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SPIRE CORP
Form 10-Q
August 14, 2009

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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-Q

- Quarterly Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 For the quarterly period ended June 30, 2009; or
- Transition Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 For the transition period from _____ to _____

Commission file number: 0-12742

SPIRE CORPORATION

(Exact name of registrant as specified in its charter)

MASSACHUSETTS

04-2457335

(State or other jurisdiction of
incorporation or organization)

(I.R.S. Employer
Identification Number)

ONE PATRIOTS PARK, BEDFORD, MASSACHUSETTS

01730-2396

(Address of principal executive offices)

(Zip Code)

781-275-6000

(Registrant's telephone number including area code)

Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports); and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (ss.232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer or a smaller reporting company. See definition of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

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Large accelerated filer Accelerated filer
Non-accelerated filer Smaller reporting company
(Do not check if a smaller reporting company)

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes No

The number of shares of the registrant's common stock outstanding as of August 10, 2009 was 8,334,688.

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PART I FINANCIAL INFORMATION

ITEM 1. UNAUDITED CONDENSED CONSOLIDATED FINANCIAL STATEMENTS

SPIRE CORPORATION AND SUBSIDIARIES
UNAUDITED CONDENSED CONSOLIDATED BALANCE SHEETS
(IN THOUSANDS, EXCEPT SHARE AMOUNTS)

| | June 30, 2009 | Dec |
|---|------------------|-------|
| | ----- | ----- |
| ASSETS | | |
| Current assets | | |
| ----- | | |
| Cash and cash equivalents | \$ 3,463 | \$ |
| Restricted cash - current portion | 1,542 | |
| | ----- | ----- |
| | 5,005 | |
| Accounts receivable - trade, net | 5,464 | |
| Inventories, net | 16,955 | |
| Deferred cost of goods sold | 19,429 | |
| Deposits on equipment for inventory | 2,191 | |
| Prepaid expenses and other current assets | 529 | |
| Current assets of discontinued operations and assets held for sale | 1,417 | |
| | ----- | ----- |
| Total current assets | 50,990 | |
| Property and equipment, net | 5,904 | |
| Intangible and other assets, net | 752 | |
| Available-for-sale investments, at quoted market value (cost of \$1,658 and \$1,859 at June 30, 2009 and December 31, 2008, respectively) | 1,636 | |
| Equity investment in joint venture | 450 | |
| Deposit - related party | 300 | |
| Non-current assets of discontinued operations and assets held for sale | 368 | |
| | ----- | ----- |
| Total other assets | 3,506 | |
| | ----- | ----- |
| Total assets | \$ 60,400 | \$ |
| | ===== | ===== |
| LIABILITIES AND STOCKHOLDERS' EQUITY | | |
| Current liabilities | | |
| ----- | | |
| Current portion of equipment and revolving line of credit | \$ 2,667 | \$ |
| Accounts payable | 6,059 | |
| Accrued liabilities | 6,901 | |
| Current portion of advances on contracts in progress | 33,613 | |
| Liabilities of discontinued operations | 883 | |
| | ----- | ----- |
| Total current liabilities | 50,123 | |
| Long-term portion of equipment line of credit | -- | |
| Long-term portion of advances on contracts in progress | 6 | |
| Deferred compensation | 1,636 | |
| Other long-term liabilities | 448 | |
| | ----- | ----- |

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| | | |
|--|-----------|-------|
| Total long-term liabilities | 2,090 | |
| | ----- | ----- |
| Total liabilities | 52,213 | |
| | ----- | ----- |
| Stockholders' equity | | |
| Common stock, \$0.01 par value; 20,000,000 shares authorized; 8,334,688 and 8,330,688 shares issued and outstanding on June 30, 2009 and December 31, 2008, respectively | 83 | |
| Additional paid-in capital | 21,124 | |
| Accumulated deficit | (12,998) | |
| Accumulated other comprehensive loss | (22) | |
| | ----- | ----- |
| Total stockholders' equity | 8,187 | |
| | ----- | ----- |
| Total liabilities and stockholders' equity | \$ 60,400 | \$ |
| | ===== | ===== |

See accompanying notes to unaudited condensed consolidated financial statements.

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SPIRE CORPORATION AND SUBSIDIARIES
UNAUDITED CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS
(IN THOUSANDS, EXCEPT SHARE AND PER SHARE AMOUNTS)

| | THREE MONTHS ENDED JUNE 30, | |
|--|-----------------------------|-----------|
| | 2009 | 2008 |
| | ----- | ----- |
| Net sales and revenues | | |
| ----- | | |
| Sales of goods | \$ 19,028 | \$ 12,579 |
| Contract research, service and license revenues | 3,145 | 3,375 |
| | ----- | ----- |
| Total net sales and revenues | 22,173 | 15,954 |
| | ----- | ----- |
| Costs of sales and revenues | | |
| ----- | | |
| Cost of goods sold | 18,127 | 8,364 |
| Cost of contract research, services and licenses | 2,269 | 2,342 |
| | ----- | ----- |
| Total cost of sales and revenues | 20,396 | 10,706 |
| | ----- | ----- |
| Gross margin | 1,777 | 5,248 |
| | ----- | ----- |
| Operating expenses | | |
| ----- | | |
| Selling, general and administrative expenses | 5,182 | 4,603 |
| Internal research and development expenses | 251 | 171 |
| | ----- | ----- |
| Total operating expenses | 5,433 | 4,774 |
| | ----- | ----- |
| Gains on termination of contracts | 200 | -- |
| | ----- | ----- |
| Income (loss) from continuing operations | (3,456) | 474 |
| ----- | | |

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| | | |
|---|------------|-----------|
| Interest expense, net | (76) | (48) |
| Loss on equity investment in joint venture | (743) | (234) |
| Foreign exchange (loss) gain | (70) | (294) |
| | ----- | ----- |
| Total other expense, net | (889) | (576) |
| | ----- | ----- |
| Loss from continuing operations before income tax provision | (4,345) | (102) |
| | ----- | ----- |
| Income tax provision | (14) | -- |
| | ----- | ----- |
| Loss from continuing operations | (4,359) | (102) |
| | ----- | ----- |
| Loss from discontinued operations, net of taxes | (201) | (167) |
| | ----- | ----- |
| Net loss | \$ (4,560) | \$ (269) |
| | ===== | ===== |
| Basic and diluted loss per share: | | |
| From continuing operations after income taxes | \$ (0.52) | \$ (0.01) |
| From discontinued operations, net of taxes | (0.03) | (0.02) |
| | ----- | ----- |
| Loss per share - basic and diluted | \$ (0.55) | \$ (0.03) |
| | ===== | ===== |
| Weighted average number of common and common equivalent shares outstanding - basic and diluted | 8,334,688 | 8,330,029 |
| | ===== | ===== |

See accompanying notes to unaudited condensed consolidated financial statements.

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SPIRE CORPORATION AND SUBSIDIARIES
UNAUDITED CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(IN THOUSANDS)

| | SIX MONTHS |
|--|------------|
| | ----- |
| | 2009 |
| | ----- |
| Cash flows from operating activities: | |
| | ----- |
| Net loss | \$ (6,08) |
| Less: Net loss from discontinued operations | (39) |
| | ----- |
| Net loss from continuing operations | (5,69) |
| Adjustments to reconcile net loss to net cash provided by (used in) operating activities: | |
| Depreciation and amortization | 71 |
| Loss on equity investment in joint venture | 1,02 |
| Deferred compensation | 40 |
| Stock-based compensation | 32 |
| Provision for accounts receivable reserves | (2) |
| Provision for inventory reserve | 14 |
| Changes in assets and liabilities: | |
| Restricted cash | 2,62 |
| Accounts receivable | 2,66 |

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| | |
|--|---------|
| Inventories | (24) |
| Deferred cost of goods sold | (2,34) |
| Deposits, prepaid expenses and other current assets | 1,12 |
| Accounts payable, accrued liabilities and other liabilities | 12 |
| Advances on contracts in progress | (2,03) |
| <hr/> | |
| Net cash (used in) provided by operating activities of continuing operations | (1,20) |
| Net cash provided by operating activities of discontinued operations | 8 |
| <hr/> | |
| Net cash (used in) provided by operating activities | (1,11) |
| | |
| Cash flows from investing activities: | |
| <hr/> | |
| Purchase of property and equipment | (52) |
| Increase in intangible and other assets | (28) |
| <hr/> | |
| Net cash used in investing activities of continuing operations | (81) |
| Net cash used in investing activities of discontinued operations | (1) |
| <hr/> | |
| Net cash used in investing activities | (83) |
| | |
| Cash flows from financing activities: | |
| <hr/> | |
| Principal payments on capital lease obligations - related parties | - |
| Principal payments on equipment line of credit | (58) |
| Proceeds from exercise of stock options | 2 |
| <hr/> | |
| Net cash used in financing activities | (55) |
| <hr/> | |
| Net (decrease) increase in cash and cash equivalents | (2,50) |
| Cash and cash equivalents, beginning of period | 5,97 |
| <hr/> | |
| Cash and cash equivalents, end of period | \$ 3,46 |
| <hr/> | |
| Supplemental disclosures of cash flow information: | |
| <hr/> | |
| Interest paid | \$ 14 |
| <hr/> | |
| Interest paid - related party | \$ - |
| <hr/> | |
| Interest received | \$ 1 |
| <hr/> | |
| Income taxes paid | \$ 4 |
| <hr/> | |

See accompanying notes to unaudited condensed consolidated financial statements.

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SPIRE CORPORATION AND SUBSIDIARIES
NOTES TO UNAUDITED CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
JUNE 30, 2009 AND 2008

1. DESCRIPTION OF THE BUSINESS

Spire Corporation ("Spire" or the "Company") develops, manufactures and

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markets highly-engineered products and services in three principal business areas: (i) capital equipment for the PV solar industry, (ii) biomedical and (iii) optoelectronics, generally bringing to bear expertise in materials technologies, surface science and thin films across all three business areas, discussed below.

In the PV solar area, the Company develops, manufactures and markets specialized equipment for the production of terrestrial photovoltaic modules from solar cells. The Company's equipment has been installed in approximately 200 factories in 50 countries.

In the biomedical area, the Company provides value-added surface treatments to manufacturers of orthopedic and other medical devices that enhance the durability, antimicrobial characteristics or other material characteristics of their products it also develops and markets coated and uncoated hemodialysis catheters and related devices for the treatment of chronic kidney disease (referred to herein as the Company's "medical products business unit"); and performs sponsored research programs into practical applications of advanced biomedical and biophotonic technologies. The results and assets of the Company's medical products business unit are being presented herein as discontinued operations and assets held for sale. See Note 14.

In the optoelectronics area, the Company provides custom compound semiconductor foundry and fabrication services on a merchant basis to customers involved in biomedical/biophotonic instruments, telecommunications and defense applications. Services include compound semiconductor wafer growth, other thin film processes and related device processing and fabrication services. The Company also provides materials testing services and performs services in support of sponsored research into practical applications of optoelectronic technologies.

Operating results will depend upon revenue growth and product mix, as well as the timing of shipments of higher priced products from the Company's solar equipment line and delivery of solar systems. Export sales, which amounted to 64% of net sales and revenues for the quarter ending June 30, 2009, continue to constitute a significant portion of the Company's net sales and revenues.

The Company has incurred operating losses before non-recurring gains in 2009 and 2008. Loss from continuing operations, before gains on termination of contracts, was \$3.7 million and \$6.4 million for the three and six months ended June 30, 2009 and \$267 thousand for the year ended December 31, 2008. For the six months ended June 30, 2009 and 2008, the cash (loss) gain (loss/gain from continuing operations less gains on termination of contract plus or minus non-cash adjustments) was \$(3.6) million and \$2.3 million. The gain in 2008 was primarily attributed to margins from the Company's solar business unit. As of June 30, 2009, the Company had unrestricted cash and cash equivalents of \$3.5 million compared to unrestricted cash and cash equivalents of \$6.0 million as of December 31, 2008. The Company has numerous options on how to fund future operational losses or working capital needs, including but not limited to sales of equity, bank debt provided it renegotiates its financial covenants or the sale or license of assets and technology, as it has done in the past; however, there are no assurances that the Company will be able to sell equity, obtain bank debt, or sell or license assets or technology on a timely basis and at appropriate values. The Company has developed several plans including cost containment efforts and outside financing to offset a decline in business due to a further deepening of the current global economic recession. As a result, the Company believes it has sufficient resources to finance its current operations through at least June 30, 2010.

2. INTERIM FINANCIAL STATEMENTS

The accompanying unaudited condensed consolidated financial statements

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have been prepared in accordance with the rules and regulations of the Securities and Exchange Commission regarding interim financial reporting. Certain information and footnote disclosures normally included in consolidated financial statements prepared in accordance with accounting principles generally accepted in the United States of America have been condensed or omitted in accordance with such rules and regulations. These unaudited condensed consolidated financial statements should be read in conjunction with the annual audited consolidated financial statements and notes thereto for the year ended December 31, 2008, included in the Company's Annual Report on Form 10-K filed with the Securities and Exchange Commission.

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In the opinion of management, the accompanying unaudited, condensed consolidated financial statements contain all adjustments necessary to fairly present the Company's financial position as of June 30, 2009 and December 31, 2008 and the results of its operations and cash flows for the three and six months ended June 30, 2009 and 2008. The results of operations for the three and six months ended June 30, 2009 are not necessarily indicative of the results to be expected for the fiscal year ending December 31, 2009. The condensed consolidated balance sheet as of December 31, 2008 has been derived from audited financial statements as of that date. During the second quarter of 2008, the Company began pursuing an exclusive sales process of our medical product group (the "Medical Unit"). Accordingly, the results of the Medical Unit are being presented herein as discontinued operations and assets held for sale. See Note 14.

The significant accounting policies followed by the Company are set forth in Note 2 to the Company's consolidated financial statements in its Annual Report on Form 10-K for the year ended December 31, 2008.

New Accounting Pronouncements

Effective January 1, 2008, the Company adopted SFAS No. 157, FAIR VALUE MEASUREMENTS ("FAS 157") relative to financial assets and liabilities. In February 2008, the FASB issued FASB Staff Position No. FAS 157-2, EFFECTIVE DATE OF FASB STATEMENT NO. 157, which provides a one year deferral of the effective date of FAS 157 for non-financial assets and non-financial liabilities, except those that are recognized or disclosed in the financial statements at fair value at least annually. Effective January 1, 2009, the Company adopted the provisions of FAS 157 with respect to its non-financial assets and non-financial liabilities.

In December 2007, the FASB issued SFAS No. 160 ("FAS 160"), NON-CONTROLLING INTEREST IN CONSOLIDATED FINANCIAL STATEMENTS - AN AMENDMENT OF ARB NO. 151. FAS 160 requires that a non-controlling interest in a subsidiary (i.e. minority interest) be reported in the equity section of the balance sheet instead of being reported as a liability or in the mezzanine section between debt and equity. It also requires that the consolidated income statement include consolidated net income attributable to both the parent and non-controlling interest of a consolidated subsidiary. A disclosure must be made on the face of the consolidated income statement of the net income attributable to the parent and to the non-controlling interest. Also, regardless of whether the parent purchases additional ownership interest, sells a portion of its ownership interest in a subsidiary or the subsidiary participates in a transaction that changes the parent's ownership interest, as long as the parent retains controlling interest, the transaction is considered an equity transaction. FAS 160 is effective for annual periods beginning after December 15, 2008. The adoption of FAS 160 did not have an impact on the Company's financial position or results of operations.

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In March 2008, the FASB issued SFAS No. 161 ("FAS 161"), DISCLOSURES ABOUT DERIVATIVE INSTRUMENTS AND HEDGING ACTIVITIES--AN AMENDMENT OF FASB STATEMENT NO. 133. FAS 161 requires enhanced disclosures about an entity's derivative and hedging activities. Entities are required to provide enhanced disclosures about (a) how and why an entity uses derivative instruments, (b) how derivative instruments and related hedged items are accounted for under Statement No. 133 and its related interpretations, and (c) how derivative instruments and related hedged items affect an entity's financial position, financial performance, and cash flows. FAS 161 is effective for financial statements issued for fiscal years and interim periods beginning after November 15, 2008, with early application encouraged. FAS 161 encourages, but does not require, comparative disclosures for earlier periods at initial adoption. The adoption of FAS 161 did not have an impact on the Company's financial position or results of operations.

In June 2009, the FASB issued SFAS No. 168 ("FAS 168"), THE FASB ACCOUNTING STANDARDS CODIFICATION AND THE HIERARCHY OF GENERALLY ACCEPTED ACCOUNTING PRINCIPLES. FAS 168 will become the single source of authoritative nongovernmental U.S. generally accepted accounting principles ("GAAP"), superseding existing FASB, American Institute of Certified Public Accountants, Emerging Issues Task Force, and related accounting literature. FAS 168 reorganizes the thousands of GAAP pronouncements into roughly 90 accounting topics and displays them using a consistent structure. Also included is relevant Securities and Exchange Commission guidance organized using the same topical structure in separate sections. FAS 168 will be effective for financial statements issued for reporting periods that end after September 15, 2009. The adoption of FAS 168 will have an impact on the Company's financial statements disclosures since all future references to authoritative accounting literature will be referenced in accordance with FAS 168.

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3. ACCOUNTS RECEIVABLE/ADVANCES ON CONTRACTS IN PROGRESS

Net accounts receivable, trade consists of the following:

| (in thousands) | June 30, 2009 | December 31, 2008 |
|---------------------------------------|------------------|----------------------|
| | ----- | ----- |
| Amounts billed | \$ 5,223 | \$ 6,711 |
| Accrued revenue | 581 | 1,790 |
| | ----- | ----- |
| | 5,804 | 8,501 |
| Less: Allowance for doubtful accounts | (340) | (403) |
| | ----- | ----- |
| Net accounts receivable - trade | \$ 5,464 | \$ 8,098 |
| | ===== | ===== |
| Advances on contracts in progress | \$ 33,619 | \$ 35,658 |
| | ===== | ===== |

Accrued revenue represents revenues recognized on contracts for which billings have not been presented to customers as of the balance sheet date. These amounts are billed and generally collected within one year.

The Company maintains allowances for doubtful accounts for estimated losses resulting from the inability of its customers to pay amounts due. The Company actively pursues collection of past due receivables as the circumstances warrant. Customers are contacted to determine the status of payment and senior accounting and operations management are included in these efforts as is deemed necessary. A specific reserve will be established for past due accounts when it is probable that a loss has been incurred and the Company can reasonably

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estimate the amount of the loss. The Company does not record an allowance for government receivables and invoices backed by letters of credit as realizeability is reasonably assured. Bad debts are written off against the allowance when identified. There is no dollar threshold for account balance write-offs. While rare, a write-off is only recorded when all efforts to collect the receivable have been exhausted and only in consultation with the appropriate business line manager.

Advances on contracts in progress represent contracts for which billings have been presented to the customer, either as deposits or progress payments against future shipments, but revenue has not been recognized.

4. INVENTORIES AND DEFERRED COSTS OF GOODS SOLD

Inventories, net of \$265 thousand and \$154 thousand of reserves at June 30, 2009 and December 31, 2008, respectively, consist of the following at:

| (in thousands) | June 30, 2009 | December 31, 2008 |
|-----------------------------|------------------|----------------------|
| | ----- | ----- |
| Raw materials | \$ 2,886 | \$ 3,517 |
| Work in process | 5,810 | 7,385 |
| Finished goods | 8,259 | 5,953 |
| | ----- | ----- |
| Net inventory | \$ 16,955 | \$ 16,855 |
| | ===== | ===== |
| Deferred cost of goods sold | \$ 19,429 | \$ 17,088 |
| | ===== | ===== |

Deferred costs of goods sold represents costs on equipment that has shipped to the customer and title has passed. The Company defers these costs until related revenue is recognized.

5. LOSS PER SHARE

The following table provides a reconciliation of the denominators of the Company's reported basic and diluted loss per share computations for the periods ended:

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| | Three Months Ended June 30, | |
|--|--------------------------------|-----------|
| | 2009 | 2008 |
| | ----- | ----- |
| Weighted average number of common and common equivalent shares outstanding - basic | 8,334,688 | 8,330,000 |
| Add: Net additional common shares upon assumed exercise of common stock options | -- | -- |
| | ----- | ----- |
| Adjusted weighted average number of common and common equivalents shares outstanding - diluted | 8,334,688 | 8,330,000 |
| | ===== | ===== |

For the three and six months ended June 30, 2009, 76,542 and 61,544 shares, respectively, and for the three and six months ended June 30, 2008, 168,834 and 188,760 shares, respectively, issuable relative to stock options were excluded from the calculation of diluted shares since their inclusion would have been anti-dilutive.

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In addition, for the three and six months ended June 30, 2009, 528,448 and 493,947 shares, respectively, and for the three and six months ended June 30, 2008, 39,500 and zero shares, respectively, of common stock issuable relative to stock options were excluded from the calculation of diluted shares because their inclusion would have been anti-dilutive, due to their exercise prices exceeding the average market price of the stock for the period.

6. OPERATING SEGMENTS AND RELATED INFORMATION

The following table presents certain continuing operating division information in accordance with the provisions of SFAS No. 131, "Disclosure about Segments of an Enterprise and Related Information."

| (in thousands) | Solar | Biomedical | Optoelectronics | Total Company |
|--|------------|------------|-----------------|---------------|
| For the three months ended June 30, 2009 | | | | |
| Net sales and revenues | \$ 19,038 | \$ 2,252 | \$ 883 | \$ 22,173 |
| Income (loss) from continuing operations | \$ (3,077) | \$ 238 | \$ (617) | \$ (3,456) |
| For the three months ended June 30, 2008 | | | | |
| Net sales and revenues | \$ 12,647 | \$ 1,927 | \$ 1,380 | \$ 15,954 |
| Income (loss) from continuing operations | \$ 1,127 | \$ (14) | \$ (639) | \$ 474 |
| For the six months ended June 30, 2009 | | | | |
| Net sales and revenues | \$ 27,611 | \$ 4,409 | \$ 1,540 | \$ 33,560 |
| Income (loss) from continuing operations | \$ (5,311) | \$ 595 | \$ 82 | \$ (4,634) |
| For the six months ended June 30, 2008 | | | | |
| Net sales and revenues | \$ 22,940 | \$ 3,840 | \$ 2,817 | \$ 29,597 |
| Income (loss) from continuing operations | \$ 1,440 | \$ (76) | \$ (995) | \$ 369 |

The following table shows net sales and revenues by geographic area (based on customer location):

| (in thousands) | Three Months Ended June 30, | | | | Six Months Ended Jun | | | |
|-------------------|-----------------------------|------|-----------|------|----------------------|------|-----------|------|
| | 2009 | % | 2008 | % | 2009 | % | 2008 | % |
| United States | \$ 7,916 | 36% | 5,859 | 37% | \$ 14,741 | 44% | 10,350 | 37% |
| Europe/Africa | 11,335 | 51 | 2,983 | 19 | 14,266 | 42 | 8,350 | 24 |
| Asia | 2,882 | 13 | 7,099 | 44 | 4,260 | 13 | 10,350 | 37 |
| Rest of the world | 40 | -- | 13 | -- | 293 | 1 | 1,000 | 3 |
| | \$ 22,173 | 100% | \$ 15,954 | 100% | \$ 33,560 | 100% | \$ 29,597 | 100% |

Revenues from contracts with United States government agencies for the three months ended June 30, 2009 and 2008 were approximately \$5.2 million and \$353 thousand or 24% and 2% of consolidated net sales and revenues, respectively.

Revenues from contracts with United States government agencies for the

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six months ended June 30, 2009 and 2008 were approximately \$7.3 million and \$753 thousand or 22% and 3% of consolidated net sales and revenues, respectively.

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Two customers accounted for approximately 69% and one customer accounted for approximately 11% of the Company's gross sales during the three months ended June 30, 2009 and 2008, respectively. Two customers accounted for approximately 51% and one customer accounted for approximately 16% of the Company's gross sales during the six months ended June 30, 2009 and 2008, respectively. Two customers represented approximately 22% of trade account receivables at June 30, 2009 and two customers represented approximately 27% of trade account receivables at December 31, 2008.

7. INTANGIBLE AND OTHER ASSETS

Patents amounted to \$57 thousand and \$68 thousand net of accumulated amortization of \$692 thousand and \$680 thousand, at June 30, 2009 and December 31, 2008, respectively. Patent cost is primarily composed of cost associated with securing and registering patents that the Company has been awarded or that have been submitted to, and the Company believes will be approved by, the government. These costs are capitalized and amortized over their useful lives or terms, ordinarily five years, using the straight-line method. There are no expected residual values related to these patents. Amortization expense, relating to patents, was approximately \$6 thousand and \$8 thousand for the three months ended June 30, 2009 and 2008, respectively, and approximately \$12 thousand and \$17 thousand for the six months ended June 30, 2009 and 2008, respectively.

For disclosure purposes, the table below includes future amortization expense for patents and licenses owned by the Company as well as estimated amortization expense related to patents that remain pending at June 30, 2009 of \$445 thousand. This estimated expense for patents pending assumes that the patents are issued immediately, and therefore are being amortized over five years on a straight-line basis. Estimated amortization expense for the periods ending December 31, is as follows:

| (in thousands) | Amortization Expense |
|-------------------------|-------------------------|
| ----- | ----- |
| 2009 remaining 6 months | \$ 56 |
| 2010 | 112 |
| 2011 | 106 |
| 2012 | 94 |
| 2013 and beyond | 134 |
| | ----- |
| | \$ 502 |
| | ===== |

Also included in other assets are approximately \$250 thousand of refundable deposits made by the Company at June 30, 2009 and \$10 thousand at December 31, 2008.

8. AVAILABLE-FOR-SALE INVESTMENTS

Available-for-sale securities consist of the following assets held as part of the Spire Corporation Non-Qualified Deferred Compensation Plan:

| (in thousands) | June 30, 2009 | December 31, 2008 |
|--------------------|------------------|----------------------|
| ----- | ----- | ----- |
| Equity investments | \$ 1,316 | \$ 1,170 |

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| | | |
|-----------------------------|----------|----------|
| Government bonds | 280 | 190 |
| Cash and money market funds | 40 | 74 |
| | ----- | ----- |
| | \$ 1,636 | \$ 1,434 |
| | ===== | ===== |

These investments have been classified as available-for-sale investments and are reported at fair value, with unrealized gains and losses included in accumulated other comprehensive loss. As of June 30, 2009, the unrealized loss on these marketable securities was \$22 thousand and as of December 31, 2008, the unrealized loss on these marketable securities was \$425 thousand.

Effective January 1, 2008, the Company adopted SFAS No. 157, FAIR VALUE MEASUREMENTS ("FAS 157"). In February 2008, the FASB issued FASB Staff Position No. FAS 157-2, EFFECTIVE DATE OF FASB STATEMENT NO. 157, which provides a one year deferral of the effective date of FAS 157 for non-financial assets and non-financial liabilities, except those that are recognized or disclosed in the financial statements at fair value at least annually. Effective January 1, 2009, the Company has adopted the provisions of FAS 157 with respect to its non-financial assets and non-financial liabilities. FAS 157 defines fair value, establishes a framework for measuring fair value, and expands disclosures about fair value measurements. The new standard provides a consistent definition of fair value, which focuses on an exit price, which is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The standard also prioritizes, within the measurement of fair value, the use of market-based information

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over entity specific information and establishes a three-level hierarchy for fair value measurements based on the nature of inputs used in the valuation of an asset or liability as of the measurement date. The application of FAS 157 in situations where the market for a financial asset is not active was clarified by the issuance of FASB Staff Position No. FAS 157-3, DETERMINING THE FAIR VALUE OF A FINANCIAL ASSET WHEN THE MARKET FOR THAT ASSET IS NOT ACTIVE, ("FAS 157-3") in October 2008. FAS 157-3 became effective immediately and did not significantly impact the methods by which the Company determines the fair values of its financial assets.

The hierarchy established under FAS 157 gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1) and the lowest priority to unobservable inputs (Level 3). As required by FAS 157, the Company's available for sale investments are classified within the fair value hierarchy based on the lowest level of input that is significant to the fair value measurement. The three levels of the fair value hierarchy under FAS 157, and its applicability to the Company's available-for-sale investments, are described below:

Level 1 - Pricing inputs are quoted prices available in active markets for identical investments as of the reporting date. As required by FAS 157, the Company does not adjust the quoted price for these investments, even in situations where the Company holds a large position and a sale could reasonably impact the quoted price.

Level 2 - Pricing inputs are quoted prices for similar investments, or inputs that are observable, either directly or indirectly, for substantially the full term through corroboration with observable market data. Level 2 includes investments valued at quoted prices adjusted for legal or contractual restrictions specific to these investments.

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Level 3 - Pricing inputs are unobservable for the investment, that is, inputs that reflect the reporting entity's own assumptions about the assumptions market participants would use in pricing the asset or liability. Level 3 includes investments that are supported by little or no market activity.

The following table presents the financial instruments related to the Company's non-qualified deferred compensation plan carried at fair value as of June 30, 2009 by FAS 157 valuation hierarchy (as defined above).

| (in thousands) | Level 1 ----- | Level 2 ----- | Level 3 ----- | Total ----- |
|--------------------------------------|------------------|------------------|------------------|----------------|
| Cash and short term investments | \$ 40 | \$ -- | \$ -- | \$ |
| Fixed income | -- | 331 | -- | 3 |
| Equities | 846 | 419 | -- | 1,2 |
| | ----- | ----- | ----- | ----- |
| Total available for-sale-investments | \$ 886 | \$ 750 | \$ -- | \$ 1,6 |
| Percent of total | 54% | 46% | -- | 1 |

9. NOTES PAYABLE AND CREDIT ARRANGEMENTS

On May 25, 2007, the Company and its wholly-owned subsidiary, Spire Semiconductor, LLC, entered into a Loan and Security Agreement (the "Equipment Credit Facility") with Silicon Valley Bank (the "Bank"). Under the Equipment Credit Facility, for a one-year period, the Company and Spire Semiconductor could borrow up to \$3.5 million in the aggregate to finance certain equipment purchases (including reimbursement of certain previously-made purchases). Advances made under the Equipment Credit Facility would bear interest at the Bank's prime rate, as determined, plus 0.5% and payable in thirty-six (36) consecutive monthly payments following the funding date of that advance. The Equipment Credit Facility, if not sooner terminated in accordance with its terms, expires on June 1, 2010.

On March 31, 2008, the Company entered into a second Loan and Security Agreement (the "Revolving Credit Facility") with the Bank. Under the terms of the Revolving Credit Facility, the Bank agreed to provide the Company with a credit line up to \$5 million. The Company's obligations under the Equipment Credit Facility were secured by substantially all of its assets and advances under the Revolving Credit Facility were limited to 80% of eligible receivables and the lesser of 25% of the value of its eligible inventory, as defined, or \$2.5 million if the inventory is backed by a customer letter of credit. Interest on outstanding borrowings accrued at a rate per annum equal to the greater of Prime Rate plus one percent (1.0%) or seven percent (7%). In addition, the Company agreed to pay to the Bank a monthly collateral monitoring fee in the event the Company was in default of its covenants and agreed to the following additional terms: (i) \$50 thousand commitment fee; (ii) an unused line fee in the amount of 0.75% per annum of the average unused portion of the revolving line; and (iii) an early termination fee of 0.5% of the total credit line if the Company terminated the Revolving Credit Facility prior to 12 months from the Revolving Credit Facility's effective date. In addition, on March 31, 2008 the Company's existing Equipment Credit Facility was amended whereby the Bank granted a waiver for the Company's defaults for not meeting its December 31, 2007 quarter liquidity and profit covenants and for not meeting its January and February 2008 liquidity covenants. Further, the covenants were amended to match the covenants, as discussed below, contained in the Revolving Credit Facility. The Company's interest rate under the Equipment Credit Facility was also modified from Bank Prime plus one half percent (0.5%) to the greater of Bank Prime plus one percent (1%) or seven percent (7%).

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On May 13, 2008, the Bank amended the Equipment Credit Facility and the Revolving Credit Facility, modifying the Company's net income profitability covenant requirements in exchange for a three quarters percent (0.75%) increase in the Company's interest rate and waiver restructuring fee equal to one half percent (0.5%) of amounts outstanding under the Equipment Credit Facility and committed under the Revolving Credit Facility. In addition, the Company's term loan balance was to be factored in when calculating the Company's borrowing base under the Revolving Credit Facility.

On March 31, 2009, the Bank extended the expiration of the Revolving Credit Facility under the same terms in order to allow both parties the time to negotiate an expansion of the credit limit contingent upon the Company qualifying for an Export-Import Bank loan guarantee.

On June 22, 2009, the Company and its subsidiaries entered into two separate credit facilities with the Bank providing for credit lines of up to \$8 million in the aggregate: (i) an Amended and Restated Loan and Security Agreement (the "Restated Revolving Credit Facility") pursuant to which the Bank agreed to provide the Company with a credit line of up to \$3 million and (ii) an Export-Import Bank Loan and Security Agreement (the "Ex-Im Facility") pursuant to which the Bank agreed to provide the Company with a credit line of up to \$5 million to be guaranteed by the Export-Import Bank of the United States (the "EXIM Bank").

Under the terms of the Restated Revolving Credit Facility, the Bank agreed to provide the Company with a credit line of up to \$3 million. The Company's obligations under the Restated Revolving Credit Facility are secured by substantially all of the assets of the Company and its subsidiaries. Advances under the Restated Revolving Credit Facility are limited to 80% of eligible receivables. Interest on outstanding borrowings accrues at a rate per annum equal to the greater of (i) the prime rate plus 1.75% or (ii) 7.75%; provided, however, that if the Company achieves positive net income over a trailing 3-month period, interest on outstanding borrowings drops and accrues during such period at a rate per annum equal to the greater of (i) the prime rate plus 0.75% or (ii) 6.75%. In addition, the Company agreed to pay the Bank a monthly collateral monitoring fee in the event the Company is in default of its covenants and agreed to the following additional terms: (i) \$67.5 thousand commitment fee; (ii) an unused line fee in the amount of 0.75% per annum of the average unused portion of the revolving line; and (iii) an early termination fee of 1.0% of the total credit line.

In addition, under the Restated Revolving Credit Facility, the Company's existing Equipment Credit Facility with the Bank was amended whereby the Bank and the Company agreed that there would be no additional availability under such facility and, based on an outstanding principal amount of \$1.2 million on June 22, 2009, the Company would continue to make monthly installments of principal of \$97,222 plus accrued interest until the outstanding balance was paid in full on June 10, 2010. The Company's interest rate with respect to the outstanding balance was also modified so that interest accrues at a rate per annum equal to the greater of (i) the prime rate plus 1.75% or (ii) 7.75%.

Under the terms of the Ex-Im Facility, the Bank agreed to provide the Company with a credit line up to \$5 million for working capital to be guaranteed by the EXIM Bank. The Company's obligations under the Ex-Im Facility are secured by substantially all of the assets of the Company and its subsidiaries. Advances under the Ex-Im Facility are limited to (i) 90% of eligible receivables subject to a suitable foreign currency hedge agreement if applicable, plus (ii) 75% of all other eligible receivables billed in foreign currency, plus (iii) the lesser of 50% of the value of eligible inventory, as defined, or \$3 million. Interest on outstanding borrowings accrues at a rate per annum equal to the greater of

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(i) the prime rate plus 1.75% or (ii) 7.75%; provided, however, that if the Company achieves positive net income over a trailing 3-month period, interest on outstanding borrowings drops and accrues during such period at a rate per annum equal to the greater of (i) the prime rate plus 0.75% or (ii) 6.75%. In addition, in the event of an early termination, the Company agreed to pay the Bank an early termination fee of 1.0% of the total credit line.

Under the Restated Revolving Credit Facility and the Ex-Im Facility, as long as any commitment remains outstanding under the facilities, the Company must comply with a minimum tangible net worth covenant and a minimum liquidity covenant. In addition, until all amounts under the credit facilities with the Bank are repaid, covenants under the credit facilities impose restrictions on the Company's ability to, among other things, incur additional indebtedness, create or permit liens on the Company's assets, merge, consolidate or dispose of assets (other than in the ordinary course of business), make dividend and other restricted payments, make certain debt or equity investments, make certain acquisitions, engage in certain transactions with affiliates or change the business conducted by the Company and its subsidiaries. Any failure by the Company to comply with the covenants and obligations under the credit facilities could result in an event of default, in which case the Bank may be entitled to declare all amounts owed to be due and payable immediately.

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The Equipment Credit Facility principal balance outstanding was \$1.2 million and \$1.8 million at June 30, 2009 and December 31, 2008, respectively. The principal balance outstanding under the Restated Revolving Credit Facility (and the prior Revolving Credit Facility) was \$1.5 million at June 30, 2009 and December 31, 2008. Under the credit facilities the Company was required to maintain a minimum tangible net worth (as defined) of \$10.0 million; the Company's tangible net worth (as defined) at June 30, 2009 was \$7.4 million. The Company was not in compliance with its credit facilities tangible net worth covenant as of June 30, 2009, but not in default, because a Bank waiver has been received. More likely than not, the Company will not be in compliance with its credit facilities tangible net worth covenant on a going forward basis. Accordingly, the Company has entered into discussions with the Bank to renegotiate and restructure the terms of its two credit facilities to more closely match its business model.

Annual maturities of the Equipment Credit Facility and the Restated Revolving Credit Facility as of June 30, 2009 are as follows:

| | |
|--|----------|
| (in thousands) | |
| Year Ending December 31, | |
| 2009 (remaining 6 months) | \$ 583 |
| 2010 | 2,084 |
| | ----- |
| Total equipment and revolving line of credit | \$ 2,667 |
| | ===== |

10. STOCK OPTION PLAN AND STOCK-BASED COMPENSATION

In accordance with SFAS No. 123(R), SHARE-BASED PAYMENT, the Company has recognized stock-based compensation expense of approximately \$177 thousand and \$213 thousand for the three months ended June 30, 2009 and 2008, respectively, and approximately \$326 thousand and \$409 thousand for the six months ended June 30, 2009 and 2008, respectively. The total non-cash, stock-based compensation expense included in the condensed consolidated statement of operations for the periods presented is included in the following expense categories:

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| (in thousands) | Three Months Ended June 30, | | Six Months Ended June 30, | |
|--|-----------------------------|--------|---------------------------|--------|
| | 2009 | 2008 | 2009 | 2008 |
| Cost of contract research, services and licenses | \$ 11 | \$ 14 | \$ 18 | \$ 24 |
| Cost of goods sold | 35 | 36 | 64 | 64 |
| Administrative and selling | 131 | 163 | 244 | 244 |
| Total stock-based compensation | \$ 177 | \$ 213 | \$ 326 | \$ 332 |

At June 30, 2009, the Company had outstanding options under the 2007 Stock Equity Plan (the "Plan"). The Plan was approved by stockholders and provided that the Board of Directors may grant options to purchase the Company's common stock to key employees and directors of the Company. Incentive and non-qualified options must be granted at least at the fair market value of the common stock or, in the case of certain optionees, at 110% of such fair market value at the time of grant. The options may be exercised, subject to certain vesting requirements, for periods up to ten years from the date of issue.

A summary of options outstanding under the Plan as of June 30, 2009 and changes during the six-month period is as follows:

| | Number of Shares | Weighted-Average Exercise Price | Average Remaining Contractual Life (Years) | Aggregate Intrinsic Value (in thousands) |
|--|------------------|---------------------------------|--|--|
| Options Outstanding at December 31, 2008 | 606,177 | \$ 7.52 | | |
| Granted | 175,000 | \$ 5.93 | | |
| Exercised | (4,000) | \$ 1.78 | | |
| Cancelled/expired | (8,500) | \$ 7.78 | | |
| Options Outstanding at June 30, 2009 | 768,677 | \$ 7.19 | 7.51 | \$ 307 |
| Options Exercisable at June 30, 2009 | 399,412 | \$ 6.80 | 6.11 | \$ 285 |

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The per-share weighted-average fair value of stock options granted during the three and six months ended June 30, 2009 was \$3.99 and \$3.79, respectively, and \$9.15 and \$7.96 for the three and six months ended June 30, 2008, respectively, on the date of grant using the Black-Scholes option-pricing model with the following weighted-average assumptions:

| Year | Expected Dividend Yield | Risk-Free Interest Rate | Expected Option Life | Expected Volatility Factor |
|------|-------------------------|-------------------------|----------------------|----------------------------|
| 2009 | -- | 2.10% | 4.5 years | 82.8% |
| 2008 | -- | 2.73% | 4.5 years | 70.6% |

The risk free interest rate reflects treasury yields rates over a term that approximates the expected option life. The expected option life is calculated based on historical lives of all options issued under the plan. The expected volatility factor is determined by measuring the actual stock price volatility over a term equal to the expected useful life of the options granted.

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11. COMPREHENSIVE LOSS

Comprehensive loss includes certain changes in equity that are excluded from net loss and consists of the following:

| (in thousands) | For the Three Months Ended June 30, | | For the Six Mon |
|--|-------------------------------------|----------|-----------------|
| | 2009 | 2008 | 2009 |
| Net loss | \$ (4,560) | \$ (269) | \$ (6,084) |
| Other comprehensive income (loss): | | | |
| Unrealized gain (loss) on available for sale marketable securities, net of tax | 356 | (59) | 403 |
| Total comprehensive loss | \$ (4,204) | \$ (328) | \$ (5,681) |

12. GAINS ON TERMINATION OF CONTRACTS

On August 29, 2008, the Company delivered to Principia Lightworks, Inc. ("Principia") a Notice of Breach and Pending Termination (the "Notice") of a certain Manufacturing Agreement, dated August 29, 2006, by and between Spire Semiconductor and Principia (the "Manufacturing Agreement"). Under the terms of the Manufacturing Agreement, Principia made an up-front payment for nonrecurring engineering and facility access costs and was required to make monthly facility availability payments throughout the term of the agreement. As a result of Principia's failure to make monthly facility availability payments in 2008, the Company has fully reserved \$225 thousand against Principia's accounts receivable balance. The Company entered into a mutual standstill agreement with Principia, which expired on March 15, 2009. The purpose of the standstill was to give the parties additional time to negotiate a resolution.

On March 27, 2009, Spire Semiconductor and Principia mutually agreed to terminate the Manufacturing Agreement for convenience and entered into a separation and novation agreement (the "Novation Agreement"). Under the terms of the Novation Agreement, both parties agreed to terminate technology licenses that were granted to each other under the terms of the Manufacturing Agreement and Spire Semiconductor was released from its production requirements to Principia. Principia was released from paying its future facility availability payments due under the Manufacturing Agreement but will be required to pay facility availability payments of \$300 thousand. Spire Semiconductor holds 67,500 shares of Principia stock as collateral against the outstanding facility availability payments. During the three months ended March 31, 2009, the Company accelerated the amortization of deferred revenue and recognized \$1.54 million as a gain on termination of contracts related to the termination of the Manufacturing Agreement.

On June 18, 2009, the Company entered into a settlement agreement with Marubeni Corporation with respect to the License to Manufacture and Distribute Equipment Agreement (the "License Agreement") dated April 1, 2003 for the license of manufacturing and distribution in Japan of the Company's solar photovoltaic modular manufacturing equipment. Under the terms of the settlement agreement, both parties agreed to terminate the License Agreement including but not limited to the eighteen (18) month non-compete obligation. As a result of the settlement, the Company received a payment and recognized a gain on termination of contracts of \$200 thousand in the second quarter of 2009.

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13. LIQUIDATION OF JOINT VENTURE

In July 2007, the Company entered into a joint venture with Gloria Solar Co., Ltd. and related entities ("Gloria Solar"), a leading cell and module manufacturer in Taiwan, which designs, sells and manages installations of photovoltaic systems. The Company's 45% ownership stake in the joint venture, Gloria Spire Solar, LLC (the "Joint Venture"), was obtained through the contribution of the Company's building integrated photovoltaic business to Gloria Solar. Gloria Solar owns the remaining 55% of the Joint Venture. The Joint Venture was formed for the purpose of pursuing the solar photovoltaic systems market within the United States. On June 3, 2009, the Company entered into a Liquidation Agreement, as amended (the "Liquidation Agreement"), with Gloria Solar pursuant to which the parties agreed to liquidate the Joint Venture. Under the terms of the Liquidation Agreement, the parties agreed to a specified allocation of the remaining assets of the Joint Venture after all liabilities have been paid, with each party receiving a share of project leads, intellectual property and remaining cash. The Company will assume responsibility for supporting the Joint Venture's existing client base, including the remaining warranties. As a result of the liquidation, the Company has formed Spire Solar Systems as a full-service organization, offering system designs and project management to domestic markets.

Since the Joint Venture's inception, the Company has reported financial results of the Joint Venture one quarter in arrears. Due to the expected liquidation of the Joint Venture in the third quarter of 2009, the Company has reported losses this quarter on equity investment of its share of the Joint Venture's first and second quarter losses in 2009 of \$310 thousand and \$348 thousand, respectively. The Company has recorded an impairment charge of \$85 thousand to reduce the value of the investment to the estimated proceeds from the liquidation.

14. DISCONTINUED OPERATIONS AND ASSETS HELD FOR SALE

In accordance with SFAS No. 144, "ACCOUNTING FOR THE IMPAIRMENT OR DISPOSAL OF LONG-LIVED ASSETS", the accompanying unaudited condensed consolidated balance sheets, statements of operations and cash flows present the results and assets of the Company's medical products business unit (the "Medical Products Business Unit") as discontinued operations and assets held for sale. During the second quarter of 2009, the Company began pursuing an exclusive sales process of the Medical Products Business Unit. The Company has (i) determined that the Medical Products Business Unit was a separate component of the Company's business as, historically, management reviewed separately the Medical Products Business Unit's financial results apart from the Company's ongoing continuing operations, (ii) eliminated the Medical Products Business Unit's financial results from ongoing operations and (iii) determined that the Company will have no further continuing involvement in the operations of the Medical Products Business Unit or cash flows from the Medical Products Business Unit after the sale.

Not included in discontinued operations are certain indirect costs of the Medical Products Business Unit that have been reclassified to selling, general and administrative expense of \$115 thousand and \$162 thousand for the three months ended June 30, 2009 and 2008, respectively, and \$234 thousand and \$290 thousand for the six months ended June 30, 2009 and 2008, respectively.

The assets and liabilities of the Medical Products Business Unit as of June 30, 2009 and December 31, 2008 are as follows:

(in thousands)

June 30,
2009

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ASSETS OF DISCONTINUED OPERATIONS AND ASSETS HELD FOR SALE

Current assets of discontinued operations and assets held for sale

| | | |
|--|----|-------|
| Accounts receivable - trade, net | \$ | 524 |
| Inventories, net | | 843 |
| Deposits on equipment for inventory | | 46 |
| Prepaid expenses and other current assets | | 4 |
| | | ----- |
| Total current assets of discontinued operations and assets held for sale | | 1,417 |
| Property and equipment, net | | 9 |
| Intangible and other assets, net | | 359 |
| | | ----- |
| Total assets of discontinued operations and assets held for sale | \$ | 1,785 |
| | | ===== |

LIABILITIES OF DISCONTINUED OPERATIONS

Current liabilities of discontinued operations

| | | |
|--|----|-------|
| Accounts payable | \$ | 477 |
| Accrued liabilities | | 406 |
| | | ----- |
| Total current liabilities of discontinued operations | | 883 |
| | | ----- |
| Total liabilities of discontinued operations | \$ | 883 |
| | | ===== |

Condensed results of operations relating to the Medical Unit are as follows:

| (in thousands) | THREE MONTHS ENDED JUNE 30, | | SIX MONTHS ENDED JUNE 30, | |
|-----------------------------------|-----------------------------|----------|---------------------------|----------|
| | 2009 | 2008 | 2009 | 2008 |
| Net sales and revenues | \$ 687 | \$ 931 | \$ 1,594 | \$ 1,826 |
| Gross margin | \$ 196 | \$ 389 | \$ 403 | \$ 791 |
| Loss from discontinued operations | \$ (201) | \$ (167) | \$ (391) | \$ (281) |

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ITEM 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

THIS MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS SECTION AND OTHER PARTS OF THIS REPORT CONTAIN FORWARD-LOOKING STATEMENTS WITHIN THE MEANING OF SECTION 27A OF THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"), AND SECTION 21E OF THE SECURITIES EXCHANGE ACT OF 1934, AS AMENDED (THE "EXCHANGE ACT"), WHICH STATEMENTS INVOLVE RISKS AND UNCERTAINTIES. THESE STATEMENTS RELATE TO OUR FUTURE PLANS, OBJECTIVES, EXPECTATIONS AND INTENTIONS. THESE STATEMENTS MAY BE IDENTIFIED BY THE USE OF WORDS SUCH AS "MAY", "COULD", "WOULD", "SHOULD", "WILL", "EXPECTS", "ANTICIPATES", "INTENDS", "PLANS", "BELIEVES", "ESTIMATES", AND SIMILAR EXPRESSIONS. OUR ACTUAL RESULTS AND THE TIMING OF CERTAIN EVENTS MAY DIFFER SIGNIFICANTLY FROM THE RESULTS AND TIMING DESCRIBED IN THE FORWARD-LOOKING STATEMENTS. FACTORS THAT COULD CAUSE OR CONTRIBUTE TO SUCH

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DIFFERENCES INCLUDE, BUT ARE NOT LIMITED TO, THOSE FACTORS DISCUSSED OR REFERRED TO IN THE ANNUAL REPORT ON FORM 10-K FOR THE YEAR ENDED DECEMBER 31, 2008 AND IN SUBSEQUENT PERIOD REPORTS FILED WITH THE SECURITIES AND EXCHANGE COMMISSION, INCLUDING THIS REPORT. THE FOLLOWING DISCUSSION AND ANALYSIS OF OUR FINANCIAL CONDITION AND RESULTS OF OPERATIONS SHOULD BE READ IN LIGHT OF THOSE FACTORS AND IN CONJUNCTION WITH OUR ACCOMPANYING CONSOLIDATED FINANCIAL STATEMENTS, INCLUDING THE NOTES THERETO.

OVERVIEW

We have been in the solar business for over 30 years, initially pioneering developments in solar cell technology. Currently, we develop, manufacture, and market customized turnkey solutions for the solar industry, including individual pieces of manufacturing equipment and full turnkey lines for cell and module production and testing. We have been continually active in research and development in the space, with over \$100 million of research and development conducted and 35 issued patents. This expertise has provided the platform for development of our manufacturing equipment and turnkey lines. We have equipment deployed in approximately 50 countries and have among our customers some of the world's leading solar manufacturers including First Solar, BP Solar, Canadian Solar, Trina Solar Energy, Evergreen Solar and Solaria Energia.

As the solar market continues to expand, and photovoltaic cell and module manufacturers ramp production to meet increasing demand, they require more turnkey equipment to produce additional photovoltaic cells and modules. We believe that we are one of the world's leading suppliers of the manufacturing equipment and technology needed to produce solar photovoltaic power systems. Our individual manufacturing equipment products and our SPI-LINETM integrated turnkey cell and module production lines can be highly scaled, customized, and automated with high throughput. These systems are designed to meet the needs of a broad customer base ranging from manufacturers relying on mostly manual processes, to some of the largest photovoltaic manufacturing companies in the world. With nearly 40 years since our incorporation and over 30 years in the solar market, we have been in a good position to capitalize on the market's growth.

In July 2007, we entered into a joint venture with Gloria Solar Co., Ltd. and related entities ("Gloria Solar"), a leading cell and module manufacturer in Taiwan, which designs, sells and manages installations of photovoltaic systems. Our 45% ownership stake in the joint venture, Gloria Spire Solar, LLC (the "Joint Venture"), was obtained through the contribution of our building integrated photovoltaic business to Gloria Solar. Gloria Solar owns the remaining 55% of the Joint Venture. The Joint Venture was formed for the purpose of pursuing the solar photovoltaic systems market within the United States. On June 3, 2009, we entered into a Liquidation Agreement, as amended (the "Liquidation Agreement"), with Gloria Solar pursuant to which the parties agreed to liquidate the Joint Venture. Under the terms of the Liquidation Agreement, the parties agreed to a specified allocation of the remaining assets of the Joint Venture after all liabilities have been paid, with each party receiving a share of project leads, intellectual property and remaining cash. We will be taking responsibility over supporting the Joint Venture's existing client base, including the remaining warranties. As a result of the liquidation, we have formed Spire Solar Systems as a full-service organization, offering system designs and project management to domestic markets. See Note 13.

In addition to our cell and module manufacturing solutions, our Spire Semiconductor subsidiary provides semiconductor foundry services and is currently developing triple-junction gallium arsenide ("GaAs") concentrator solar cells. This state-of-the-art semiconductor fabrication facility is the foundation of our solar cell process technology for silicon, polysilicon, thin-film, and GaAs concentrator cells. We also operate a small business line

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associated with advanced biomedical applications. The foundation for all of our business units is our industry-leading expertise in manufacturing, materials technologies and surface treatments; this proprietary knowledge enables us to further develop our offerings in each market we serve.

During the second quarter of 2009, we began pursuing an exclusive sales process of our Medical Products Business Unit. Accordingly, the results and assets of the Medical Unit are being presented herein as discontinued operations and assets held for sale. See Note 14.

Operating results will depend upon revenue growth and product mix, as well as the timing of shipments of higher priced products from our solar equipment line and delivery of solar systems. Export sales, which amounted to 64% of net sales and revenues for the six months ended June 30, 2009, continue to constitute a significant portion of our net sales and revenues.

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Results of Operations

The following table sets forth certain items as a percentage of net sales and revenues for the periods presented:

| | Three Months Ended June 30, | | Six Months Ended Ju | |
|---|-----------------------------|------|---------------------|---|
| | 2009 | 2008 | 2009 | 2 |
| Net sales and revenues | 100% | 100% | 100% | |
| Cost of sales and revenues | 92 | 67 | 91 | |
| Gross profit | 8 | 33 | 9 | |
| Selling, general and administrative expenses | (24) | (29) | (26) | |
| Internal research and development expenses | (1) | (1) | (2) | |
| Gains on termination of contracts | 1 | -- | 5 | |
| Income (loss) from continuing operations | (16) | 3 | (14) | |
| Other expense, net | (4) | (4) | (3) | |
| Loss from continuing operations before income tax provision | (20) | (1) | (17) | |
| Income tax provision | -- | -- | -- | |
| Loss from continuing operations | (20) | (1) | (17) | |
| Loss from discontinued operations, net of tax | (1) | (1) | (1) | |
| Net loss | (21%) | (2%) | (18%) | |

OVERALL

Our total net sales and revenues for the six months ended June 30, 2009 were \$33.6 million as compared to \$29.6 million for the six months ended June 30, 2008, which represents an increase of \$4 million or 13%. The increase was primarily attributable to a \$4.7 million increase in solar sales and a slight increase in biomedical sales, partially offset by a \$1.3 million decrease in optoelectronics sales.

SOLAR BUSINESS UNIT

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Sales in our solar business unit increased 20% during the six months ended June 30, 2009 to \$27.6 million as compared to \$22.9 million in the six months ended June 30, 2008. The increase is the result of sales in solar cell materials during 2009, partially offset by a decrease in solar equipment sales. We did not sell solar cell materials in 2008.

BIOMEDICAL BUSINESS UNIT

Revenues of our biomedical business unit increased 15% during the six months ended June 30, 2009 to \$4.4 million as compared to \$3.8 million in the six months ended June 30, 2008. The increase reflects increased revenues from our orthopedics coatings services partially offset by a decrease in revenue from research and development contracts.

OPTOELECTRONICS BUSINESS UNIT

Revenues in our optoelectronics business unit decreased 45% to \$1.5 million during the six months ended June 30, 2009 as compared to \$2.8 million in the six months ended June 30, 2008. The decrease reflects an overall decrease in optoelectronics activities attributable to a further deepening of the current global economic recession and to a lesser extent the termination of a contract as discussed below in Gains on Termination of Contracts.

Three and Six Months Ended June 30, 2009 Compared to Three and Six Months Ended

June 30, 2008

NET SALES AND REVENUES

The following table categorizes our net sales and revenues for the periods presented:

| (in thousands) | Three Months Ended June 30, | | Increase/ (Decrease) |
|--|-----------------------------|-----------|----------------------|
| | 2009 | 2008 | \$ |
| Sales of goods | \$ 19,028 | \$ 12,579 | \$ 6,449 |
| Contract research, services and license revenues | 3,145 | 3,375 | (230) |
| | ----- | ----- | ----- |
| Net sales and revenues | \$ 22,173 | \$ 15,954 | \$ 6,219 |

The 51% increase in sales of goods for the three months ended June 30, 2009 as compared to the three months ended June 30, 2008 was primarily due to new sales in solar cell materials and increased solar equipment revenues. New sales of solar cell materials was \$4.6 million in 2009. Solar equipment sales increased 16% in 2009 as compared to 2008 primarily due to revenue recognized from the completion of an automated module line in 2009.

The 7% decrease in contract research, services and license revenues for the three months ended June 30, 2009 as compared to the three months ended June 30, 2008 is primarily attributable to a decrease in optoelectronics and royalties, partially offset by an increase in orthopedics service and research and development activities. Revenue from our optoelectronics processing services (Spire Semiconductor) decreased 36% in 2009 compared to 2008 as a result of an overall decrease in optoelectronics activities attributable to a further deepening of the current global economic recession and to a lesser extent the termination of a contract with Principia Lightworks, Inc. in March 2009 (see

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Gains on Termination of Contracts). Revenue from royalties decreased 100% as a result of the termination of contract with Nisshinbo Industries, Inc. in November 2008. Revenues from our orthopedic activities increased 19% in 2009 as compared to 2008. This increase is primarily the result of revenue from a new customer added in the third quarter of 2008. Revenues from our research and development activities increased 11% in 2009 as compared to 2008 primarily due to an increase in the number and value of contracts associated with funded research and development.

The following table categorizes our net sales and revenues for the periods presented:

| (in thousands) | Six Months Ended June 30, | | Increase/ (Decrease) |
|--|---------------------------|-----------|----------------------|
| | 2009 | 2008 | \$ |
| Sales of goods | \$ 27,550 | \$ 22,679 | \$ 4,871 |
| Contract research, services and license revenues | 6,010 | 6,918 | (908) |
| Net sales and revenues | \$ 33,560 | \$ 29,597 | \$ 3,963 |

The 21% increase in sales of goods for the six months ended June 30, 2009 as compared to the six months ended June 30, 2008 was primarily due to new sales in solar cell materials, partially offset by decreased solar equipment revenues. New sales of solar cell materials was \$6.1 million in 2009. Solar equipment sales decreased 5% in 2009 as compared to 2008 primarily due to an overall slow down in solar power industry activity.

The 13% decrease in contract research, services and license revenues for the six months ended June 30, 2009 as compared to the six months ended June 30, 2008 is primarily attributable to a decrease in optoelectronics, royalties and research and development activities, partially offset by an increase in orthopedics service. Revenue from our optoelectronics processing services (Spire Semiconductor) decreased 45% in 2009 compared to 2008 as a result of an overall decrease in optoelectronics activities attributable to a further deepening of the current global economic recession and to a lesser extent the termination of a contract with Principia Lightworks, Inc. in March 2009 (see Gains on Termination of Contracts). Revenue from royalties decreased 100% as a result of the termination of contract with Nisshinbo Industries, Inc. in November 2008. Revenues from our research and development activities decreased 10% in 2009 as compared to 2008 primarily due to an increase in the number and value of contracts associated with funded research and development. Revenues from our orthopedic activities increased 24% in 2009 as compared to 2008. This increase is primarily the result of revenue from a new customer added in the third quarter of 2008.

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COST OF SALES AND REVENUES

The following table categorizes our cost of sales and revenues for the periods presented, stated in dollars and as a percentage of related sales and revenues:

| (in thousands) | Three Months Ended June 30, | | | | Increase/ (Decrease) |
|----------------|-----------------------------|---|------|---|----------------------|
| | 2009 | % | 2008 | % | \$ |
| | 2009 | % | 2008 | % | \$ |

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| | | | | | |
|--|-----------|-----|-----------|-----|----------|
| Cost of goods sold | \$ 18,127 | 95% | \$ 8,364 | 66% | \$ 9,763 |
| Cost of contract research, services and licenses | 2,269 | 72% | 2,342 | 69% | (73) |
| | ----- | | ----- | | ----- |
| Net cost of sales and revenues | \$ 20,396 | 92% | \$ 10,706 | 67% | \$ 9,690 |
| | ===== | | ===== | | ===== |

Cost of goods sold increased 117% for the three months ended June 30, 2009 as compared to the three months ended June 30, 2008, primarily as a result of costs related to solar materials, costs related to the completion of an automated module line and a provision for a reserve of \$279 thousand related to estimated costs to complete a solar project. As a percentage of sales, cost of goods sold was 95% of sales of goods in 2009 as compared to 66% of sales of goods in 2008. This increase in the percentage of sales in 2009 is due to the provision for a reserve of \$279 thousand related to estimated costs to complete a solar project and low margin related to the completion of an automated module line along with an unfavorable utilization of solar manufacturing overhead.

Cost of contract research, services and licenses decreased 3% for the three months ended June 30, 2009 as compared to the three months ended June 30, 2008, primarily as a result of decreased costs at our optoelectronics facility (Spire Semiconductor) due to lower associated revenues, partially offset by increased costs of our contract research activities due to higher volumes. Cost of contract research, services and licenses as a percentage of revenue increased to 72% of revenues in 2009 from 69% in 2008, primarily due to unfavorable margin related to our optoelectronics facility, partially offset by favorable margins in orthopedic services in 2009.

Cost of sales and revenues also includes approximately \$46 thousand and \$50 thousand of stock-based compensation for the three months ending June 30, 2009 and 2008, respectively.

The following table categorizes our cost of sales and revenues for the periods presented, stated in dollars and as a percentage of related sales and revenues:

| (in thousands) | Six Months Ended June 30, | | | | Increase/ (Decrease) |
|--|---------------------------|-----|-----------|-----|----------------------|
| | 2009 | % | 2008 | % | |
| Cost of goods sold | \$ 25,985 | 94% | \$ 16,237 | 72% | \$ 9,748 |
| Cost of contract research, services and licenses | 4,433 | 74% | 4,716 | 68% | (283) |
| | ----- | | ----- | | ----- |
| Net cost of sales and revenues | \$ 30,418 | 91% | \$ 20,953 | 71% | \$ 9,465 |
| | ===== | | ===== | | ===== |

Cost of goods sold increased 60% for the six months ended June 30, 2009 as compared to the six months ended June 30, 2008, primarily as a result of costs related to solar materials, costs related to the completion of an automated module line and a provision for a reserve of \$279 thousand related to estimated costs to complete a solar project. As a percentage of sales, cost of goods sold was 94% of sales of goods in 2009 as compared to 72% of sales of goods in 2008. This increase in the percentage of sales in 2009 is due to the provision for a reserve of \$279 thousand related to estimated costs to complete a solar project and low margin related to the completion of an automated module line along with an unfavorable utilization of solar manufacturing overhead.

Cost of contract research, services and licenses decreased 6% for the

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six months ended June 30, 2009 as compared to the six months ended June 30, 2008, primarily as a result of decreased costs at our optoelectronics facility (Spire Semiconductor) due to lower associated revenues, partially offset by increased costs of our orthopedic services due to higher associated revenues. Cost of contract research, services and licenses as a percentage of revenue increased to 74% of revenues in 2009 from 68% in 2008, primarily due to unfavorable margin related to our optoelectronics facility, partially offset by favorable margins in orthopedic services in 2009.

Cost of sales and revenues also includes approximately \$82 thousand and \$95 thousand of stock-based compensation for the six months ending June 30, 2009 and 2008, respectively.

OPERATING EXPENSES

The following table categorizes our operating expenses for the periods presented, stated in dollars and as a percentage of total sales and revenues:

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| (in thousands) | Three Months Ended June 30, | | | | Increase |
|-------------------------------------|-----------------------------|-----|----------|-----|----------|
| | 2009 | % | 2008 | % | \$ |
| Selling, general and administrative | \$ 5,182 | 24% | \$ 4,603 | 29% | \$ 579 |
| Internal research and development | 251 | 1% | 171 | 1% | 80 |
| | ----- | | ----- | | ----- |
| Operating expenses | \$ 5,433 | 25% | \$ 4,774 | 30% | \$ 659 |

SELLING, GENERAL AND ADMINISTRATIVE EXPENSES

Selling, general and administrative expense increased 13% in the three months ended June 30, 2009 as compared to the three months ended June 30, 2008, primarily as a result of an increase in corporate staffing levels and related employee costs to support our overall growth. Selling, general and administrative expense decreased to 24% of sales and revenues in 2009 as compared to 29% in 2008. The decrease was primarily due to the absorption of selling, general and administrative overhead costs by the 39% increase in sales and revenues.

Operating expenses includes approximately \$131 thousand and \$163 thousand of stock-based compensation for the three months ending June 30, 2009 and 2008, respectively.

INTERNAL RESEARCH AND DEVELOPMENT

Internal research and development expense increased 47% in the three months ended June 30, 2009 as compared to the three months ended June 30, 2008, primarily as a result of higher levels of research and development spent in the solar group. As a percentage of sales and revenue, internal research and development expenses remained at 1% of sales and revenues in 2009 and 2008.

The following table categorizes our operating expenses for the periods presented, stated in dollars and as a percentage of total sales and revenues:

| (in thousands) | Six Months Ended June 30, | | | | Increase |
|----------------|---------------------------|---|------|---|----------|
| | 2009 | % | 2008 | % | \$ |

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| | ----- | ----- | ----- | ----- | ----- |
|-------------------------------------|----------|-------|----------|-------|----------|
| Selling, general and administrative | \$ 8,949 | 26% | \$ 7,993 | 27% | \$ 956 |
| Internal research and development | 562 | 2% | 282 | 1% | 280 |
| | ----- | | ----- | | ----- |
| Operating expenses | \$ 9,511 | 28% | \$ 8,275 | 28% | \$ 1,236 |
| | ===== | | ===== | | ===== |

SELLING, GENERAL AND ADMINISTRATIVE EXPENSES

Selling, general and administrative expense increased 12% in the six months ended June 30, 2009 as compared to the six months ended June 30, 2008, primarily as a result of an increase in corporate staffing levels and related employee costs to support our overall growth. Selling, general and administrative expense decreased to 26% of sales and revenues in 2009 as compared to 27% in 2008. The decrease was primarily due to the absorption of selling, general and administrative overhead costs by the 13% increase in sales and revenues.

Operating expenses includes approximately \$244 thousand and \$314 thousand of stock-based compensation for the six months ending June 30, 2009 and 2008, respectively.

INTERNAL RESEARCH AND DEVELOPMENT

Internal research and development expense increased 99% in the six months ended June 30, 2009 as compared to the six months ended June 30, 2008, primarily as a result of higher levels of research and development spent in the solar group. As a percentage of sales and revenue, internal research and development expenses increased slightly to 2% of sales and revenues in 2009 as compared to 1% in 2008.

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GAINS ON TERMINATION OF CONTRACTS

On August 29, 2008, we delivered to Principia Lightworks, Inc. ("Principia") a Notice of Breach and Pending Termination (the "Notice") of a certain Manufacturing Agreement, dated August 29, 2006, by and between Spire Semiconductor and Principia (the "Manufacturing Agreement"). Under the terms of the Manufacturing Agreement, Principia made an up-front payment for nonrecurring engineering and facility access costs and was required to make monthly facility availability payments throughout the term of the agreement. As a result of Principia's failure to make monthly facility availability payments in 2008, we have fully reserved \$225 thousand against Principia's accounts receivable balance. We entered into a mutual standstill agreement with Principia, which expired on March 15, 2009. The purpose of the standstill was to give the parties additional time to negotiate a resolution.

On March 27, 2009, Spire Semiconductor and Principia mutually agreed to terminate the Manufacturing Agreement for convenience and entered into a separation and novation agreement (the "Novation Agreement"). Under the terms of the Novation Agreement, both parties agreed to terminate technology licenses that were granted to each other under the terms of the Manufacturing Agreement and Spire Semiconductor was released from its production requirements to Principia. Principia was released from paying its future facility availability payments due under the Manufacturing Agreement but will be required to pay facility availability payments of \$300 thousand. Spire Semiconductor holds 67,500 shares of Principia stock as collateral against the outstanding facility availability payments. During the three months ended March 31, 2009, we accelerated the amortization of deferred revenue and recognized \$1.54 million as a gain on termination of contract related to the termination of the

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Manufacturing Agreement.

On June 18, 2009, we entered into a settlement agreement with Marubeni Corporation with respect to The License to Manufacture and Distribute Equipment Agreement (the "License Agreement") dated April 1, 2003 for the license of manufacturing and distribution in Japan of our solar photovoltaic modular manufacturing equipment. Under the terms of the settlement agreement, both parties agreed to terminate the License Agreement including but not limited to the eighteen (18) month non-compete obligation. As a result of the settlement, we received a payment of \$200 thousand in the second quarter of 2009.

OTHER INCOME (EXPENSE), NET

We earned \$3 thousand and \$2 thousand of interest income for the three months ended June 30, 2009 and 2008, respectively. We incurred interest expense of \$79 thousand and \$50 thousand for the three months ended June 30, 2009 and 2008, respectively. We recorded a loss of \$743 thousand and \$234 thousand on equity investment in joint venture with Gloria Solar for the three months ended June 30, 2009 and 2008, respectively. Since the Joint Venture's inception, we have reported financial results of the Joint Venture one quarter in arrears. Due to the expected liquidation of the Joint Venture in the third quarter of 2009, we have included in our reported losses on equity investment relating to the Joint Venture, the Joint Venture's second quarter 2009 losses of \$348 thousand, first quarter losses of \$310 thousand and impairment charge of \$85 thousand to reduce the value of the investment to the estimated proceeds from the liquidation. See Note 13. We had a currency exchange loss of approximately \$70 thousand and \$294 thousand during the three months ended June 30, 2009 and 2008, respectively.

We earned \$14 thousand and \$11 thousand of interest income for the six months ended June 30, 2009 and 2008, respectively. We incurred interest expense of \$148 thousand and \$119 thousand for the six months ended June 30, 2009 and 2008, respectively. We recorded a loss of \$1.02 million and \$364 thousand on equity investment in joint venture with Gloria Solar for the six months ended June 30, 2009 and 2008, respectively. Since the Joint Venture's inception, we have reported financial results of the Joint Venture one quarter in arrears. Due to the expected liquidation of the Joint Venture in the third quarter of 2009, we have included in our reported losses on equity investment relating to the Joint Venture, the Joint Venture's second quarter 2009 losses of \$348 thousand, first quarter losses of \$310 thousand, fourth quarter of 2008 losses of \$280 thousand and impairment charge of \$85 thousand to reduce the value of the investment to the estimated proceeds from the liquidation. See Note 13. We had a currency exchange gain of approximately \$139 thousand and a currency exchange loss of \$408 thousand during the six months ended June 30, 2009 and 2008, respectively.

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INCOME TAXES

We recorded a provision for income taxes of \$14 thousand and \$41 thousand for the three and six months ended June 30, 2009, respectively. We did not record an income tax provision or benefit in the three or six months ending June 30, 2008. A valuation allowance has been provided against the current period tax benefit due to uncertainty regarding the realization of the net operating loss in the future.

LOSS FROM DISCONTINUED OPERATIONS

During the second quarter of 2009, we began pursuing an exclusive sales process of our Medical Products Business Unit. Accordingly, the results and assets of the Medical Products Business Unit are being presented herein as

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discontinued operations and assets held for sale.

We recorded a loss from discontinued operations of \$201 thousand and \$167 thousand for the three months ended June 30, 2009 and 2008, respectively. We recorded a loss from discontinued operations of \$391 thousand and \$281 thousand for the six months ended June 30, 2009 and 2008, respectively. Not included in discontinued operations are certain indirect costs of the Medical Products Business Unit that have been reclassified to selling, general and administrative expense of \$115 thousand and \$162 thousand for the three months ended June 30, 2009 and 2008, respectively, and \$234 thousand and \$290 thousand for the six months ended June 30, 2009 and 2008, respectively. See Note 14.

NET LOSS

We reported a net loss for the three months ended June 30, 2009 and 2008 of approximately \$4.56 million and \$269 thousand, respectively. The net loss increased approximately \$4.29 million primarily due to lower margins in solar equipment sales and to a lesser extent two quarters of losses from the Joint Venture and an impairment charge to reduce the value of the investment to the estimated proceeds from the liquidation (see Note 13), partially offset by gains on termination of contracts.

We reported a net loss for the six months ended June 30, 2009 and 2008 of approximately \$6.08 million and \$792 thousand, respectively. The net loss increased approximately \$5.29 million primarily due to lower margins in solar equipment sales and to a lesser extent two quarters of losses from the Joint Venture and an impairment charge to reduce the value of the investment to the estimated proceeds from the liquidation (see Note 13), partially offset by gains on termination of contracts.

Liquidity and Capital Resources

| (in thousands) | June 30, | December 31, | Decrease | |
|---------------------------|----------|--------------|------------|-------|
| | 2009 | 2008 | \$ | % |
| Cash and cash equivalents | \$ 3,463 | \$ 5,971 | \$ (2,508) | (42%) |
| Working capital | \$ 867 | \$ 6,835 | \$ (5,968) | (87%) |

Cash and cash equivalents decreased due to cash used in operating activities, primarily the net loss, and to a lesser extent deferred cost of sales advances on contracts in progress. The overall reduction in working capital is due to a decrease in cash and restricted cash. We have historically funded our operating cash requirements using operating cash flow, proceeds from the sale and licensing of technology and proceeds from the sale of equity securities.

There are no material commitments by us for capital expenditures. At June 30, 2009, our accumulated deficit was approximately \$13.0 million, compared to accumulated deficit of approximately \$6.9 million as of December 31, 2008.

We have numerous options on how to fund future operational losses or working capital needs, including but not limited to sales of equity, bank debt or the sale or license of assets and technology, as we have done in the past; however, there are no assurances that we will be able to sell equity, obtain bank debt, or sell or license assets or technology on a timely basis and at appropriate values. We have developed several plans including cost containment efforts and outside financing to offset a decline in business due to a further deepening of the current global economic recession. As a result, we believe we have sufficient resources to finance our current operations through at least June 30, 2010.

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LOAN AGREEMENTS

On May 25, 2007, we and our wholly-owned subsidiary, Spire Semiconductor, LLC, entered into a Loan and Security Agreement (the "Equipment Credit Facility") with Silicon Valley Bank (the "Bank"). Under the Equipment Credit Facility, for a one-year period, we and Spire Semiconductor could borrow up to \$3.5 million in the aggregate to finance certain equipment

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purchases (including reimbursement of certain previously-made purchases). Advances made under the Equipment Credit Facility would bear interest at the Bank's prime rate, as determined, plus 0.5% and payable in thirty-six (36) consecutive monthly payments following the funding date of that advance.

On March 31, 2008, we entered into a second Loan and Security Agreement (the "Revolving Credit Facility") with the Bank. Under the terms of the Revolving Credit Facility, the Bank agreed to provide us with a credit line up to \$5.0 million. Our obligations under the Equipment Credit Facility were secured by substantially all of our assets and advances under the Revolving Credit Facility were limited to 80% of eligible receivables and the lesser of 25% of the value of our eligible inventory, as defined, or \$2.5 million if the inventory is backed by a customer letter of credit. Interest on outstanding borrowings accrued at a rate per annum equal to the greater of Prime Rate plus one percent (1.0%) or seven percent (7.0%). In addition, we agreed to pay to the Bank a collateral monitoring fee of \$750 per month in the event we were in default of our covenants and agreed to the following additional terms: (i) \$50 thousand commitment fee; (ii) an unused line fee in the amount of 0.75% per annum of the average unused portion of the revolving line; and (iii) an early termination fee of 0.5% of the total credit line if we terminated the Revolving Credit Facility prior to 12 months from the Revolving Credit Facility's effective date. In addition, on March 31, 2008 our existing Equipment Credit Facility was amended whereby the Bank granted a waiver for our defaults for not meeting our December 31, 2007 quarter liquidity and profit covenants and for not meeting our January and February 2008 liquidity covenants. Further, the covenants were amended to match the covenants, as discussed below, contained in the Revolving Credit Facility. Our interest rate under the Equipment Credit Facility was also modified from Bank Prime plus one half percent (0.5%) to the greater of Bank Prime plus one percent (1.0%) or seven percent (7.0%).

On May 13, 2008, the Bank amended the Equipment Credit Facility and the Revolving Credit Facility, modifying our net income profitability covenant requirements in exchange for a three quarters percent (0.75%) increase in our interest rate and waiver restructuring fee equal to one half percent (0.5%) of amounts outstanding under the Equipment Credit Facility and committed under the Revolving Credit Facility. Interest on outstanding borrowings accrues at a rate per annum equal to the greater of Prime Rate plus one percent (1.0%) or seven percent (7.0%). In addition, our term loan balance was to be factored in when calculating our borrowing base under the Revolving Credit Facility.

On March 31, 2009, the Bank extended the expiration of the Revolving Credit Facility under the same terms for an additional sixty-one days, to expire on May 31, 2009. The purpose of the extension is to allow both parties the time to negotiate an expansion of the credit limit contingent upon our qualifying for an Export-Import Bank loan guarantee.

On June 22, 2009, we entered into two separate credit facilities with the Bank providing for credit lines of up to \$8 million in the aggregate: (i) an Amended and Restated Loan and Security Agreement (the "Restated Revolving Credit Facility") pursuant to which the Bank agreed to provide us with a credit line of up to \$3 million and (ii) an Export-Import Bank Loan and Security Agreement (the

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"Ex-Im Facility") pursuant to which the Bank agreed to provide us with a credit line of up to \$5 million to be guaranteed by the Export-Import Bank of the United States (the "EXIM Bank").

Under the terms of the Restated Revolving Credit Facility, the Bank agreed to provide us with a credit line of up to \$3 million. Our obligations under the Restated Revolving Credit Facility are secured by substantially all of our assets. Advances under the Restated Revolving Credit Facility are limited to 80% of eligible receivables. Interest on outstanding borrowings accrues at a rate per annum equal to the greater of (i) the prime rate plus 1.75% or (ii) 7.75%; provided, however, that if we achieve positive net income over a trailing 3-month period, interest on outstanding borrowings drops and accrues during such period at a rate per annum equal to the greater of (i) the prime rate plus 0.75% or (ii) 6.75%. In addition, we agreed to pay the Bank a monthly collateral monitoring fee in the event we are in default of our covenants and agreed to the following additional terms: (i) \$67.5 thousand commitment fee; (ii) an unused line fee in the amount of 0.75% per annum of the average unused portion of the revolving line; and (iii) an early termination fee of 1.0% of the total credit line.

In addition, under the Restated Revolving Credit Facility, our existing Equipment Credit Facility with the Bank was amended whereby we agreed with the Bank that there would be no additional availability under such facility and, based on an outstanding principal amount of \$1.2 million on June 22, 2009, we would continue to make monthly installments of principal of \$97,222 plus accrued interest until the outstanding balance was paid in full on June 10, 2010. Our interest rate with respect to the outstanding balance was also modified so that interest accrues at a rate per annum equal to the greater of (i) the prime rate plus 1.75% or (ii) 7.75%.

Under the terms of the Ex-Im Facility, the Bank agreed to provide us with a credit line up to \$5 million for working capital to be guaranteed by the EXIM Bank. Our obligations under the Ex-Im Facility are secured by substantially all of our assets. Advances under the Ex-Im Facility are limited to (i) 90% of eligible receivables subject to a suitable foreign currency hedge agreement if applicable, plus (ii) 75% of all other eligible receivables billed in foreign currency, plus (iii) the lesser of 50% of the value of eligible inventory, as defined, or \$3 million. Interest on outstanding borrowings accrues at a rate per annum equal to the greater of (i) the prime rate plus 1.75% or (ii) 7.75%; provided, however, that if we achieve positive net

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income over a trailing 3-month period, interest on outstanding borrowings drops and accrues during such period at a rate per annum equal to the greater of (i) the prime rate plus 0.75% or (ii) 6.75%. In addition, in the event of an early termination, we agreed to pay the Bank an early termination fee of 1.0% of the total credit line.

Under the Restated Revolving Credit Facility and the Ex-Im Facility, as long as any commitment remains outstanding under the facilities, we must comply with a minimum tangible net worth covenant and a minimum liquidity covenant. In addition, until all amounts under the credit facilities with the Bank are repaid, covenants under the credit facilities impose restrictions on our ability to, among other things, incur additional indebtedness, create or permit liens on our assets, merge, consolidate or dispose of assets (other than in the ordinary course of business), make dividend and other restricted payments, make certain debt or equity investments, make certain acquisitions, engage in certain transactions with affiliates or change the business conducted by us. Any failure by us to comply with the covenants and obligations under the credit facilities could result in an event of default, in which case the Bank may be entitled to declare all amounts owed to be due and payable immediately.

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The Equipment Credit Facility principal balance outstanding was \$1.2 million and \$1.8 million at June 30, 2009 and December 31, 2008, respectively. The principal balance outstanding under the Restated Revolving Credit Facility (and the prior Revolving Credit Facility) was \$1.5 million at June 30, 2009 and December 31, 2008. Under the credit facilities we were required to maintain a minimum tangible net worth (as defined) of \$10.0 million; our tangible net worth (as defined) at June 30, 2009 was \$7.4 million. We were not in compliance with our credit facilities tangible net worth covenant as of June 30, 2009, but not in default, because a Bank waiver has been received. More likely than not, we will not be in compliance with our credit facilities tangible net worth covenant on a going forward basis. Accordingly, we have entered into discussions with the Bank to renegotiate and restructure the terms of our two credit facilities to more closely match our business model.

GAINS ON TERMINATION OF CONTRACTS

On August 29, 2008, we delivered to Principia Lightworks, Inc. ("Principia") a Notice of Breach and Pending Termination (the "Notice") of a certain Manufacturing Agreement, dated August 29, 2006, by and between Spire Semiconductor and Principia (the "Manufacturing Agreement"). Under the terms of the Manufacturing Agreement, Principia made an up-front payment for nonrecurring engineering and facility access costs and was required to make monthly facility availability payments throughout the term of the agreement. As a result of Principia's failure to make monthly facility availability payments in 2008, we have fully reserved \$225 thousand against Principia's accounts receivable balance. We entered into a mutual standstill agreement with Principia, which expired on March 15, 2009. The purpose of the standstill was to give the parties additional time to negotiate a resolution.

On March 27, 2009, Spire Semiconductor and Principia mutually agreed to terminate the Manufacturing Agreement for convenience and entered into a separation and novation agreement (the "Novation Agreement"). Under the terms of the Novation Agreement, both parties agreed to terminate technology licenses that were granted to each other under the terms of the Manufacturing Agreement and Spire Semiconductor was released from its production requirements to Principia. Principia was released from paying its future facility availability payments due under the Manufacturing Agreement but will be required to pay facility availability payments of \$300 thousand. Spire Semiconductor holds 67,500 shares of Principia stock as collateral against the outstanding facility availability payments. During the three months ended March 31, 2009, we accelerated the amortization of deferred revenue and recognized \$1.54 million as a gain on termination of contract related to the termination of the Manufacturing Agreement.

On June 18, 2009, we entered into a settlement agreement with Marubeni Corporation with respect to The License to Manufacture and Distribute Equipment Agreement (the "License Agreement") dated April 1, 2003 for the license of manufacturing and distribution in Japan of our solar photovoltaic modular manufacturing equipment. Under the terms of the settlement agreement, both parties agreed to terminate the License Agreement including but not limited to the eighteen (18) month non-compete obligation. As a result of the settlement, we received a payment of \$200 thousand in the second quarter of 2009.

Foreign Currency Fluctuation

We sell only in U.S. dollars, generally against an irrevocable confirmed letter of credit through a major United States bank. Accordingly, we are not directly affected by foreign exchange fluctuations on our current orders. However, fluctuations in foreign exchange rates do have an effect on our

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customers' access to U.S. dollars and on the pricing competition on certain pieces of equipment that we sell in selected markets. In addition, purchases made and royalties received under our Consortium Agreement with Nisshinbo are in Japanese yen. In addition, we received Japanese yen related to the termination

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of the Consortium Agreement in 2008. We have committed to purchase certain pieces of equipment from European and Japanese vendors; these commitments are denominated in Euros and Yen, respectively. We bear the risk of any currency fluctuations that may be associated with these commitments. We attempt to hedge known transactions when possible to minimize foreign exchange risk. Foreign exchange gain (loss) included in other income (expense) was \$(70) thousand and \$(294) thousand for the three months ended June 30, 2009 and 2008, respectively and \$139 thousand and \$(408) thousand for the six months ended June 30, 2009 and 2008, respectively.

Related Party Transactions

On November 30, 2007, we entered into a Lease Agreement (the "Bedford Lease") with SPI-Trust, a Trust of which Roger Little, our Chairman of the Board, Chief Executive Officer and President, is the sole trustee and principal beneficiary, with respect to 144,230 square feet of space comprising the entire building in which we have occupied space since December 1, 1985. The term of the Bedford Lease commenced on December 1, 2007 and continues for five (5) years until November 30, 2012. We have the right to extend the term of the Bedford Lease for an additional five (5) year period. The annual rental rate for the first year of the Lease is \$12.50 per square foot on a triple net basis, whereby the tenant is responsible for operating expenses, taxes and maintenance of the building. The annual rental rate increases on each anniversary by \$0.75 per square foot. If we exercise our right to extend the term of the Bedford Lease, the annual rental rate for the first year of the extended term will be the greater of (a) the rental rate in effect immediately preceding the commencement of the extended term or (b) the market rate at such time, and on each anniversary of the commencement of the extended term the rental rate will increase by \$0.75 per square foot. We believe that the terms of the Bedford Lease are commercially reasonable. Rent expense under the Bedford Lease was \$505 thousand for both the three months ended June 30, 2009 and 2008 and was \$1.0 million for both the six months ended June 30, 2009 and 2008.

In May 2003, Spire Semiconductor leased a building (90 thousand square feet) in Hudson, New Hampshire from SPI-Trust whereby we agreed to pay \$4.1 million to SPI-Trust over an initial five-year term expiring in May 2008 with an option for us to extend for five years. In addition to the rent payments, the lease obligated us to keep on deposit with SPI-Trust the equivalent of three months rent. The lease agreement did not provide for a transfer of ownership at any point. Interest costs were assumed at 7%. Interest expense was approximately \$1.6 thousand and \$8.4 thousand for the three and six months ended June 30, 2008, respectively. This lease was classified as a related party capital lease and a summary of payments (including interest) follows:

| Year | Rate Per Square Foot | Annual Rent | Monthly Rent | Security Deposit |
|---|-------------------------|----------------|-----------------|---------------------|
| ----- | | | | |
| (in thousands, except rate per square foot) | | | | |
| June 1, 2003 - May 31, 2004 | \$ 6.00 | \$ 540 | \$ 45 | \$ 135 |
| June 1, 2004 - May 31, 2005 | 7.50 | 675 | 56 | 169 |
| June 1, 2005 - May 31, 2006 | 8.50 | 765 | 64 | 191 |
| June 1, 2006 - May 31, 2007 | 10.50 | 945 | 79 | 236 |
| June 1, 2007 - May 31, 2008 | \$ 13.50 | \$ 1,215 | \$ 101 | \$ 304 |

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\$ 4,140
=====

Upon the expiration of the lease in May 2008, we did not exercise our option to extend the lease for an additional 5 years. On May 20, 2008, we agreed with SPI-Trust to continue the current lease, under the current terms and conditions on a month-to-month basis for a maximum of three (3) months beyond the current term.

On August 29, 2008, we entered into a new Lease Agreement (the "Hudson Lease") with SPI-Trust, with respect to 90 thousand square feet of space comprising the entire building in which Spire Semiconductor has occupied space since June 1, 2003. The term of the Hudson Lease commenced on September 1, 2008, and continues for seven (7) years until August 31, 2015. We have the right to extend the term of the Hudson Lease for an additional five (5) year period. The annual rental rate for the first year of the Hudson Lease is \$12.50 per square foot on a triple-net basis, whereby the tenant is responsible for operating expenses, taxes and maintenance of the building. The annual rental rate increases on each anniversary by \$0.75 per square foot. If we exercise our right to extend the term of the Hudson Lease, the annual rental rate for the first year of the extended term will be the greater of: (a) the rental rate in effect immediately preceding the commencement of the extended term; or (b) the market rate at such time, and on each anniversary of the commencement of the extended term the rental rate will increase by \$0.75 per square foot. In addition, we are required to deposit with SPI-Trust \$300 thousand as security for performance by us for our covenants and obligations under the Hudson Lease. SPI-Trust is responsible, at its sole expense, to make certain defined tenant improvements to the building. We believe that the terms of the Hudson Lease are commercially reasonable and reflective of market rates. The lease agreement does not provide for a transfer of ownership at any point. The Hudson Lease is classified as a related party operating lease. Rent expense under the Hudson Lease for the three and six months ended June 30, 2009 was \$332 thousand and \$664 thousand, respectively.

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Critical Accounting Policies

The preparation of financial statements in accordance with accounting principles generally accepted in the United States requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Among the significant estimates affecting our consolidated financial statements are those relating to revenue recognition, reserves for doubtful accounts and sales returns and allowances, reserve for excess and obsolete inventory, impairment of long-lived assets, income taxes, and warranty reserves. We regularly evaluate our estimates and assumptions based upon historical experience and various other factors that it believes to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. To the extent actual results differ from those estimates, our future results of operations may be affected. We believe the following critical accounting policies affect our more significant judgments and estimates used in the preparation of our consolidated financial statements. Refer to Note 2 of the notes to consolidated financial statements in our Annual Report on Form 10-K for the year ended December 31, 2008 for a description of our significant accounting policies.

REVENUE RECOGNITION

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We derive our revenues from three primary sources: (1) commercial products including, but not limited to, solar energy manufacturing equipment, solar energy systems and hemodialysis catheters; (2) biomedical and semiconductor processing services; and (3) United States government funded research and development contracts.

We generally recognize product revenue upon shipment of products provided there are no uncertainties regarding customer acceptance, persuasive evidence of an arrangement exists, the sales price is fixed or determinable, and collectibility is reasonably assured. These criteria are generally met at the time of shipment when the risk of loss and title passes to the customer or distributor, unless a consignment arrangement exists. Revenue from consignment arrangements is recognized based on product usage indicating sales are complete.

Our OEM capital equipment solar energy business builds complex customized machines to order for specific customers. Most orders are sold on a FOB Bedford, Massachusetts (or EX-Works Factory) basis and other orders are sold on a CIP or on rare situations a DDU basis. It is our policy to recognize revenues for this equipment as title of the product has passed to the customer, as customer acceptance is obtained prior to shipment and the equipment is expected to operate the same in the customer's environment as it does in our environment. When an arrangement with the customer includes future obligations or customer acceptance, revenue is recognized when those obligations are met or customer acceptance has been achieved. For arrangements with multiple elements, we allocate fair value to each element in the contract and revenue is recognized upon delivery of each element. If we are not able to establish fair value of undelivered elements, all revenue is deferred.

We recognize revenues and estimated profits on long-term government contracts on the accrual basis where the circumstances are such that total profit can be estimated with reasonable accuracy and ultimate realization is reasonably assured. We accrue revenue and profit utilizing the percentage of completion method using a cost-to-cost methodology. A percentage of the contract revenues and estimated profits is determined utilizing the ratio of costs incurred to date to total estimated cost to complete on a contract by contract basis. Profit estimates are revised periodically based upon changes and facts, and any losses on contracts are recognized immediately. Some of the contracts include provisions to withhold a portion of the contract value as retainage until such time as the United States government performs an audit of the cost incurred under the contract. Our policy is to take into revenue the full value of the contract, including any retainage, as we perform against the contract because we have not experienced any substantial losses as a result of audits performed by the United States government.

ALLOWANCE FOR DOUBTFUL ACCOUNTS

We maintain allowances for doubtful accounts for estimated losses resulting from the inability of our customers to pay amounts due. We actively pursue collection of past due receivables as the circumstances warrant. Customers are contacted to determine the status of payment and senior accounting and operations management are included in these efforts as is deemed necessary. A specific reserve will be established for past due accounts when it is probable that a loss has been incurred and we can reasonably estimate the amount of the loss. We do not record an allowance for government receivables and invoices backed by letters of credit as realizability is reasonably assured. Bad debts are written off against the allowance when identified. There is no dollar threshold for account balance write-offs. While rare, a write-off is only recorded when all efforts to collect the receivable have been exhausted and only in consultation with the appropriate business line manager.

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IMPAIRMENT OF LONG-LIVED ASSETS

Long-lived assets, such as property and equipment and amortizable intangibles, are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. The determination of recoverability is based on fair value. If the fair value is less than the carrying value, we recognize an impairment loss to operations in the period in which impairment is determined. Impairment is measured as the amount by which the carrying value exceeds the fair value of the asset.

STOCK-BASED COMPENSATION

We account for our stock-based compensation plans in accordance with the fair value recognition provisions of SFAS No. 123(R), SHARE-BASED payment ("Statement 123(R)"). We use the Black-Scholes option pricing model as our method for determining the fair value of stock option grants. Statement 123(R) requires the fair value of all share-based awards that are expected to vest to be recognized in the statements of operations over the service or vesting period of each award. We use the straight-line method of attributing the value of stock-based compensation expense for all stock option grants.

On November 10, 2005, the FASB issued FASB Staff Position SFAS 123R-3, TRANSITION ELECTION RELATED TO ACCOUNTING FOR TAX EFFECTS OF SHARE-BASED PAYMENT AWARDS. We have elected to adopt the alternative transition method provided by the FASB Staff Position for calculating the tax effects (if any) of stock-based compensation expense pursuant to Statement 123(R). The alternative transition method includes simplified methods to establish the beginning balance of the additional paid-in capital pool related to the tax effects of employee stock-based compensation, and to determine the subsequent impact to the additional paid-in capital pool and the consolidated statements of operations and cash flows of the tax effects of employee stock-based compensation awards that are outstanding upon adoption of Statement 123(R).

WARRANTY

We provide warranties on certain products and services. Our warranty programs are described below:

Spire Solar Equipment warrants solar energy module manufacturing equipment sold for a total of 360 days, the first 90 days of which include the replacement of defective component parts and the labor to correct the defect and the next 270 days of which include only the cost of defective component parts.

Spire Biomedical warrants that any of its catheter products found to be defective will be replaced. No warranty is made that the failure of the product will not occur, and we disclaim any responsibility for any medical complications. Spire Biomedical warrants that its services only will meet the agreed upon specifications.

Spire Semiconductor warrants that its products will meet the agreed upon specifications.

We provide for the estimated cost of product warranties, determined primarily from historical information, at the time product revenue is recognized. Should actual product failure warranties differ from our estimates, revisions to the estimated warranty liability would be required. The changes in the product warranties for the six months ended June 30, 2009, are as follows:

(in thousands)

| | | |
|------------------------------|----|-----|
| Balance at December 31, 2008 | \$ | 495 |
|------------------------------|----|-----|

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| | |
|-----------------------------|--------|
| Provision charged to income | 470 |
| Usage | (248) |
| | ----- |
| Balance at June 30, 2009 | \$ 717 |
| | ===== |

Contractual Obligations, Commercial Commitments and Off-Balance Sheet

Arrangements

The following table summarizes our gross contractual obligations at June 30, 2009 and the maturity periods and the effect that such obligations are expected to have on our liquidity and cash flows in future periods:

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| Contractual Obligations | Payments Due by Period | | | |
|--|------------------------|---------------------|----------------|----------------|
| | Total | Less than 1 Year | 2 - 3 Years | 4 - 5 Years |
| (in thousands) | | | | |
| Equipment Credit Facility (SVB) | \$ 1,216 | \$ 1,216 | -- | |
| Restated Revolving Credit Facility (SVB) | \$ 1,500 | \$ 1,500 | -- | |
| Purchase obligations | \$ 11,983 | \$ 11,766 | \$ 217 | |
| Operating leases: | | | | |
| Unrelated party operating leases | \$ 200 | \$ 124 | \$ 76 | |
| Related party operating leases | \$ 15,533 | \$ 3,155 | \$ 6,838 | \$ 3, |

Purchase obligations include all open purchase orders outstanding regardless of whether they are cancelable or not. Included in purchase obligations are raw material and equipment needed to fulfill customer orders.

Equipment Credit Facility obligations outlined above include both the principal and interest components of these contractual obligations.

Outstanding letters of credit totaled \$1.6 million and \$4.2 million at June 30, 2009 and December 31, 2008, respectively. The letters of credit secure performance obligations and purchase commitments, and allow holders to draw funds up to the face amount of the letter of credit if we do not perform as contractually required. These letters of credit expire through 2010 and are 100% secured by cash, short-term investments and the Revolving Credit Facility.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Not required as we are a smaller reporting company.

ITEM 4T. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

Our management, under the supervision of and with the participation of

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the Chief Executive Officer and Chief Financial Officer, performed an evaluation of the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) under the Securities Exchange Act of 1934 (the "Exchange Act")) as of the end of the period covered by this report, June 30, 2009.

Based on its evaluation, and taking into consideration the material weaknesses in internal control over financial reporting referenced below, our management, including the Chief Executive Officer and Chief Financial Officer, concluded that our disclosure controls and procedures were not effective as of June 30, 2009.

As previously reported in our Annual Report on Form 10-K, as filed with the Securities and Exchange Commission (SEC) on March 31, 2009, in connection with our assessment of the effectiveness of our internal control over financial reporting at the end of our last fiscal year, management identified material weaknesses in the internal control over financial reporting as of December 31, 2008.

We have an ineffective control environment. This has been previously disclosed in prior filings. Management has designed and implemented some effective controls, however, these controls are not sufficient and are not operating effectively. Efforts to remediate deficiencies were impeded by an evolving control environment brought on by the rapid expansion in our business. We did not maintain an effective financial reporting process, ensure timely and accurate completion of financial statements and we did not maintain effective monitoring controls including reconciliations and analysis of key accounts. We did not have a sufficient level of staffing with the necessary knowledge, experience and training to ensure the completeness and accuracy of our financial statements. In addition, certain finance positions were staffed with individuals who did not possess the level of accounting knowledge, experience and training in the application of US GAAP commensurate with our financial reporting requirements. Specifically, the financial reporting organization structure was not adequate to support the size, complexity or activities of our Company.

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This affected our ability to maintain effective monitoring controls and related segregation of duties over automated and manual transactions processes. Specifically, inadequate segregation of duties led to untimely identification and resolution of accounting and disclosure matters and failure to perform timely and effective supervision and reviews. We did not maintain effective controls over our IT environment. Specifically, we did not perform a timely review of restricted user access in our application software system and we did not consistently follow our defined back up policies and procedures.

As a result of the foregoing, management concluded that our internal control over financial reporting was not effective as of December 31, 2008.

Management is actively addressing operational and internal control remediation efforts. New policies and procedures have been created and existing policies and procedures have been reviewed and modified as part of our documentation of internal control over financial reporting. Management believes these new controls, policies and procedures, training of key personnel, and testing of these key controls will be effective in remediating these material weaknesses. Management reports quarterly to our Audit Committee on the status of the remediation effort.

Management has partially addressed the need for additional experienced staff with the addition of a Director of Financial Reporting (February 2008) who has the primary responsibility for the financial close and reporting process and monitoring environment related to financial reporting. We also hired a Senior Financial Analyst, CPA (July 2008) who is actively involved in the financial

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close and reporting process and assisting us in our remediation efforts. In addition, we hired a Corporate Controller (April 2009) who will add accounting knowledge, experience and applications of US GAAP. These positions will help us address the identified weakness in the knowledge and experience required for completeness and accuracy of our financial statements and will also help improve our overall financial close and reporting process.

In connection with the findings of our review related to the November 2008 restatement of our previously issued financial statements for the fourth quarter and fiscal 2007 included in our Annual Report on Form 10-K for the fiscal year ended December 31, 2007 and our previously issued financial statements included in the Quarterly Report on Form 10-Q for the fiscal quarters ended March 31, 2008 and June 30, 2008, management and the Audit Committee reviewed the additional internal control procedures and processes that have been implemented since the original date of the error and have identified additional remediation steps to address the material weakness of untimely reporting of customer contract changes. We have implemented new internal controls and enhanced accounting policies, as well as improved sales policies and procedures relating to customer contract management and order fulfillment.

Changes in Internal Control Over Financial Reporting

Except as described above, there have been no changes during our fiscal quarter ended June 30, 2009 in our internal control over financial reporting that may have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

PART II OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS

During the second quarter of 2005, a suit was filed by Arrow International, Inc. against Spire Biomedical, Inc., a wholly owned subsidiary of the Company, alleging that Company's sales of its Pourchez Retro™ catheter infringed U.S. Patent 6,872,198 owned by Arrow. Arrow alleged that the Company's sales of its Pourchez Retro™ catheter infringed U.S. Patent 6,872,198 owned by Arrow. The complaint claimed Retro catheter product induced and contributed to infringement when medical professionals inserted it. The Company responded to the complaint denying all allegations and filed certain counterclaims. The Company also filed a motion for summary judgment, asserting patent invalidity resulting from plaintiff's failure to follow the administrative procedures of the U.S. Patent and Trademark Office ("USPTO"). On August 4, 2006, the Court granted the Company's motion and dismissed this lawsuit without prejudice. Plaintiffs applied to revive the applicable patent, which application was granted by the USPTO later in August 2006. Plaintiffs refiled their lawsuit against the Company on August 31, 2006. On July 10, 2009, the Federal District Court for the District of Massachusetts granted summary judgment in favor of Spire Biomedical on the ground that the asserted claims of the '198 patent were invalid for obviousness. Arrow and Spire Biomedical have agreed that neither party will appeal the court's ruling thereby ending the suit.

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ITEM 1A. RISK FACTORS

There have been no material changes in the Risk Factors described in Part I, Item 1A ("Risk Factors") of our Annual Report on Form 10-K for the year ended December 31, 2008.

ITEM 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS

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None.

ITEM 3. DEFAULTS UPON SENIOR SECURITIES

None.

ITEM 4. SUBMISSION OF MATTERS TO A VOTE OF SECURITY HOLDERS

On May 21, 2009, we held a Special Meeting in Lieu of Annual Meeting of Stockholders. At the meeting, stockholders voted on the following:

PROPOSAL NUMBER 1

The number of directors was fixed at eight, leaving one vacancy. Udo Henseler, David R. Lipinski, Mark C. Little, Roger G. Little, Michael J. Magliochetti, Guy L. Mayer and Roger W. Redmond were elected to the Board of Directors to hold office until the 2010 annual meeting of the stockholders. The results for Proposal Number 1 were as follows:

| Nominee | Shares Voting For | Shares Voting Against or Authority Withheld | Shares Abstaining |
|-------------------------|----------------------|--|----------------------|
| Udo Henseler | 6,438,987 | 363,503 | -- |
| David R. Lipinski | 6,436,150 | 366,340 | -- |
| Mark C. Little | 6,168,184 | 634,306 | -- |
| Roger G. Little | 6,215,173 | 587,317 | -- |
| Michael J. Magliochetti | 6,438,038 | 364,452 | -- |
| Guy L. Mayer | 6,438,121 | 364,369 | -- |
| Roger W. Redmond | 6,440,782 | 361,708 | -- |

ITEM 5. OTHER INFORMATION

None.

ITEM 6. EXHIBITS

2.3 Gloria Spire Solar LLC Liquidation Agreement, dated May 29, 2009, by and among Gloria Solar (Delaware) Company, Ltd., Gloria Solar Co., Ltd., Gloria Spire Solar, LLC and Spire Corporation.*

2.4 First Amendment to the Gloria Spire Solar, LLC Liquidation Agreement, dated June 2, 2009, by and among Gloria Solar (Delaware) Company, Ltd., Gloria Solar Co., Ltd., Gloria Spire Solar, LLC and Spire Corporation.*

10(af) Amended and Restated Loan and Security Agreement, dated June 22, 2009, among Spire Corporation, Spire Solar, Inc., Spire Biomedical, Inc., Spire Semiconductor, LLC and Silicon Valley Bank.

10(ag) Export-Import Bank Loan and Security Agreement, dated June 22,

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2009, among Spire Corporation, Spire Solar, Inc., Spire Biomedical, Inc., Spire Semiconductor, LLC and Silicon Valley Bank.

- 31.1 Certification of the Chairman of the Board, Chief Executive Officer and President pursuant to ss.302 of the Sarbanes-Oxley Act of 2002.
- 31.2 Certification of the Chief Financial Officer and Treasurer pursuant to ss.302 of the Sarbanes-Oxley Act of 2002.
- 32.1 Certification of the Chairman of the Board, Chief Executive Officer and President pursuant to 18 U.S.C. ss.1350, as adopted pursuant to ss.906 of the Sarbanes-Oxley Act of 2002.
- 32.2 Certification of the Chief Financial Officer and Treasurer pursuant to 18 U.S.C. ss.1350, as adopted pursuant to ss.906 of the Sarbanes-Oxley Act of 2002.

* The Company agrees to furnish supplementally to the Securities and Exchange Commission (the "Commission") a copy of any omitted schedule or exhibit to this agreement upon request by the Commission.

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SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

SPIRE CORPORATION

Dated: August 14, 2009

By: /s/ Roger G. Little

Roger G. Little
Chairman of the Board,
Chief Executive Officer and
President

Dated: August 14, 2009

By: /s/ Christian Dufresne

Christian Dufresne, Ph. D.
Chief Financial Officer and Treasurer

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EXHIBIT INDEX

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| Exhibit ----- | Description ----- |
|------------------|--|
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