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DEA  
INTELLIGENCE  
REPORT

# The Heroin Signature Program and Heroin Domestic Monitor Program 2014 Reports



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# THE HEROIN SIGNATURE PROGRAM AND HEROIN DOMESTIC MONITOR PROGRAM 2014 REPORTS



(U) This product was prepared by the DEA Intelligence Programs Section. Comments and questions may be addressed to the Chief, Analysis and Production Section at [DEAIntelpublications@usdoj.gov](mailto:DEAIntelpublications@usdoj.gov)

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**TABLE OF CONTENTS**


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<b>Message from the Chief of Intelligence</b> .....	vii
Introduction .....	1
<b>2014 Heroin Signature Program</b> .....	3
Executive Summary .....	4
Background .....	4
Changes Impacting the 2014 Heroin Signature Program .....	4
2014 Heroin Signature Program Results .....	5
Mexico .....	6
South America .....	8
Inconclusive-South America .....	10
Southwest Asia .....	10
Southeast Asia .....	10
Characteristics of Heroin Samples with Unknown Signatures.....	11
Outlook.....	11
Appendix A: Heroin Source Area Distribution – 1977-2014 .....	12
Appendix B: 1977 – 2014 Heroin Signature Program Results .....	13
<b>2014 Heroin Domestic Monitor Program</b> .....	15
Executive Summary .....	16
Background.....	17
Qualified Exhibits .....	18
Changes Impacting the 2014 Heroin Domestic Monitor Program.....	18
Exhibits Classified as Unknown .....	19
2014 HDMP Results.....	22
General.....	22
Fentanyl .....	23
Heroin Adulterants and Diluents .....	23

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**TABLE OF CONTENTS**

---

Regional .....24

City by City .....25

2014 Heroin Counts, Purities, Prices, Origin and City by Geographic Region – Mexican Origin Heroin  
.....34

2014 Heroin Counts, Purities, Prices, Origin and City by Geographic Region .....35

Geo-Probes: Views from Additional Cities .....36

2014 Summary of Findings .....38

HDMP Consumers .....39

Appendix A: 2013 Heroin Counts, Purities, Prices, Origin and City by Geographic Region .....40

Appendix B: 2012 Heroin Counts, Purities, Prices, Origin and City by Geographic Region .....41

Appendix C: Definitions.....42

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## MESSAGE FROM THE CHIEF OF INTELLIGENCE

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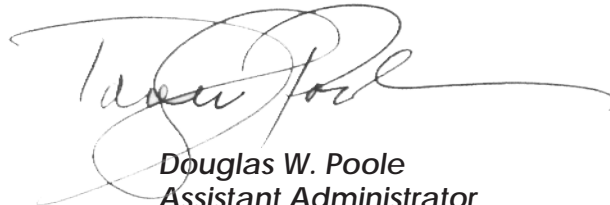
This report presents data and conclusions from the Drug Enforcement Administration's Heroin Signature Program (HSP) and Heroin Domestic Monitor Program (HDMP) for calendar year (CY) 2014. The HSP was initiated in 1977 and examines the wholesale aspect of the domestic heroin trafficking situation with the principal objective being to enhance DEA's ability to identify the geographic source of heroin seized and purchased with the United States.

The HDMP was initiated in 1979 and provides data on the price, purity, and geographic source of heroin sold at the retail (street) level in 27 US cities. The data contained in the HDMP report are based on actual undercover heroin purchases made by the DEA and its law enforcement partners on the streets of these 27 cities.

2014 HDMP data indicates that Mexican-origin heroin was the predominant type of heroin available in retail drug markets west of the Mississippi River. Based on new heroin signature classifications developed by DEA's Special Testing and Research Laboratory (SFL1), a significant number of 2014 HDMP heroin exhibits were classified as INC-SA. This new signature classification is assigned when the heroin processing signatures are characterized as South American with an "Inconclusive" origin component where either Mexico or South America could be the geographic origin of the heroin. HDMP data revealed that in 2014, heroin classified as INC-SA and SA were identified as the primary types of heroin available east of the Mississippi River. Southwest Asian (SWA) heroin availability at the retail level remains limited. Only one heroin exhibit purchased under the HDMP in 2014 was classified as SWA heroin. For the ninth consecutive year, no SEA heroin exhibits were purchased under the HDMP during 2014.

Mexico was identified as the primary geographic source of the heroin exhibits submitted to the HSP in 2014. HSP statistics for 2014 indicate that both the purity of Mexican-origin heroin, as well as the size of Mexican-origin heroin seizures, has increased. While South American heroin remains available in the United States, HSP results for 2014 indicate that South America's longtime status as the dominant source of heroin as examined by the HSP in the United States, has been overtaken by Mexico. Despite record estimates of opium and heroin production in Afghanistan, and increasing levels of opium production in Southeast Asia, 2014 HSP analysis continue to indicate that heroin from both of these geographic source regions has minimal impact on the U.S. heroin market.

DEA uses information derived from the HSP and the HDMP—along with investigative, source, and strategic trafficking information—to develop and disseminate information on trends in the supply of wholesale-level and retail-level heroin to the United States. Through their ability to detect historical trends, and to identify shifts in the current heroin picture, both programs have proven to be valuable assessment and analytical tools for drug policymakers, law enforcement authorities, and drug abuse researchers throughout the nation.



*Douglas W. Poole*  
Assistant Administrator  
Chief of Intelligence

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## INTRODUCTION

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The Drug Enforcement Administration's (DEA) Heroin Signature Program (HSP) was initiated in 1977 and examines the wholesale aspect of the domestic heroin trafficking situation with the principal objective being to enhance DEA's ability to identify the geographic source of heroin seized and purchased within the United States. In addition to identifying the heroin source area, the HSP provides intelligence on wholesale-level purity and tracks transitions in heroin smuggling patterns into and throughout the United States.

DEA's Heroin Domestic Monitor Program (HDMP) was initiated in 1979 and is a retail-level heroin purchase program that provides data on the purity, price, and geographic source of origin for the heroin sold at the retail (street)-level in 27 U.S. cities.

Heroin samples obtained via both programs are sent to DEA's Special Testing and Research Laboratory (SFL1) for signature analysis that serves as the only scientifically-based source of information currently available on the geographic origins of the heroin encountered in the U.S. drug market. Through this program, heroin samples undergo multiple, in-depth analyses that identify the purity, cutting patterns, and geographic processing origin—South America (SA), Mexico (MEX), Southwest Asia (SWA), or Southeast Asia (SEA)—of the sample. Each of the geographic source areas noted above has a unique production process or "signature" that is used to determine the origin of the sample.

According to DEA's SFL1, clandestine heroin production can be dynamic and technology transfer can occur from one source region of production to another. As a result, there is ongoing HSP research and method development at SFL1 to stay current with any changes. In the last decade, SFL1 noted a significant change in heroin being produced in Mexico, in that it began to look more South American (SA)-like. This heroin is commonly referred to as "Mexican White" or "China White" heroin with classic SA heroin physical appearance. This heroin is processed from opium poppies grown in Mexico using either Mexican or Colombian type poppies and is manufactured using Colombian and/or a combination of Colombian-Mexican processing methods.

Hundreds of these heroin samples submitted under the HSP and HDMP for analysis displayed signature anomalies, i.e. , they did not exactly match the authentic SA heroin profile and were classified as unknown (UNK) by SFL1 for years and tracked as "alleged Mexican white heroin (AMW)." Despite utilizing the most advanced, emerging scientific technologies, the development of a distinct signature profile for this type of heroin was hindered for many years by the lack of authentic samples from laboratories in Mexico producing UNK-AMW heroin.

However, continued SFL1 comprehensive signature analysis of powder heroin seizures at the Southwest border in conjunction with DEA reports provided sufficient information for SFL1 to develop the below listed new heroin signature classifications for Mexican-produced heroin effective May 1, 2015. These new signature classifications appear in both the 2014 HSP report and the 2014 HDMP report.

- **MEX/T**: Mexican-Black Tar; previously classified as MEX.
- **MEX/BP**: Mexican-Brown Powder; previously classified as MEX.
- **MEX-SA**: Mexican-South American; white heroin that originated from Mexico with processing signatures classified as South American; previously classified as UNK-AMW.
- **MEX**: Refined or crudely manufactured heroin from Mexico. This classification is assigned when MEX/T, MEX/BP, or MEX-SA are not applicable.
- **INC-SA**: Resembles SA heroin in appearance; processing signatures are characterized as South American with an "inconclusive" origin component where either Mexico or South America could be the origin. Extremely adulterated and diluted (low purity) heroin is likely to generate this classification.

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## INTRODUCTION (CONTINUED)

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The scientific protocol used by SFL1 to develop the above classifications allows for a more intensive scrutiny of SA heroin processing methods to further differentiate and isolate the origin of the samples to either Mexico or South America and is considered the crucial step in accurately identifying the production region.

SFL1 advises that numerous adulterants present in HDMP heroin exhibits hinder the new signature protocol; therefore, an origin determination could not be made for the vast majority of these samples. A large portion of the heroin exhibits submitted to the HDMP during 2014 that were originally classified as SA are now classified as INC-SA (inconclusive origin- SA or MEX with SA processing). It is important to note that this has led to an under reporting of both SA heroin and MEX-SA heroin in the 2014 HDMP report, as both types of heroin are similarly adulterated in HDMP exhibits purchased in East Coast cities. In comparison, 2014 HSP exhibits, because they are at the wholesale-level, tend not to be severely adulterated and therefore, SFL1 was able to assign SA or MEX-SA classification for the majority of powder samples under the HSP.

Both the HSP and the HDMP underwent significant changes in 2014 with the introduction of new origin classifications such as MEX-SA and INC-SA for refined powder heroin, and additional granular profiling of Mexican-produced crude heroin (MEX/T and MEX/BP). Based on these circumstances, the 2014 HSP and HDMP reports will be combined for the first time in order to provide both context and an explanation of why the Mexican and South American heroin percentages radically diverge between the HSP and the HDMP.

SFL1 will continue to monitor the various heroin processing methods that occur in Mexico and is likely to update the classification schemes in future as needed. In addition, the signature characteristics of heroin produced in South America, Southwest Asia, and Southeast Asia are also under continual review at SFL1 despite the fact that HSP reporting indicates that heroin from these source regions does not contribute significantly to the current U.S. heroin market.

# 2014 HEROIN SIGNATURE PROGRAM



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## 2014 HEROIN SIGNATURE PROGRAM

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### Executive Summary

The Drug Enforcement Administration's (DEA) Heroin Signature Program (HSP) analyzes several hundred wholesale-level heroin samples each year to identify the geographic area—Mexico (MEX), South America (SA), Southwest Asia (SWA), or Southeast Asia (SEA)—where they were manufactured. In 2014, heroin from MEX accounted for 79 percent (by weight) of the heroin analyzed through the HSP; heroin from SA accounted for 17 percent; heroin under the new HSP classification of “Inconclusive Origin-South American” Processing Method (INC-SA) accounted for 3 percent; and heroin from SWA accounted for 1 percent. There were no SEA heroin samples submitted to the program in 2014. Since its inception more than 30 years ago, the HSP has proven to be a valuable indicator of changes in the supply of heroin by providing insight into the wholesale-level of heroin trafficking to the United States.

### Background

The HSP is one essential component of the ability of DEA's Intelligence Division to identify trends in heroin trafficking and distribution in the United States. The objective of the program is to identify and quantify the chemical components of heroin seized at U.S. ports of entry (POEs), all non-POE heroin seizures weighing more than 1 kilogram, randomly chosen samples, and special requests for analysis. Samples submitted to the HSP undergo in-depth chemical analysis at the DEA Special Testing and Research Laboratory (SFL1). This chemical analysis allows SFL1 to associate the heroin samples with a production process, or “signature,” which is indicative of a particular geographic source area and processing method. The proportion of heroin associated with each geographic source area is measured in terms of the net weight of heroin seized and analyzed in the program from each source area that year.

Signature analysis conducted under the HSP is currently the only scientifically based source of information available to determine the origin of heroin encountered in the U.S. drug market. HSP chemical analysis data, combined with investigative and other types of reporting, allow for the identification of possible changes in the geographic source and purity of heroin in the United States, as well as changes in trafficking routes and methods. The HSP continually undergoes quality assurance by analyzing authentic samples obtained from the primary heroin production regions.

### Changes Impacting the 2014 Heroin Signature Program

Effective May 1, 2015, SFL1 established several new classification subdivisions for Mexican-produced heroin, which further classified MEX heroin into several new subdivisions. This protocol was developed by SFL1 to address Mexico's increasingly diversified heroin production and to further clarify the status of heroin previously classified as “unknown” (UNK), specifically UNK-Alleged Mexican White (AMW) heroin. These new signature classifications are noted below.

- **MEX/T:** Mexican-Black Tar; previously classified as MEX.
- **MEX/BP:** Mexican-Brown Powder; previously classified as MEX.
- **MEX-SA:** Mexican-South American; white heroin that originated from Mexico with processing signatures classified as South American; previously classified as UNK-AMW.
- **MEX:** Refined or crudely manufactured heroin from Mexico. This classification is assigned when MEX/T, MEX/BP, or MEX-SA are not applicable.

## 2014 HEROIN SIGNATURE PROGRAM

- **INC-SA:** Resembles SA heroin in appearance; processing signatures are characterized as South American with an “inconclusive” origin component where either Mexico or South America could be the origin. Extremely adulterated and diluted (low purity) heroin is likely to generate this classification.

Although this new protocol provides additional clarity between South American white (SA) and Mexican white (MEX-SA) at the wholesale level, only a limited number of 2014 HSP samples previously classified as UNK-AMW were re-evaluated and re-classified as MEX-SA by SFL1. Also, several samples previously classified as SA were reviewed and re-classified as MEX-SA.

### 2014 Heroin Signature Program Results

In 2014, heroin from Mexico accounted for 79 percent (by weight) of the heroin analyzed by the HSP. SA and INC-SA heroin accounted for 17 percent and 3 percent, respectively; and SWA heroin accounted for 1 percent. No SEA heroin samples were submitted to the program in 2014. Over 795 HSP samples, totaling approximately 1,745 kilograms of heroin, were analyzed in 2014 by SFL1. Of those 795 samples, 732 (representing approximately 1,676 kilograms) were classified through the HSP (see Figure 1).<sup>a</sup>

Figure 1: HSP Geographic Source Area Summary						
Signature	Number of Samples		Weight of Samples (kilograms)		Percentage by Weight	
	2014	2013	2014	2013	2014	2013
<b>Mexican-Origin (508 Total Samples)</b>		<b>383</b>	<b>1,332</b>	<b>861</b>	<b>79%</b>	<b>54%</b>
<b>MEX-SA</b>	<b>209</b>	<b>0</b>	<b>777</b>	<b>0</b>	<b>58</b>	<b>0</b>
<b>MEX/BP</b>	<b>24</b>	<b>0</b>	<b>68</b>	<b>0</b>	<b>5</b>	<b>0</b>
<b>MEX/T</b>	<b>271</b>	<b>0</b>	<b>482</b>	<b>0</b>	<b>36</b>	<b>0</b>
<b>MEX</b>	<b>4</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>1</b>	<b>0</b>
<b>SA</b>	<b>153</b>	<b>354</b>	<b>288</b>	<b>715</b>	<b>17</b>	<b>44</b>
<b>INC-SA</b>	<b>55</b>	<b>0</b>	<b>47</b>	<b>0</b>	<b>3</b>	<b>0</b>
<b>SWA</b>	<b>16</b>	<b>28</b>	<b>9</b>	<b>37</b>	<b>1</b>	<b>2</b>
<b>SEA</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Total</b>	<b>732</b>	<b>765</b>	<b>1,676</b>	<b>1,613</b>	<b>100%</b>	<b>100%</b>

Source: DEA

<sup>a</sup> Since all heroin seized in the United States is not submitted for analysis through the HSP, the source area proportions reported through the HSP should not be characterized as market share. Fluctuations from year to year in source area proportions may reflect shifting law enforcement priorities, changes in trafficking patterns, or exceptionally large seizures that could boost the HSP representation of a particular source area. To achieve a comprehensive assessment of heroin smuggled into and trafficked in the United States, HSP data must be used in conjunction with investigative reporting, drug production estimates, and seizure statistics.

## 2014 HEROIN SIGNATURE PROGRAM

Heroin classified as MEX-SA (previously classified as UNK-AMW) had the highest purity average in 2014 at 74 percent, followed by SA heroin at 61 percent. SA heroin purity increased one percentage point between 2013 and 2014. Since MEX-SA, MEX/BP, MEX/T, and INC-SA represent new heroin signature classifications, there is no comparative purity data provided for this classification of heroin between 2013 and 2014 (see Figure 2).

In 2014, approximately 8 percent of the heroin samples submitted for analysis through the HSP were classified as UNK. This represents a decrease of 8 percentage points from 2013, when 16 percent of HSP heroin samples were classified as UNK. This is due in large part to the introduction of new signature classifications for Mexican-produced white heroin.

According to SFL1, samples are classified as UNK when the signature profiles of the samples are not consistent with the signature profiles of authentic heroin samples collected from any of the four geographic source regions.

### Mexico

Analysis of 2014 HSP data identified Mexico as the primary source of origin for heroin transported to the United States for the second consecutive year. Mexico was identified as the geographic origin of 79 percent (by weight) of samples classified under the HSP during 2014. Of these samples, 58 percent were classified as MEX-SA (formerly classified as UNK-AMW), 36 percent as MEX/T, 5 percent as MEX/BP, and 1 percent as MEX. In 2014, the percentage (by weight) of Mexican-origin heroin analyzed through the HSP increased 25 percentage points, from 54 percent in 2013 to 79 percent in 2014. The weight of Mexican-origin heroin samples submitted to the HSP also increased, from approximately 861 kilograms (383 samples) in 2013 to 1,332 kilograms (508 samples) in 2014. In addition, the number of Mexican-origin heroin samples exceeding 10 kilograms increased to 32 in 2014 from 17 in 2013.

The purity levels of MEX heroin in 2014 varied within SFL1's new classifications for Mexican-produced heroin. Accordingly, the average overall purity of Mexican-origin heroin analyzed through the HSP in 2014 decreased slightly—down 1 percentage point from 2013 (down to 44 percent from 45 percent). Within Mexican signatures, MEX-SA heroin had the highest purity level at 74 percent in 2014, followed by MEX/BP at 43 percent, and MEX/T at 39 percent. In 2014, only 11 percent of MEX-SA heroin was adulterated, with caffeine being the primary adulterant.<sup>b</sup> Two MEX-SA samples were found to contain methamphetamine. Lactose and

**Figure 2: HSP Average Heroin Purity**

Signature	Average Purity	
	2014	2013
MEX-SA	74%	N/A
SA	61%	60%
MEX	44%	45%
MEX/BP	43%	N/A
MEX/T	39%	N/A
INC-SA	39%	N/A
SWA	35%	34%
SEA	N/A	N/A

Source: DEA

<sup>b</sup> Adulterants are pharmacologically active substances that are added to heroin to enhance or mimic the effect of heroin. A good example of an adulterant is acetaminophen, an analgesic compound often found with heroin. That said, many current heroin adulterants do not meet this criteria, as they may have an adverse effect, or possibly no effect, to the heroin. Adulterants can be added to heroin shipments immediately after production, in transit, or prior to distribution. Although dextromethorphan for Southwest Asian heroin and diltiazem for South American heroin are examples of adulterants that are added immediately after production, xylazine for Puerto Rico and quinine for Washington, DC-Baltimore are examples of city-specific adulteration prior to distribution.

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**2014 HEROIN SIGNATURE PROGRAM**


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**Figure 3: Mexican and South American Heroin Seized at Southwest Border (SWB) POEs by State**

SWB State	Mexican-Origin Heroin (Number of Samples)		SA Heroin (Number of Samples)	
	2014	2013	2014	2013
Arizona	32	32	2	8
California	147	120	14	32
New Mexico	0	0	0	0
Texas	19	12	4	20

Source: DEA

mannitol were still the most common diluents<sup>o</sup> found in MEX-SA heroin samples. The majority of MEX/T and MEX/BP samples analyzed under the HSP in 2014 were unadulterated; however, of the adulterated samples, lidocaine was the most detected adulterant. Lactose remained the most common diluent, followed by mannitol, dextrose, inositol, and sucrose.

The number of Mexican-origin heroin samples seized at Arizona POEs and submitted to the HSP for analysis remained unchanged between 2013 and 2014 at 32 samples, while Mexican-origin heroin seizures at POEs in Texas increased from 12 in 2013 to 19 in 2014, as well as heroin seizures at POEs in California, rising from 120 in 2013 to 147 in 2014 (see Figure 3).

The number of Mexican-origin heroin samples seized at U.S. POEs has increased steadily since 2001, which appears to be a direct result of the increased smuggling of Mexican-produced heroin through Mexico. Figure 4 summarizes the number and purity of Mexican-origin heroin samples seized at U.S. POEs and analyzed through the HSP from 2001 to 2014.

Although the availability of Mexican-origin heroin remains strong in markets west of the Mississippi River, 2014 HSP data indicates that increasing amounts of Mexican-origin heroin have moved into Eastern and Midwestern U.S. markets. In 2014, for example, the HSP received a total of 100 Mexican-origin heroin samples obtained from the following areas that are predominately SA white heroin markets: Connecticut (1 sample), Florida (1 sample), Illinois (15 samples - 12 classified as MEX-SA), Michigan (11 samples - 10 classified as MEX-SA), New York (33 samples - 29 classified as MEX-SA), North Carolina (4 samples), Ohio (12 samples - one classified as MEX-SA), Pennsylvania (12 samples - 11 classified as MEX-SA), Rhode Island (3 samples), and Virginia (8 samples). These samples represent more than four times the total number of Mexican-origin heroin samples obtained in these same markets in 2013. Of particular importance is that the majority of Mexican-origin heroin samples obtained from Illinois, Michigan, New York, and Pennsylvania in 2014 were classified as MEX-SA (previously classified as UNK-AMW). This is an indication that Mexican drug trafficking organizations are producing white heroin for distribution in the eastern United States and continue to expand their operations in order to gain a larger share of these lucrative heroin markets.

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<sup>o</sup> Diluents are inert ingredients (pharmacologically inactive compounds) used to increase the bulk of a finished product. Typical diluents include sugars, starches, and inorganic salts.

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**2014 HEROIN SIGNATURE PROGRAM**


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**Figure 4: Characteristics of Mexican Heroin Seized at U.S. POEs and Analyzed Through the HSP**

Calendar Year	Number of Heroin Samples	Average Purity
2014	12 (MEX/BP)	54.0%
	63 (MEX-SA)	82.0%
	125 (MEX/T)	43.0%
2013	165	46.9%
2012	146	42.3%
2011	145	40.4%
2010	88	38.1%
2009	55	39.6%
2008	61	44.0%
2007	49	38.6%
2006	32	44.6%
2005	40	49.4%
2004	24	41.5%
2003	20	37.9%
2002	26	32.8%
2001	34	31.0%

Source: DEA

## South America

South America (SA) was identified as the geographic source area of 17 percent (by weight) of heroin samples classified under the HSP during 2014. This represents a significant decrease from 2013 when SA heroin accounted for 44 percent (by weight) of the heroin analyzed through the HSP. The weight of SA heroin samples submitted to the HSP also decreased dramatically from 715 kilograms in 2013 to 288 kilograms in 2014. South America (primarily Colombia) has accounted for the majority of the heroin analyzed through the HSP since 1995; however, HSP results for both 2013 and 2014 indicate that South America's longtime status as the dominant source of heroin examined by the program in the United States has been overtaken by Mexico.



## 2014 HEROIN SIGNATURE PROGRAM

The average purity of SA heroin increased from 60 percent in 2013 to 61 percent in 2014. According to SFL1 forensic analysis, approximately 50 percent of SA heroin samples were found to be adulterated. Caffeine continued to be the most common adulterant for SA heroin, followed by diltiazem. Adulterants such as quinine, lidocaine, diphenhydramine, and procaine were also detected in many samples. In addition, controlled substances were also identified in SA heroin samples analyzed by the HSP, including cocaine (9 samples), fentanyl (3 samples), and ketamine (1 sample). Mannitol and lactose were the most commonly used diluents for SA heroin.

Although SA heroin continues to be smuggled into the United States by couriers on commercial flights, as well as overland from Mexico, 2014 HSP data show a significant decline in the number of SA heroin samples seized at U.S. POEs in comparison to 2013.

In 2014, 32 SA heroin samples obtained from seizures at U.S. POEs (both air and land) were analyzed under the HSP compared to 76 samples in 2013. Of the 32 SA

heroin samples obtained in 2014, only 12 were airport seizures with the major airports in New York and Miami continuing as the primary arrival points for SA heroin couriers. SFL1 forensic analysis further indicated that SA heroin shipments transported into the United States via air couriers contained diltiazem, caffeine, phenacetin, and aminopyrine. According to SFL1, caffeine and diltiazem were identified in SA heroin samples seized in-country in Colombia (which are not included in the SA heroin samples referenced in this report).

In addition to air transport, SA heroin continues to be smuggled overland into the United States from Mexico. HSP data indicate that SWB POEs in California, Arizona, and Texas are still the main entry points for SA heroin entering the United States via Mexico. The average purity of SA heroin trafficked overland from Mexico through SWB POEs in 2014 was 83 percent and mostly unadulterated. In 2014, HSP data identified California (with 14 SA heroin samples obtained from seizure events) as the primary entry point for SA heroin smuggled overland into the United States from Mexico. HSP data also reflects that SA heroin seizures at POEs in Arizona decreased from 8 samples in 2013 to 2 in 2014; and SA heroin seizures at POEs in Texas decreased from 20 in 2013 to 4 in 2014. Figure 3 provides a comparison of the number and location of SA heroin and MEX heroin samples seized at SWB POEs in 2013 and 2014 and analyzed through the HSP.

**Figure 5: Characteristics of South American Heroin Seized at U.S. POEs and Analyzed Through the DEA HSP**

Calendar Year	Number of Samples	Average Purity
2014	32	77.4%
2013	76	71.8%
2012	138	68.2%
2011	150	61.8%
2010	128	54.5%
2009	134	61.9%
2008	141	64.7%
2007	126	64.3%
2006	138	62.0%
2005	185	68.0%
2004	237	72.5%
2003	350	77.1%
2002	376	76.9%
2001	412	81.2%

Source: DEA

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## 2014 HEROIN SIGNATURE PROGRAM

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The number of SA heroin samples seized at U.S. POEs and analyzed through the HSP since 2001 has steadily decreased, while the purity has remained relatively stable during the same timeframe. The decline in the amount of SA heroin seized at U.S. POEs is consistent with reports of significant decreases in Colombian poppy cultivation over the last 15 years. The reduction in SA heroin production, coupled with increasing levels of heroin production in Mexico and transportation activities across the SWB, has had a noticeable impact on SA heroin availability in the United States. Figure 5 summarizes the number and purity of SA heroin samples seized and analyzed through the HSP at U.S. POEs from 2001 through 2014.

### Inconclusive - South America

Heroin under the new HSP classification of INC-SA (inconclusive origin-South American processing) accounted for 3 percent (by weight) of the heroin analyzed through the HSP in 2014. The weight of INC-SA heroin samples analyzed through the HSP in 2014 totaled 47 kilograms (55 samples) with an average purity of 39 percent. HSP data revealed that these INC-SA heroin samples were obtained from 19 states, the majority of which were in the Eastern United States, primarily Massachusetts (15 samples), New York (8 samples), and Pennsylvania (5 samples). INC-SA is a classification assigned when the processing signatures are characterized as South American with an “inconclusive” origin component where either Mexico or South America could be the origin. Extremely adulterated and diluted (low purity) heroin is likely to generate this classification.

### Southwest Asia

Southwest Asian (SWA) heroin accounted for 1 percent of the heroin analyzed (by weight) under the HSP in 2014, down from 2 percent in 2013. The average purity of SWA heroin remained relatively constant at 35 percent in 2014, a 1 percentage point increase from 34 percent in 2013. The primary adulterants identified in SWA heroin samples analyzed under the HSP in 2014 were acetaminophen, caffeine, and methorphan (dextromethorphan).

SWA heroin continues to be smuggled into the United States primarily via couriers on international flights and through international mail delivery services. Air couriers generally arrive at JFK International Airport in New York on flights originating in Western Europe or West Africa. SWA heroin seized at U.S. airports from couriers and analyzed through the HSP in 2014 ranged in weight from approximately 199 grams to 3 kilograms.

The HSP continues to document the presence of SWA heroin in the United States, even though the quantities for this heroin type are limited. Record levels of opium and heroin production in Afghanistan have not led to a corresponding rise in SWA heroin availability in the United States. Based on DEA reporting and seizure data, SWA heroin is not shipped to the United States in the bulk (wholesale) quantities needed to sufficiently challenge or supplant well-entrenched Mexican heroin distribution networks. As noted in Figure 1, the total weight of SWA heroin samples submitted to the HSP in 2014 was only 9 kilograms (16 samples), which is a significant decrease of 28 percentage points from 37 kilograms in 2013. Until SWA trafficking networks can ensure a consistent flow of high purity, competitively priced heroin while simultaneously expanding their U.S. distribution networks, it is unlikely that SWA heroin will significantly increase its presence in the United States in the near term.

### Southeast Asia

For the sixth consecutive year, no Southeast Asian (SEA) heroin samples were analyzed in 2014 through the HSP. Although reports indicate opium cultivation in Burma is once again on the rise after a decade of decline, this increased level of opium production has not resulted in a concurrent rise in SEA heroin availability in the United States. The majority of SEA opium remains in Asia to meet the demand for opiates in local and regional markets.

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## 2014 HEROIN SIGNATURE PROGRAM

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### Characteristics of Heroin Samples with Unknown Signatures

According to SFL1, heroin samples are classified as “UNK” when the signature profiles of the samples are not consistent with the signature profiles of authentic heroin samples collected from the four geographic source regions. According to SFL1, since heroin is manufactured through a series of chemical processing steps, signature analysis is expected to result in a certain number of samples whose signature is UNK or undetermined. Generally, a range of 4 to 7 percent of heroin samples classified as UNK is considered the norm.

In 2014, the percentage of HSP heroin samples classified as UNK dropped to 8 percent from 16 percent in 2013. This 8 percentage point decrease is due in large part to the introduction of the new signature classifications for Mexican-produced heroin. Prior to the new classifications, many of these UNK samples were identified as UNK-AMW (alleged Mexican white heroin).

SFL1 further indicates that approximately one-third of the 2014 HSP samples classified as UNK contained high levels of adulterants, which hindered application of the new signature protocol; therefore, these samples could not be processed. According to SFL1, when a heroin sample cannot undergo analysis via the new protocol, SFL1 is unable to state the geographic origin of the sample.

#### **Heroin Color does not Confirm its Source**

*The geographic origin of heroin can only be determined by scientific analysis. The DEA Special Testing and Research Laboratory notes that the suspected origin of heroin does not always match analyzed results. For example, some SA heroin, historically off-white to tan in color, is brown. Similarly, MEX brown powder and black tar heroin can become off-white, white, or gray in color if mixed with large amounts of sugars, starches, or other cutting agents.*

### Outlook

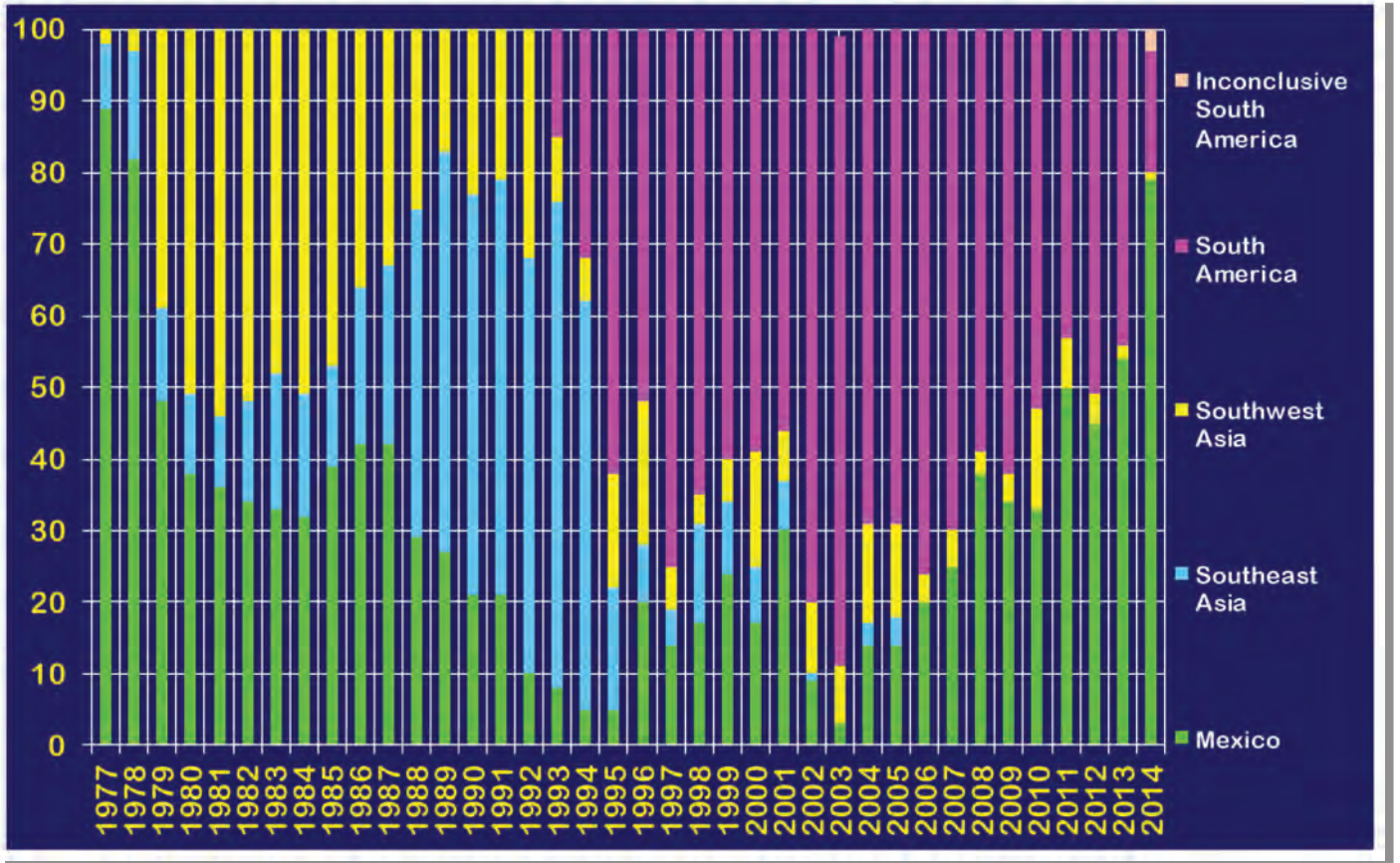
Mexico was the primary geographic source of the heroin samples submitted to the HSP in 2014. HSP statistics for 2014 indicated that both the purity and weight of Mexican-origin heroin seizures increased. This increased level of Mexican-origin heroin in HSP data from 2013 to 2014 is noteworthy and is a strong indicator that Mexican traffickers are aggressively expanding and taking greater control of the U.S. heroin market. They are now producing their own white powder heroin and becoming more active in Eastern white powder heroin markets historically supplied by Colombian traffickers. Seizures of Mexican-origin heroin at the Southwest Border continue to grow and are an indication that Mexican traffickers are increasing their level of heroin production and transportation to meet rising demand in the United States.

Although SA heroin remains available in the United States, HSP results for both 2013 and 2014 indicate that South America’s longtime status as the dominant source of heroin as examined by the HSP in the United States has been overtaken by Mexico. Diminished levels of SA heroin in the United States are likely the result of decreased levels of opium poppy production in Colombia and steadily increasing levels of heroin production in Mexico and subsequent transportation activities.

Despite record estimates of opium and heroin production in Afghanistan, and increasing levels of opium production in Southeast Asia, HSP statistics continue to indicate that heroin from both of these geographic source regions has minimal impact on the U.S. heroin market.

APPENDICES

Appendix A: Heroin Source Area Distribution -1977-2014



Source: DEA

## APPENDICES

APPENDIX B: 1977-2014 Heroin Signature Program Results Geographic Source Area Distribution (in percent*) Based on Net Weight of Heroin Seized and Analyzed					
Year	Mexico	Southeast Asia	Southwest Asia	South America	Inconclusive/ South America
2014	79	0	1	17	3
2013	54	0	2	44	N/A
2012	45	0	4	51	N/A
2011	50	0	7	43	N/A
2010	33	0	14	53	N/A
2009	34	0	4	62	N/A
2008	38	<1	3	59	N/A
2007	25	<1	5	70	N/A
2006	20	0	4	76	N/A
2005	14	4	13	69	N/A
2004	14	3	14	69	N/A
2003	3	<1	8	88	N/A
2002	9	1	10	80	N/A
2001	30	7	7	56	N/A
2000	17	8	16	59	N/A
1999	24	10	6	60	N/A
1998	17	14	4	65	N/A
1997	14	5	6	75	N/A
1996	20	8	20	52	N/A
1995	5	17	16	62	N/A

Source: DEA

## APPENDICES

APPENDIX B: 1977-2014 Heroin Signature Program Results, <b>Continued</b> Geographic Source Area Distribution (in percent*) Based on Net Weight of Heroin Seized and Analyzed					
Year	Mexico	Southeast Asia	Southwest Asia	South America	Inconclusive/ South America
1994	5	57	6	32	N/A
1993	8	68	9	15**	N/A
1992	10	58	32	---	N/A
1991	21	58	21	---	N/A
1990	21	56	23	---	N/A
1989	27	56	17	---	N/A
1988	29	46	25	---	N/A
1987	42	25	33	---	N/A
1986	42	22	36	---	N/A
1985	39	14	47	---	N/A
1984	32	17	51	---	N/A
1983	33	19	48	---	N/A
1982	34	14	52	---	N/A
1981	36	10	54	---	N/A
1980	38	11	51	---	N/A
1979	48	13	39	---	N/A
1978	82	15	3	---	N/A
1977	89	9	2	---	N/A

\* Percentage based on samples for which a signature was identified. From 1977 through 1991, percentages were based on the number of samples tested. Since 1992, percentages have been based on the net weight of the heroin seized and analyzed.

\*\* The signature for heroin from South America was developed in July 1993; therefore, this figure represents only partial-year data. DEA reporting indicates that heroin from South America first was noted in the United States in 1991 and that its availability increased during the latter half of 1992 and early 1993.

Source: DEA

# 2014 Heroin Domestic Monitor Program



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## 2014 HEROIN DOMESTIC MONITOR PROGRAM

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### Executive Summary

The Drug Enforcement Administration's (DEA) Heroin Domestic Monitor Program (HDMP) is a retail-level heroin purchase program that provides data analysis about the price, purity, and geographic source of heroin sold at the retail level in 27 U.S. cities. In 2014, a total of 625 qualified exhibits were purchased. Of those exhibits, 287 were classified as Mexican-origin heroin (4 Mexican [MEX], 233 Mexican-Black Tar [MEX/T], 49 Mexican-Brown Powder [MEX/BP], and 1 Mexican-South American [MEX-SA]); 303 heroin exhibits were classified as Inconclusive Origin-South American Processing Method (INC-SA); 34 were classified as South American (SA) heroin; and 1 was classified as Southwest Asian (SWA) heroin. During 2014, for the ninth consecutive year, no Southeast Asian (SEA) heroin exhibits were purchased through the HDMP.

2014 HDMP data indicated that Mexican-origin heroin was the predominant type of heroin available in retail drug markets west of the Mississippi River. In 2014, the overall average purity of Mexican-origin heroin was 21.1 percent, an increase of 0.8 percentage points<sup>d</sup> from 2013. The purity levels of Mexican-origin heroin in 2014 varied within the new signature classifications that were developed by DEA's Special Testing and Research Laboratory (SFL1) for Mexican-produced heroin. MEX/T averaged 22.9 percent pure and MEX/BP averaged 13.5 percent pure. The only heroin exhibit classified as MEX-SA exhibited a purity of 57.2 percent. Heroin classified as MEX, which is refined or crudely manufactured heroin from Mexico that does not fit in one of the other Mexican categories, averaged 1.6 percent pure.

Mexican-origin heroin exhibits reflected an average price per milligram pure of \$1.15,<sup>e</sup> an increase of \$0.02 from the 2013 price of \$1.13 per milligram pure. Heroin classified as MEX cost \$9.98 price per milligram pure; MEX/T cost \$1.04 price per milligram pure; and MEX/BP cost \$0.97 price per milligram pure. The one heroin exhibit classified as MEX-SA, cost \$0.36 per milligram pure.

Based on the new signature classifications developed by SFL1, a significant number of 2014 HDMP heroin exhibits were classified as INC-SA. SFL1 assigns this new signature classification when the heroin processing signatures are characterized as South American with an "Inconclusive" origin component where either Mexico or South America could be the geographic origin. Extremely adulterated and diluted (low purity) heroin, such as that purchased at the retail-level, is likely to generate this classification.

2014 HDMP data indicates that heroin classified as INC-SA was encountered most often in the Eastern and Midwestern United States where SA heroin typically dominates the market. Heroin classified as INC-SA and SA were identified as the primary types of heroin available east of the Mississippi River. HDMP data revealed that heroin classified as INC-SA had an average purity of 38 percent, while SA heroin exhibits had an average purity at 31.1 percent, a decrease of 4 percentage points from 2013. HDMP data further reflected the average price per milligram pure for heroin classified as INC-SA was \$1.07, while SA heroin had an average price per milligram pure of \$1.03, a decrease of \$0.01 from 2013.

The only 2014 SWA heroin exhibit was purchased in Washington, DC, and was analyzed at 16.2 percent pure, a decrease of 6.8 percentage points from the purity level of HDMP SWA heroin exhibits analyzed in 2013. The SWA heroin exhibit purchased in Washington, DC cost \$1.06 per milligram pure, a decrease of \$0.17 from 2013.

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<sup>d</sup> A percentage point is a unit expressing the arithmetic difference between two percentages, e.g., a decline of one percentage point would be a decrease from 10 percent to nine percent. A complete list of other definitions is available in Appendix C.

<sup>e</sup> All prices are listed in U.S. currency (USC) throughout the report.



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## 2014 HEROIN DOMESTIC MONITOR PROGRAM

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Exhibits classified as “unknown” (UNK) were purchased in all but seven of the HDMP cities. Heroin exhibits are classified as UNK when their signature profiles are inconsistent with the signature profiles of authentic heroin exhibits<sup>f</sup> collected from the four geographic source regions: Mexico, South America, Southeast Asia, or Southwest Asia.

Comparison of 2008 HDMP data to 2014 data reflected an 11.5 percent decrease in exhibits where the signature was classified as UNK by SFL1. In 2008, 131 HDMP exhibits were classified as UNK, while in 2014 that number decreased to 113 exhibits. In 2014, Chicago experienced a notable increase in the number of heroin exhibits whose geographic source of origin was classified as UNK, while Miami and Orlando, as well as St. Louis all experienced notable decreases.

### Background

The HDMP collects data on the price, purity, and geographic origin of street-level heroin available in major metropolitan areas of the United States. Each quarter, the DEA Intelligence Division provides funding for the purchase of retail (street-level) heroin exhibits in 27 metropolitan areas. Each purchase is submitted for in-depth chemical analysis at SFL1.

The goal of the HDMP is to provide federal, state, and local law enforcement authorities, as well as drug policymakers and drug abuse researchers, with information regarding domestic heroin available at the street level. HDMP data analyses reveal changes in heroin availability, price and purity, adulterants and diluents, use patterns, and marketing practices. Through Heroin Signature Analysis<sup>g</sup>, SFL1 also determines the geographic origin of each qualified heroin exhibit submitted to the program.

Since its inception more than 30 years ago, the HDMP has proven to be a valuable and reliable indicator for the detection of trends in U.S. retail-level heroin trafficking. The program also has provided accurate assessments of the fluctuations in the domestic retail availability of heroin sourced from each of the major heroin source areas – Mexico, South America, Southeast Asia, and Southwest Asia. In recent years, the HDMP has tracked the increasing presence at the retail-level, particularly in the East and Midwest sections of the United States of SA like heroin produced in Mexico and commonly referred to as “Alleged Mexican White” or “China White” heroin. In years past, the HDMP also documented the increased availability in the early to mid-1980s of SEA heroin at the retail-level in a number of U.S. cities; further documented significant increases in the mid-1990s in the amount of SA heroin available at the retail-level, particularly in the key metropolitan heroin markets of the northeastern U.S.; and, in the early 2000s, HDMP program data highlighted the growth in competitive drug markets containing heroin from multiple geographic sources.

The HDMP was initiated in DEA's New York Division in 1979 and, to this day, particular attention is paid to HDMP results for New York City because it remains one of the most prominent heroin destination and distribution centers in the United States. Between 1979 and 1991, the number of DEA offices that participated in the HDMP fluctuated between 6 and 12. In 1991, the DEA expanded the HDMP to include one city in each of DEA's 21 domestic divisions. Between 1995 and 1999, Baltimore, Maryland; Orlando, Florida; and El Paso, Texas joined as program participants. San Antonio, Texas and Richmond, Virginia were added as participants

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<sup>f</sup> An authentic heroin exhibit meets at least one of the following criteria: 1) a heroin exhibit seized in heroin producing countries; 2) a heroin exhibit seized in a heroin/opium processing laboratory in a heroin/opium source country; 3) a heroin exhibit transported directly to the United States from a source country and seized at a U.S. land, sea, or airport port of entry.

<sup>g</sup> Heroin Signature Analysis is a program developed by the DEA to identify the geographic source area of a heroin exhibit. Heroin signature analysis is based on exhaustive chemical profiles of authentic exhibits acquired from each of the four major heroin source areas: Mexico, South America, Southeast Asia, and Southwest Asia.

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## 2014 HEROIN DOMESTIC MONITOR PROGRAM

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in early 2003. In 2006, the program was expanded further to include Pittsburgh, Pennsylvania; Minneapolis, Minnesota; and Portland, Oregon. In January 2010, the El Paso Division transferred the program from El Paso, Texas to Albuquerque, New Mexico, and in September 2011, Minneapolis-St. Paul, Minnesota was removed from the HDMP.

As previously noted, the HDMP is conducted in 27 metropolitan areas, as opposed to nationwide sampling. Consequently, attempts to calculate a national average for price and purity cannot be extrapolated solely from program results because the sampling reflects local user preferences and market availability. The dynamics of the local heroin market are unique to each metropolitan area; 2014 HDMP data accurately reflect long-term local trends as well as changes in price per milligram pure and purity in the participating cities.

### Qualified Exhibits

The DEA offices in most cities where the HDMP is conducted are tasked with 10 street-level heroin purchases per quarter, or a total of 40 purchases per year. In New York City however, 15 purchases are made per quarter, a total of 60 per year. The following cities purchase only five exhibits per quarter, a total of 20 per year: Albuquerque, New Mexico; Houston, Texas; Orlando, Florida; Pittsburgh, Pennsylvania; Portland, Oregon; Richmond, Virginia; and San Antonio, Texas. Although 960 heroin exhibits were scheduled to be purchased during 2014 as part of the HDMP; due to budgetary restrictions, only 808 heroin exhibits were purchased.

The total number of exhibits included in HDMP analysis varies year to year based on a number of factors. For example, some purchased exhibits are determined to contain no controlled substance; some are determined to contain another controlled substance such as cocaine; and others, while containing heroin, do not include a sufficient amount to allow for geographic signature classification. Such exhibits are not included in this report. Those that are included in the yearly HDMP analysis are deemed “qualified exhibits,” signifying that price, purity, and geographic source data could be obtained for the exhibit.

### Changes Impacting the 2014 Heroin Domestic Monitor Program

Effective May 1, 2015, SFL1 established new heroin classifications for Mexican-produced heroin which further classified Mexican heroin into several new subdivisions. This protocol was developed by SFL1 to address Mexico’s increasingly diversified heroin production and to further clarify the status of heroin previously classified as “UNK”, specifically Unknown-Alleged Mexican White (UNK-AMW) heroin. These new signature classifications are noted below.

- **MEX/T:** Mexican-Black Tar; formerly classified as MEX
- **MEX/BP:** Mexican-Brown Powder; formerly classified as MEX
- **MEX-SA:** Mexican-South American; processing signatures are classified as South American with an origin component of Mexico; previously classified as UNK-AMW.
- **MEX:** Refined or crudely manufactured heroin from Mexico. This classification is assigned when MEX/T, MEX/BP, or MEX-SA are not applicable.
- **INC-SA:** Resembles SA heroin in appearance; processing signatures are characterized as South American with an “Inconclusive” origin component where either Mexico or South America could be the origin. Extremely adulterated and diluted (low purity) heroin is likely to generate this classification.

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## 2014 HEROIN DOMESTIC MONITOR PROGRAM

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The scientific protocol used by SFL1 to develop the above classifications allows for a more intensive scrutiny of SA heroin processing methods to further differentiate and isolate the origin of the HDMP heroin exhibits to either Mexico or South America and is considered a crucial step in accurately identifying the geographic production region.

Although this new protocol provides additional clarity between South American white (SA) and Mexican white (MEX-SA) exhibits, SFL1 advises that numerous adulterants present in HDMP retail level heroin exhibits hinder the new signature protocol therefore; a definitive origin determination could not be made for the vast majority of these exhibits. As a result, none of the 2014 HDMP exhibits previously classified as UNK-AMW were re-classified as MEX-SA under this new signature protocol. However, for the purposes of the 2014 HDMP report, these exhibits will be referred to as UNK Signature with MEX-SA characteristics. Only one of the 2014 HDMP exhibits previously classified as SA was re-evaluated and re-classified as MEX-SA by SFL1. Also, several exhibits previously classified as SA were reviewed under the new signature protocol and re-classified as INC-SA. It is important to note that this has led to a significant under-reporting of both SA and MEX-SA heroin in the 2014 HDMP report as both types of heroin are similarly adulterated in HDMP exhibits purchased in east coast cities.

### Exhibits Classified as Unknown

Each year, hundreds of heroin exhibits are purchased through the HDMP. The SFL1 analyzes these exhibits to determine the price, purity, and geographic source of origin. Heroin exhibits are classified as UNK when their signature profiles are not consistent with the signature profiles of authentic heroin exhibits collected from the four geographic source regions (Mexico, South America, Southeast Asia, and Southwest Asia). According to SFL1, since heroin is manufactured through a series of chemical processing steps, signature analysis is expected to result in a certain number of exhibits whose signature is UNK or undetermined. Generally, a range of from 4 to 7 percent of heroin exhibits that result in a signature that is UNK or undetermined is considered the norm.

SFL1 continues to classify a significant number of heroin exhibits as “UNK” signature exhibits and in 2014, a total of 113 such heroin exhibits were purchased through the HDMP. Of these exhibits, 97 were purchased east of the Mississippi River and 16 were purchased west of the Mississippi River. Twenty-nine of the UNK signature exhibits displayed the characteristics of MEX-SA heroin with an average purity of 36 percent and cost an average of \$0.57 per milligram pure. Compared to 2013 HDMP data, the average purity increased by 0.5 percentage point, while the average price per milligram pure decreased by \$0.64. In 2014, one UNK heroin signature exhibit which displayed the characteristics of MEX-SA heroin purchased in Atlanta, Georgia reflected the highest purity at 87.3 percent. UNK heroin signature exhibits which displayed the characteristics of MEX-SA heroin which were purchased in Pittsburgh, Pennsylvania and Orlando, Florida also had relatively high purity levels of 78.6 percent and 60.9 percent, respectively (See Figure 6).

SFL1 analysis of 2014 HDMP data reflect that 25.7 percent (29 exhibits) of the heroin exhibits classified as UNK signature with characteristics of MEX-SA heroin were purchased in Atlanta, Georgia; Baltimore, Maryland; Boston, Massachusetts; Chicago, Illinois; Detroit, Michigan; Houston, Texas; New Orleans, Louisiana; New York City, New York; Orlando, Florida, Pittsburgh, Pennsylvania; St. Louis, Missouri; and Washington, DC. These HDMP cities, with the exception of Houston are predominantly white heroin markets. The increasing presence of Mexican-origin white heroin in these markets is an indication that Mexican Drug Trafficking Organizations (DTOs) are producing white heroin for distribution in eastern markets and continue to expand their operations in order to gain a larger share of these lucrative retail markets.

## 2014 HEROIN DOMESTIC MONITOR PROGRAM

**Figure 6: 2014 Source of Origin Unknown: Heroin Counts, Purities, Prices, Origin, and City by Geographic Region**

UNK Heroin displaying characteristics of MEX-SA Heroin			
East	Number of Exhibits	Purity	Price
Atlanta	1	87.3%	\$0.31
Baltimore	1	17.4	0.32
Boston	3	12.6	0.07
Chicago	6	12.1	0.33
Detroit	2	48.0	0.50
Miami	-	-	-
New Orleans	2	19.5	1.05
New York	3	48.7	0.81
Newark	-	-	-
Orlando	2	60.9	0.38
Philadelphia	-	-	-
Pittsburgh	3	78.6	0.53
Richmond	-	-	-
San Juan	-	-	-
Washington, DC	4	27.8	0.60
UNK Heroin displaying characteristics of MEX-SA Heroin			
West	Number of Exhibits	Purity	Price
Albuquerque	-	-	-
Dallas	-	-	-
Denver	-	-	-
Houston	1	29.5%	\$0.97
Los Angeles	-	-	-
Phoenix	-	-	-
Portland	-	-	-
San Antonio	-	-	-
San Diego	-	-	-
San Francisco	-	-	-
Seattle	-	-	-
St. Louis	1	49.7	0.46
<b>Total</b>	<b>29</b>	<b>36.0%</b>	<b>\$0.57</b>

Report Parameters: Only Unknown exhibits are shown. January 1 to December 31, 2014

Price Unit: Per milligram pure.

Raw Data: Outliers were not omitted.

Source: DEA

(An outlier is an element of a data set that distinctly stands out or "lies outside" most of the values in a set of data. For the purposes of the HDMP, outliers are heroin exhibits that have a purity of less than 0.5 percent, or a price greater than \$16.00 per milligram pure. Outliers are not used in the calculation of HDMP averages or included in trends.)

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**2014 HEROIN DOMESTIC MONITOR PROGRAM**


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**Figure 7: 2014 Source of Origin Unknown: Heroin Counts, Purities, Prices, Origin, and City by Geographic Region**

<b>Unknown Heroin</b>			
<b>East</b>	<b>Number of Exhibits</b>	<b>Purity</b>	<b>Price</b>
Atlanta	7	67.3%	\$2.01
Baltimore	5	10.8	1.05
Boston	3	17.2	1.89
Chicago	10	11.7	0.39
Detroit	11	31.6	0.81
Miami	2	19.9	3.29
New Orleans	7	22.2	1.50
New York	4	33.0	0.65
Newark	2	53.2	0.51
Orlando	1	30.1	1.38
Philadelphia	8	64.5	0.43
Pittsburgh	3	54.0	2.14
Richmond	4	21.4	1.03
San Juan	-	-	-
Washington, DC	3	16.8	2.20
<b>Unknown Heroin</b>			
<b>West</b>	<b>Number of Exhibits</b>	<b>Purity</b>	<b>Price</b>
Albuquerque	-	-	-
Dallas	5	2.3%	\$1.40
Denver	-	-	-
Houston	2	17.6	3.91
Los Angeles	1	25.6	0.37
Phoenix	1	8.9	1.91
Portland	-	-	-
San Antonio	-	-	-
San Diego	-	-	-
San Francisco	-	-	-
Seattle	1	20.2	0.99
St. Louis	4	50.1	0.38
<b>Total</b>	<b>84</b>	<b>31.2%</b>	<b>\$1.19</b>
Report Parameters: Only Unknown exhibits are shown. January 1 to December 31, 2014 Price Unit: Per milligram pure. Raw Data: Outliers were not omitted. Source : DEA			

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## 2014 HEROIN DOMESTIC MONITOR PROGRAM

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There were thirty-six UNK signature exhibits analyzed by the SFL1 that demonstrated a mixed profile of both South American and Mexican heroin. DEA's SFL1 uses the term "mixed profile" to describe the deliberate mixing of South American and Mexican heroin by traffickers. These exhibits, as well as other UNK signature exhibits, had an average purity of 31.2 percent and cost an average of \$1.19 per milligram pure. Compared to 2013 HDMP data, the average purity increased by 7 percentage points, while the average price per milligram pure decreased by \$0.81. UNK signature heroin exhibits purchased in Atlanta, Georgia during 2014 showed the highest average purity at 67.3 percent, while in Dallas, Texas, UNK reflected the lowest average purity at 2.3 percent. UNK signature heroin exhibits purchased in Philadelphia, Pennsylvania; Pittsburgh, Pennsylvania; and Newark, New Jersey had relatively high purity levels of 64.5 percent; 54 percent; and 53.2 percent, respectively (See Figure 7).

## 2014 HDMP Results

### General

In 2014, a total of 625 qualified exhibits were purchased under the HDMP. Of those exhibits, 287 were classified as Mexican origin heroin (4 MEX; 233 MEX/T; 49 MEX/BP; and one MEX-SA), 303 were classified as INC-SA, 34 were classified as SA heroin, and one was classified as SWA heroin. During 2014, for the ninth consecutive year, no SEA heroin exhibits were purchased through the HDMP.

According to 2014 HDMP data, the average purity for Mexican-origin heroin was 21.1 percent (MEX heroin 1.6 percent pure; MEX/T 22.9 percent pure; MEX/BP 13.5 percent pure; while the one MEX-SA heroin exhibit exhibited the highest purity in the program at 57.2 percent). Heroin exhibits under the new classification of INC-SA exhibited an average purity of 38 percent, while SA heroin exhibits exhibited an average purity at 31.1 percent. The only SWA heroin exhibit obtained under the HDMP in 2014 was analyzed at 16.2 percent pure. Mexican-origin heroin exhibits reflected an average price per milligram pure of \$1.15 (MEX heroin \$9.98 price per milligram pure; MEX/T \$1.04 price per milligram pure; MEX/BP \$0.97 price per milligram pure; the one MEX-SA exhibit cost \$0.36 price per milligram pure). The average price per milligram pure for heroin classified as INC-SA and SA heroin was \$1.07 and \$ 1.03, respectively while the sole SWA heroin exhibit obtained in 2014 cost \$1.06 per milligram pure.

From 2013 to 2014, the average price per milligram pure of Mexican-origin heroin increased \$0.02, while the average purity of Mexican-origin heroin in 2014 increased to 21.1 percent from 20.3 percent in 2013. The average price per milligram pure of SA heroin decreased \$0.01 in 2014, from the 2013 price of \$1.04 per milligram pure. In 2014, the average purity of SA heroin decreased 4 percentage points. The purity of SWA heroin decreased to 16.2 percent in 2014 from 23 percent in 2013, while the average price per milligram pure dropped to \$1.06 in 2014 from its 2013 price of \$1.23 per milligram pure.

Figures 11 and 12 (see page 34 and 35) reflect the characteristics of heroin purchased in the 27 unique heroin markets sampled by the HDMP. The values shown in these tables are "snapshots" and are not representative of national averages. Figure 8 reflects 2014 values for heroin price and purity by source area and includes price and purity values for the period 2010 through 2014.

## 2014 HEROIN DOMESTIC MONITOR PROGRAM

**Figure 8: Heroin Exhibits: Origins, Purities, and Prices**

Heroin Sources	2010	2011	2012	2013	2014
Mexican Origin Exhibits	309	296	339	357	287
Mexican Origin Percent Pure	14.7%	16.8%	17.6%	20.3%	21.1%
Mexican Origin Price Per Milligram Pure	\$2.00	\$1.35	\$1.40	\$1.13	\$1.15
South America Exhibits	346	323	375	334	34
South America Percent Pure	25.9%	31.1%	35.3%	35.1%	31.1%
South America Price Per Milligram Pure	\$1.75	\$1.18	\$1.15	\$1.04	\$1.03
Inconclusive Origin-South America Exhibits	-	-	-	-	303
Inconclusive Origin-South America Percent Pure	-	-	-	-	38%
Inconclusive Origin-South America Price Per Milligram Pure	-	-	-	-	\$1.07
Southwest Asia Exhibits	39	23	12	8	1
Southwest Asia Percent Pure	20.9%	12.3%	18.6%	23.0%	16.2%
Southwest Asia Price Per Milligram Pure	\$1.21	\$1.66	\$1.10	\$1.23	\$1.06

Source: DEA

### Fentanyl

Fentanyl is a Schedule II narcotic controlled substance which is used as an analgesic and anesthetic. It is one of the most potent opioids available for human or veterinary use. Fentanyl is generally considered 50 to 100 times more potent than morphine and 30 to 50 times more potent than heroin. While diversion and/or theft of fentanyl from legitimate supplies occurs, the vast majority of fentanyl encountered in the illicit market is clandestinely manufactured outside the U.S. or illegally smuggled into the U.S. from overseas suppliers.

In 2014, there were twenty-one exhibits purchased under the HDMP which were analyzed as containing fentanyl, fentanyl (trace), and fentanyl (not quantitated). These exhibits were purchased in Atlanta, Baltimore, Boston, Detroit, Miami, New York, Philadelphia, Richmond, and Washington, DC (See Figure 9).

By comparison, in 2013, there were only seven exhibits purchased under the HDMP which were found to contain fentanyl, fentanyl (trace), fentanyl (acetyl), and fentanyl (citrate). These exhibits were purchased in Detroit, New Orleans, Miami, and Washington, DC.

### Heroin Adulterants and Diluents

Heroin (diacetylmorphine) is produced from morphine by a chemical process known as acetylation. The morphine is extracted from opium, which is derived from the opium poppy plant (*Papaver somniferum* L). Adulterants are pharmacologically active substances such as caffeine, procaine, and quinine, which are added subsequent to the heroin conversion process. Diluents are pharmacologically inactive substances (in other words, cutting agents) such as lactose, mannitol, starch, and sucrose, added to the heroin to increase bulk/quantity.

**Figure 9: Heroin Domestic Monitor Cities with Fentanyl Exhibits**

City	2014
Atlanta	3
Baltimore	2
Boston	4
Detroit	2
Miami	4
New York	1
Philadelphia	1
Richmond	3
Washington, DC	1

Source: DEA

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## 2014 HEROIN DOMESTIC MONITOR PROGRAM

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### *SA Heroin Adulterants and Diluents*

- Analysis of 2014 HDMP exhibits identified caffeine as one of the most commonly used adulterants for SA heroin and was present in 94 percent of the HDMP SA heroin exhibits. SA heroin exhibits contained adulterants such as diltiazem (94 percent), quinine (46 percent), and lidocaine (26 percent). Diphenhydramine, acetaminophen, and procaine were also routinely detected. The most common diluent identified in SA heroin exhibits was lactose (identified in 51 percent of the exhibits), followed by mannitol (identified in 43 percent of the exhibits). Approximately 9 percent of SA heroin exhibits analyzed in 2014 contained no diluents.
- SA heroin exhibits purchased in Puerto Rico continued to show significant amounts of the adulterant xylazine.
- Four SA heroin exhibits analyzed under the HDMP program were also found to contain cocaine.

### *Mexican-Origin Heroin Adulterants and Diluents*

- Approximately 82 percent of Mexican-origin heroin exhibits analyzed under the HDMP in 2014 were un-adulterated with only a few containing adulterants such as lidocaine (5 percent), diphenhydramine (4 percent), and caffeine (3 percent). Cocaine was also identified in approximately 3 percent of Mexican-origin heroin exhibits.
- Lactose was identified as the most common diluent for Mexican-origin heroin and was noted in 37 percent of the HDMP exhibits. Diacetamide was detected in 25 percent of the exhibits followed by sucrose at 13 percent. Dextrose was discovered in less than 10 percent of the HDMP Mexican-origin heroin exhibits. No diluents were identified in approximately 30 percent of Mexican-origin heroin exhibits analyzed in 2014.

### *SWA Heroin Adulterants and Diluents*

- One SWA heroin exhibit was purchased via the HDMP in 2014. Adulterants detected in this exhibit included caffeine and quinine while diluents identified in this same heroin exhibit included lactose and mannitol.

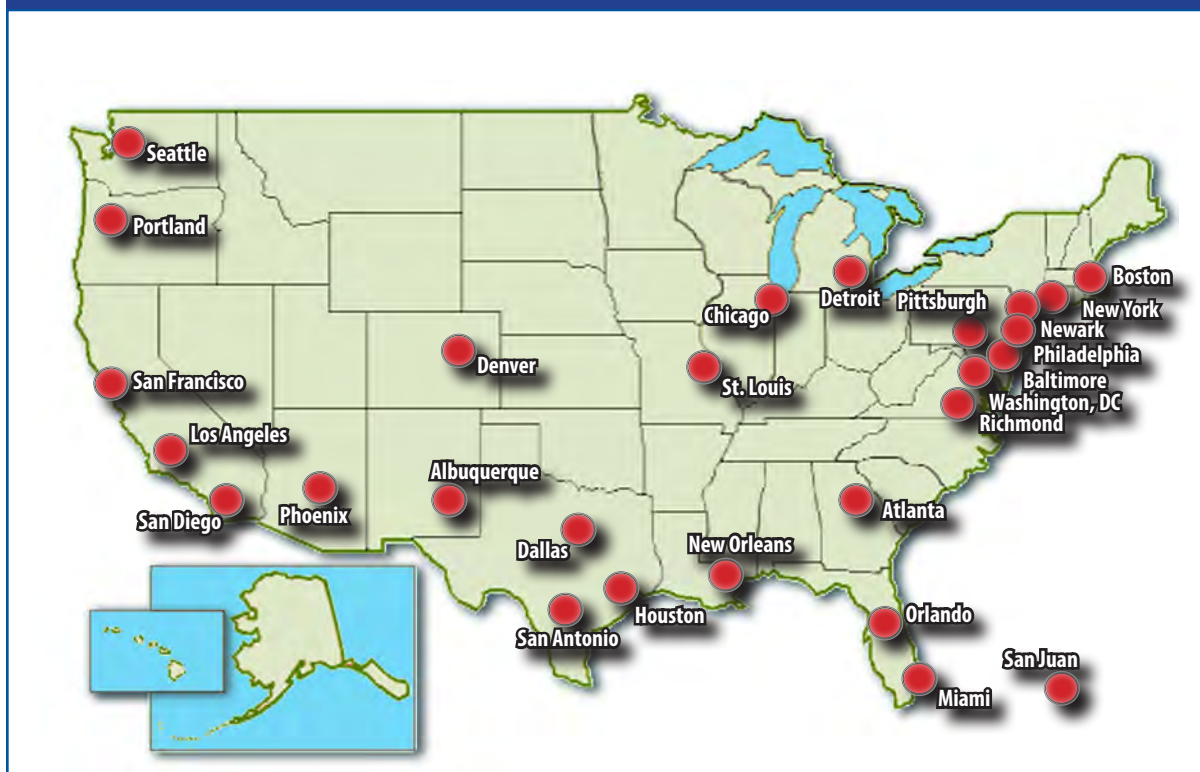
## Regional

Generally, the U.S. heroin market remains geographically divided by the Mississippi River. East of the Mississippi River, particularly in the northeast where the largest U.S. heroin user populations are located, SA heroin and heroin classified as INC-SA dominate the market. In 2014, of the HDMP qualified exhibits classified as SA and INC-SA heroin, 100 percent and 91.7 percent respectively, were purchased east of the Mississippi River. Of the HDMP qualified exhibits classified as Mexican-origin heroin, 96.9 percent were purchased west of the Mississippi River. The one SWA heroin exhibit purchased under the HDMP in 2014 was obtained in Washington, DC.



## 2014 HEROIN DOMESTIC MONITOR PROGRAM

Figure 10: Heroin Domestic Monitor Program Participating Cities



Source: DEA

### City by City

#### Albuquerque, New Mexico

In 2014, 20 qualified HDMP exhibits were purchased in the Albuquerque metropolitan area. Eighteen HDMP exhibits were classified as MEX/T heroin. The average purity of these exhibits was 19.1 percent with an average cost of \$0.48 per milligram pure. Two exhibits were classified as MEX/BP with an average purity of 17.1 percent, while the average cost was \$0.36 per milligram pure. Mexican-origin heroin exhibits purchased in Albuquerque averaged 18.9 percent pure, while the average cost was \$0.47 per milligram pure. Compared to 2013 HDMP data, the average purity of Mexican-origin heroin in Albuquerque increased 1.1 percentage points, while the price per milligram pure of this heroin decreased by \$0.18.

#### Atlanta, Georgia

In 2014, 14 qualified heroin exhibits were purchased and classified as INC-SA. The average purity of these heroin exhibits was 42.6 percent, at an average cost of \$1.81 per milligram pure.

In 2014, eight other heroin exhibits purchased in Atlanta were classified as UNK signature. One of these UNK signature exhibits displayed the characteristics of MEX-SA heroin and was analyzed at 87.3 percent pure and cost \$0.31 per milligram pure. One UNK signature exhibit purchased in Atlanta in 2014 demonstrated a mixed profile of both South American and Mexican heroin. This exhibit as well as six other UNK exhibits

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## 2014 HEROIN DOMESTIC MONITOR PROGRAM

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had an average purity of 67.3 percent and cost an average of \$2.01 per milligram pure. Compared to 2013 HDMP data, the average purity of exhibits classified as UNK signature with characteristics of MEX-SA heroin increased 32.1 percentage points, while the price per milligram pure decreased by \$0.25. The average purity of the remaining UNK signature exhibits increased by 15 percentage points, while the price per milligram pure increased by \$0.62.

### Baltimore, Maryland

In 2014, 24 qualified heroin exhibits were purchased; each was classified as INC-SA. These exhibits reflected an average purity of 12.9 percent, with an average cost of \$0.67 per milligram pure.

Six other heroin exhibits purchased in Baltimore in 2014 were classified as an UNK signature. One of these UNK signature exhibits displayed the characteristics of MEX-SA heroin and was analyzed at 17.4 percent pure with a cost of \$0.32 per milligram pure. Compared to 2013 HDMP data, the average purity of UNK signature exhibits with characteristics of MEX-SA heroin decreased 13.2 percentage points, while the price per milligram pure decreased by \$0.28.

Three other UNK signature exhibits purchased in Baltimore in 2014 demonstrated a mixed profile of both South American and Mexican heroin. The mixed profile exhibits as well as two remaining UNK signature exhibits had an average purity of 10.8 percent and cost an average of \$1.05 per milligram pure.

### Boston, Massachusetts

Heroin remained widely available in Boston in 2014. The continued availability and relative affordability of the drug highlights the city's position as a major eastern U.S. heroin market. A total of 19 qualified heroin exhibits were purchased; each was classified as INC-SA. These exhibits reflected an average purity of 19.5 percent and an average price of \$1.12 per milligram pure.

Six other HDMP exhibits purchased in Boston in 2014 were classified as an UNK signature. Three of these UNK signature exhibits displayed the characteristics of MEX-SA heroin and were analyzed at 12.6 percent pure and cost \$0.70 per milligram pure. Compared to 2013 HDMP data, the average purity of UNK signature exhibits displaying the characteristics of MEX-SA heroin decreased 5.5 percentage points, while the price per milligram pure increased by \$0.06.

One other UNK signature exhibit analyzed by SFL1 demonstrated a mixed profile of both South American and Mexican heroin. This exhibit plus two remaining exhibits classified as UNK signature had an average purity of 17.2 percent and cost an average of \$1.82 per milligram pure. The average purity of the UNK signature exhibits decreased by 2.9 percentage points in 2014, while the price per milligram pure increased by \$1.07.

### Chicago, Illinois

In 2014, 14 qualified HDMP heroin exhibits purchased in Chicago were classified as INC-SA. The average purity of these heroin exhibits was 11 percent and the average price was \$0.48 per milligram pure.

Sixteen other HDMP exhibits purchased in Chicago in 2014 were classified as an UNK signature. Six of these UNK signature exhibits displayed the characteristics of MEX-SA heroin and were analyzed with an average purity of 12.1 percent and average cost of \$0.33 per milligram pure. Compared to 2013 HDMP data, the average purity of UNK signature exhibits displaying the characteristics of MEX-SA heroin decreased 12.7 percentage points, while the price per milligram pure also decreased by \$0.12.

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## 2014 HEROIN DOMESTIC MONITOR PROGRAM

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Two other UNK signature exhibits purchased in Chicago in 2014 demonstrated a mixed profile of both South American and Mexican heroin. These two exhibits plus the eight remaining UNK signature exhibits had an average purity of 11.7 percent and cost an average of \$0.39 per milligram pure. This represents an increase in purity of 2.9 percentage points, and a decrease of \$0.12 in price per milligram pure when compared to 2013 HDMP statistics.

### Dallas, Texas

In 2014, 26 qualified HDMP exhibits were purchased in the Dallas metropolitan area. Twenty of these exhibits were classified as MEX/T heroin. The average purity of these exhibits was 25.1 percent with an average cost of \$1.80 per milligram pure. Six HDMP exhibits purchased in Dallas in 2014 were classified as MEX/BP and were analyzed with an average purity of 7.3 percent and an average cost of \$0.56 per milligram pure.

Five other HDMP exhibits purchased in Dallas in 2014 were classified as an UNK signature. These exhibits had an average purity of 2.3 percent and cost an average of \$1.40 per milligram pure.

Mexican-origin heroin exhibits purchased in Dallas had an average purity of 21 percent, while the average cost was \$1.52 per milligram pure. Compared to 2013 HDMP data, the average purity of Mexican-origin heroin in Dallas increased 8.9 percentage points, while the price per milligram pure increased by \$0.91.

### Denver, Colorado

In 2014, 32 qualified HDMP exhibits were purchased in the Denver metropolitan area. Twenty-seven of these exhibits were classified as MEX/T heroin with an average purity of 20.8 percent and an average cost of \$1.34 per milligram pure. Five HDMP exhibits purchased in Denver were classified as MEX/BP with an average purity of 13.1 percent and an average cost of \$1.12 per milligram pure.

Mexican origin heroin exhibits purchased in Denver averaged 19.6 percent pure, while the average cost was \$1.31 per milligram pure. Compared to the 2013 HDMP data, the average purity of Mexican-origin heroin in Denver decreased 2.4 percentage points, while the price per milligram pure of this heroin also decreased by \$0.10.

### Detroit, Michigan

Detroit is a major heroin user market as well as a transshipment point to other communities in Michigan, Ohio, and Kentucky. During 2014, 19 qualified HDMP heroin exhibits were purchased in Detroit; 18 of these exhibits were classified as INC-SA. These exhibits averaged 44.5 percent pure, while the average cost per milligram pure was \$0.37. One HDMP exhibit purchased in Detroit was classified as MEX/BP heroin and was analyzed at 5.7 percent pure with a cost of \$1.43 per milligram pure.

Thirteen other HDMP exhibits purchased in Detroit in 2014 were classified as an UNK signature. Two of these UNK signature exhibits displayed the characteristics of MEX-SA heroin with an average purity of 48 percent and cost an average of \$0.50 per milligram pure. Compared to 2013 HDMP data, the average purity of UNK signature exhibits displaying the characteristics of MEX-SA heroin increased 8.8 percentage points, while the price per milligram pure decreased by \$0.24.

Eight other UNK signature exhibits obtained in Detroit demonstrated a mixed profile of both South American and Mexican heroin. The mixed profile exhibits plus the three remaining UNK signature exhibits had an

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## 2014 HEROIN DOMESTIC MONITOR PROGRAM

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average purity of 31.6 percent and cost an average of \$0.81 per milligram pure. The average purity of these UNK signature exhibits increased in 2014 by 6.4 percentage points, while the price per milligram pure decreased by \$0.06.

### Houston, Texas

MEX/T heroin accounted for all 17 of the qualified HDMP purchases made in Houston in 2014. These exhibits averaged 12.6 percent pure with an average cost per milligram pure of \$3.04. Compared to the MEX/T heroin exhibits purchased in 2013, purity increased by 9.1 percentage points, while the price decreased by \$0.54 per milligram pure.

Three other HDMP exhibits purchased in Houston in 2014 were classified as an UNK signature. One of these UNK signature exhibits displayed the characteristics of MEX-SA heroin and was analyzed at 29.5 percent pure and cost \$0.97 per milligram pure. The remaining two UNK signature exhibits had an average purity of 17.6 percent and cost an average of \$3.91 per milligram pure. Compared to 2013 HDMP data, the average purity of the UNK exhibits increased by 15.3 percentage points, while the price per milligram pure decreased by \$0.96.

### Los Angeles, California

In 2014, 29 qualified HDMP exhibits were purchased in Los Angeles; 22 were classified as MEX/T heroin. The purity of these exhibits averaged 26.8 percent, and the average price was \$0.71 per milligram pure. Six exhibits were classified as MEX/BP with an average purity of 30.7 percent, and an average cost of \$0.24 per milligram pure. The purity of Mexican-origin heroin exhibits purchased in Los Angeles in 2014 averaged 27.7 percent, and the average cost was \$0.61 per milligram pure. Compared to 2013 HDMP data, the average purity of Mexican-origin heroin exhibits in Los Angeles increased 2.5 percentage points, while the price per milligram pure of Mexican-origin heroin increased by \$0.19.

One heroin exhibit classified as INC-SA was purchased in Los Angeles in 2014 under the HDMP and was analyzed at 87.9 percent pure and cost \$0.10 per milligram pure.

One other HDMP exhibit purchased in Los Angeles in 2014 was classified as an UNK signature. The purity of this exhibit was analyzed at 25.6 percent and cost \$0.37 per milligram pure. Compared to 2013 HDMP data, the purity of the UNK signature heroin exhibit obtained in 2014 decreased by 1.3 percentage points, while the price per milligram pure also decreased by \$0.34.

### Miami, Florida

In 2014, of the 26 qualified HDMP heroin exhibits purchased in the Miami area, 19 were classified as INC-SA. The average purity of these exhibits was 35.1 percent with an average cost of \$1.82 per milligram pure.

Four exhibits purchased in 2014 in Miami were classified as SA heroin. These exhibits had an average purity of 33.3 percent and an average price of \$0.90 per milligram pure. Compared to 2013 HDMP data, the average purity of SA heroin in Miami increased by 6.5 percentage points, while the average price per milligram pure decreased by \$0.69.

Two other HDMP exhibits purchased in Miami in 2014 were classified as MEX/BP heroin and were analyzed with an average purity of 6 percent and an average cost of \$6.42 per milligram pure. The one additional exhibit was classified as MEX heroin with a purity of 1.9 percent and a cost of \$11.96 per milligram pure. The average

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## 2014 HEROIN DOMESTIC MONITOR PROGRAM

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purity of the Mexican-origin heroin exhibits obtained in Miami in 2014 was 4.6 percent, while the average cost was \$8.27 per milligram pure. Compared to the 2013 HDMP data, the average purity of Mexican-origin heroin exhibits purchased in Miami in 2014 decreased 9.7 percentage points, while the price per milligram pure of this same heroin increased by \$5.40.

Two HDMP exhibits purchased in Miami in 2014 were classified as an UNK signature. One of these UNK signature exhibits demonstrated a mixed profile of both South American and Mexican heroin. This exhibit, as well as one other UNK signature exhibit had an average purity of 19.9 percent and cost an average of \$3.29 per milligram pure. Compared to 2013 HDMP data, the average purity of UNK signature exhibits obtained in Miami increased by 12.4 percentage points, and the price per milligram pure decreased by \$0.72.

### Newark, New Jersey

In 2014, 29 qualified HDMP exhibits were purchased in the Newark metropolitan area; 24 of these exhibits were classified as INC-SA. These exhibits had an average purity of 57 percent and an average cost of \$0.75 per milligram pure.

Four exhibits purchased in Newark in 2014 were classified as SA heroin. These exhibits had an average purity of 41.3 percent and an average price of \$1.22 per milligram pure. Compared to 2013 HDMP data, the average purity of the SA heroin exhibits obtained in Newark decreased by 16.6 percentage points, while the average price per milligram pure increased by \$0.21.

One MEX-SA heroin exhibit was purchased in Newark in 2014 under the HDMP. The exhibit was analyzed at 57.2 percent pure and cost \$0.36 per milligram pure.

Two other HDMP heroin exhibits purchased in Newark in 2013 were classified as an UNK signature. These exhibits demonstrated a mixed profile of both South American and Mexican heroin and had an average purity of 53.2 percent and cost an average of \$0.51 per milligram pure. Compared to 2013 HDMP data, the average purity of UNK signature exhibits obtained in Newark in 2014 decreased by 7.4 percentage points, while the price per milligram pure also decreased by \$0.67.

### New Orleans, Louisiana

In 2014, 21 qualified HDMP heroin exhibits were purchased in the New Orleans metropolitan area; 18 were classified as INC-SA. These 18 exhibits had an average purity of 24.2 percent and an average price of \$2.06 per milligram pure.

Two HDMP exhibits purchased in New Orleans in 2014 were classified as MEX heroin. The average purity of these exhibits was 1.3 percent with an average cost of \$13.61 per milligram pure. One HDMP exhibit was classified as MEX/BP with purity of 8.1 percent, and cost of \$1.06 per milligram pure. The average purity of Mexican-origin heroin exhibits obtained in New Orleans was analyzed at 3.6 percent, while the average cost was \$9.43 per milligram pure.

Nine other HDMP exhibits purchased in New Orleans in 2014 were classified as an UNK signature. Two of these UNK signature exhibits displayed the characteristics of MEX-SA and had an average purity of 19.5 percent and cost an average of \$1.05 per milligram pure. Compared to 2013 HDMP data, the average purity of heroin exhibits classified as UNK signature with the characteristics of MEX-SA heroin decreased 9.4 percentage points, while the price per milligram pure also decreased by \$1.47.

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## 2014 HEROIN DOMESTIC MONITOR PROGRAM

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Six UNK signature exhibits obtained in New Orleans in 2014 demonstrated a mixed profile of both South American and Mexican heroin. These mixed profile exhibits plus one remaining UNK signature exhibit had an average purity of 22.2 percent and cost an average of \$1.50 per milligram pure. In comparison to 2013, the average purity of these UNK signature exhibits increased by 15.2 percentage points, while the price per milligram pure decreased by \$4.45.

### New York, New York

New York City remains one of the most prominent heroin destination and distribution centers in the United States. Of the 50 qualified heroin exhibits purchased in New York City during 2014, 40 were classified as INC-SA with an average purity of 53.9 percent and an average price of \$0.72 per milligram pure.

Ten HDMP heroin exhibits purchased in New York City in 2014 were classified as SA heroin. These exhibits had an average purity of 38.5 percent and an average price of \$0.79 per milligram pure. Compared to 2013 HDMP data, the average purity of the SA heroin available in New York City decreased by 4.8 percentage points and the average price per milligram pure increased by \$0.06.

Seven other HDMP exhibits purchased in New York in 2014 were classified as an UNK signature. Three of these UNK signature exhibits displayed the characteristics of MEX-SA heroin and had an average purity of 48.7 percent and cost an average of \$0.81 per milligram pure. Compared to 2013 HDMP data, the average purity of UNK signature exhibits with the characteristics of MEX-SA heroin decreased 29.4 percentage points, while the price per milligram pure increased by \$0.45.

Four UNK signature exhibits obtained in New York City demonstrated a mixed profile of both South American and Mexican heroin with an average purity of 33 percent and an average cost of \$0.65 per milligram pure. The average purity of these UNK signature exhibits decreased by 0.4 percentage point, while the price per milligram pure also decreased by \$1.10.

### Orlando, Florida

Eleven qualified HDMP exhibits were purchased in Orlando in 2014. One exhibit was classified as SA heroin with a purity of 40.2 percent, and cost of \$0.62 per milligram pure. Compared to 2013 HDMP data, the average purity of SA heroin in Orlando increased by 14.4 percentage points, while the average price per milligram pure decreased by \$0.72.

Ten heroin exhibits purchased in Orlando in 2014 were classified as INC-SA with an average purity of 22 percent and an average price of \$3.19 per milligram pure.

Three other HDMP exhibits purchased in Orlando in 2014 were classified as an UNK signature. Two of these exhibits displayed the characteristics of MEX-SA heroin and had an average purity of 60.9 percent and an average cost of \$0.38 per milligram pure. Compared to 2013 HDMP data, the average purity of UNK signature exhibits with the characteristics of MEX-SA heroin increased 40.2 percentage points, while the price per milligram pure decreased by \$1.12.

One remaining UNK signature exhibit obtained in Orlando in 2014 was analyzed at 30.1 percent pure and cost \$1.38 per milligram pure.

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## 2014 HEROIN DOMESTIC MONITOR PROGRAM

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### Philadelphia, Pennsylvania

In 2014, 24 qualified HDMP heroin exhibits were purchased in Philadelphia; 22 of these exhibits were classified as INC-SA. These exhibits had an average purity of 67 percent and an average price of \$0.43 per milligram pure.

Two HDMP exhibits purchased in Philadelphia were classified as SA heroin with an average purity of 65.3 percent and an average cost of \$0.46 per milligram pure. Compared to 2013 HDMP data, the purity of SA heroin in Philadelphia increased by 0.5 percentage point, while the average price per milligram pure decreased by \$0.04.

Eight other HDMP exhibits purchased in Philadelphia in 2014 were classified as an UNK signature. Three of these UNK signature exhibits demonstrated a mixed profile of both South American and Mexican heroin. These exhibits along with five remaining UNK signature exhibits had an average purity of 64.5 percent and cost an average of \$0.43 per milligram pure. Compared to 2013 HDMP data, the average purity of UNK signature exhibits obtained in Philadelphia in 2014 increased by 6.2 percentage points, while the price per milligram pure decreased by \$0.01.

### Phoenix, Arizona

In 2014, 30 qualified HDMP exhibits were purchased in Phoenix; 29 of these exhibits were classified as MEX/T heroin. The average purity of the MEX/T exhibits obtained in Phoenix was 26.8 percent with an average cost of \$0.56 per milligram pure. The other qualified exhibit was classified as MEX/BP with purity of 21.5 percent and a cost of \$0.37 per milligram pure.

The purity of Mexican-origin heroin available in Phoenix in 2014 averaged 26.6 percent, while the average cost was \$0.55 per milligram pure. Compared to the 2013 HDMP data, the average purity of Mexican-origin heroin in Phoenix increased 0.2 percentage points, while the price per milligram pure decreased by \$0.03.

One other HDMP exhibit purchased in Phoenix in 2014 was classified as an UNK signature and was analyzed at 8.9 percent pure, and cost \$1.91 per milligram pure.

### Pittsburgh, Pennsylvania

In 2014, a total of 10 qualified heroin exhibits were purchased in Pittsburgh; each was classified as INC-SA. The average purity of these heroin exhibits was 55.1 percent pure, with an average price of \$1.06 per milligram pure.

Six other HDMP exhibits purchased in Pittsburgh in 2014 were classified as an UNK signature. Three of these exhibits displayed the characteristics of MEX-SA heroin and had an average purity of 78.6 percent and an average cost of \$0.53 per milligram pure. Compared to 2013 HDMP data, the average purity of UNK signature exhibits with the characteristics of MEX-SA heroin increased 61.1 percentage points, while the price per milligram pure decreased by \$0.86.

Two UNK signature exhibits obtained in Pittsburgh in 2014 demonstrated a mixed profile of both South American and Mexican heroin. Both the mixed profile exhibits as well as one remaining UNK signature exhibit had an average purity of 54 percent, and cost an average of \$2.14 per milligram pure. The average purity of these UNK signature exhibits increased by 35.3 percentage points in 2014, while the price per milligram pure decreased by \$0.03.

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## 2014 HEROIN DOMESTIC MONITOR PROGRAM

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### Portland, Oregon

In 2014, 19 qualified HDMP exhibits were purchased in Portland and all were classified as MEX/T heroin. These exhibits had an average purity of 24.8 percent and an average price of \$1.36 per milligram pure. Compared to 2013 HDMP data, the average purity of Mexican-origin heroin in Portland increased by 7.9 percentage points and the average price decreased by \$0.29 per milligram pure.

### Richmond, Virginia

A total of 12 qualified HDMP heroin exhibits were purchased in Richmond in 2014; 11 exhibits were classified as INC-SA. These exhibits had an average purity of 14.9 percent and an average price of \$2.44 per milligram pure. One SA heroin exhibit purchased in Richmond in 2014 was analyzed at 10.9 percent pure and cost \$1.58 per milligram pure. Compared to 2013 HDMP data, the purity of the SA heroin exhibit obtained in Richmond decreased 9.6 percentage points while the average price per milligram pure increased by \$0.12.

Four other HDMP exhibits purchased in Richmond in 2014 were classified as an UNK signature. One of these UNK signature exhibits demonstrated a mixed profile of both South American and Mexican heroin. This exhibit as well as the three remaining UNK signature exhibits purchased in Richmond had an average purity of 21.4 percent and cost an average of \$1.03 per milligram pure. Compared to 2013 HDMP data, the purity of UNK signature exhibits obtained in Richmond in 2014 increased by 2.7 percentage points, while the price per milligram pure decreased by \$1.14.

### San Antonio, Texas

In 2014, 19 qualified HDMP exhibits were purchased in the San Antonio area. Seven of these exhibits were classified as MEX/T heroin while 12 were classified as MEX/BP. The average purity of the MEX/T exhibits was 7.8 percent with an average cost of \$0.68 per milligram pure. The average purity of the exhibits classified as MEX/BP was 7 percent, while the average cost of these same exhibits was \$1.16 per milligram pure.

The average purity of Mexican-origin heroin in San Antonio was 7.3 percent, while the average cost was \$0.98 per milligram pure. Compared to the 2013 HDMP data, the average purity of Mexican-origin heroin in San Antonio increased 0.2 percentage points, while the price per milligram pure of Mexican-origin heroin increased by \$0.07.

### San Diego, California

In 2014, 32 qualified HDMP exhibits were purchased in the San Diego metropolitan area; 29 of these exhibits were classified as MEX/T heroin with an average purity of 32.9 percent and an average cost of \$0.25 per milligram pure. Three HDMP exhibits purchased in San Diego in 2014 were classified as MEX/BP with an average purity of 38.8 percent and an average cost of \$0.28 per milligram pure. The average purity of Mexican-origin heroin available in San Diego increased 7 percentage points in 2014, while the price per milligram pure decreased by \$0.43.

### San Francisco, California

In 2014, 27 qualified HDMP exhibits were purchased in the San Francisco metropolitan area; 17 were classified as MEX/T heroin. The average purity of these exhibits was 7.2 percent with an average cost of \$1.25 per milligram pure. Nine other heroin exhibits obtained in San Francisco in 2014 were classified as



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## 2014 HEROIN DOMESTIC MONITOR PROGRAM

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MEX/BP with an average purity of 8.3 percent and an average cost of \$0.53 per milligram pure. The other exhibit was classified as MEX heroin and was analyzed at 2 percent pure and cost \$0.76 per milligram pure.

Mexican-origin HDMP heroin exhibits obtained in San Francisco in 2014 averaged 7.3 percent pure, while the average cost was \$0.99 per milligram pure. Compared to 2013 data, this represents a 2.1 percent increase in average purity as well as a \$0.30 decrease in the price per milligram pure.

### San Juan, Puerto Rico

In 2014, 28 qualified exhibits were purchased in San Juan under the HDMP. Twelve of these exhibits were classified as SA heroin with an average purity of 15.9 percent and an average cost of \$1.30 per milligram pure. Compared to 2013 HDMP data, the purity of SA heroin available in San Juan increased by 2.5 percentage points and the average price per milligram pure decreased by \$0.40.

Sixteen HDMP heroin exhibits purchased in San Juan in 2014 were classified as INC-SA. These exhibits had an average purity of 21.2 percent and an average price of \$1.53 per milligram pure.

### Seattle, Washington

All 28 qualified HDMP heroin exhibits purchased in Seattle in 2014 were classified as MEX/T heroin. These exhibits had an average purity of 26.5 percent and cost an average of \$0.68 per milligram pure. Compared to 2013 HDMP data, average purity increased by 10.9 percentage points, while the average price per milligram pure decreased by \$0.46.

One other HDMP exhibit purchased in Seattle in 2014 was classified as an UNK signature. The exhibit was 20.2 percent pure, and cost \$0.99 per milligram pure. Compared to 2013 HDMP data, the average purity of the UNK signature exhibit obtained in 2014 increased by 16.5 percentage points, while the price per milligram pure decreased by \$0.13.

### St. Louis, Missouri

In 2014, all 24 qualified HDMP heroin exhibits purchased in St. Louis were classified as INC-SA. The average purity of these heroin exhibits was 46.5 percent and the average price was \$0.53 per milligram pure.

Five other HDMP exhibits purchased in St. Louis in 2014 were classified as an UNK signature. One of these UNK signature exhibits displayed the characteristics of MEX-SA heroin and was analyzed at 49.7 percent pure with a cost of \$0.46 per milligram pure. Compared to 2013 HDMP data, the average purity of UNK signature exhibits with the characteristics of MEX-SA heroin increased 9.3 percentage points, while the price per milligram pure decreased by \$0.16.

One other UNK signature exhibit purchased in St. Louis demonstrated a mixed profile of both South American and Mexican heroin. The mixed profile exhibit along with three remaining UNK signature exhibits had an average purity of 50.1 percent and cost an average of \$0.38 per milligram pure. This represents a 47.6 percentage point increase in purity and an \$8.04 decrease in the price per pure milligram when compared to 2013 statistics.

**Figure 11: 2014 Heroin Counts, Purities, Prices, Origin, and City by Geographic Region  
Mexican Origin Heroin**

	MEX			MEX/T			MEX/BP			MEX-SA		
East	Number of Exhibits	Purity	Price	Number of Exhibits	Purity	Price	Number of Exhibits	Purity	Price	Number of Exhibits	Purity	Price
Atlanta												
Baltimore												
Boston												
Chicago												
Detroit							1	5.7%	\$1.43			
Miami	1	1.9%	\$11.96				2	6	6.42			
New Orleans	2	1.3	13.61				1	8.1	1.06			
New York												
Newark										1	57.2%	\$0.36
Orlando												
Philadelphia												
Pittsburgh												
Richmond												
San Juan												
Washington, D.C.							1	8.7	1.04			
	MEX			MEX/T			MEX/BP			MEX-SA		
West	Number of Exhibits	Purity	Price	Number of Exhibits	Purity	Price	Number of Exhibits	Purity	Price	Number of Exhibits	Purity	Price
Albuquerque				18	19.1%	\$0.48	2	17.1%	\$0.36			
Dallas				20	25.1	1.80	6	7.3	0.56			
Denver				27	20.8	1.34	5	13.1	1.16			
Houston				17	12.6	3.04						
Los Angeles				22	26.8	0.71	6	30.7	0.24			
Phoenix				29	26.8	0.56	1	21.6	0.37			
Portland				19	24.8	1.36						
San Antonio				7	7.8	0.68	12	7	1.16			
San Diego				29	32.9	0.25	3	38.8	0.28			
San Francisco	1			17	7.2	1.25	9	8.3	0.53			
Seattle				28	26.5	0.68						
St. Louis												
<b>Total</b>	<b>4</b>	<b>1.6%</b>	<b>\$9.98</b>	<b>233</b>	<b>22.9%</b>	<b>\$1.04</b>	<b>49</b>	<b>13.5%</b>	<b>\$0.97</b>	<b>1</b>	<b>57.2%</b>	<b>\$0.36</b>

Report Parameters: Only qualified exhibits are shown. January 1 to December 31, 2014

Price Unit: Per milligram pure.

Source: DEA

**Figure 12: 2014 Heroin Counts, Purities, Prices, Origin, and City by Geographic Region**

	Southwest Asian Heroin			South American Heroin			Inconclusive Origin-South American Processing		
East	Number of Exhibits	Purity	Price	Number of Exhibits	Purity	Price	Number of Exhibits	Purity	Price
Atlanta							14	42.6%	\$1.81
Baltimore							24	12.9	0.67
Boston							19	19.5	1.12
Chicago							14	11	0.48
Detroit							18	44.5	0.37
Miami				4	33.3%	\$0.90	19	35.1	1.82
New Orleans							18	24.2	2.06
New York				10	38.5	0.79	40	53.9	0.72
Newark				4	41.3	1.22	24	57	0.75
Orlando				1	40.2	0.62	10	22	3.19
Philadelphia				2	65.3	0.46	22	67	0.43
Pittsburgh							10	55.1	1.06
Richmond				1	10.9	1.58	11	14.9	2.44
San Juan				12	15.9	1.30	16	21.2	1.53
Washington, DC	1	16.2%	\$1.06				19	36.5	0.78
	Southwest Asian Heroin			South American Heroin			Inconclusive Origin-South American Processing		
West	Number of Exhibits	Purity	Price	Number of Exhibits	Purity	Price	Number of Exhibits	Purity	Price
Albuquerque									
Dallas									
Denver									
Houston									
Los Angeles							1	87.9%	\$0.10
Phoenix									
Portland									
San Antonio									
San Diego									
San Francisco									
Seattle									
St. Louis							24	46.5	0.53
<b>Total</b>	<b>1</b>	<b>16%</b>	<b>\$1.06</b>	<b>34</b>	<b>31.1%</b>	<b>\$1.03</b>	<b>303</b>	<b>38%</b>	<b>\$1.07</b>

Report Parameters: Only qualified exhibits are shown. January 1 to December 31, 2014  
Price Unit: Per milligram pure.  
Source: DEA

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## 2014 HEROIN DOMESTIC MONITOR PROGRAM

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### Washington, DC

Washington, DC has a robust heroin market. New York City is the predominant source city for the heroin distributed in the Washington, DC area, with Philadelphia and Baltimore as secondary source areas.

In 2014, of the 21 qualified HDMP heroin exhibits purchased in Washington, DC, 19 were classified as INC-SA. The purity of these exhibits averaged 36.5 percent pure, while the average price was \$0.78 per milligram pure.

SWA heroin accounted for one of the 21 qualified HDMP heroin exhibits purchased in Washington, DC in 2014. The exhibit was 16.2 percent pure and cost \$1.06 per milligram pure. Compared to 2013 HDMP data, the average purity of the SWA heroin available in Washington, DC, decreased significantly by 11.6 percentage points and the average price per milligram pure decreased by \$0.16. In 2014, Washington, DC was the only HDMP participating city where SWA heroin was purchased. This is an indicator that SWA heroin availability remains extremely limited in U.S. retail markets.

One MEX/BP heroin exhibit was purchased in Washington, DC in 2014 under the HDMP. The purity of this exhibit was analyzed at 8.7 percent and cost \$1.04 per milligram pure.

Seven other HDMP exhibits purchased in Washington, DC in 2014 were classified as an UNK signature. Four of these UNK signature exhibits displayed the characteristics of MEX-SA heroin with an average purity of 27.8 percent and an average cost of \$0.60 per milligram pure. Compared to 2013 HDMP data, the average purity of UNK signature exhibits with characteristics of MEX-SA heroin decreased 9 percentage points, while the price per milligram pure decreased by \$0.04.

One UNK signature exhibit purchased in Washington, DC demonstrated a mixed profile of both South American and Mexican heroin. The mixed profile exhibit together with two remaining UNK signature exhibits had an average purity of 16.8 percent and cost an average of \$2.20 per milligram pure. The average purity of these UNK signature increased by 2.7 percentage points in 2014, while the price per milligram pure increased by \$0.29.

### Geo-Probes: Views from Additional Cities

Since 2001, DEA has sponsored an initiative in the HDMP known as Geographical Probes, or Geo-Probes. The goal of the Geo-Probes is to gain additional information about existing and emerging heroin markets in areas outside of the 27 designated HDMP cities. In order to accomplish this, DEA provides funds for additional heroin exhibit purchases in selected cities across the United States.

Geo-Probe data, while important to identify emerging threats and market trends, are not calculated as part of the national average and are not compared against program-wide HDMP exhibits.

In 2014, under the Geo-Probe Initiative, heroin purchases were made in the following areas: Baton Rouge, Louisiana; Birmingham, Alabama; Little Rock, Arkansas; Buffalo, New York; Charlotte, North Carolina; Culpeper, Virginia; Dayton, Ohio; Green Bay, Wisconsin; Kansas City, Missouri; Madison, Wisconsin; Norfolk, Virginia; Roanoke, Virginia; Westchester County, New York; Vermont; and West Virginia.

- In January and March 2014, a Geo-Probe conducted in Culpeper, Virginia resulted in the purchase of one heroin exhibit classified as INC-SA and one UNK signature exhibit. The INC-SA exhibit was 23.6 percent pure with a cost of \$13.04 per milligram pure. The UNK signature exhibit demonstrated a mixed profile of both South American and Mexican heroin with a purity of 5 percent and a cost of \$6.06 per milligram pure.

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## 2014 HEROIN DOMESTIC MONITOR PROGRAM

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- A Geo-Probe conducted in Buffalo, New York in February 2014 resulted in the purchase of three heroin exhibits classified as INC-SA and one SA heroin exhibit. The INC-SA exhibits averaged 37 percent pure with a cost of \$0.73 per milligram pure. The SA was 30 percent pure with a cost of \$1.19 per milligram pure.
- In February and March 2014, a Geo-Probe was conducted in Kansas City, Missouri, and two heroin exhibits classified as MEX/T heroin were purchased. These exhibits averaged 37.6 percent pure and cost \$0.74 per milligram pure.
- In March 2014, a Geo-Probe conducted in Baton Rouge, Louisiana resulted in the purchase of four heroin exhibits classified as INC-SA. These exhibits averaged 20.5 percent pure with a cost of \$1.49 per milligram pure.
- In March and April 2014, a Geo-Probe in Charlotte, North Carolina resulted in the purchase of five heroin exhibits classified as MEX/T. These exhibits had an average purity of 27.5 percent and an average cost of \$0.43 per milligram pure.
- In March and May 2014, a Geo-Probe was conducted in Green Bay, Wisconsin. Two heroin exhibits were purchased and both were classified as INC-SA with an averaged purity of 40.2 percent and a cost of \$0.71 per milligram pure.
- A Geo-Probe conducted in Norfolk and Roanoke, Virginia, in May and June 2014 resulted in the purchase of three heroin exhibits classified as INC-SA and one UNK signature heroin exhibit. The INC-SA exhibits averaged 34.7 percent pure with a cost of \$1.25 per milligram pure. The UNK exhibit demonstrated a mixed profile of both South American and Mexican heroin, and was 22.3 percent pure with a cost of \$1.07 per milligram pure.
- A Geo-Probe conducted in Westchester County, New York in May and June 2014 resulted in the purchase of four heroin exhibits classified as INC-SA and one UNK signature heroin exhibit. The INC-SA exhibits averaged 55.2 percent pure with a cost of \$0.74 per milligram pure. The UNK exhibit, which displayed the characteristics of MEX-SA heroin, was 49.3 percent pure with a cost of \$0.53 per milligram pure.
- A Geo-Probe conducted in Vermont in May and June 2014 resulted in the purchase of two heroin exhibits classified as INC-SA and two UNK signature heroin exhibits. The INC-SA exhibits averaged 28.9 percent pure with a cost of \$2.30 per milligram pure. The two UNK signature exhibits averaged 32.5 percent pure with an average cost of \$1.79 per milligram pure.
- A Geo-Probe conducted in Dayton, Ohio in June 2014 resulted in the purchase of three heroin exhibits classified as INC-SA and one UNK signature exhibit. The INC-SA exhibits averaged 89.8 percent pure with a cost of \$0.41 per milligram pure. The UNK signature exhibit demonstrated a mixed profile of both South American and Mexican heroin and was analyzed at 41.4 percent pure with a cost of \$0.25 per milligram pure.
- In June 2014, a Geo-Probe conducted in Madison, Wisconsin, resulted in the purchase of four heroin exhibits classified as INC-SA. These exhibits averaged 33.6 percent pure with a cost of \$0.62 per milligram pure.

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## 2014 HEROIN DOMESTIC MONITOR PROGRAM

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- In August 2014, a Geo-Probe conducted in Birmingham, Alabama and Little Rock, Arkansas resulted in the purchase of one MEX/T heroin exhibit and two INC-SA exhibits. The MEX/T exhibit was 18.2 percent pure with a cost of \$2.29 per milligram pure. The two INC-SA exhibits had an average purity of 37.4 percent and an average cost of \$0.47 per milligram pure. One of the heroin exhibits purchased in Birmingham, Alabama, contained fentanyl (trace).
- A Geo-Probe conducted in West Virginia in August and September 2014, resulted in the purchase of five heroin exhibits classified as INC-SA with an average purity of 21.6 percent pure and a cost of \$2.28 per milligram pure.

### 2014 Summary of Findings

The HDMP underwent significant changes in 2014 with the introduction of new origin classifications such as MEX-SA and INC-SA for refined powder heroin, and additional granular profiling of Mexican-produced crude heroin (MEX/T and MEX/BP). The scientific protocol used by SFL1 to develop these classifications allows for a more intensive scrutiny of SA heroin processing methods to further differentiate and isolate the origin of the samples to either Mexico or South America and is considered the crucial step in accurately identifying the production region.

SFL1 advises that numerous adulterants present in HDMP heroin exhibits hinder the new signature protocol therefore an origin determination could not be made for the vast majority of the 2014 samples. A large portion of the heroin exhibits submitted to the HDMP during 2014 which were originally classified as SA are now classified as INC-SA (Inconclusive origin- SA or MEX with SA Processing). This has led to an under-reporting of both SA heroin and MEX-SA heroin in the 2014 HDMP report as both types of heroin are similarly adulterated in HDMP exhibits purchased in east coast cities. It is important to note however, that of the 303 heroin exhibits classified as INC-SA in the 2014 HDMP report, 302 of these exhibits were purchased in eastern and Midwestern cities that are considered traditional white heroin markets.

The U.S. heroin market remains geographically divided by the Mississippi River. East of the Mississippi River, particularly in the northeast where the largest U.S. heroin user populations are located, SA heroin and heroin classified as INC-SA dominate the market. In 2014, of the HDMP qualified exhibits that were classified as SA and INC-SA heroin, 100 percent and 91.7 percent respectively, were purchased east of the Mississippi River. Of the HDMP qualified exhibits that were classified as Mexican origin heroin, 96.9 percent were purchased west of the Mississippi River.

Between 2009 and 2014, the purity of Mexican-origin heroin at the retail level dropped from 24.7 percent to 21.1 percent. In 2014, Denver reported a decline in the purity of Mexican origin heroin available in that city while all other HDMP participating cities west of the Mississippi reported an increase in the purity of Mexican origin heroin in their respective retail markets when compared with 2013 purity levels.

HDMP data reflected a decline in the average purity of SA heroin from 37.3 percent in 2005 to 31.1 percent in 2014. In 2014, three HDMP cities including Newark, New York, and Richmond reported a decline in the average purity of SA heroin available in their respective retail markets when compared with 2013 purity levels.

The availability of SWA heroin remains extremely limited in U.S. retail markets and only one SWA heroin exhibit was purchased through the HDMP in 2014 in Washington, DC.

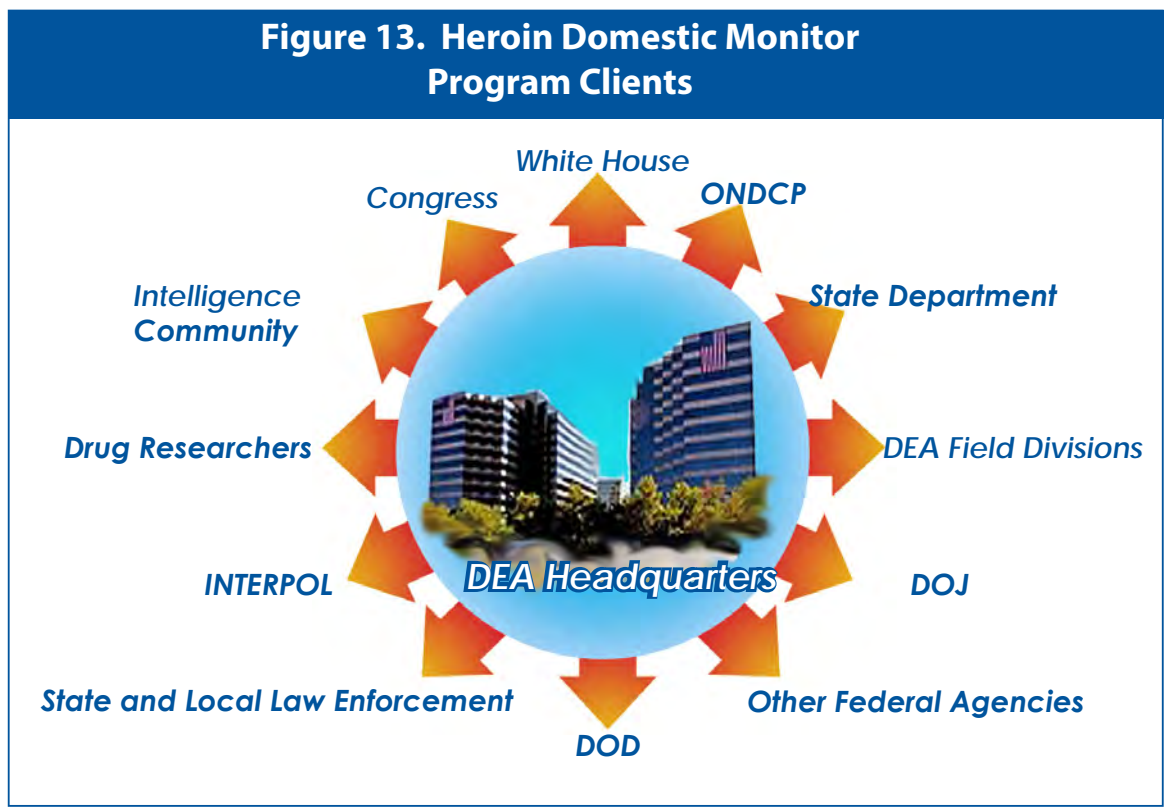
2014 marked the ninth consecutive year in which no SEA heroin exhibits were purchased through the HDMP.

## 2014 HEROIN DOMESTIC MONITOR PROGRAM

The HDMP data from 2008 compared against 2014 data reflected an 11.5 percent decrease in heroin exhibits whose signature was classified as UNK by the SFL1. In 2008, 131 HDMP exhibits were classified as UNK, while in 2014, that number decreased to 113. This decrease is likely due in part to the introduction of new signature classifications for Mexican-produced heroin. In 2014, 97 UNK signature exhibits were purchased east of the Mississippi River and 16 were purchased west of the Mississippi River. Twenty-nine of the UNK signature exhibits displayed the characteristics of MEX-SA heroin with an average purity of 36 percent and cost an average of \$0.57 per milligram pure. There were also 36 UNK signature exhibits analyzed by SFL1 that demonstrated a mixed profile of both South American and Mexican heroin.

### HDMP Consumers

The HDMP is the sole U.S. Government source of data on the origin, price, and purity of heroin available on the streets of the United States and, as such, is an important assessment and trending tool for DEA, other federal, state, and local law enforcement agencies, drug policymakers, and drug abuse researchers throughout the nation. The HDMP results are frequently included in intelligence and investigative reports designed to corroborate trends and inform DEA, other government agencies, including Congress and the White House Office of National Drug Control Policy (ONDCP) about the U.S. situation. The HDMP remains a valuable indicator of trends in the retail market, and when used in conjunction with other information, provides DEA with an overall, long-term assessment of heroin trafficking in the United States.



Source: DEA

## APPENDICES

(U) Appendix A: 2013 Heroin Counts, Purities, Prices, Origin, and City by Geographic Region

EAST	Southwest Asian Heroin			South American Heroin			Mexican Heroin			Alleged Mexican White Heroin		
	Number of Samples	Purity	Price	Number of Samples	Purity	Price	Number of Samples	Purity	Price	Number of Samples	Purity	Price
Atlanta	—	—	—	17	38.4%	\$1.34	—	—	—	7	55.2%	\$0.56
Baltimore	1	2%	\$2.17	23	13.7	0.67	—	—	—	4	30.6	0.60
Boston	1	17.4	0.34	23	20.5	0.80	—	—	—	1	18.1	0.64
Chicago	—	—	—	23	16.4	0.72	—	—	—	5	24.8	0.45
Detroit	—	—	—	22	40.3	0.77	—	—	—	9	39.2	0.74
Miami	—	—	—	16	21.9	2.17	2	14.3%	\$2.87	5	9	4.29
New Orleans	—	—	—	17	33.1	1.63	—	—	—	6	28.9	2.52
New York	—	—	—	43	43.3	0.73	1	29.8	2.40	2	78.1	0.36
Newark	—	—	—	29	57.9	1.01	—	—	—	2	66.8	0.37
Orlando	—	—	—	11	25.8	1.34	—	—	—	7	20.7	1.50
Philadelphia	—	—	—	23	64.8	0.50	—	—	—	2	48.1	0.97
Pittsburgh	—	—	—	15	47.8	1.03	—	—	—	1	74.2	0.59
Richmond	—	—	—	12	20.5	1.46	1	10.2	3.06	3	17.5	1.39
San Juan	—	—	—	19	13.4	1.70	—	—	—	—	—	—
Washington, DC	6	27.4	1.22	16	22	1.04	—	—	—	3	36.8	0.64

WEST	Southwest Asian Heroin			South American Heroin			Mexican Heroin			Alleged Mexican White Heroin		
	Number of Samples	Purity	Price	Number of Samples	Purity	Price	Number of Samples	Purity	Price	Number of Samples	Purity	Price
Albuquerque	—	—	—	—	—	—	14	17.8%	\$0.65	—	—	—
Dallas	—	—	—	—	—	—	34	12.1	0.61	—	—	—
Denver	—	—	—	—	—	—	33	22	1.40	—	—	—
Houston	—	—	—	—	—	—	20	3.5	3.58	—	—	—
Los Angeles	—	—	—	1	89%	\$0.37	34	25.2	0.42	—	—	—
Phoenix	—	—	—	—	—	—	28	26.4	0.58	—	—	—
Portland	—	—	—	—	—	—	20	16.9	1.65	—	—	—
San Antonio	—	—	—	—	—	—	20	7.1	0.91	—	—	—
San Diego	—	—	—	—	—	—	30	26.4	0.69	—	—	—
San Francisco	—	—	—	—	—	—	31	5.2	1.29	—	—	—
Seattle	—	—	—	—	—	—	26	15.6	1.14	—	—	—
St. Louis	—	—	—	24	46.8	1.02	—	—	—	7	40.4%	\$0.62
TOTAL	8	23%	\$1.23	334	35.1%	\$1.04	293	16.9%	\$1.12	64	35.5%	\$1.21

Report Parameters: Only qualified samples are shown. January 1 to December 31, 2013

Price Unit: Per milligram pure.

Source: DEA



## APPENDICES

(U) Appendix B: 2012 Heroin Counts, Purities, Prices, Origin, and City by Geographic Region

EAST	Southwest Asian Heroin			South American Heroin			Mexican Heroin			Southeast Asian Heroin		
	Number of Samples	Purity	Price	Number of Samples	Purity	Price	Number of Samples	Purity	Price	Number of Samples	Purity	Price
Atlanta				30	39.8%	\$1.45						
Baltimore	3	21.3%	\$0.59	22	19.2	0.70	1	12.8%	\$0.41			
Boston				31	16.0	1.62						
Chicago				16	13.2	0.46						
Detroit				26	36.5	0.54						
Miami				20	15.4	2.86	1	16.2	2.13			
New Orleans				21	22.4	1.19						
New York				41	45.0	0.61						
Newark				29	58.4	0.77						
Orlando				14	22.4	1.95						
Philadelphia				32	76.8	0.47						
Pittsburgh	1	32.9	1.13	14	37.9	1.01						
Richmond				15	22.6	1.68	1	5.3	5.55			
San Juan				36	18.7	1.77						
Washington, DC	8	15.8	1.30	8	31.7	0.83						

WEST	Southwest Asian Heroin			South American Heroin			Mexican Heroin			Southeast Asian Heroin		
	Number of Samples	Purity	Price	Number of Samples	Purity	Price	Number of Samples	Purity	Price	Number of Samples	Purity	Price
Albuquerque							20	19%	\$0.57			
Dallas							41	22.4	0.67			
Denver							32	31.9	0.80			
Houston				1	2.3%	\$8.70	34	3.1	5.44			
Los Angeles							37	23.7	0.58			
Phoenix				1	93.9	0.12	37	21.7	0.83			
Portland							20	20.8	1.76			
San Antonio							20	8.5	0.71			
San Diego							29	30.4	0.73			
San Francisco							42	5.7	1.23			
Seattle							24	5.7	1.85			
St. Louis				18	55.4	0.53						
TOTAL	12	18.6%	\$1.10	375	35.3%	\$1.15	339	17.6%	\$1.40			

Report Parameters: Only qualified samples are shown. January 1 to December 31, 2012

Price Unit: Per milligram pure.

Source: DEA

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## APPENDICES

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### Appendix C: Definitions

**Adulterant:** A pharmacologically active substance that is added to heroin to enhance or mimic the effect of heroin. Adulterants can be added to heroin shipments immediately after production, in transit, or prior to distribution. While dextromethorphan for Southwest Asian heroin and diltiazem for South American heroin are examples of adulterants that are added immediately after production, xylazine for Puerto Rico and quinine for Washington, DC-Baltimore are examples for city-specific adulteration prior to distribution.

**Diluent:** An inert ingredient (pharmacologically inactive compound) used to increase the bulk of a finished product. Typical diluents are sugars, starches, and inorganic salts.

**Heroin Signature Analysis:** A program developed by the DEA to identify the geographic source area of a heroin exhibit. Heroin signature analysis is based on an exhaustive chemical profile of authentic exhibits acquired from each of the four major heroin source areas: South America, Mexico, Southeast Asia, and Southwest Asia.

**Heroin Signature Classification:** The result of heroin signature analysis. Origin classifications currently defined include Mexican (MEX), Mexican Tar (MEX/T), Mexican Brown Powder (MEX/BP), Mexican South American (MEX-SA), South America (SA), Inconclusive South America (INC-SA where Mexico or South America could be the origin), Southeast Asia (SEA), and Southwest Asia (SWA) heroin. Exhibits meeting these classifications are referred to as “qualified exhibits.”

**Insufficient Weight:** An exhibit of heroin that is too small for signature analysis. Generally, an exhibit should weigh at least 1 gram net, including diluents and adulterants. This amount ensures at least 150 milligrams of pure heroin are available for signature analysis.

**Net Weight:** The total weight of the heroin exhibit, including diluents and adulterants, excluding its packaging.

**Price per milligram pure:** The price of the exhibit divided by the pure weight, expressed in milligrams. Price per milligram pure provides a constant in prices of exhibits of differing weights and purity can be compared.

**Pure Weight:** The weight of pure heroin is determined by multiplying the purity of an exhibit by its net weight.

**Purity:** The amount of heroin present in the exhibit compared to all other substances. Purity is expressed as a percent.

**Qualified Exhibit:** A heroin exhibit for which price, purity and geographic source data can be determined.

**Unknown:** A heroin exhibit analyzed by SFL1, but for which the results of the analysis do not match with authentic profiles of any known source region (refer to Heroin Signature Classification).







# DEA Intelligence Product Feedback Database



Name of Organization: \_\_\_\_\_  
 Point of Contact: \_\_\_\_\_ Telephone Number: \_\_\_\_\_  
 Email: \_\_\_\_\_

DEA Product #: DEA- \_\_\_\_\_  
 Title: \_\_\_\_\_

	Very Satisfied	Somewhat Satisfied	Neither Satisfied nor Dissatisfied	Somewhat Dissatisfied	Very Dissatisfied
Overall satisfaction with DEA Product	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Readability/Understanding of DEA Product	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Value/Usefulness of NNP Product	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Report Increased my Understanding or Knowledge of the report subject	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Product Relevance to my agency's mission	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How will you use this report? (Check all that apply)	<input type="checkbox"/> Policy Formulation <input type="checkbox"/> Situational Awareness <input type="checkbox"/> Operational Planning <input type="checkbox"/> Training <input type="checkbox"/> Resource Allocation <input type="checkbox"/> Other				

Additional Comments: