Collaborative Testing Services, Inc
FORENSIC TESTING PROGRAM

P.O. Box 650820
Sterling, VA 20165-0820
e-mail: forensics@cts-interlab.com
Telephone: +1-571-434-1925
Web site: www.cts-forensics.com

Serial Number Restoration
Test No. 26-5250 Summary Report

Each participant received a sample pack containing a piece of steel bar stock with an obliterated serial number and a piece of aluminum bar stock intended as a comparison for the size, shape, and positioning of the stamped alphanumeric characters, which they were asked to restore the obliterated serial number using their existing protocols. Data were returned from 329 participants and are compiled into the following tables:

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

Each sample pack contained a piece of steel bar stock with an obliterated serial number and a piece of aluminum bar stock intended as a comparison for the size, shape, and positioning of the stamped alphanumeric characters. Participants were asked to restore the obliterated serial number utilizing their laboratory restoration methodologies and report the recovered serial number.

SAMPLE PREPARATION: Each piece of steel bar stock was stamped with six characters, along with an upward arrow for orientation, and then obliterated by a grinding machine. Additionally, a piece of aluminum bar stock was included in the sample pack as a comparison standard with the alphanumeric characters 0-9 and A-F, H, J, K, and N. The characters were stamped in the same font and size as those on the steel bar stock.

SAMPLE PACK ASSEMBLY: A steel bar stock and an aluminum bar stock were separately enclosed in chipboard, placed in their respective pre-labeled envelopes, and then packed into a larger sample pack envelope and sealed.

VERIFICATION: Predistribution results were consistent with each other and the manufacturer's preparation information.

Character 1	Character 2	Character 3	Character 4	Character 5	Character 6
E	7	6	K	3	A

Summary Comments

This test was designed to allow participants to assess their proficiency in the restoration of an obliterated serial number. Participants were supplied with a piece of steel bar stock with an obliterated serial number and a piece of aluminum bar stock intended as a comparison for the size, shape, and positioning of the stamped alphanumeric characters. The serial number to be restored consisted of six characters (E76K3A). Refer to the Manufacturer's Information for preparation details.

In Table 1: Recovered Characters, 313 of the 329 responding participants (95%) restored all six characters. Of the remaining sixteen participants, thirteen restored five of the six characters and three restored between two and four characters. Additionally, out of those sixteen participants, ten experienced the most difficulty with character one.

In Table 3: Sample Preparation, the most commonly reported preparation methods were visual and polishing.

In Table 4: Recovery Methods, the majority of participants used a combination of both chemical and magnetic processing.

Recovered Characters

Please record the restored characters below.

TABLE 1

Recovered Characters						
WebCode	Character 1	Character 2	Character 3	Character 4	Character 5	Character 6
26BAAZ	E	7	6	K	3	A
26PVJ2	E	7	6	K	3	A
29CACH	E	7	6	K	3	A
2A7ZHW	E	7	6	K	3	A
2DP4EU	E	7	6	K	3	A
2MALKL	E	7	6	K	3	A
2NM4RY	E	7	6	K	3	A
2RLAGC	E	7	6	K	3	A
2RNYMU	E	7	6	K	3	A
2UTRDM	E	7	6	K	3	A
2Y29QG	E	7	6	K	3	A
2YLP7K	E	7	6	K	3	A
2ZVYWV	E	7	6	K	3	A
33XQCT	E	7	6	K	3	A
34UKDQ	E	7	6	K	3	A
37Z3CM	E	7	6	K	3	A
3PCJQ9	E	7	6	K	3	A
3VJDL4	E	7	6	K	3	A
3WETX2	E	7	6	K	3	A
3ZCACF	E	7	6	K	3	A
46NHBY	E	7	6	K	3	A
48QHBW	E	7	6	K	3	A
4U3NPV	F	7	6	K	3	A

TABLE 1

	Recovered Characters					
WebCode	Character 1	Character 2	Character 3	Character 4	Character 5	Character 6
4YCTB3	E	7	6	K	3	A
62FGCQ	E	7	6	K	3	A
69HXYD	E	7	6	K	3	A
6C3PMM	E	7	6	K	3	A
6DNRT9	E	7	6	K	3	A
6EK867	K	7	6	K	3	A
6PJXQD	E	7	6	K	3	A
6TMMHM	E	7	6	K	3	A
76RCKF	E	7	6	K	3	A
7C2CFK	E	7	6	K	3	A
7R6EQQ	E	7	6	K	3	A
7Y86BN	E	7	6	K	3	A
82B7ML	E	7	6	K	3	A
86V46A	E	7	6	K	3	A
8AY2JF	E	7	6	K	3	A
8FA28T	E	7	6	K	3	A
8QBNZP	E	7	6	K	3	A
8VH79P	E	7	6	K	3	A
8ZFQAN	E	7	6	K	3	A
8ZWPHK	E	7	(6,8,G	K	3	A
96QXDE	E	7	6	K	3	A
9BEU3P	E	7	6	K	3	A
9BRA9B	E	7	6	K	3	A
9CUQUN	E	7	6	K	3	A
9ETHBZ	E	7	6	K	3	A

TABLE 1

	Recovered Characters					
WebCode	Character 1	Character 2	Character 3	Character 4	Character 5	Character 6
9EXLDR	E	7	6	K	3	A
9F62MH	E	7	6	K	3	A
9FU6FT	E	7	6	K	3	A
9J69YF	E	7	6	K	3	A
9J9TN4	E	7	6	K	3	A
9MLQWQ	E	7	6	K	3	A
9N3VKG	E	7	6	K	3	A
9Q6LWX	E	7	6	K	3	A
9R22AV	E	7	6	K	3	A
9Z839Z	E	7	6	K	3	A
A8AE4X	E	7	6	K	3	A
AAFX6E	E	7	6	K	3	A
AAK4WA	E	7	6	K	3	A
ACPVNN	E	7	6	K	3	A
ALTX28	E	7	6	K	3	A
ARV74U	E	7	6	K	3	A
ARW4EP	E	7	6	K	3	A
ATPWA9	E	7	6	K	3	A
AULA8M	E	7	6	K	3	A
AVUH2E	E	7	6	K	3	A
AWTR7H	E	7	6	K	3	A
B6YR7J	E	7	6	K	3	A
B7THCX	E	7	6	K	3	A
B886P7	E	7	6	K	3	A
BHK6HT	E	7	6	K	3	A

TABLE 1

	Recovered Characters					
WebCode	Character 1	Character 2	Character 3	Character 4	Character 5	Character 6
BHRFAJ	E	7	6	K	3	A
BJEVN8	E	7	6	K	3	A
BPTR7G	E	7	6	K	3	A
BQVQ7M	E	7	6	K	3	A
BQZWXJ	E	7	6	K	3	A
BRVCAF	E	7	6	K	3	A
BU3U9C	@	7	6	K	3	A
C3NAKT	E	7	6	K	3	A
CE632F	E	7	6	K	3	A
CJDGF7	E	7	6	K	3	A
CJVQ7L	E	7		K		A
CMEK8R	E	7	6	K	3	A
CMRM3K	E	7	6	K	3	A
CN9BD8	E	7	6	K	3	A
CPETC3	E	7	6	K	3	A
CXBND8	F	7	6	K	3	A
D2RFX9	E	7	6	K	3	A
DDLPM3	E	7	6	K	3	A
DGHD4A	E	7	6	K	3	A
DGLXRD	E	7	6	K	3	A
DHKUPM	E	7	6	K	3	A
DHYAUN	E	7	6	K	3	A
DJC7BE	E	7	6	K	3	A
DK296G	E	7	6	K	3	A
E64FWK	E	7	6	K	3	A

TABLE 1

	Recovered Characters					
WebCode	Character 1	Character 2	Character 3	Character 4	Character 5	Character 6
EGL9D9	E	7	6	K	3	A
EHEYJM	E	7	6	K	3	A
EHYT7H	E	7	6	K	3	A
ELUNRX	E	7	6	K	3	A
ENLTDH	E	7	6	K	3	A
F3JVZG	E	7	6	K	3	A
F6A437	E	7	6	K	3	A
F7GH9C	E	7	6	K	3	A
FC2R99	E	7	6	K	3	A
FC7XZ4	E	7	6	K	3	A
FDJHTE	E	7	6	K	3	A
FGG3LC	E	7	6	K	3	A
FHNF3D	E	7	6	K	3	A
FHULVA	E	7	6	K	3	A
FJPECE	E	7	6	K	3	A
FPB9CR	E	7	6	K	3	A
FTV7VG	E	7	6	K	3	A
FYWHQD	E	7	6	K	3	A
FZTX4B	E	7	6	K	3	A
G2ZDBG	E	7	6	K	3	A
G4DZUG	E	7	6	K	3	A
G7EBH4	E	7	6	K	3	A
G9JUNC	E	7	6	K	3	A
GATYQE	E	7	6	K	3	A
GAX6JB	E	7	6	K	3	A

TABLE 1

	Recovered Characters					
WebCode	Character 1	Character 2	Character 3	Character 4	Character 5	Character 6
GBULV8	E	7	6	K	3	A
GE7KXZ	E	7	6	K	3	A
GEA4YA	E	7	6	K	3	A
GF23Z2	F	7	6	K	3	A
GHUVAD	E	7	6	K	3	A
GJJ727	E	7	6	K	3	A
GJYPJH	E	7	6	K	3	A
GKBGGZ	E	7	6	K	3	A
GKV7VE	E	7	6	K	3	A
GNAU6P	E	7	6	K	3	A
GUB7ZM	E	7	6	K	3	A
GXFLYE	E	7	6	K	3	A
GYRCYH	E	7	6	K	3	A
H6CUTJ	E	7	6	K	3	A
H8GLKW	E	7	6	K	3	A
HBJKXB	E	7	6	K	3	A
HBNQP7	E	7	6	K	3	A
HCE4YC	E	7	6	K	3	A
HCEZA8	E	7	6	K	3	A
HCJ724	E	7	6	K	3	A
HEGYKZ	E	7	6	K	3	A
HFW74W	E	7	6	K	3	A
HFXVBE	E	7	6	K	3	A
HQRCZF	E	7	6	K	3	A
HQVVMJ	E	7	6	K	3	A

TABLE 1

	Recovered Characters					
WebCode	Character 1	Character 2	Character 3	Character 4	Character 5	Character 6
HTYQ7L	E	7	6	K	3	A
HV8TK7	E	7	6	K	3	A
J3JKX9	E	7	6	K	3	A
JLFWVA	E	7	6	K	3	A
JLHBGX	E	7	6	K	3	A
JMCC98	E	7	?	K	3	A
JNL7ZZ	E	7	6	K	3	A
JPFYVJ	E	7	6	K	3	A
JQQ2GH	E	7	6	K	3	A
JRJRMW	E	7	6	K	3	A
JRRH73	E	7	6	K	3	A
JV77FD	E	7	6	K	3	A
K2RUF2	E	7	6	K	3	A
K3MDH3	E	7	6	K	3	A
K676T6	E	7	6	K	3	A
K8VRWR	E	7	6	K	3	A
KAEK9V	E	7	6	K	3	A
KAXQ8K	E	7	6	K	3	A
KJ8VMW	F	7	D	K	8	A
KLBQ4E	E	7	6	K	3	A
KTCZB7	E	7	6	K	3	A
KXRJK2	E	7	6	K	3	A
KZW3QA	E	7	6	K	3	A
L2J4WV	E	7	6	K	3	A
L2LNN6	E	7	6	K	3	A

TABLE 1

	Recovered Characters					
WebCode	Character 1	Character 2	Character 3	Character 4	Character 5	Character 6
L3H8P7	E	7	6	K	3	A
L4NPN3	E	7	6	K	3	A
L4TVFX	E	7	6	K	3	A
L6MLLC	E	7	6	K	3	A
L92AVN	?	?	?	K	?	A
LAXWE8	E	7	6	K	3	A
LPRJKY	E	7	6	K	3	A
LRHFH7	E	7	6	K	3	A
LT4HMR	E	7	6	K	3	A
LT78UA	E	7	6	K	3	A
LUZXYP	E	7	6	K	3	A
LXJT63	E	7	6	K	3	A
LXMDR6	E	7	6	K	3	A
LXYCKT	E	7	6	K	3	A
M22AVL	E	7	6	K	3	A
M22F38	E	7	6	K	3	A
M673Z7	E	7	6	K	3	A
M6F6BJ	E	7	6	K	3	A
M7GQFC	E	7	6	K	3	A
MBMKA8	E	7	6	K	3	A
MPMDT4	E	7	6	K	3	A
MTLNN4	E	7	6	K	3	A
MTLQD8	E	7	6	K	3	A
MW7JPA	?	7	6	K	3	A
MZ7UJP	E	7	6	K	3	A

TABLE 1

	Recovered Characters					
WebCode	Character 1	Character 2	Character 3	Character 4	Character 5	Character 6
N29CUP	E	7	6	K	3	A
N2LAP4	E	7	6	K	3	A
NR9EBW	E	7	6	K	3	A
NWF6CG	E	7	6	K	3	A
NZ3J6X	E	7	6	K	3	A
P3MX7C	E	7	6	K	3	A
PD7C8U	E	7	6	K	3	A
PFDQR7	E	7	6	K	3	A
PG4YTV	E	7	6	K	3	A
PJ8N4Q	E	7	6	K	3	A
PKHN27	E	7	6	K	3	A
PLJA7Y	E	7	6	K	3	A
PTBWMW	E	7	6	K	3	A
PVKNZK	E	7	6	K	3	A
PWVNXZ	E	7	6	K	3	A
PWZUQV	E	7	6	K	3	A
PYJ9RB	E	7	6	K	3	A
Q4HMEZ	E	7	6	K	3	A
Q8WBNB	E	7	6	K	3	A
QAETJ2	E	7	6	K	3	A
QAJYBW	E	7	6	K	3	A
QCQDH3	E	7	6	K	3	A
QD4223	E	7	6	K	3	A
QDMUUZ	E	7	6	K	3	A
QERDPM	E	7	6	K	3	A

TABLE 1

	Recovered Characters					
WebCode	Character 1	Character 2	Character 3	Character 4	Character 5	Character 6
QEU4W6	E	7	6	K	3	A
QG2H4B	E	7	6	K	3	A
QHV9AP	E	7	6	K	3	A
QN6EEW	E	7	6	K	3	A
QNY9LZ	E	7	6	K	3	A
QPT2HJ	E	7	6	K	3	A
QPVQN3	E	7	6	K	3	A
QPX6KB	E	7	6	K	3	A
QRKWHY	E	7	6	K	3	A
QTCTTL	E	7	6	K	3	A
QTV884	E	7	6	K	3	A
QU9CVN	F	7	6	K	3	A
QXADYQ	K	7	6	K	3	A
QXLA6V	E	7	6	K	3	A
QYE3ZE	E	7	6	K	3	A
R93DPZ	E	7	6	K	3	A
RCL8Q8	E	7	6	K	3	A
RDGQR9	E	7	6	K	3	A
REQ38P	E	7	6	K	3	A
RFJXYR	E	7	6	K	3	A
RFLJJL	E	7	6	K	3	A
RGDN67	E	7	6	K	3	A
RJAUWY	E	7	6	K	3	A
RKFFBX	E	7	6	K	3	A
RKRCDH	E	7	6	K	3	A

TABLE 1

	Recovered Characters					
WebCode	Character 1	Character 2	Character 3	Character 4	Character 5	Character 6
RPPTTW	E	7	6	K	3	A
RPUYKT	E	7	6	K	3	A
RQHMNF	E	7	6	K	3	A
RQNPQ8	E	7	6	K	3	A
RU2GTT	E	7	6	K	3	A
RU3EYH	E	7	6	K	3	A
RVXW2J	E	7	6	K	3	A
RXZVCC	E	7	6	K	3	A
T7TMYW	E	7	6	K	3	A
TB9XDZ	E	7	6	K	3	A
TFER8W	E	7	6	K	3	A
TL62GU	E	7	6	K	3	A
TLN2M6	E	7	6	K	3	A
TM4BLX	E	7	6	K	3	A
TNTLCQ	E	7	6	K	3	A
TPMCH6	E	7	6	K	3	A
TTPDH3	E	7	6	K	3	A
U2DH22	E	7	6	K	3	A
U3BNFZ	E	7	6	H	3	A
UCYGUR	E	7	6	K	3	A
UDRKB7	E	7	6	K	3	A
UFX3BM	E	7	6	K	8	A
UG7AJG	E	7	6	K	3	A
UGRW77	E	7	6	K	3	A
UH3PWE	E	7	6	K	3	A

TABLE 1

	Recovered Characters					
WebCode	Character 1	Character 2	Character 3	Character 4	Character 5	Character 6
UK3ZPT	E	7	6	K	3	A
UK7KFG	E	7	6	K	3	A
UK8BLY	E	7	6	K	3	A
UL22RE	E	7	6	K	3	A
V2TT2Y	E	7	6	K	3	A
V4XQLM	E	7	6	K	3	A
V9AUCN	E	7	6	K	3	A
VC4BCQ	E	7	6	K	3	A
VC968N	E	7	6	K	3	A
VDMEJA	E	7	6	K	3	A
VFTXJQ	E	7	6	K	3	A
VGLQEA	E	7	6	K	3	A
VGNFKT	E	7	6	K	3	A
VJNQE8	E	7	6	K	3	A
VV7G7P	E	7	6	K	3	A
VYPB7W	E	7	6	K	3	A
WKHW97	E	7	6	K	3	A
WLQG7Z	E	7	6	K	3	A
WLWCTY	E	7	6	K	3	A
WNY282	E	7	6	K	3	A
WU6V2W	E	7	6	K	3	A
WUA2TT	E	7	6	K	3	A
WZCW9Y	E	7	6	K	3	A
X3JZLU	E	7	6	K	3	A
X4FHNW	E	7	6	K	3	A

TABLE 1

	Recovered Characters					
WebCode	Character 1	Character 2	Character 3	Character 4	Character 5	Character 6
X8AD9Q	E	7	6	K	3	A
XDZVGZ	E	7	6	K	3	A
XEW38T	E	7	6	K	3	A
XF3LV3	E	7	6	K	3	A
XGEKPB	E	7	6	K	3	A
XGG2FV	E	7	6	K	3	A
XLA2UQ	E	7	6	K	3	A
XMLXYV	E	7	6	K	3	A
XNYKJV	E	7	6	K	3	A
XPNP32	E	7	6	K	3	A
XQHF9G	E	7	6	K	3	A
XQKEBP	E	7	6	K	3	A
YDUTE9	E	7	6	K	3	A
YEQGMW	E	7	6	K	3	A
YFEC9W	E	7	6	K	3	A
YH67W8	E	7	6	K	3	A
YMWDEF	E	7	6	K	3	A
YVZWER	E	7	6	K	3	A
YYPWXR	E	7	6	K	3	A
YYU3PN	E	7	6	K	3	A
Z4JYPY	E	7	6	K	3	A
Z8LP7L	E	7	6	K	3	A
Z9EKNN	E	7	6	K	3	A
ZDU2BY	E	7	6	K	3	A
ZELBVZ	E	7	6	K	3	A

TABLE 1

Recovered Characters						
WebCode	Character 1	Character 2	Character 3	Character 4	Character 5	Character 6
ZG67UM	E	7	6	K	3/8	A
ZHJR8U	E	7	6	K	3	A
ZNPJCL	E	7	6	K	3	A
ZQXMDP	E	7	6	K	3	A
ZV66LP	E	7	6	K	3	A
ZV72RE	E	7	6	K	3	A

Response Summary **Participants: 329**

	Character 1	Character 2	Character 3	Character 4	Character 5	Character 6
	E	7	6	K	3	A
Total	319	328	324	328	324	329
Percent	97.0%	99.7%	98.5%	99.7%	98.5%	100.0%

Totals may differ, if a participant did not report a response or if a response was reported other than the consensus.

Conclusions

TABLE 2

WebCode	Conclusions
26BAAZ	The serial number on the approximate center of the bar stock (Item 1) was determined to be "E76K3A".
26PVJ2	Serial number restoration results: E76K3A
29CACH	Using chemical etching techniques, the serial number was restored to read E76K3A. Ten photographs were taken of the barstocks during the restoration process and were uploaded to Evidence.com. All items were transferred to [Laboratory] Manager [Name].
2A7ZHW	I found filing marks on the cold rolled steel bar 'Item 1'. Upon electrochemical treatment on the filed surface, the number 'E76K3A' was restored. Based on the findings, I am of the opinion that the obliterated serial number is 'E76K3A'.
2DP4EU	The obliterated serial number on Item 01 (bar stock) was chemically restored and determined to be E76K3A.
2MALKL	ITEM SUMMARY OF RESULTS AND INTERPRETATIONS 1.1 Using Magnetic Particle Inspection and Chemical restoration procedures, the item's serial number was restored to read: E76K3A.
2NM4RY	A serial number restoration was attempted on the steel bar stock using magnetic particle inspection. The serial number was restored to read E76K3A.
2RLAGC	The serial number on the piece of steel bar stock (Exhibit 1A) was mechanically and chemically treated and restored to read E76K3A. No analysis was performed on the aluminum bar stock standard (Exhibit 1B).
2RNYMU	For the metal piece received and internally identified in the Ballistics Unit as 2025-1810: The metal fragment received for analysis, internally identified as [Numbers], shows wear on its surface. After applying the restoration process, the serial number E76K3A was recovered. It should be noted that the characteristics revealed through this process are not permanently restored, and the wear remains present on the surface. (*)
2UTRDM	The obliterated serial number on the submitted bar stock was restored to read E76K3A using the chemical and magnetic method.
2Y29QG	Submission SNR1 consisted of item 1, a piece of metal with visible machining marks one side, and an “aluminum standard.” The item 1 machined area was examined with magnetic particle inspection; a serial number was restored to read E76K*A, where * is most likely a 3 but may be an 8.
2YLP7K	The serial number of item 1 was restored to read "E76K3A".
2ZVYWV	I found filing mark on the plate Item 1. Upon electrochemical treatment on the filed surface, number 'E76K3A' was restored. Therefore, i am of the opinion the obliterated serial number is 'E76K3A'.
33XQCT	Lab Item(s)# 1-1 Restoration Results E76K3A
34UKDQ	The obliterated serial number was chemically processed and restored to read "E76K3A"
37Z3CM	The serial number is ground off. The serial number (E76K3A) was restored by acid etching. Polishing and the Fry’s reagent were used for the restoration. A chemical reaction was observed when the acid etching solution was applied to the surface area of the firearm. This item will be retained in the Firearms Section.
3PCJQ9	Using standard serial number restoration chemical techniques, the obliterated serial number on item 1-1-1 (CTS Item 1) was restored to read: E76K3A.
3VJDL4	Using magnetic and chemical restoration techniques, and attempt was made to restore the serial number on Item 1 with the following results: Serial Number: E 7 6 K 3 A was restored to Item 1.
3WETX2	Standard restoration techniques revealed the following characters on Item #1: E76K3A
3ZCACF	Restoration of obliterated marks, using acid solution, allows to read following marks : E76K3A
46NHBY	My reporting shows the recovered serial number in a table format with the header "Restoration Results" and the recovered serial number "E76K3A" below.

TABLE 2

WebCode	Conclusions
48QHBW	Attempts to physically restore the obliterated serial number of Lab Item 1 were successful. The restored serial number is E76K3A.
4U3NPV	A serial number restoration was performed on this item. The serial number was fully restored and appeared to be F76K3A.
4YCTB3	After using special chemical product for iron, we managed to restore this following obliterated serial number : "E 7 6 K 3 A".
62FGCQ	Restoration Results: E76K3A
69HXYD	The serial number on Item 1 was restored to read E76K3A using magnetic particle inspection and chemical etching techniques.
6C3PMM	Item 1 A serial number restoration was attempted on the Item 1 steel bar stock using magnetic particle inspection. The serial number was restored to read E76K3A. The Item 1 aluminum standard was used for reference purposes.
6DNRT9	Serial number restoration techniques were applied to Item 1A (metal plate). The serial number was determined to be E76K3A.
6EK867	The examination of the submitted sample of a metal piece with a removed six-digit stamped serial number was carried out by the following standard methods. The sample was tested and observed with a magneto optical device to visualize the removed serial number without destruction with several different settings. Through the process with the magneto optical device, the following numbers/letters were made visible: "K76K3A".
6PJXQD	1- Item 1 is metal piece with the following dimensions: length = 65.0 mm, width = 25.5 mm and height = 6.5 mm. Visual examination of the evidence shows the existence of a scratch one side of part, caused by milling. The size of scratched zone is approximatively: Length= 38.2 mm, width= 25.5 mm, and depth = 0.4 mm. 2- The chemical restoration of the characters that had been altered by milling was positive and the result is: E 7 6 K 3 A.
6TMMHM	Serial Number Restoration using chemical processing was performed on the Item 1 obliterated serial number. The Item 1 obliterated serial number was restored to read "E76K3A".
76RCKF	The serial number of the steel bar, Exhibit ITEM1, was restored and observed to be " E76K3A ".
7C2CFK	An obliterated area was found on the center of Item 1. Standard serial number restoration techniques were used to reveal the following characters E76K3A. Item AS was received and noted as a reference standard; but, not further analyzed.
7R6EQQ	Serial Number Restoration Lab Item #1-2 - Restoration Results: E76K3A
7Y86BN	An obliterated area was located on the cold rolled steel stock, and the aluminum standard was used to compare any restored characters to a known standard. Serial number restoration on the obliterated area revealed the following characters "E76K3A."
82B7ML	The alphanumeric sequence of the metal fragment was determined to be altered. Subsequent analysis revealed the entire sequence consistent with the characteristics evaluated in the comparative material. The detected alteration will remain perceptible after the analyses performed. In summary: The analyzed metal fragment is fully identifiable despite the detected alterations.
86V46A	The serial number on item 1 was restored to E 7 6 K 3 A .
8AY2JF	Visual examination and chemical treatment restored the obliterated serial number on Item 1 to read "E76K3A".
8FA28T	RESULTS and INTERPRETATIONS: The serial number on the steel bar was restored to read: E 7 6 K 3 A EXAMINATION: The serial number on the steel bar had been obliterated. The area of the serial number on the steel bar was processed with chemical etchants and magnetic techniques.
8QBNZP	Examination of the submitted cold rolled steel bar stock found the manufacturer's serial number to have been obliterated. The obliterated, original serial number was restored to read "E76K3A".

TABLE 2

WebCode	Conclusions
8VH79P	I found filing marks on the cold rolled steel bar 'Item 1'. Upon electrochemical treatment on the filed surface, the number 'E76K3A' was restored. Based on the findings, I am of the opinion that the obliterated serial number is 'E76K3A'.
8ZFQAN	The serial number was restored to read E76K3A.
8ZWPHK	Item 1-1 Trace item - A piece of cold rolled steel bar stock with suspected obliterated serial number.: Visual examination of this item revealed the presence of grind marks on the middle of the metal bar. This area was magnetically processed and etched with acid solutions, and the following was restored: E 7 (6,8,G) K 3 A ( ) Indicates a possible character due to an incomplete restoration. The serial number restoration results listed above can be used for further investigative purposes.
96QXDE	The serial number was obliterated and was polished with steel wool prior to chemical processing. After it was determined that the area was ferrous (magnetic), the appropriate chemical etchants to include Magnaflux, Davis, Turner, and Fry were utilized in an attempt to visualize the obliterated characters. Through examination and processing, the obliterated serial number was fully restored to be "E76K3A".
9BEU3P	1. Examination of Exhibit 1 revealed it to be one ferromagnetic metal bar with an obliterated surface on one face. a. No toolmarks suitable for comparison present within the obliterated area or elsewhere on the metal bar. b. After restoration of the obliterated area, the following characters were observed: E 7 6 K 3 A. 2. See photos for approximate measurements.
9BRA9B	E76K3A
9CUQUN	Mechanical and chemical processing of the submitted bar stock reveal that the original serial number is E76K3A.
9ETHBZ	The Item 1 serial number was restored and found to be: E76K3A.
9EXLDR	A serial number restoration was attempted on the metal block using magnetic particle inspection and chemical etching techniques. The serial number was restored to read E76K3A.
9F62MH	The obliterated serial number located on the Exhibit 1 steel bar was processed. The characters were concluded to be E76K3A.
9FU6FT	Item 001-001-01 was polished and chemically restored to reveal the serial number E76K3A
9J69YF	Because the serial number was erased/subscribed, the electroetching method was used. The combination of figures and letters "E76K3A" emerged after a short period of processing the material.
9J9TN4	One (1) steel bar stock submitted in a small tan envelope labeled “Test No. 26-5250: C (Item #1). Serial number has been defaced by abrasion and smooth polishing. CTS# 26-5250C was etched on underside of bar stock by examiner for identification purposes. The serial number is obliterated. Chemical restoration techniques resulted in a full restoration "E76K3A".
9MLQWQ	The serial number on the bar stock was determined to be "E76K3A".
9N3VKG	Item #SNR1 was chemically processed. Its serial number was restored to read: E 7 6 K 3 A.
9Q6LWX	The obliterated serial number on the bar stock in Exhibit #1 was completely restored by means of chemical etching and found to be E 7 6 K 3 A.
9R22AV	Restoration Results: E76K3A
9Z839Z	The serial number on the piece of metal (Exhibit 1A) was mechanically and chemically treated and restored to read E76K3A. No analysis was performed on the piece of metal (Exhibit 1B).
A8AE4X	The hypothesis that the serial number is E 7 6 K 3 A is strongly supported
AAFX6E	for restoring the serial number, two methods were performed. Firstly the metal plate was cleaned with acetone and then sanded well using dremel tool. to get the result magnaflux was spared on the metal plate by which the result was achieved. Second method which included the use of Restor-a-gel RAG001 was used to get more clear result.
AAK4WA	The obliterated serial number on the Item A1-1 piece of bar stock was restored and found to be E-7-6-K-3-A.

TABLE 2

WebCode	Conclusions
ACPVNN	Examination of the submitted bar stock found the manufacturer's serial number to have been obliterated. The obliterated, original serial number was restored to read "E76K3A".
ALTX28	The examination and processing of the obliterated serial number on the Item 1 bar stock was restored to read "E76K3A".
ARV74U	A serial number restoration was attempted on Item 1 using magnetic particle inspection and chemical etching techniques. The serial number was restored to read E 7 6 K 3 A.
ARW4EP	The serial number was fully restored to E76K3A
ATPWA9	The following characters were restored on Item 1: E76K3A
AULA8M	Number restoration techniques were applied to the central area of the metal bar. A single line of characters was revealed. The line of characters was "E 7 6 K 3 A".
AVUH2E	Examined the specimen marked Item 1. The obliterated serial number was magnetically and chemically processed and restored to read E76K3A.
AWTR7H	The serial number had been erased. I was able to restore it to read E76K3A.
B6YR7J	On examination, I found that there were filing marks on the steel bar stock 'Item 1' and no alphanumerics were observed. Upon electrochemical treatment on the filed surface, a set of number read as 'E76K3A' was restored. Hence, I am of the opinion that the original alphanumerics on the steel bar stock 'Item 1' were filed and was restored back and read as 'E76K3A'.
B7THCX	The section of metal bar stock Q1 (Item 001.001) was visually analyzed and through magnetic and chemical processes was fully restored to read E76K3A. This report contains examination results that relate only to the items tested and conclusions based on the interpretations/opinions of this author. Work performed began on May 6, 2026.
B886P7	The examination and processing of the obliterated serial number on the Item 1 piece of steel was restored to read " E76K3A ".
BHK6HT	The serial number on the bar stock was restored to read E76K3A using magnetic particle inspection and chemical etching techniques.
BHRFAJ	The serial number had been erased, however, I was able to restore the serial number, which read E76K3A.
BJEVN8	Examination of the steel bar in Item #1 revealed an obliterated area. Standard restoration techniques revealed the following characters: "E76K3A"
BPTR7G	The serial number was restored: E76K3A
BQVQ7M	The obliterated area on the piece of cold rolled steel bar stock in item 1 was chemically etched and the serial number was determined to be E76K3A.
BQZWXJ	Lab Item(s)# 1 Restoration Results E76K3A
BRVCAF	The obliterated serial# was chemically processed and restored to read "E76K3A".
BU3U9C	Serial number restoration techniques were performed on Exhibit 1. The original serial number was restored to the following: @ 7 6 K 3 A. The “@” is an F or E.
C3NAKT	The obliterated serial number, located on a piece of steel bar stock, was magnetically and chemically processed and fully restored to read "E76K3A."
CE632F	The obliterated serial number on the piece of bar stock (Item 1) was magnetically processed and chemically restored to read “E76K3A”.
CJDGF7	Recovered Characters are E76K3A

TABLE 2

WebCode	Conclusions
CJVQ7L	The serial number on the submitted steel bar stock (Item 1) was partially restored. Using acidic method(-s) the following characters in the serial number were visible: E 7 (6) K (8) A. Characters in brackets were faint and thus uncertain. We emphasize that the combination of letters and numbers in the serial number is based on our interpretation of the results and misjudgements therefore can occur as a consequence. Based on the available characters submitted as reference the uncertain character (6) can also be 0 (zero) or C and the uncertain character (8) can also be 3, 9 or 0 (zero).
CMEK8R	A portion of item 001-01-A (Item 1) was obliterated with no visible serial number. Examination and chemical processing of the obliterated serial number on item 001-01-A (item 1) was restored and determined to be "E76K3A".
CMRM3K	Recovered characters : E76K3A
CN9BD8	E76K3A
CPETC3	Standard laboratory procedures for restoring serial numbers stamped in metal have been applied to the recessed area of the metal plate. The serial number restored is "E76K3A".
CXBND8	Single conclusion: A complete restoration of the serial number was obtained, located on the gray metal plate identified as item 1, obtaining the alphanumeric series: F76K3A, which correspond in shape and size with the characters engraved on the reference aluminum plate.
D2RFX9	The obliterated serial number was chemically processed and restored to read "E76K3A".
DDLPM3	Using chemical and magnetic methods, the suspected obliterated serial number on Item 001A was restored to read E76K3A.
DGHD4A	The recovered characters through Fry's Reagent were: E76K3A
DGLXRD	The metal piece showed wear and/or alteration where the serial number is normally printed, which was successfully recovered through the developing process. After applying the developing process, the sequence E76K3A was revealed. It should be noted that the characteristics revealed through this process are not permanently recovered, and the wear remains on the surface.
DHKUPM	Item 001-001-01 was polished and chemically restored to reveal the serial number E76K3A. Item 001-002 was not analyzed.
DHYAUN	Characters Restored: E76K3A
DJC7BE	The serial number had been erased. I was able to restore the serial number, which read 'E76K3A'.
DK296G	Following electrochemical analysis, I am of the opinion that the number "E76K3A" is stamped on the metal plate marked "Item 1".
E64FWK	Item 1: one magnetic metal bar with up arrow (unknown Item 1) and one non-magnetic metal bar (Item 1 Aluminum Standard) Item: 1 Restoration Results: E76K3A
EGL9D9	Chemical restoration revealed the serial number to be E76K3A.
EHEYJM	Item 001-001-01 was polished and chemically restored to reveal the serial number E76K3A. Item 001-002 was not analyzed.
EHYT7H	Chemical etching of the exhibit revealed a sequence of characters determined to be E76K3A.
ELUNRX	A piece of cold rolled steel bar stock with suspected obliterated serial number. The serial number is obliterated. Chemical and physical restoration techniques resulted in a full restoration "E76K3A".
ENLTDH	Examination of the submitted bar stock found the manufacturer's serial number to have been obliterated. The obliterated, original serial number was restored to read "E76K3A".
F3JVZG	The item was described in accompanying documentation as a piece of steel bar. I was requested to examine the steel bar and to restore any erased serial numbers. The steel bar contained a groove where it appeared that some of the metal had been removed. Number restoration techniques were applied to this area and a single line of characters was restored. The characters were "E76K3A".
F6A437	The serial number of Item 1 as restored is E76K3A.

TABLE 2

WebCode	Conclusions
F7GH9C	The obliterated serial number was chemically processed and restored to read E76K3A
FC2R99	[No Conclusions Reported.]
FC7XZ4	Item 1 was microscopically examined. The obliterated number on Item 1 was polished, magnetically processed, and chemically restored to reveal the serial number E76K3A.
FDJHTE	The serial number of the steel bar, Exhibit ITEM 1, was restored and observed to be "E76K3A".
FGG3LC	The alphanumeric sequence revealed in the piece of cold rolled steel bar identified as [Numbers] (Test No. 26-5250 Item 1) corresponds to "E76K3A ".
FHNF3D	It was observed that the metal piece had been altered and its serial number obliterated in the area where the manufacturer typically applies it. Through the restoration process, the serial number E76K3A was recovered. However, it should be noted that the features uncovered through this process are not permanently restored, and the surface wear remains
FHULVA	The piece of steel bar stock (Item 1) was submitted with an obliterated serial number and was restored to read E76K3A.
FJPECE	Restoration ceased after 1:55 minutes. Serial number restored to read E76K3A.
FPB9CR	I used magnetic particle inspection, polishing, and chemical etching techniques to restore the serial number to E76K3A. The examinations were documented with a series of 15 digital images.
FTV7VG	Visual examination and chemical treatment of the serial number area on the middle of the bar stock, Item 1.A, reveal the following number: E 7 6 K 3 A. Item 1.B was inspected to verify and document contents. No analysis was performed on the item listed.
FYWHQD	Standard restoration techniques revealed the following characters on Item #1, "E76K3A".
FZTX4B	Item 1 was examined and found to exhibit an area of obliteration. The obliterated area was treated with a chemical etchant. This process revealed the following serial number: E76K3A. The above analysis began on 03/09/2026.
G2ZDBG	Examination of the submitted cold rolled bar stock found the manufacturer's serial number to have been obliterated. The obliterated, original serial number was restored to read "E76K3A".
G4DZUG	A chemical etching process was used on the metal plate. (Item 1) to restore a serial number which was identified as being E76K3A.
G7EBH4	Using chemical serial number restoration techniques, an attempt was made to restore the obliterated serial number with the following results: E 7 6 K 3 A was restored on Item 1.
G9JUNC	Exam Commenced: 0845hrs 30/3/2026 Exam Complete: 0900 30/3/2026 Conclusion At about 0845hrs 30/03/2026 Test No 26-5250: Serial Number Restoration marked as item 1 opened. Item one was a metal block measuring approximately 64mm x 25mm. The metal block had a smooth cut / milled section where a serial number is believed to have been removed. There was no visible serial number on initial examination. Sandpaper P1200 wet/dry was used to remove mill marks and polish surface. Fry's Macro Reagent a chemical etchant was used to restore a serial number of E76K3A by rubbing a cotton swab dipped in Fry's over surface. There were no signs of other numbers in the milled area. the number restored appeared to be original stamping as per the Aluminium Standard.
GATYQE	One (1) piece of steel bar stock (2 ½" X 1") submitted with a suspected obliterated serial number. Approximately 1" X 1" area of surface defaced through abrasions/ grinding. Chemical restoration techniques resulted in a full restoration to E76K3A. Evidence scribed with [Letters]-26-00809 by examiner for identification purposes. NOTE: Above evidence was submitted in a tan envelope labelled "2026 CTS Forensic Testing program". Test No. 26-5250: Serial number restoration Sample pack: SNR1.
GAX6JB	The obliterated serial number located on the Exhibit 1 piece of bar stock was processed. The characters were concluded to be "E76K3A".

TABLE 2

WebCode	Conclusions
GBULV8	Visual examination with magnetic and chemical processing of the steel bar stock (Item 1) revealed the obliterated serial number to read: E76K3A. Evidence examined for this report will be returned to the [Laboratory] Coordinator.
GE7KXZ	Recovered characters are E76K3A.
GEA4YA	The restored serial number was E76K3A.
GF23Z2	EXAMINATIONS: Determine whether a serial number or other identifying mark can be restored from the area of obliteration on the piece of metal in Exhibit 12. FINDINGS AND OPINIONS: Exhibit 12 is a piece of cold rolled steel bar stock bearing an obliterated area which was restored to read F76K3A. The serial number in Exhibit 12 was restored using various chemical etchants.
GHUVAD	Examination of the steel bar [SNR1: 14408-1567] indicated that the surface of the metal had been ground. The ground metal surface was subjected to a restoration technique and I subsequently made a recovery of the characters E76K3A. I formed the opinion that the characters E76K3A had been originally stamped onto the surface of the steel bar.
GJJ727	Examinations showed the serial number of Item 1 to be obliterated. The serial number was restored using magnetic and chemical etching techniques and was found to be: E76K3A.
GJYPJH	The serial number was restored to read E76K3A.
GKBGGZ	Results: Serial Number Restoration Lab Item(s)# Restoration Results 1 E76K3A
GKV7VE	Lab Item(s)# Restoration Results 1 E76K3A
GNAU6P	I found filing marks on the steel bar 'Item 1' upon electrochemical treatment on the filed surface, the number 'E76K3A' was restored. Therefore, I am of the opinion that the obliterated serial number is 'E76K3A'.
GUB7ZM	Serial number restoration performed on item 001.001. The serial number E76K3A was restored on item 001.001.
GXFLYE	The obliterated serial number on Item 1 was restored to read E76K3A.
GYRCYH	I examined and chemically processed Item 1, and I determined the serial number to be E76K3A.
H6CUTJ	Item #1 has an area of obliteration. E76K3A were restored as the characters.
H8GLKW	The bar stock (Item 1) was stereo microscopically examined. It was physically and chemically processed. Its serial number was restored to read: E76K3A
HBJKXB	Items 1 (alloy steel bar) and Item 2 (Aluminum standard) were photographed. The obliterated area of item 1 was sanded with 220 and 400 grit sandpaper and treated with Fry's chemical reagent, for a total of four times. After each treatment photographs were taken. After the third treatment the alpha-numeric combination was observed (E76K3A). The alpha-numeric combination was photographed and viewed in Adobe Photoshop.
HBNQP7	Serial number was successfully restored.
HCE4YC	The metal piece (Item 1) showed areas of wear and alteration. After applying the restoration process to the obliterated area, the E76K3A sequence was revealed. It is noted that the revealed characteristics are not permanently restored, and the wear persists on the surface.
HCEZA8	On examination, I found no number on the cold rolled steel bar stock. However, I observed the surface of cold rolled steel bar stock was filed. After electrochemical treatment, the obliterated serial number was restored and read as "E76K3A".
HCJ724	The obliterated serial number on the bar, item 1, was restored to E76K3A.

TABLE 2

WebCode	Conclusions
HEGYKZ	As received, the serial number on the steel bar was obliterated. Using chemical etching techniques (Davis, Turners & Frys Reagents), the serial number was restored to E76K3A. Oil was placed on the bar after the restoration process was complete. Please refer to Serial Number Restoration Worksheet for further information on the chemical restoration process. Thirty-six photographs were taken during the restoration process and uploaded to Evidence.com on 03/30/26.
HFW74W	Serial number restoration techniques were applied to item 1A (metal bar). The serial number was determined to be: E76K3A.
HFXVBE	The serial number was restored to read E 7 6 K 3 A.
HQRCZF	During the examination of the bar stock, item (1), it was observed that the serial number had been completely defaced by a grinding action. The serial number was physically and chemically treated in an attempt to restore the number. The defaced serial number on the bar stock, item (1), was restored to read E76K3A.
HQWMJ	A piece of cold rolled bar stock was submitted with a suspected obliterated serial number. The characters "E 7 6 K 3 A" were recovered.
HTYQ7L	The serial number on the steel bar stock (Item 1) was restored to read E76K3A.
HV8TK7	The serial number of Item 001-01 was mechanically and chemically processed and restored to read “E76K3A”. This is also the opinion of Firearms Examiner NAME.
J3JKX9	The questioned piece of metal shows surface wear; By chemical restoration, the original sequence was determined, which corresponds to the pattern characters used as comparison elements.
JLFWVA	The following characters were recovered after a serial number restoration: E76K3A
JLHBGX	Using chemical methods, the obliterated serial number located on Item 001A, was restored to read E76K3A. Item 001B was used for reference.
JMCC98	The serial number E 7 ? K 3 A were restored on the bar stock. The "?" represents a character that could not be fully restored. However, the "?" character was partially restored and it was most consistent with a 6 or an 8.
JNL7ZZ	The obliterated serial number on the metal bar (Item #1) was magnetically and chemically processed and fully restored. The obliterated serial number was successfully restored and reads: E76K3A.
JPFYVJ	Standard restoration techniques revealed the characters "E76K3A".
JQQ2GH	An obliterated area was observed on the metal plate marked Item 1. The obliterated area was magnetically processed and was restored to read the characters "E76K3A".
JRJRMW	Serial number restoration techniques were applied to Item 1 (metal plate). The serial number was determined to be E76K3A.
JRRH73	The obliterated serial number on the Item 1 piece of bar stock was restored to read E76K3A.
JV77FD	Examinations showed the serial number of Item 1 to be obliterated. The serial number of Item 1 was restored using various chemical etching techniques and was found to be: E76K3A. The procedure was photographed and documented accordingly.
K2RUF2	EXAMINATIONS SHOWED THE SERIAL NUMBER OF ITEM 1 TO BE OBLITERATED. THE SERIAL NUMBER OF ITEM 1 WAS RESTORED USING MECHANICAL POLISHING AND CHEMICAL ETCHING TECHNIQUES AND FOUND TO BE: E76K3A.
K3MDH3	The serial number on the submitted cold-rolled steel block Item 1, was fully restored to read E76K3A.
K676T6	The serial number is ground off. The serial number (E76K3A) was restored by acid etching. Polishing, Magnaflux and the Fry's reagent were used for the restoration. The magnetic particles provided an outline of the serial number when the Magnaflux was used. A chemical reaction was observed when the acid etching solution was applied to the surface area of the firearm. This Evidence Submission will be held in the Firearm Section's Evidence Room.

TABLE 2

WebCode	Conclusions
K8VRWR	The serial number on the piece of metal (Exhibit 1A) was mechanically and chemically treated and restored to read E76K3A.
KAEK9V	Standard laboratory procedures for restoring serial numbers stamped in metal have been employed on the middle of the metal block, Item 1. The serial number was determined to be "E76K3A". The reference block was not analyzed.
KAXQ8K	The sequence of characters imprinted mechanically was removed only to such a depth that after the acid etching treatment it could be restored.
KJ8VMW	The restored character on the provided piece of metal reads as follows: F7DK8A
KLBQ4E	The serial number of Item 1 had been obliterated. The serial number of E76K3A was restored while using polishing, magnetic, and chemical restoration techniques. Item 2, the aluminum standard block with alphanumeric exemplars, was used for reference only.
KTCZB7	After applying the development process, the E76K3A sequence was successfully revealed.
KXRJK2	Examinations showed the serial number of Item 1 to be obliterated. The serial number was restored using mechanical polishing, magnetic particle inspection and chemical etching techniques and was found to be: E76K3A.
KZW3QA	The serial number had been erased. I was able to restore the serial number which read E76K3A.
L2J4WV	Reports are auto generated in a table format and there is no actual "wording" included. Table would be titled "Recovered Characters" and below the header would be E76K3A.
L2LNN6	Interpretation: - The alphanumeric sequence of the metal fragment was determined to be altered. Subsequent analysis revealed the entire sequence consistent with the characteristics evaluated in the comparative material. The detected alteration will remain perceptible after the analyses performed. In summary: The analyzed metal fragment is fully identifiable despite the detected alterations, as indicated in the table above in the "Final Sequence Determined" column.
L3H8P7	Polished, chemically processed and restored to read E76K3A.
L4NPN3	The obliterated serial number was fully restored to read "E 7 6 K 3 A" using sand paper, Fry's reagent, and photography.
L4TVFX	The obliterated serial number on the steel bar stock, item 1, was restored to E76K3A. The steel bar stock, item 1, was examined. The location of the suspected obliterated serial number, the middle of the bar stock, was obliterated by a grinding/polishing type of tool. Using standard restoration techniques, the obliterated area was treated with chemicals and magnetic inspection particles.
L6MLLC	1) Examination of Exhibit 1 revealed one rectangular piece of ferromagnetic bar stock with an obliterated area on the top. a. The observed damage is consistent with an abrasive action tool such as an electric grinder/filing tool. b. These toolmarks are unsuitable for comparison. 2) The obliterated area was restored and the following characters were observed: E 7 6 K 3 A. 3) Please see photos for measurements. All measurements are approximate. Technical Notes Serial number restoration is dependent upon multiple factors to include the original stamping/engraving method, material type, obliteration method, and depth of material removed. The reported characters convey only the appearance of characters or partial characters that the examiner observed after the application of standard serial number restoration techniques. These characters are not considered absolute to the exclusion of other possible characters with similar shape or form.
L92AVN	The obliterated serial number was partially restored to read ???K?A. The ? represents an un-restored character.
LAXWE8	The serial number is ground off. The serial number (E76K3A) was restored by acid etching. Polishing and the Fry's reagent were used for the restoration. A chemical reaction was observed when the acid etching solution was applied to the surface area of the metal plate. Image 1 is an image of the item depicting the defaced number before restoration attempts. Image 2 is an image of the item after the restoration process was completed. Item 1 will be forwarded to the Firearm Section's evidence room. Images of the restoration process with be stored on the Foray Server.

TABLE 2

WebCode	Conclusions
LPRJKY	The cold rolled steel bar stock submitted as Item 1 was examined and it was determined that the serial number on the front (with the arrow pointing upwards) of the bar had been obliterated. Attempts were made to restore the obliterated serial number using magnetic particle inspection and chemical etching techniques. The serial number was restored and determined to be E76K3A.
LRHFH7	Positive. The restored serial number was: E76K3A
LT4HMR	Serial number restoration techniques were applied to Item 1 (steel bar stock). The serial number was determined to be E76K3A.
LT78UA	Examination and chemical processing of Item 1 restored the original obliterated serial number, which was determined to be "E76K3A".
LUZXYP	Item 1-1 was submitted with a defaced serial number. Chemical etching restoration techniques were used to restore the serial number. The serial number was restored and found to be: E76K3A.
LXJT63	Examination and restoration of the serial number located on the middle of steel bar (side with arrow symbol) of Item 1 revealed the serial number “E76K3A”.
LXMDR6	It is concluded that the development methodology with chemical reagents is more efficient and faster than the electromagnetic methodology.
LXYCKT	The defaced serial number of Item 1 was physically, magnetically, and chemically processed. Its serial number was restored to read "E 7 6 K 3 A".
M22AVL	The section of metal bar stock Q1 (Item 1) was visually analyzed and through chemical process, was fully restored to read E76K3A. This report contains examination results that relate only to the items tested and conclusions based on interpretations/opinions of this author. Work performed began on 05/05/2026.
M22F38	Item 1 was received with an obliterated area in the middle of the bar stock. Standard restoration techniques revealed the following characters: "E76K3A". Multiple factors could have had an effect on the interpretation of the restored characters.
M673Z7	I chemically treated the surface of the cold rolled steel bar stock that was listed as item 1. As a result, I recovered the previously stamped characters 'E76K3A'. These characters were consistent in size and style to the characters provided on the Aluminium Standard.
M6F6BJ	The section of metal bar stock Q1 (Item 001) was visually analyzed and through chemical processes was fully restored to read E76K3A. This report contains examination results that relate only to the items tested and conclusions based on the interpretations/opinions of this author. Work performed began on May 5, 2026.
M7GQFC	1. Examination of Exhibit 1 revealed it to be a ferromagnetic piece of steel bar stock displaying an area of obliteration. The bar stock has a thickness of 6.28mm, while the area of obliteration has a thickness of 6.01mm. The tool utilized to obliterate Exhibit 1 could not be determined. It does appear that the area of obliteration was polished, possibly with an angle grinder or something similar. These markings are not suitable for microscopic comparison. Visual and chemical restoration techniques were utilized in an attempt to restore the obliterated characters. The obliterated area was restored, and the following characters were observed: E 7 6 K 3 A. All measurements are approximate. Additional measurements are available in photographs. TECHNICAL NOTES: Serial number restoration is dependent upon multiple factors to include the original stamping/engraving method, material type, obliteration method, and depth of material removed. The reported characters convey only the appearance of characters or partial characters that the examiner observed after the application of standard serial number restoration techniques. These characters are not considered absolute to the exclusion of other possible characters with similar shape or form.
MBMKA8	As received, the factory stamped serial number was obliterated or partially obliterated. Mechanical and chemical processing was applied and the following characters were developed: E76K3A
MPMDT4	Serial number restoration using chemical etching process recovered the serial number, E76K3A.
MTLNN4	The obliterated serial number was fully restored to read : " E 7 6 K 3 A" using sand paper, Fry's reagent and photography.

TABLE 2

WebCode	Conclusions
MTLQD8	The serial number of the piece metal identified item 1 is E76K3A.
MW7JPA	Examination of Item 1 revealed the presence of a defaced area. Item 1 was chemically, magnetically and physically processed. The serial number was partially restored as: ?76K3A E F REMARKS: A question mark denotes the position of an unknown character and may have possible character choice(s) listed below.
MZ7UJP	"Serial number' obliterated by abrasion. Back of bar stock scribed "CTS 26-5250D" by examiner for identification. Chemical and physical restoration techniques resulted in a full restoration "E76K3A".
N29CUP	Serial number restoration techniques were applied to Item 1A. The serial number was determined to be E76K3A.
N2LAP4	A serial number restoration was attempted using magnetic particle inspection. The serial number was restored to read E76K3A.
NR9EBW	I used Magnaflux, sandpaper, and chemical etching to restore the serial number on Item 1 to E76K3A.
NWF6CG	Item 1: The serial number on Item 1 was restored to read E 7 6 K 3 A using magnetic particle inspection and chemical etching techniques.
NZ3J6X	Based on my finding, I am of the opinion that the steel bar was tempered and after electrochemical restoration process, the serial number was restored and read as E76K3A.
P3MX7C	An obliterated area was observed on the metal bar of Item 1. The characters "E76K3A" were restored.
PD7C8U	The characters "E76K3A" were restored on the bar stock in Item #1.
PFDQR7	A combination of visual, magnetic, and a chemical etching process was used to restore a serial number which was identified as being E76K3A.
PG4YTV	[No Conclusions Reported.]
PJ8N4Q	The steel bar stock was chemically processed. Its serial number was restored to read: E76K3A.
PKHN27	Examination and chemical processing of the Steel Bar Stock using serial number restore chemicals such as Davis, Turner's and Fry's Reagents restored the original obliterated serial number which was determined to be E76K3A. The procedure was photographed and documented accordingly.
PLJA7Y	Lab Item #1 (one piece of cold rolled steel bar stock with suspected obliterated serial number) was examined on 03/13/2026 and found to contain an area of obliteration with overlapping linear signatures. Serial number restoration commenced and was completed on 03/13/2026. Serial number restoration was successful. The serial number on Lab Item #1 (steel bar stock) was recovered as: E76K3A.
PTBWMW	The serial number of the steel bar, Exhibit ITEM1, was restored and observed to be "E76K3A".
PVKNZK	A serial number restoration was performed on item 1-1, and the serial number was found to be: E76K3A. The item 1-2 character standards were used as a reference during the serial number restoration.
PWVNXZ	The serial number was fully restored
PWZUQV	The obliterated number on Item 1 was polished and chemically restored to reveal the serial number E76K3A.
PYJ9RB	Item 1: Magnetic particle inspection and chemical etching revealed the serial number to be E76K3A.
Q4HMEZ	The piece of steel was examined and determined to have a serial number which had been obliterated by grinding. Using standard chemical restoration techniques and the aluminum standard for reference, the serial number was restored and determined to be E76K3A.
Q8WBNB	Restoration Results: E76K3A
QAETJ2	The surface in the metal piece was determined obliterated. After the analysis an alphanumeric sequence was revealed concordant with the characteristics evaluated in the comparative material.

TABLE 2

WebCode	Conclusions
QAJYBW	The obliterated serial number of the submitted metal plate, Item 1, was restored to be, E 7 6 K 3 A. No analysis was conducted on the aluminum plate containing known serial number standards.
QCQDH3	The restored serial number is "E76K3A"
QD4223	The serial number of the steel bar, Exhibit ITEM 1, was restored and observed to be "E76K3A".
QDMUUZ	Serial number restoration was performed on the Item 1 bar stock. The characters E76K3A were restored. This should be considered the complete serial number.
QERDPM	The serial number on the metal blank (Exhibit 1) was mechanically and chemically treated and restored to read E76K3A.
QEU4W6	the restoration procedure was applied to the cold rolled steel bar stock and the alphanumeric sequence E76K3A was obtained
QG2H4B	Examination of Item 1 revealed an obliterated area on the steel bar stock. Standard restoration techniques revealed the following characters "E76K3A".
QHV9AP	Using the following techniques: visual, polishing, and acid etching, the serial number was restored to read: E76K3A.
QN6EEW	The obliterated serial number on Item 1 was restored to read E76K3A by using the Magnaflux method.
QNY9LZ	The metal part was observed to show wear and/or alteration in the area where the manufacturer normally prints the series, which could be recovered through the development process. After the development process was applied, the E76K3A sequence was revealed. It should be noted that the characteristics revealed through this process are not permanently recovered, and the wear persists on the surface.
QPT2HJ	Restoration of obliterated stamped marking was performed on the questioned surface of “Item 1”, and the restored serial number was found to be “E 7 6 K 3 A”.
QPVQN3	The surface in the metal piece was determined obliterated. After the analysis an alphanumeric sequence was revealed concordant with the characteristics evaluated in the comparative material.
QPX6KB	The number on the steel block was obliterated by grinding. The area was chemically etched. The number E76K3A was restored.
QRKWHY	An obliterated area was found in the center of Item 1. Standard serial number restoration techniques were used to reveal the following characters: "E76K3A". The Aluminum standard was documented and not examined further.
QTCTTL	Chemical restoration techniques resulted in a full restoration "E76K3A".
QTV884	the restored serial number is E76K3A
QU9CVN	We succeeded to restore the serial number as: F76K3A
QXADYQ	The complete restoration of the serial number of the steel bar was achieved.
QXLA6V	The serial number on "Item 1 bar stock" was restored by the use of methods 0327 and 0976. Both methods produced the same result independently.
QYE3ZE	Restoration Results: E76K3A
R93DPZ	Interpretation: - The alphanumeric sequence of the metal fragment was determined to be altered. Subsequent analysis revealed the complete sequence consistent with the characteristics evaluated in the comparative material received. The detected alteration will remain perceptible after the analyses performed. In summary: The analyzed metal fragment is fully identifiable despite the detected alterations, according to the information in the table above in the "Final Sequence Determined" column.
RCL8Q8	Defaced Bar Stock (item 1) was magnetically and chemically processed. Its serial number was restored to read: E76K3A.

TABLE 2

WebCode	Conclusions
RDGQR9	Attempts to physically and chemically restore the obliterated serial number of Lab Item 1 were successful. The restored serial number is E76K3A.
REQ38P	Using the methods of polishing, Magnaflux, and Fry's Reagent the obliterated serial number was restored to read "E76K3A".
RFJXYR	The serial number on the one (1) piece of cold rolled steel bar stock, item 1, was restored to read E76K3A.
RFLJJL	The serial number on the piece of metal (Exhibit 1A) was mechanically and chemically treated and restored to read E76K3A
RGDN67	Visual examination and chemical treatment of the serial number area on the center of the barstock, Item 1.A, reveal the following number: E 7 6 K 3 A Item 1.B was inspected to verify and document contents. No analysis was performed on the item listed.
RJAUWY	The obliterated area on item 1 was physically and chemically restored to read: E 7 6 K 3 A An aluminum block with numeric and alpha characters was received and used as a reference standard.
RKFFBX	The rectangular shaped steel bar, Item #1, was received with an obliterated serial number. Attempts to restore the serial number utilizing chemical methods were successful and the serial number was determined to be E76K3A.
RKRCDH	Restoration procedures revealed the serial number to be E76K3A
RPPTTW	The serial number of Item 1 was fully restored to read E76K3A.
RPUYKT	The obliterated serial number on the bar stock (1) was recovered to read: E 7 6 K 3 A
RQHMNF	The section of metal bar stock Q1 (Item 001.001) was visually analyzed and through magnetic and chemical processes was fully restored to read E76K3A. This report contains examination results that relate only to the items tested and conclusions based on the interpretations/opinions of this author. Work performed began on 04/28/2026.
RQNPQ8	Visual examination and chemical treatment of the serial number area on the center of the bar stock, Item 1.A, reveal the following number: E76K3A. Item 1.B was inspected to verify and document contents. No analysis was performed on the item listed.
RU2GTT	One (1) steel bar stock with restored serial number E76K3A.
RU3EYH	The suspected obliterated serial number has been completely restore and the number is : E76K3A
RVXW2J	The obliterated serial number on Item 1 was chemically processed and restored to read: E76K3A.
RXZVCC	The serial number on Item 1 was restored to read E76K3A using magnetic particle inspection and chemical etching techniques.
T7TMYW	The aluminum bar, Item #1, was received in the laboratory with an obliterated serial number. Attempts to retrieve the serial number via chemical methods revealed the following serial number: E76K3A. All evidence will be returned to the Firearms Unit Vault upon completion of analysis.
TB9XDZ	The piece of metal submitted for analysis showed alteration due to wear on the metal surface. After analysis, the series that had been subjected to wear was revealed. The alteration detected may still be noticeable after the analysis is completed.
TFER8W	The serial number of Item 1 was fully restored to read E76K3A.
TL62GU	The obliterated number on Item #1 was polished and chemically restored to reveal the serial number E76K3A.

TABLE 2

WebCode	Conclusions
TLN2M6	1. Examination of Exhibit 1 revealed one ferromagnetic metal bar with an obliterated area displaying damage consistent with that caused by an undetermined abrasive action tool. The toolmarks observed on Exhibit 1 are not suitable for microscopic comparison. See photos for measurements. Please note all measurements are approximate. 2. The obliterated area of Exhibit 1 was restored and the following characters were observed: E 7 6 K 3 A TECHNICAL NOTES Serial number restoration is dependent upon multiple factors to include the original stamping/engraving method, material type, obliteration method, and depth of material removed. The reported characters convey only the appearance of characters or partial characters that the examiner observed after the application of standard serial number restoration techniques. These characters are not considered absolute to the exclusion of other possible characters with similar shape or form.
TM4BLX	Using Magnetic Particle Restoration and acid etch, the defaced serial number was restored to read "E76K3A".
TNTLCQ	The serial number of the metal bar from Item 1 was restored and determined to be E 7 6 K 3 A. The metal bar from Item 1 was examined and it was determined that the serial number had been obliterated. Attempts were made to restore the serial number using magnetic particle inspection and chemical etching techniques.
TPMCH6	1. Examination of Exhibit 1 revealed one (1) ferromagnetic piece of bar stock with an obliterated area. Thin parallel striations consistent with being created by an abrasive tool, such as a grinding wheel were observed and are unsuitable for comparison. 2. The obliterated area of Exhibit 1 was restored and the following characters were observed: E 7 6 K 3 A.
TTPDH3	The serial number of Item 1 was restored to read “E76K3A”.
U2DH22	The piece of metal, internally identified as [Alpha-Numeric Characters], showed alteration in the area where the print was located, which could be recovered through the restoration process. After applying the development process, the sequence E76K3A was revealed.
U3BNFZ	A piece of steel bar with a suspected obliterated serial number was examined. Non-destructive and then destructive methods were used in an attempt to restore a serial number. The methods used consisted of a Magnetic Particle Inspection tool and acid etching with the application of heat. Six alpha-numeric characters were restored and appeared to display the characters: E76H3A.
UCYGUR	[No Conclusions Reported.]
UDRKB7	Item 001-001 was polished and chemically restored to reveal the serial number E76K3A. Item 001-002 was not analyzed.
UFX3BM	The obliterated serial number on Item 1 was restored to read E76K8A.
UG7AJG	Item #1 One (1) steel bar stock with arrow submitted in a small envelope labeled "Test No. 26-5250: F". Serial number defaced by abrasion and smooth polishing. Examiner scribed "26-5250:F" on reverse for identification purposes. The serial number is obliterated. Magnetic Particle Inspection techniques resulted in a full restoration "E76K3A".
UGRW77	Item 001-001-01 was polished and chemically restored to reveal the serial number E76K3A. Item 001-002 was not analyzed.
UH3PWE	The section of metal bar stock Q1 (Item #001.001) was visually analyzed and through polishing, magnetic, and chemical processes was fully restored to read E76K3A. This report contains examination results that relate only to the items tested and conclusions based on the interpretations/opinions of this author. Work performed began on 05/01/2026.
UK3ZPT	[No Conclusions Reported.]
UK7KFG	Aluminum bar stock used as reference for serial number restoration test. The serial number is obliterated. Physical and chemical restoration techniques resulted in a full restoration, "E76K3A".
UK8BLY	The serial number restoration technique was applied to Item 1. The restored serial number was determined to be E76K3A.

TABLE 2

WebCode	Conclusions
UL22RE	The section of steel bar stock Q1 (Item 001) was visually analyzed and through chemical processes was fully restored to read E76K3A. This report contains examination results that relate only to the items tested and conclusions based on the interpretations/opinions of this author. Work performed began on 4/16/2026.
V2TT2Y	The obliterated serial number on Item 1 cold rolled steel bar stock was restored and interpreted as "E76K3A".
V4XQLM	The obliterated serial number was restored. The final characters of the serial number were E76K3A.
V9AUCN	I restored the serial number (SN) on Item 1 to read E76K3A.
VC4BCQ	After an attempt to chemically restore the erased serial number on the block submitted, the following number was recovered, E76K3A.
VC968N	The serial number was restored to read E 7 6 K 3 A.
VDMEJA	Attempts to restore the obliterated serial number of Item 1 were successful. The restored serial number is E 7 6 K 3 A.
VFTXJQ	Lab Item 1 with obliterated serial number, located on the front of the bar, was chemically/magnetically processed and determined to be " E76K3A"
VGLQEA	Restoration techniques applied to the steel sample provided "Item1" reveabled a serial number consistent with the following sequence: E76K3A
VGNFKT	Examination and restoration of the serial number located on the middle of bar stock of Item 1 revealed the serial number "E76K3A".
VJNQE8	An obliterated area was observed on the metal bar in Item 1. Standard restoration techniques revealed the characters: E76K3A.
VW7G7P	Using chemical serial number restoration techniques, an attempt was made to restore the obliterated serial number with the following results: Serial Number: E76K3A was restored on Item 1.
VYPB7W	The obliterated serial number located on the Exhibit 1 bar stock was processed. The characters were concluded to be "E76K3A".
WKHW97	Recovered characters: E76K3A
WLQG7Z	Restoration Results 1-1 E76K3A
WLWCTY	Item 1 was examined and found to have an obliterated area in the middle of the steel bar stock. Standard restoration techniques were applied to Item 1. The following characters were restored: E76K3A. Multiple factors could have had an effect on the interpretation of the restored characters.
WNY282	I found filing marks on the cold rolled steel bar 'Item 1'. Upon electrochemical treatment on the filed surface, the number 'E76K3A' was restored. Based on the findings, I am of the opinion that the obliterated serial number is 'E76K3A'.
WU6V2W	The development process was carried out in the area where it was altered and it was possible to restoration the alphanumeric sequence correspondin to E76K3A
WUA2TT	The serial number was chemically restored to read 'E76K3A'.
WZCW9Y	Lab Item # 1; Restoration Results: E76K3A
X3JZLU	Serial number read E76K3A
X4FHNW	Serial Number Analysis: Methodology: Physical (Visual Examination) Microscopy (Comparison Microscope) MPI - Magnetic Particle Inspection Chemical (Reagent Etching) Serial number restoration procedures revealed the serial number on Item 1 to be: E 7 6 K 3 A
X8AD9Q	The obliterated serial number is perceived to be E76K3A.

TABLE 2

WebCode	Conclusions
XDZVGZ	Visual examination and chemical treatment of the serial number area on the bar stock, Item 1.A, reveal the following number: E76K3A. Item 1.B was inspected to verify and document contents. No analysis was performed on the item listed.
XEW38T	The serial number of Item 001-AA was examined using magnetic particle inspection and chemically processed and determined to be E76K3A. Item 001-AB was used as a standard of characters to determine the serial number of Item 001-AA.
XF3LV3	Examination and chemical processing of [Laboratory] Item 001 restored the original obliterated serial number which was determined to be E76K3A.
XGEKPB	The serial number on Item 1 was restored and determined to be the following: E 7 6 K 3 A. The aluminum bar stock standard was utilized during the restoration process. It will be returned with Item 1.
XGG2FV	RESTORATION: The serial number for Item 1 was chemically processed and restored to: E76K3A
XLA2UQ	Visual examination with mechanical, magnetic, and chemical processing of the piece of metal (Item 1) revealed the obliterated serial number to read: E76K3A.
XMLXYV	Examination and restoration of the serial number on Item 1 (bar stock) revealed the following characters: "E76K3A"
XNYKJV	The serial number on the steel bar was removed. Serial number restoration attempt recovered a serial number of 'E76K3A'.
XPNP32	Recovered Characters: E76K3A
XQHF9G	The obliterated serial number was restored to read: "E76K3A".
XQKEBP	The serial number of the submitted Metal bar (Item 1) was recovered to E76K3A.
YDUTE9	The obliterated serial number on the Item 1 bar stock (Tracking Number T26110029) was chemically processed and restored to read "E76K3A".
YEQGMW	E76K3A
YFEC9W	Serial Number Restoration: E76K3A
YH67W8	Non destructive number restoration (magnetic particle application) was carried out on item 1OMCG1. Resolved digits indicated: 'E76K3A' Destructive tests were not carried out.
YMWDEF	The obliterated number has been restored by using the etch method with the acid after Fry.
YVZWER	Serial Number Restoration Analysis: Methodology: Physical (Visual Examination, Sanding/Polishing) Microscopy (Stereo/Comparison Microscope) MPI- Magnetic Particle Inspection Serial number restoration procedures revealed the serial number on Item 1A, the bar stock, to be: E 7 6 K 3 A.
YYPWXR	Steel bar identified as Item 1 has an obliterated area. By restoration process the alphanumeric sequence "E76K3A" was recovered.
YYU3PN	The ground surface was deveoloped utilizing serial number restoration techniques and the following number was developed: E76K3A
Z4JYPY	The obliterated serial number was successfully restored to read E76K3A.
Z8LP7L	Using standard laboratory techniques the obliterated serial number present on item 1 was fully restored and was E76K3A.
Z9EKNN	The submitted piece of cold-rolled steel bar stock was restored to read E76K3A using the chemical etching method.
ZDU2BY	The serial number was restored to read E76K3A.
ZELBVZ	Item 1 has been photographed, then the surface in question was sanded and polished. In turns, this surface was subsequently treated with "Fry 1"-solution and polished. As soon as any characters could be seen, they were photographed. Based on the available alphanumeric characters present on the "Aluminum Standard" the six characters seem to be "E76K3A".

TABLE 2

WebCode	Conclusions
ZG67UM	The obliterated number on the bar stock submitted in laboratory evidence item 1 was chemically restored to reveal a partial serial number E 7 6 K * A. The * (5th) character could be a 3 or 8.
ZHJR8U	Steel bar identified as Item 1 has an obliterated area. By restoration process the alphanumeric sequence E76K3A was recovered. It should be noted that the characteristics revealed by this process are not permanently recovered and wear persists on the surface.
ZNPJCL	Lab Item 1 with obliterated serial number, located on the middle of the aluminum bar, was chemically processed and restored to read "E76K3A".
ZQXMDP	Item 1: The serial number is ground off. The serial number (E76K3A) was restored by acid etching. Polishing, Magnaflux, Fry's reagent and nitric acid were used for the restoration. A chemical reaction was observed when the acid etching solution was applied to the surface area of the firearm. ….. Item 1 will be forwarded to the Property Custody Division.
ZV66LP	Examination and processing of the obliterated area of this item restored the original alphanumeric/numeric characters. A Full Restoration was determined to be: E76K3A
ZV72RE	Standard laboratory procedures for restoring serial numbers stamped in metal have been employed on the obliterated area of this metal bar. The serial number was determined to be "E76K3A".

Sample Preparation

(listed in order of use)

TABLE 3

Sample Preparation			
WebCode	**Method**	**Tool Used**	**Grit Size**
26BAAZ	None		
26PVJ2	Visual		
	Grinding		
29CACH	Visual		
	Visual	Stereoscope	
	Sanding	Sand paper	P800
	Polishing	Sand paper	P1000
	Visual	Camera- Photographs	Throughout restoration
2A7ZHW	None		
2DP4EU	None		
2MALKL	None		
2NM4RY	Visual	Microscope	
2RLAGC	Polishing	Dremel	
2RNYMU	Sanding	Sand paper	400
2UTRDM	Polishing	Scotch Pad	
2Y29QG	None		
2YLP7K	None		
2ZVYWV	Cleaning	Acetone	
33XQCT	None		
34UKDQ	Cleaning	Steel wool	
37Z3CM	Polishing	Rotary Tool	
3PCJQ9	Polishing	Dremel	
3VJDL4	Cleaning	SKC-S	
3WETX2	None		
3ZCACF	Polishing	Rotary Tool	600
46NHBY	None		
48QHBW	None		
4U3NPV	Cleaning	SKC-S	
	Polishing	Dremel	
	Cleaning	Acetone	
4YCTB3	Polishing	Steel wool	120
	Cleaning	Acetone	

TABLE 3

Sample Preparation			
WebCode	**Method**	**Tool Used**	**Grit Size**
62FGCQ	None		
69HXYD	Visual		
6C3PMM	Visual	Microscope	
6DNRT9	Visual	Microscope	
6EK867	Visual	camera	
	Visual	Stereoscope	
6PJXQD	Cleaning	Acetone	
6TMMHM	Polishing	Steel wool	
76RCKF	None		
7C2CFK	Visual	Acetone	
7R6EQQ	Visual	Stereoscope	
7Y86BN	None		
82B7ML	Sanding	Sand paper	220 y 360
86V46A	Visual	Stereoscope	
	Polishing	Emery paper	Extra Fine
8AY2JF	None		
8FA28T	None		
8QBNZP	None		
8VH79P	Cleaning	Acetone	
8ZFQAN	None		
8ZWPHK	Visual	Stereoscope	
96QXDE	Visual	standard eye visualization	
	Polishing	Steel wool	
9BEU3P	Sanding	Sand paper	180
	Sanding	Sand paper	220
9BRA9B	None		
9CUQUN	None		
9ETHBZ	Visual	Stereoscope	
9EXLDR	Visual	digital camera	
	Visual	Microscope	5 minutes
9F62MH	None		
9FU6FT	Polishing	Sand paper	
9J69YF	Visual	Magnifying Glass	
9J9TN4	Visual	Stereoscope	

TABLE 3

Sample Preparation			
WebCode	**Method**	**Tool Used**	**Grit Size**
9MLQWQ	None		
9N3VKG	None		
9Q6LWX	None		
9R22AV	None		
9Z839Z	None		
A8AE4X	Sanding	Sand paper	1500
	Cleaning	Acetone	
AAFX6E	Visual	Microscope	
	Sanding	Dremel	
	Cleaning	Acetone	
AAK4WA	Sanding	Dremel	1000
ACPVNN	Polishing	Dremel	
ALTX28	Polishing	Simichrome, Dremel w/ buffing wheel	
ARV74U	Visual	visual (with eyes)	
	Visual	Stereoscope	
	Visual	Photographic	
ARW4EP	Polishing	Dremel	
ATPWA9	Visual	Stereoscope	
AULA8M	Sanding	Sand paper	1200
AVUH2E	Polishing	Dremel	
AWTR7H	Visual		
B6YR7J	Visual	Torch light	
	Cleaning	Acetone	
B7THCX	None		
B886P7	Polishing	Fiber polishing tip	
BHK6HT	Visual	Stereoscope	
	Sanding	Sand paper	150C
BHRFAJ	Polishing	Rubber polishing wheel	
	Polishing	Metal polish with microfibre cloth	
	Cleaning	Acetone	
BJEVN8	Visual	Stereoscope	
BPTR7G	Visual	Stereoscope	

TABLE 3

Sample Preparation			
WebCode	**Method**	**Tool Used**	**Grit Size**
BQVQ7M	Visual	Stereoscope	
	Polishing	Steel wool	
	Polishing	Sand paper	600
BQZWXJ	Cleaning	Stereoscope	
BRVCAF	Sanding	Sand paper	Grit #320
BU3U9C	Polishing	Dremel	
C3NAKT	Visual	Stereoscope	
CE632F	Visual		
CJDGF7	Visual		
	Polishing	Dremel	
CJVQ7L	Visual		
CMEK8R	Polishing	Polishing Paper	
CMRM3K	Polishing	Dremel	
CN9BD8	Visual	Stereoscope	
CPETC3	Visual	Stereoscope	
CXBND8	Visual	Stereoscope	
D2RFX9	Visual	Stereoscope	
DDLPM3	Polishing	Dremel	240
DGHD4A	Cleaning	Thinner	
DGLXRD	Polishing	Sand paper	400
DHKUPM	Visual		
	Polishing	Dremel	
DHYAUN	None		
DJC7BE	None		
DK296G	Visual	Microscope	
E64FWK	Polishing	Dremel	
EGL9D9	Sanding	Sand paper	220
EHEYJM	Polishing	Dremel	
EHYT7H	None		
ELUNRX	Polishing	Dremel	
ENLTDH	Polishing	Dremel	
F3JVZG	Sanding	Sand paper	1200
F6A437	Visual	Stereoscope	
	Polishing	Sand paper	400

TABLE 3

Sample Preparation			
WebCode	**Method**	**Tool Used**	**Grit Size**
F7GH9C	None		
FC2R99	None		
FC7XZ4	Polishing	Dremel	
FDJHTE	Sanding	Sand paper	600
FGG3LC	Sanding	Sand paper	150
FHNF3D	Polishing	Sand paper	400
	Cleaning	Acetone	
FHULVA	None		
FJPECE	Sanding	Sand paper	3M734
FPB9CR	Visual		
FTV7VG	None		
FYWHQD	Visual	Stereoscope	
FZTX4B	None		
G2ZDBG	None		
G4DZUG	Sanding	Sand paper	1200
G7EBH4	None		
G9JUNC	Sanding	Sand paper	P1200
	Cleaning		
GATYQE	None		
GAX6JB	None		
GBULV8	None		
GE7KXZ	Visual	Stereoscope	
GEA4YA	Visual		
	Sanding	Dremel	
	Sanding	Sand paper	Coarse Emery
	Polishing	Sand paper	400
GF23Z2	Visual	Microscope	
GHUVAD	Sanding	Sand paper	1200
GJJ727	Visual	Stereoscope	
	Polishing	Dremel	3m Polishing Wheel
GJYPJH	Cleaning	Microscope	
GKBGGZ	Visual		
GKV7VE	Visual	Stereoscope	
GNAU6P	Cleaning	Acetone	
GUB7ZM	None		

TABLE 3

Sample Preparation			
WebCode	**Method**	**Tool Used**	**Grit Size**
GXFLYE	Polishing	Dremel	500 grit + Jeweler's Rouge
GYRCYH	Polishing	Dremel	
H6CUTJ	Visual		
	Polishing	Dremel	
H8GLKW	Polishing	Dremel	
HBJKXB	Sanding	Sand paper	220 and 400
HBNQP7	Visual	Stereoscope	
HCE4YC	Sanding	Sand paper	400
HCEZA8	Cleaning	Acetone	
HCJ724	Visual	Eyeballs	
	Sanding	Sand paper	1500
HEGYKZ	Visual	Stereoscope	
	Sanding	Sand paper	100
	Grinding	Dremel	
HFW74W	Visual	Stereoscope	
HFXVBE	None		
HQRCZF	Sanding	Sand paper	1000
HQVVMJ	None		
HTYQ7L	None		
HV8TK7	Polishing	Dremel	
J3JKX9	Polishing	Sand paper	220 and 600 gritwater sandpaper wasused
JLFWVA	Visual	no tool used	
JLHBGX	None		
JMCC98	Visual	Stereoscope	
JNL7ZZ	Cleaning	Acetone	
JPFYVJ	None		
JQQ2GH	Visual	Stereoscope	
JRJRMW	Polishing	Dremel	
JRRH73	Visual	Stereoscope	
JV77FD	Visual		
K2RUF2	Visual	Stereoscope	
	Polishing	Dremel	
K3MDH3	Polishing	Dremel	

TABLE 3

Sample Preparation			
WebCode	**Method**	**Tool Used**	**Grit Size**
K676T6	Visual		
	Sanding	Sand paper	Unknown grit
	Polishing	Rotary Tool	
K8VRWR	None		
KAEK9V	Visual	Stereoscope	
	Visual	Microscope	
	Polishing	Dremel	
	Cleaning	water/Kim wipe	
KAXQ8K	Visual	Stereoscope	
	Cleaning	Acetone	
KJ8VMW	Cleaning	Ethanol	
KLBQ4E	Polishing	Sand paper	P1200
KTCZB7	Sanding	Sand paper	220
KXRJK2	Polishing	Dremel	
KZW3QA	Visual	Microscope	
	Polishing	Rubber wheel	
	Polishing	Emery paper	Super fine grit
	Cleaning	Acetone	
L2J4WV	Visual	Eyes	
L2LNN6	Cleaning	Acetone	
L3H8P7	Polishing	Dremel	
L4NPN3	Sanding	Sand paper	60, 80, 280, 400, 600, 1000
L4TVFX	None		
L6MLLC	Visual		
L92AVN	None		
LAXWE8	Polishing	Rotary Tool	
LPRJKY	Sanding	Sand paper	500 Grit sanding paper
	Cleaning	Acetone	
LRHFH7	Visual		
	Sanding	Dremel	400
	Sanding	Sand paper	600
	Polishing	Dremel	
LT4HMR	Visual	Stereoscope	
LT78UA	Polishing	Dremel	
LUZXYP	Polishing	Emery paper	fine

TABLE 3

Sample Preparation			
WebCode	**Method**	**Tool Used**	**Grit Size**
LXJT63	Polishing	Dremel	Extra fine
LXMDR6	Polishing	Sand paper	600 grain
LXYCKT	None		
M22AVL	None		
M22F38	Visual	Stereoscope	
M673Z7	Sanding	Sand paper	800
M6F6BJ	None		
M7GQFC	Visual	Stereoscope	
MBMKA8	None		
MPMDT4	None		
MTLNN4	Sanding	Sand paper	80, 320, 600
MTLQD8	Sanding	Sand paper	1000
MW7JPA	None		
MZ7UJP	Polishing	Flitz metal polish	
N29CUP	None		
N2LAP4	Visual	Photography	
	Visual	Stereoscope	
NR9EBW	Sanding	Sand paper	600
NWF6CG	Visual	Stereoscope	
NZ3J6X	Cleaning	Acetone	
P3MX7C	Visual	Stereoscope	
PD7C8U	Visual		
PFDQR7	Visual	oblique lighting	
	Sanding	Sand paper	1200
	Polishing	Buffing cloth	
PG4YTV	Polishing	Rotary Tool	
PJ8N4Q	None		
PKHN27	Visual		
PLJA7Y	Visual	Stereoscope	
PTBWMW	None		
PVKNZK	None		
PWVNXZ	Visual		
PWZUQV	Polishing	Dremel	

TABLE 3

Sample Preparation			
WebCode	**Method**	**Tool Used**	**Grit Size**
PYJ9RB	Visual	Camera	
	Visual	Microscope	
Q4HMEZ	Sanding	Sand paper	320 grit
Q8WBNB	Visual	Stereoscope	
QAETJ2	Visual	Sand paper	360
	Sanding		
QAJYBW	Sanding	Sand paper	800
	Polishing	Sand paper	1500
QCQDH3	Polishing	Dremel	
QD4223	Polishing	Sand paper	600
QDMUUZ	Visual	Stereoscope	
QERDPM	None		
QEU4W6	Sanding	Sand paper	400
QG2H4B	None		
QHV9AP	Visual	Microscope	
	Polishing	Rotary Tool	
QN6EEW	Visual	naked eyes	
	Visual	Stereoscope	
	Cleaning	Acetone	
	Cleaning	SKC-S	
QNY9LZ	Cleaning	Acetone	
QPT2HJ	Sanding	Sand paper	60, 120, 360, 600, 1000 and 1500
QPVQN3	Visual		
	Sanding	Sand paper	360
QPX6KB	Visual		
QRKWHY	Visual	Stereoscope	
QTCTTL	Polishing	Rotary Tool	
QTV884	Visual	Stereoscope	
	Polishing	Dremel	120
QU9CVN	Sanding	Rotary Tool	Grinding disc 240
QXADYQ	Visual	Acetone	
	Cleaning	Ethanol	
QXLA6V	Cleaning	Acetone	
QYE3ZE	None		
R93DPZ	Sanding	Sand paper	600 grit

TABLE 3

Sample Preparation			
WebCode	**Method**	**Tool Used**	**Grit Size**
RCL8Q8	Visual	Stereoscope	
RDGQR9	None		
REQ38P	Visual	Stereoscope	
	Polishing	Dremel	
RFJXYR	None		
RFLJJL	Polishing	Dremel	
RGDN67	None		
RJAUWY	Visual	Stereoscope	
	Polishing	Dremel	Cratex Extra Fine Abrasive Wheel
RKFFBX	Sanding	Sand paper	80 & 120 grit paper
RKRCDH	Polishing	Sand paper	600
	Cleaning	Acetone	
RPPTTW	None		
RPUYKT	Sanding	Sand paper	100
	Polishing	Dremel	
RQHMNF	Visual	Stereoscope	
RQNPQ8	None		
RU2GTT	Polishing	Dremel	
RU3EYH	Visual	Stereoscope	
RVXW2J	None		
RXZVCC	Visual	Stereoscope	
	Sanding	Sand paper	220
T7TMYW	None	Stereoscope	
TB9XDZ	Sanding	Sand paper	220, 400
TFER8W	Visual	Stereoscope	
TL62GU	None		No preparation to surface due to its mirror-like smooth, clean surface.
TLN2M6	None		
TM4BLX	None		
TNTLCQ	Visual	Stereoscope	
TPMCH6	None		
TTPDH3	Cleaning	Acetone	
U2DH22	None		

TABLE 3

Sample Preparation			
WebCode	**Method**	**Tool Used**	**Grit Size**
U3BNFZ	Sanding	Sand paper	400 grit wet and dry
	Cleaning	Ethanol	Alcohol was used to prepare the surface.
UCYGUR	Grinding	Dremel	
	Polishing	Dremel	
UDRKB7	Polishing	Sand paper	
	Visual	Stereoscope	
UFX3BM	None		
UG7AJG	Visual		
UGRW77	Polishing	Dremel	
UH3PWE	Polishing	Dremel	
UK3ZPT	Visual		
UK7KFG	Polishing	Dremel	
UK8BLY	Cleaning	Acetone	
UL22RE	None		
V2TT2Y	Polishing	Rotary Tool	
V4XQLM	Visual	Stereoscope	
V9AUCN	Visual		
VC4BCQ	Sanding	Sand paper	1000 grit
VC968N	None		
VDMEJA	Visual	Stereoscope	
VFTXJQ	None		
VGLQEA	Polishing	Steel wool	
	Cleaning	Ethanol	
VGNFKT	Polishing	Dremel	Extra fine
VJNQE8	Visual	Stereoscope	
	Cleaning	Acetone	
VV7G7P	None		
VYPB7W	Visual	Stereoscope	
WKHW97	Visual		
	Polishing	Dremel	fine, done after magnaflux
WLQG7Z	None		
WLWCTY	Visual	Stereoscope	
	Cleaning	water and cotton swab	
WNY282	None		

TABLE 3

Sample Preparation			
WebCode	**Method**	**Tool Used**	**Grit Size**
WU6V2W	None		
WUA2TT	Visual		
WZCW9Y	None		
X3JZLU	None		
X4FHNW	None		
X8AD9Q	Visual	Stereoscope	
	Cleaning	Acetone	
	Grinding	Dremel	
	Polishing	Dremel	
XDZVGZ	None		
XEW38T	Visual	Stereoscope	
XF3LV3	Visual		
XGEKPB	None	Stereoscope	
XGG2FV	Visual	Eyes	
XLA2UQ	Sanding	Sand paper	600 grit
XMLXYV	Visual		
	Cleaning	Acetone	
	Polishing	Emery paper	
XNYKJV	Visual	torch	
	Cleaning	Acetone	
	Sanding	Sand paper	1200 grit
XPNP32	Visual	Stereoscope	
	Polishing	Dremel	
XQHF9G	Visual	Stereoscope	
	Sanding	Sand paper	800, 1000, 1500, 2000
	Polishing	Sand paper	2000 with WD40
XQKEBP	Polishing	Rotary Tool	
YDUTE9	Visual	Stereoscope	
YEQGMW	Polishing	Dremel	
YFEC9W	None		
YH67W8	Cleaning		
YMWDEF	None		
YVZWER	Polishing	Rotary Tool	
YYPWXR	Polishing	Sand paper	400 and 1000
YYU3PN	None		

TABLE 3

Sample Preparation			
WebCode	**Method**	**Tool Used**	**Grit Size**
Z4JYPY	Visual	Stereoscope	
	Polishing	Dremel	
Z8LP7L	Polishing	Dremel	
Z9EKNN	Cleaning	Acetone	
ZDU2BY	Cleaning	Acetone	
ZELBVZ	Visual	Lamps	
	Sanding	Rotary Tool	1200K
	Polishing	Rotary Tool	
ZG67UM	Cleaning	Acetone	
ZHJR8U	Polishing	Sand paper	400
ZNPJCL	Visual	Microscope	
ZQXMDP	Polishing	Rotary Tool	
ZV66LP	Sanding	Sand paper	180
ZV72RE	Visual	Stereoscope	
	Polishing	Dremel	

Response Summary **Participants: 329**

Sample Preparation

Visual Method: 116

Sanding Method: 53

Polishing Method: 95

None: 89

Note: Participants may use more than one sample preparation method therefore the total number of preparation methods reported may not be equivalent to the total number of participants.

Recovery Methods

(listed in order of use)

TABLE 4

Recovery Methods		
WebCode	**Method**	**Time**
26BAAZ	Magnetic Particle Inspection (MPI)	
	Davis Reagent	10 seconds (x3)
	Fry's Reagent	10 seconds (x2)
	Turner's Reagent	20 seconds
	Fry's Reagent	10 seconds (x2)
	Turner's Reagent	20 seconds
26PVJ2	MagnaFlux	
	Fry's Reagent	swiped with swab
	20% nitric acid	swiped with swab
29CACH	Davis Reagent	30 seconds
	Turner's Reagent	30 seconds, alternating Fry's
	Fry's Reagent	30 seconds, alternating Turner's
2A7ZHW	Acid Etch Method	10 MINUTES
2DP4EU	Davis Reagent	brushed with cotton swab
	Turner's Reagent	brushed with cotton swab
	Fry's Reagent	brushed with cotton swag
	25% Nitric Acid	brushed with cotton swab and left on for a duration of 5 minutes
	MagnaFlux	2 minutes
2MALKL	Magnetic Particle Inspection (MPI)	
	Fry's Reagent	not recorded
	25% Nitric Acid	not recorded
2NM4RY	Magnetic Particle Inspection (MPI)	
	MagnaFlux	
2RLAGC	MagnaFlux	
	Davis	1 min
	Turner's Reagent	1 min
	Fry's Reagent	1 min
2RNYMU	Fry's Reagent	20 min
2UTRDM	Fry's Reagent	continuously swabbed approx 3 mins
	MagnaFlux	
2Y29QG	Magnetic Particle Inspection (MPI)	

TABLE 4

Recovery Methods		
WebCode	**Method**	**Time**
2YLP7K	Magnetic Particle Inspection (MPI)	
	Fry's Reagent	20 min, multiple short applications
	Davis Reagent	10 min, mulitple short applications
2ZVYWV	Fry's Reagent	
33XQCT	MagnaFlux	
	MagnaFlux	
34UKDQ	25% Nitric Acid	20-30 seconds
	Davis Reagent	10-15 seconds
37Z3CM	Fry's Reagent	2-5 minutes
3PCJQ9	Fry's Reagent	3 minutes 45 seconds (total)
3VJDL4	MagnaFlux	
	Fry's Reagent	Swabbed approximately 10 minutes
3WETX2	MagnaFlux	
	Fry's Reagent	10 - 15 minutes
	20% Nitric Acid	~2 minutes
3ZCACF	Fry's Reagent	3x 30'
	Lubricant	
46NHBY	MagnaFlux	
	Fry's Reagent	total time = approximately 1 minute
	20% Nitric Acid	approximately 15 seconds
48QHBW	MagnaFlux	
4U3NPV	MagnaFlux	
	Davis Reagent	10 minutes
	Turner's Reagent	5
4YCTB3	Acidic Ferric Chloride	5 minutes
62FGCQ	MagnaFlux	
	Acidic Ferric Chloride	10-15 seconds per application
	Fry's Reagent	5-10 seconds per application
	20% Nitric Acid	10-15 seconds per application
	Acetone	
	Remington Oil	
69HXYD	Magnetic Particle Inspection (MPI)	
	Fry's Reagent	1 minute
6C3PMM	Magnetic Particle Inspection (MPI)	
	MagnaFlux	

TABLE 4

Recovery Methods		
WebCode	**Method**	**Time**
6DNRT9	Magnetic Particle Inspection (MPI)	
	Davis' Reagent	~10-15 minutes (not timed)
	Turner's Reagent	~10-15 minutes (not timed)
6EK867	Electro-magnetic	
6PJXQD	Chemical method: WAZAU	Ten (10)minutes
6TMMHM	Davis Reagent	3 minutes
	Turner's Reagent	5 minutes
76RCKF	MagnaFlux	
	Acid Etch Method	periods of 10-30 seconds
7C2CFK	MagnaFlux	
	Fry's Reagent	~2-3 minutes
7R6EQQ	MagnaFlux	
	Fry's Reagent	~5 minutes
7Y86BN	MagnaFlux	
	Acid Etch Method	
	Fry's Reagent	2-5
	Acidic Ferric Chloride	1-2
	25 % Nitric Acid	1-2
82B7ML	MagnaFlux	
86V46A	MagnaFlux	
	Acidic Ferric Chloride	1 - 5 minutes
8AY2JF	Fry's Reagent	20 minutes
8FA28T	Magnetic Particle Inspection (MPI)	
	Fry's Reagent	5-10 seconds
8QBNZP	MagnaFlux	
	Fry's Reagent	~ 1 minute increments
	Turner's Reagent	~1 minute increments
8VH79P	Acid Etch Method	10-15 minutes
8ZFQAN	MagnaFlux	
	Fry's Reagent	2 applications, constant rubbing for 10 seconds
8ZWPHK	Acid Etch Method	less than 1 min
	Magnetic Particle Inspection (MPI)	less than 1 min

TABLE 4

Recovery Methods		
WebCode	**Method**	**Time**
96QXDE	MagnaFlux	
	Davis Reagent	15-30 seconds
	Turner's Reagent	10-15 seconds
	MagnaFlux	
	Fry's Reagent	10-15 seconds
	MagnaFlux	
9BEU3P	MagnaFlux	
	Turner's Reagent	3 minutes
	Fry's Reagent	10 minutes
	MagnaFlux	
9BRA9B	MagnaFlux	
	Electro-acid	approx. 3 minutes
	MagnaFlux	
	Electro-acid	approx. 1 minute
9CUQUN	MagnaFlux	
	Acidic Ferric Chloride	10 minutes
9ETHBZ	Magnetic Particle Inspection (MPI)	
	Fry's Reagent	5 minutes
9EXLDR	Magnetic Particle Inspection (MPI)	
	Turner's Reagent	5 minutes
	Fry's Reagent	5 minutes
9F62MH	Magnetic Particle Inspection (MPI)	
	Davis reagent	Not tracked
	Davis reagent	Not tracked
	Turner's Reagent	Not tracked
	Fry's Reagent	Not tracked
9FU6FT	Fry's Reagent	3 minutes
9J69YF	Electro-acid	
9J9TN4	Fry's Reagent	
	Turner's Reagent	
	Davis Reagent	

TABLE 4

Recovery Methods		
WebCode	**Method**	**Time**
9MLQWQ	Magnetic Particle Inspection (MPI)	
	Davis	~45 seconds
	Fry's Reagent	~30 seconds
	Turner's Reagent	~10 seconds
	Fry's Reagent	~30 seconds
	Turner's Reagent	~10 seconds
9N3VKG	Fry's Reagent	6 min, continuous swiping
9Q6LWX	Fry's Reagent	~ 5 minutes
9R22AV	MagnaFlux	
9Z839Z	MagnaFlux	One minute
	Davis	One minute
	Turner's Reagent	One minute
	Fry's Reagent	One minute
A8AE4X	Acidic Ferric Chloride	3 min
AAFX6E	MagnaFlux	
	Restor-a-gel RAG001	
AAK4WA	MagnaFlux	
ACPVNN	MagnaFlux	
	Fry's Reagent	Applied with cotton swabs for about 3 hours
ALTX28	MagnaFlux	
	Cupric Ammonium Chloride w/ electricity	Intermittent application for total of 5 minutes
	25% Nitric Acid	<10 sec
ARV74U	Magnetic Particle Inspection (MPI)	
	Davis Reagent	10 minutes
	Turner's Reagent	10 minutes
	Fry's Reagent	5 minutes
ARW4EP	Acidic Ferric Chloride	5 minutes
	MagnaFlux	
	Acid Etch Method	20% Nitric, 5 minutes
ATPWA9	MagnaFlux	
	Nitric Acid	2 minutes
	Acidic Ferric Chloride	2 minutes
AULA8M	MagnaFlux	
	Acid Etch Method	less than 5 seconds

TABLE 4

Recovery Methods		
WebCode	**Method**	**Time**
AVUH2E	MagnaFlux	
	MagnaFlux	
	Davis Reagent	5 Minutes
	Turner's Reagent	5 Minutes
	Fry's Reagent	5 Minutes
AWTR7H	Mild heat	
	Fry's Reagent	1 minute.
B6YR7J	Acidic Ferric Chloride	10 minutes
B7THCX	MagnaFlux	
	Turner's Reagent	20 Minutes
	Fry's Reagent	10 Minutes
B886P7	MagnaFlux	
BHK6HT	Magnetic Particle Inspection (MPI)	
	Fry's Reagent	2 seconds per swipe
	Davis' Reagent	2 seconds per swipe
BHRFAJ	Fry's Reagent	2 minutes
BJEVN8	MagnaFlux	
	Fry's Reagent	approximately 3 minutes
BPTR7G	Griffin Reagent	
	25% Nitric Acid	
BQVQ7M	MagnaFlux	
	Davis Reagent	Swabbed 3 times
	Fry's Reagent	Swabbed 4 times
BQZWXJ	MagnaFlux	
	Fry's Reagent	1 minute
BRVCAF	Turner's Reagent	A few minutes
	Fry's Reagent	A few minutes
	Davis	A few minutes
BU3U9C	MagnaFlux	
	Acidic Ferric Chloride	5-30 seconds
	Griffin Reagent	5-30 seconds
	Fry's Reagent	5-30 seconds
	Fry's Reagent	5-30 seconds
	Nitric/Phosphoric Acid	5-30 seconds
C3NAKT	MagnaFlux	
	Davis Reagent	

TABLE 4

Recovery Methods		
WebCode	**Method**	**Time**
CE632F	Magnetic Particle Inspection (MPI)	
	Acid Etch Method	3 minutes
	Fry's Reagent	~20 minutes with periodic reapplication, rolling, and swiping.
	Turner's Reagent	3 minutes
CJDGF7	MagnaFlux	
	Fry's Reagent	~ 20 minutes
	25% Nitric Acit	~ 20 minutes
CJVQ7L	Fry's Reagent	1 - 10 min in increasing intervalls
CMEK8R	Turner's Reagent	~ 5 mins.
	Fry's Reagent	~10mins.
CMRM3K	MagnaFlux	
	Fry's Reagent	minutes
CN9BD8	MagnaFlux	5
	Acid Etch Method	Nitric acid, 5
	Acidic Ferric Chloride	5
	Fry's Reagent	5
CPETC3	Fry's Reagent	2 minutes
CXBND8	MagnaFlux	2 minutes
	Reactivo Davis	10 minutes
	Turner's Reagent	15 minutes
	Fry's Reagent	20 minutes
	Pulido más reactivo de Davis	10 minutes
	Turner's Reagent	20 minutes
	Fry's Reagent	20 minutes
	MagnaFlux	2 minutes
D2RFX9	Fry's Reagent	Applied and removed several times, for approximately 5 minutes.
DDLPM3	Davis	5 minutes
	Turner's Reagent	25 minutes
	Fry's Reagent	1 hour
	Magnetic Particle Inspection (MPI)	1 minute
DGHD4A	Nitric acid	30 seconds
	Fry's Reagent	1 minute
DGLXRD	MagnaFlux	
	Fry's Reagent	3 minutes

TABLE 4

Recovery Methods		
WebCode	**Method**	**Time**
DHKUPM	Davis Reagent	1 Minute
	Fry's Reagent	1 Minute
DHYAUN	MagnaFlux	5 minutes
	20% Nitric Acid	5 minutes
	Fry's Reagent	5 minutes
DJC7BE	Fry's Reagent	4 minutes.
DK296G	Acid Etch Method	Approximately 5-8 minutes
E64FWK	MagnaFlux	
	Acidic Ferric Chloride	2 minutes each time applied
	20% Nitric Acid	2 minutes each time applied
	Fry's Reagent	2 minutes each time applied
EGL9D9	Fry's Reagent	5 minutes
EHEYJM	Fry's Reagent	~2.5 minutes
EHYT7H	Fry's Reagent	5 minutes
ELUNRX	Fry's Reagent	3minutes
	Turner's Reagent	
	Magnetic Particle Inspection (MPI)	
ENLTDH	Fry's Reagent	swabbing approximate 1 hr
F3JVZG	Nirtic acid 25%	Brief wipes
F6A437	Acidic Ferric Chloride	10-15 seconds
	Phosphoric/ Nitric	10-15 seconds
	Fry's Reagent	5-10 seconds
F7GH9C	10% Sodium Hydroxide	approx. 2 mins
	25% Nitric Acid	approx. 2 mins
	Acidic Ferric Chloride	approx. 2 mins
	Ferric Chloride	approx. 1-2 mins
FC2R99	Fry's Reagent	
FC7XZ4	MagnaFlux	
	Griffin Reagent	~2 min with swabbing
	Fry's Reagent	~2 min with swabbing
	Griffin Reagent	~1 min with swabbing
FDJHTE	MagnaFlux	
	Fry's Reagent	5 minutes (dilute Fry's)
	Acid Etch Method	15 minutes (dilute Nitric Acid)
FGG3LC	MagnaFlux	

TABLE 4

Recovery Methods		
WebCode	**Method**	**Time**
FHNF3D	Fry's Reagent	5 minutes
	Turner's Reagent	5 minutes
FHULVA	MagnaFlux	
	Acid Etch Method	Davis Reagent, 5 seconds
	Turner's Reagent	5 seconds
	Fry's Reagent	5 seconds
	Acid Etch Method	25% Nitric Acid, 5 seconds
FJPECE	Fry's Reagent	1:55
FPB9CR	Magnetic Particle Inspection (MPI)	
	Fry's Reagent	30 minutes
	Fry's Reagent	15 minutes
	Acid Etch Method	10 minutes
FTV7VG	Fry's Reagent	~3 mins
FYWHQD	MagnaFlux	
	Fry's Reagent	swipe with cotton for a minute
	Acid Etch Method	swipe with cotton for a minute
FZTX4B	Acidic Ferric Chloride	30 minutes
	Acidic Ferric Chloride	10 minutes
G2ZDBG	Fry's Reagent	15 min
G4DZUG	Fry's Reagent	5 minutes
G7EBH4	Fry's Reagent	Rubbing / approximately 10 minutes
G9JUNC	Fry's Reagent	Under 1 min
GATYQE	Magnetic Particle Inspection (MPI)	
	DAVIS	5 minutes
	Turner's Reagent	5 minutes
	Modified Turners	10 minutes
	Fry's Reagent	10 minutes
GAX6JB	Magnetic Particle Inspection (MPI)	
	Davis	<1 minute
	Turner's Reagent	<1 minute
	Fry's Reagent	~1 minute
	Polishing - fine cratex wheel	
GBULV8	Magnetic Particle Inspection (MPI)	
	Fry's Reagent	10 second increments for 5 minutes

TABLE 4

Recovery Methods		
WebCode	**Method**	**Time**
GE7KXZ	MagnaFlux	
	25% Nitric Acid	10 min increments, 30 min total
	Fry's Reagent	10 min increments, 30 min total
GEA4YA	MagnaFlux	
	Turner's Reagent	1 to 2 seconds
	Davis' Reagent	1 to 2 seconds
GF23Z2	MagnaFlux	
	Davis Reagent	10 minutes
GHUVAD	Fry's Reagent	15 minutes
GJJ727	MagnaFlux	
	Davis's Reagent	30 second applications
	Turner's Reagent	30 second applications
	Fry's Reagent	30 second applications
GJYPJH	Fry's Reagent	10 min
GKBGGZ	MagnaFlux	
	Fry's Reagent	30 seconds
	25% Nitric Acid	5 seconds
GKV7VE	MagnaFlux	
	Acid Etch Method	20 minutes total
GNAU6P	Fry's Reagent	10 - 15 minutes
GUB7ZM	MagnaFlux	
	Davis	1 minute
	Turner's Reagent	1 minute
	Fry's Reagent	1 minute
GXFLYE	MagnaFlux	
	Acid Etch Method	Fry's Acidic Ferric, Ferric, Phosphric/Nitric
GYRCYH	Fry's Reagent	less than 5 minutes
H6CUTJ	MagnaFlux	
	Acid Etch Method	varied
	Fry's Reagent	varied
H8GLKW	Fry's Reagent	approximately 5 minutes
	25% Nitric Acid	approximately 5 minutes
HBJKXB	Fry's Reagent	4 applications of 3 minutes each
HBNQP7	Fry's Reagent	Less than 10 minutes

TABLE 4

Recovery Methods		
WebCode	**Method**	**Time**
HCE4YC	MagnaFlux	
	Fry's Reagent	1 minute
HCEZA8	Acid Etch Method	10 minutes
HCJ724	Magnetic Particle Inspection (MPI)	
	Fry's Reagent	~10 minutes
HEGYKZ	Fry's Reagent	consistent swiping for approx 5 mins at a time
	Turner's Reagent	used to highlight in between Frys and Davis
	Davis	consistent swiping for approx 5 mins at a time
HFW74W	Magnetic Particle Inspection (MPI)	
	Fry's Reagent	~ 3 minutes
HFXVBE	MagnaFlux	
	Fry's Reagent	used a cotton swab dipped in Fry's Reagent and continuously swiped over obliterated area until visible
HQRCZF	Turner's Reagent	10 swipes with a cotton swab
	Nitric Acid Reagent	10 swipes with a cotton swab
HQWMJ	MagnaFlux	
	Fry's Reagent	
	Acidic Ferric Chloride	
	20% Nitric Acide	
HTYQ7L	Fry's Reagent	
HV8TK7	Turner's/Davis	5 min.
	Davis Reagent	3 min.
	Fry's Reagent	5 min.
	Davis Reagent	5 min.
	Fry's Reagent	5 min.
J3JKX9	Acid Etch Method	Se aplicó Acido nítico al 30% V/ V, por 5 minutes
JLFWVA	MagnaFlux	
	25% Nitric Acid	
	Fry's Reagent	
JLHBGX	Acid Etch Method	Davis Reagent; total of 15 minutes wiping the surface with a cotton swab

TABLE 4

Recovery Methods		
WebCode	**Method**	**Time**
JMCC98	MagnaFlux	
	Davis	swabbed
	Turner's Reagent	swabbed
	Fry's Reagent	swabbed
	25% Nitric Acid	swabbed
	Electro-magnetic	
JNL7ZZ	Magnetic Particle Inspection (MPI)	
	Davis Reagent	Repeatedly applied with swab in unidirectional manner and wiped off with paper towel
	Turner's Reagent	Repeatedly applied with swab in unidirectional manner and wiped off with paper towel
	Fry's Reagent	Repeatedly applied with swab in unidirectional manner and wiped off with paper towel
	Fry's Reagent with Turner's used as a highlighter	Repeatedly applied with swab in unidirectional manner and wiped off with paper towel
	Davis Reagent with Turner's used as a highlighter	Repeatedly applied with swab in unidirectional manner and wiped off with paper towel
	Fry's Reagent	Repeatedly applied with swab in unidirectional manner and wiped off with paper towel
	Davis Reagent with Turner's used as a highlighter	Repeatedly applied with swab in unidirectional manner and wiped off with paper towel
	Fry's Reagent with Turner's used as a highlighter	Repeatedly applied with swab in unidirectional manner and wiped off with paper towel
JPFYVJ	MagnaFlux	
	Fry's Reagent	alternating 10-15 seconds of Fry's and 20% Nitric Acid
	20% Nitric Acid	alternating 10-15 seconds of Fry's and 20% Nitric Acid
JQQ2GH	MagnaFlux	
JRJRMW	Magnetic Particle Inspection (MPI)	
	Davis Reagent	30 Seconds
	Magnetic Particle Inspection (MPI)	
	Turner's Reagent	1 minute
	Magnetic Particle Inspection (MPI)	
JRRH73	Acid Etch Method	Davis Reagent - Approximately 1 to 3 minutes (Performed 3 times)
JV77FD	Davis Reagent	1 minute
	Turner's Reagent	1 minute
	Fry's Reagent	1-2 minutes
	Nitric Acid 25%	<1 minute
	Fry's Reagent	1-2 minutes

TABLE 4

Recovery Methods		
WebCode	**Method**	**Time**
K2RUF2	Acid Etch Method	1-2 MINUTES
	Turner's Reagent	1-2 MINUTES
	Fry's Reagent	LESS THAN A MINUTE
K3MDH3	MagnaFlux	
	Fry's Reagent	
	Turner's Reagent	
K676T6	Magnetic Particle Inspection (MPI)	
	Fry's Reagent	2 minutes
K8VRWR	MagnaFlux	
	Turner's Reagent	
	Fry's Reagent	
KAEK9V	Fry's Reagent	a few seconds
KAXQ8K	Fry's Reagent	3x 45 sec
KJ8VMW	Electro-acid	
KLBQ4E	Magnetic Particle Inspection (MPI)	
	Acid Etch Method	Nitric Acid - 10 second intervals
KTCZB7	Fry's Reagent	nine minutes
	Nitric acid 25%	four minutes
KXRJK2	MagnaFlux	
	DAVIS REAGENT	Approximately 1 minute.
	Turner's Reagent	Approximately 1 minute.
	Fry's Reagent	Approximately 1 minute.
KZW3QA	Fry's Reagent	10 minutes
L2J4WV	MagnaFlux	
	Fry's Reagent	+/- 8 seconds
	25% Nitric Acid	+/- 8 seconds
L2LNN6	MagnaFlux	
	Fry's Reagent	3 min
L3H8P7	Davis Reagent	
	Turner's Reagent	
	Fry's Reagent	
	Magnetic Particle Inspection (MPI)	
L4NPN3	Fry's Reagent	1 - 2 minutes at a time.
L4TVFX	Magnetic Particle Inspection (MPI)	
	Fry's Reagent	A few minutes

TABLE 4

Recovery Methods		
WebCode	**Method**	**Time**
L6MLLC	MagnaFlux	
	Davis Reagent	30 seconds x 3 times
	Turner's Reagent	30 seconds x 3 times
	Fry's Reagent	30 seconds x 5 times
L92AVN	Davis Reagent	2 minutes
	Turner's Reagent	2 minutes
	Fry's Reagent	5 minutes
LAXWE8	Fry's Reagent	3 minutes
LPRJKY	Magnetic Particle Inspection (MPI)	
	Fry's Reagent	Continues application of chemical - More than two minutes.
LRHFH7	Magnetic Particle Inspection (MPI)	
	Turner's Reagent	1-2 seconds per swab
	Davis	1-2 seconds per swab
LT4HMR	Magnetic Particle Inspection (MPI)	
	Davis's Reagent	2 minutes
	Fry's Reagent	Several applications applied, left about 1 minute
LT78UA	Fry's Reagent	50 seconds
LUZXYP	Acidic Ferric Chloride	
LXJT63	Fry's Reagent	7 minutes
	Fry's Reagent	5 minutes
	Fry's Reagent	6 minutes
	Fry's Reagent	5 minutes
	Fry's Reagent	5 minutes
LXMDR6	Fry's Reagent	The time was practically instantaneous
LXYCKT	Magnetic Particle Inspection (MPI)	
	Acid Etch Method	25 minutes
	Polished using a Dremel with a Cratex wheel	
M22AVL	Fry's Reagent	3 minutes
	Aqua Regia Reagent	2 minutes
M22F38	MagnaFlux	
	Davis Reagent	2 minutes max per swab
M673Z7	Fry's Reagent	2 Minutes

TABLE 4

Recovery Methods		
WebCode	**Method**	**Time**
M6F6BJ	Acid Etch Method	Aqua Regia ~1 minute
	Turner's Reagent	~2 minutes
	Fry's Reagent	~45 seconds
	Acid Etch Method	Aqua Regia ~1 minute
M7GQFC	MagnaFlux	
	Turner's Reagent	3 mins
	MagnaFlux	
	Fry's Reagent	1 min
	MagnaFlux	
	Fry's Reagent	
MBMKA8	MagnaFlux	
	Fry's Reagent	1 to 2 minutes
	Davis Reagent	1 to 2 minutes
	Turner's Reagent	1 to 2 minutes
MPMDT4	Fry's Reagent	5 seconds
	Turner's Reagent	5 seconds
MTLNN4	Fry's Reagent	Less than 1 min at a time
MTLQD8	Fry's Reagent	Three minutes
MW7JPA	Magnetic Particle Inspection (MPI)	
	Polishing	
	Davis' Reagent	Reagent was swiped on with cotton swab multiple times
	Turner's Reagent	Reagent was swiped on with cotton swab multiple times
	Fry's Reagent	Reagent was swiped on with cotton swab multiple times
MZ7UJP	Magnetic Particle Inspection (MPI)	
	Davis Reagent	1 - 2 minutes
	Turner Reagent	1 - 2 minutes
	Fry's Reagent	1 - 2 minutes
	Modified Fry Reagent	1 minute
	Acidic Pot Dicromate	<1 minute
	Modified Turner Reagent	<1 minute
N29CUP	MagnaFlux	
	Davis	30 Seconds
	Turner's Reagent	10 Seconds
N2LAP4	Magnetic Particle Inspection (MPI)	

TABLE 4

Recovery Methods		
WebCode	**Method**	**Time**
NR9EBW	MagnaFlux	
	Fry's Reagent	30 seconds
NWF6CG	Magnetic Particle Inspection (MPI)	
	Acid Etch Method	10 minutes
	Turner's Reagent	10 minutes
	Fry's Reagent	10 minutes
NZ3J6X	Acid Etch Method	10 minutes
P3MX7C	MagnaFlux	Seconds
	20% Nitric Acid	Seconds
	Fry's Reagent	Seconds
PD7C8U	MagnaFlux	2-3 minutes
	Fry's Reagent	2-3 minutes
	Acidic Ferric Chloride	2-3 minutes
PFDQR7	MagnaFlux	
	Fry's Reagent	5 minutes
PG4YTV	Magnetic Particle Inspection (MPI)	
	Acid Etch Method	
PJ8N4Q	Acid Etch Method	10 minutes
PKHN27	Davis Reagent	1 minute
	Turner's Reagent	1 minute
	Fry's Reagent	1 minute
	Davis Reagent	30 seconds
PLJA7Y	MagnaFlux	
	Turner's Reagent	3 minutes
	Fry's Reagent	1 minute
PTBWMW	MagnaFlux	2 min
	Fry's Reagent	2 min
PVKNZK	Fry's Reagent	
	25% Nitric Acid	
	MagnaFlux	
PWVNXZ	Davis Reagent	30 seconds
	Turner's Reagent	30 seconds
	Fry's Reagent	30 seconds
	Turner's Reagent	30 seconds
PWZUQV	Fry's Reagent	wiped, did not leave pooled
	Fry's Reagent	wiped, did not leave pooled

TABLE 4

Recovery Methods		
WebCode	**Method**	**Time**
PYJ9RB	Magnetic Particle Inspection (MPI)	
	Polishing	
	Davis Reagent	~10-15 Seconds
	Fry's Reagent	~10-15 Seconds
	Turner's Reagent	~10-15 Seconds
Q4HMEZ	Fry's Reagent	3-5 seconds each application
Q8WBNB	MagnaFlux	
	Acidic Ferric Chloride	30-90 seconds, swabbed
	Nitric Acid	30-90 seconds, swabbed
	Fry's Reagent	30-90 seconds, swabbed
	Stabilized with oil	
QAETJ2	MagnaFlux	1 min
	Acid Etch Method	1-2 min
	Fry's Reagent	
QAJYBW	Magnetic Particle Inspection (MPI)	
QCQDH3	Fry's Reagent	
	MagnaFlux	
	25% Nitric Acid	
QD4223	Magnetic Particle Inspection (MPI)	
	Fry's Reagent	30-45 seconds
QDMUUZ	MagnaFlux	
	Electro-magnetic	
	Davis	
	Turner's Reagent	
	Fry's Reagent	
QERDPM	MagnaFlux	
	Davis	Approx. 4-5 minutes
QEU4W6	MagnaFlux	
	Fry's Reagent	less to 3 minutes
QG2H4B	MagnaFlux	
	Fry's Reagent	under 1 minute per swab
QHV9AP	Fry's Reagent	25
QN6EEW	MagnaFlux	
QNY9LZ	MagnaFlux	
QPT2HJ	Fry's Reagent	5 to 10 seconds

TABLE 4

Recovery Methods		
WebCode	**Method**	**Time**
QPVQN3	MagnaFlux	
	Acid Etch Method	1 min
	Fry's Reagent	1-2min
QPX6KB	Davis	
	Fry's Reagent	
QRKWHY	MagnaFlux	
	Turner's Reagent	2 minutes
	Fry's Reagent	4 minutes
QTCTTL	Fry's Reagent	30-60 seconds
	Turner's Reagent	30-60 seconds
	Davis Reagent	30-60 seconds
QTV884	Magnetic Particle Inspection (MPI)	
	Fry's Reagent	
QU9CVN	Acidic Ferric Chloride	Apply in 3 times - few seconds each time
QXADYQ	Regula 7517 magneto optical	
QXLA6V	MagnaFlux	
	Electro-acid	4 min.
QYE3ZE	MagnaFlux	
	Fry's Reagent	5 minutes
R93DPZ	MagnaFlux	No acid was used
	Fry's Reagent	5 min
RCL8Q8	MagnaFlux	
	Ferric Chloride	
RDGQR9	MagnaFlux	
	Acid Etch Method	Davis 10 minutes
REQ38P	MagnaFlux	
	Fry's Reagent	~30 Minutes Total, 5 minute intervals
RFJXYR	Acid Etch Method	Swabbed across. ~4 minutes.
RFLJJL	MagnaFlux	
	Davis	10 minutes
RGDN67	Fry's Reagent	5 - 10 seconds, wiped, repeated
RJAUWY	MagnaFlux	
	Fry's Reagent	Less than 5 minutes
RKFFBX	Acid Etch Method	2 minutes

TABLE 4

Recovery Methods		
WebCode	**Method**	**Time**
RKRCDH	Electro-magnetic	
	Fry's Reagent	3 min
RPPTTW	Davis'	2
	Turner's Reagent	2
	Polished	
	Davis'/Fry's	5
RPUYKT	Turner's Reagent	This reagent was applied ~2 minutes
	Fry's Reagent	This reagent was applied, with intermittent reapplication over a period of ~4 to 5 minutes
	Magnetic Particle Inspection (MPI)	Magnetic particle inspection was applied subsequently and was left ~1 - 1 1/2 minutes
RQHMNF	Magnetic Particle Inspection (MPI)	
	Acid Etch Method	15 Minutes
RQNPQ8	Fry's Reagent	20 Minutes
RU2GTT	MagnaFlux	
RU3EYH	MagnaFlux	
	Acid Etch Method	5 minutes with Nitric acid solution (25% v/v)
RVXW2J	Davis's Reagent	1 - 3 minutes
	Turner's Reagent	1 - 3 minutes
	Fry's Reagent	1 - 3 minutes
RXZVCC	Magnetic Particle Inspection (MPI)	
	Davis Reagent	1 minute
	Turner's Reagent	1 minute
	Fry's Reagent	5 minutes
T7TMYW	Acid Etch Method	5 minutes
TB9XDZ	Acid Etch Method	FRY (10 minutes)
TFER8W	Davis Reagent	1-2 minutes
	Turner's Reagent	3-5 minutes
	Fry's Reagent	5-7 minutes
TL62GU	Davis Reagent	Approximately 30 seconds
	Turner's Reagent	Approximately 30 seconds
	Fry's Reagent	Approximately 60 seconds
	Polish with Dremel tool utilizing emery impregnated polishing disc (60 grit)	

TABLE 4

Recovery Methods		
WebCode	**Method**	**Time**
TLN2M6	MagnaFlux	
	Davis' reagent	3 minutes
	MagnaFlux	
	Turner's Reagent	3 minutes
	MagnaFlux	
	Fry's Reagent	10 minutes
TM4BLX	Magnetic Particle Inspection (MPI)	
	Turner's Reagent	30 seconds
	Fry's Reagent	30 seconds multiple times
	25% Nitric Acid	30 seconds
TNTLCQ	Magnetic Particle Inspection (MPI)	
	Davis Reagent	30 seconds
	Turner's Reagent	30 seconds
	Fry's Reagent	5 minutes
TPMCH6	Davis	1min
	Turner's Reagent	1min
	Fry's Reagent	5min
TTPDH3	Acid Etch Method	
	Davis Reagent	45 minutes
U2DH22	MagnaFlux	No applies
	Fry's Reagent	10 minutes
U3BNFZ	Magnetic Particle Inspection (MPI)	
	Acid Etch Method	About 1-2 minutes
UCYGUR	Acid Etch Method	The sample was eating away chemical solution CuC Time 30 min.
UDRKB7	Acidic Ferric Chloride	30 seconds/ 1 min
UFX3BM	Fry's Reagent	30 seconds
UG7AJG	Magnetic Particle Inspection (MPI)	
UGRW77	Fry's Reagent	15-25 seconds
	Turner's Reagent	15-25 seconds
UH3PWE	MagnaFlux	
	Davis' Reagent	Approximately 10 minutes
	Turner's Reagent	Approximately 5 minutes
UK3ZPT	Acid Etch Method	8 minutes

TABLE 4

Recovery Methods		
WebCode	**Method**	**Time**
UK7KFG	Fry's Reagent	
	Turner's Reagent	
	Davis' Reagent	
UK8BLY	Fry's Reagent	swipe for 15-20 minutes
UL22RE	Acid Etch Method	2 min
	Fry's Reagent	4 min
	Turner's Reagent	2 min
V2TT2Y	Fry's Reagent	5 minutes
V4XQLM	MagnaFlux	
	Fry's Reagent	
V9AUCN	MagnaFlux	
	Fry's Reagent	seconds - wiped on with swab and wiped off with Kimwipe
	Davis	seconds - wiped on with swab and wiped off with Kimwipe
	Turner's Reagent	seconds - wiped on with swab and wiped off with Kimwipe
VC4BCQ	Fry's Reagent	30mins
	MagnaFlux	
VC968N	MagnaFlux	
	Davis	Est. 2 mins - 5mins
	Turner's Reagent	Est. 2 mins - 5mins
	Fry's Reagent	Est. 2 mins - 5mins
VDMEJA	MagnaFlux	
	Turner's Reagent	5 minutes
	Fry's Reagent	less than 1 minute
	Turner's Reagent	10-15 minutes
VFTXJQ	Davis Reagent	Approx 30 seconds, per application
	Turner's Reagent	Approx 30 seconds, per application
	Fry's Reagent	Approx 30 second, per application
VGLQEA	Fry's Reagent	About fifteen minutes
VGNFKT	Fry's Reagent	5 minutes
	Fry's Reagent	5 minutes
	Fry's Reagent	5 minutes
VJNQE8	MagnaFlux	
	Fry's Reagent	Acid was swiped across the obliterated area repeatedly, seconds at a time
VV7G7P	Fry's Reagent	30 minutes

TABLE 4

Recovery Methods		
WebCode	**Method**	**Time**
VYPB7W	Magnetic Particle Inspection (MPI)	
	Davis	1 hour
	Magnetic Particle Inspection (MPI)	
	Davis	15 minutes
	Turner's Reagent	1 hour 30 minutes
WKHW97	MagnaFlux	
	Fry's Reagent	overall, less than 5 minutes
	Acidic Ferric Chloride	overall, less than 5 minutes
	20% Nitric Acid	overall, less than 5 minutes
WLQG7Z	MagnaFlux	used U-shaped magnet
	Acidic Ferric Chloride	swiped with cotton swabs
	20% Nitric Acid	swiped with cotton swabs
WLWCTY	MagnaFlux	
	Acid Etch Method	Davis Reagent / swabs 10-15 swabs
	Turner's Reagent	swabs 10-15 swabs
	Acid Etch Method	swabs 5-10 swabs
WNY282	Acid Etch Method	10 minutes
WU6V2W	Fry's Reagent	5 min
	Davis reagent	3 min
WUA2TT	Fry's Reagent	10 seconds
	Turner's Reagent	10 seconds
	Davis Reagent	10 seconds
	Acid Etch Method	10 seconds
	Fry's Reagent	10 seconds
WZCW9Y	MagnaFlux	
	Fry's Reagent	5 Seconds
X3JZLU	Fry's Reagent	5Min
	Fry's Reagent	10min
X4FHNW	Magnetic Particle Inspection (MPI)	
	Fry's Reagent	~ 6 minutes total
X8AD9Q	MagnaFlux	
	Electro-acid	
XDZVGZ	Fry's Reagent	10 seconds
	25% Nitric Acid	10 seconds
XEW38T	Magnetic Particle Inspection (MPI)	
	Acid Etch Method	Davs'+Nitric Acid, Fry's+Nitric Acid, total time = ~1.5hrs

TABLE 4

Recovery Methods		
WebCode	**Method**	**Time**
XF3LV3	Fry's Reagent	2-3 minutes
	Nitric Acid	less than 1 minute
XGEKPB	Fry's Reagent	Greater than 5 minutes
	MagnaFlux	
XGG2FV	Fry's Reagent	total processing time approximately 2 hours
	Nitric Acid	total processing time approximately 2 hours
XLA2UQ	MagnaFlux	
	Fry's Reagent	30 seconds to one minute
	Turner's Reagent	one minute
	Fry's Reagent	less than 30 seconds
	Turner's Reagent	30 seconds to one minute
XMLXYV	Magnetic Particle Inspection (MPI)	
XNYKJV	Magnetic Particle Inspection (MPI)	
	Fry's Reagent	15 minutes
XPNP32	MagnaFlux	
	Fry's Reagent	1 min
	Acidic Ferric Chloride	1 min
	20% Nitric Acid	1 min
XQHF9G	Acid Etch Method	22.5 minutes
XQKEBP	Fry's Reagent	One hour.
YDUTE9	Modified Fry's Reagent	
	Davis Reagent	
YEQGMW	MagnaFlux	
	Fry's Reagent	4 swabs - 10 minutes
	Nitric Acid	2 swabs - 2 minutes
YFEC9W	MagnaFlux	
	Fry's Reagent	couple of minutes per swab
	Acid Etch Method	25% Nitric acid; couple of minutes per swab
YH67W8	Magnetic Particle Inspection (MPI)	
YMWDEF	Acid Etch Method	3 MIN.
YVZWER	Magnetic Particle Inspection (MPI)	
YYPWXR	MagnaFlux	1 min
	Fry's Reagent	2 min

TABLE 4

Recovery Methods		
WebCode	**Method**	**Time**
YYU3PN	MagnaFlux	
	Turner's Reagent	5-10 minues
	Fry's Reagent	2 minutes
Z4JYPY	Fry's Reagent	1 hour
Z8LP7L	MagnaFlux	
	Fry's Reagent	5-10 minutes
Z9EKNN	Turner's Reagent	approximately 4 minutes
	Fry's Reagent	approximately 6 minutes
ZDU2BY	Acid Etch Method	About 5 mins
ZELBVZ	Fry's Reagent	several turns, each about 5 seconds
ZG67UM	Fry's Reagent	~2min
	25% Nitric Acid	~1min
	Fry's Reagent	~3min
ZHJR8U	MagnaFlux	
ZNPJCL	Davis'	30 seconds
	Turner's Reagent	30 seconds
	Fry's Reagent	30 seconds
ZQXMDP	MagnaFlux	
	Fry's Reagent	5
	Nitric acid	2
ZV66LP	Turner's Reagent	
	Modified Fry's Reagent	
	Fry's Reagent	
ZV72RE	Fry's Reagent	~5 minutes or less

Response Summary **Participants: 329**

Recovery Methods

Chemical Processing: **304**

Magnetic Processing: **190**

Note: Participants may use more than one sample recovery method therefore the total number of recovery methods reported may not be equivalent to the total number of participants.

Additional Comments

TABLE 5

WebCode	Additional Comments
29CACH	Applications of Davis, Turner's and Fry's reagents were used, while alternating Turner's and Fry's reagents. At the end of the restoration, oil was applied to prevent rust/corrosion. Photographs were taken throughout the restoration process.
2UTRDM	After perform restoration using the Fry's method, I used the Magnaflux technique due to the flat surface, and thickness of material to better enhance my visual of the serial number.
2Y29QG	Magnaflux is magnetic particle inspection.
2YLP7K	Chemical etchant were left on the metal for 1-2 minutes at a time, wiped off, assessed, and reapplied for approximate times listed.
33XQCT	7HF and 14AM used
3VJDL4	Good test.
46NHBY	The characters were all fairly visible using MagnaFlux. Chemical restoration was utilized to confirm the 1st and 5th characters.
6DNRT9	CTS test Item 1 is referred to as Item 1A (metal plate) in question 2 due to lab labeling conventions.
76RCKF	Used Cupric Ammonium Chloride solution for acid etching.
8ZWPHK	The third character in question 1) should read "(6,8,G)". Character limits did not allow the end parenthesis to be added.
9BEU3P	TECHNICAL NOTES: Serial number restoration is dependent upon multiple factors to include the original stamping/engraving method, material type, obliteration method, and depth of material removed. The reported characters convey only the appearance of characters or partial characters that the examiner observed after the application of standard serial number restoration techniques. These characters are not considered absolute to the exclusion of other possible characters with similar shape or form.
9J69YF	The etching liquid we used was newly manufactured. At the beginning of the etching, there were signs appearing even after about 20-30 seconds. In total, the material was processed approximately 3 to 4 minutes, when the full serial number could be read. We were two people who read separately and we could read the same number and letter combination.
AVUH2E	Rectangular, magnetic, metal bar. Area obliterated by an unknown type abrasive method. Obliterated area was magnetically treated utilizing black magnaflux and then polished, again magnetically treated utilizing black magnaflux, then chemically treated utilizing Davis, Turner, and Fry's reagents. Serial number restored to read E76K3A.
BHRFAJ	Chemical etching was the only method used, conducted with 100% Fry's reagent which produced clear results and visiualisation of characters in approximately 2 minutes.
CE632F	Alternated Fry’s reagent and Turner’s reagent after initial chemical etch with Davis reagent.

TABLE 5

WebCode	Additional Comments
CJDGF7	The Magnaflux technique was applied to the area first, then followed by a light polishing. The Magnaflux technique was re-applied and all characters were not clearly visible. Alternating swabs of Fry's Reagent and 25% Nitric Acid were used until characters were recovered.
FDJHTE	good test
FPB9CR	I also used Davis Reagent, but it was not listed.
FTV7VG	Item 1.A= CTS Item 1 Item 1.B= CTS Aluminum Standard
HBJKXB	The obliterated area was sanded with 220 and 400 grit sandpaper until mirror-like finish. After third application of Fry's chemical reagent waited approximate three minutes and the serial number was partially visible. The obliterated area was sanded and treated with Fry's chemical reagent for a four time, waiting approximate another three minutes and the serial number was restored. (E76K3A)
HEGYKZ	As received, the serial number on the steel bar was obliterated. Using chemical etching techniques (Davis, Turners & Frys Reagents), the serial number was restored to E76K3A. Oil was placed on the bar after the restoration process was complete. Please refer to Serial Number Restoration Worksheet for further information on the chemical restoration process. Thirty-six photographs were taken during the restoration process and uploaded to Evidence.com on 03/30/26.
HFXVBE	The initial use of MagnaFlux was helpful in determining the location of the obliterated number. From there I continuously swiped a cotton swab over the area of obliteration until the the number became visible. Best visual was while using oblique lighting.
J3JKX9	There are no Additional Comments
JNL7ZZ	A total of ninety-six (96) photographs were taken in the course of this assignment, to include overall, midrange, and close-up views of the metal bar (Item #1) and associated test materials as received, and close-up views of the metal bar (Item #1) throughout the restorations process from the original state of obliteration to the final results. The obliterated serial number on the metal bar (Item #1) was magnetically and chemically processed and fully restored. The obliterated serial number was successfully restored and reads: E76K3A.
JPFYVJ	There is an arrow stamped into the surface indicating the orientation of the piece of metal. Attached are images of the piece of metal with an area of obliteration and the aluminum standard as received. Due to relative smooth surface of area of obliteration as received, the area of obliteration was not polished. During the Magnaflux application revealed possible characters. The first character is unknown, second character could be "7", the third character could be "6", the fourth character could be "X" or "K", the fifth character is unknown, the sixth character could be an "A". See attached images. During/after chemical processing the characters "E76K3A" were recovered. See attached images. After processing, the area of obliteration was cleaned with acetone and covered with Rem Oil to prevent corrosion.
JV77FD	After successful restoration, Item 001 was rinsed with water, dried, preserved with clear lacquer and photographed.
KAXQ8K	After cleaning the surface with acetone, we treated it with freshly prepared Fry's reagent. The reagent was applied to the surface by rubbing with cotton, then wiped off.

TABLE 5

WebCode	Additional Comments
L2LNN6	The piece of metal and the aluminum standard received as evidence, along with its packaging and chain of custody slip, must be picked up from this office by a judicial officer.
L3H8P7	Restored to read E76K3A.
LXMDR6	Not all the characters were formed properly using the electromagnetic method. The piece of metal remains hot once the electromagnetic method is completed. Fry is immediately applied to it, and all the characters are clearly revealed.
MW7JPA	Further application of etching reagents did not result in resolving the first alpha character. Application of etching reagents ended when alphanumerics starting to disappear and slight pitting was observed. The first alpha character was observed to be an E or F due to the alpha character intermittently appearing as an E or F as etching reagents were added. The base line of the possible E was not as distinct as the rest of the alpha character. Therefore the first alpha character could not be determined definitively as an E or F.
N2LAP4	The submitted item(s) will be transferred to the Evidence Section for return to your agency. Questions regarding this report should be addressed to: [email]
NWF6CG	Magnetic particle inspection was used on the bar stock before chemical etching was done using Davis, Turner's and Fry's reagents.
NZ3J6X	The original serial number was restored and read as E76K3A.
PFDQR7	Upon reaching a conclusion a second suitably trained expert independently reviewed the exhibit, and the results were found to be identical.
PJ8N4Q	Modified Fry's and 20% Nitric acid were used.
PWVNXZ	The final application of Turner's Reagent was as a highlighter
QAETJ2	The Fry acid etching method is the most widely used in our field. It offers a higher percentage of reliability in restoring markings on metals.
QAJYBW	During analysis, circular defects, presumably caused by the edges of the stamps, were observed around the stamped characters of the serial number. These defects partially interfered with the restoration process.
QPVQN3	The magnetic method was not very satisfactory in revealing the obliterated sequence; the acid and FRY method was performed for double corroboration of the sequence and also the acid-FRY method that is used more in our work área.
RKRCDH	sample core 6.40 mm obliterated section 6.01 mm about 0.4 mm of the original material was taken off
RQNPQ8	Item 1.A - CTS rolled steel bar stock with serial number removed Item 1.B - CTS aluminum standard
TB9XDZ	Anyone
TL62GU	The three different reagents (Davis, Turner, Frys) were utilized in the process a total of five times, with a polishing step in between each series.

TABLE 5

WebCode	Additional Comments
TPMCH6	Technical Notes: Serial number restoration is dependent upon multiple factors to include the original stamping/engraving method, material type, obliteration method, and depth of material removed. The reported characters convey only the appearance of characters or partial characters that the examiner observed after the application of standard serial number restoration techniques. These characters are not considered absolute to the exclusion of other possible characters with similar shape or form.
V4XQLM	The obliterated serial number was restored. The final characters of the serial number were E76K3A.
V9AUCN	I began with MPI with Magnaflux prior to any preparation. I did see characters, so I then moved onto sanding with 100 and 400 grit sand paper and repeated MPI with Magnaflux. This was all prior to chemical etching.
VDMEJA	Using fry's resulted in an immediate precipitation of a lot of copper, so much so that visualization of the number was prevented. the copper was sanded away with fine grit sandpaper, and turner's was applied.
X8AD9Q	MagnaFlux was used before grinding as well as after.
XNYKJV	Initial observations: the serial number had been removed from the steel bar. The substrate was magnetic metal. Fine grind marks were visible. A partial character was also visible (possible '7'). Surface prep: the surface was cleaned with acetone. 1200 grit sand paper was then used on the surface to produce a mirror like finish. Chemical treatment: Treatment with Fry's reagent was commenced. Complete serial number restoration was successful.
XQKEBP	Prior to beginning the restoration process, no characters were visible in the obliterated area when viewed under magnification. The obliterated area was first polished with a rotary tool. The submitted metal bar was comprised of a ferrous metal and the method of obliteration was surface milling. According to the included instructions, the serial number structure consisted of six characters.
YFEC9W	Every year the unknown obliterated area is on a steel bar. A large number of restorations we perform are on a non-magnetic surface. We are provided character standards on a non-magnetic aluminum bar. Future tests should have the obliterated areas on this material to give a wider range of restoration procedures performed.
YH67W8	These results are indicative. Further chemical tests may be carried out - however these would be destructive in nature and no further work would be possible.
Z9EKNN	The reagents were applied with cotton-tipped applicators for two-minute intervals.

-End of Report-
(Appendix may follow)

Collaborative Testing Services ~ Forensic Testing Program

Test No. 26-5250: Serial Number Restoration

DATA MUST BE SUBMITTED BY **May 11, 2026, 11:59 p.m. EDT** TO BE INCLUDED IN THE REPORT

Participant Code: U1234A WebCode: 76H7GT

The Accreditation Release section can be accessed by using the "Continue to Final Submission" button above. This information can be entered at any time prior to submitting to CTS.

Please Note: A piece of aluminum bar stock labeled as 'Aluminum Standard' is also included in the sample pack and is intended as a reference for the size, shape and positioning of the available stamped alphanumeric characters used in the serial number.

-Use caution when handling the samples, as there may be sharp areas on the Item 1 bar stock and aluminum standard.

-An arrow symbol has been stamped in an upward position on the Item 1 bar stock to represent orientation.

-Please ignore any manufacturing ink on the aluminum standard and refer only to the stamped characters.

Items Submitted (Sample Pack SNR1):
Item 1: A piece of cold rolled steel bar stock with suspected obliterated serial number.

1.) Please record the restored characters below.

The serial number on this material consists of 6 characters.

Item 1: | | | | | | |

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

Note: *Please use appropriate punctuation to indicate the end of sentences, sections, and statements in the free-form space below. Extra spacing and returns used for separation within your text will not transfer and may cause your information to be illegible in the Summary Report. The use of lists and tabular formats to deliver information is also cautioned against, as these do not transfer.*

3.) What preparation methods were used prior to attempts at restoration?

eg. Sanding, Polishing, Visual, etc. (Please describe in order.)

Method	Tool Used	If sanding was done what grit size was used?

4.) What restoration methods were used during your examination?

eg. Fry's, Acid Etch, MagnaFlux, etc. (Please list in order of use)

Method	If an acidic method was used how long was the acid left on the material?

5.) Additional Comments

Note: *Please use appropriate punctuation to indicate the end of sentences, sections, and statements in the free-form space below. Extra spacing and returns used for separation within your text will not transfer and may cause your information to be illegible in the Summary Report. The use of lists and tabular formats to deliver information is also cautioned against, as these do not transfer.*

RELEASE OF DATA TO ACCREDITATION BODIES

The Accreditation Release is accessed by pressing the "Continue to Final Submission" button online and can be completed at any time prior to submission to CTS.

CTS submits external proficiency test data directly to ANAB and/or A2LA. Please select one of the following statements to ensure your data is handled appropriately.

- ○ This participant's data is intended for submission to ANAB and/or A2LA. (Accreditation Release section below must be completed.)
- ○ This participant's data is **not** intended for submission to ANAB and/or A2LA.

Have the laboratory's designated individual complete the following steps
only if your laboratory is accredited in this testing/calibration discipline
by one or more of the following Accreditation Bodies.

Step 1: Provide the applicable Accreditation Certificate Number(s) for your laboratory

ANAB Certificate No.

A2LA Certificate No.

Step 2: Complete the Laboratory Identifying Information in its entirety

Authorized Contact Person and Title

Laboratory Name

Location (City/State)