



Office of the Inspector General
U.S. Department of Justice



**Audit of the Office of Justice
Programs Basic Scientific Research
to Support Forensic Science for
Criminal Justice Purposes
Cooperative Agreement Awarded to
IsoForensics Incorporated
Salt Lake City, Utah**

**AUDIT OF THE OFFICE OF JUSTICE PROGRAMS BASIC
SCIENTIFIC RESEARCH TO SUPPORT FORENSIC SCIENCE FOR
CRIMINAL JUSTICE PURPOSES COOPERATIVE AGREEMENT
AWARDED TO ISOFORENSICS INCORPORATED
SALT LAKE CITY, UTAH**

EXECUTIVE SUMMARY

The U.S. Department of Justice (DOJ) Office of the Inspector General (OIG) completed an audit of cooperative agreements awarded by the Office of Justice Programs (OJP), under the Basic Scientific Research to Support Forensic Science for Criminal Justice Purposes program to IsoForensics, Inc. (IsoForensics) in Salt Lake City, Utah. IsoForensics was awarded \$710,005 under Award Numbers 2011-DN-BX-K544 and 2013-DN-BX-K009.

The objective of this audit was to determine whether costs claimed under the cooperative agreements were allowable, supported, and in accordance with applicable laws, regulations, guidelines, and terms and conditions. To accomplish this objective, we assessed performance in the following areas of award management: financial management, expenditures, budget management and control, drawdowns, federal financial reports, and program performance. The criteria we audited against are contained in the OJP Financial Guide and the cooperative agreement documents.

As of April 20, 2015, IsoForensics had drawn down \$619,632 of the total cooperative agreement funds awarded. We examined IsoForensics' policies and procedures, accounting records, and financial and progress reports, and found that IsoForensics did not fully comply with essential award conditions related to expenditures, federal financial reports, and program performance. Specifically, IsoForensics: (1) charged unallowable indirect costs to the awards, (2) submitted inaccurate financial reports, (3) did not maintain support for progress reports, and (4) did not meet all special conditions.

Our report contains six recommendations to OJP, which are detailed in the Findings and Recommendations section of this report. Our audit objective, scope, and methodology are discussed in Appendix 1 and our Schedule of Dollar-Related Findings appears in Appendix 2. We discussed the results of our audit with IsoForensics officials and have included their comments in the report, as applicable. In addition, we requested responses to our draft audit report from IsoForensics and OJP, and their responses are included in Appendices 4 and 5, respectively.

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SALT LAKE CITY, UTAH**

INTRODUCTION

The U.S. Department of Justice (DOJ) Office of the Inspector General (OIG) completed an audit of cooperative agreements awarded by the Office of Justice Programs (OJP), under the Basic Scientific Research to Support Forensic Science for Criminal Justice Purposes program, to IsoForensics, Incorporated (IsoForensics) in Salt Lake City, Utah. IsoForensics was awarded two cooperative agreements totaling \$710,005, as shown in Table 1.

**Table 1
Cooperative Agreements Awarded to IsoForensics**

AWARD NUMBER	AWARD DATE	PROJECT START DATE	PROJECT END DATE	AWARD AMOUNT
2011-DN-BX-K544	09/12/2011	09/01/2011	03/31/2014	\$342,606
2013-DN-BX-K009	08/27/2013	10/01/2013	09/30/2015	\$367,399
Total:				\$710,005

Source: OJP Grants Management System

Funding through the Basic Scientific Research to Support Forensic Science for Criminal Justice Purposes program supports the U.S. Department of Justice, OJP, National Institute of Justice’s (NIJ) mission by sponsoring research to provide objective, independent, evidence-based knowledge and tools to meet the challenges of crime and criminal justice, particularly at the state and local levels. The research was to be in the physical, life, and cognitive sciences and designed to increase the knowledge underlying forensic science disciplines intended for use in the criminal justice system.

Audit Approach

The objective of this audit was to determine whether costs claimed under the awards were allowable, supported, and in accordance with applicable laws, regulations, guidelines, and terms and conditions. To accomplish this objective, we assessed performance in the areas of award management, financial management, expenditures, budget management and control, drawdowns, federal financial reports, and program performance.

We tested compliance with what we consider to be the most important conditions of the cooperative agreements. The criteria we audited against are contained in the OJP Financial Guide and the award documents. The results of our analysis are discussed in detail in the

Findings and Recommendations section of the report. Appendix 1 contains additional information on this audit's objective, scope, and methodology. The Schedule of Dollar-Related Findings appears in Appendix 2. In addition, we requested responses to our draft audit report from IsoForensics and OJP, and their responses are included in Appendices 4 and 5, respectively.

FINDINGS AND RECOMMENDATIONS

We examined IsoForensics' policies and procedures, accounting records, and financial and progress reports, and found that IsoForensics did not fully comply with essential award conditions related to award expenditures, federal financial reports, and program performance. Specifically, IsoForensics: (1) charged unallowable indirect costs to the awards, (2) submitted inaccurate financial reports, (3) did not maintain support for progress reports, and (4) did not meet all special conditions.

Award Financial Management

According to the OJP Financial Guide, all grant recipients and subrecipients are required to establish and maintain adequate accounting systems and financial records and to accurately account for funds awarded to them. We conducted interviews with IsoForensics' staff and inspected documents to determine whether IsoForensics adequately safeguarded award funds.¹

Award Expenditures

For Award Number 2011-DN-BX-K544, IsoForensics' approved budget included personnel, fringe benefits, travel, supplies, and other. For Award Number 2013-DN-BX-K009, IsoForensics' approved budget also included personnel, fringe benefits, travel, supplies, and other. Accountable property and matching were not applicable to these cooperative agreements.

To determine whether costs charged to the awards were allowable, supported, and properly allocated in compliance with award requirements, we tested a judgmental sample of transactions. For Award Number 2011-DN-BX-K544 we judgmentally selected 50 transactions totaling \$73,262. For Award Number 2013-DN-BX-K009 we judgmentally selected 50 transactions totaling \$60,416. The following sections describe the results of that testing.

Direct Costs

For Award Number 2011-DN-BX-K544 we determined that a portion of one transaction in our sample was unallowable. Ten and half hours of the 54.5 hours charged to the award for the chemist's time, for the October 22, 2012 pay period, was not for time spent working on the award. For Award Number 2013-DN-BX-K009 we also determined that a portion of one transaction in our sample was unallowable. Three of the 22 hours charged to the award for the principal investigator's time, for the April 22, 2015 pay period, were not for hours worked on the award. Both errors were corrected in

¹ IsoForensics has not expended more than \$500,000 in federal awards and financial assistance and is therefore exempt from Office of Management and Budget Circular A-133, the single audit reporting requirements.

subsequent pay periods and as a result, we do not question the unallowable hours charged to the awards.

Indirect Costs

Indirect costs are costs of an organization that are not readily assignable to a particular project, but are necessary to the operation of the organization and the performance of the project. We found that IsoForensics charged a portion of personnel, fringe benefits, and other direct costs, using an indirect rate allocation to both the 2011-DN-BX-K544 and the 2013-DN-BX-K009 awards.

IsoForensics originally included indirect costs in its 2011-DN-BX-K544 budget and was told by OJP to move the indirect costs to the direct cost categories because they were initially unable to obtain an indirect cost rate agreement.² Similarly, IsoForensics restructured the budget for the 2013-DN-BX-K009 award in an effort to account for all indirect costs as direct costs. According to IsoForensics officials, indirect costs were allocated using a basic three-tier accounting structure of fringe, overhead, and general and administrative costs pools to ensure indirect costs were allocated fairly to all activities driving the costs. Indirect costs were reclassified from the cost pools to cost category budget line items, based on an OJP Office of the Chief Financial Officer recommendation. The methodology was used to accommodate the reclassified budget without affecting IsoForensics' established process of accounting for indirect costs associated with other federal and commercial projects. However, neither budget included costs charged to the grant using an indirect rate allocation.

Neither award budget included approved indirect costs; the budgets did not include direct costs charged to the awards using an indirect rate allocation. As a result, we are questioning \$280,840 charged to the awards as unallowable because indirect costs were not included in the approved budgets and we recommend OJP work with IsoForensics to remedy the \$280,840 in unallowable costs charged to the awards using the indirect rate allocation.

Budget Management and Control

According to the OJP Financial Guide, the recipient is responsible for establishing and maintaining an adequate accounting system, which includes the ability to compare actual expenditures or outlays with budgeted amounts for each award. Additionally, the grant recipient must initiate a GAN for a budget modification that reallocates funds among budget categories if the proposed cumulative change is greater than 10 percent of the total award amount.

² IsoForensics obtained an indirect cost rate agreement, based on provisional indirect cost rates, on June 10, 2015.

We compared expenditures to the approved budgets to determine whether IsoForensics transferred funds among budget categories in excess of 10 percent. We determined that the cumulative difference between category expenditures and approved budget category totals was not greater than 10 percent.

Drawdowns

According to the OJP Financial Guide, an adequate accounting system should be established to maintain documentation to support all receipts of federal funds. If, at the end of the grant award, recipients have drawn down funds in excess of federal expenditures, unused funds must be returned to the awarding agency. To assess whether IsoForensics managed award receipts in accordance with federal requirements, we compared the total amount reimbursed to the total expenditures in the accounting records. We determined that IsoForensics complied with the requirement, as total expenditures were greater than cumulative drawdowns as of April 8, 2015.

Federal Financial Reports

According to the OJP Financial Guide, recipients shall report the actual expenditures and unliquidated obligations incurred for the reporting period and cumulatively on each Federal Financial Report (FFR). To determine whether the FFRs submitted by IsoForensics were accurate, for the 2011-DN-BX-K544 award we compared the four most recent reports to IsoForensics' accounting records and for the 2013-DN-BX-K009 award we compared the five most recent reports to IsoForensics' accounting records.

We found that the FFRs did not match IsoForensics' accounting records for Award Numbers 2011-DN-BX-K544 and 2013-DN-BX-K009, as shown in Table 2.

Table 2
FFR Accuracy by Period

REPORT NUMBER	REPORTING PERIOD	EXPENDITURES PER FFR	EXPENDITURES PER ACCOUNTING RECORDS	DIFFERENCE
2011-DN-BX-K544				
8	04/01/13-06/30/13	\$24,537	\$24,537	\$ 0
9	07/01/13-09/30/13	\$25,260	\$25,260	\$ 0
10	10/01/13-12/31/13	\$84,378	\$74,378	(\$10,000)
11	01/01/14-03/31/14	\$10,289	\$39,564	\$ 29,276
Cumulative Difference				\$ 19,276
2013-DN-BX-K009				
2	01/01/14-03/31/14	\$37,777	\$37,793	\$ 23
3	04/01/14-06/30/14	\$76,735	\$78,837	\$ 2,202
4	07/01/14-09/30/14	\$64,170	\$48,556	(\$ 15,614)
5	10/01/14-12/31/14	\$67,974	\$81,238	\$ 13,264
6	01/01/15-03/31/15	\$42,648	\$42,348	(\$ 299)
Cumulative Difference				(\$ 424)

Source: OJP's Grants Management System; IsoForensics' accounting records

For the 2011-DN-BX-K544 award, there was a cumulative difference of \$19,276 reported less than the accounting records supported. According to IsoForensics officials the \$19,276 cumulative difference is the amount IsoForensics contributed towards the sample analysis costs, which was manually subtracted from the accounting records for FFR reporting purposes. In addition, IsoForensics mistakenly reported \$10,960 under the recipient share of FFR number 11. It was under the impression that it should report costs contributed by the company in this section, and did not understand the section was specific to an award match requirement. The \$10,960 was an estimate of costs contributed by IsoForensics.

For the 2013-DN-BX-K009 award, there was a cumulative difference of \$424 more reported than the accounting records supported. IsoForensics officials said the reason for the difference was that numbers were transposed and miss-keyed on the FFR's and charges were initially missed due to late billing. IsoForensics officials also said the \$424 cumulative difference will be resolved with FFR number 7.

For the 2011-DN-BX-K544 award we also found that IsoForensics used estimates rather than actual expenditures for a portion of the expenditures reported in the FFRs. Specifically, starting with FFR number 8 estimates were used, by budget category, and allocated at a percentage. This was the case until FFR number 11, the final FFR, in which estimated costs were reconciled with actual costs. According to IsoForensics officials, the indirect expense calculations were estimated each month by budget category to accommodate the reclassifying of the indirect costs to direct costs. As a result, we recommend that OJP coordinate with IsoForensics to ensure that the financial information reported in FFRs is accurate and based on actual expenditures, not estimates. The FFRs did not identify any program income for either award.

Program Performance and Accomplishments

We reviewed the Research Performance Progress Reports (progress reports), which are completed semiannually, to determine if the required reports were accurate. We also reviewed the solicitations and award documentation, and interviewed IsoForensics officials to determine whether the program goals and objectives were implemented. Finally, we reviewed IsoForensics' compliance with the special conditions identified in the award documentation.

Research Performance Progress Reports

According to the OJP Financial Guide, the funding recipient should ensure that valid and auditable source documentation is available to support all data collected for each performance measure specified in the program solicitation. Due to the scientific nature of the awards, and since the Research Performance Progress Reports are a narrative of the research conducted for the reporting period, we judgmentally selected quantifiable and tangible items reported from the two most recent progress reports submitted for Award Numbers 2011-DN-BX-K544 and 2013-DN-BX-K009. We then traced the items to supporting documentation maintained by IsoForensics.

For Award Number 2011-DN-BX-K544, we found that the items we reviewed specific to the fifth progress report submitted, were properly supported. For the sixth and final progress report submitted, we requested support for the 102 hair samples collected and analyzed from individuals living within the Salt Lake City region. Support was provided for the 102 hair samples but no support could be provided to tie the sample collection to the Salt Lake City region because the samples came from human subjects and are protected under the Institutional Review Board guidelines.³

For Award Number 2013-DN-BX-K009, we found that the support provided did not match the numbers reported in the progress report. Specifically, the second progress report stated they collected 518 water samples and 203 hair samples. The sample database report provided by IsoForensics officials showed 517 water samples collected and 269 hair samples collected, for a difference of 1 water sample and 66 hair samples. In addition, the third progress report stated they collected 564 water samples and the sample database report provided by IsoForensics officials showed 625 water samples collected, for a difference of 61 water samples. According to IsoForensics officials, the database reports cannot be run with an "as of" date and they do not export and save the database reports used to complete the progress reports. As a result, we recommend that OJP coordinate with IsoForensics to ensure progress report support is maintained.

³ An Institutional Review Board or IRB is a committee that performs ethical reviews of proposed research.

Program Goals and Objectives

The objective of the proposed research under Award Number 2011-DN-B-K544 was to determine whether or not strontium isotope analyses could be used as a diagnostic tool to precisely estimate the recent regions of origin of humans through chemical analyses of scalp hair.⁴ In addition, the goals of the research were to build a data product and a model product that would further refine and constrain the region-of-origin predictions based initially on hydrogen and oxygen isotope ratio analyses. IsoForensics will accomplish this objective by data collection and analyses to test four specific hypotheses:

- Hypothesis 1: The variations in strontium isotope ratios of human scalp hair reflect source differences in regional bedrock and dust inputs of specific geographical regions and not variations in the strontium isotope ratios of food inputs.
- Hypothesis 2: Extensive geographic variations in the strontium isotope ratios of hair exist and these variations reflect the known variations in soil strontium isotopes across the United States.
- Hypothesis 3: The movement of an individual from one region to another will be reflected in changes in strontium isotopes incorporated exogenously along the length of a hair segment.⁵
- Hypothesis 4: Endogenous and exogenous strontium sources contribute to the latitudinal variations in $^{87}\text{Sr}/^{86}\text{Sr}$ ratios of hair, but the contribution of endogenous strontium is small relative to exogenous strontium.⁶

The objective of the proposed research under Award Number 2013-DN-BX-K009 was to test the overarching hypotheses that $^{87}\text{Sr}/^{86}\text{Sr}$ ratios can be used as a diagnostic tool to precisely describe the recent region of origin of humans through chemical analyses of scalp hair. In addition, the goals of this proposed research are to (a) test this overarching hypothesis and (b) build a data product and a model product that would further refine and constrain the region-of-origin predictions based initially on oxygen isotope ratio analyses. This requires data layers of municipal water distribution systems. IsoForensics will accomplish these objectives through data collection and analyses to test three specific hypotheses that will help establish a foundation

⁴ An Isotope is any of two or more species of atoms of a chemical element with the same atomic number and nearly identical chemical behavior but with differing atomic mass or mass number and different physical properties.

⁵ Exogenous is growth caused by factors or an agent from outside the organism or system.

⁶ $^{87}\text{Sr}/^{86}\text{Sr}$ are naturally occurring isotopes in the alkali earth metal strontium.

for applying the isoscape approach to law enforcement applications:

- Hypothesis 1: The strontium and oxygen isotope ratios of municipal waters reflect well described water management practices, reflecting transported and/or local groundwater sources.
- Hypothesis 2: The strontium and oxygen isotope ratios of human hairs record the water management practices of the municipality in which an individual resides.
- Hypothesis 3: Any seasonal variations in water management practices associated with changes in water source will be reflected in the strontium and oxygen isotope ratios of both municipal waters and human hairs.

According to the principal investigator, if these hypotheses are supported, the results will help lay a foundation for the application of strontium isotope ratios as a quantitative tool for distinguishing residents from non-residents in a municipality and to distinguish individuals among different municipalities within a metropolis.

Based on our review, there were no indications that IsoForensics was not meeting the stated goals and objectives of the cooperative agreements. In regards to the 2013-DN-BX-K009 award, IsoForensics officials did indicate that they were off schedule due to some instrument issues and that they would request a no-cost extension Grant Adjustment Notice to extend the project end date, if necessary.

Compliance with Special Conditions

Special conditions are the contractual terms and conditions that are included with the awards. We evaluated the special conditions for each award and selected a judgmental sample of the requirements that are significant to performance under the awards and are not addressed in another section of this report. We evaluated 22 special conditions for the 2011-DN-BX-K544 award and 21 for the 2013-DN-BX-K009 award.

Based on our sample, we identified one instance where IsoForensics was not in compliance with the special conditions and one instance where a research change impacted IsoForensics' compliance with a total of four special conditions, all relating to 28 C.F.R. 46 and the Human Subjects Protection form. For Award Numbers 2011-DN-BX-K544 and 2013-DN-BX-K009, we found that IsoForensics did not comply with the special condition that requires OJP to approve successors to key personnel. In January of 2014, the president of IsoForensics was replaced and OJP was not notified and its approval was not obtained. We recommend that OJP ensure IsoForensics obtains proper approval for the successor to key personnel.

For Award Numbers 2011-DN-BX-K544 and 2013-N-BX-K009, we found that originally IsoForensics did comply with the special conditions and 28 C.F.R. 46 regarding the protection of human research subjects. Initially IsoForensics complied with the special conditions and 28 C.F.R. 46 and completed the applicable Human Subjects Protection form by saying the projects would not involve human subjects. As we learned through our verification of progress report data, there was a minor research change and IsoForensics used human subject samples from existing data for the 2011-DN-BX-K544 award. This research change required a change to the Human Subjects Protection form and caused IsoForensics to be non-compliant with the special conditions and 28 C.F.R. 46. As a result, we recommend that OJP ensure IsoForensics is compliant with 28 C.F.R. 46 for the 2011-DN-BX-K544 award.

Since IsoForensics did not notify and seek OJP's approval for the change in key personnel and did not properly update its compliance with 28 C.F.R. 46 and the corresponding special conditions, we recommend OJP coordinate with IsoForensics to develop policies and procedures to ensure that all award requirements are met.

Conclusion

The objective of this audit was to determine whether costs claimed under the awards were allowable, supported, and in accordance with applicable laws, regulations, guidelines, and terms and conditions. We examined IsoForensics' accounting records, budget documents, financial and progress reports, and financial management procedures. We found that IsoForensics charged unallowable indirect costs to the awards, did not accurately report award expenditures, did not maintain progress report support, and did not meet all award special conditions. We made six recommendations to improve IsoForensics' management of the awards.

Recommendations

We recommend that OJP:

1. Remedy the \$280,840 in unallowable costs charged to the awards using the indirect rate allocation.
2. Coordinate with IsoForensics to ensure that the financial information reported in FFRs is accurate and based on actual expenditures, not estimates.
3. Ensure progress report support is maintained.
4. Ensure IsoForensics obtains proper approval for the successor to key personnel.

5. Ensure IsoForensics is compliant with 28 C.F.R. 46 for the 2011-DN-BX-K544 award.
6. Coordinate with IsoForensics to develop policies and procedures to ensure that all award requirements are met.

APPENDIX 1

OBJECTIVE, SCOPE, AND METHODOLOGY

The objective of this audit was to determine whether costs claimed under the awards were allowable, supported, and in accordance with applicable laws, regulations, guidelines, and terms and conditions. To accomplish this objective, we assessed performance in the following areas of award management: financial management, expenditures, budget management and control, drawdowns, federal financial reports, and program performance.

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

This was an audit of Office of Justice Programs' cooperative agreements awarded to IsoForensics under the Basic Scientific Research to Support Forensic Science for Criminal Justice Purposes program. Award Numbers 2011-DN-BX-K544 and 2013-DN-BX-K009 were awarded \$342,606 and \$367,399 respectively; and as of April 20, 2015, IsoForensics had drawn down \$619,632 of the total award funds awarded. Our audit concentrated on, but was not limited to September 12, 2011, the award date for Award Number 2011-DN-BX-K544, through May 15, 2015, the last day of our fieldwork. Award Number 2011-DN-BX-K544 has been fully expended and closed.

To accomplish our objective, we tested compliance with what we consider to be the most important conditions of IsoForensics' activities related to the audited awards. We performed sample-based audit testing for award expenditures including payroll and non-payroll costs, financial reports, and progress reports. In this effort, we employed a judgmental sampling design to obtain broad exposure to numerous facets of the awards reviewed. This non-statistical sample design did not allow projection of the test results to the universe from which the samples were selected. The criteria we audit against are contained in the OJP Financial Guide and the award documents. In addition, we evaluated IsoForensics' (1) award financial management, including award-related procedures in place for procurement, financial reports, and progress reports; (2) budget management and controls; (3) drawdowns; and (4) program performance.

During our audit, we obtained information from OJP's Grants Management System (GMS) as well as IsoForensics' accounting system specific to the management of DOJ funds during the audit period. We did not test the reliability of those systems as a whole, therefore any findings identified involving information from those systems were verified with documentation from other sources. However, support could not be provided for a minor statement in a progress report because a set of samples used in the research

came from human subjects and are protected under the Institutional Review Board guidelines. A minor adjustment was made to the management representation letter to reflect this.

APPENDIX 2

SCHEDULE OF DOLLAR-RELATED FINDINGS

<u>QUESTIONED COSTS</u> ⁷	AMOUNT	PAGE
<u>Unallowable Costs</u>		
Unallowable indirect costs	<u>\$280,840</u>	4
Total Unallowable Costs	<i>\$280,840</i>	
 QUESTIONED COSTS	 \$280,840	

⁷ **Questioned Costs** are expenditures that do not comply with legal, regulatory, or contractual requirements; are not supported by adequate documentation at the time of the audit; or are unnecessary or unreasonable. Questioned costs may be remedied by offset, waiver, recovery of funds, or the provision of supporting documentation.

**ISOFORENSICS, INC. RESPONSE
TO THE DRAFT AUDIT REPORT**



October 27, 2015
David M. Sheeren Regional
Audit Manager Denver
Regional Audit Office
Office of the Inspector General
U.S. Department of Justice
1120 Lincoln Street, Suite 1500
Denver, CO 80203
Email: David.M.Sheeren@usdoj.gov

Dear Mr. Sheeren,

Following are IsoForensics' official comments to the draft report issued by the U.S. Department of Justice (DOJ), Office of the Inspector General (OIG), Denver Regional Audit Office to the Office of Justice Programs (OJP) on 6 October 2015, related to an audit of Award Numbers 2011-DN-BX-K544 and 2013-DN-BX-K009. The draft report contained six recommendations, which are repeated on the following pages along with the organization's response to each recommendation. Supporting documentation for the response is provided in Attachment 1. Provided separately is a signed management representation letter on company letterhead.

I understand that the final audit report, including the company's response, will be released to the public.

While the audit was a sometimes-challenging learning experience for all involved, I appreciate the time OIG and its auditors spent thoroughly reviewing program accounting, management, and performance. We at IsoForensics collectively learned a great deal through the process and I know that our small business will improve as a result. As an example, we have already begun writing new policies and procedures for contracts and grants. In short, it was very constructive to undergo the audit. Thank you.

I—and the rest of the IsoForensics' team—look forward to working with OJP in the coming weeks to close the six recommendations, during the audit resolution phase.

If you have any questions or need additional information, please feel free to contact me at (801) 755-7990.

Sincerely,

Lesley Chesson
President
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Enclosure

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IsoForensics, Inc.
Response to Draft Audit Report (OIG)
Award Numbers 2011-DN-BX-K544 and 2013-DN-BX-K009
October 27, 2015

Recommendations:

1. Remedy the \$280,840 in unallowable costs charged to the awards using the indirect rate allocation.

Response: Regarding the \$280,840 in 'unallowable costs' charged to the awards as indirect costs, we offer the following explanation:

When the 2011-DN-BX-K544 award was made to IsoForensics, Inc. the budget included both direct costs (salaries, sample analyses, etc.) and indirect costs, those costs not readily assignable to a particular project, but necessary to the operation of the company and the performance of the project. Our indirect costs calculations are based on a three-tier accounting structure of (1) fringe, (2) overhead, and (3) general and administrative cost pools. We use our Incurred Cost Submission to calculate these indirect rates yearly. However, the company was unable to obtain an indirect cost rate agreement from a cognizant government agency in 2011. (We have since obtained an agreement; see Footnote 2 of the Draft Audit Report.)

As a consequence, the company was asked by OJP to allocate the project's indirect costs as 'direct' costs to the award. The purpose of this allocation was specifically meant as a solution to recover indirect costs. Budget recalculations took place in March 2013, 18 months into the 2-year period of performance for 2011-DN-BX-K544. When the 2013-DN-BX-K009 award was made, we immediately recalculated the budget to again allocate the indirect costs as 'direct' costs.

Although the recalculated budgets for the 2011-DN-BX-K544 and 2013-DN-BX-K009 awards included several line items of 'direct' costs associated with office and lab support, these costs were in actuality indirect costs. They were tracked in the company's accounting system accordingly. (To do so otherwise would have painted a false picture of the true size of the indirect cost pools at IsoForensics, Inc. and impacted all other federal and commercial projects taking place at the company.) However, as the company's indirect costs could only be charged to the awards as 'direct' costs, a percentage estimate was used to allocate a portion of the company's indirect costs to 2011-DN-BX-K544 and 2013-DN-BX-K009; calculations were completed by FFR and then reconciled with our annual Incurred Cost Submissions at the end of each award.

We recognize that this is an unusual accounting structure, unfortunately necessitated for these awards by the lack of an indirect cost rate agreement at the start of 2011-DN-BX-K544. We note that IsoForensics, Inc. obtained an indirect cost rate agreement, based on provisional indirect cost rates, on 10 June 2015 (Footnote 2, Draft Audit Report). These rates are the same as those used to allocate indirect costs to the 2011-DN-BX-K544 and 2013-DN-BX-K009 awards in the company's accounting system. A summary of the reconciliations was provided to the Program Manager at NIJ on 16 October 2015. A copy of these calculations can also be provided to OJP, upon request. (They are not included here as they contain sensitive company financial information.)

We look forward to working closely with OJP in the upcoming weeks during the audit resolution phase to remedy the \$280,840 in 'unallowable costs' via "offset, waiver, recovery of funds, or the provision of supporting documentation" (Footnote 7, Draft Audit Report; emphasis added). We ask that OJP consider the reconciliations already provided to the Program Manager as a start to providing the necessary supporting documentation to close this recommendation.

2. Coordinate with IsoForensics to ensure that the financial information reported in FFRs is accurate and based off of actual expenditures, not estimates.

Response:

(A) Regarding FFR Accuracy by Period (Table 2, Draft Audit Report), we offer the following explanations:

Award 2011-DN-BX-K544, FFR 10 – This \$10,000 difference was caused by a keying error during FFR submission. Once submitted, we were unable to make edits to the FFR. We requested a change via email to the Program Manager on 10 February 2014; no change was made before the submission of the final FFR and the error was thus corrected in FFR 11.

Award 2011-DN-BX-K544, FFR 11 – This \$29,276 difference was caused by (a) a correction of the keying error from FFR 10 (\$10,000) and (b) our misunderstanding of how contributions made by the company should be documented in the final FFR. As noted above, the keying error made in FFR 10 was corrected in FFR 11. We contributed \$19,276 toward sample analysis costs in this award, which accounts for the remainder of the difference; this contribution is thus reflected in the *cumulative* difference for the 2011-DN- BX-K544 award.

Award 2013-DN-BX-K009 – For FFRs 3 and 4, we used work orders rather than final invoices for calculating expenditures due to late billing. This caused differences that were corrected in subsequent FFRs (e.g., through FFR 5).

the *cumulative* difference of \$424 for FFRs 2-6 was caused by minor transposition and keying errors during FFR submission. To correct this cumulative difference, changes have been made in subsequent FFRs that were not reviewed during the audit.

(B) Regarding the use of estimates rather than actual expenditures for the 2011-DN-BX-K544 award, we offer the following explanation:

As noted above, the original budget for Award 2011-DN-BX-K544 included direct costs as well as indirect costs. IsoForensics, Inc. did not have an indirect cost rate agreement at the start of the 2011-DN-BX-K544 award and we were asked to recalculate the budget by allocating a portion of the company's indirect cost pools to the award as a 'direct' cost to recover our indirect costs. This recalculation was not approved or completed until 18 months into the planned 2-year work period (e.g., FFR 8). Before FFR 11, we thus used an estimated percentage to portion indirect costs as direct costs to the 2011-DN-BX-K544 award. For the final FFR, we calculated the actual portion of the company's indirect costs that should be allocated to the award and reconciled expenditures accordingly.

3. Ensure progress report support is maintained.

Response: IsoForensics, Inc. concurs with this recommendation. In response, we have begun writing a series of policies and procedures on Internal Controls related to contracts and grants. Policy 8.353 (Procedures for Progress Reports) will outline the steps that should be taken by individuals involved in managing contracts and grants to ensure all data, figures, tables, text, and correspondence used in reporting progress are clearly identified, securely stored, and properly archived. This policy will go before the company's Board of Trustees for approval at the next annual meeting (scheduled for 2 December 2015). A copy of the policy can be provided to OJP following approval.

4. Ensure IsoForensics obtains proper approval for the successor to key personnel.

Response: IsoForensics, Inc. concurs with this recommendation. In response, we have submitted a Grant Adjustment Notice (GAN 537490) to document the change in company leadership that took place in January 2014. That GAN was submitted 23 September 2015 and approved 25 September 2015.

5. Ensure IsoForensics is compliant with 28 CFR 46 for the 2011-DN-BX-K544 award.

Response: IsoForensics, Inc. concurs with this recommendation. Since the

2011-DN-BX-K544 award is closed, we are unable to submit a GAN to document the change in sampling design. In response, we supplied a document describing the sampling design change—and how it related to work with human subjects—to the Program Manager on 9 July 2015. A copy of that document is attached as Appendix 1.

6. Coordinate with IsoForensics to develop policies and procedures to ensure that all award requirements are met.

Response: IsoForensics, Inc. concurs with this recommendation. In response, we have begun writing a series of policies and procedures on Internal Controls related to contracts and grants. One of those policies (8.353 Procedures for Progress Reports) was described above, in our response to Recommendation 3. Two other policies—8.351 Terms and Definitions for Contracts and Grants and 8.352 Procedures for Contracts and Grants—will identify the parties involved in managing contracts and grants and also define the roles each party plays in ensuring all award requirements are met. These policies will go before the company's Board of Trustees for approval at the next annual meeting (scheduled for 2 December 2015). Copies of the policies can be provided to OJP following approval.

2011-DN-BX-K544

Timeline of Changes and Reporting:

Initial proposal submitted: April 12, 2011

Grant awarded: September 12, 2011

Grant accepted: September 19, 2011

Collaboration between IsoForensics and University of Utah researchers established:
Summer-Fall 2011

New experimental design outlined and discussed, 1st Progress Report: January 31, 2012

Sample processing began: February 22, 2012

Sample analysis began: February 24, 2012

Sample analysis concluded: March 21, 2012

Data reported, 2nd Progress Report: July 31, 2012

Final report submitted: June 27, 2014

Proposed and Substituted Design and Sample Analysis:

Hypothesis:

The variations in strontium isotope ratios of human scalp hair reflect source differences in regional bedrock and dust inputs of specific geographical regions and not variations in the strontium isotope ratios of food inputs.

Initially proposed experimental design:

We proposed to randomly sample discarded scalp hair in distinct subpopulations (i.e., ethnic groups) that were living in a single city. Previous research has shown that the subpopulations within a city can have distinct diets.

Initially proposed sample analyses:

To test this hypothesis, we had planned to analyze hair from three distinct subpopulations within Salt Lake City - Caucasian, Latino, and Asian. We initially proposed to randomly obtain discarded hair (i.e., trash) from the floor of three barbershops, each located in neighborhoods dominated by one of the ethnic groups. Discarded hair on the floor of a barbershop is classified as trash and is not subject to IRB protocol requirements.

Substituted experimental design:

A National Institute of Health award, titled “Monitoring Childhood Nutrition using Stable Isotopes in Hair”, was provided to the University of Utah in 2009. As part of this NIH-supported study, a scalp hair sample, a self-administered food frequency questionnaire, and a collection of biometrics were obtained from individual volunteers, ranging from 9 to 18 years of age from four different educational institutions in Salt Lake City. Samples and data were collected by University of Utah researchers in accordance to University of Utah IRB #00032797, “Improving Childhood Nutrition Using Stable isotope in Hair and Breath” and IRB #00010249, “Stable Isotope Ratios of Hair.” Questionnaires and data were stored in a secure facility on the University campus and on a University of Utah- supported secure server, respectively.

Substituted sample analyses:

As part of a University-IsoForensics collaboration, subsets of anonymously-coded, ground hair samples were provided to a scientist at IsoForensics, Inc. The availability of these hair samples was the result of a collaboration with the specific University of Utah researchers that received the NIH support to collect and analyze samples. Samples provided to IsoForensics, Inc. researchers consisted of pulverized scalp hair within glass vials and were identified only by random, anonymous serial numbers. The University of Utah researchers provided a spreadsheet linking the random serial number of each sample to collection location (i.e., school) and biometric data (i.e., age, ethnicity). No personal identifying information about the individual was provided by the University of Utah researchers to IsoForensics. In addition, the spreadsheet contained carbon, nitrogen, and sulfur isotope ratio data and trace element abundances of select hair samples from earlier analyses performed by University researchers.

Evidence of Collaboration:

Documentation of collaborative effort between IsoForensics, Inc. and University of Utah researchers using the specific data set described above (IsoForensic, Inc. researchers in **bold**, University of Utah researchers are *italicized*):

Presentations:

(Oral) *Strontium isotope ratios of hair for human provenancing*, **Tipple, B.J., Chau, T.H., Chesson, L.A., Ehleringer, J.R., Mancuso, C.J., Valenzuela, L.O.**, American Academy of Forensic Sciences, Orlando, FL (February, 2015).

(Poster) *Combining strontium and oxygen isotope ratios of hair for human provenancing*, **Tipple, B.J., Valenzuela, L.O., Chesson, L.A., Bowen, G.J., Ehleringer, J.R.**, Geological Society of America Annual Meeting, Denver, CO (October, 2013).

(Poster) *The spatial patterns of water management practices are reflected in the strontium isotope ratios of human hair*, **Tipple, B.J., Valenzuela, L.O., Ehleringer, J.R.**, American Geophysical Union Annual Meeting, San Francisco, CA (December, 2012).

Publications (as reported in the 2011-DN-BX-K544 Final Technical Report):

Tipple, B.J., Valenzuela, L.O., Chesson, L.A., and Ehleringer, J.R., (*In Preparation*) The strontium isotope ratios of municipal water are recorded in human hair, *Forensic Science International*.

Tipple, B.J., Valenzuela, L.O., Chesson, L.A., Chau, T., and Ehleringer, J.R., (*In Preparation*) Combining O and Sr isotope landscapes of human hair for geolocation, *Forensic Science International*.

Tipple, B.J., Bowen, G., Chesson, L.A., Valenzuela, L.O., Chau, T., Cerling, T.E., and Ehleringer, J.R., (*In Preparation*) Water management practices are reflected in the strontium isotope ratios of municipal waters, *Water Research*.

Tipple, B.J., Valenzuela, L.O., Chesson, L.A., Chau, T., Cerling, T.E., and Ehleringer, J.R., (*In Preparation*) Linking O and Sr isotope ratios of hair across the United States, *Proceedings of the National Academy of Sciences of the USA*.

OFFICE OF JUSTICE PROGRAMS RESPONSE
TO THE DRAFT AUDIT REPORT



U.S. Department of Justice

Office of Justice Programs

Office of Audit, Assessment, and Management

Washington, D.C. 20531

November 5, 2015

MEMORANDUM TO: David M. Sheeren
Regional Audit Manager
Denver Regional Audit Office
Office of the Inspector General

FROM: Ralph E. Martin /s/
Director

SUBJECT: Response to the Draft Audit Report, *Audit of the Office of Justice Programs, Basic Scientific Research to Support Forensic Science for Criminal Justice Cooperative Agreements, Awarded to Isoforensics Incorporated, Salt Lake City, Utah*

This memorandum is in reference to your correspondence, dated October 6, 2015, transmitting the above-referenced draft audit report for IsoForensics, Incorporated (IsoForensics). We consider the subject report resolved and request written acceptance of this action from your office.

The draft report contains **six** recommendations and **\$280,840** in questioned costs. The following is the Office of Justice Programs' (OJP) analysis of the draft audit report recommendations. For ease of review, the recommendations are restated in bold and are followed by our response.

- 1. We recommend that OJP remedy the \$280,840 in unallowable costs charged to the awards using the indirect rate allocation.**

OJP agrees with the recommendation. We will coordinate with IsoForensics to remedy the \$280,840 in questioned costs, related to indirect costs allocated to cooperative agreement numbers 2011-DN-BX-K544 and 2013-DN-BX-K009.

- 2. We recommend that OJP coordinate with IsoForensics to ensure that the financial information reported in FFRs is accurate and based off of actual expenditures, not estimates.**

OJP agrees with the recommendation. We will coordinate with IsoForensics to obtain a copy of written policies and procedures, developed and implemented, to ensure that Federal Financial Reports are accurately prepared, based on actual expenditures incurred, and the supporting documentation is maintained for future auditing purposes.

- 3. We recommend that OJP ensure progress report support is maintained.**

OJP agrees with the recommendation. We will coordinate with IsoForensics to obtain a copy of written policies and procedures, developed and implemented, to ensure that future semi-annual progress reports are accurately prepared, and reviewed and approved by management; and the supporting documentation is maintained for future auditing purposes.

- 4. We recommend that OJP ensure IsoForensics obtains proper approval for the successor to key personnel.**

OJP agrees with the recommendation. We will coordinate with IsoForensics to obtain a copy of written policies and procedures, developed and implemented, to ensure that proper approval is obtained from the Federal awarding agency, for the successor to key personnel. In the interim, Grant Adjustment Notice Number 12 was approved by OJP on September 25, 2015, to change IsoForensics' Authorized Representative under cooperative agreement number 2013-DN-BX-K009 (see Attachment).

- 5. We recommend that OJP ensure IsoForensics is compliant with 28 CFR 46 for the 2011-DN-BX-K544 award.**

OJP agrees with the recommendation. We will coordinate with IsoForensics to ensure that it is in compliance with 28 CFR 46, for cooperative agreement number 2011-DN-BX-K544.

- 6. We recommend that OJP coordinate with IsoForensics to develop policies and procedures to ensure that all award requirements are met.**

OJP agrees with the recommendation. We will coordinate with IsoForensics to obtain a copy of written policies and procedures, developed and implemented, to ensure that all award requirements are met.

We appreciate the opportunity to review and comment on the draft audit report. If you have any questions or require additional information, please contact Jeffery A. Haley, Deputy Director, Audit and Review Division, on (202) 616-2936.

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OJP Executive Secretariat
Control Number IT20151009090024

**OFFICE OF THE INSPECTOR GENERAL
ANALYSIS AND SUMMARY OF ACTIONS
NECESSARY TO CLOSE THE REPORT**

The OIG provided a draft of this audit report to IsoForensics, Inc. (IsoForensics) and the Office of Justice Programs (OJP). IsoForensics' response is incorporated as Appendix 3 of this final report, and OJP's response is included as Appendix 4. In response to our audit report, OJP agreed with our recommendations, therefore, the status of the audit report is resolved. IsoForensics agreed with 4 of the 6 recommendations and offered additional explanations, similar to what was already shown in our report. The following provides the OIG analysis of the responses and summary of actions necessary to close the report.

Recommendation:

- 1. We recommend that OJP remedy the \$280,840 in unallowable costs charged to the awards using the indirect rate allocation.**

Resolved. OJP concurred with our recommendation. OJP stated in its response that it would coordinate with IsoForensics to remedy the \$280,840 in unallowable costs charged to the awards using the indirect rate allocation.

IsoForensics did not state whether it agreed with this recommendation. They provided details on the process they use to charge indirect costs to the grant, similar to what was already shown in the report. Since IsoForensics was unable to obtain and approved indirect cost rate agreement, OJP told them to allocate the indirect costs to direct costs. IsoForensics charged the direct costs to the award using the indirect rate allocation. However, neither budget included costs charged to the grant using an indirect rate allocation. IsoForensics stated they would work with OJP to remedy the \$280,840 in unallowable costs.

This recommendation can be closed when we receive evidence that OJP remedied the \$280,840 in unallowable costs.

- 2. We recommend that OJP coordinate with IsoForensics to ensure that the financial information reported in FFRs is accurate and based off of actual expenditures, not estimates.**

Resolved. OJP concurred with our recommendation. OJP stated in its response that it would coordinate with IsoForensics to obtain a copy of written policies and procedures, developed and implemented, to ensure that Federal Financial Reports are accurately prepared, based on actual

expenditures incurred, and supporting documentation is maintained for future auditing purposes.

IsoForensics did not state whether it agreed or disagreed with this recommendation. However, it provided additional explanations regarding the causes for FFR errors. It also explained that it was told by OJP to allocate the indirect costs to direct costs since it did not have an indirect cost rate agreement at the start of either award. IsoForensics further explained that the allocation of indirect costs to direct costs was not completed and approved until 18 months into the start of the 2011-DN-BX-K544 award, which is why estimates were used for many FFRs.

This recommendation can be closed when we receive a copy of the written policies and procedures, developed and implemented, to ensure that FFRs are accurately prepared and based on actual expenditures incurred, and that supporting documentation is maintained for future auditing purposes.

3. We recommend that OJP ensure progress report support is maintained.

Resolved. OJP concurred with our recommendation. OJP stated in its response that it would coordinate with IsoForensics to obtain a copy of written policies and procedures, developed and implemented, to ensure that future semiannual progress reports are accurately prepared, and reviewed and approved by management; and the supporting documentation is maintained for future auditing purposes.

IsoForensics agreed with our recommendation and stated that it has begun writing a series of policies and procedures to strengthen internal controls related to contracts and grants.

This recommendation can be closed when we receive a copy of the written policies and procedures, developed and implemented, to ensure that future semiannual progress reports are accurately prepared, and reviewed and approved by management; and the supporting documentation is maintained for future auditing purposes.

4. We recommend that OJP ensure IsoForensics obtains proper approval for the successor to key personnel.

Resolved. OJP concurred with our recommendation. OJP stated in its response that it would coordinate with IsoForensics to obtain a copy of written policies and procedures, developed and implemented, to ensure that proper approval is obtained from the federal awarding agency, for the successor to key personnel.

IsoForensics agreed with our recommendation and submitted a Grant Adjustment Notice documenting the change in company leadership.

This recommendation can be closed when we receive a copy of the written policies and procedures, developed and implemented, to ensure that proper approval is obtained from the federal awarding agency, for the successor to key personnel.

5. We recommend that OJP ensure IsoForensics is compliant with 28 C.F.R. 46 for the 2011-DN-BX-K544 award.

Resolved. OJP and IsoForensics concurred with our recommendation. OJP stated in its response that it would coordinate with IsoForensics to ensure it is compliant with 28 C.F.R. 46 for the 2011-DN-BX-K544 award.

IsoForensics agreed with our recommendation. In response, it supplied to OJP a document describing the sampling design change.

This recommendation can be closed when we receive evidence that OJP has ensured that IsoForensics is compliant with 28 C.F.R. 46 for the 2011-DN-BX-K544 award.

6. We recommend that OJP coordinate with IsoForensics to develop policies and procedures to ensure that all award requirements are met.

Resolved. OJP concurred with our recommendation. OJP stated in its response that it would coordinate with IsoForensics to obtain a copy of written policies and procedures to ensure that all award requirements are met.

IsoForensics agreed with our recommendation and has begun writing a series of policies and procedures to strengthen internal controls related to contracts and grants.

This recommendation can be closed when we verify that IsoForensics has developed adequate policies and procedures to ensure all award requirements are met.