



## **Flammables Analysis Test No. 07-536 Summary Report**

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This proficiency test was sent to 329 participants. Each sample pack consisted of five items: one FireDebrisPAK™ bag and two Nylon bags that each contained a “wick” spiked with a flammable substance, and one FireDebrisPAK™ bag and one Nylon bag both unused, and sealed containing a sample of the same type of cotton terry cloth which were provided to participants as negative control samples. Data were returned from 269 participants (82% response rate) and are compiled into the following tables:

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This report contains the data received from the participants in this test. Since these participants are located in many countries around the world, and it is their option how the samples are to be used (e.g., training exercise, known or blind proficiency testing, research and development of new techniques, etc.), the results compiled in the Summary Report are not intended to be an overview of the quality of work performed in the profession and cannot be interpreted as such. The Summary Comments are included for the benefit of participants to assist with maintaining or enhancing the quality of their results. These comments are not intended to reflect the general state of the art within the profession.

Participant results are reported using a randomly assigned "WebCode". This code maintains participant's anonymity, provides linking of the various report sections, and will change with every report.

# Manufacturer's Information

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Each sample pack consisted of five items: one FireDebrisPAK™ bag and two Nylon bags that each contained a “wick” spiked with a flammable substance, and one FireDebrisPAK™ bag and one Nylon bag both unused, and sealed containing a sample of the same type of cotton terry cloth which were provided to participants as negative control samples. FireDebrisPak™ evidence bags were manufactured by Kapak® Corporation, discontinued in late 2006. The Nylon bags used in this test were produced by the Grand River Products company.

The wicks in the Item 1 and Item 2 bags both contained 93 octane gasoline, and the wick in the Item 3 bag contained STP® Fuel Injector & Carburetor Treatment. Laboratories that conducted predistribution analysis of the samples classified Item 1 and Item 2 as Gasoline. Item 3 was classified as a Heavy Petroleum Distillate, using the ASTM classification scheme.\*

The three items were prepared and packaged separately. For Item 1, a pre-labeled bag was opened so it could stand on its own and a clean, cotton terry cloth swatch was held in the opening of the bag and 25 µl of the designated flammable substance was pipetted on top of the cloth, which was then immediately dropped into the bag. The volume of air in the bag was reduced slightly, and the bag was immediately double heat-sealed across the top using a Kapak® Commercial Pouch Sealer 18" (Stock No. 118-1), which produces a 5/8" wide band.

For Item 2 and Item 3, a pre-labeled bag was opened and a clean, cotton terry cloth swatch was held in the opening of the bag and 25 µl of the designated flammable substance was pipetted on top of the cloth, which was then immediately dropped into the bag. The volume of air in the bag was reduced slightly, and the bag was immediately double heat-sealed across the top using a Midwest Pacific Impulse Heat Sealer, Model MP-12, which produces a 1/8" wide band.

The control bags were prepared before Items 1, 2 and 3 with no flammable substances in the immediate production area. For the bags containing the spiked wicks, no other flammable material was present in the production area other than the one being used to create the immediate items. Each item was stored separately until the complete sample packs were put together.

*\*Source: ASTM E 1387-01, Standard Test Method for Ignitable Liquid Residues in Extracts from Fire Debris Samples by Gas Chromatography, Table 1.*

## Summary Comments

This test was designed to allow participants to assess their ability to extract and identify flammable substances and at the same time evaluate the transition from FireDebrisPAK™ bags to Nylon bags. Participants were provided with: one FireDebrisPAK™ bag and two Nylon bags that each contained a “wick” spiked with a flammable substance, and one FireDebrisPAK™ bag and one Nylon bag both unused, and sealed containing a sample of the same type of cotton terry cloth which were provided to participants as negative control samples. The wicks in the Item 1 and Item 2 bags both contained 93 octane gasoline, and the wick in the Item 3 bag contained STP® Fuel Injector & Carburetor Treatment. [Refer to the Manufacturer's Information for preparation details.]

For this report 269 participants responded, however, two participants did not report identification results for any of the Items because they only performed extractions of the samples, which were then forwarded to another laboratory for further analysis. Another participant reported more flammable classifications than could be entered into our reporting database, this participant's results have been stated in their Conclusions (Table 4).

Of the 262 participants who reported identification results for Item 1, 243 (92%) identified the flammable substance as belonging to the Gasoline classification. There were five participants who reported Gasoline and Oxygenated Solvents, with most reporting that this was Ethanol. This may be due to the 10% Ethanol component of Gasoline marketed in the United States. There were nine participants who reported Gasoline plus an additional flammable classification other than an Oxygenated Solvent; four reported an additional flammable classification without the identification of Gasoline. There was one participant who reported Inconclusive for this sample.

There were four participants that did not report in the response Table 1a for Item 1. Of these, two indicated in their Additional Comments (Table 5) that they found indications of Gasoline, but the sample was either too weak or did not have the full profile to make an Identification. One reported in their Conclusions that the sample was a Normal Alkanes Product, and the final participant stated that their laboratory does not analyze evidence submitted in KaPak bags.

Of the 259 participants who reported Identification results for Item 2, 233 (90%) identified the flammable substance as belonging to the Gasoline classification. There was one participant who reported Gasoline and Oxygenated Solvents (Ethanol), this may be due to the 10% Ethanol component of Gasoline marketed in the United States. There were six participants who reported Gasoline plus an additional flammable classification other than an Oxygenated Solvent; seventeen reported an additional flammable classification without the identification of Gasoline. Six reported "Aromatic Products", these participants were from the same laboratory system. There were two participants who reported Inconclusive or Negative for this sample.

There were seven participants that did not report in Table 1b for Item 2. Of these, four reported negative, one reported Inconclusive, one reported a light n-alkane product, and one reported that no mixture was detected that could be classified. These statements were in the Conclusions (Table 4) with the last participant stating in their Additional Comments (Table 5) that signals of Gasoline were detected but fell below reporting criteria.

Of the 266 participants that reported identification results for Item 3, 256 (96%) identified the flammable substance as belonging to the Petroleum Distillates classification. There were two participant who reported Petroleum Distillates and Gasoline, and seven that reported a different flammable classification without the identification of Petroleum Distillates. For the SubClass determination of those participants that reported Petroleum Distillates for Item 3, 215 reported the subclass as Heavy, HPD or HPP and 31 reported the subclass as Medium, MPD or Medium to Heavy. The remaining participants used Class designations and/ or carbon ranges to report their SubClass.

# Flammable Identification

Indicate the ASTM E 1618-06 class or classes for any flammable substances detected in the submitted item

TABLE 1a - FireDebrisPAK™ bag

WebCode	Item 1: Class	SubClass
119FUQ	Gasoline	
11B2RW	Gasoline	
11DJ39	Gasoline	
18WYW6	Gasoline	
1A3FU2	Gasoline	
1CSP2H	Gasoline	
1LLZ87	Gasoline, Petroleum Distillates (medium), Oxygenated Solvents (light-ethanol)	
1LV5A9	Gasoline	
1MRLM7	Petroleum Distillates	Medium
1SNV76	Gasoline	
1TDB92	Gasoline	
1ZH118	Gasoline	
2AQ1K2	*	
2BECZ7	Gasoline	
2FJVRE	Gasoline	
2J48EP	Gasoline, Oxygenated Solvents	Ethanol
2K39N1	Gasoline	
2MCCBB	Gasoline	
36JHEL	Gasoline*	
38335M	Gasoline	
38R58H	Gasoline	
3B53F5	Gasoline	
3BLCXK	Gasoline	
3F4DB5	Gasoline	
3J7YF5	Gasoline	
3MLWL7	Gasoline	
3WGNJ1	Gasoline	
3ZQ61F	Gasoline	
4351FD	Gasoline	
452AR8	Gasoline	
45YMBQ	Gasoline	
46SLH1	Gasoline	
4HBRZY	Gasoline	

TABLE 1a - FireDebrisPAK™ bag

WebCode	Item 1: Class	SubClass
4HLWW9	Gasoline	
4TTFSC	Gasoline	
4VBUWC	Gasoline	
56MKYM	Gasoline	
59DDEQ	Gasoline	
5B4P6H	Gasoline	
5MF1E6	Gasoline	
5P837F	Gasoline	
65NU9J	Gasoline	
698J9P	Gasoline	
6BC37W	*	
6FVD6M	Gasoline	
6J5PL9	Gasoline	
6JV56F	Gasoline	
6YV8XS	Gasoline	
6Z493Y	Gasoline	
74V5WH	Gasoline, Isoparaffinic Products	Light
77VAEU	Gasoline	
7EQEAR	Gasoline	
7EVTWS	Gasoline	
7M5XS5	Gasoline	
7QD7X9	Gasoline	
7QWY6T	Gasoline	
7VMCRU	Gasoline	
7Y7FHZ	Gasoline, Oxygenated Solvents	Light
81PJJB	Gasoline	
8AXD3A	Gasoline	
8J68X3	Gasoline	
8QNHAD	Gasoline	
8TQJ6V	Gasoline	
943GPD	Gasoline, Oxygenated Solvents	Ethanol
94RB9U	Gasoline	
957CMH	Gasoline	
96DW4Q	Gasoline	
9CGS4Q	Gasoline	
9E3781	Gasoline	

TABLE 1a - FireDebrisPAK™ bag

WebCode	Item 1: Class	SubClass
9R4XFT	Gasoline	
9VBG4Z	*	
9YF7NL	Gasoline	
A4L5SK	Gasoline	
A6Q1YF	Gasoline	
ABMKF6	Gasoline	
ADAXZA	Oxygenated Solvents*	C6-C16
AGVQ9R	Gasoline	
AH4XE5	Gasoline	
AYWSRW	Gasoline	
B29RNX	Gasoline	
B8GDFR	Gasoline	
BA6MN7	Gasoline	
BCRJ2Y	Gasoline	
BGQV3R	Gasoline	
BST12Y	Gasoline	
CHCVFS	Gasoline, Isoparaffinic Products	Light
CJCPKS	Gasoline	
CKQHZZ	Gasoline	
CN9A99	Gasoline	
CQBT7B	Gasoline	
CV4F3A	Gasoline	
D157DR	Gasoline	
D7GXDD	Gasoline, Others - Miscellaneous	Lacquer Thinner
DGEWP6	Gasoline	
DHN6G4	Gasoline	
DJ38NC	Gasoline	
DMBE6X	Gasoline	
DN6N7V	Gasoline	
DPX2NY	Gasoline	
DS3UQX		
DYK9AV	Gasoline	
E577RV	Gasoline	
E88FTK	Gasoline	
EETDG7	Gasoline	
EH6WC4	Gasoline	

TABLE 1a - FireDebrisPAK™ bag

WebCode	Item 1: Class	SubClass
ELY39D	Gasoline	
EV35KC	Gasoline	
EVJG2H	Gasoline	
EVXF17	Gasoline, Oxygenated Solvents	Ethanol
F141GG	Gasoline	
F4S876	Gasoline	
F5MR97	Gasoline	
FB2VKE	Gasoline	
FBVQYA	Gasoline	
FCUR7N	Gasoline	
FH7AM9	Gasoline	
FKELLY	Gasoline	
FKG6GD	Gasoline	
FKVK9Q	Gasoline	
FM896E	Gasoline	
FNBSV4	Gasoline	
FNE1QE	Gasoline	
FR38F4	Gasoline	
FSDCN1	Gasoline	
FZUMHP	Gasoline	
G68EZ8	Gasoline	
G8KRPU	Gasoline	
G8X69J	Gasoline	
G979P2	Others - Miscellaneous	Light to Heavy
GC7KK2	Gasoline	
GFVWT8	Gasoline, Isoparaffinic Products	Light
GPRTKG	Gasoline	
GXGWLZ	Gasoline	
GZ8HEF	Gasoline	
H71CQJ	Gasoline	
HEJDD9	Gasoline	
HJU6Z2	Gasoline	
HNPQ4B	Gasoline	
HQQ8UN	Gasoline	
HYAMB4	Gasoline	
HZ65C6	Gasoline	

TABLE 1a - FireDebrisPAK™ bag

WebCode	Item 1: Class	SubClass
J1UFJY	Gasoline	
J23BS9	Gasoline	
J3WXNL	Gasoline	
J52HC7	Gasoline	
JBENHN	Gasoline	
JCMP4C	Gasoline	
JD3R1C	Gasoline	
JDZ4SL	Gasoline	
JK5ZBL	Gasoline	
JNPZJE	Gasoline	
JP3BEY	Gasoline	
JT861U	Gasoline	
JY7GBL	Gasoline	
K2Y6UC	Gasoline	
KE7TBA	Gasoline	
KGXCF3	Gasoline	
KGZKQ2	Gasoline	
KMXWUD	Gasoline	
KXNZN6	Gasoline	
L2HUYM	Gasoline	
LJ7479	Gasoline	
LLDGV3	Gasoline	
LLS6YF	Gasoline	
LMXUYD	Gasoline	
LNTABA	Gasoline	
LULG3J	Gasoline	
M1MX9J	Gasoline	
M8LHFK	Gasoline	
ME9XAJ	Gasoline	
MH8F6Q	Gasoline	
ML3831	Gasoline	
ML6UTF	Gasoline, Normal Alkanes Products	Medium to Heavy
MPTGKH	Gasoline	
MZ6D4L	Gasoline	
N7H8Q7	Gasoline	
N81YAD	Gasoline	

TABLE 1a - FireDebrisPAK™ bag

WebCode	Item 1: Class	SubClass
NE434H	Gasoline	
NHCMNJ	*	
NK5HAS	Gasoline	
NLZ464	Gasoline	
NQFGWJ	Gasoline	
NST2VL	Gasoline	
NYN3W6	Gasoline	
PCJGJ3	Gasoline	
PPHH94	Gasoline	
PPNSK3	Gasoline	
PQ1AGT	Gasoline	
PY6F7P	Gasoline	
Q88XF6	Gasoline	
QD14YE	Gasoline	
QDDUSR	Gasoline	
QHMAZU	Gasoline	
QK39U5	Gasoline	
QPE4PG	Gasoline	
QS3NHS	Gasoline	
QTT1UH	Gasoline	
R179VK	Gasoline	
R1JX4Y	Gasoline	
R3DJZA	Gasoline	
R46EMJ	Gasoline	
RH5X6Q	Gasoline	
RNX5PY	Gasoline	
RSJ4AZ	Inconclusive- Indicative of gasoline or aromatic*	
RZGWJT	Gasoline	
S51GZE	Gasoline	
S8L89V	Gasoline	
S983GW	Gasoline	
SDAVX9	Gasoline	
SE175U	Gasoline	
SERY12	Gasoline	
SFVT16	Gasoline	
T1X65X	Gasoline	

TABLE 1a - FireDebrisPAK™ bag

WebCode	Item 1: Class	SubClass
T5ENWQ	Gasoline	
T8ED5F	Gasoline	
T8RBYZ	Gasoline	
T96D8T	Gasoline	
TALXUB	Gasoline	
TBZ6EX	Gasoline	
TEHHYL	Gasoline	
TKV47S	Gasoline	
TL8N12	Gasoline	
TNZSP3	Gasoline	
U2CMFJ	Gasoline	
U71DJ6	Gasoline	
UB8VJT	Gasoline	
UBZK43	Gasoline	
UE8236	Petroleum Distillates	Light
UH4HY1	Gasoline	
UHHVDX	Gasoline	
UJDDFY	Gasoline	
UKQAK4	Gasoline	
UNNSXX	Gasoline	
V5SL4X		
V7W9L8	Gasoline	
VDJZ84	Gasoline	
VDY5L8	Gasoline	
VECQBX	*	
VK5QUY	Gasoline	
VS1Q76	Gasoline	
VTAV98	Gasoline	
W6TZWV	Gasoline	
WA9A7D	Gasoline	
WZTNWS	Gasoline	
WZYYU9	Gasoline	
XCFYCV	Gasoline, Petroleum Distillates	Heavy
XFJM1Y	Gasoline	
XL7GR4	Gasoline, Oxygenated Solvents	Light
XN3UH3	Gasoline	

TABLE 1a - FireDebrisPAK™ bag

WebCode	Item 1: Class	SubClass
XPSSSP	Gasoline	
XVBLL6	Gasoline	
XXJWJV	Gasoline	
Y5Q1QS	Gasoline, Isoparaffinic Products	Light
Y6VFDD	Gasoline	
Y9D664	Gasoline	
YE5KR5	Gasoline	
YHHLCA	Gasoline	
YL6XBF	Gasoline	
YUG3J5	Gasoline	
YUY9HV	Gasoline	
Z3P7T1	Gasoline	
Z68MAQ	Gasoline	
ZDRADX	Gasoline, Isoparaffinic Products	Medium
ZDT5X4	Gasoline	
ZEYQL4	Gasoline	
ZKA6WN	Gasoline	
ZKDAFW	Gasoline	
ZN7EQ2	Gasoline	
ZZAANY	Gasoline	

Response Summary		Total Participants: 269
<u>Item 1</u>		
<b>Class: Gasoline</b>		<b>243</b>
<b>Class: Other Responses</b>		<b>19</b>

\* See Conclusions (Table 4) or Additional Comments (Table 5).

# Flammable Identification

Indicate the ASTM E 1618-06 class or classes for any flammable substances detected in the submitted item

TABLE 1b- Nylon Bags

WebCode	Item 2: Class	SubClass	Item 3: Class	SubClass
119FUQ	Gasoline, Petroleum Distillates	n-C8 to n-C16 (ASTM Class 4)	Petroleum Distillates	n-C8 to n-C16 (ASTM Class 4)
11B2RW	Gasoline		Petroleum Distillates	Heavy
11DJ39	Gasoline		Petroleum Distillates	Heavy
18WYW6	Gasoline		Petroleum Distillates	Heavy
1A3FU2	Gasoline		Petroleum Distillates	Heavy
1CSP2H	Gasoline		Petroleum Distillates	Heavy
1LLZ87	*		Petroleum Distillates	Medium to Heavy
1LV5A9	Gasoline		Petroleum Distillates	Kerosene
1MRLM7	Gasoline		Isoparaffinic Products	Medium
1SNV76	Gasoline		Petroleum Distillates	Heavy (C10-C16)
1TDB92	Gasoline		Petroleum Distillates	Medium to Heavy
1ZH118	Gasoline		Petroleum Distillates	Heavy
2AQ1K2	Gasoline		Petroleum Distillates	HPD
2BECZ7	Gasoline		Petroleum Distillates	Heavy
2FJVRE	Gasoline		Petroleum Distillates	Heavy
2J48EP	Gasoline		Petroleum Distillates	Heavy
2K39N1	Gasoline		Petroleum Distillates	Heavy
2MCCBB	Gasoline		Petroleum Distillates	Heavy
36JHEL	Gasoline		Petroleum Distillates	Medium
38335M	Gasoline		Petroleum Distillates	Heavy (C9-C16)
38R58H	Gasoline		Petroleum Distillates	
3B53F5	Gasoline		Petroleum Distillates	C9-C17
3BLCXK	Gasoline		Petroleum Distillates	Heavy (C10-C15)
3F4DB5	Gasoline		Petroleum Distillates	HPD
3J7YF5	Gasoline		Petroleum Distillates	Heavy
3MLWL7	Gasoline		Petroleum Distillates	HPP (Kerosene)
3WGNJ1	Gasoline		Petroleum Distillates	Heavy
3ZQ61F	*		Petroleum Distillates	Medium
4351FD	Gasoline		Petroleum Distillates	Medium
452AR8	Gasoline		Petroleum Distillates	Heavy
45YMBQ	Aromatic Products		Petroleum Distillates	Heavy (Kerosene)

TABLE 1b- Nylon Bags

WebCode	Item 2: Class	SubClass	Item 3: Class	SubClass
46SLH1	Gasoline		Petroleum Distillates	Heavy
4HBRZY	Gasoline		Petroleum Distillates	Heavy
4HLWW9	Gasoline		Petroleum Distillates	Heavy
4TTFSC	Gasoline		Petroleum Distillates	Heavy
4VBUWC	Gasoline		Petroleum Distillates	Heavy
56MKYM	Gasoline		Petroleum Distillates	Heavy
59DDEQ	Gasoline		Petroleum Distillates	Heavy
5B4P6H	Gasoline		Petroleum Distillates	Heavy
5MF1E6	Gasoline		Petroleum Distillates	Heavy (C9-C16)
5P837F	Gasoline		Petroleum Distillates	Heavy
65NU9J	Gasoline		Normal Alkanes Products	Class 4 (Kerosene)
698J9P	Gasoline		Petroleum Distillates	Heavy
6BC37W	Gasoline		Normal Alkanes Products	Medium to Heavy (C9-C14)
6FVD6M	Gasoline		Petroleum Distillates	Heavy
6J5PL9	Gasoline		Petroleum Distillates	Heavy
6JV56F	Gasoline		Petroleum Distillates	Heavy
6YV8XS	Gasoline		Petroleum Distillates	Heavy
6Z493Y	Gasoline		Petroleum Distillates	Heavy
74V5WH	Gasoline, Isoparaffinic Products	Light	Petroleum Distillates	Heavy
77VAEU	*		Petroleum Distillates	Heavy
7EQEAR	Aromatic Products	Medium	Petroleum Distillates	Heavy
7EVTWS	Others - Miscellaneous	C8-C15	Petroleum Distillates	Heavy
7M5XS5	Gasoline		Petroleum Distillates	Heavy
7QD7X9	Gasoline		Petroleum Distillates	Heavy
7QWY6T	Gasoline		Petroleum Distillates	Heavy (C9-C17)
7VMCRU	Gasoline		Petroleum Distillates	Medium- Heavy (C10-C16)
7Y7FHZ	Gasoline		Petroleum Distillates	Heavy
81PJB	Gasoline		Petroleum Distillates	Heavy
8AXD3A	Gasoline		Petroleum Distillates	Heavy
8J68X3	Gasoline		Petroleum Distillates	Heavy
8QNHAD	Gasoline		Petroleum Distillates	Class 4
8TQJ6V	Gasoline		Petroleum Distillates	Heavy
943GPD	Gasoline		Petroleum Distillates	Heavy

TABLE 1b- Nylon Bags

WebCode	Item 2: Class	SubClass	Item 3: Class	SubClass
94RB9U	Gasoline		Petroleum Distillates	Medium
957CMH	Gasoline		Petroleum Distillates	Heavy
96DW4Q	Gasoline		Petroleum Distillates	Heavy
9CGS4Q	Gasoline		Petroleum Distillates	Heavy
9E3781	Gasoline		Petroleum Distillates	Heavy
9R4XFT	Gasoline		Petroleum Distillates	Heavy
9VBG4Z	*		*	
9YF7NL	Gasoline		Petroleum Distillates	Heavy
A4L5SK	Gasoline		Petroleum Distillates	Heavy
A6Q1YF	Gasoline		Petroleum Distillates	Medium
ABMKF6	Gasoline		Petroleum Distillates	Heavy
ADAXZA	Others - Miscellaneous*	C6-C16	Petroleum Distillates	Heavy
AGVQ9R	Gasoline		Petroleum Distillates	Medium- Heavy (C9-C16)
AH4XE5	Gasoline		Petroleum Distillates	MPD
AYWSRW	Gasoline		Petroleum Distillates	Heavy
B29RNX	Gasoline		Naphthenic Paraffinic Products	Heavy
B8GDFR	Gasoline		Petroleum Distillates	Heavy
BA6MN7	Gasoline		Petroleum Distillates	Heavy
BCRJ2Y	Gasoline		Petroleum Distillates	Heavy
BGQV3R	Gasoline		Petroleum Distillates	Heavy
BST12Y	Gasoline		Petroleum Distillates	Heavy
CHCVFS	Gasoline, Isoparaffinic Products	Light	Petroleum Distillates	Heavy
CJCPKS	Gasoline		Petroleum Distillates	Heavy
CKQHZZ	Gasoline		Petroleum Distillates	Medium to Heavy
CN9A99	Gasoline		Normal Alkanes Products*	HPD
CQBT7B	Gasoline		Petroleum Distillates	Heavy
CV4F3A	Gasoline		Petroleum Distillates	HPD, C8-C17
D157DR	Gasoline		Petroleum Distillates	Medium
D7GXDD	Gasoline, Others - Miscellaneous	Lacquer Thinner	Petroleum Distillates	C9-C15
DGEWP6	Gasoline		Petroleum Distillates	Heavy
DHN6G4	Others - Miscellaneous*	Negative	Petroleum Distillates	Heavy
DJ38NC	Gasoline		Petroleum Distillates	Kerosene

TABLE 1b- Nylon Bags

WebCode	Item 2: Class	SubClass	Item 3: Class	SubClass
DMBE6X	Gasoline		Petroleum Distillates	Heavy (C10-C16)
DN6N7V	Gasoline		Petroleum Distillates	Heavy
DPX2NY	Gasoline		Petroleum Distillates	Heavy
DS3UQX				
DYK9AV	Gasoline		Petroleum Distillates	Medium (C9-C13)
E577RV	Gasoline		Petroleum Distillates	Heavy
E88FTK	Gasoline		Petroleum Distillates	Heavy
EETDG7	Gasoline		Petroleum Distillates, Gasoline	Heavy (C9-C20+)
EH6WC4	Gasoline		Petroleum Distillates	Medium
ELY39D	Gasoline		Petroleum Distillates	Heavy
EV35KC	Gasoline		Petroleum Distillates	Heavy
EVJG2H	Gasoline		Petroleum Distillates	HPD
EVXF17	Gasoline, Oxygenated Solvents	Ethanol	Petroleum Distillates	Heavy
F141GG	Gasoline		Petroleum Distillates	Heavy
F4S876	Gasoline		Petroleum Distillates	Heavy
F5MR97	Gasoline		Petroleum Distillates	Heavy (C8-C17)
FB2VKE	Aromatic Products	Medium	Petroleum Distillates	Heavy (Kerosene)
FBVQYA	Petroleum Distillates	Medium to Heavy	Normal Alkanes Products	Medium
FCUR7N	Gasoline		Petroleum Distillates	Heavy
FH7AM9	Gasoline		Petroleum Distillates	Heavy
FKELLY	Gasoline		Petroleum Distillates	Medium
FKG6GD	Gasoline		Petroleum Distillates	Heavy
FKVK9Q	Gasoline		Petroleum Distillates	Heavy
FM896E	Gasoline		Petroleum Distillates	Heavy
FNBSV4	Gasoline		Petroleum Distillates	Heavy
FNE1QE	Gasoline		Petroleum Distillates	Heavy
FR38F4	Gasoline		Petroleum Distillates	HPP
FSDCN1	Gasoline		Petroleum Distillates	HPD
FZUMHP	Gasoline		Petroleum Distillates	Heavy
G68EZ8	Gasoline		Petroleum Distillates	Heavy
G8KRPU	Gasoline		Petroleum Distillates	Heavy (C10-C16)
G8X69J	Gasoline		Petroleum Distillates	Heavy
G979P2	Others - Miscellaneous	Light to Heavy	Petroleum Distillates	Heavy

TABLE 1b- Nylon Bags

WebCode	Item 2: Class	SubClass	Item 3: Class	SubClass
GC7KK2	Gasoline		Petroleum Distillates	Medium to Heavy
GFVWT8	Gasoline, Isoparaffinic Products	Light	Petroleum Distillates	Heavy
GPRTKG	Gasoline		Petroleum Distillates	Heavy
GXGWLZ	Gasoline		Petroleum Distillates	Heavy
GZ8HEF	Gasoline		Petroleum Distillates	Heavy
H71CQJ	Gasoline		Petroleum Distillates	Heavy
HEJDD9	Inconclusive indications of gasoline*		Petroleum Distillates	Heavy
HJU6Z2	Gasoline		Petroleum Distillates	Medium Pet. Dist.
HNPQ4B	Gasoline		Petroleum Distillates	Heavy
HQQ8UN	Gasoline		Petroleum Distillates	Heavy HPD
HYAMB4	Gasoline		Petroleum Distillates	Heavy
HZ65C6	Gasoline		Petroleum Distillates	Heavy
J1UFJY	Gasoline		Petroleum Distillates	Heavy
J23BS9	Gasoline		Petroleum Distillates	Medium to Heavy
J3WXNL	Gasoline		Petroleum Distillates	Heavy
J52HC7	Gasoline		Petroleum Distillates	Heavy
JBENHN	Gasoline		Petroleum Distillates	Heavy
JCMP4C	Gasoline		Petroleum Distillates	Heavy
JD3R1C	Gasoline		Petroleum Distillates	Heavy
JDZ4SL	Gasoline		Petroleum Distillates	Heavy
JK5ZBL	Gasoline		Petroleum Distillates	Heavy
JNPZJE	Gasoline		Petroleum Distillates	Heavy
JP3BEY	Gasoline		Petroleum Distillates	Heavy
JT861U	Gasoline		Petroleum Distillates	Medium
JY7GBL	Gasoline		Petroleum Distillates	Heavy
K2Y6UC	Aromatic Products	Medium (C8-C13)	Petroleum Distillates	Heavy (C8-C20)
KE7TBA	Gasoline		Petroleum Distillates	Heavy
KGXCF3	Gasoline		Petroleum Distillates	Heavy
KGZKQ2	Gasoline		Petroleum Distillates	Heavy
KMXWUD	Gasoline		Petroleum Distillates	Heavy
KXNZN6	Gasoline		Petroleum Distillates	Heavy
L2HUYM	Gasoline		Petroleum Distillates	Medium- Heavy (C10-C15)

TABLE 1b- Nylon Bags

WebCode	Item 2: Class	SubClass	Item 3: Class	SubClass
LJ7479	Gasoline		Petroleum Distillates	Class 4, Kerosene C9-C17
LLDGV3	Gasoline		Petroleum Distillates	HPD
LLS6YF	Gasoline		Petroleum Distillates	Heavy (C9-C16)
LMXUYD	Gasoline		Petroleum Distillates	Predominately C9-C14
LNTABA	Gasoline		Petroleum Distillates	Heavy
LULG3J	Gasoline		Petroleum Distillates	HPD
M1MX9J	Gasoline		Petroleum Distillates	Heavy
M8LHFK	Gasoline		Petroleum Distillates	Heavy
ME9XAJ	Gasoline		Petroleum Distillates	Heavy
MH8F6Q	Gasoline		Petroleum Distillates	Heavy
ML3831	Gasoline		Petroleum Distillates	Heavy
ML6UTF	Normal Alkanes Products	Medium to Heavy	Petroleum Distillates	Heavy
MPTGKH	Gasoline		Petroleum Distillates	Heavy
MZ6D4L	Gasoline		Petroleum Distillates	Heavy range
N7H8Q7	Aromatic Products	Volatile & Less Volatile (Medium)	Petroleum Distillates	Heavy (Kerosene)
N81YAD	Gasoline		Petroleum Distillates	Medium
NE434H	Gasoline		Petroleum Distillates	Heavy
NHCMNJ	*		Petroleum Distillates	Heavy
NK5HAS	Gasoline		Petroleum Distillates	Heavy
NLZ464	Gasoline		Petroleum Distillates	C8-C18
NQFGWJ	Petroleum Distillates	Heavy	Petroleum Distillates	Heavy
NST2VL	Gasoline		Petroleum Distillates	Heavy
NYN3W6	Aromatic Products		Petroleum Distillates, Gasoline	Kerosene
PCJGJ3	Gasoline		Petroleum Distillates	HPD
PPHH94	*		Petroleum Distillates	Heavy
PPNSK3	Gasoline		Petroleum Distillates	Heavy
PQ1AGT	Gasoline		Petroleum Distillates	HPD- Kerosene
PY6F7P	Gasoline		Petroleum Distillates	Kerosene (C9-C16) (ASTM Class 4)
Q88XF6	Gasoline		Petroleum Distillates	Heavy
QD14YE	Gasoline		Petroleum Distillates	Heavy
QDDUSR	Gasoline		Petroleum Distillates	Heavy

TABLE 1b- Nylon Bags

WebCode	Item 2: Class	SubClass	Item 3: Class	SubClass
QHMAZU	Gasoline		Petroleum Distillates	HPD
QK39U5	Gasoline		Petroleum Distillates	Heavy
QPE4PG	Gasoline		Petroleum Distillates	Heavy
QS3NHS	Gasoline		Petroleum Distillates	Heavy
QTT1UH	Gasoline		Petroleum Distillates	Heavy (C11-C16)
R179VK	Gasoline		Petroleum Distillates	Heavy
R1JX4Y	Gasoline		Petroleum Distillates	Heavy
R3DJZA	Gasoline		Petroleum Distillates	Heavy (C8-C18)
R46EMJ	Gasoline		Petroleum Distillates	Medium to Heavy
RH5X6Q	Gasoline		Petroleum Distillates	Heavy
RNX5PY	Gasoline		Petroleum Distillates	Heavy
RSJ4AZ	Negative*		Petroleum Distillates	Heavy
RZGWJT	Gasoline		Petroleum Distillates	Heavy
S51GZE	Gasoline		Petroleum Distillates	Heavy
S8L89V	Others - Miscellaneous*	No ignitable liquid residue were detected	Petroleum Distillates	Medium to Heavy
S983GW	Gasoline		Petroleum Distillates	Heavy
SDAVX9	Gasoline		Petroleum Distillates	Heavy
SE175U	Gasoline		Petroleum Distillates	Heavy
SERY12	*		Petroleum Distillates	Heavy
SFVT16	Gasoline		Petroleum Distillates	Heavy
T1X65X	Gasoline		Petroleum Distillates	Medium to Heavy
T5ENWQ	Gasoline		Petroleum Distillates	Medium
T8ED5F	Gasoline		Petroleum Distillates	Heavy (C10-C17) Kerosene probably
T8RBYZ	Gasoline		Petroleum Distillates	Medium to Heavy
T96D8T	Gasoline		Petroleum Distillates	Heavy
TALXUB	Petroleum Distillates	Medium	Petroleum Distillates	Medium
TBZ6EX	Gasoline		Petroleum Distillates	Heavy
TEHHYL	Gasoline		Petroleum Distillates	Heavy
TKV47S	Gasoline		Petroleum Distillates	Heavy
TL8N12	Gasoline		Petroleum Distillates	Heavy
TNZSP3	Gasoline		Petroleum Distillates	Heavy
U2CMFJ	Gasoline		Petroleum Distillates	Heavy

TABLE 1b- Nylon Bags

WebCode	Item 2: Class	SubClass	Item 3: Class	SubClass
U71DJ6	Gasoline		Petroleum Distillates	Heavy (C9-C17)
UB8VJT	Gasoline		Petroleum Distillates	Heavy
UBZK43	Gasoline		Petroleum Distillates	Heavy
UE8236	Petroleum Distillates	Light	Petroleum Distillates	Heavy (C9-C15)
UH4HY1	Gasoline		Petroleum Distillates	Heavy
UHHVDX	Gasoline		Petroleum Distillates	Medium- Heavy (C9-C17)
UJDDFY	Gasoline		Petroleum Distillates	Heavy
UKQAK4	Gasoline		Petroleum Distillates	Heavy
UNNSXX	Gasoline		Petroleum Distillates	Medium to Heavy (C11-C16)
V5SL4X				
V7W9L8	Gasoline		Petroleum Distillates	Heavy (C9-C17)
VDJZ84	Gasoline		Petroleum Distillates	Heavy
VDY5L8	Gasoline		Petroleum Distillates	Kerosene
VECQBX	Gasoline		Petroleum Distillates	Medium to Heavy
VK5QUY	Gasoline		Petroleum Distillates	Heavy
VS1Q76	Gasoline		Petroleum Distillates	Heavy (C9-C18)
VTAV98	Gasoline		Petroleum Distillates	Heavy
W6TZWV	Gasoline		Petroleum Distillates	Heavy
WA9A7D	Gasoline		Petroleum Distillates	Medium to Heavy
WZTNWS	Gasoline		Petroleum Distillates	Heavy
WZYYU9	Gasoline		Petroleum Distillates	Heavy
XCFYCV	Petroleum Distillates	Heavy	Petroleum Distillates	Heavy
XFJM1Y	Gasoline		Petroleum Distillates	Heavy
XL7GR4	*		Petroleum Distillates	Heavy
XN3UH3	Gasoline		Petroleum Distillates	Heavy
XPSSSP	Gasoline		Petroleum Distillates	HPD (Class 4)
XVBLL6	Gasoline		Petroleum Distillates	Heavy
XXJWJV	Gasoline		Petroleum Distillates	Heavy
Y5Q1QS	Gasoline		Petroleum Distillates	Heavy
Y6VFDD	Gasoline		Petroleum Distillates	Heavy
Y9D664	Gasoline		Petroleum Distillates	Heavy
YE5KR5	Gasoline		Petroleum Distillates	Heavy
YHHLCA	Gasoline		Petroleum Distillates	Heavy

TABLE 1b- Nylon Bags

WebCode	Item 2: Class	SubClass	Item 3: Class	SubClass
YL6XBF	Gasoline		Petroleum Distillates	Heavy
YUG3J5	Gasoline		Petroleum Distillates	Heavy
YUY9HV	Gasoline		Petroleum Distillates	Heavy
Z3P7T1	Gasoline		Petroleum Distillates	Heavy range
Z68MAQ	Gasoline		Petroleum Distillates	Heavy
ZDRADX	Gasoline, Isoparaffinic Products	Medium	Petroleum Distillates	Heavy
ZDT5X4	Gasoline		Petroleum Distillates	Heavy
ZEYQL4	Gasoline		Petroleum Distillates	Heavy
ZKA6WN	Gasoline		Petroleum Distillates	Heavy
ZKDAFW	Gasoline		Petroleum Distillates	HPD
ZN7EQ2	Gasoline		Naphthenic Paraffinic Products	Heavy
ZZAANY	Gasoline		Petroleum Distillates	Heavy

Response Summary		Total Participants: 269	
<u>Item 2</u>		<u>Item 3</u>	
<b>Class: Gasoline</b>	<b>233</b>	<b>Class: Petroleum Distillates</b>	<b>257</b>
<b>Class: Other Responses</b>	<b>26</b>	SubClass: Heavy	200
		SubClass: Medium / Medium to Heavy	30
		<b>Class: Other Responses</b>	<b>9</b>

\* See Conclusions (Table 4) or Additional Comments (Table 5).

# Flammable Recovery Techniques

TABLE 2

WebCode	Adsorption/Elution			Headspace			Other
	Adsorbent	Static/Dynamic	Desorption	Rm Temp	Heated	°C	
119FUQ	✓ Tenax	Dynamic	Thermal	✓			
11B2RW	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulfide				
11DJ39		Static	Thermal		✓	150	
18WYW6	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulfide		✓	65	
1A3FU2	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulfide				
1CSP2H	✓ Carbon/Charcoal	Static	Solvent: Pentane				
1LLZ87		Static	Solvent:		✓	90	Pentane extraction
1LV5A9	✓ SPME (PDMS)	Static	Thermal		✓	75	
1MRLM7					✓	90	
1SNV76	✓ Carbon/Charcoal	Static			✓	68	
1TDB92	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulfide		✓	66	
1ZH118	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulfide		✓	80	
2AQ1K2	✓ Carbon/Charcoal	Static	Solvent: CS2				Direct Extraction CS2
2BECZ7	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulfide				
2FJVRE	✓ Tenax TA	Static	Thermal		✓	60	Heated Headspace @ 90 C
2J48EP	✓ Carbon/Charcoal	Static	Solvent: CS2		✓	70	
2K39N1					✓	90	
2MCCBB	✓ Carbon/Charcoal	Static	Solvent: CS2		✓	75	
36JHEL			Diethyl ether		✓	70	
38335M	✓ Carbon/Charcoal	Static	Solvent: Pentane		✓	60	
38R58H	✓ Carbon/Charcoal	Dynamic	Solvent: CS2		✓		
3B53F5				✓	✓	60	SPME
3BLCXK	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulfide				
3F4DB5	✓ Carbon/Charcoal	Static	Solvent: Pentane/CS2				
3J7YF5	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulfide				
3MLWL7	✓ Carbon/Charcoal	Static	Solvent:		✓	80	
3WGNJ1	✓ Carbon/Charcoal	Static					
3ZQ61F	✓ Carbon/Charcoal	Dynamic	Solvent: Carbon Disulfide				
4351FD	✓ SPME	Static	Thermal				
452AR8	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulfide				Solvent Wash: Petroleum Ether
45YMBQ	✓ Carbon/Charcoal		Solvent: Carbon Disulfide		✓	80	

TABLE 2

WebCode	Adsorption/Elution			Headspace			Other
	Adsorbent	Static/Dynamic	Desorption	Rm Temp	Heated	°C	
46SLH1	✓ Carbon/Charcoal	Static	Solvent: CS2		✓	70	
4HBRZY	✓ Carbon/Charcoal	Static	Solvent: CS2		✓	60	
4HLWW9	✓ Carbon/Charcoal		Solvent: CS2		✓	65	
4TTFSC	✓ Carbon/Charcoal	Static	Solvent: CS2				
4VBUWC	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulfide				
56MKYM	✓ Carbon/Charcoal	Static	Solvent: CS2		✓	65	
59DDEQ	✓ Carbon/Charcoal	Static	Solvent: CS2				
5B4P6H	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulfide		✓	65	
5MF1E6	✓ Carbon/Charcoal	Static	Solvent: CS2		✓	80	
5P837F	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulfide				
65NU9J	✓ Carbon/Charcoal		Solvent: CS2				
698J9P	✓ Carbon/Charcoal	Static	Solvent: Ethyl ether		✓	70	
6BC37W	✓ Tenax		Thermal		✓	100	
6FVD6M	✓ Carbon/Charcoal	Static	Solvent: Ether		✓	70	
6J5PL9	✓ Carbon/Charcoal	Static	Solvent: CS2		✓	65	
6JV56F	✓ Carbon/Charcoal		Solvent: CS2		✓	70	
6YV8XS	✓ Carbon/Charcoal	Static	Solvent: CS2				
6Z493Y	✓ Carbon/Charcoal	Static	Solvent: Dichloromethane		✓	70	Solvent Extraction (Item 3)
74V5WH	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulfide				
77VAEU	✓ Carbon/Charcoal	Static	Solvent: Ethyl Ether		✓	70	
7EQEAR	✓ Carbon/Charcoal		Solvent: CS2Cl2		✓	80	
7EVTWS	✓ Carbon/Charcoal	Static	Solvent: Pentane				
7M5XS5	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulfide				
7QD7X9	✓ Carbon/Charcoal	Static	Solvent: CS2		✓	80	
7QWY6T	✓ Carbon/Charcoal	Static	Solvent: Dichloromethane or Butan-1-ol				
7VMCRU	✓ Carbon/Charcoal	Static	Solvent: Carbon disulfide				
7Y7FHZ	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulfide		✓	60	
81PJJB			Solvent: CS2	✓			
8AXD3A	✓ Carbon/Charcoal	Static	Solvent: CS2				
8J68X3	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulfide		✓	70	
8QNHAD					✓	80	
8TQJ6V	✓ Carbon/Charcoal	Static	Solvent: CS2				

TABLE 2

WebCode	Adsorption/Elution			Headspace			Other
	Adsorbent	Static/Dynamic	Desorption	Rm Temp	Heated	°C	
943GPD	✓ Carbon/Charcoal	Static	Solvent: CS2		✓	60	Static headspace and pentane extraction for Item 3.
94RB9U	✓ Tenax		Thermal		✓	90	
957CMH	✓ Carbon/Charcoal	Static	Solvent: CS2		✓	72	
96DW4Q	✓ Carbon/Charcoal	Static	Solvent: CS2, Toluene	✓	✓	60	
9CGS4Q	✓ Carbon/Charcoal	Static	Solvent: CS2				
9E3781	✓ Carbon/Charcoal		Solvent: CS2				
9R4XFT	✓ Teuax	Static	Thermal		✓	90	
9VBG4Z	✓ SPME		Solvent: Ethyl ether	✓	✓	90	
9YF7NL	✓ Carbon/Charcoal	Static	Solvent: CS2		✓	~80	
A4L5SK	✓ Carbon/Charcoal	Static	Solvent: CS2				
A6Q1YF	✓ Carbon/Charcoal	Dynamic	Solvent: CS2		✓	70	
ABMKF6	✓ Carbon/Charcoal	Dynamic	Solvent: CS2				
ADAXZA	✓ Carbon/Charcoal		Solvent: CS2 (Carbon Disulfide)		✓	60 for 16 hours	
AGVQ9R	✓ Carbon/Charcoal	Static	Solvent: Carbon disulfide				
AH4XE5	✓ Carbon/Charcoal	Static	Solvent: CS2		✓	60	
AYWSRW	✓ Carbon/Charcoal	Dynamic	Solvent: Carbon disulfide				
B29RNX					✓	90	
B8GDFR	✓ Carbon/Charcoal	Static	Solvent: CS2		✓	60	
BA6MN7	✓ Carbon/Charcoal		Solvent: Pentane				
BCRJ2Y	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulfide		✓	80	
BGQV3R	✓ Carbon/Charcoal	Static	Solvent: CS2				
BST12Y	✓ Carbon/Charcoal	Static	Solvent: CS2				
CHCVFS	✓ Carbon/Charcoal		Solvent: CS2		✓	60	
CJCPKS	✓ Carbon/Charcoal	Static	Solvent: CS2		✓	70	
CKQHZS	✓ Tenax TA		Thermal		✓	60	325C
CN9A99					✓	100	
CQBT7B	✓ Carbon/Charcoal	Static	Solvent: Pentane/Carbon Disulfide		✓	88	
CV4F3A	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulfide				
D157DR					✓	90	
D7GXDD	✓ Carbon/Charcoal	Dynamic	Solvent: C5				
DGEWP6	✓ Carbon/Charcoal	Dynamic	Solvent: CS2		✓	85 (5 minute s)	
DHN6G4	✓ Carbon/Charcoal	Static	Solvent: CS2 500 ml		✓	65	

TABLE 2

WebCode	Adsorption/Elution			Headspace			Other
	Adsorbent	Static/Dynamic	Desorption	Rm Temp	Heated	°C	
DJ38NC	✓ Carbon/Charcoal	Static	Solvent: CS2		✓	80	nC5 ext. of Item 3
DMBE6X	✓ Carbon/Charcoal	Static	Solvent: CS2		✓	65	
DN6N7V	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulfide				
DPX2NY	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulfide		✓	65	
DS3UQX	✓ Carbon/Charcoal	Dynamic			✓	80	
DYK9AV					✓	80	
E577RV	✓ Carbon/Charcoal	Static	Solvent: CS2				
E88FTK	✓ Carbon/Charcoal	Static	Solvent: CS2	✓			
EETDG7	✓ TENAX	Dynamic	Thermal		✓	110	
EH6WC4	✓ Carbon/Charcoal	Static	Solvent: DCM	✓	✓	85	Water
ELY39D	✓ Carbon/Charcoal	Static	Solvent: CS2	✓			Pentane Extract of Item 3
EV35KC	✓ Carbon/Charcoal	Dynamic	Solvent: Carbon Disulfide	✓			
EVJG2H	✓ Carbon/Charcoal	Static	Solvent: Diethyl Ether				
EVXF17	✓ Carbon/Charcoal	Static	Solvent: Dichloromethane				
F141GG	✓ Carbon/Charcoal	Static	Solvent: CS2				
F4S876	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulfide				
F5MR97	✓ Carbon/Charcoal	Static	Solvent: CS2				
FB2VKE	✓ Carbon/Charcoal		Solvent: CS2		✓	80	
FBVQYA					✓	75	
FCUR7N	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulfide		✓	66	
FH7AM9	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulfide		✓	60	
FKELLY	✓ Carbon/Charcoal	Dynamic	Solvent: CS2				
FKG6GD	✓ Carbon/Charcoal	Static	Solvent: CS2				
FKVK9Q	✓ Carbon/Charcoal		Solvent: CS2				
FM896E	✓ Carbon/Charcoal	Static	Solvent: Ethyl ether		✓	70	
FNBSV4	✓	Static	Thermal	✓	✓	80	
FNE1QE	✓ Carbon/Charcoal	Static	Solvent: CS2	✓			
FR38F4	✓ Carbon/Charcoal	Static	Solvent: Pentane				
FSDCN1	✓ Carbon/Charcoal		Solvent: CS2				
FZUMHP	✓ Carbon/Charcoal		Solvent: Ethyl Ether		✓	80	
G68EZ8	✓ Carbon/Charcoal	Static	Solvent: CS2: Pentane 1:1				
G8KRPU	✓ Carbon/Charcoal	Static	Solvent: CS2		✓	65	
G8X69J	✓ Carbon/Charcoal	Static	Solvent:				
G979P2	✓ Carbon/Charcoal	Static	Solvent: Pentane				
GC7KK2	✓ Tenax TA		Thermal	✓	✓	130	

TABLE 2

WebCode	Adsorption/Elution			Headspace			Other
	Adsorbent	Static/Dynamic	Desorption	Rm Temp	Heated	°C	
GFVVT8	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulfide		✓	60	heated for 16 hours
GPRTKG	✓ Carbon/Charcoal	Static	Solvent: CS2	✓			
GXGWLZ	✓ Tenax TA	Static	Thermal		✓	60	Heated Headspace @ 90 C
GZ8HEF	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulfide				
H71CQJ	✓ Carbon/Charcoal	Static	Solvent: CS2		✓	80	
HEJDD9	✓ Carbon/Charcoal ACS	Static	Solvent: CS2		✓	70/16 hrs.	
HJU6Z2	✓ Tenax	Dynamic	Thermal	✓	✓	130	
HNPQ4B	✓ Carbon/Charcoal	Static	Solvent: CS2		✓	80	
HQQ8UN	✓ Carbon/Charcoal, ACS		Solvent: CS2		✓	60	
HYAMB4	✓ Carbon/Charcoal	Static	Solvent: CS2				
HZ65C6	✓ Carbon/Charcoal		Solvent: CS2		✓	65	Used .3 ml to extract charcoal strip
J1UFJY	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulphide		✓	80	
J23BS9	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulfide	✓			
J3WXNL					✓	90	
J52HC7	✓ Carbon/Charcoal	Static	Solvent: Pentane		✓	64	
JBENHN	✓ Carbon/Charcoal	Static	Solvent: CS2				
JCMP4C	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulfide				
JD3R1C	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulfide				
JDZ4SL	✓ Carbon/Charcoal	Static	Solvent: CS2		✓	80-85	
JK5ZBL	✓ Carbon/Charcoal						
JNPZJE	✓ Carbon/Charcoal	Static	Solvent: CS2				
JP3BEY	✓ Carbon/Charcoal	Static	Solvent: CS2		✓	80	
JT861U	✓ Carbon/Charcoal	Static	Solvent: CS2		✓	65	
JY7GBL	✓ Carbon/Charcoal	Static	Solvent: Pentane				
K2Y6UC	✓ Carbon/Charcoal	Dynamic	Solvent: CH2Cl2				
KE7TBA	✓ Carbon/Charcoal	Static	Solvent: CS2		✓		
KGXCF3	✓ Tenax	Dynamic	Thermal	✓			Also solvent extraction of the residues
KGZKQ2	✓ Carbon/Charcoal	Static	Solvent: CS2				
KMXWUD	✓ Carbon/Charcoal						
KXNZN6	✓ Carbon/Charcoal	Dynamic	Solvent: CS2				
L2HUYM	✓ Carbon/Charcoal	Static	Solvent: CS2				
LJ7479	✓ Carbon/Charcoal	Static	Solvent: CS2		✓	60	
LLDGV3	✓ Carbon/Charcoal		Solvent: CS2		✓	65	

TABLE 2

WebCode	Adsorption/Elution			Headspace			Other
	Adsorbent	Static/Dynamic	Desorption	Rm Temp	Heated	°C	
LLS6YF	✓ Carbon/Charcoal		Solvent: Carbon Disulfide				
LMXUYD		Dynamic	Thermal		✓	100	
LNTABA	✓ Tanex		Solvent: Pentane		✓	90	SPME- 100 um PDMS
LULG3J	✓ Carbon/Charcoal	Static	Solvent: CS2				
M1MX9J	✓ Carbon/Charcoal	Static	Solvent: CS2				
M8LHFK	✓ Carbon/Charcoal	Static	Solvent: CS2				
ME9XAJ	✓ Carbon/Charcoal	Static	Solvent: n-Pentane		✓	80	
MH8F6Q	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulfide		✓	80	
ML3831	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulfide				
ML6UTF	✓ DFLEX	Static	Solvent: CH2Cl2				
MPTGKH	✓ Carbon/Charcoal	Static	Solvent: CS2				
MZ6D4L	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulfide		✓	60	
N7H8Q7	✓ Carbon/Charcoal		Solvent: Carbon Disulfide		✓	80	
N81YAD					✓	90	
NE434H	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulfide	✓			
NHCMNJ	✓ Carbon/Charcoal	Static	Solvent: Pentane		✓	60	
NK5HAS							SPME
NLZ464	✓ SPME	Static	Thermal		✓	50	
NQFGWJ	✓ SPME	Static	Thermal				
NST2VL	✓ Carbon/Charcoal	Static	Solvent: Dichloromethane		✓	70	Solvent Extraction (Item 3)
NYN3W6	✓ Carbon/Charcoal		Solvent: Carbon Disulfide		✓	80	
PCJGJ3	✓ Carbon/Charcoal		Solvent: CS2		✓	60	
PPHH94	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulfide				
PPNSK3	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulfide		✓	60	
PQ1AGT	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulfide		✓	70	
PY6F7P					✓	60	liquid-liquid extraction with diethylether
Q88XF6	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulfide				
QD14YE	✓ Carbon/Charcoal	Static	Solvent: CS2				
QDDUSR	✓ DFLEX		Solvent: CS2		✓	80	
QHMAZU	✓ Carbon/Charcoal	Dynamic	Solvent: CS2		✓	95	
QK39U5	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulfide		✓	70	
QPE4PG	✓ Carbon/Charcoal		Solvent: CS2		✓	70	Passive Headspace

TABLE 2

WebCode	Adsorption/Elution			Headspace			Other
	Adsorbent	Static/Dynamic	Desorption	Rm Temp	Heated	°C	
QS3NHS	✓ DFLEX	Static	Solvent: carbon disulfide				
QTT1UH	✓ Carbon/Charcoal	Static	Solvent: CS2		✓	60	
R179VK	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulfide		✓	80	
R1JX4Y	✓ Carbon/Charcoal	Static	Solvent: CS2				
R3DJZA					✓	90	
R46EMJ	✓ SPME, 100 um PDMS	Dynamic	Thermal	✓			
RH5X6Q	✓ Carbon/Charcoal	Static	Solvent: Dichloromethane	✓	✓	90	
RNX5PY	Carbon/Charcoal	Static	Solvent: CS2				
RSJ4AZ	✓ Carbon/Charcoal	Static	Solvent: CS2		✓	70	
RZGWJT	✓ Carbon/Charcoal	Static	Solvent: CS2		✓	85	
S51GZE	✓ Carbon/Charcoal	Static	Solvent: CS2		✓	60	
S8L89V	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulfide				undecane
S983GW	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulfide				
SDAVX9	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulfide				
SE175U	✓ Carbon/Charcoal						
SERY12	✓ Carbon/Charcoal	Static	Solvent: Pentane				
SFVT16	✓ Tenax	Dynamic	Thermal	✓			
T1X65X	✓ SPME (85 um PDMS)	Static	Solvent: ether; Thermal				
T5ENWQ	✓ Carbon/Charcoal	Static	Solvent: Dichloromethane	✓	✓	85	Distilled Water
T8ED5F	✓ Carbon/Charcoal	Static	Solvent: Carbon disulfide				
T8RBYZ	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulfide	✓			
T96D8T	✓ Carbon/Charcoal	Dynamic	Solvent: CS2		✓	85 (5 minute s)	
TALXUB					✓	90	
TBZ6EX	✓ Carbon/Charcoal	Dynamic	Solvent: Carbon Disulfide	✓			
TEHHYL	✓ Carbon/Charcoal		Solvent: Carbon Disulfide		✓	80	
TKV47S	✓ Carbon/Charcoal	Static	Solvent: CS2		✓	85	
TL8N12	✓ Carbon/Charcoal	Static	Solvent: 5% CS2 in Pentane		✓	65	
TNZSP3	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulfide				
U2CMFJ	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulfide				Solvent Wash: Petroleum Ether
U71DJ6	✓ Carbon/Charcoal	Static	Solvent: CS2	✓			Solvent-Pentane

TABLE 2

WebCode	Adsorption/Elution			Headspace			Other
	Adsorbent	Static/Dynamic	Desorption	Rm Temp	Heated	°C	
UB8VJT	✓ Carbon/Charcoal	Static	Solvent: CS2				
UBZK43	✓ Carbon/Charcoal	Dynamic	Solvent: Carbon Disulfide		✓	95	
UE8236	✓ Carbon/Charcoal	Static	Solvent: Diethyl ether		✓	80	
UH4HY1	✓ Carbon/Charcoal	Static	Solvent: CS2, Toluene				
UHHVDX	✓ Carbon/Charcoal	Static, Dynamic	Solvent: CS2		✓	70	Solvent extraction (solvent CS2) employed for Item 3 in addition to headspace analysis.
UJDDFY	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulfide		✓	80	
UKQAK4	✓ Carbon/Charcoal	Static	Solvent: CS2				
UNNSXX	✓ Carbon/Charcoal	Static	Solvent: CS2				in addition, solvent extraction on #3
V5SL4X	✓ Carbon/Charcoal	Static			✓	60	
V7W9L8	✓ Carbon/Charcoal		Solvent: CS2				
VDJZ84	✓ Carbon/Charcoal	Static	Solvent: CS2	✓	✓	70	CS2 extracts charcoal strip
VDY5L8	✓ Carbon/Charcoal	Static					Solvent Extraction
VECQBX	✓ SPME				✓	130	
VK5QUY	✓ Carbon/Charcoal	Static	Solvent: CS2				
VS1Q76					✓	100	Solvent extraction with ether
VTAV98					✓	90	
W6TZWW	✓ Carbon/Charcoal	Static	Solvent: CS2		✓	85	
WA9A7D	✓ Carbon/Charcoal; SPME (PDMS)	Static	Solvent: Dichloromethane; Thermal		✓	60	
WZTNWS	✓ Carbon/Charcoal	Static	Solvent: CS2				
WZYU9	✓ Carbon/Charcoal	Static	Solvent: CS2		✓	65	
XCFYCV	✓ SPME	Static	Thermal	✓	✓	80	
XFJM1Y	✓ Carbon/Charcoal	Static	Solvent: CS2				
XL7GR4			Solvent: Pentane; Thermal				
XN3UH3	✓ Carbon/Charcoal	Static	Solvent: CS2	✓			
XPSSSP	✓ Carbon/Charcoal	Static	Solvent: DCM		✓	65	
XVBLL6	✓ Carbon/Charcoal	Static	Solvent: CS2		✓	70	
XXJWJV	✓ Carbon/Charcoal	Static	Solvent: Diethyl Ether		✓	70	
Y5Q1QS	✓ Carbon/Charcoal	Static	Solvent: CS2				
Y6VFDD	✓ Carbon/Charcoal	Static	Solvent: CS2		✓	80	
Y9D664	✓ Carbon/Charcoal	Static	Solvent: CS2		✓	60	
YE5KR5	✓ Carbon/Charcoal	Static	Solvent: CS2		✓	80	
YHHLCA	✓ Tenax TA		Thermal				Solvent extraction, Hexane

TABLE 2

WebCode	Adsorption/Elution			Headspace			Other
	Adsorbent	Static/Dynamic	Desorption	Rm Temp	Heated	°C	
YL6XBF	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulfide		✓	65	
YUG3J5	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulfide				Also did a solvent extract of Item 3
YUY9HV	✓ Carbon/Charcoal	Static	Solvent: CS2		✓	80	
Z3P7T1	✓ Carbon/Charcoal	Static	Solvent: CS2 and toluene	✓	✓	60	
Z68MAQ	✓ Carbon/Charcoal	Static	Solvent: CS2				
ZDRADX	✓ Carbon/Charcoal	Static	Solvent: CS2		✓	70/16 hrs	
ZDT5X4	✓ Carbon/Charcoal	Static	Solvent: CS2		✓	60	
ZEYQL4	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulfide		✓	56	
ZKA6WN	✓ Porapak Q	Dynamic	Thermal	✓			Dichloromethane extract of Item 3 for liquid injection GCMS.
ZKDAFW	✓ Carbon/Charcoal	Static	Solvent: CS2				
ZN7EQ2					✓	100	
ZZAANY	✓ Carbon/Charcoal	Static	Solvent: Carbon Disulfide		✓	70	

### Response Summary

Participants	Adsorption/Elution	Headspace:	Rm Temp	Heated
<b>269</b>	<b>244</b>		<b>29</b>	<b>149</b>

# Identification Techniques

TABLE 3

WebCode	GC	GC/MS	Other	WebCode	GC	GC/MS	Other	WebCode	GC	GC/MS	Other
119FUQ		✓		65NU9J	✓	✓		BCRJ2Y	✓	✓	
11B2RW		✓		698J9P		✓		BGQV3R	✓	✓	
11DJ39	✓	✓		6BC37W	✓	✓		BST12Y		✓	
18WYW6		✓		6FVD6M		✓		CHCVFS		✓	
1A3FU2		✓		6J5PL9		✓		CJCPKS		✓	
1CSP2H		✓		6JV56F		✓		CKQHZS		✓	
1LLZ87	✓	✓		6YV8XS		✓		CN9A99	✓	✓	
1LV5A9		✓		6Z493Y		✓		CQBT7B		✓	
1MRLM7		✓		74V5WH		✓		CV4F3A		✓	
1SNV76		✓		77VAEU		✓		D157DR	✓		
1TDB92		✓		7EQEAR		✓		D7GXDD		✓	
1ZH118		✓		7EVTWS		✓		DGEWP6		✓	
2AQ1K2		✓		7M5XS5		✓		DHN6G4		✓	
2BECZ7		✓		7QD7X9		✓		DJ38NC		✓	
2FJVRE	✓			7QWY6T		✓	GC/FID	DMBE6X	✓		
2J48EP	✓			7VMCRU		✓		DN6N7V		✓	
2K39N1		✓		7Y7FHZ		✓		DPX2NY		✓	
2MCCBB	✓	✓		81PJJB		✓		DS3UQX			
36JHEL	✓	✓		8AXD3A		✓		DYK9AV		✓	
38335M		✓		8J68X3		✓		E577RV		✓	
38R58H	✓	✓		8QNHAD		✓		E88FTK		✓	
3B53F5	✓	✓		8TQJ6V		✓		EETDG7	✓		
3BLCXK	✓			943GPD		✓		EH6WC4		✓	
3F4DB5	✓	✓		94RB9U	✓			ELY39D		✓	
3J7YF5		✓		957CMH		✓		EV35KC		✓	
3MLWL7	✓	✓		96DW4Q		✓		EVJG2H		✓	
3WGNJ1		✓		9CGS4Q		✓		EVXF17		✓	
3ZQ61F		✓		9E3781		✓		F141GG		✓	
4351FD		✓		9R4XFT		✓		F4S876	✓	✓	
452AR8	✓	✓		9VBG4Z		✓		F5MR97		✓	
45YMBQ		✓		9YF7NL	✓		odor	FB2VKE		✓	
46SLH1	✓	✓		A4L5SK		✓		FBVQYA	✓	✓	
4HBRZY		✓		A6Q1YF		✓		FCUR7N		✓	
4HLWW9		✓		ABMKF6		✓		FH7AM9		✓	
4TTFSC		✓		ADAXZA		✓		FKELLY	✓	✓	
4VBUWC		✓		AGVQ9R		✓		FKG6GD		✓	
56MKYM		✓		AH4XE5		✓		FKVK9Q		✓	
59DDEQ	✓	✓		AYWSRW		✓		FM896E		✓	
5B4P6H		✓		B29RNX		✓		FNBSV4		✓	
5MF1E6	✓	✓		B8GDFR		✓		FNE1QE		✓	
5P837F		✓		BA6MN7		✓		FR38F4		✓	

TABLE 3

WebCode	GC	GC/MS	Other	WebCode	GC	GC/MS	Other	WebCode	GC	GC/MS	Other
FSDCN1		✓		LULG3J		✓		SE175U		✓	
FZUMHP		✓		M1MX9J	✓	✓		SERY12		✓	
G68EZ8		✓		M8LHFK		✓		SFVT16	✓		
G8KRPU	✓			ME9XAJ		✓		T1X65X	✓	✓	
G8X69J		✓		MH8F6Q		✓		T5ENWQ	✓	✓	
G979P2		✓		ML3831		✓		T8ED5F		✓	
GC7KK2		✓		ML6UTF	✓	✓		T8RBYZ		✓	
GFVVT8		✓		MPTGKH	✓	✓		T96D8T		✓	
GPRTKG		✓		MZ6D4L		✓		TALXUB	✓	✓	
GXGWLZ	✓			N7H8Q7		✓		TBZ6EX		✓	
GZ8HEF		✓		N81YAD	✓	✓		TEHHYL		✓	
H71CQJ		✓		NE434H		✓		TKV47S	✓	✓	FID
HEJDD9		✓		NHCMNJ		✓		TL8N12		✓	
HJU6Z2		✓		NK5HAS		✓		TNZSP3	✓	✓	
HNPQ4B		✓		NLZ464		✓		U2CMFJ	✓	✓	
HQQ8UN		✓		NQFGWJ	✓			U71DJ6	✓	✓	
HYAMB4	✓	✓		NST2VL		✓		UB8VJT		✓	
HZ65C6		✓		NYN3W6		✓		UBZK43		✓	
J1UFJY	✓			PCJGJ3		✓		UE8236	✓	✓	
J23BS9		✓		PPHH94		✓		UH4HY1		✓	
J3WXNL	✓	✓		PPNSK3		✓		UHHVDX	✓	✓	
J52HC7		✓		PQ1AGT		✓		UJDDFY		✓	
JBENHN		✓		PY6F7P	✓	✓		UKQAK4		✓	
JCMP4C		✓		Q88XF6		✓		UNNSXX		✓	
JD3R1C	✓			QD14YE	✓	✓		V5SL4X			
JDZ4SL		✓		QDDUSR		✓		V7W9L8		✓	
JK5ZBL	✓	✓		QHMAZU		✓		VDJZ84	✓		
JNPZJE	✓	✓		QK39U5		✓		VDY5L8		✓	
JP3BEY		✓		QPE4PG		✓		VECQBX	✓	✓	
JT861U		✓		QS3NHS		✓		VK5QUY		✓	
JY7GBL		✓		QTT1UH		✓		VS1Q76		✓	
K2Y6UC		✓		R179VK	✓	✓		VTAV98	✓		
KE7TBA		✓		R1JX4Y		✓		W6TZWV		✓	
KGXCF3		✓		R3DJZA	✓	✓		WA9A7D		✓	
KGZKQ2	✓	✓		R46EMJ	✓	✓		WZTNWS		✓	
KMXWUD		✓		RH5X6Q	✓	✓		WZYYU9		✓	
KXNZN6		✓		RNX5PY		✓		XCFYCV		✓	
L2HUYM	✓	✓		RSJ4AZ		✓		XFJM1Y		✓	
LJ7479	✓			RZGWJT	✓	✓		XL7GR4	✓		
LLDGV3		✓		S51GZE		✓		XN3UH3		✓	
LLS6YF		✓		S8L89V		✓		XPSSSP		✓	
LMXUYD		✓		S983GW	✓			XVBLL6	✓	✓	
LNTABA		✓		SDAVX9		✓		XXJWJV		✓	

TABLE 3

WebCode	GC	GC/MS	Other	WebCode	GC	GC/MS	Other	WebCode	GC	GC/MS	Other
Y5Q1QS		✓									
Y6VFDD		✓									
Y9D664		✓									
YE5KR5	✓	✓									
YHHLCA		✓									
YL6XBF		✓									
YUG3J5		✓									
YUY9HV		✓									
Z3P7T1		✓									
Z68MAQ		✓									
ZDRADX		✓									
ZDT5X4		✓									
ZEYQL4	✓	✓									
ZKA6WN		✓									
ZKDAFW		✓									
ZN7EQ2		✓									
ZZAANY		✓									

<b>Response Summary</b>		
Participants	GC	GC/MS
<b>269</b>	<b>69</b>	<b>248</b>

# Conclusions

TABLE 4

WebCode	Conclusions
119FUQ	TD-GC-MS* analysis of Item 1 (the "wick" from the loading dock) provided conclusive scientific support for the presence of petrol (gasoline). TD-GC-MS analysis of Item 3 (the "wick" from the manager's office) provided conclusive scientific support for the presence of kerosene (a Class 4 (medium to heavy) petroleum distillate according to the ASTM classification system), with an approximate boiling range of n-octane to n-hexadecane. TD-GC-MS analysis of Item 2 (the "wick" from the storage room) provided conclusive scientific support for the presence of [evaporated] petrol (gasoline). In addition, there was also evidence of kerosene, with an approximate boiling range of n-octane to n-hexadecane. On consideration of the data, it is possible that Item 2 contained a mixture of the two ignitable liquids detected in Item 1 and Item 3, namely petrol (gasoline) and kerosene in approximately equal proportions. *TD-GC-MS involves flash heating and cryo-focussing of the volatile substances sampled from an exhibit. These volatiles are subsequently analyzed by gas chromatography (GC), an analytical technique that separates the constituents of a mixture into their individual components. The components are then detected using mass spectrometry (MS), which is a technique that enables the identification of individual molecules based on their chemical structure.
11B2RW	Instrumental analysis of Exhibit 1A revealed the presence of gasoline. Instrumental analysis of Exhibit 1B revealed the presence of gasoline. Instrumental analysis of Exhibit 1C revealed the presence of a heavy petroleum distillate, examples include kerosene, diesel fuel, and fuel oil. 1D: This item was submitted as a control. 1E: This item was submitted as a control.
11DJ39	No ignitable liquids were identified in the control bags. Item 1: the ignitable liquid was identified as evaporated gasoline. Item 2: the ignitable liquid was identified as evaporated gasoline (evaporation percentage higher than Item 1). Item 3: The ignitable liquid was identified as a heavy petroleum distillate. The compounds pristane and phytane were identified. Diesel fuel is an example of a heavy petroleum distillate.
18WYW6	The evidence was examined following standard laboratory and ASTM guidelines and procedures. Items 1 and 2 each contain an ignitable liquid residue, gasoline. Gasoline can originate from any brand or grade of gasoline, including gasohol. Item 3 contains an ignitable liquid residue, a heavy petroleum distillate. Heavy petroleum distillate can originate from kerosene, diesel fuel, some jet fuels, and some charcoal starters. Items 4 and 5 each were examined as a control.
1A3FU2	Gasoline was identified in Items 1 and 2. A heavy petroleum distillate was identified in Item 3. Heavy petroleum distillates include, but are not limited to, kerosene, diesel fuel, and some brands of charcoal starters.
1CSP2H	Examination of Item 1 and Item 2 revealed the presence of gasoline. Examination of Item 3 revealed the presence of a heavy petroleum distillate, an example of which includes a charcoal starter.
1LLZ87	Item 1 contains: ethanol, gasoline, de-aromatized products (medium range) that can be found on charcoal starters, paint thinners, or kerosene. Item 2: No flammable product was found. Item 3 contains: De-aromatized products (medium range slightly to heavy (C9-C17)) that can be found on charcoal starters, paint thinners, or kerosene.
1LV5A9	Item 1 contains gasoline. GC/MS chromatogram shows us characteristic but somewhat evaporated peak pattern of gasoline. There are significant aromatic compounds and characteristic naphthalenes are also present. Item 2 contains gasoline. GC/MS chromatogram shows us characteristic but more evaporated gasoline peak pattern than Item 1. There are characteristic aromatic compounds and naphthalenes. Item 3 contains kerosene. There are significant and consecutive n-alkane peaks of C11 to C17. Characteristic patterns of cycloparaffinic and isoparaffinic compounds appear among the n-alkanes but less abundant than n-alkanes.
1MRLM7	I found the Item 1 to contain light petroleum distillates. Item 2 to contain gasoline and Item 3 to contain medium isoparaffinic products.
1SNV76	Gasoline residues were detected in Items 1 and 2. A heavy petroleum distillate was detected in Item 3. Examples of heavy petroleum distillates include kerosene, some lamp oils, and some charcoal starters.
1TDB92	Gasoline was found on the following exhibit(s): 1 and 2. A heavy petroleum distillate was found on the

TABLE 4

WebCode	Conclusions
	following exhibit(s): 3. No ignitable liquid was determined on the following exhibit(s): 4 and 5.
1ZH118	Within a reasonable degree of scientific certainty and based upon education, training and experience, the Chemical Laboratory holds the following opinions. A foreign ignitable liquid was isolated on Items 1 and 2. The foreign ignitable liquid isolated on Items 1 and 2 has been identified as fire-aged gasoline. The term "fire-aged" implies that the original petroleum product, in this case gasoline, was exposed to heat and/or time, causing the more volatile components to be consumed. A foreign ignitable liquid was isolated on Item 3. The foreign ignitable liquid isolated on Item 3 has been identified as a fuel oil #1 type product. Some examples of fuel oil #1 type products are, but are not limited to, kerosene, some lamp oils, some degreasers, and some spot cleaners.
2AQ1K2	Item 1: Analysis conducted on Item 1 was inconclusive due to an unidentified pattern. The origin of the unidentified pattern may arise from the substrate or an ignitable liquid. Item 2: Analysis conducted on Item 2 disclosed the presence of an ignitable liquid from the gasoline class. This class includes all brands and grades of gasoline, including gasohol, and some types of camp fuels. Item 3: Analysis conducted on Item 3 disclosed the presence of an ignitable liquid from the heavy petroleum distillate class (HPD). This class includes all brands and blends of kerosene and diesel fuel and some lamp oils, charcoal starters, and jet fuels.
2BECZ7	Items 1 and 2 each contain an ignitable liquid residue, gasoline. Gasoline can originate from any brand or grade of gasoline or gasohol. Item 3 contains an ignitable liquid residue, a heavy petroleum distillate. A heavy petroleum distillate can originate from kerosene, diesel fuel, some charcoal starters, and some jet fuels. Items 4 and 5 were examined as controls.
2FJVRE	Item 1, petrol was detected in the contents of this item. Item 2, traces of a hydrocarbon fraction, containing the high boiling components of petrol, were detected in the contents of this item. Item 3, a hydrocarbon fraction, similar to heating oil, was detected in the contents of this item.
2J48EP	Item 1 was found to contain a mixture of gasoline and ethanol. Item 2 was found to contain gasoline. Item 3 was found to contain a heavy petroleum distillate (HPD). Examples of HPDs are kerosene, diesel fuel, some jet fuels, and some charcoal starters. No ignitable liquids were detected in the control bags.
2K39N1	On analysis: I found the presence of gasoline in the debris 'Item 1' and 'Item 2.' I found the presence of petroleum distillate products and heavy subclass in the debris 'Item 3.'
2MCCBB	Item 1, residual gasoline. Item 2, residual gasoline. Item 3, heavy petroleum distillate. Examples of heavy petroleum distillates are kerosene, diesel fuel, and No. 2 fuel oil.
36JHEL	Item 1, flammable liquid was detected on this sample; some components consistent with moderately evaporated petrol, but with additional branched chain octanes raising the possibility of the flammable liquid actually being a higher octane or octane modified petrol. This is similar in some respects to high-octane petrols in [this Country], but trimethylpentane is the most common additive. Item 2, very low levels of moderately evaporated petrol were detected on this sample, however the significance of such levels is questionable. Item 3, a medium petroleum distillate, consistent with kerosene was detected on the sample. Items 4 and 5, no flammable liquid was detected on either sample.
38335M	Gasoline was found in Item 1 and Item 2. A heavy petroleum distillate (HPD) was detected in Item 3. Examples of which include kerosene. No ignitable liquid residue was detected in the Kapak control bag and in the nylon control bag.
38R58H	Item 1: Gasoline was identified. Item 2: Gasoline was identified. Item 3: A heavy petroleum product was identified. Examples of this type product are kerosene, diesel fuel, and some charcoal starters.
3B53F5	Item 1 contains gasoline (fresh). Item 2 contains an evaporated gasoline. Item 3 contains a "kerosene" with an elevated level of aromatics or a trace of gasoline.
3BLCXK	Physical and chemical analyses were performed on Item 1, 2, and 3. Items 1 and 2 contained gasoline. Item 3 contained a Heavy (C10 to C15) petroleum product which can be found in, but is not limited to, some diesel fuel, kerosene, some jet fuels, some charcoal starters.
3F4DB5	Item 1: A gasoline was chromatographically detected. Examples of a gasoline include all grades and brands of automobile gasoline including gasohol. Item 2: Same as Item 1. Item 3: A fuel oil was chromatographically detected. Examples of a fuel oil include #1 fuel oil, Jet "A" aviation fuel, some

TABLE 4

WebCode	Conclusions
	charcoal starters, some torch fuels, some lamp oils, some paint thinners, some solvents for insecticides and polishes, #2 fuel oil and diesel fuel.
3J7YF5	A residue of gasoline, an ignitable liquid, was identified in Item 1. A residue of gasoline, an ignitable liquid, was identified in Item 2. An ignitable liquid residue consistent with a heavy petroleum distillate was identified in Item 3. Examples of the heavy petroleum distillate class of ignitable liquids include kerosene, diesel fuel, Number 1 and Number 2 fuel oils, some jet fuels, some charcoal starters, and some solvents for insecticides.
3MLWL7	Results of Fire Debris Analysis: Item 1 and 2: The volatile contents were recovered using heated headspace recovery method and analyzed by gas chromatography, and were extracted by passive headspace adsorption using an activated charcoal strip recovery method and analyzed by gas chromatography/ mass spectrometry. Gasoline was detected. Item 3: The volatile contents were recovered using heated headspace recovery method and analyzed by gas chromatography, and were extracted by passive headspace adsorption using an activated charcoal strip recovery method and analyzed by gas chromatography/ mass spectrometry. A heavy petroleum product (e.g. kerosene, diesel fuel, fuel oil, etc.) was detected. Item 4 and 5: The volatile contents were recovered using heated headspace recovery method and analyzed by gas chromatography, and were extracted by passive headspace adsorption using an activated charcoal strip recovery method and analyzed by gas chromatography/ mass spectrometry. The Items were analyzed as a comparison sample
3WGNJ1	Item 1: Gasoline found. This includes all brands of gasoline and gasohol. Item 2: Gasoline found. This includes all brands of gasoline and gasohol. Item 3: A heavy petroleum distillate found. Some examples of heavy petroleum distillate are kerosene, diesel fuel, some jet fuels, and some charcoal starters. Item 4: No flammable or combustible liquids were detected. Item 5: No flammable or combustible liquids were detected.
3ZQ61F	Item 1 contains a flammable/ ignitable liquid consistent with gasoline. Item 2 no flammable/ ignitable liquid could be detected or confirmed. Item 3 contains a flammable/ ignitable liquid consistent with a medium petroleum distillate.
4351FD	[Conclusions not reported]
452AR8	Examination of Items 1 and 2 showed residual gasoline. Examination of Item 3 showed a heavy petroleum distillate. Examples of heavy petroleum distillates are kerosene and #2 Fuel oil. Items 4 and 5 failed to show accelerants.
45YMBQ	The exhibit material as mentioned Item 1 contains gasoline. Item 2 contains aromatic products which can be any of the cleaning solvents, varnish remover or paint removers. Item 3 contain kerosene which is a heavy petroleum distillate.
46SLH1	Items 1 and 2 each contained a volatile mixture which was consistent with gasoline. Item 3 contained a volatile mixture which was consistent with a heavy petroleum distillate (HPD). Examples of such products include kerosenes, some charcoal lighters, and some torch fuels.
4HBRZY	Item 1: Gasoline found. This includes all brands of gasoline and gasohol. Item 2: Gasoline found. This includes all brands of gasoline and gasohol. Item 3: A heavy, petroleum distillate found some examples of HPD are kerosene, diesel fuel, some jet fuels, and some charcoal starters. Item 4: No flammable or combustible liquids detected. Item 5: No flammable or combustible liquids detected.
4HLWW9	Sample 1 - Analysis indicates the presence of gasoline. Sample 2- Analysis indicates the presence of gasoline. Sample 3- Analysis indicates the presence of a heavy petroleum distillate consistent with kerosene.
4TTFSC	Analysis conducted on Items 1 and 2 disclosed the presence of ignitable liquid(s) from the gasoline class. This class includes all brands and grades of gasoline, gasohol, and some types of camp fuels. Analysis conducted on Item 3 disclosed the presence of ignitable liquid(s) from the heavy petroleum distillate (HPD) class. This class includes all brands and blends of kerosene and diesel fuel, and some lamp oils, charcoal starters, and jet fuels. No ignitable liquid(s) were detected in Items 4 and 5. Extracts of the evidence from Items 1-5 have been returned as a fire debris packet along with the original containers for possible further analysis.
4VBUWC	Items 1 and 2 - The submitted sample was analyzed using a passive headspace technique and gas-liquid

TABLE 4

WebCode	Conclusions
	chromatography/mass spectrometry (GC-MS). Gasoline was detected in the sample. Item 3 - The submitted sample was analyzed using a passive headspace technique and gas-liquid chromatography/mass spectrometry (GC-MS). A heavy petroleum distillate was detected. Examples of this type of ignitable liquid include: kerosene, diesel fuel, some jet fuels, and some charcoal starters.
56MKYM	Item 1: Gasoline found. This includes all brands and grades of domestic gasoline. Item 2: Gasoline found. This includes all brands and grades of domestic gasoline. Item 3: Heavy petroleum product found. Examples include: diesel fuel, kerosene, and some lamp oils.
59DDEQ	Item 1 and Item 2 contain gasoline. Item 3 contains a heavy petroleum distillate (HPD). Examples of an HPD include: kerosene, diesel fuel, and some jet fuels. No ignitable fluid was identified in Items 4 or 5.
5B4P6H	Gasoline was identified in Items 1 and 2. A petroleum distillate in the heavy range was identified in Item 3, examples of which include kerosene, diesel fuel, and some charcoal starters. There were no ignitable liquids identified in Items 4 and 5.
5MF1E6	Item 1 and 2: The volatile contents were recovered using heated headspace recovery method and analyzed by gas chromatography, and were extracted by passive headspace adsorption using an activated charcoal strip recovery method and analyzed by gas chromatography/ mass spectrometry. Gasoline was detected. Item 3: The volatile contents were recovered using heated headspace recovery method and analyzed by gas chromatography, and were extracted by passive headspace adsorption using an activated charcoal strip recovery method and analyzed by gas chromatography/ mass spectrometry. A heavy petroleum product (e.g... diesel fuel, kerosene, fuel oil, etc.) was detected.
5P837F	The analysis of Items 1 and 2 revealed the presence of a petroleum product characteristic of gasoline. The alkane pattern in Item 2 is comparable to the alkane pattern in Item 1, however, the abundance of the alkane pattern in Item 2 is considerably weaker than the alkane pattern in Item 1. The analysis of Item 3 revealed the presence of a heavy petroleum distillate, examples of which include kerosene, diesel fuel, and some charcoal lighter fluids.
65NU9J	Items 1 and 2 were found to contain gasoline. Item 2 is more weathered than Item 1. Item 3 contains kerosene (ASTM Class 4).
698J9P	Analysis of Item 1 and Item 2 detected the presence of gasoline. Analysis of Item 3 detected the presence of a heavy petroleum distillate (examples: kerosene, some charcoal starters, diesel fuel, etc.)
6BC37W	Analysis of three of the submitted items revealed the presence of petrol (gasoline) associated with the wick from the storage room (Item 2). A paraffinic accelerant was associated with the wick from the Manager's office (Item 3). The nylon control bag did not reveal the presence of accelerants.
6FVD6M	Analysis by gas chromatography/mass spectrometry of the cloth material (Item 1) reveals the presence of gasoline. Analysis by gas chromatography/ mass spectrometry of the cloth material (Item 2) reveals the presence of gasoline. Analysis by gas chromatography/mass spectrometry of the cloth material (Item 3) reveals the presence of a heavy petroleum distillate (HPD). Examples of HPD's include: Kerosene, Diesel fuel, Fuel Oil No. 1, Fuel Oil No. 2, Jet fuel, some paint thinners, some torch fuels, some lamp oils and some solvents for insect sprays and polishes. Analysis by gas chromatography/mass spectrometry of the Kapak control sample fails to reveal the presence of any ignitable liquids. Analysis by gas chromatography/mass spectrometry of the Nylon control sample fails to reveal the presence of any ignitable liquids.
6J5PL9	Item 1: Instrumental analysis detected the presence of gasoline. Item 2: Instrumental analysis detected the presence of gasoline. Item 3: Instrumental analysis detected the presence of a heavy petroleum distillate. Examples include but are not limited to kerosene and diesel fuel.
6JV56F	Lab Item 1, Agency Item 1, one white cloth fabric swatch contains gasoline. Lab Item 2, Agency Item 2, one white cloth fabric swatch, no ignitable liquid was detected. Lab Item 3, Agency Item 3, one white cloth fabric swatch contains a heavy petroleum distillate. Lab Item 4, Agency Item n/a (control), one white cloth fabric swatch, no ignitable liquid was detected. Lab Item 5, Agency n/a (control), one white cloth fabric swatch, no ignitable liquid was detected. Lab Item 6, Agency Item 3 (resupplied), one white cloth fabric swatch contains a heavy petroleum distillate. Lab Item 7, Agency Item 2 (resupplied), one white cloth fabric swatch contains gasoline.
6YV8XS	Analysis of Item 1, wick from loading dock, and Item 2, wick from storage room, revealed the presence

TABLE 4

WebCode	Conclusions
	of an evaporated gasoline range product. Products in this range include all brands and grades of automotive fuels, including gasohol. Analysis of Item 3, wick from manager's office, revealed the presence of a heavy petroleum distillate. Products in this range include, but are not limited to: kerosene, diesel fuel, fuel oils No. 1 and 2, jet-a (aviation) fuel, some charcoal starters, some torch fuels, some paint thinners, some solvents for insecticides and polishes, and some lamp oils.
6Z493Y	Item 1 was found to contain gasoline. Item 2 was found to contain gasoline. Item 3 was found to contain a heavy petroleum distillate. Examples may include but are not limited to kerosene, diesel fuel, home heating fuel, and some charcoal starters. No ignitable liquids were identified in Item 4. No ignitable liquids were identified in Item 5.
74V5WH	Item 1 and Item 2 contain a mixture of an ignitable liquid in the gasoline class and a liquid in the light isoparaffinic class. Some examples of a light isoparaffin are aviation fuels and some specialty solvents. Item 3 contains an ignitable liquid in the heavy petroleum distillate class. Some examples of a heavy petroleum distillate are diesel fuel, kerosene, and jet fuel. No ignitable liquids were identified in either the Kapak control or the nylon control bags.
77VAEU	Item 1: Gasoline was detected. Item 2: No ignitable liquid residues were identified. Item 3: Heavy Medium Petroleum Distillate was detected. Examples of HPD include, but are not limited to, some cleaning solvents, some charcoal lighters, and some heating fuels.
7EQEAR	No commonly known ignitable liquid could be identified in controls marked as "y" and "z." Exhibit marked as "A" contained gasoline as per ASTM 1618-01 classification. Exhibit marked as "B" contained medium aromatic products as per ASTM E 1618-01. Exhibit marked as "C" contained Heavy Petroleum Distillates as per ASTM E 1618-01 classification.
7EVTWS	Gasoline was detected in Item 1. A miscellaneous class product, which was a mixture of a heavy petroleum distillate and an aromatic product, was detected in Item 2. A heavy petroleum distillate was detected in Item 3. An example of a heavy petroleum distillate is kerosene.
7M5XS5	Instrumental analysis of Exhibits 1 and 2 revealed gasoline. Instrumental analysis of Exhibit 3 revealed heavy petroleum distillate. No ignitable liquid was detected in Exhibits 4 and 5.
7QD7X9	An ignitable liquid was detected in Item 1. The liquid was identified as gasoline. An ignitable liquid was detected in Item 2. The liquid was identified as gasoline. An ignitable liquid was detected in Item 3. The liquid was identified as a heavy petroleum distillate, an example of this type of compound is kerosene.
7QWY6T	A flammable liquid corresponding to a gasoline class was identified amongst Item 1 and Item 2. The weathering levels are different. In Item 2, the gasoline recovered is more evaporated than Item 1. A heavy petroleum distillate ranging from C9 to C17 was identified for Item 3. Some aromatic compounds are present amongst this "wick."
7VMCRU	Item 1 and 2 contain a partially evaporated residue of automotive gasoline. Item 3 contains a medium to heavy range petroleum distillate. Medium to heavy range petroleum distillates include some charcoal starters, some paint thinners, some two cycle oils, kerosene and some jet fuels. The Fire DebrisPAK and Nylon control bags were analyzed as control samples only.
7Y7FHZ	Gas chromatography Mass Spectrometry (GCMS) analysis of Item 1 "wick" from loading dock disclosed the presence of gasoline and ethanol. Gas Chromatography Mass Spectrometry (GCMS) analysis of Item 2 "wick" from storage room disclosed the presence of gasoline. Gas Chromatography Mass Spectrometry (GCMS) analysis of Item 3 "wick" from manager's office disclosed the presence of a heavy petroleum distillate (HPD). Examples of a heavy petroleum distillate are kerosene, diesel fuel, some jet fuels, and some charcoal starters.
81PJJB	Gasoline was detected in Items 1 and 2. Gasoline is an ignitable liquid and could act as a fire accelerant. A medium-to-heavy petroleum distillate fraction, encompassing the carbon range C11, C12, C13 and C14 was detected in Item 2 that resembles a commercially available specialty solvent; however, it was also similar to a component of an unusual laboratory gasoline reference standard. This component is not critical to the identification of gasoline. It cannot be determined whether this distillate has been blended in as part of the formulation of the gasoline detected in Item 2 or whether Item 2 is a mixture of gasoline and a medium-to-heavy petroleum distillate. Uses of medium and heavy petroleum distillates include, but are not limited to, some charcoal starters, some paint thinners, some dry cleaning

TABLE 4

WebCode	Conclusions
	solvents, kerosene, diesel fuel, some specialty solvents, some fuel additives, some automotive parts cleaners and some jet fuels. Medium and heavy petroleum distillates are ignitable liquids and could act as a fire accelerant. A heavy petroleum distillate was detected in Item 3, uses of which include, but are not limited to, kerosene, diesel fuel, some specialty solvents, some charcoal starters, some fuel additives, some automotive parts cleaners and some jet fuels. Heavy petroleum distillates are ignitable liquids and could act as a fire accelerant. No ignitable liquid, or its residue, was detected in Item 4 and 5.
8AXD3A	Item 1: Analysis revealed the presence of weathered gasoline. Item 2: Analysis revealed the presence of weathered gasoline. Item 3: Analysis revealed the presence of a heavy petroleum distillate consistent with a kerosene product.
8J68X3	Gas chromatographic/mass spectral analysis of Items 1 and 2 identified the presence of gasoline. Gas chromatography/mass spectral analysis of Item 3 identified the presence of a heavy petroleum distillate. Examples include some charcoal starters, kerosene, and diesel fuel.
8QNHAD	Item 1: presence of highly evaporated gasoline. Item 2: presence of slight traces of highly evaporated gasoline. Item 3: presence of kerosene (medium petroleum distillate).
8TQJ6V	Gasoline was identified in Items 1 and 2. A petroleum distillate in the heavy range was identified in Item 3, examples of which include kerosene, diesel fuel and some charcoal starters. There were no ignitable liquids identified in the control bags.
943GPD	Within the limits of applied methodology and after comparison with the results of the two provided control samples; the presence of a "gasoline" type product and ethanol in trace was detected in the sample Item 1. Such a mixture corresponds to a biofuel product. The presence of a "gasoline" type product was detected in the sample Item 2. The presence of a heavy petroleum distillate was detected in the sample Item 3. Considering a potential evaporation of ethanol in the sample Item 2, a common origin between the samples Item 1 and Item 2 cannot be excluded.
94RB9U	On analysis, I found: Both Item 1 ("wick" collected from loading dock) and Item 2 ("wick" collected from storage room) to bear residues of ignitable liquid which could fall into the category of gasoline. Item 3 ("wick" collected from manager's office) to bear residues of ignitable liquid which could fall into category of medium petroleum distillate product. (e.g. kerosene)
957CMH	Gasoline was detected in the plastic bag containing the wick from the loading dock (Item 1) and the plastic bag containing the wick from the storage room (Item 2). A heavy petroleum distillate was detected in the plastic bag containing the wick from the manager's office (Item 3). Examples of ignitable liquids in the Heavy Petroleum Distillate class include kerosene, diesel fuel, some aviation fuels, and some paint thinners. No ignitable liquids were detected in the plastic bags labeled as controls (Items 4 and 5).
96DW4Q	Exhibit 1 Agency #1 Description, Firepak debris bag containing white fabric. Examination reveals the presence of an ignitable liquid residue in the Gasoline class. Refer to the attached Ignitable Liquid Classification System. Exhibit 2 Agency #2 Description, Nylon debris bag containing white fabric. Examination reveals the presence of an ignitable liquid residue in the gasoline class. Refer to the attached Ignitable Liquid Classification System. Exhibit 3 Agency #3 Description, Nylon debris bag containing white fabric. Examination reveals the presence of a Heavy Range ignitable liquid residue in the Petroleum Distillate Class. Refer to the attached Ignitable Liquid Classification System. Exhibit 4 Firepak control bag. Description- Firepak debris bag containing white fabric. No ignitable liquid residue as defined by the attached Ignitable Liquid Classification System was detected. Exhibit 5 Nylon control bag Description, Nylon debris bag containing white fabric. No ignitable liquid residue as defined by the attached Ignitable Liquid Classification System was detected.
9CGS4Q	Items 1 and 2 were found to contain materials consistent with the composition of "GASOLINE" as describes by ASTM specification E1618-06. The term "GASOLINE" includes all brands and grades of automotive gasoline including gasohol. Item 3 was found to contain materials consistent with the composition of "HEAVY PETROLEUM DISTILLATE" as described by ASTM specifications E1618-06. The term "HEAVY PETROLEUM DISTILLATE" includes products such as kerosene, diesel fuel, some jet fuels, and some charcoal starters. Items 4 and 5 were control samples used for comparison purpose.
9E3781	Gasoline was detected in Items 1 and 2. A heavy petroleum distillate was detected in Item 3. Examples include kerosene and some fuel oils. No ignitable liquids were detected in control bag 1 or 2.

TABLE 4

WebCode	Conclusions
9R4XFT	Item 1: Flammable liquid detected. Presence of aromatic compounds (toluene, xylene, ethylbenzene, C3-alkylbenzenes, C4-alkylbenzenes, naphthalenes) and a slight alkene profile C9 to C14). Product identified as evaporated gasoline. Item 2: Same as Item 1 with a more intense alkene profile. Item 3: Flammable liquid detected. Mainly n-alkanes. Presence of isoalkanes- Range C9- C16. Product identified as Heavy Petroleum Distillates (kerosene type).
9VBG4Z	[Participant indicated multiple flammable substances that could not be reported in Table 1a - Kapak and Table 1b - Nylon bags. They are as follows: "Item 1: Gasoline; Petroleum- Light; Iso- Heavy; Aromatic- Light and Medium; Naphthenic Paraffinic- Light; Normal Alkanes- Light; Oxygenated Solvents- Light. Item 2: Gasoline; Petroleum- Light; Iso- Heavy; Aromatic- Light and Medium; Naphthenic Paraffinic- Light; Normal Alkanes- Medium and Heavy. Item 3: Iso- Heavy; Aromatic- Light; Normal Alkanes- Medium and Heavy."]
9YF7NL	Item 1: Ignitable liquid identified as gasoline. Item 2: Ignitable liquid identified as gasoline. Item 3: Ignitable liquid identified as a heavy petroleum distillate.
A4L5SK	Item 1 analysis revealed the presence of gasoline. Item 2 analysis revealed the presence of gasoline. Item 3 analysis revealed the presence of a heavy petroleum distillate, examples include kerosene, diesel fuel, and some charcoal starter fluids. Item 4 no ignitable liquids were detected. Item 5 no ignitable liquids were detected. Note: Items 1 and 4 came in Kapak bags and Items 2, 3 and 5 came in Nylon bags. Due to inappropriate packaging the ignitable liquid identified in Item 2 can not be excluded as contamination.
A6Q1YF	Volatile compounds from wicks of Items 1, 2, and 3, and the control samples were collected using the laboratory standard heating dynamic recovery procedure with the volatile components of interest being sorbed onto activated charcoal. Components of interest were recovered from the charcoal using carbon disulfide and analyzed on an Agilent 6890 gas chromatograph equipped with an Agilent 5973 mass selective detector. Items 1 and 2 were found to contain volatile components consistent with gasoline (according to ASTM E1618-06 definition). Item 3 was found to contain volatile components consistent with medium petroleum distillates (according to ASTM E1618-06). Examples of medium petroleum distillates include certain charcoal starters and certain paint thinners.
ABMKF6	Item 1: Gasoline. Item 2: Gasoline. Item 3: Heavy Petroleum Distillate, examples of which are fuel oils, diesel fuel and some brands of charcoal starter fluids. Control Nylon bag: used for comparison to Items 1, 2 and 3. Control Kapak bag: used for comparison to Items 1, 2 and 3.
ADAXZA	Item 1 contains an unidentified petroleum product. Item 2 contains a medium to heavy miscellaneous (misc.) product. Some examples of a misc. product are various specialty products and some blended products. Item 3 contains a Heavy Petroleum Distillate (HPD). Some examples of a HPD are kerosene, diesel fuel and some charcoal starters. Items 4 and 5: No ignitable liquids were found. A negative result means the laboratory did not identify ignitable liquids in the submitted samples.
AGVQ9R	Items 1 and 2 contain an evaporated residue of a flammable petroleum product commonly marketed as automotive gasoline. Item 3 contains a volatile residue of a medium to heavy petroleum distillate. Examples of residues within this range include some paint thinners, some charcoal starter fluids, some lamp oils, and kerosene.
AH4XE5	Item 1: Wick from loading dock- gasoline identified. Item 2: Wick from storage room- gasoline identified. Item 3: Wick from manager's office- medium petroleum distillates identified. Examples are some mineral spirits, some paint thinners and some charcoal starters.
AYWSRW	Items 1, 2, and 3 and the Kapak and Nylon control bags were analyzed by gas chromatography/mass spectrometry for the presence of ignitable liquids. An ignitable liquid (gasoline class) was detected in Items 1 and 2. An ignitable liquid (petroleum distillate class- heavy range) was detected in Item 3. Examples of petroleum distillate in the heavy range include but are not limited to kerosene, some jet fuels, and some charcoal starters. No ignitable liquids were detected in either of the control bags.
B29RNX	On analysis, I detected gasoline in Item 1 and Item 2. I detected Heavy Paraffinic Products in Item 3.
B8GDFR	Item 1: Gasoline found. This includes all brands of gasoline and gasohol. Item 2: Gasoline found. This includes all brands of gasoline and gasohol. Item 3: A heavy petroleum distillate found. Some examples of heavy petroleum distillate and kerosene, diesel fuel, some jet fuels, and some charcoal starters. Item 4

TABLE 4

WebCode	Conclusions
	and Item 5: No flame or combustible liquid were detected.
BA6MN7	Examination of the wick (Item 1 and Item 2) revealed the presence of gasoline. Examination of the wick (Item 3) revealed the presence of a heavy petroleum product, examples include, but are not limited to, kerosene, diesel fuel, and fuel oils.
BCRJ2Y	Items 1 and 2: The volatile contents were recovered using heated headspace recovery method and analyzed by gas chromatography, and were extracted by passive headspace adsorption using an activated charcoal strip recovery method and analyzed by gas chromatography/ mass spectrometry. Gasoline was detected. Item 3: The volatile contents were recovered using heated headspace recovery method and analyzed by gas chromatography, and were extracted by passive headspace adsorption using an activated charcoal strip recovery method and analyzed by gas chromatography/ mass spectrometry. A heavy petroleum product (e.g. kerosene, diesel fuel, fuel oil, etc.) was detected. Items 4 and 5: The volatile contents were recovered using heated headspace recovery method and analyzed by gas chromatography, and were extracted by passive headspace adsorption using an activated charcoal strip recovery method and analyzed by gas chromatography/mass spectrometry. The Items were analyzed as comparison samples.
BGQV3R	Items 1 and 2 both contain a product normally marketed as automotive gasoline. Item 3 contains a heavy-range distillate product. Such products include some solvents and fuels such as diesel and kerosene. No ignitable liquids were identified in the control nylon or "Kapak" bags.
BST12Y	Item 1 was determined to contain evaporated gasoline. Examples of which include all brands and grades of automotive gasoline, including gasohol. Item 2 was determined to contain evaporated gasoline. Examples of which include all brands and grades of automotive gasoline, including gasohol. Item 3 was determined to contain a heavy petroleum distillate ignitable liquid. Examples of which include Kerosene, diesel fuel, some jet fuels, and some charcoal starters. The control Kapak Fire DebrisPAK bag contained components of gasoline. This should be considered when determining the true significance of the presence of evaporated gasoline in Item 1.
CHCVFS	Item 1- The presence of a light isoparaffinic product and gasoline were detected. Item 2- The presence of a light isoparaffinic product and gasoline were detected. Item 3- The presence of a heavy petroleum distillate was detected.
CJCPKS	Analysis of Exhibits 1 and 2 revealed the presence of gasoline. Analysis of Exhibit 3 revealed the presence of a heavy petroleum distillate. Examples of heavy petroleum distillates include, but are not limited to, kerosene, diesel fuel, some jet fuels, some charcoal starters, and some wood treatment products.
CKQHZZ	In Item 1 and Item 2 traces of gasoline are present. In Item 3 traces of petroleum distillate are present. The petroleum distillate found in Item 3 belongs to subcategory 'medium to heavy' - its main components are n-alkanes from range C9-C15. The examples of products from these category accessible on our market are some brands of kerosene.
CN9A99	Item 1 contained residues of gasoline. Item 2 contained residues of gasoline. Item 3 contained residues of heavy petroleum distillate (diesel fuel).
CQBT7B	Items 1 and 2 contained residues consistent with the gasoline class of ignitable liquids. Some examples of this class are all brands and grades of automotive gasoline. Item 3 contained residue consistent with the heavy petroleum distillates class of ignitable liquids. Some examples of this class are No. 1 and No. 2 fuel oil, kerosene, diesel fuel, some jet fuels, some charcoal starters, some lamp oils and some solvents for insecticides and polishes. No ignitable liquid residues were identified in Items Control: Kapak and Control: Nylon.
CV4F3A	Item 1 contained gasoline. Examples of gasoline include all brands and grades of gasoline, including gasolines containing ethanol. Item 2 contained gasoline. Examples of gasoline include all brands and grades of gasoline, including gasolines containing ethanol. Item 3 contained a heavy petroleum distillate, in the range of C8-C17. Examples of a heavy petroleum distillate include kerosene, diesel fuel, some jet fuels, and some charcoal starters.
D157DR	On analysis, I found Item 1 and Item 2 to bear traces of accelerant that are consistent with gasoline. However I found Item 3 to bear traces of accelerant that are consistent with the Petroleum Distillates class and subclass of medium.

TABLE 4

WebCode	Conclusions
D7GXDD	GC/MS analysis of submissions Item 1 and Item 2 revealed the presence of a petroleum product consistent in a gasoline. Also present in Item 1 and Item 2 was a low boiling range flammable liquid. GC/MS analysis of submission Item 3 revealed the presence of a medium boiling range petroleum distillate. GC/MS analysis of submissions Item 4 and Item 5 failed to reveal the presence of a flammable liquid.
DGEWP6	Item 1- gasoline. Item 2- gasoline. Item 3- Heavy petroleum distillate, examples of which are kerosene, fuels oils, diesel fuels, and some brands of charcoal starters.
DHN6G4	Item 1 is positive for gasoline. Gasoline includes all brands and grades of automotive gasoline including gasohol. Item 2 is negative for ignitable liquids. Item 3 is positive for a Heavy Petroleum Distillate. Examples of Heavy Petroleum Distillates may include but are not limited to kerosene, some aviation fuels, and some lamp oils
DJ38NC	Item 1, 2: Auto gasoline identified. Item 3: A mid-range distillate such as kerosene identified.
DMBE6X	Item 1 disclosed the presence of a gasoline range ignitable liquid. Item 2 disclosed the presence of a gasoline range ignitable liquid. Item 3 disclosed the presence of a heavy range petroleum distillate. Examples of products in this range include, but are not limited to, kerosene and some charcoal starters.
DN6N7V	Item 1, the white piece of cloth contains a gasoline ignitable liquid residue. Item 2, the white piece of cloth contains a gasoline ignitable liquid residue. Item 3, the white piece of cloth contains a heavy petroleum distillate ignitable liquid residue. An ignitable residue was not detected on the white pieces of cloth in the two control bags.
DPX2NY	Item 1: Analysis indicates the presence of gasoline. Item 2: Analysis indicates the presence of gasoline. Item 3: Analysis indicates the presence of heavy petroleum distillates consistent with kerosene. Failure to identify an ignitable liquid in any samples of fire debris should not be interpreted to mean that an ignitable liquid could not have been present. It means only that none could be recovered from the debris and or detected during analysis. Ignitable liquid classification based on ASTM 1618-01.
DS3UQX	The submitted evidence was extracted onto activated charcoal for future examination. These extracts will be transported to another laboratory for Gas Chromatography/Mass Spectrometry analysis. A report containing the results of that analysis will be forwarded to your agency.
DYK9AV	Item 1: "wick" from loading dock- contains a significant and proportionate series of hydrocarbons, which are consistent with the formulation of petrol. Item 2: "wick" from storage room- contains a significant and proportionate series of hydrocarbons, which are consistent with the formulation of a heavily evaporated petrol. Item 3: "wick" from manager's office- contains aromatic compounds as well as a series of hydrocarbons (C9-C13) in a "Gaussian Peak distribution," which would class this ignitable liquid as a medium petroleum distillate most likely white spirit or paint thinner.
E577RV	Item 1 was determined to contain evaporated gasoline. Examples of which include all brands and grades of automotive gasoline, including gasohol. Item 2 was determined to contain evaporated gasoline. Examples of which include all brands and grades of automotive gasoline, including gasohol. Item 3 was determined to contain a heavy petroleum distillate ignitable liquid. Examples of which include kerosene, diesel fuel, some jet fuels, and some charcoal starters. The KAPAK Fire DebrisPAK control bag was determined to contain components of gasoline. This should be considered when determining the significance of the presence of evaporated gasoline found in Item 1.
E88FTK	Item 1 was examined for the presence of ignitable liquid residues. Gasoline was detected. Item 2 was examined for the presence of ignitable liquid residues. Gasoline was detected. Item 3 was examined for the presence of ignitable liquid residues. A heavy petroleum distillate was detected. Examples of a heavy petroleum distillate are kerosene and diesel fuels.
EETDG7	Our report would state: Items 1, 2 and 3 were examined for hydrocarbon fire accelerants e.g. petrol, white spirit, paraffin oil and diesel oil. Partly evaporated petrol vapor was detected in Items 1 and 2. Partly evaporated oil vapor and traces of partly evaporated petrol vapor were detected in Item 3.
EH6WC4	Petrol and ethanol were found on the wick from the loading dock (Item 1). Such a mixture is commonly called gasohol. Petrol was found on the wick from the storage room (Item 2). A medium petroleum distillate was found on the wick from the manager's office (Item 3). Medium petroleum distillates are flammable liquids.

TABLE 4

WebCode	Conclusions
ELY39D	Items 1 and 2 were determined to contain gasoline. Item 3 was determined to contain a heavy petroleum distillate.
EV35KC	Item 1: Gasoline. Item 2: Gasoline. Item 3: Heavy petroleum distillate, examples of which are kerosene, fuel oils, diesel fuels, and some brands of charcoal starters. Item 4: (Kapak Fire DebrisPAK Control Bag): No flammable or combustible liquids were found. Used in conjunction with Item 1. Item 5 (Nylon Control Bag): No flammable or combustible liquids were found. Used in conjunction with Items 2 and 3.
EVJG2H	Analysis by gas chromatography/mass spectrometry of the wick (Item 1) reveals the presence of gasoline. Analysis by gas chromatography/mass spectrometry of the wick (Item 2) reveals the presence of gasoline. Analysis by gas chromatography/mass spectrometry of the wick (Item 3) reveals the presence of a heavy petroleum distillate (HPD). Examples of HPD's include: Kerosene, some lamp oils, jet fuel, some paint thinners, some torch fuels, Diesel fuel, fuel oil No. 1, fuel oil No. 2 and some solvents for insect sprays and polishes. Analysis by gas chromatography/mass spectrometry of the wick Kapak (Item 4) fails to reveal the presence of any ignitable liquids. Analysis by gas chromatography/mass spectrometry of the wick Nylon (Item 5) fails to reveal the presence of any ignitable liquids.
EVXF17	Item 1, petrol and oxygenated product, similar to ethanol, identified. Item 2, weathered petrol and oxygenated product, similar to ethanol identified. Item 3, heavy petroleum distillate similar to kerosene, identified. No recognizable ignitable liquids were identified in the Nylon control bag or the Kapak Fire DebrisPak control bag.
F141GG	Gasoline was identified in Items 1 and 2. A heavy petroleum distillate, such as kerosene, some diesel fuels and some brands of charcoal starter, was identified in Item 3. No ignitable liquids were identified in either of the control bags.
F4S876	Items 1 and 2 were each found to contain gasoline. Item 3 was found to contain a fuel oil (kerosene/diesel). Items 4 and 5 were submitted as control samples.
F5MR97	The above exhibits were analyzed by gas chromatography-mass spectrometry for the presence of ignitable liquids. Exhibits 1 and 2 contained gasoline, an ignitable liquid. Exhibit 3 contained a heavy petroleum distillate (HPD), an ignitable liquid. Examples of heavy petroleum distillates include but are not limited to some lamp oils, kerosene, some paint thinners, diesel fuel, and some polishers. No ignitable liquids were identified in the control bags.
FB2VKE	Item 1- contains gasoline. Item 2- contains aromatic product. Item 3- contains kerosene. Having got these results it can be deduced that this fire at the warehouse was accelerate with different incendiary substances.
FBVQYA	Item 1 ("wick" from loading dock) and Item 2 ("wick" from storage room) revealed the same chromatographic pattern using GCFID. But when analyzed using GCMS, Item 1 was found to contain compounds normally present in gasoline and Item 2 was found to contain compounds normally present in medium to heavy petroleum distillate. While Item 3 ("wick" from the manager's office) was found to contain compounds of n-alkane. No ignitable liquids were identified in both control bags (Kapak Fire DebrisPAK and Nylon bag).
FCUR7N	Gasoline was found on the following exhibit(s): 1 and 2. A heavy petroleum distillate was found on the following exhibit(s): 3. No ignitable liquid was determined on the following exhibit(s): 4 and 5.
FH7AM9	Item 1 and Item 2: Sample contains an ignitable liquid in the gasoline class. Item 3: Sample contains an ignitable liquid in the heavy petroleum distillate class. Some examples are kerosene and jet fuel. Control Bag(s): These bags (Control Bag Nylon and Control Bag Kapak Fire DebrisPAK) were analyzed and used for quality comparison purposes. No conflicting ignitable liquids were detected. This does not preclude the possibility that ignitable liquids were present.
FKELLY	Item 1: Analysis of an activated charcoal extract by gas chromatography and gas chromatography/mass selective detector was consistent with gasoline. Products in this class include all brands of gasoline and gasohol. Item 2: Analysis of an activated charcoal extract by gas chromatography and gas chromatography/mass selective detector was consistent with gasoline. Products in this class include all brands of gasoline and gasohol. Item 3: Analysis of an activated charcoal extract by gas chromatography and gas chromatography/mass selective detector was consistent with a medium petroleum distillate.

TABLE 4

WebCode	Conclusions
	Products in this class include, but are not necessarily limited to: some charcoal starters, some paint thinners, and some dry cleaning solvents.
FKG6GD	Gasoline was detected within contents of Items 1 and 2. A heavy petroleum distillate was detected within the contents of Item 3. Such products include but are not limited to the following: kerosene, diesel fuel, some jet fuels, and some charcoal starters. No ignitable liquids were identified within the contents of the control samples (Items C1 and C2).
FKVK9Q	Items 1 and 2 each contained gasoline. Item 3 contained a heavy petroleum product. Examples of heavy petroleum distillates include, but are not limited to, kerosene. The control bags contained no ignitable liquids.
FM896E	Analysis of Item 1 and Item 2 detected the presence of gasoline. Analysis of Item 3 detected the presence of a heavy petroleum distillate (examples: kerosene, some charcoal starters, some jet fuels, diesel fuel, etc.)
FNBSV4	Traces of petrol were recovered from each of the "wick" Items 1 and 2. Traces of diesel were recovered from the "wick" Item 3. Nothing of significance was found with respect to the recovery of fire accelerant residues from the Kapak Fire DebrisPak control bag and the nylon control bag.
FNE1QE	The Item 1 and 2 extracts each contained a gasoline petroleum product. The Item 3 extract contained a fuel oil petroleum product. Kerosene and fuel oil #2/diesel fuel are examples of fuel oil petroleum products. The Item 4 extract contained toluene, ethylbenzene and xylenes. No volatile compounds or petroleum products were identified in the Item 5 extract.
FR38F4	Examination of Items 1 and 2 revealed the presence of gasoline. Examination of Item 3 revealed the presence of a heavy petroleum product, examples of which include but are not limited to kerosene, charcoal starters, and other fuel products.
FSDCN1	Item 1 and 2: Analysis conducted on Items 1 and 2 disclosed the presence of an ignitable liquid(s) from the gasoline class. This class includes all brands and grades of gasoline including gasohol, and some types of camp fuels. Item 3: Analysis conducted on Item 3 disclosed the presence of an ignitable liquid(s) from the kerosene/HPD class. This class includes all brands and blends of kerosene and diesel fuels, and some lamp oils, charcoal starters, and jet fuels. Item 4 and 5: Analysis conducted on Items 4 and 5 were done for comparison purposes only with an ignitable liquid(s) detected.
FZUMHP	Gasoline was identified in Items 1 and 2. A heavy petroleum distillate was identified in Item 3. Heavy petroleum distillates include, but are not limited to kerosene, diesel fuel, some jet fuels, and some brands of charcoal starters. No common ignitable liquid was identified in the Control Bags (Kapak and Nylon). Some conditions that could lead to this result are: no common ignitable liquid was present in the material analyzed, an ignitable liquid was present but below quantities required for positive identification, an uncommon ignitable liquid was present.
G68EZ8	Item 1 and Item 2 each contained residues consistent with the gasoline class of ignitable liquids. This class of ignitable liquids includes all brands and grades of automotive gasoline. Item 3 contained residues consistent with the heavy petroleum distillate class of ignitable liquids. Examples of the heavy petroleum distillate class of ignitable liquids include: some kerosenes, some jet fuels, some charcoal starters and diesel fuel. No ignitable liquid residues were detected in the control kapak bag or the control nylon bag.
G8KRPU	Item 1 disclosed the presence of a gasoline range ignitable liquid. Item 2 disclosed the presence of a gasoline range ignitable liquid. Item 3 disclosed the presence of a heavy range petroleum distillate. Examples of products in this range include, but are not limited to, kerosene and some charcoal starters.
G8X69J	Specimens 1 and 2 were found to contain materials consistent with the composition of "gasoline" as defined by ASTM Specification E1618-06. The term "Gasoline" includes all grades of automotive gasoline including gasohol. Specimen 3 was found to contain materials consistent with the composition of "Heavy Petroleum Distillates" as defined by ASTM Specification E1618-06. The term "Heavy Petroleum Distillates" includes kerosene, diesel fuel, some jet fuels, and some charcoal lighters. Specimens 4 and 5 were comparison samples for control purposes. The results detailed in this report are supported by testing documentation. The original supporting documentation is available for review at the laboratory and may consist of worksheets, notes, instrument tracings, and possible photographs.

TABLE 4

WebCode	Conclusions
G979P2	Items 1 and 2 were found to contain a trace light to heavy petroleum based product that cannot be identified as this time and is classified as a miscellaneous product. Item 3 was found to contain a heavy petroleum distillate. Examples include but are not limited to kerosene, diesel fuel, and some charcoal starters. No ignitable liquids were found in Items 4 and 5.
GC7KK2	Gasoline was identified in Items 1 and 2. A medium-to-heavy petroleum distillate was identified in Item 3.
GFVT8	No ignitable liquids were observed in the Control Bags (Nylon or Fire DebrisPAK). Items 1 and 2 contained a mixture of ignitable liquids in the gasoline and Light Isoparaffinic Classes. An example of a Light Isoparaffinic class is Aviation Fuel. Item 3 contained an ignitable liquid in the Heavy Petroleum Distillate (HPD) class. An example of an HPD is Diesel.
GPRTKG	Items 1 and 2: The samples each contain gasoline. Item 3: The sample contains Heavy Range Petroleum Distillates. Products within this classification include kerosene, diesel fuel and some charcoal starters. Heavy range distillates are used as a vehicle for some insecticides. Control Bags: No ignitable liquids were detected in either the Kapak Fire DebrisPAK or the nylon bag.
GXGWLZ	Item 1, traces of a hydrocarbon fraction containing the medium and high boiling constituents of petrol were detected in the contents of this item. Item 2, traces of hydrocarbon fraction containing the medium and high boiling constituents of petrol were detected in the contents of this item. Item 3, a hydrocarbon fraction similar to heating oil was detected in the contents of this item.
GZ8HEF	Item 1 - Analysis of this exhibit revealed the presence of an evaporated gasoline range product. Products in this range include all brands and grades of automotive fuels including gasohol. Item 2 - Analysis of this exhibit revealed the presence of an evaporated gasoline range product. Products in this range include all brands and grades of automotive fuels including gasohol. Item 3 - Analysis of this exhibit revealed the presence of a heavy petroleum distillate. Products in this range include, but are not limited to: kerosene, diesel fuel, fuel oils No. 1 and 2, Jet-A (aviation) fuel, some charcoal starters, some torch fuels, some paint thinners, some solvents for insecticides and polishes, and some lamp oils.
H71CQJ	Examination of Item 1 revealed the presence of components consistent with automotive gasoline. Examination of Item 2 revealed the presence of components consistent with partially evaporated automotive gasoline. Examination of Item 3 revealed the presence of components consistent with a heavy range distillate product. Examples of heavy range distillate products include kerosene and diesel fuel. Items 4 and 5 were evaluated for comparison purposes only.
HEJDD9	Item 1, analysis conducted on the mentioned evidence revealed the presence of gasoline. Item 2, analysis conducted on the mentioned evidence revealed inconclusive results. Item 3, analysis conducted on the mentioned evidence revealed the presence of a heavy petroleum distillate; examples include kerosene, some jet fuels and some charcoal starters. Item 4, Control Fire DebrisPak bag, analysis conducted on the mentioned evidence failed to reveal the presence of an ignitable liquid. Item 5, Control Nylon bag, analysis on the mentioned evidence failed to reveal the presence of an ignitable liquid. Disclaimers: Item 2 has indications of the presence of gasoline, however, the data is inconclusive due to sample weakness. Negative results do not preclude the possibility that ignitable liquids were present at the fire scene.
HJU6Z2	Gasoline was identified in Items 1 and 2. A medium petroleum distillate was identified in Item 3. No volatile ignitable liquid was identified in Items 4 and 5. Medium petroleum distillates are volatile ignitable liquids. Commercial examples of products that may contain a medium petroleum distillate include Varsol, barbecue starter fluids, paint thinners, and some products marketed as kerosene. Items 1 to 5 have been analyzed by gas chromatography-mass spectrometry (GC-MS). No attempt has been made to identify non-volatile ignitable liquids, such as motor oil or cooking oil, or to specifically identify the debris.
HNPQ4B	Gas Chromatography- Mass Spectrometry (GC-MS) analysis of Items 1 and 2 showed the presence of gasoline. GC-MS analysis of Item 3 showed the presence of a heavy petroleum distillate, which includes, but is not limited to, kerosene, diesel fuel, some jet fuel, and some charcoal lighter fluids.
HQQ8UN	Analysis of Item 1 revealed the presence of gasoline. Analysis of Item 2 revealed the presence of gasoline. Analysis of Item 3 revealed the presence of a heavy petroleum distillate (HPD). Examples of this class include kerosene, diesel fuel, and some charcoal starters.

TABLE 4

WebCode	Conclusions
HYAMB4	Items 1 and 2 were found to contain gasoline. Item 3 was found to contain fuel oil (kerosene/ diesel). Items 4 and 5 were control samples.
HZ65C6	Items 1 through 3 as well as the Kapak Fire DebrisPAK and Nylon control bags were analyzed for the presence of ignitable liquids by gas chromatography-mass spectrometry (GC-MS). Items 1 and 2 contained gasoline. Gasoline is an ignitable liquid. Item 3 contained a heavy petroleum distillate (HPD). Some examples of HPD's are kerosene, some lamp oils, jet-A fuel and diesel fuel. Heavy petroleum distillates are ignitable liquids. No ignitable liquid was identified in the Kapak Fire DebrisPAK and Nylon control bags.
J1UFJY	Weathered petrol was detected in Item 1. Weathered petrol was detected in Item 2. Kerosene was detected in Item 3. No accelerant was detected in Items 4 and 5.
J23BS9	Gasoline was identified in Item 1. Gasoline was identified in Item 2. A petroleum distillate in the medium to heavy range was detected in Item 3. Examples of petroleum products in the medium to heavy range include: some charcoal starters, some paint thinners and some dry cleaning solvents. No ignitable liquids were detected in Item 4. No ignitable liquids were detected in Item 5.
J3WXNL	Item 2 and 3 were found to contain gasoline. Item 3 was found to contain kerosene.
J52HC7	Item 1- Gasoline was detected using ASTM 1412 and ASTM 1618. Item 2- Gasoline was detected using ASTM 1412 and ASTM 1618. Item 3- A heavy petroleum distillate was detected using ASTM 1412 and ASTM 1618. (Examples of a heavy petroleum distillate include but are not limited to kerosene and diesel.)
JBENHN	Items 1 and 2 each contain gasoline. Item 3 contains a heavy petroleum distillate. An example of a heavy petroleum distillate includes, but is not limited to, kerosene. The control samples did not contain ignitable liquids.
JCMP4C	Item 1. Partially evaporated gasoline was identified on the white cloth in the Kapak bag. Item 2. Partially evaporated gasoline was identified on the white cloth in the nylon bag. Item 3. A heavy petroleum distillate was identified on the white cloth in the nylon bag. Examples of heavy petroleum distillates are kerosene, diesel fuel and some charcoal starters. No ignitable liquids were identified in the control samples.
JD3R1C	I detected the presence of gasoline, an ignitable liquid, in Items 1 and 2. I detected the presence of a heavy product range petroleum distillate (an ignitable liquid such as kerosene, some charcoal starters, some torch fuels, and some jet fuels) in Item 3.
JDZ4SL	Gasoline was identified in specimens Q1 (Item 1) and Q2 (Item 2). A heavy petroleum distillate was identified in specimen Q3 (Item 3). Examples of heavy petroleum distillates include kerosene, some charcoal starters, and diesel fuel. The specimens were extracted using heated- headspace technique and a passive adsorption/elution technique then analyzed by gas chromatography mass spectrometry.
JK5ZBL	Gasoline was detected in Item 1 from the loading dock. Gasoline was also detected in Item 2- the storage room. Diesel was detected in Item 3- the sample from the manager's office.
JNPZJE	Gasoline was identified in Item 1 and Item 2. A heavy petroleum distillate was identified in Item 3. Examples of ignitable liquids in this class are kerosene, diesel fuel, some jet fuels, and some charcoal starters.
JP3BEY	Gas chromatographic analysis (GC-MSD; passive headspace concentration [Item 1 through Item 3, control bags nylon and Fire Debris Pak bag] and heated headspace [Item 1 through Item 3, control bags nylon and Fire Debris Pak bag] of the submitted material yielded the following results: Item 1 and 2 gasoline identified in each. Item 3 a heavy petroleum distillate was detected. Examples of heavy petroleum distillates of the type detected are some torch fuels, and some aviation fuels. Nylon control bag and Fire Debris Pak: Ignitable liquid residues were not detected.
JT861U	Item 1: Analysis indicates the presence of gasoline. Item 2: Analysis indicates the presence of gasoline. Item 3: Analysis indicates the presence of a medium petroleum distillate. Failure to identify an ignitable liquid in any samples of fire debris should not be interpreted to mean that an ignitable liquid could not have been present. It means only that none could be recovered from the debris and or detected during analysis. Ignitable liquid classification based on ASTM 1618-01.

TABLE 4

WebCode	Conclusions
JY7GBL	Items 1 and 2, gasoline was detected. Item 3, a heavy petroleum distillate was detected. Examples of this class of ignitable liquids include kerosene and some charcoal lighters.
K2Y6UC	Items 1, 2, and 3 all contained a flammable substance, namely Item 1: gasoline; Item 2: medium aromatic product, such as automotive parts cleaners; Item 3: Heavy petroleum distillate, such as kerosene. The control bags were negative, thus no contamination took place. Arson by means of using flammable substances was the cause of the fire.
KE7TBA	Item 1, Gasoline detected. Item 2, Gasoline detected. Item 3, Heavy Petroleum distillate detected. Heavy petroleum distillates include but are not limited to kerosene and some charcoal starters. Item 4 and 5, No ignitable liquid residue detected. Samples submitted as control.
KGXCF3	Item 1 indicated volatiles originate from inflammable liquid. The liquid is of the type gasoline. Item 2 indicated volatiles originate from inflammable liquid. The liquid is mainly of the type gasoline. Item 3, an inflammable liquid of the type kerosene was indicated.
KGZKQ2	Items 1 and 2 were each found to contain gasoline. Item 3 was found to contain fuel oil (kerosene/diesel). Items 4 and 5 were used as control samples.
KMXWUD	Gasoline was detected in the wick from the loading dock (Item 1) and in the wick from the storage room (Item 2), and a heavy petroleum distillate was detected in the wick from the manager's office (Item 3).
KXNZN6	Item 1: Gasoline. Item 2: Gasoline. Item 3: Heavy petroleum distillate, examples of which are kerosene, diesel fuel, and some charcoal starters.
L2HUYM	No ignitable liquids were identified in either control bag. Test Item 1 contained gasoline. Test Item 2 contained gasoline. A medium to heavy petroleum distillate class ignitable liquid, with a carbon number range from 10 to 15, was detected in test Item 3. Members of this class may include but are not limited to kerosene, jet fuels, paint thinners, charcoal lighter fluid, camping fuels, and torch fuels.
LJ7479	Gasoline was detected on the pieces of cloth in Items 1 and 2. A kerosene product was detected on the cloth in Item 3. Examples of this type of product include but are not limited to kerosene, charcoal lighter fluid, lamp oil and heating fuel.
LLDGV3	Gasoline was identified in Exhibits 1 and 2. Gasoline is an ignitable liquid. A heavy petroleum distillate (HPD) was identified in Exhibit 3. Some examples of an HPD include kerosene, some lamp oils, and diesel fuels. A heavy petroleum distillate is an ignitable liquid. The Kapak Fire DebrisPak and Nylon control bags were analyzed for the presence of ignitable liquids with negative results.
LLS6YF	[No conclusions reported]
LMXUYD	A vapor composed of a series of hydrocarbons indistinguishable from those associated with petrol (gasoline) was detected in Items 1 and 2. A vapor composed of a series of hydrocarbons indistinguishable from those associated with a petroleum distillates was detected in Item 3. No ignitable liquid residues were detected in either control bag.
LNTABA	On chromatographic analysis, I found Item 1 and Item 2 to bear traces of gasoline. Whereas for Item 3, I detected traces of kerosene, which fall under the Heavy Petroleum Distillate classification.
LULG3J	Item 1- piece of wick- An ignitable petroleum distillate was detected, examples of which include all brands and grades of automotive gasolines and gasahol. Item 2- piece of wick- An ignitable petroleum distillate was detected, examples of which include all brands and grades of automotive gasolines and gasahol. Item 3- piece of wick- A heavy petroleum distillate was detected, examples of which include kerosene, jet fuels, fuel oils, diesel fuels, insect sprays, some charcoal starters, some torch fuels, some paint thinners, some solvents for insecticides and polish, and some lamp oils. Control Bag- Kapak- piece of wick, comparison sample. Control bag-Nylon- piece of wick, comparison sample.
M1MX9J	Items 1 and 2 each contained a volatile mixture which was consistent with gasoline. Item 3 contained a volatile mixture which was consistent with a heavy petroleum distillate. Examples of such products include kerosenes, torch fuels, and diesel fuels.
M8LHFK	Item 1: Gasoline, an ignitable liquid, was identified in Item 1. Item 2: Gasoline, an ignitable liquid, was identified in Item 2. Item 3: An ignitable liquid comparable to a heavy petroleum distillate was identified in Item 3. Examples of the heavy petroleum distillate class of ignitable liquids include kerosene, number

TABLE 4

WebCode	Conclusions
	2 fuel oil, some charcoal starters and diesel fuel.
ME9XAJ	Item 1 and 2: Gasoline was detected. Item 3: A heavy petroleum distillate was detected. Examples of this class of ignitable liquid include kerosene, diesel fuel, some jet fuel, and some charcoal starters. Both the nylon and Kpak control bags were negative.
MH8F6Q	Gas chromatography mass spectral analysis showed the presence of gasoline in Items 1 and 2, a heavy petroleum distillate in Item 3, but did not show any ignitable liquids in the Control bags.
ML3831	Items 1 and 2 were determined to contain a gasoline sample in which the concentration of the components has been altered by evaporation. Item 3 was determined to contain a heavy petroleum distillates ASTM class ignitable liquid. Examples of this ASTM class are kerosene, diesel fuels, some jet fuels, and some charcoal starters.
ML6UTF	Gasoline and a medium to heavy Normal Alkanes Products (n-alkanes C11 to C14) were recovered in Item 1. Medium to heavy Normal Alkanes Products (n-alkanes C11 to C14) was recovered in Item 2. Heavy petroleum distillates (n-alkanes C3 to C18) was recovered in Item 3.
MPTGKH	Item 1 and Item 2 were found to contain a volatile mixture consistent with gasoline. Item 3 was found to contain a volatile mixture consistent with a heavy range petroleum distillate. Examples of heavy range petroleum distillates include kerosene, some charcoal lighters, some lamp oils, and diesel fuel. No common ignitable liquid residues were detected in the control samples of Item 4 and Item 5.
MZ6D4L	Item 1 contains gasoline ignitable liquid residue. Item 2 contains gasoline ignitable liquid residue. Item 3 contains a heavy range of petroleum distillate ignitable liquid residue.
N7H8Q7	Item 1, contains gasoline, comparable to petrol as we call it in [country]. Item 2, contains Aromatic Products, both volatile and less volatile aromatics are present. Item 3, contains heavy petroleum product, comparable to kerosene. Kerosene in [country] is called paraffin. Both controls were found to be negative, no ignitable liquids detected. Ignitable/flammable liquid were used to accelerate the fire.
N81YAD	Presence of flammable products were detected by GC/MS: Item 1 ("wick" from loading dock): Gasoline. Item 2 ("wick" from storage room): Gasoline partially weathered. Item 3 ("wick" from manager's office): Medium petroleum distillate.
NE434H	The Items were analyzed by gas chromatography-mass spectrometry for the presence of ignitable liquids. Gasoline, an ignitable liquid, was identified in Exhibits 1 and 2. Exhibit 3 contained a heavy petroleum distillate (HPD), which is an ignitable liquid. Examples of HPDs include kerosene, diesel fuel, Jet-A fuel, and some paint thinners. No ignitable liquids were detected in either control bag.
NHCMNJ	Item 1- Normal alkane products. Item 2- light n-alkane products. Item 3- contained heavy petroleum distillates. No ignitable liquids were detected in all control bags.
NK5HAS	The wicks recovered from the loading dock and storage room were both identified as containing residues of "gasoline." The wick recovered from the manager's office was also "positive" for an ignitable liquid but was different as it contained residues of a "heavy petroleum distillate."
NLZ464	No ignitable liquid was found in two control bags. Item 1: contains gasoline. Item 2: contains gasoline. Item 3: contains Petroleum Distillates in the range C8-C18. Based upon the ASTM 1618-94, the sample extract was classified as Kerosene.
NQFGWJ	In Item 1 it was found gasoline type traces. In Item 2 it was found heavy petroleum distillates traces and in Item 3 it was found heavy petroleum distillates traces.
NST2VL	Item 1 was found to contain gasoline. Item 2 was found to contain gasoline. Item 3 was found to contain a heavy petroleum distillate. Examples may include but are not limited to kerosene, diesel fuel, some jet fuels, and some charcoal starters. No ignitable liquids were identified in Item 4. No ignitable liquids were identified in Item 5.
NYN3W6	The aromatic product contains any flammable substance that contains aromaticity, such as paint thinner, xylenes and toluene based product.
PCJGJ3	The analysis of Item 1 and Item 2 revealed the presence of gasoline in each item. The analysis of Item 3 revealed the presence of a heavy petroleum distillate (Examples: kerosene, diesel fuel).
PPH94	In the sample received and labeled as Item 1, it was detected the presence of one mixture which can be

TABLE 4

WebCode	Conclusions
	classified in the scheme proposed by the ASTM E 1618-06 Standard Methods as gasoline. In the sample received and labeled as Item 2, it was not detected any mixture which can be classified in the scheme proposed by ASTM E 1618-06 Standard Methods, (see additional comments). In the sample received and labeled as Item 3, it was detected the presence of one mixture which can be classified in the scheme proposed by ASTM E 1618-06 Standard Methods as Heavy Petroleum Distillates (kerosene). In the sample received and labeled as "Control Bag: Kapak Fire DebrisPAKTM," it was detected the presence of one mixture which can be classified in the scheme proposed by the ASTM E 1618-06 Standard Methods as Light Aromatic Products (toluene, ethylbenzene and xylenes), with signals as chromatography peaks above 8500 of abundance (see additional comments). In the sample received and labeled as "Control Bag: Nylon," it were not detected any mixture which can be classified in the scheme proposed by the ASTM E 1618-06 Standard Methods, (see additional comments). The gasoline, kerosene, toluene, ethylbenzene and xylenes are ignitable liquids. Ignitable liquid may start or accelerate a fire. Nonetheless, the identification of an ignitable liquid residue in a fire scene does not necessarily lead to the conclusion that a fire was incendiary in nature.
PPNSK3	Items 1, 2 and 3 were sampled for ignitable liquid residues using headspace and passive charcoal adsorption techniques. The samples were analyzed using gas chromatography and mass spectrometry. Gasoline was detected in Items 1 and 2. A heavy petroleum distillate was detected in Item 3. Some heavy petroleum distillates may include; kerosene, diesel fuel, some jet fuels, and some charcoal starters.
PQ1AGT	Items 1 and 2 both test positive for the presence of gasoline. Item 3 tested positive for the presence of a heavy petroleum distillate in the kerosene range. This would include but not be limited to some lamp oils, some jet fuels, and kerosene.
PY6F7P	Item 1: Gasoline (ASTM Class 2). Characteristic aromatic profile. The aliphatic content is less abundant. Hydrocarbon range of the majority of the pattern: C4-C12. Item 2: Less volatile fraction of gasoline. I have detected: Trimethylbenzenes, tetramethylbenzenes. Hydrocarbons: C9 and C10 derivatives. Item 3: Kerosene (ASTM Class 4). Typical distillate. Homologous normal alkane series in a "bell shaped pattern". Cycloparaffinic and isoparaffinic compounds appear among normal alkanes. Hydrocarbon range of the majority of the pattern: C9-C16. Peak spread: consecutive N- alkanes.
Q88XF6	Item 1, Partially evaporated gasoline was identified in the Kapak Fire Debris bag containing an uncharred white square of cloth. Item 2, Partially evaporated gasoline was identified in the nylon bag containing an uncharred white square of cloth. Item 3, A heavy petroleum distillate was identified in the nylon bag containing an uncharred white square of cloth. Examples of heavy petroleum distillates are kerosene, diesel fuel and some charcoal starters. No ignitable liquids were identified in the control samples.
QD14YE	Items 1 and 2 were each found to contain a volatile mixture consistent with gasoline. Item 3 was found to contain a volatile mixture consistent with a heavy petroleum distillate. Examples of heavy petroleum distillates include some lamp oils, some charcoal lighters, and kerosene. No common ignitable liquid residues were detected in Items 4 and 5 (control samples).
QDDUSR	Item 1 was found to contain gasoline. Item 2 was found to contain gasoline. Item 3 was found to contain Heavy Petroleum Distillates.
QHMAZU	Item 1- gasoline. Item 2- gasoline. Item 3- Heavy petroleum distillate, examples of which are kerosene, diesel fuels, and some brands of charcoal starters.
QK39U5	Gasoline was detected in Item 1, the "wick" from the loading dock. Gasoline was detected in Item 2, the "wick" from the storage room. A heavy petroleum distillate product was detected in Item 3, the "wick" from the Manager's Office. Examples of heavy petroleum distillate products include, but are not limited to kerosene, diesel fuel, some jet fuels, and some charcoal starters.
QPE4PG	Item 1 was subjected to adsorption-elution extraction followed by gas chromatographic mass spectrometric (GC/MS) analysis. GC/MS analysis shows the presence of partially evaporated gasoline. Item 2 was subjected to adsorption-elution extraction followed by gas chromatographic/ mass spectrometric (GC/MS) analysis. GC/MS analysis shows the presence of partially evaporated gasoline. Item 3 was subjected to adsorption-elution extraction followed by gas chromatographic mass spectrometric (GC/MS) analysis. GC/MS analysis shows the presence of a heavy petroleum distillate. Examples of this class of ignitable liquids could include (but are not limited to): kerosene, diesel fuel,

TABLE 4

WebCode	Conclusions
	some jet fuels, some charcoal starters, or a mixture of these or other similar products.
QS3NHS	Item 1 confirmed gasoline. Item 2 confirmed gasoline. Item 3 confirmed heavy petroleum distillate.
QTT1UH	Item 1- gasoline was identified. Item 2- gasoline was identified. Item 3- A heavy petroleum distillate, examples of which include kerosene and #2 fuel oil was identified. Control Bag (Nylon)- No ignitable liquid or residue was detected. Control Bag (K-Pak)- No ignitable liquid or residue was detected.
R179VK	Results of Fire Debris Analysis: Items 1 and 2- The volatile contents were recovered using heated headspace recovery method and analyzed by gas chromatography, and were extracted by passive headspace adsorption using an activated charcoal strip recovery method and analyzed by gas chromatography/ mass spectrometry. Gasoline was detected. Item 3- The volatile contents were recovered using heated headspace recovery method and analyzed by gas chromatography, and were extracted by passive headspace adsorption using an activated charcoal strip recovery method and analyzed by gas chromatography/ mass spectrometry. A heavy petroleum product (e.g. diesel fuel, kerosene, fuel oil, etc.) was detected. Items 4 and 5- The volatile contents were recovered using heated headspace recovery method and analyzed by gas chromatography, and were extracted by passive headspace adsorption using an activated charcoal strip recovery method and analyzed by gas chromatography/ mass spectrometry. The Items were analyzed as comparison samples.
R1JX4Y	Gasoline was identified in Lab Items 1 and 2. A heavy petroleum distillate was identified in Lab Item 3.
R3DJZA	I found the Items received to consist of: Item 1: A piece of cloth which on analysis I detected the presence of residue of gasoline with components in the range of carbon 6 to carbon 12 with constituents such as toluene, xylene and benzene. Item 2: A piece of cloth which on analysis I detected the presence of residue of gasoline with components in the range of carbon 6 to carbon 12 with constituents such as toluene, xylene and benzene. Item 3: A piece of cloth which on analysis I detected the presence of residue of heavy petroleum distillates where the components are in the range of carbon 8 to carbon 18.
R46EMJ	The samples were analyzed using gas chromatography/mass spectrometry. Gasoline was identified in Item 1 and Item 2. Petroleum distillates in the medium to heavy range were identified in Item 3.
RH5X6Q	I formed the opinion that Items 1 and 2, the wicks from the loading dock and storage room respectively, contained petrol residues. Petrol is a gasoline class ignitable liquid. I also formed the opinion that Item 3, the wick from the manager's office contained a heavy petroleum distillate residue. Heavy petroleum distillate class residues are ignitable liquids.
RNX5PY	Item 1, ignitable liquid residues containing gasoline. Item 2, ignitable liquid residues containing gasoline. Item 3, ignitable liquid residues in the range of a heavy petroleum distillate. Products in this range include, but are not limited to, some brands of kerosene and diesel fuel, some charcoal starters, some lamp oils, and some injector cleaners. Item 4, no ignitable liquid residues were detected (control sample). Item 5, no ignitable liquid residues were detected (control sample).
RSJ4AZ	Control Nylon: Analysis of control failed to reveal the presence of an ignitable liquid. Control Kapak: Analysis of control failed to reveal the presence of an ignitable liquid. Item 1: Analysis of Item 1 revealed inconclusive results. Item 2: Analysis of Item 2 failed to reveal the presence of an ignitable liquid- Negative. Item 3: Analysis of Item 3 revealed the presence of a heavy petroleum distillate such as diesel fuel and kerosene. Disclaimers: Item 1 has indications of a petroleum product present such as an aromatic or gasoline, the data is inconclusive and some target compounds are unable to be identified. Negative results do not preclude that an ignitable liquid was present at the scene.
RZGWJT	Gasoline was identified in Items 1 and 2. A heavy petroleum distillate which would include kerosene and #2 fuel oil was identified in Item 3. Items 4 and 5 were used for control purposes only.
S51GZE	The two control samples and the "wicks" from the loading dock (Item 1), the storage room (Item 2), and the manager's office (Item 3) were analyzed for the presence of ignitable liquids using gas chromatography/mass spectrometry (GC/MS). No ignitable liquids were detected in the control samples. Gasoline was detected in the samples from the loading dock (Item 1) and the storage room (Item 2). A petroleum distillate (heavy range) was detected in the sample from the manager's office (Item 3). Examples of heavy range petroleum distillates include: kerosene, diesel fuel, some jet fuels and some charcoal starters.
S8L89V	Item 1- Gasoline residue was detected. Item 2- No ignitable liquid residues were detected. Item 3- A

TABLE 4

WebCode	Conclusions
	medium to heavy petroleum distillate was detected. Kapak bag control- No ignitable liquid residues were detected. Nylon Bag control- No ignitable liquid residues were detected. Several alternative explanations are possible when no ignitable liquid residues are identified by laboratory analysis of fire debris samples. These possibilities are: The sample at no time contained ignitable liquid. This may be because no ignitable liquid was used at the fire scene or because the particular evidence sample was not collected from the exact location where an ignitable liquid may have been used. Any ignitable liquid that may have been used at the scene was consumed beyond the limits of detectability by burning or evaporation prior to laboratory analysis of the sample.
S983GW	By means of physical and chemical analysis was detected: The flammable substance gasoline in Items 1 and 2. An ignitable substance within the Heavy Petroleum Distillates class in Item 3, which includes kerosene, diesel fuel, some jet fuels, some charcoal starters, etc.
SDAVX9	Items 1 - 5 were subjected to adsorption-elution extraction followed by gas chromatographic/ mass spectrometric (GC/MS) analysis. GC/MS analysis shows the presence of gasoline in Item 1 and Item 2. GC/MS analysis shows the presence of a heavy petroleum distillate (HPD) in Item 3. Examples of HPD's include but are not limited to kerosene, diesel fuel, some jet fuels and some charcoal starters. GC/MS analysis shows no evidence of ignitable liquids in Item 4 and Item 5 (Nylon and Kapak Fire Debris Pak control exhibits).
SE175U	Items 1 and 2 were determined to contain a gasoline sample in which the concentration of the components has been altered by evaporation. Item 3 was determined to contain a heavy petroleum distillate ASTM class ignitable liquid. Examples of this ASTM class are kerosene and diesel fuel.
SERY12	Item 1 contains gasoline residue. Item 3 contains a heavy petroleum distillate residue. Examples of products that contain heavy petroleum distillates include but are not limited to the following: kerosene, diesel fuel, some jet fuels, and some charcoal starters. Test results for Item 2 are inconclusive test results from Item 2 had some similarities to ignitable liquids; however, the results did not correspond well enough to an ignitable liquid in the laboratory reference collection or literature references to allow for a classification. The inability to find a comparable reference liquid may be because the particular ignitable liquid is not contained in the reference collections, the liquid residue is too weak for accurate interpretation, the data obtained from Item 2 is not from an ignitable liquid, or because of possible contaminants in the sample.
SFVT16	Item 1- There is in all probability gasoline in the sample. Item 2- There is probably gasoline in the sample. Item 3- There is in all probability identified an ignitable liquid, which may have its origin from diesel or kerosene.
T1X65X	Item 1 and Item 2 contain gasoline, respectively. GC chromatograms of Item 1 and Item 2 showed the somewhat evaporated peaks pattern of gasoline. Item 3 contains 'medium to heavy' ranged petroleum distillates.
T5ENWQ	Gasoline was detected in the wick from the loading dock (Item 1) and in the wick from the storage room (Item 2). Ethanol was also detected in Item 1. The presence of ethanol in Item 1 could indicate that the gasoline detected was a source of gasohol. A medium petroleum distillate was detected in the wick from the manager's office (Item 3).
T8ED5F	Gasoline was detected in Items 1 and 2. A heavy range ignitable liquid was detected in Item 3. Heavy range ignitable liquids may contain such products as kerosene, fuel oil, and some charcoal starters. No ignitable liquid was detected in Items 4 and 5.
T8RBYZ	Gasoline was identified in Items 1 and 2. A petroleum distillate in the medium/heavy range was detected in Item 3. Examples of petroleum products in the medium/heavy range include: some charcoal starters and kerosene. No ignitable liquid detected in Items 4 and 5.
T96D8T	Item 1- gasoline. Item 2- gasoline. Item 3- Heavy petroleum distillate, examples of which are kerosene, fuel oils, diesel fuels, and some brands of charcoal starter fluids.
TALXUB	On analysis I found the wick in 'Item 1' to contain traces of gasoline and both wicks in 'Item 2' and 'Item 3' to contain traces of medium class petroleum distillates.
TBZ6EX	Item 1: Gasoline. Item 2: Gasoline. Item 3: Heavy petroleum distillate, examples of which are kerosene, fuel oils, diesel fuels and some brands of charcoal starters. Item 4 (Kapak control): No

TABLE 4

WebCode	Conclusions
	flammable or combustible liquids were found. Used in conjunction with Exhibit 1. Item 5 (Nylon control): No flammable or combustible liquids were found. Used in conjunction with Exhibits 2 and 3.
TEHHYL	Item 1 gasoline. Item 2 gasoline. Item 3 heavy petroleum product. Examples would include kerosene and some charcoal starters. Item 4 No ignitable liquids detected. Item 5 no ignitable liquids detected.
TKV47S	A gasoline residue was identified in Items 1 and 2. A heavy petroleum distillate was identified in Item 3. Some examples of heavy petroleum distillates would include diesel fuel and kerosene. No ignitable liquids were detected in Items 4 and 5.
TL8N12	Gasoline was identified in Items 1 and 2. A heavy petroleum distillate product was identified in Item 3, examples of heavy petroleum distillate products include kerosene, some charcoal starters, and some jet fuels. No ignitable liquid residues were detected in the two control samples.
TNZSP3	Items 1 and 2: Gasoline. Item 3: Heavy petroleum distillate. Examples of heavy petroleum distillates are kerosene, diesel fuel, some jet fuels, some charcoal starters, and some automotive fuel system cleaners and treatments.
U2CMFJ	Examination of Items 1 and 2 revealed the presence of residual gasoline. Examination of Item 3 revealed the presence of a heavy petroleum distillate. Heavy petroleum distillates include kerosene and diesel fuel.
U71DJ6	The Item 1 and 2 extracts each contained a gasoline petroleum product. The Item 3 extract contained a kerosene petroleum product. No petroleum products were identified in the Item 4 or 5 extracts.
UB8VJT	Items 1 and 2 were determined to contain gasoline samples in which the concentration of the components has been altered by evaporation. Item 3 was determined to contain a heavy petroleum distillate ASTM class ignitable liquid. Examples of this class are kerosenes and some gas treatments. Ignitable liquids would not be detected in Items 4 and 5.
UBZK43	Instrumental analysis of Item 1 and Item 2 revealed the presence of gasoline. Instrumental analysis of Item 3 revealed the presence of a heavy petroleum distillate, examples of which include kerosene, diesel fuel and fuel oils.
UE8236	Item 1- "wick" from loading dock in Kapak Fire Debris PAK evidence bag, contained a light petroleum distillate. Item 2- "wick" from storage room in Nylon evidence bag, contained a light petroleum distillate. Item 3- "wick" from manager's office in Nylon evidence bag, contained a heavy petroleum distillate.
UH4HY1	Gasoline was identified in Items 1 and 2. A heavy petroleum distillate was identified in Item 3.
UHHVDX	Sample 1, Engine gasoline identified. Sample 2, Engine gasoline identified. Sample 3 a medium to heavy petroleum distillate identified. Note: Engine gasoline is a general term for gasoline with or without lubricant (2-stroke, -resp, 4-stroke gasoline). No distinction between the two can be made with the current analysis method employed (headspace analysis).
UJDDFY	Gas chromatography mass spectral analysis showed the presence of gasoline in Items 1 and 2, a heavy petroleum distillate in Item 3, but did not show any ignitable liquids in the Control bags.
UKQAK4	Item 1 contained gasoline. Item 2 contained gasoline. Item 3 contained a heavy range petroleum distillate (HPD). Examples of HPD's include kerosene, some charcoal starters, and some jet fuels.
UNNSXX	Items 1 and 2 contain gasoline. Item 3, A medium to heavy petroleum distillate was detected by GCMS analysis. Examples of medium to heavy petroleum distillates include, but are not limited to, some lamp oils, kerosenes, and insecticide carriers.
V5SL4X	The Kapak Fire DebrisPAK bags (Item 1 and control) and the Nylon bags (Items 2 and 3 and control) were sampled and the charcoal adsorption material sent [to another laboratory] via Gas Chromatography-Mass Spectrometry.
V7W9L8	Gasoline was detected in Items 1 and 2. Heavy petroleum distillate was detected in Item 3.
VDJZ84	Items 1 and 2 were examined for the presence of ignitable liquid residues. Gasoline was detected in Items 1 and 2. Item 3 was examined for the presence of ignitable liquid residues. A heavy petroleum distillate (kerosene) was detected.
VDY5L8	Item I contains components identifiable as gasoline. Item II contains components identifiable as evaporated gasoline. Item III contains components identifiable as a kerosene type product. Both control

TABLE 4

WebCode	Conclusions
	bags were examined and were found to be free of contaminants which might influence the determination.
VECQBX	Item 1- No ignitable liquid residues were identified. Item 2- A limited number of gasoline components were detected. Item 3- A medium to heavy petroleum distillate was detected. (C11-C17). Medium to heavy petroleum distillates include, among others, kerosene and diesel fuels. Note- an important comment concerning Item 1 is added in "additional comments."
VK5QUY	Item 1: Analysis revealed the presence of gasoline. Item 2: Analysis revealed the presence of gasoline. Item 3: Analysis revealed the presence of a heavy petroleum distillate, examples include kerosene, jet fuels, and some charcoal starter fluids. Item 4: No ignitable liquids were identified. Item 5: No ignitable liquids were identified.
VS1Q76	We found the following results: Item 1: gasoline with ethanol in the loading dock; Item 2: gasoline in the storage room; Item 3: heavy petroleum distillate (HPD) in the manager's office type "Sunnyside Kerosene." In this scenario, we don't know enough information about this warehouse (its activity...) to conclude about origins of this fire. Nevertheless, we could suppose the presence of motor vehicles (trucks...) in the loading dock what could explain gasoline. In addition, respectively in the storage room and in the manager's office, gasoline, and the heavy petroleum distillate are suspect if their presence aren't justified. Indeed, in the manager's office the HPD type "Sunnyside Kerosene" is a safer fuel used among others for camp stoves, space heater or oil burning lamps.
VTAV98	Item 1 contained gasoline. Item 2 contained gasoline. Item 3 contained heavy petroleum distillates consisting of kerosene.
W6TZWW	Item 1- Analyzed using passive headspace technique based on ASTM 1412 the sample extract produced a pattern that was classified as gasoline. Item 2- Analyzed using passive headspace technique based on ASTM 1412 the sample extract produced a pattern that was classified as gasoline. Item 3- Analyzed using passive headspace technique based on ASTM 1412 the sample extract produced a pattern that was classified as a heavy petroleum distillate. Materials in this classification include kerosene, diesel fuel, some jet fuels, and some charcoal starters.
WA9A7D	Item 1 and Item 2 were found to contain a gasoline. Item 3 was found to contain a medium to heavy petroleum distillates in the range of C8-C17. No ignitable liquids were identified in the control bags (Kapak Fire DebrisPAK and Nylon evidence bag).
WZTNWS	Gasoline was identified in Items 1 and 2. A heavy petroleum distillate was identified in Item 3. Examples of materials in this class include kerosene and diesel fuels. No ignitable liquids were identified in the Kapak Fire DebrisPak control bag and the Nylon control bag. Samples of recovered materials from this case have been preserved with the evidence.
WZYU9	Exhibits 1, 2, and 3 and the two (2) bags submitted as "control" bags were examined by gas chromatography-mass spectrometry for the presence of ignitable liquids. Exhibits 1 and 2 contained gasoline, which is an ignitable liquid. Exhibit 3 contained a heavy petroleum distillate (HPD), which is an ignitable liquid. Examples of HPDs include kerosene, jet fuel, home heating fuel, diesel fuel, and some charcoal starter fluids. No ignitable liquids were identified in either of the exhibits submitted as "control" bags.
XCFYCV	Item 1 is a gasoline and heavy petroleum distillate mixture. Item 2 is a heavy petroleum distillate. Item 3 is a heavy petroleum distillate.
XFJM1Y	Item 1: Gasoline, an ignitable liquid, was detected. Item 2: Gasoline, an ignitable liquid, was detected. Item 3: An ignitable liquid was detected. It was a heavy petroleum distillate product. Examples of such products include, but are not limited to, kerosene, some charcoal starters, and some jet fuels. The control KAPAK FireDebrisPAK bag and the control Nylon bag were each analyzed for comparison purposes only.
XL7GR4	Item 1: Aromatics and alkanes of gasoline are found. The class is gasoline. The flammable is evaporated gasoline. Ethanol is also found. Item 2: No characteristic compound of flammable is found. Item 3: n alkanes from C10 to C15 are found. The class is Petroleum Distillate. The subclass is Heavy. The flammable could be evaporated Kerosene.
XN3UH3	The Items 1 and 2 extracts each contained a gasoline petroleum product. The Item 3 extract contained a fuel oil petroleum product. Kerosene and fuel oil #2/diesel fuel are examples of fuel oil petroleum products. No volatile compounds or petroleum products were identified in the Items 4 or 5 extracts.

TABLE 4

WebCode	Conclusions
XPSSSP	Petrol residues (Gasoline, ASTM Class 2) were recovered from the "wick" from the loading dock and the "wick" from the storage room (Items 1 and 2). Hydrocarbon residues with a composition consistent with kerosene (Heavy Petroleum Distillate, ASTM Class 4) were recovered from the "wick" from the manager's office (Item 3).
XVBLL6	Items 1 and 2 were found to contain a volatile mixture consistent with gasoline. Item 3 was found to contain a volatile mixture consistent with a heavy range petroleum distillate. Examples of such mixtures include kerosene, jet fuel, and #1 fuel oil. No common ignitable liquids were detected in Items 4 and 5.
XXJWJV	Analysis by gas chromatography/mass spectrometry of the wick material (Item 1) reveals the presence of gasoline. Analysis by gas chromatography/mass spectrometry of the wick material (Item 2) reveals the presence of gasoline. Analysis by gas chromatography/ mass spectrometry of the wick material (Item 3) reveals the presence of a heavy petroleum distillate (HPD). Examples of HPD's include: Kerosene, Diesel fuel, Fuel Oil No. 1, Fuel Oil No. 2, Jet fuel, some paint thinners, some torch fuels, some lamp oils and some solvents for insect sprays and polishes. Analysis by gas chromatography/mass spectrometry of the Kapak control sample (Item 4) fails to reveal the presence of any ignitable liquids. Analysis by gas chromatography/ mass spectrometry of the Nylon control sample (Item 5) fails to reveal the presence of any ignitable liquids.
Y5Q1QS	Analysis by GCMS revealed the presence of: Item 1: a light range isoparaffinic product and gasoline. Item 2: Gasoline. Item 3: a heavy range distillate. Examples of a light range isoparaffinic product include Isopar C, specialty solvents and aviation gas. Gasoline includes all brands, grades, and gasohol. Examples of a heavy range distillate include kerosene, diesel fuel, some jet fuels, and some charcoal starters.
Y6VFDD	Gas chromatographic analysis (GC-MSD; heated headspace sampling and passive headspace concentration) of the submitted items was performed and yielded the following results: Item 1 and 2- gasoline was identified in each. Item 3- a heavy petroleum distillate was identified. Examples of heavy petroleum distillates of the type detected include some charcoal lighter fluids and kerosene. Nylon control bag and Fire Debris Pak control bag- Ignitable liquid residue was not detected or identified.
Y9D664	Item 1: Gasoline found. This includes all brands of gasoline and gasohol. Item 2: Gasoline found. This includes all brands of gasoline and gasohol. Item 3: A heavy petroleum distillate found. Some examples of heavy petroleum distillates are kerosene, diesel fuel, some jet fuels and some charcoal starters. Item 4: (control bag) No flammable or combustible liquids were detected. Item 5: (control bag) No flammable or combustible liquids were detected.
YE5KR5	Item 1 was found to be a cloth substrate which was examined for the presence of ignitable liquids and was found to be stained with gasoline. Item 2 was found to be a cloth substrate which was examined for the presence of ignitable liquids and was found to be stained with traces of gasoline. Item 3 was found to be a cloth substrate which was examined for the presence of ignitable liquids and was found to be stained with heavy petroleum distillates.
YHHLCA	Traces of ignitable liquid, classified as gasoline, were detected in the "wick" from loading dock (Item 1). Traces of ignitable liquid, classified as gasoline, were detected in the "wick" from storage room (Item 2). Traces of ignitable liquid, classified as Medium petroleum distillates were detected in the "wick" from manager's office (Item 3). No ignitable liquid residue was detected in the Kapak Fire DebrisPAK evidence bag. No ignitable liquid residue was detected in the Nylon evidence bag.
YL6XBF	Item 1: Gasoline, this includes all brands and grades of domestic gasoline. Item 2: Gasoline, this includes all brands and grades of domestic gasoline. Item 3: Heavy Petroleum Product, some examples are kerosene, diesel fuel, and some charcoal starters. *Kapak Control bag: No ignitable liquids indicated. *Nylon Control bag: No ignitable liquids indicated.
YUG3J5	Gasoline was identified in Item 1 and Item 2. A heavy-range petroleum distillate (HPD) was identified in Item 3. Examples of commercially available products of HPDs include but are not limited to charcoal lighter fluid and kerosene. A direct solvent extract of the fabric did not indicate the presence of diesel type fuel. No ignitable liquid residues were identified in either control bag- Fire DebrisPak or control bag- Nylon.
YUY9HV	Gas chromatographic mass spectral analysis of Items 1 and 2 detected the presence of gasoline. A heavy petroleum distillate was detected in Item 3. There were no ignitable liquids detected in either of

TABLE 4

WebCode	Conclusions
	the control bags.
Z3P7T1	Exhibit 1 Kapak Fire Debris bag containing white cloth. Examination reveals the presence of an ignitable liquid residue in the gasoline class. Refer to the attached Ignitable Liquid Classification System. Exhibit 2 Nylon bag containing white cloth. Examination reveals the presence of ignitable liquid residue in the Gasoline class. Refer to the attached Ignitable Liquid Classification System. Exhibit 3 Nylon bag containing white cloth. Examination reveals the presence of an ignitable liquid residue in the Heavy Range of the petroleum distillate class. Refer to the attached Ignitable Liquid Classification System. Exhibit 4 Nylon bag containing white cloth (control bag). No ignitable liquid as defined by the attached Ignitable Liquid Classification System was detected. Exhibit 5 Kapak Fire Debris bag containing white cloth (control bag). No ignitable liquid as defined by the attached Ignitable Liquid Classification System was detected.
Z68MAQ	A residue of gasoline was detected in Items E-1 and E-2. A residue of a heavy petroleum distillate was detected in Item E-3. Examples of a heavy petroleum distillate are kerosene, diesel fuel, some charcoal starters, and some jet fuels. No ignitable liquids were detected in Item E-CB or E-CN (control samples).
ZDRADX	Exhibits 1, 2, and 3 were examined for the presence of ignitable liquids using gas chromatography/ mass spectrometry (GC/MS). Examination of Exhibits 1 and 2 disclosed the presence of gasoline and a medium range isoparaffinic product. Medium range isoparaffinic products are available as some charcoal starters, some paint thinners, and some copier toners. Examination of Exhibit 3 disclosed the presence of a heavy range petroleum distillate. Heavy range petroleum distillates are available as kerosene, diesel fuel and some jet fuels. It should be noted that the identification of an ignitable liquid residue in a fire scene does not necessarily lead to the conclusion that a fire was incendiary in nature. Further investigation may reveal a legitimate reason for the presence of ignitable liquids. The Kapak Fire DebrisPAK evidence bag and the nylon evidence bag were submitted as control samples. No ignitable liquids were detected in these bags.
ZDT5X4	It was determined utilizing gas chromatography/mass spectrometry analysis that Item 1 and Item 2 exhibited the presence of gasoline. It was determined utilizing gas chromatography/ mass spectrometry analysis that Item 3 exhibited the presence of a heavy petroleum distillate.
ZEYQL4	Gas chromatography and mass spectrometry were used to analyze the samples in Items 1, 2, and 3. Gasoline was present in Items 1 and 2. A heavy range petroleum distillate like that in kerosene and some charcoal lighter fluids was present in Item 3.
ZKA6WN	Item 1 contained residues of petrol. Item 2 contained residues of petrol. Item 3 contained a petroleum distillate similar to a light heating oil.
ZKDAFW	Item 1 contains a volatile residue of a flammable petroleum product commonly marketed as automotive gasoline. Item 2 contains a low level of volatile residue of a flammable petroleum product commonly marketed as automotive gasoline. Item 3 contains a volatile residue of a heavy petroleum distillate. Examples of a heavy petroleum distillate include kerosene and some heating and lamp oils. The control bags were evaluated for comparison purposes only.
ZN7EQ2	Item 1 and Item 2 was found to contain gasoline. Item 3 was found to contain Heavy Naphthenic Paraffinic Products.
ZZAANY	Examination of vapor samples from Items 1 and 2 showed the presence of gasoline. Examination of a vapor sample from Item 3 showed the presence of a heavy petroleum distillate product; examples of such would include kerosene diesel fuel, and some charcoal starters. There were no commonly encountered flammable liquids detected in either of the control bags.

# Additional Comments

TABLE 5

WebCode	Additional Comments
11B2RW	Lab Exhibit 1B (CTS Item 2) would be reported as gasoline, however a qualifying statement remains in the notes, "Traces of heavy petroleum distillate peaks." These could be the result of a mixture, contamination at/from the scene, or contamination while packaging. Both Items 1 and 2 (1A and 1B) were extremely weak.
1TDB92	For Item 1, it was noted that early alkanes were stronger than expected. The alkanes present could be ascribed to either an LPD or early isoparaffinic product. However, the items were not sufficiently distinctive from the early components seen in a gasoline standard. Item 2 was less abundant and slightly more deteriorated than Item 1. For Item 3, the determination was to place it in the "Medium to Heavy" range. It contained from C9 to C16 with the majority being before C13, yet the components after C13 were too significant to ignore. With eight consecutive n-alkanes (nine if one counts the very small C17 and pristane) the pattern falls between the ASTM E1618 "rules" for both "medium" and "heavy."
1ZH118	A mixture of ignitable liquids [ethyl acetate, methyl ethyl ketone, benzene, toluene, ethyl benzene, and xylenes] were isolated on the Kapak control bag. No ethyl acetate or MEK were isolated on Item 1. Concentrations of aromatics isolated on the control were significantly less than the aromatics isolated on Item 1. No ignitable liquids were isolated on the nylon control bag. The nylon control bag was the only bag of the five received to have a significant volume entrapped (bag was obviously "pillowed" where none of the others (Kapak or Grand Rivers were). Gasoline isolated on Item 2 was more fire-aged than that isolated on Item 1 but both appeared to be from similar sources (a premium, high octane gasoline).
2AQ1K2	Item 1: TIC consistent with weathered gasoline but lacked sufficiently abundant C3- Alkylbenzes (ASTM standard 1618-06) to identify gasoline.
38335M	Nylon bag recoveries at 60° C included: 50% gasoline + IS (phenyltoluene) GKD + IS (phenyltoluene). IS ship recovery (nylon bag). The central recoveries were first analyzed at 60° C, 4 hours- ambient. The second time (new strike) at 60° C overnight ambient. *Low recovery from Item 2, nylon bag.
3F4DB5	The Kapak fire debris bag contained a small amount of xylene.
3ZQ61F	It is noted that many ignitable liquids are very volatile and may be lost through evaporation, totally consumed during a fire, environmentally altered or indistinguishable from background material. A negative result for the identification of an ignitable/flammable liquid on fire debris does not preclude its presence or use in a fire.
46SLH1	The choice of headspace under no. 2, Flammable Recovery Techniques, is confusing. Does it mean the sampling of the containers headspace for direct injection or does it refer to the collection of the headspace hydrocarbons on carbon/charcoal at room temperature or specific temperature?
4VBUWC	Under the test conditions employed, the Kapak control bag was essentially "clean", whereas the nylon control bag showed the presence of a significant level of caprolactam in the GC/MS scan.
5P837F	The analysis of the nylon bag revealed the presence of caprolactum, so it should be noted that future tests from CTS (in flammables analysis) may contain this analyte. This analyte appeared in Item 2 and was of no consequence but seemed to co-elute with C12 in Item 3.
698J9P	The light components in Item 1 were unusually more abundant than the medium range components. Item 2 contained a significantly higher amount of medium range aliphatics than we normally see in gasoline. However, naphthalene and methylnaphthalenes could not be identified.
6BC37W	The policy of this laboratory is only to analyze items submitted for examination where they have been packaged in nylon bags. Item 1, wick from loading dock, and the Kapak control bag were not examined.
6J5PL9	It should be noted that Items 1 and 2 were fairly weak. I did notice that my control bag for Item 1 (Kapak Fire DebrisPAK) did contain light aromatic products; toluene, ethylbenzene, m,p-zylene, and o-xylene which made the identification of Item 1 increasingly difficult. I am not aware whether or not this was intentional but it was my understanding that the purpose of proficiency testing was to test the skills of the analyst as he/she would be tested in real world samples not to attempt to "trick" or "trip up" the analyst. Also, Item 1 contained a few isoparaffins, however, Texaco gasoline does have these same isoparaffins in their gasoline. Whether or not additional isoparaffins were added to Item 1 to indicate that a light isoparaffinic products (in particular, Isopar C) was mixed with gasoline is unclear and I could not

TABLE 5

WebCode	Additional Comments
	confidently report.
6JV56F	Item 1 appears to suggest an evaporated or weathered gasoline. No ignitable liquid residue was detected on Item 2. Gasoline was readily detected on a resupplied sample of Item 2 (Lab Item 7). Please contact this lab for more detailed information and concerns. Item 3 was received deflated/damaged. A heavy petroleum distillate was detected in both it and a resupplied sample of Item 3 (Lab Item 6).
74V5WH	It appears that the same combination of ignitable liquids were used in Item 1 and Item 2. If the same quantity was used in both, Item 1 was better at retaining the sample. Overall abundance of Item 2 compared to Item 1 was nearly 1/3. I also question the resiliency of this type of container (bags) for the majority of ignitable liquid analysis evidence. Fire debris is often fraught with jagged, sharp and irregular debris that can and likely would puncture these types of evidence containers.
77VAEU	Both control bags were tested and no ignitable liquid residues were detected.
7EQEAR	Exhibit "A" is comparable to the commercial product petrol. Exhibit "B" is comparable to the commercial products, some cleaning solvents, fuel, and adhesives. Exhibit "C" is comparable to commercial product kerosene/paraffin.
7EVTWS	The Fire Debris Pak control sample contained a light aromatic product.
7M5XS5	We have an informational sheet similar to Table 1 'Ignitable Liquid Classification Scheme' in ASTM E-1618-06, which we send along with the report.
7QWY6T	No residue of a flammable liquid was detected for both controls bags, Nylon and Fire DebrisPak.
8J68X3	There is a light isoparaffinic product consistent with Isopar C observed in Items 1 and 2. This could be due to having a gasoline sample obtained from a different part of the U.S., or it could be from a gasoline additive or the sample may be a mixture.
8TQJ6V	Good common sense proficiency.
943GPD	Samples Item 1 and 2 were packed in two different packaging devices made of distinguished materials. Therefore, no valid definitive conclusion based on the comparison of the two samples should be drawn.
957CMH	The classification was based on the light, medium, and heavy classes stated in the instructions. Based on the range of n-alkanes observed (C8-C18), it would have been considered as being in the kerosene class (medium-heavy); however, considering the possible shortcomings of the method used, it would have been reported as a fuel oil to include both medium-heavy and heavy class possibilities.
96DW4Q	Ignitable Liquid Classification System used is equivalent to ASTM E-1618 method requirements. I did not print out our classification system for this report. Item 2 (wick from storage room in Nylon evidence bag) produced a pattern which was considerably weaker than the pattern produced from Item 1.
9YF7NL	Significant amounts of Item 1 and 2 samples had evaporated from the cloth into the volume of air in sample bags. Tests were run on the headspace in the bags also.
A4L5SK	Nylon bags are not permitted for submission to County Forensic Laboratory, thus the proficiency test does not mimic actual casework.
ADAXZA	There was no in-house standard for Item 1 which contained an oxygenated solvent. My policy states that chromatographic patterns that fall within an ASTM class with no in-house standard are to be reported as an unidentified petroleum product. Item 1 also contained gas and med-heavy distillate components. Item 2 contained gas and HPD.
BCRJ2Y	Very low levels of a possible medium to heavy petroleum product was detected in Item 5. The amount observed was so weak that it had the appearance of being some type of contamination or were inherent to the sample. The levels detected were not high enough to have been a contributing factor in the results of the analysis of Items 2 or 3.
CHCVFS	Both control bags displayed extraneous peaks. In both Items 1 and 2 alkane to aromatic ratio was 1:1 or higher leading to designation of a mixture.
CKQHZZ	The amount of gasoline found in Item 2 is much lower than the amount found in Item 1. The gasoline found in Item 2 is more evaporated than these found in Item 1.
CV4F3A	One (1) Kapak Fire DebrisPAK evidence bag containing control wick material was examined as a control sample. One (1) Nylon evidence bag containing control wick material was examined as a control sample

TABLE 5

WebCode	Additional Comments
	and was found to contain a medium naphthenic paraffinic product, in the range of C9-C14.
D7GXDD	I do not distinguish between an INBPD and a de-aromatized distillate. The HC range is not affected by the treatment and does not alter the flammability of the distillate.
DHN6G4	Item 1 contains a medium to heavy pattern between C11 and C14 that has an unusually high amount of C13. Overall, this pattern was not very abundant. Our lab does not have a comparable reference for this pattern.
DPX2NY	Item 3 was not sealed upon receipt.
DS3UQX	Our laboratory extracts samples and then sends them to another lab, therefore ignitable liquid results were not entered on this test.
DYK9AV	The Kapak corporation's Fire DebrisPak bags cause no problem for us.
EETDG7	The DebrisPak bag would be considered very unsuitable as packaging for fire debris samples as it gave off quite a number of potentially interfering peaks during the analysis. Generally we use a simplified nomenclature when reporting (as can be seen in the wording of our conclusion above).
FCUR7N	The toluene peak in Item 1 is fairly strong, but the sample may be less deteriorated than the sample in Item 2. The naphthalenes in Item 2 are not as strong as in Item 1, but there may be a recovery factor due to concentration. The pattern for Item 3 fits both the "heavy" and "medium" requirements for ASTM E1618 10.1.3.2 and 10.1.3.3. The determination of "heavy" was selected as the standard to which the unknown most favorably compared was a diesel fuel (HPD). A determination of "medium to heavy" was considered.
FKELLY	The carbon range for Item 3 was C8 to C15, with no major peaks over C14. While the range is slightly heavy, the product is still described as an MPD by ASTM E1618.
FNE1QE	The control bags were assigned Item numbers 4 and 5.
FZUMHP	The nylon bags seem to be less resistant of punctures than the Kapak bags.
G68EZ8	The analyst was given one of four sealed "Sample Pack FL" boxes received by our laboratory and performed the analysis utilizing proper procedures for ignitable liquids analysis. The analyst became concerned over the results obtained for Item 1 as very weak aromatic compounds were indicated but could not be classified as an ignitable liquid. These materials were not present in the control sample for Item 1. Subsequent re-extraction and re-analysis of Item 1 yielded the same results. The analyst's examination of Items 2 and 3 detected residues consistent with gasoline and HPD respectively. The analyst requested that the laboratory Quality Manager provide an additional proficiency test in order to confirm the results of the initial testing of Item 1. The analysis of the second proficiency test yielded a significantly different result for Item 1, which the analyst classified as consistent with gasoline. Furthermore, upon opening the Kapak bag an odor suggestive of an ignitable liquid was detected which was not observed in the first sample. The examination of Items 2 and 3 gave the same results obtained in the first proficiency test. Based on the knowledge of the analyst's extensive experience and competency in the analysis of ignitable liquids and a thorough technical review of the work done, it is concluded by the laboratory's Quality Manager that there was an issue with the manufacturer's preparation or packaging of the initial Item 1 tested.
GC7KK2	Gasoline is a volatile ignitable liquid. Medium-to-heavy petroleum distillates are volatile ignitable liquids that may be found in many commercial products including some paint thinners, some barbecue starter fluids and some products marketed as kerosene. Comparison containers (nylon bags) submitted for Items 1 to 3 were also analyzed. No volatile ignitable liquids were identified in these two comparison bags. Background contributions from these comparison bags were considered in evaluating the results of the associated items.
GZ8HEF	Analysis of the control samples did not reveal any ignitable liquid residues. However, some aromatic compounds were identified in the Fire DebrisPak Control sample.
HEJDD9	Item 2 sample was very weak therefore inconclusive, could not confirm. Possible sample prep problem with Item 2 since QA/QC of oven, strips, GCMS, method passed.
HZ65C6	Item 1 gave a TIC profile which was similar to 50% evaporated gasoline standard. Item 2 gave a TIC profile which was similar to -75% evaporated gasoline standard. If Items 1 and 2 were spiked with the same gasoline sample then the lighter portion of gasoline is partially lost in Nylon bag.

TABLE 5

WebCode	Additional Comments
J1UFJY	The laboratory does not employ the ASTM flammables classification scheme.
J23BS9	Containers were left at ambient temperature. Packaging for Item 3 appeared to be compromised. Carbon range for Item 3: C9-C15.
J52HC7	Samples 1 and 2 had an uncharacteristically high level of n-alkanes and low level of naphthalenes. These alkane patterns were reminiscent of a medium petroleum distillate, but the aromatic pattern and presence of lighter products in the expected ratios suggested gasoline.
JBENHN	Items 1 and 2 were sampled at room temperature. Item 3 was sampled at room temperature and at an elevated temperature (70 C).
JD3R1C	Item 3, C9-C16 (kerosene range), but falls into/is classified in "heavy" subclass of petroleum distillates class.
JK5ZBL	The control bag- type Kapak Fire Debris PAK used for Item 1 gave peaks in the C3 alkyl benzene region and in the C17 region but this did not interfere with the detection and identification of gasoline. The nylon control bag of the type used for Items 2 and 3 gave no interfering peaks.
JT861U	Previous study by CTS indicates that Kapak bags can affect analysis outcome when analyzing fire debris. This lab will not use Kapak bags for analysis. Both bag blanks showed the presence of background contamination which could be misleading. Therefore neither bag should be used when conducting analyses destined for court use.
JY7GBL	We do not use plastic bags for arson evidence on a regular basis. These bags are more trouble than they are worth. They confuse investigators on properly sealing them and are unreliable. Protecting physical evidence is more important than saving a few dollars.
K2Y6UC	The control prepared with the samples (Items 1, 2, and 3 plus both control bags) was clean, thus no contamination took place during preparation. All classification regarding the flammable substances was done in accordance with ASTM 1618-01.
KGXCF3	We don't use the ASTM classification scheme. In Item 2 there was also noticed traces of volatile n-alkanes. Their concentration was far too low to admit a conclusion of their origin. Ordinary gasolines in [this Country] may differ from those in North America.
KMXWUD	Each of the submitted items (control bag 1, control bag 2, 1, 2 and 3) consisted of a bag (Kapak Fire DebrisPak or Nylon) containing an approximate two inch by two inch square of white cloth. I examined each of these items for the presence of ignitable liquid residues (including oxygenated compounds such as alcohols) using passive adsorption/elution carbon strip methods and gas chromatography/mass spectrometry. Results were classified based on the ASTM standard E-1618-06. Gasoline was detected in Items 1 and 2, and a heavy petroleum distillate was detected in Item 3. Heavy petroleum distillates can include such products as kerosene, jet fuels, diesel fuels, and some charcoal starters. No ignitable residue were detected in either of the control bags (Items control bag 1 and control bag 2).
LJ7479	The plastic bags used for packaging were too large for the sample. It is suggested that in the future, the packaging size be commensurate with that of the sample. Clean metal paint cans would be preferable.
LLDGV3	Although I receive Kapak and Nylon bags on occasion, I feel that they are not suitable for most debris. I like the fact that I can visually see the evidence, but the nylon bags in particular seem thin. I have issues with sealing techniques with these bags.
LMXUYD	The ASTM classification scheme for ignitable liquids is not used at this laboratory.
LNTABA	Based on similar chromatographic analysis as above, I found both Control bags of Kapak DebrisPak and Nylon evidence bag were free from contaminants. Therefore, I am of the opinion that the Nylon bag is suitable replacement for the Kapak DebrisPak bag as fire debris evidence bag.
M1MX9J	There is no space on page 2 to indicate the time of exposure and temperature for the carbon strip method.
M8LHFK	Item 2 was very weak.
ME9XAJ	The [State Lab] (including the State's Fire Marshall) does not typically use evidence bags for collection of fire debris for analysis, nor does it recommend these bags to any of its submitting agencies. While lab testing has shown this method of collection may be suitable under laboratory conditions, actual field use has shown them to be cumbersome and problematic at best, and downright unsuitable at worse.

TABLE 5

WebCode	Additional Comments
MZ6D4L	No ignitable liquid residue was detected in the Fire DebrisPak control bag or the nylon control bag.
N7H8Q7	It was really difficult for me to believe that Item 2, 3 and nylon bag control were all packaged in a nylon bag since the bags had characteristics of just a normal plastic bag.
NE434H	The evidence was improperly sealed. Proper seals must be initialed. The "controls" are not true comparison samples, because each "control" bag contains fabric. A true "control" bag should be empty.
NLZ464	The control bag is too big.
PPHH94	Additionally to the two control bags that you sent, in the process of aperture and preparation of samples, was made a control sample of work's laboratory area, it were not detected any mixture which can be classified in the scheme proposed by the ASTM E 1618-06 Standard Methods. According to our practical procedures the signals of chromatography peaks below 8500 of abundance in the analysis of ignitable liquid are not reported. Although, in the Item 2, signals of chromatography peaks was detected with retention time which fit to gasoline according to the scheme proposed by the ASTM E 1618-06 Standard Methods (below 8500 of abundance). In the same item was detected the chromatograph peak to Nylon (standard container material).
PPNSK3	Noted low level spiking n-alkanes in Item 2.
PQ1AGT	Items 4 and 5 were used as packaging controls.
QS3NHS	Item 1. weak, some ethanol presence. Item 2, stronger sample than Item 1, trace ethanol.
R1JX4Y	No suspicious ignitable liquids were identified in Lab Items 4 and 5, the control bags.
R3DJZA	The control bags were free from ignitable materials.
RH5X6Q	Item 1, some evidence of evaporation to this sample with front end depletion and higher boiling fraction concentration (C10-C13 known to be present in petrol and enhanced by evaporation) observed. Aromatics dominate profile. Item 2, some evidence of evaporation to this sample with front end depletion and higher boiling fraction concentration (C10-C13 known to be present in petrol and enhanced by evaporation) observed. Aromatics dominate profile. Item 3, ambient head space suggests nC10- nC15 present on GC/FID trace. Procedures require samples with alkane series up to nC15 present to be heated to discriminate between kerosene and diesel. Heated head-space suggests Heavy class PD with broad range, nC11 to nC18 present (nC13-nC15 dominating). Continuous Alkane homologous series spanning >5 (8) n-alkanes present. Classed as Heavy PD.
RNX5PY	Light and heavy compounds were present in large abundances in the carbon range of C8-C10 and C17-C18 in both control samples.
RSJ4AZ	Item 1- Sample very weak- inconclusive- could not confirm. Item 2- Negative. Quality control of: oven, strips, GCMS, MDPD method pass, possible sample prep problem with Item 1 and 2.
S8L89V	Item 2 has a very weak aromatic and naphthaline profile with a gasoline like pattern. The levels are too low and there is insufficient data to make an identification.
T8ED5F	I report gasoline, light range, medium range, and heavy range ignitable liquid. I don't report subgroups. I make note of them in my notes but do not report them. I report control samples the same as suspected samples and quite often find an ignitable liquid in the control.
T8RBYZ	Item 3, carbon range: C8-C16.
U71DJ6	The control bags are assigned as Items 4 and 5.
UH4HY1	The gasoline profile in Item 1 had an unweathered appearance. The gasoline profile in Item 2 had a weathered appearance. Item 3 showed good agreement with a laboratory kerosene sample.
UNNSXX	Solvent extract procedure reveals caprolactam in the Nylon control bag and in Item 3 (also contained in a Nylon evidence bag). Caprolactam noted by MS-library search (not confirmed). Caprolactam is a known monomer for production of polyamide polymers such as Nylon.
VDY5L8	The bags received were filled with a significant amount of air, and the cotton pads have little propensity for retaining light components. The result was that most of the gasoline components were free in the air in the bags, and since the bags were somewhat pressurized some of the components had to escape. I would

TABLE 5

WebCode	Additional Comments
	suggest that in the future that the bags not be pressurized. Personally, I still do not like the bags, and I really believe the vast majority of real life cases come in metal cans. Just a note: although the "Fire Debris" bags are no longer available, the K-pak bags are still available as flat bags. They can be purchased from the "Police Supply Depot."
VECQBX	For Item 1- The results were positive for gasoline components, but did not pass our limit for delivering a positive report. In general- in our laboratory SOP, there is a demand for 2 separate independent results (GC/FID, GC/MS, or 2 GC/MS). In exhibit 1 there was a clear gasoline profile in FID and a questionable result in MS, therefore the negative report.
VS1Q76	In both evidence bags, the various components found in the analysis haven't impact on the interpretations.[sic]
WZYU9	Using two different types of bags in a test is a bad idea. A control bag should be to test the bag. Why does it contain cloth similar to exhibits?
XCFYCV	We can see that nylon control bag have toluene, C2-alkylbenzene and C3-alkylbenzenes with carboxen/PDMS fiber.
XN3UH3	The control Items were numbered 4 and 5 for the report.
XVBLL6	Under 2.) "Flammable Recovery Technique" is the reference to "headspace" refer to the analysis technique or the parameter of the item processing? Maybe need to add area for "time" and "temperature" for adsorption/elution if "Headspace" refers to heated headspace technique.
Y5Q1QS	The abundance of the gasoline in Items 1 and 2 were low. May be contamination from the proficiency test provider.
Y9D664	During peer review process, it came to my attention that the concentration in bag #1 of my proficiency test was very much less than others. This could have led to an incorrect call and potentially a failure on the test. Please ensure samples have an appropriate loading of accelerant.
YE5KR5	No ignitable liquids were detected in the KapakFire DebrisPAK and the "Nylon" control bags. The profiles obtained from Item 2 were found to be below the threshold set by the laboratory. However, Item 2 was concluded to be stained with gasoline (weathered) as there were no significant pyrolysis products or matrix interference detected.
YL6XBF	This laboratory indicates "distillates" in the "product" category to be slightly broader in nature.
Z3P7T1	The Ignitable Liquids Classification table is attached to all reports.
ZEYQL4	Both standard bags were blank.
ZZAANY	The initial Item 3 bag received was deflated and its vapor sample revealed some evaporation of the flammable liquid as compared to the vapor sample collected from the replacement item.

# Appendix: Data Sheet

Collaborative Testing Services ~ Forensic Testing Program

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## **Test No. 07-536: Flammables Analysis**

DATA MUST BE RECEIVED BY November 19, 2007 TO BE INCLUDED IN THE REPORT

Participant Code:

Web Code:

### Scenario:

Police are investigating the attempted arson of a warehouse. Investigators have collected what appear to be wicks from the remnants of incendiary devices found in the loading dock, the storage room and the manager's office. They have sealed one wick within a Kapak Fire DebrisPAK™ evidence bag and two wicks with in Nylon evidence bags. The police are requesting you to identify any flammable liquid(s) that may be present on the wicks.

*Please Note: A control bag has been provided for both the Kapak Fire DebrisPAK™ evidence bag and the Nylon evidence bags.*

### Items Submitted (Sample Pack FL):

Item 1: "wick" from loading dock in Kapak Fire DebrisPAK™ evidence bag.

Item 2: "wick" from storage room in Nylon evidence bag.

Item 3: "wick" from manager's office in Nylon evidence bag.

Control Bag:: Kapak Fire DebrisPAK™

Control Bag: Nylon

### ASCLD/LAB Release

If your lab has been accredited by ASCLD/LAB and you are submitting this data as part of their external proficiency test requirements, have the Lab Director or Quality Assurance Manager complete the following. ***The information below must be completed in its entirety for the results to be submitted to ASCLD/LAB.***

ASCLD/LAB Legacy Certificate No \_\_\_\_\_ ASCLD/LAB International Certificate No. \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

Laboratory Name \_\_\_\_\_

Location (City/State) \_\_\_\_\_

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Due to the discontinuation of Kapak Corporation's Fire DebrisPak Bags the design of the Flammables Analysis Test has been changed. This test will now include Nylon Bags purchased from Grand River Products. We recognize that some laboratories may not be able to accommodate this change in packaging without performing their own in-house evaluations. To assist with this, we have designed the Flammables Analysis Test 07-536 to include both types of packaging, thereby serving as a transition between Fire DebrisPak bags and Nylon bags.

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**1.) Using the ASTM E 1618-06 Ignitable Liquid Classification Scheme, indicate the class for any flammable substance detected in the submitted items.**

Please Note the change to ASTM standard referenced above. The difference in the Ignitable Liquid Classification Scheme from ASTM E 1387-01 to ASTM E 1618-06 is the inclusion of De-Aromatized Distillates under the Petroleum Distillates Classification.

With the exception of the gasoline class, there are three subclasses for each major class based on n-alkane range: **Light** (C4-C9), **Medium** (C8-C13) and **Heavy** (C9-C20+). When the carbon range does not fit clearly into one of the previous categories (e.g. "light to medium", "medium to heavy"), report the carbon number range. Typical chromatograms for some of the classes/subclasses may be found in the published ASTM standard.

Class	Item 1 Subclass	Item 2 Subclass	Item 3 Subclass
Gasoline	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Petroleum Distillates (including De-Aromatized)	<input type="checkbox"/> _____	<input type="checkbox"/> _____	<input type="checkbox"/> _____
Isoparaffinic Products	<input type="checkbox"/> _____	<input type="checkbox"/> _____	<input type="checkbox"/> _____
Aromatic Products	<input type="checkbox"/> _____	<input type="checkbox"/> _____	<input type="checkbox"/> _____
Naphthenic Paraffinic Products	<input type="checkbox"/> _____	<input type="checkbox"/> _____	<input type="checkbox"/> _____
Normal Alkanes Products	<input type="checkbox"/> _____	<input type="checkbox"/> _____	<input type="checkbox"/> _____
Oxygenated Solvents	<input type="checkbox"/> _____	<input type="checkbox"/> _____	<input type="checkbox"/> _____
Others - Miscellaneous	<input type="checkbox"/> _____	<input type="checkbox"/> _____	<input type="checkbox"/> _____

**2.) Flammable Recovery Techniques**

**Adsorption/Elution**

Adsorbent:  Carbon/Charcoal  
 Other: \_\_\_\_\_

Static \_\_\_\_ Dynamic \_\_\_\_

Desorption:  Solvent: \_\_\_\_\_  
 Thermal

**Headspace**

Room Temperature  
 Heated (Temperature: \_\_\_\_\_°C)

**Other**

Specify: \_\_\_\_\_  
Specify: \_\_\_\_\_

**3.) Flammable Identification Techniques**

Indicate the technique(s) used to identify any flammables detected.

GC       GC/MS       Other (specify): \_\_\_\_\_

**4.) What would be the wording of the Conclusions in your report?**

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**5.) Additional Comments**

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**Return Instructions**

Participant Code:

Data Sheets can be mailed or faxed (please include a cover sheet) and must be received by **November 19, 2007** to be included in the report.

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