

Economic Loss Appraisal

An Analysis of the Economic Loss to  
Mr. Matthew D. Client

November 25, 2015

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**Conclusion:**

The present value of Mr. Matthew D. Client’s economic loss totals \$120,548, excluding future lost earning capacity and past and future medical expenses. Refer to Table 1 for additional information.

Mr. Client was injured on March 19, 2014 at age 24.2 years. His education attainment consists of a High School diploma and a one-year carpentry program at Bridger Applied Technology College. He earned an average of \$1,357 per week in 2014, the year of his injury. He missed 25.3 weeks from work for medical treatment and recuperation following his injury. Mr. Client anticipates that he will need another knee operation in 2016 and will miss an additional 4.3 weeks (30 days) for recuperation.

The measured economic loss assumes that Mr. Client will not suffer a long-term impact from his injuries. Mr. Client’s current position as a Service Operator II is physically demanding and requires agility and stamina to work in outdoor conditions in gas and oil fields. According to Mr. Client, after a physical day of work, he suffers “excruciating knee pain” and a loss of feeling below the knee.

Because Mr. Client’s injury is so recent, it’s difficult to know the extent of his future economic loss without additional medical evaluation. The measured \$120,548 economic loss does not factor in the probability that Mr. Client may not be able to continue his current employment or the risk that his employer will view his physical limitations as a risk and terminate him.

Because of his lack of educational attainment, Mr. Client could suffer a substantial loss of annual earnings. Furthermore, because of his age, his future economic loss is potentially magnified by a substantial remaining work life. If Mr. Client were to lose \$40,000/year in earning capacity for 40 years of remaining work life, his future loss of earnings would total \$1.6 million dollars.

**TABLE 1**  
**CLIENT**  
**ECONOMIC LOSS RANGE**

Damage Component	Present Value Economic Loss	Reference
Past Lost Earnings	\$40,119	Table 4
Future Lost Earnings	not included	
Total Lost Earnings	\$40,119	
Lost Employee Benefits	not included	
Lost Household Services	\$80,429	Table 6
Past Medical Expenses	not available	
Future Medical Expenses	not available	
<b>Total Economic Loss</b>	<b><u>\$120,548</u></b>	

## ECONOMIC LOSS APPRAISAL REPORT

Mr. Matthew D. Client

### SECTION 1: REPORT OUTLINE

- Included in this report is a detailed summary of all opinions which I presently intend to express in this case. To the extent my investigation discloses additional pertinent information, I reserve the right pursuant to applicable rules to supplement this report.
- This report provides the following information:
  - 1) Curriculum Vitae including a list of all publications authored within the last 10 years (Appendix A)
  - 2) Statement of compensation for professional services rendered in this case (Appendix B)
  - 3) List of cases in which I have testified as an expert at trial or deposition within the last four years (Appendix C)
  - 4) Supporting information (Appendix D)

### SECTION 2: QUALIFICATIONS

- The law offices of Thomas M. Attorney Jr. retained my services as a forensic accountant<sup>1</sup> to provide analysis, opinions and conclusions pertaining to the economic damages in connection with this matter. Over the past 42 years, I have assisted courts, regulators, shareholders and businesses with an independent expert opinion of values and damages in a wide variety of financial, accounting and economic litigation issues on behalf of both plaintiffs and defendants.
- I am a Certified Public Accountant (CPA) in good standing, jointly licensed in both Utah and North Carolina<sup>2</sup> with reciprocal privileges to testify in all fifty states.
- The role of the forensic accountant is not to serve as an advocate for the client's position. The forensic accountant's function is to assist the trier of fact in understanding complex or unfamiliar concepts after having reasonably applied reliable principles and methods to sufficient relevant data. The forensic accountant is not expected to blindly offer only evidence and opinions helpful to the client, but is instead expected to offer objective opinions, based on knowledge and experience, of how a trier of fact should interpret the relevant issues.<sup>3</sup>

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<sup>1</sup> **Forensic Accountant:** "A Certified Public Accountant who performs an orderly analysis, investigation, inquiry, test, inspection, or examination to obtain the truth and from which to make an expert opinion." The American Board of Forensic Accounting

<sup>2</sup> Utah CPA License #144269-2601 Expires 9/30/2016 and North Carolina CPA License #38811 Expires 6/30/2016.

<sup>3</sup> AICPA Litigation and Dispute Resolution Subcommittee, 2001

- An economic loss appraisal provides an estimate of monetary damages relying on available factual information and statistical data.
- Based on the information available, the expert applies analytic and quantitative skills to project with reasonable, although not absolute, certainty the most likely course of economic events had the injury, death, termination or event not occurred.
- Knowledge, skill, education and experience are needed to gather the factual information, supplement with statistical and demographical data, sift and winnow inappropriate material, and correctly interpret and analyze what is left.
- I have prepared more than a thousand economic loss appraisals in cases involving personal injury, wrongful death, and wrongful termination on behalf of both plaintiffs and defendants and have previously testified in both federal and state court as an expert on earning capacity, lost earnings, work life expectancy and employee benefits. My credentials and experience as a forensic accountant can be found in attached Appendices A, B and C.
- This loss appraisal was independently and objectively prepared with the standard methodology, factors and inputs that I regularly rely upon in measuring economic losses.<sup>5</sup> Regardless of which side I represent,<sup>3</sup> I adhere to the same methodology in performing an economic loss appraisal.<sup>4</sup> I maintain a public website, [GaryCouillard.com](http://GaryCouillard.com), that contains an open disclosure of the both the factors and methodology I use in measuring economic losses.

### SECTION 3: CONCLUSION:

- No assumption of liability is made or implied in the measurement of the economic loss. Proximate causation questions concerning economic damages are a legal issue in personal injury and wrongful termination cases. Economic causation is not an explicit element in the ordinary economic model for measuring damages in a personal injury case.<sup>5</sup>

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<sup>3</sup> The engagement assignment for plaintiff's damage expert is typically different than the assignment for defendant's expert. Plaintiff's expert is typically tasked with measuring the injured person's economic loss with the expectation that testimony in deposition or trial may be necessary. Defendant's economic expert is typically tasked with critiquing plaintiff's expert's damage calculation, which occasionally involves preparing a complete economic loss appraisal and rarely involves rebuttal testimony at trial.

<sup>4</sup> Consistency in application of damage theory is one of the nine core ethical principles of the National Association of Forensic Economics (NAFE) *Statement of Ethical Principles and Principles of Professional Practice*, #5, 2013, <http://nafe.net/about-nafe/nafes-ethics-statement.html>.

*"Consistency: While it is recognized that practitioners of forensic economics may be given a different assignment when engaged on behalf of the plaintiff than when engaged on behalf of the defense, for any given assignment, the basic assumptions, sources, and methods should not change regardless of the party who engages the expert to perform the assignment. There should be no change in methodology for purposes of favoring any party's claim. This requirement of consistency is not meant to preclude methodological changes as new knowledge evolves, nor is it meant to preclude performing requested calculations based upon a hypothetical--as long as its hypothetical nature is clearly disclosed in the expert's report and testimony."*

<sup>5</sup> Economic causation is a common element in damage models for lost profits, business interruptions, securities cases and other commercial litigation. There is no mention of economic causation in key authoritative sources such as the following: Wolfgang Franz. 1990. Calculating the Economic Damages of Wrongful Termination. *The Practical LaUTer* 36(3); Gerald D. Martin. 2013. *Determining Economic Damages*, James Publishing: Costa Mesa, CA.; and W. Chris Lewis and Tyler J. Bowles. 2005. Assessing Economic Damages in Personal Injury and Wrongful Death Litigation: The State of Utah. *Journal of Forensic Economics* 18(2-3).

- The identified economic damages are assumed linked to the economic harm caused by the industrial accident.
- If the trier of fact finds no liability on the part of the Defendant, then there are no economic losses for the Plaintiff attributable to the Defendant in this matter.
- If the trier of fact finds liability on the part of the Defendant, I have reviewed the available documents and calculations for purposes of measuring the economic loss to the Plaintiff as a result of the alleged personal injury.
- Economic damages in cases involving personal injury refer to compensation for objectively verified losses that typically include the following damage components:
  - Past and future lost earnings or earning capacity
  - Past and future lost employee benefits
  - Past and future lost household services
  - Past and future medical expenses
  - Prejudgment interest
- I have prepared a series of calculations estimating Mr. Client's lost earnings and lost household services as a result of injuries from the accident. The present value of Mr. Client's economic loss totals \$120,548.
- Mr. Client is still receiving treatment for his injuries and may not have reached maximum medical improvement. It's possible that depending on the outcome of his treatment, he may experience future wage loss if he is unable to continue his current employment as a Service Operator.
- Past and future medical expenses are unavailable at this time.
- Past damages will need to be adjusted for prejudgment interest after damages are awarded.
- No estimates of emotional distress or loss of enjoyment of life have been included in Mr. Client's economic loss.
- Table 1 is a summary of Mr. Client's economic loss.

#### SECTION 4: ASSUMPTIONS AND DOCUMENTS

- Table 2 is a summary of facts and assumptions.
- My conclusions are based on the documents listed in Table 3 and other information typically relied upon by experts in preparing similar economic damage appraisals.<sup>6</sup>

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<sup>6</sup> The majority of the data sources and treatises relied on are available as Internet downloads. The U.S. Bureau of Labor Statistics, Social Security Administration, Federal Reserve Bank and the U.S. Census now regularly provide online information, analysis, surveys and articles regarding, wages, inflation, interest rates, disability income, employment, labor force participation, life expectancy, work life expectancy, employee benefits, time use diaries and a multitude of other data and journal articles.

I also rely on professional accounting and economic journals. One of the earliest and most commonly referenced journals on economic damages is the *Journal of Forensic Economics* published by the National Association of Forensic Economics founded in 1988. The *Journal of Forensic Economics*, published biannually, presents peer-reviewed academic research pertaining to the application of economics to litigation

Table 2

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**TABLE 3**  
**CLIENT**  
**DOCUMENTS REVIEWED / RELIED UPON**

PI Questionnaire (Appendix D)
Household Service Questionnaire (Appendix D)
Functional Capacity Questionnaire (Appendix D)
Tax Returns 2013 and 2014
Household Service reference data (Appendix D)
Interview Matt 11/21/2015, 20 minutes



- The legal framework for economic damages<sup>7</sup>, as defined by existing case law<sup>8</sup>, can and frequently does vary based on the type of claim and the jurisdiction.
- The damage methodology and the factors and inputs that I regularly rely upon in measuring economic losses are supported by professional surveys, publications and other research material generally relied upon.
- One generally accepted<sup>9</sup> reference source that closely mirrors the overall damage methodology I use is Gerald D. Martin's *Determining Economic Damages*, James Publishing: Costa Mesa, CA. 2013. Originally published in 1988, the 23<sup>rd</sup> revision was released in 2013.
- Throughout this report, I cite references to other professional surveys, publications and other research material generally relied upon as support for the economic model used to measure damages in a personal injury matter.

## SECTION 5: LOST EARNINGS

- Past and future lost earnings are a common damage element in personal injury matters.
- Damage components in personal injury cases typically include the injured person's (1) past wage loss and (2) future impairment or loss of earning capacity.<sup>10</sup>
- These separate and distinct damage components are legal concepts defined by case law and not economics, accounting or vocational assessment theory.
- Together these two damage components are commonly referred to as "lost earnings," but there is an important distinction between lost earnings and loss of earning capacity.
- Earnings refer to income received from employment. "*Actual earnings are what a person actually earns, expected earnings are what a person is expected to earn, while earning capacity is what that person is able to earn.*"<sup>11</sup>
- Lost earnings are based on the injured person's expected earnings at the time of the accident. Employment<sup>12</sup> at the time of the injury would be necessary to make a claim for lost earnings. Lost earnings refer to the expected value of the actual time that the injured would have worked but could not work because of the injury.

<sup>7</sup> Within this legal framework of existing case law, damage experts can assist the trier of fact in measuring the impact of the injury. Outside this legal framework attorneys and experts face the challenges of making new law. Martin, 2013.

<sup>8</sup> The legal framework for damages is defined by existing case law and not by economic principles, accounting theory or vocational assessment theory.

<sup>9</sup> Lewis and Bowles, 2005, p. 227. "*As a general rule, the approach to measuring the economic losses is not unlike those in most states. The guidelines offered in Martin and Vavoulis (2005) which are followed by most forensic economists, generally would be accepted by the Utah courts.*" Gerald D. Martin and Ted Vavoulis. (2005) *Determining Economic Damages*, James Publishing: Costa Mesa, CA.

<sup>10</sup> The term "human capital" is the synonymous economic term to the legal concept of earning capacity. The foundation of human capital is a person's education, training, experience, physical and mental attributes. Based on this foundation, a person develops and accumulates capabilities that include knowledge, skills and understanding. Human capital is the value of a person's capabilities as valued in the labor marketplace in exchange for money.

<sup>11</sup> Stephen M. Horner and Frank Slesnick, (1999) The Valuation of Earning Capacity, Definition, Measurement and Evidence, *Journal of Forensic Economics* 12(1):13.

<sup>12</sup> Or a high probability of pending employment.

- Loss of earning capacity is a separate and distinct damage component. In a personal injury case, the injured person may suffer both a loss of earnings and a loss of earning capacity.
- The definition of earning capacity in Black's Law Dictionary is as follows:  
*"Earning Capacity. Term refers to capability of worker to sell his labor or services in any market reasonably accessible to her, taking into consideration his general physical functional impairment resulting from his accident, any previous disability, his occupation, age at the time of injury, nature of injury and his wages prior to and after the injury. Sims v. Industrial Commission, 10 Ariz. App. 574, 460 P.2D.d 1003, 1006. Term does not necessarily mean the actual earnings that one who suffers an injury was making at the time of the injuries were sustained, but refers to that which, by virtue of the training, the experience, and the business acumen possessed, an individual is capable of earning."*
- Loss of earning capacity refers to the economic harm an injured person suffers which results in a diminished capacity to earn wages—the impact a person's injuries have on the **capacity to earn** after the injury as compared to the pre-injury earning capacity.
- Lost earning capacity represents the difference between the injured person's pre-injury earning capacity less post-injury earning capacity.
- There are three critical factors in measuring lost earnings:
  - 1) **Pre-Injury Earning Capacity**
    - ◆ Is there an indicated pre-injury earning capacity based on the injured person's earnings prior to the injuries?
    - ◆ Does the injured person have any education, training or experience that would indicate an unrealized earning capacity?
  - 2) **Post-Injury Earning Capacity**
    - ◆ What is the injured person's earning capacity after the injuries?
    - ◆ How much can the injured person earn from post-injury employment that he or she is physically and mentally able to perform?
    - ◆ As an injured person, how much will he or she earn from the date of the injury to the end of his work life?
  - 3) **Work Life Expectancy**
    - ◆ Had the person not been injured, how long would he or she have worked before exiting the work force?
    - ◆ Did the person have an economic need or non-financial reason to work an extended period?
    - ◆ Has the person's work life been reduced by a delay in entering the work force as a result of injuries?
    - ◆ Has the person's work life been reduced by a reduction in hours available to work as a result of injuries?
    - ◆ Post-injury, how long will the person work?
- Lost earnings are measured by comparing pre-accident earning capacity and post-accident actual and projected earnings. Lost earning capacity is not necessarily determined by comparing pre-accident actual earnings and post-accident actual earnings.

*“Loss of earning capacity is not the same as lost wages. Rather, earning capacity refers to a person’s potential. Earning capacity is not necessarily determined by actual loss.<sup>13</sup> While the earnings at the time of the accident may be relevant, such figures are not necessarily indicative of past and future lost earning capacity.”<sup>14</sup>*

*The focal point of the inquiry is not what the plaintiff actually would have earned, but the difference in his capacity to earn – before and after the injury.”<sup>15</sup>*

- Mr. Client was injured in an industrial accident on March 19, 2014.
- Mr. Client was age 24.2 at the time of the accident. He has a high-school education plus a one-year degree in carpentry from Bridger Applied Technology College.<sup>16</sup>
- At the time of the accident, Mr. Client was employed by OilGasCO as a Service Operator 1. He primarily works in natural gas fields.
- Mr. Client was originally hired by OilGasCO as an Operator Assistant on May 28, 2013.
- He was promoted to Service Operator 1 on December 15, 2013.
- A Service Operator is a physically demanding occupation that requires strength and agility in outdoor conditions, sometimes in rugged terrain.<sup>17</sup>
- Following the accident on March 19, 2014, surgery was performed on Mr. Client’s knee, and he was unable to work for 136 days. He returned to work on August 1, 2014.
- Mr. Client had a second operation on his knee in September 2015 and missed 41 days from work.
- According to Mr. Client, after a physical day of work, he suffers “excruciating knee pain” and a loss of feeling below the knee. A third knee surgery is planned for 2016. He expects to miss approximately a month from work to recuperate.

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<sup>13</sup> The loss of earning capacity does not require employment at the time of the injury. Gerald D. Martin. (2011). *Determining Economic Damages*. James Publishing: Costa Mesa, CA, sections 3-10

<sup>14</sup> Corbett v. Seamons dba Big O Tire, 904 P.2d 232, N.2 (Ut. App. 1995, page 233)

<sup>15</sup> Clawson v. Walgreen Drug, 1045 Utah Supreme Court

<sup>16</sup> PI Questionnaire, Appendix D

<sup>17</sup> Client phone interview 11/21/2015, BLS Dictionary Occupational Titles **CODE**: 939.462-010, <http://www.occupationalinfo.org/93/939462010.html>: OIL-WELL-SERVICE OPERATOR (petrol. & gas) Controls pumping and blending equipment to acidize, cement, or fracture gas or oil wells and permeable rock formations: Consults with SUPERINTENDENT, DRILLING AND PRODUCTION (petrol. & gas) to determine well conditions, pipe sizes, and amounts of acid, cement, or fracturing chemicals to be used. Gives directions to OIL-WELL-SERVICE-OPERATOR HELPER (petrol. & gas) to unload pipes, fittings, and chemicals, and to correct pipes between pumps and well, using handtools. Mixes acids, chemicals or dry cement according to service specified by customer. Observes meters and pressure gauges to regulate quantity and consistency of materials and to control pump pressure. May perform routine maintenance on vehicles and equipment. May be designated according to specialty as Acidizer (petrol. & gas); Acidizer, Water Well (construction); Cementer, Oil Well (petrol. & gas); Formation-Fracturing Operator (petrol. & gas).  
GOE: 05.11.03 STRENGTH: H GED: R4 M3 L3 SVP: 6 DLU: 77  
Strength H-Heavy Work - Exerting 50 to 100 pounds of force occasionally, and/or 25 to 50 pounds of force frequently, and/or 10 to 20 pounds of force constantly to move objects. Physical Demand requirements are in excess of those for Medium Work.

- Mr. Client earned \$70,547 in 2014, the year of his injury or an average of \$1,357 per week. His missed work was valued at \$1,357 per week.
- Mr. Client's lost earnings for missed work totals \$40,119.
- Refer to Table 4 for additional information.
- All disability payments received since the accident have been treated as a collateral source.

### Future Lost Earning Capacity

- Future lost earning capacity measures the ongoing economic harm, continuing after the final day of trial, which may be experienced by a plaintiff who has been injured.
- For purposes of measuring damages, I have assumed a present value/trial date of December 31, 2015.
- Future lost earning capacity represents the injured person's reduced earning capacity from January 1, 2015, to the end of his expected work life.
- For purposes of measuring a threshold level of damages, I have conservatively assumed that following his third knee surgery, Mr. Client will complete his work life and not suffer any additional economic impact from his injury.
- Because Mr. Client's injury is so recent, it's difficult to know the extent of his future economic loss without additional medical evaluation.
- It's possible that after his third surgery in 2016, Mr. Client's medical providers will be able to better assess the long-term likelihood of his being able to continue working as a Service Operator.
- If Mr. Client continues to work with pain, he is exposed to the risk that his employer will view his physical limitations as a risk and terminate him. Because of low energy prices<sup>18</sup>, oil and gas companies are paring their labor force to the bare minimum and keeping their best people. Mr. Client's physical limitations may be perceived as a weakness that limits his employability in a physically demanding position.<sup>19</sup>
- Because of his lack of educational attainment, Mr. Client could suffer a substantial loss of annual earnings. Furthermore, because of his age, his future economic loss is potentially magnified by a substantial remaining work life. If Mr. Client were to lose \$40,000/year in earning capacity for 40 years of remaining work life, his future loss of earnings would total \$1.6 million dollars.

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<sup>18</sup> ZACKS Investment Report, November 20, 2015: *From a peak of about \$13.50 per MMBtu in 2008 to just above \$2.2 now – sinking in between to a 10-year low of under \$2 in 2012 – the plummeting value of natural gas represents a decline of around 80% over seven years. In the absence of major production cuts, we do not expect much upside in gas prices in the near term.*

<sup>19</sup> Mish's Global Economic Trend Analysis, November 21, 2015: *More than 250,000 people world-wide have lost their jobs in the industry over the past year, according to Graves & Co., a Houston consulting firm. Many companies that were hoping to weather low energy prices without new rounds of layoffs and salary cuts may be forced to slash those costs yet again, said Eric Lee, an energy analyst with Citigroup. "We're really reaching the limit of what people can do," said Allen Gilmer, chief executive of DrillingInfo, an Austin, Texas company that compiles data on tens of thousands of shale wells across North America. "Right now, you are down to the best areas, the best rigs, the best people.*

**TABLE 4**  
**CLIENT**  
**LOST EARNINGS**

<u>From</u>	<u>To</u>	<u>Weeks Missed From Work</u>	<u>2014 Average Earnings Per Week</u>	<u>Lost Earnings</u>
3/19/2014	8/1/2014	19.4	\$1,357	\$26,358
9/10/2015	10/20/2015	5.9	\$1,357	\$7,946
2016	30 days	4.3	\$1,357	\$5,814
<b>LOST EARNINGS</b>				<b><u>\$40,119</u></b>

- I reserve the right to reassess Mr. Client's economic loss after his anticipated 2016 surgery.

#### **SECTION 6: PAST AND FUTURE MEDICAL COSTS**

- Past and future medical expenses should be included in the final damage amount.
- Mr. Client's past and future medical expenses for injuries from the accident are not measured in this preliminary loss estimate pending additional information.

#### **SECTION 7: LOST HOUSEHOLD SERVICES**

- The ability to work and perform various activities around the home for oneself and family has economic value.
- Mr. Client has identified a number of physical activities that are now more difficult to do because of his injuries. Refer to Appendix D for additional information.
- The amount of time spent on household tasks is quantified in a number of published studies. These studies are based on detailed time diaries and logs to measure the typical or standard amount of time individuals spend on various activities. The results are sorted by gender, age, work status, and number of children at home.
- The amount of time spent performing various household tasks can be estimated using published time-diary statistics.
- These studies are based on detailed time diaries and logs to measure the typical or standard amount of time individuals spend on various activities. The results are sorted by gender, age, work status, and number of children at home.
- Three common sources for time spent on household services include the following:
  - 1) *The Dollar Value Of Household Work* by William H. Gauger and Kathryn E. Walker of the New York State College of Human Ecology and Cornell University
  - 2) *Time for Life* by John P. Robinson and Geoffrey Godbey
  - 3) *Dollar Value of a Day – Time Diary Analysis* by Economic Demographers, 1999, 2003 and 2006 Surveys
- According to Mr. Client's self assessment<sup>20</sup>, he needs assistance in lawn maintenance, snow removal, maintenance that involves lifting or climbing and other household tasks. He needs assistance with 15% to 25% of typical household tasks.
- Refer to Appendix D for additional information regarding Mr. Client's loss of household service hours.

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<sup>20</sup> Appendix D

- The replacement cost method for measuring the value of lost household services is based on the cost to hire a replacement to come into the home and perform the jobs the injured person is no longer able to perform without pain or the risk of further injury.
- A replacement hourly wage can be employed as a proxy economic value for lost household services to convert the lost time estimates to a dollar value.
- Mr. Client lives in Tremonton, Utah. He currently rents but is responsible for lawn care and snow removal. He plans to buy a home and be married within approximately five years.
- Based on Northern Utah wage levels, a replacement labor rate from \$11.76 to \$17.83 per hour was used for basic household production tasks.
- Lost household services were valued at \$3.49/day to age 30; \$4.67/day to age 68, \$7.69/day to age 74 and \$6.55/day ages 74+. Refer to Table 5 for additional information.
- Mr. Client has a normal life expectancy to approximately age 77.8.
- Lost household services were discounted to a present value using a 1.00% net discount rate.
- Mr. Client's lost household services total \$80,429 or an average of \$4.11 per day for his remaining life expectancy.
- Refer to Table 6 for additional information.

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**TABLE 5**  
**MATTHEW D. CLIENT**  
**LOST DAILY HOUSEHOLD SERVICES**

	<u>Period</u>	<u>Total Weekly Hours Household Production</u>	<u>Lost Weekly Hours</u>	<u>National Total \$/Day Daily Value Household Production</u>	<u>CLIENT Lost \$/Day Daily Value Household Production</u>
Single Males, work full-time, no children	Ages 25 to 29	11.29	1.99	\$21.64	\$3.49
Married Males - Work Full-Time, No Children	Ages 30 to 67	13.78	2.61	\$26.82	\$4.67
Married Males - Ages 62 to 74, Retired, Spouses Not Employed	Ages 68 to 74	21.67	4.26	\$42.78	\$7.69
Married Males - Age 75+ , Retired, Living Only With Spouse	Ages 75 to 77.8	18.81	3.64	\$37.06	\$6.55



**TABLE 6**  
**MATTHEW D. DOWNEY**  
**LOST HOUSEHOLD SERVICES**

<u>From</u>	<u>To</u>	<u>Age</u> <u>(End)</u>	<u>PV Net Lost</u> <u>Household</u> <u>Services</u> <u>\$/day</u>	<u>Days</u>	<u>PV Net Lost</u> <u>Household</u> <u>Services</u>
3/19/2014	12/31/2014	25.03	\$3.60	288	\$1,038
1/1/2015	12/31/2015	26.03	\$3.61	365	\$1,317
1/1/2016	12/31/2016	27.03	\$3.68	366	\$1,348
1/1/2017	12/31/2017	28.03	\$3.76	365	\$1,374
1/1/2018	12/31/2018	29.03	\$3.85	365	\$1,404
1/1/2019	12/31/2019	30.03	\$3.93	365	\$1,435
1/1/2020	12/31/2020	31.03	\$4.66	366	\$1,704
1/1/2021	12/31/2021	32.03	\$4.61	365	\$1,683
1/1/2022	12/31/2022	33.03	\$4.57	365	\$1,667
1/1/2023	12/31/2023	34.03	\$4.52	365	\$1,650
1/1/2024	12/31/2024	35.03	\$4.48	366	\$1,639
1/1/2025	12/31/2025	36.03	\$4.43	365	\$1,619
1/1/2026	12/31/2026	37.03	\$4.39	365	\$1,603
1/1/2027	12/31/2027	38.03	\$4.35	365	\$1,587
1/1/2028	12/31/2028	39.03	\$4.31	366	\$1,576
1/1/2029	12/31/2029	40.03	\$4.27	365	\$1,557
1/1/2030	12/31/2030	41.03	\$4.22	365	\$1,542
1/1/2031	12/31/2031	42.03	\$4.18	365	\$1,527
1/1/2032	12/31/2032	43.03	\$4.14	366	\$1,516
1/1/2033	12/31/2033	44.03	\$4.10	365	\$1,497
1/1/2034	12/31/2034	45.03	\$4.06	365	\$1,483
1/1/2035	12/31/2035	46.03	\$4.02	365	\$1,468
1/1/2036	12/31/2036	47.03	\$3.98	366	\$1,458
1/1/2037	12/31/2037	48.03	\$3.95	365	\$1,440
1/1/2038	12/31/2038	49.03	\$3.91	365	\$1,426
1/1/2039	12/31/2039	50.03	\$3.87	365	\$1,412
1/1/2040	12/31/2040	51.03	\$3.83	366	\$1,402
1/1/2041	12/31/2041	52.03	\$3.79	365	\$1,385
1/1/2042	12/31/2042	53.03	\$3.76	365	\$1,372
1/1/2043	12/31/2043	54.03	\$3.72	365	\$1,358
1/1/2044	12/31/2044	55.03	\$3.69	366	\$1,349
1/1/2045	12/31/2045	56.03	\$3.65	365	\$1,332
1/1/2046	12/31/2046	57.03	\$3.61	365	\$1,319
1/1/2047	12/31/2047	58.03	\$3.58	365	\$1,307
1/1/2048	12/31/2048	59.03	\$3.54	366	\$1,297
1/1/2049	12/31/2049	60.03	\$3.51	365	\$1,281

**TABLE 6**  
**MATTHEW D. DOWNEY**  
**LOST HOUSEHOLD SERVICES**

<u>From</u>	<u>To</u>	<u>Age</u> <u>(End)</u>	<u>PV Net Lost</u> <u>Household</u> <u>Services</u> <u>\$/day</u>	<u>Days</u>	<u>PV Net Lost</u> <u>Household</u> <u>Services</u>
1/1/2050	12/31/2050	61.03	\$3.48	365	\$1,269
1/1/2051	12/31/2051	62.03	\$3.44	365	\$1,257
1/1/2052	12/31/2052	63.03	\$3.41	366	\$1,248
1/1/2053	12/31/2053	64.03	\$3.38	365	\$1,232
1/1/2054	12/31/2054	65.03	\$3.34	365	\$1,220
1/1/2055	12/31/2055	66.03	\$3.31	365	\$1,209
1/1/2056	12/31/2056	67.03	\$3.28	366	\$1,200
1/1/2057	12/31/2057	68.03	\$5.35	365	\$1,954
1/1/2058	12/31/2058	69.03	\$5.30	365	\$1,935
1/1/2059	12/31/2059	70.03	\$5.25	365	\$1,917
1/1/2060	12/31/2060	71.03	\$5.20	366	\$1,903
1/1/2061	12/31/2061	72.03	\$5.15	365	\$1,880
1/1/2062	12/31/2062	73.03	\$5.10	365	\$1,862
1/1/2063	12/31/2063	74.03	\$5.05	365	\$1,843
1/1/2064	12/31/2064	75.03	\$5.00	366	\$1,831
1/1/2065	12/31/2065	76.03	\$4.22	365	\$1,540
1/1/2066	12/31/2066	77.03	\$4.18	365	\$1,525
1/1/2067	10/24/2067	77.84	\$4.14	297	\$1,229
Total Lost Household Services			<u>\$4.11</u>		
Days				19,578	
Loss Household Services Per Day					<u>\$80,429</u>

#### SECTION 8: PRESENT VALUE AND DISCOUNT RATES:

- To estimate the lump-sum worth of future economic losses, the projected stream of future earnings, expressed in future dollars, must be converted to a lump-sum amount in today's dollars. This is called present value.
- The present value of any given future amount is equal to the amount of money which must be invested today at a certain interest rate in order to yield that given value in the future.
- The present value calculation in cases involving lost future earnings requires a projection of future earnings and a discount rate for each period considered.
- Future earnings are projected based on current earnings escalated each year by a wage growth rate.
- This stream of future earnings is then converted to present value using the appropriate discount rate.
- Inflation is the primary component in both wage growth rates and discount rate equations:

Discount Rate = Inflation + Pure Rate of Interest + Risk Premiums

Wage Growth Rates = Inflation + Real Growth In Wages

- Any long-term change in the rate of inflation will be reflected in a corresponding change in both the discount rate and the wage growth rate.
- Removing inflation from both equations isolates the critical relationship between real growth in wages and the pure rate of interest plus risk premium.

#### Discount Rate:

- A wide variety of interest rates are available, depending upon the type of investment and the level of risk involved.
- The injured party is entitled to a risk-free stream of future earnings to replace lost wages.
- The appropriate discount rate should not require special skill or expertise, for where this is necessary part of the return is earned by the investor and not the investment.
- The discount rate (interest rate) should not reflect the market premium for investors who are willing to accept some risk of default.
- The present-value amount to replace lost earnings should be placed in a safe investment offering a no-risk premium.

- The instrument closest to the ideal of a risk-free investment is a three-month U.S. Treasury Bill. Its interest rate includes minimum-risk premiums for default and unexpected inflation.
- Longer-term treasury bills have a risk premium for unanticipated inflation included in their interest rate. A 10-year or 30-year treasury bill has greater uncertainty (risk) of inflation than does a three-month treasury bill.
- The pure rate of interest can be calculated by subtracting the actual rate of inflation from the average historical yield on three-month U.S. Treasury Bills.
- For two reasons, the appropriate period to measure the pure rate of interest is from 1952 to the present.
- Interest rates prior to 1952 were set by the U.S. Treasury. In March 1951, the U.S. Treasury agreed to allow the Federal Reserve Board to pursue a separate monetary policy.
- Since 1952, Treasury bill interest rates have been determined by a free-market auction process.
- The second reason for choosing the period beginning in 1952 involves the relationship of interest rates and the business cycle.
- The U.S. economy displays a cyclical pattern between two business phases often called expansion and contraction, or growth and recession. A full swing from expansion to contraction is called a business cycle. Interest rates vary according to the phase in the business cycle.
- A short-term analysis of interest rates will include a limited number of complete business cycles. The measurement of the pure interest rate would be distorted depending on what point during the cycle interest rates were measured.
- According to the National Bureau of Economic Research, since 1952, the U.S. economy has experienced nine complete economic cycles, a broad perspective on interest rates.
- Since 1952, the average relationship between three-month treasury bills and inflation indicates a 1.00% "pure" rate of interest over and above the average inflation rate. The "pure" rate of inflation is also referred to as the "time value of money."
- Refer to Table 7 for additional information.
- The discount rate for future damages is equal to the long-term inflation rate of 2.20% plus the 1.00% time value of money, or 3.20%. All future costs were discounted to present value at a discount rate of 3.20%.

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Table 7

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- As a point of reference, the current 10-year U.S. Treasury Bills yield 1.68% and the 30-year bills yield 3.01% as of November 19, 2015. These Treasury Bill yields vary by the hour and are relevant only as a benchmark to the discount rate. A lower discount rate increases the net damage amount.
- Refer to Table 8 for additional information.

TABLE 8  
 Discount Rate

**DISCOUNT RATE**

Long-Term Inflation Rate June 2015 Source: Federal Reserve, Livingston Survey and Economic Outlook	2.20%
Average Treasury Bills Less Inflation 1/1/1952 to 12/31/2014 (63 year average)	1.00%
<b>Discount Rate</b>	<b><u>3.20%</u></b>
5 Year U.S. T-Bill Yields Source: Bloomberg Financials 11/19/2015	1.68%
10 Year U.S. T-Bill Yields Source: Bloomberg Financials 11/19/2015	2.25%
Current 30 Year U.S. T-Bill Yields Source: Bloomberg Financials 11/19/2015	3.01%

**APPENDICES:**

- Appendix A: Curriculum Vitae for Gary Couillard, CPA
- Appendix B: Compensation Statement
- Appendix C: Testimony History
- Appendix D: Supporting Documents

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## CERTIFICATION

I certify that to the best of my knowledge and belief:

- The statements of fact contained in this report are true and correct.
- The reported analyses and opinions are limited only by the reported assumptions and are my personal, unbiased professional conclusions.
- My analysis, opinions and conclusions were developed, and this report has been prepared, in accordance with the American Institute of Certified Public Accountants' (AICPA) Standards for Consulting Services.
- I have no present or prospective interest in the property or companies that are the subject of this report, and I have no personal interest or bias with respect to the parties involved.
- This loss appraisal was independently and objectively prepared with the standard methodology, factors and inputs that I regularly rely upon in measuring economic losses. This approach is supported by professional surveys, publications and other research material generally relied upon.
- My compensation is not contingent on an action or event resulting from the analyses, opinions or conclusions in this report.

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Gary R. Couillard, CPA