

## **East Alaska and West Alaska gold companies: the financial statement impact of accounting choices**

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### **ABSTRACT**

In this case twin sisters start identical companies as buyers of gold from small gold mines in Alaska which they then resell to companies around the world for a profit. In deciding how to account for their businesses, each sister makes different choices in accounting for bad debt expense and inventory. They also make different estimates (useful lives and salvage values) related to long term assets. The goal is to account for each company in the first year of operations and evaluate their financial results to determine which company would be a better investment opportunity. A self-grading Excel template is available to assist in the completion of this case.

**Keywords:** Accounting choice, Pathways Commission, Inventory, Accounts Receivable, Depreciation



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## INTRODUCTION

Lily and Addison Sheppard are twin sisters who grew up in Anchorage, Alaska. After spending much of their post-college years as consultants for various businesses, they both decided that they wanted to go back to Alaska and start their own businesses. They have always loved the gold rush stories their grandparents told them when they were young and wanted to work in the gold industry. Originally they considered going into business together, but realized that they often could not agree on business decisions. An old family friend had a business (The Alaska Gold Company) that purchased raw gold from the smaller gold mines in eastern and western Alaska and packaged the gold for sale to businesses around the world. This family friend, Kelsey Thorpe, was willing to sell the business intangible assets (trademarks, customer lists, gold mine supplier lists) to the twins for \$1,200,000 and the business equipment for \$4,000,000. The twins decided that they would then split the company into two distinct companies: East Alaska Gold (to be owned and operated by Lily) and West Alaska Gold (to be owned and operated by Addison). Each company would get half of the equipment and own half of the intangible assets, contributed by the sisters to the companies (in exchange for no par common stock). Both Lily and Addison were each able to contribute \$1,000,000 of their own cash into their businesses and each were able to obtain a \$4,000,000 loan (Long-Term Note Payable) from the Bank of Alaska. The loans were made to each sister on January 1, 2017 and require interest payments each December 31, with the first interest payment due on December 31, 2017. The interest rate on these loans is 5%. They expect to begin making principal payments on the loans beginning in 2018.

The gold mining season in Alaska runs from May through September. During this time each company had gold purchasing agreements with their supplier gold mines to acquire a specific quantity of gold (in ounces) at a price that was 15% below the spot (i.e., current market) gold price. These smaller gold mines were willing to accept this deal because this allowed them to easily convert their gold into cash. The twins' companies were able to sell their gold (often granular gold or gold dust) at a 12% premium over the spot gold price. This excess fee was to cover shipping and packaging costs. The challenge for the twins was to be able to estimate annual gold demand, given that they only have five months to purchase gold which must cover the demand for a year. The twins work together to determine demand and to set purchasing targets. (Their companies are too small to impact the market price, so illegal collusion is not an issue).

## FIRST YEAR OF OPERATIONS 2017

Though the companies began operations in January 2017, they did not start purchasing gold (or selling gold) until May 2017. Based on the demand expected from their customers, each company decided to purchase 1,475 ounces of gold per month (May through September). They estimated demand to be 500 ounces of gold per month for each company (May through December). Spot gold prices per ounce for the time period from May 2017 through December 2017 are as follows (note that these are prices are to be used to value gold purchase and sales and are not the gold price as of the end of the month):

May	\$	1,458
June	\$	1,405
July	\$	1,240

August	\$	1,318
September	\$	1,390
October	\$	1,290
November	\$	1,308
December	\$	1,230

At the end of 2017, each company had an outstanding balance of accounts receivable of \$600,000. Of these balances, 60% was current, 20% was less than 30 days past due, 10% was between 30-60 days past due, and the remaining 10% was more than 60 days past due.

Each company incurred the following General, Selling, and Administrative Costs in 2017:

Salaries	\$	200,000
Marketing	\$	50,000
Packaging	\$	20,000
Shipping	\$	30,000
Insurance	\$	105,000
Rent	\$	12,000
Supplies	\$	30,000
Utilities	\$	8,000
Security	\$	25,000

Each company paid each of these expenses with cash. All supplies purchased were used. Income taxes for East Alaska Gold are \$39,090. Income taxes for West Alaska Gold are \$114,919 (the difference is primarily due to how each company accounts for its inventory). Each company will pay its income taxes three months after year end. Each company will declare and pay a \$50,000 cash dividend.

### ACCOUNTING CHOICES

Lily, the owner of East Alaska Gold, believes that the intangible assets should be amortized over an eight year time period. In addition, all equipment is considered to have a useful life of eight years with no salvage value. The company accounts for its inventory using the FIFO inventory costing assumption (periodic method). The company estimates its bad debt expense using the aging method. It assumes that collections of the existing receivables based on the aging will be as follows:

<u>Age</u>	<u>Expected Collections</u>
Current	98%
0-30 days past due	95%
30-60 days past due	80%
Over 60 days past due	40%

Addison, the owner of West Alaska Gold, believes that the intangible assets should be amortized over a sixteen year time period. In addition, all equipment is considered to have a sixteen year useful life with a \$400,000 salvage value. The company accounts for its inventory

using the LIFO inventory costing assumption (periodic method). The company estimates its bad debt expense using the percentage of credit sales method. All sales are on credit and the company estimates that 1% of credit sales will be uncollectible. For the purposes of evaluating whether an inventory lower of cost or market (LCM) adjusting entry is necessary, the replacement cost (spot market price) of an ounce of gold at December 31, 2017 was \$1,195.

**REQUIRED:**

1. Prepare an income statement for each company for 2017.
2. Prepare a balance sheet for each company for 2017.
3. Calculate the following ratios for each company for each year: Current Ratio, Profit Margin, Gross Margin Percentage, and Return on Assets (use ending Total Assets rather than Average Assets).
4. If you were looking to invest your money, which company do you believe would be a better investment? Explain your answer in a minimum of ½ page commentary to be submitted to your instructor at the beginning of class on the date it is due as determined by your instructor.



## EAST ALASKA AND WEST ALASKA GOLD COMPANIES TEACHING NOTE

### EDUCATIONAL OBJECTIVE

This case was developed as part of our department's intent to implement the Pathways Commission's Vision Model into our Principles of Financial Accounting course. The goal with this case is to highlight the impact that accounting choices and estimates can make on a company's financial statements. While we discuss earnings management and how it might be accomplished by companies during the semester, being able to see first-hand how financial statements can be impacted by accounting choices and estimates for companies whose operations are identical seems to make a difference in our students being able to visualize what we mean by earnings management. This case focuses on three financial statement areas where accountant's judgments can make a dramatic impact on the financial statements: accounting for accounts receivable, inventory and long-term assets. These chapters are taught sequentially which allows this case to be assigned such that students can use it as a review for the exam on these areas. The case does not list accounting transactions to record, but describes in summary form the operations of the companies in their first year of operations. In this way, we challenge our students to be able to interpret whether a transaction has occurred and how it should be recorded. Further, students are challenged to remember all of the necessary adjusting journal entries without being alerted to do so. Options on implementation are discussed in more detail under the implementation guidelines.

Many cases examining accounting choice (often contextualized as earnings management) exist in the literature, though most focus on one particular accounting topic and are often designed for intermediate levels rather than the introductory level.<sup>1</sup> Of the case geared for introductory students<sup>2</sup>, several take an integrative approach (rather than focusing on one topic) similar to the approach I have taken in this case (Phillips and Mackintosh, 2011; Wilcox and Claiborne, 2011; Johnstone, Mackintosh, and Phillips, 2013; and Phillips, 2015). Of these, Wilcox and Claiborne, 2011, most closely resembles this case as both examine the impact of different accounting choices on nearly identical companies. However, the breadth of accounting issues discussed in Wilcox and Claiborne spans the entire semester and may be best introduced as a comprehensive case near the end of the semester. My case focuses on three topics covered sequentially in our textbook (Libby, Libby, and Hodge, 2017) and included on our second (of

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<sup>1</sup> For example, there are cases examining bonds (Mohrman, 1999), security investments (Depree and Grant, 1999), inventory (Gujarathi and Kohlbeck, 2007), accounts receivable/allowance for doubtful accounts (Gujarathi and Mcquade, 2009), depreciation (Mohrman, 2009 and Bujaki and Durocher, 2014), unearned revenue (Gujarathi, 2012), research and development costs (Hughes, Beaudoin, and Boedeker, 2013), and customer acquisition costs (Weihrich and Hyatt, 2005). A number of cases also have looked at multiple topics such as Sack (2002) who incorporated multiple issues including the allowance for doubtful accounts, inventory valuation, depreciation contingency provisions and off-book entities. This case is best suited for students at or beyond the intermediate level.

<sup>2</sup> The search for similar cases used the Accounting Case Search website described in Meyer and Meyer (2014).



three) semester exams. My case also can be implemented with an associated self-grading Excel template, which is described next.

### **SELF-GRADING TEMPLATE**

To assist our students, I created a self-grading Excel template. While the case can be used without the template, I have found that the immediate feedback students' receive supports the learning objectives. In using this case, I am not attempting to create variation in determining final grades, but to help students learn the concepts (as such, I expect my students to continue to work at it until they have earned all the points). The template workbook is comprised of eight Excel worksheets<sup>3</sup>, each focused on one part of the case. The first worksheet walks students through the calculation of Sales and Gold (Inventory) Purchases given the designated markup and markdown, respectively. In addition, the worksheet presents information in such a way to easily determine the cost of goods sold and the cost of ending inventory for each company. Students are asked to calculate the replacement cost of inventory with the hope that they will recognize the need to evaluate whether a Lower of Cost or Market adjustment will be necessary. Once everything on this worksheet is correct, a message at the bottom of the worksheet indicates "There are No Errors on this Sheet"; prior to this, the message states "There is AT LEAST ONE ERROR on this sheet."

The second and third worksheets provide t-accounts for students to record all of the transactions and adjustments for the companies. Note that these t-accounts are not graded. However, it is expected that values for Sales, Inventory and Cost of Goods Sold will be linked from the first worksheet. The fourth and fifth worksheets provide the format of the trial balances for each company. These cells are all graded and it is expected that students will link from their t-accounts to the trial balances. Like the first worksheet, once all of the account values are correct on the trial balances a message at the bottom of the worksheet indicates "There are No ERRORS on this sheet." The sixth worksheet provides the format for the income statements for the companies, which is also graded. Again, it is expected that students will link from the trial balances to the income statements. The seventh worksheet provides the format for the balance sheets for the companies, which is graded. Once the balance sheets are correct a message at the bottom of the sheet indicates "There are NO ERRORS on this sheet." Finally, the eighth worksheet provides space for students to calculate four ratios: Current Ratio, Profit Margin, Gross Margin Percentage, and the Return on Assets. This sheet is similarly graded.

The final worksheet is the Grade worksheet which displays the grade on the assignment and is home of the grading formulas. Portions of all the worksheets are locked to make sure students do not change the data or layout inadvertently. The grading formulas are hidden on the Grade worksheet. However, if students open the Excel workbook in either Google Sheets or Apple Numbers, the cell protections are lost as neither program supports Microsoft Excel's workbook security. To mitigate students from simply using the grading formulas to determine the solutions (which they can view if they open the file in Google Sheets or Apple Numbers), the grading formulas have been jumbled in a random order and incorrect solutions are inserted as a distraction.

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<sup>3</sup> I have included two additional Honor Code sheets (the group honor code wording and the individual honor code wording) which I require my students to complete. I have used similar wording when using Excel templates at a university that did not have a formal honor code (the sheet was referred to as an academic honesty pledge).

## EVIDENCE OF CASE EFFICACY

As coordinator of the principles of accounting courses I mandated that all instructors assign the case to their students beginning in the Fall 2015 where we had approximately 700 students complete the case. This continued in Fall 2016 where we had approximately 650 students complete the case. In the Fall 2017 I no longer made the case required for all sections, though half of the instructors required the case covering approximately 340 of the 670 students taking the principles course. In the Fall 2017 I distributed a case evaluation form for students to complete, with 101 responses received. A summary of their responses is provided in Table 1 (Appendix). Student evaluated each question based on a 7-point likert scale with 7 meaning strongly agrees to the statement and 1 meaning strongly disagrees with statement. See table one in the Appendix.

The first question relates to the difficulty of the case. On the seven point scale, students rated the difficulty on average as 5.47 (median rating was 5). Even though students completed the case in groups and were using a self-grading template, the case was sufficiently challenging for my students. The next four questions relate to the ability of the case to help students improve their understanding of various accounting issues including, the differences between LIFO and FIFO, Lower of Cost or Market adjustments, using different useful lives to depreciate and amortize long-lived assets, and differences between the percentage of sales and the aging method in determining bad debt expense, respectively. The rating range was between 5.43 and 5.78, with the median score range between 5 and 6, out of 7. These ratings suggest that the case provides students with a mechanism to help them understand these challenging accounting topics.

Questions 6 through 9 ask students to evaluate whether they saw that the case was able to assist them in understanding better the impact of accounting choices on the financial statements and how the financial statements are used. The students rated the case 6.37 (median 7) out of 7 on its ability to help them understand that financial ratios can be significantly impacted by the accounting choices made. Similarly, students rated the case 6.51 (median 7) out of 7 on its ability to help them understand that a company's financial statements can be significantly impacted by accounting choices made. Students rated the case 6.24 (median 7) out of 7 on its ability to help them see that investment decisions should go beyond simply looking at a company's financial statements and ratios. Students rated the case 6.55 (median 7) out of 7 on its ability to help them see that nearly identical companies can show significantly different financial results simply as a consequence of the accounting choices made.

The last three questions (questions 10-12) asked students to evaluate the value of the self-grading templates. Their responses suggest that the self-grading templates helped them complete the case faster (6.66 average rating with median of 7 out of 7) and more accurately (6.80 average rating with a median of 7 out of 7). In addition, students felt that the self-grading templates provided immediate feedback that helped them understand whether they were doing the case correctly (6.86 average rating with a median of 7 out of 7).

## IMPLEMENTATION GUIDANCE

The case is used principally in our introductory principles of financial accounting course, though I have also used it as part of the final exam in my MBA financial accounting course. The case is assigned to coincide with the second exam which covers classified financial statements,

accounting for accounts receivable (and bad debt expense), accounting for inventory, and accounting for long-lived assets. The case was written, in part, to be a comprehensive review of the material to be tested on the second exam. Students in the introductory course complete the numerical portion of the case (using the self-grading template) in groups of three students. The written portion of the case, which is not graded on the self-graded template, is handed in at the final class prior to the exam. On that class day we discuss the case as part of the review for the upcoming exam.

The MBA financial accounting course I teach is part of our summer intensive foundational courses for our one-year MBA program. Because our one-year MBAs are expected to have undergraduate business degrees, the course focuses on areas of significant judgment and identifying earnings management. As part of their final exam, I have these students individually complete the case prior to the in-class portion of the final exam. One problem on the in-class portion of the final exam requires students to calculate the cash flow from operating activities for both companies (the income statements and balance sheets of the companies are provided along with selected ratios) and ask them to identify which of the two companies they would rather invest in with their own money and to explain the rationale for their choice.

There are two additional alternative methods one might choose to implement this case which would make it easier for the students. Similar to Claiborne and Wilcox (2011) instructors could provide a list of journal entries that need to be made (see Table 2 Appendix).

As our students are mostly sophomores (and MBAs) at a highly selective private university, the case was made to challenge these students. With a more normal distribution of students, providing the list of journal entries may be a way to mitigate uncertainty some students might feel. The second alternative method of implementing the case would be to use a second self-grading template I developed. In this template, an additional sheet is provided which guides students to prepare all of the necessary journal entries. Spaces are provided for each debit and credit (account and amount) and each line item is graded. In this way, students can see their grade increase as they get parts of the journal entry correct (account and amount). Similar to the other self-graded sheets, once all journal entries of both companies are correct, the sheet will indicate that there are no errors on the sheet.

When using the Excel self-grading templates, it is expected that students are linking cells rather than retyping values. Often students will ask why their values are not being graded as correctly when they are sure their values are correct. The cause of this is that students are retyping values and not typing the entire value (missing pennies). The easy fix is to reinforce the need to exploit the linking features of Excel when using the templates.

## **ACCESS TO SOLUTIONS AND EXCEL TEMPLATES**

Access to recommended solutions and self-grading Excel templates are available by contacting the author.



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**Table 1**  
**Summary of Student Evaluations of Case**

	<b>Question</b>	<b>Average Response</b>	<b>Median Response</b>	<b>Standard Deviation</b>
1.	The Alaska Gold Company case was challenging.	5.47	5	0.9334
2.	The Alaska Gold Company case helped me to better understand the differences between LIFO and FIFO Inventory costing.	5.66	6	1.0980
3.	The Alaska Gold Company case helped me to better understand when a Lower of Cost or Market adjustment is necessary.	5.43	5	1.1167
4.	The Alaska Gold Company case helped me to better understand the impact on depreciation of using different estimates for useful lives and salvage values on long-term assets.	5.78	6	1.0891
5.	The Alaska Gold Company case helped me to better understand the differences between using the aging method and the percentage of sales method in estimating bad debt expense.	5.71	6	1.0278
6.	The Alaska Gold Company case helped me to better understand that financial ratios can be significantly impacted by the accounting choices made.	6.37	7	0.8837
7.	The Alaska Gold Company case helped me to better understand that a company's financial statements can be significantly impacted by the accounting choices made.	6.51	7	0.7474
8.	The Alaska Gold Company case helped me to better understand that investment decisions should go beyond simply looking at a company's financial statements and financial ratios.	6.24	7	1.0359
9.	The Alaska Gold Company case helped me to better understand that nearly identical companies can show dramatically different financial results simply as a consequence of the accounting choices made.	6.55	7	0.7437
10.	Having a self-grading Excel template helped me complete the case quicker than if I did not have the self-grading template.	6.66	7	0.9014
11.	Having a self-grading Excel template helped me complete the case more accurately than if I did not have the self-grading template.	6.80	7	0.5860

12. Having the immediate feedback from the self-grading Excel template allowed me to understand what I was doing correctly and incorrectly as I was completing the case.	6.86	7	0.6966
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All responses were on a 7 point likert scale with 7 meaning strongly agree and 1 meaning strongly disagree. A total of 101 student responses were received.

**Table 2**  
**List of Journal Entries**

1. Initial investment
2. 5% note payable from the Bank of Alaska
3. Summary Purchases of Inventory (All purchases of Gold for the year in one entry)
4. Summary Sales transaction (All sales on account for the year in one entry)
5. Summary of Cash collections of Accounts Receivable (All collections for the year in one entry)
6. General, Selling and Administrative Expenses for the year
7. Income tax expense
8. Dividends declared and paid
9. Interest expense on note from the Bank of Alaska
10. Amortization of Intangible Assets
11. Depreciation of Equipment
12. Summary Cost of Goods Sold entry (Cost of all sales for the year)
13. Bad Debt Expense adjusting entry
14. Lower of cost or market adjusting entry (if necessary)