

LONESTAR GRAPHITE

Steve Patterson smiled as he walked past Lonestar Graphite's (Lonestar) headquarters in Henderson, Texas, a small town about an hour's drive southwest of Dallas. The company was producing some of the most technologically advanced products in its industry and was being offered for sale by its parent United Oil Company of Texas (UNOTEX). Patterson and Ravi Desai were cofounding directors of Hamilton Capital Partners (HCP), a relatively new \$450 million middle-market private equity firm. Patterson and Desai wondered whether Lonestar Graphite was a good addition to its growing portfolio of companies.

The final due diligence meeting between HCP and Lonestar's management team had just ended. It was a Friday, in late September 2000, and management was insistent that the meeting end by 5:00 p.m. On a fall Friday evening in Henderson, you would not find many businesses open, cars on the streets, or people in their homes. Everyone was under the lights at the Henderson High School stadium watching the Panthers play football. Lonestar was the largest employer in the town, and a majority of employees' families would insist they arrive at the game early.

Fortunately, Patterson had covered his remaining questions and concerns before the 5:00 p.m. deadline. But rather than head to the game, he drove back to the local hotel. He had come to Henderson to look at Lonestar—not football.

The due diligence process had gone smoothly thus far but the final valuation and purchase price were still left to be determined. A Monday morning meeting had been scheduled to negotiate a purchase price and begin drafting the final legal documents. Patterson would be in close contact with Desai, who was back at HCP's home office—both of them knowing it would be a long weekend ahead.

This case was prepared by Jason Gaede (MBA '09) under the supervision of Professor Robert Harris. Paul Capital, a global leader in the private equity secondary market, sponsored this case with the cooperation of the private equity fund (in which Paul Capital purchased an interest) that originated the investment in Lonestar Graphite. It was written as a basis for class discussion rather than to illustrate effective or ineffective handling of an administrative situation. Names and some data have been disguised. Copyright © 2009 by the University of Virginia Darden School Foundation, Charlottesville, VA. All rights reserved. *To order copies, send an e-mail to sales@dardenbusinesspublishing.com. No part of this publication may be reproduced, stored in a retrieval system, used in a spreadsheet, or transmitted in any form or by any means—electronic, mechanical, photocopying, recording, or otherwise—without the permission of the Darden School Foundation.* ◇

Company Background

Headquartered in Henderson, Texas, and operating as an independent subsidiary of UNOTEX, Lonestar manufactured and marketed superior-quality specialty graphite and silicon carbide materials. The company’s history began in 1964 when Lonestar bought a specialty graphite technology originally intended for use in space travel. Graphite, an allotrope of carbon, had a chemical structure that made it an excellent conductor of electricity. Once used sparingly as an alternate material, graphite had overtaken copper as the material of choice for electrical discharge machining in North America, and was gradually becoming the preferred material worldwide. Since inception, Lonestar had combined research and development and innovation with strict quality standards to become North America’s leading manufacturer of premium specialty graphite and silicon carbide materials.

Management

Lonestar’s senior management team had extensive industry experience (an average of over 15 years) and a history of working together (see **Table 1**).

Table 1. Management team.

Name	Position	Years at Lonestar Graphite	Previous Experience
Charles W. Ross	CEO	24	Various positions at Lonestar Graphite
Mark Richardson	CFO	3	UNOTEX, Spirit Energy 76
Dan Stevenson	General manager, EDM group	22	Various positions at Lonestar Graphite
Chris Pulaski	General manager, SIP group	12	Various positions at Lonestar Graphite
Richard L. Smith	General manager, R&D group	2	Advanced Refractory Technologies, Inc.

In anticipation of a purchase, HCP utilized its extensive professional network to identify two individuals to work with Lonestar in an advisory role post-transaction. Mike Miller, with years of experience in the financial services industry and a long track record of significantly growing business, would serve as chairman and lead advisor. Matt Snyder, an industry veteran, would help Lonestar expand into new markets. The addition of these two individuals was essential to the potential success of both the deal negotiations and future returns.

Geographic reach

Lonestar’s operations fell into three primary global regions. In North America, Lonestar was the market leader in the premium graphite segment and had gained market share during a recent economic downturn as competitors had gone out of business or exited the market. New investment and management emphasis on Europe and the Pacific Rim had already begun to create new growth in those regions. **Table 2** depicts Lonestar’s 1999 sales breakout.

Table 2. Sales by region (in thousands of dollars).

Sales by Region	1999
United States/Canada	\$36,299
Europe	6,300
Pacific Rim	2,740
Other	682
Total	\$46,021

Facilities

The company's primary manufacturing operations were housed in modern, recently expanded 350,000-square-foot facilities located on 62.5 acres in Henderson. The design of the plant and purpose of each machine was carefully chosen and had evolved over the company's history. In fact, the complexity of Lonestar's manufacturing operations was its primary competitive advantage and made it impossible for competitors to replicate Lonestar's products. The company's headquarters were two miles from its plant in an 18,400-square-foot office facility. In addition to Henderson operations, Lonestar leased a 10,800-square-foot sales, training, and warehouse facility in France and a 3,600-square-foot sales and technical-training facility in Illinois. These training facilities had helped to maintain Lonestar's leadership in key lines of business.

Employees

The vast majority of the company's approximately 350 individuals were located in Henderson, with much smaller employee groups residing in Europe and Asia.

Industry and Product Overview

Worldwide expenditures for carbon and graphite products in 1999 were estimated at \$5 billion. Lonestar competed in the industrial applications segment, which accounted for approximately \$900 million or 18% of worldwide sales. A significant portion of the segment was large-micron (i.e., greater than 100 microns) graphite material. Lonestar, however, operated in the premium niche, focusing on the manufacture of precision graphite products with between one and twenty microns. Lonestar served three distinct premium-oriented customer groups: (1) electrical discharge machining, (2) semiconductor and industrial products, and (3) glass container. **Exhibit 1** shows the market distribution of Lonestar's end users.

Electrical discharge machining (EDM)

EDM processes were used to make plastic parts and to precision machine extremely hard materials such as steel and titanium into intricate shapes. Lonestar produced premium graphite

materials that were machined into electrodes for the production of molds and dies. The company's graphite products were used by specialty machine shops for virtually every EDM machine application. Lonestar's high-quality and superior-performance products set the industry standard and have allowed the company to develop a strong brand identity.

The company sold its EDM products through a worldwide network of 56 distributors who in turn sold Lonestar products to over 18,000 end users in North America alone. Lonestar had done business with many of its EDM distributors for over 20 years.

EDM demand depended on the competitive environments of businesses that used graphite, primarily for molds, but also for tools, dies and fixtures, and aircraft engine production. The EDM customer group was diverse, with over 20,000 companies in North America. Between late 1997 and the first half of 1999, global demand for graphite products, particularly EDM products, declined as a result of the severe manufacturing slowdown in the Pacific Rim. During this time, the production of molds, tools, dies, and fixtures declined as much as 17%. Simultaneously, a strong U.S. dollar relative to many Asian currencies led to increased imports of manufactured products, resulting in higher U.S. inventories and significant declines in factory orders. This gave rise to lower capacity utilization.

After mid-1999, however, the global manufacturing environment had significantly improved, prompting greater demand for molds, tools, dies, and fixtures. Industry reports forecast a 6% increase in 2000 in orders for tooling and machining equipment, including molds. In addition, the customer industries with above-average capacity usage rates, which therefore had a higher probability of needing additional equipment and tooling and machining help, included electrical machining (currently at 85.0% capacity) and semiconductor (currently at 91.9% capacity).¹

Semiconductor and industrial products (SIP)

Lonestar's SIP division housed two main segments: semiconductors and industrial products. Products were primarily sold directly to end users, many of whom had done business with the company for over 15 years.

Lonestar's semiconductor segment manufactured a broad range of graphite products that were consumable parts in wafer processing equipment. These included sputtering targets, e-beam crucibles, plasma tech electrodes, and others that held the integrated circuit when it was soldered or brazed to a connector device. In addition, Lonestar produced a line of silicon carbide products used in the production of wafer carriers to hold the silicon wafers during processing. Some of these had been specified in the next generation of plasma tech equipment.

Demand for Lonestar's semiconductor product was driven by semiconductor production and new capacity additions, subject to a secular trend toward increasing use of graphite and

¹ Spring 2000 Forecast Report by the National Tooling and Machining Association.

silicon carbide. This secular trend was due to existing materials lacking the required purity levels to meet the ever-increasing industry demands.

The semiconductor industry was emerging from one of its worst recessions, which occurred in 1998 and early 1999, because of overcapacity combined with a slowdown in consumption in the Far East. Driven by strengthening Asian economies and increased applications of technology in developing economies, analysts at Hamilton saw the recovery continuing and that, taken as a whole, the semiconductor industry would grow approximately 30% in 2000 and 15% over the subsequent two to three years. The analysts anticipated even higher growth for the front-end processing segment of the semiconductor industry, which is the most relevant sector for Lonestar's products: 70% to 75% growth in 2000 and 35% to 40% growth in 2001.

In its industrial products segment, Lonestar produced more than 40 different graphite grades for general industrial, scientific, aerospace, and biomedical applications. Products included materials infiltrated with oxidation inhibitors for high temperature bearings and seals, porous graphite for fuel cell development, heaters for vacuum furnaces, and graphite with tungsten inclusion to provide radio opaqueness for biomedical use.

In addition, Lonestar was the sole supplier of graphite for carbon heart valves and radioactive pellets that were implanted in the body to treat prostate cancer as well as thyroid gland problems. Silicon carbide materials were also introduced to these market applications. Lonestar's silicon carbide aero shells were on board the January 1999 launch of probes to explore the planet Mars.

Glass container

Graphite was used in the glass container industry as a hot-glass contact material because of its strength, durability thermal properties, nonabsorption of liquids, nonchecking and nonsticking capabilities. The glass container industry had experienced relatively slow growth in recent years as a result of competitive pressures from aluminum cans, plastic, and other soft containers. The majority of Lonestar's sales to the glass industry were machined from graphite scrap. The remaining sales to the glass industry were derived from other glass industry segments, such as tableware, lighting, scientific, and display (TV/CRT). Lonestar's SIP division housed its glass products.

In recent years, there had been substantial consolidation of glass container manufacturers. This consolidation lowered production costs, created a more competitive pricing environment among glass producers (and manufacturers of other packaging materials), and forced suppliers to retool with high-speed and higher-precision machines. Such a retooling favored greater usage of graphite because of its close tolerances. Management estimated the size of its addressable glass container opportunities in 1999 at \$28.9 million, assuming 100% use of graphite as the preferred hot contact material.

Other products

The SIP division also included Lonestar's developing activity in thermal management products. These products possessed concentrated high-thermal characteristics useful for heating/cooling systems, refrigeration, as well as thermal transfer. Management believed these materials had tremendous potential with continued development.

Comparative Advantage and Competition

Lonestar's superior ability to convert graphite into silicon carbide was a significant competitive advantage for the company. As both the semiconductor and the industrial products industries produced more intricate and precise products, the demand for silicon carbide produced using Lonestar's process would increase. Silicon carbide offered higher purity than alternative materials and Lonestar's process produced higher-purity products capable of more complex end uses.

In addition, Lonestar had distinguished itself from its glass container competition by providing superior service and being the first mover with premium graphite products. Both activities have solidified the company's relationships with large customers.

The company's primary competitors in the EDM segment were virtually the same as those they competed against in the SIP segment. These companies were large international firms that had much more diverse revenue streams than Lonestar. A full description of each key competitor is located in the **Appendix**.

In glass products, the company faced competitive pressures from HGH, Fieldco, Pyrotek, Le Carbone Lorraine, Schunk, Dura Temp, and Toyo Tanso.

HCP Background and Motivations

HCP, the private equity affiliate of Hamilton Group, Inc., was in its infancy as a private equity firm. Located in New York and consisting of three experienced investment professionals, HCP utilized its professionals' proven track record of investment sourcing, execution, management, and realization to partner with management teams that could benefit from HCP's guidance. The firm would complete both leveraged buyouts and growth equity transactions within business services, health care services, and specialty manufacturing industries. Additionally, HCP focused on the lower-middle market consisting of companies with \$30 million to \$300 million in revenue and \$5 million to \$20 million in EBITDA.

Before cofounding HCP, Desai had over a decade of experience in investment banking at Goldman Sachs and Morgan Stanley. And Patterson had been with Chase Securities in the High Yield Leverage Finance group, specializing in leveraged acquisitions.

Typically HCP sought to invest in businesses with the following characteristics:

- strong free cash flow with the ability to apply leverage
- the opportunity to bridge the company into new applications for additional products
- a company that would benefit from professional oversight and executive contact
- a company that commanded a significant market share in a niche market

Investment Opportunity

Lonestar met all the characteristics listed above and HCP felt this was an attractive investment opportunity. First, Lonestar was essentially a corporate orphan that presented many opportunities for synergies in SG&A expenses, working capital management, and capital expenditures. UNOTEX had decided to sell Lonestar as part of a plan to divest all of UNOTEX's businesses not related to its core activities in oil and gas exploration and production. Second, the company held significant market share in a niche market and had the ability to command premium prices for its products. Third, the company had developed superior technological capabilities for its manufacturing process that provided a significant competitive advantage. Finally, Lonestar had the opportunity to grow in existing markets and enter new markets due to its strong R&D pipeline.

As shown in **Exhibit 2**, management has provided its forecast for the remainder of 2000 through 2004. **Exhibit 3** depicts a balance sheet as of August 31, 2000. Revenues were expected to grow significantly from 2000 to 2004 as Lonestar capitalized on opportunities with core graphite customers and garnered additional success with the sale of silicon carbide. A significant portion of this growth was expected to come from international sales, as Lonestar leveraged its dominant U.S. position into a stronger international presence.

Risks and Concerns

Despite the upside for this investment opportunity, HCP saw a number of risks and concerns and incorporated many of them into a potential downside case, shown in **Exhibit 4**.

The following are risks and concerns that HCP had regarding Lonestar:

- management's ability to effectively manage working capital and reduce inventory levels and overhead expenditures.
- the ability to grow sales domestically and internationally.
- the cyclical nature of the EDM business and future trends of the semiconductor industry; some analysts were projecting a major drop in both the growth of the overall economy and demand for semiconductors.

- the ability to quickly transition into a stand-alone entity.
- customer concentration; Lonestar's top-ten customers accounted for 48% of sales while the top-four customers accounted for 34% (a breakout of Lonestar's top-ten customers is shown in **Exhibit 5**).
- the potential that Lonestar's key competitive advantage of process manufacturing semiconductor micron graphite could be replicated by a competitor.
- the consolidation among glass container manufacturers combined with slow industry growth, which significantly limited the company's opportunities in its glass container unit.

Investment Overview

After speaking with numerous potential lenders, HCP determined it could borrow up to \$51 million to complete the transaction if it bought Lonestar from UNOTEX. As **Exhibit 6** shows, this debt would consist of three separate tranches—a revolving line of credit, a senior bank loan, and a mezzanine tranche. HCP would be the sole equity investor and ideally would like to keep equity to total transaction value between 15% and 50%. HCP generally made equity investments with a goal of a five- to seven-year horizon and an approximate 25% hurdle rate.

Patterson and Desai looked at comparables for both public companies and sale transactions to assist them. They used the information in **Exhibits 7** through **9** to help them calculate their initial valuation.

Decision

HCP still had to decide how much equity to invest in Lonestar. Because HCP was a young firm, the success of the first few equity investments was crucial to future funding from its limited partners. HCP wanted this deal but could not afford to jeopardize potential returns by paying too much. Lonestar's investment advisors had learned that at least three other firms had already submitted final bids.

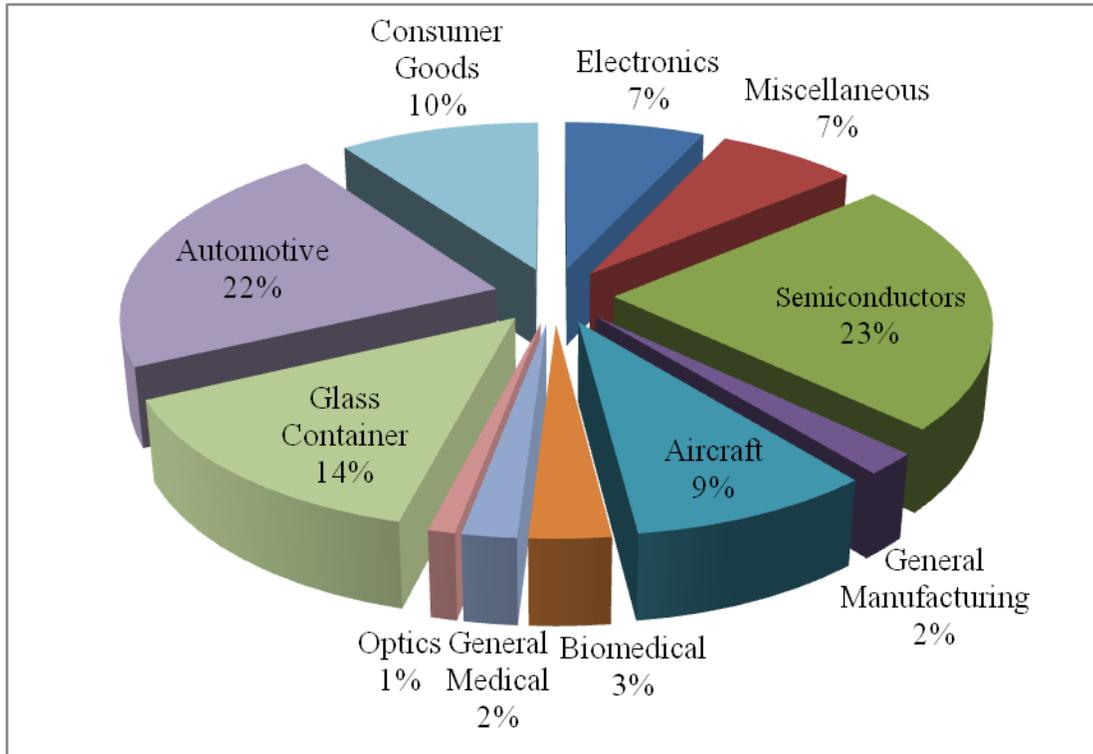
Once a fair valuation was calculated, Patterson and Desai could evaluate and determine the appropriate capital structure: total purchase price and how much debt versus equity would be needed to complete the transaction. More debt would allow HCP to drive its potential equity return—but introduce some financial risk in a downturn. Which forecast should they use—management's forecast or HCP's downside case? Would they be able to hit the firm's internal hurdle rate? What about the risk of a downturn in semiconductors? Could Lonestar, with the help of outside advisors, continue to operate efficiently and realize the projected synergies as a stand-alone entity? Would HCP's bid be high enough to acquire Lonestar?

As Patterson sat in his hotel room and worked through spreadsheets, he could hear the roar of the stadium down the street. The Panthers must have just scored. That was good news. The meeting on Monday would certainly have a more positive tone if the local team could pull out a victory.

Exhibit 1

LONESTAR GRAPHITE

Customer End Markets Served by Lonestar



Data source: Case writer analysis and company documents.

Exhibit 2

LONESTAR GRAPHITE
Pro Forma Management Case

	1997	1998	1999	LTM*	2000	2001	<i>Forecast</i> 2002	2003	2004
Total revenues	\$44.30	\$45.10	\$46.00	\$46.40	\$51.20	\$62.40	\$69.10	\$76.50	\$84.70
Gross profit	21.80	23.80	27.60	18.10	27.60	33.50	37.00	41.40	46.60
EBITDA	14.00	11.80	14.80	12.40	14.00	17.20	19.80	22.90	26.70
EBIT				8.90	10.50	11.70	14.10	17.10	20.80
Total interest				6.00	6.00	5.60	4.70	3.50	2.50
CAPEX				1.00	0.70	4.10	3.70	4.70	5.20
Total debt					53.40	45.50	35.80	25.60	15.00
Change in NWC					-3.23	3.09	2.04	1.01	-2.55
<i>Percent growth</i>	<i>5.6%</i>	<i>1.7%</i>	<i>2.0%</i>		<i>11.4%</i>	<i>21.7%</i>	<i>10.8%</i>	<i>10.8%</i>	<i>10.7%</i>
<i>Gross margin</i>	<i>49.1%</i>	<i>52.7%</i>	<i>60.0%</i>	<i>39.0%</i>	<i>53.9%</i>	<i>53.7%</i>	<i>53.6%</i>	<i>54.0%</i>	<i>54.9%</i>
<i>EBITDA margin</i>	<i>31.6%</i>	<i>26.2%</i>	<i>32.3%</i>	<i>26.7%</i>	<i>27.4%</i>	<i>27.5%</i>	<i>28.7%</i>	<i>29.9%</i>	<i>31.5%</i>
<i>Tax rate</i>				<i>35.0%</i>	<i>35.0%</i>	<i>35.0%</i>	<i>35.0%</i>	<i>35.0%</i>	<i>35.0%</i>

* LTM stands for "last 12 months," ending August 31, 2000.

Data source: Case writer analysis and company documents.

Exhibit 3

LONESTAR GRAPHITE

Balance Sheet (8/31/2000)

Cash	\$0.4
Accounts receivable	9.1
Inventory	<u>22.2</u>
Current assets	31.7
Net property, plant, and equipment	36.1
Other long-term assets	<u>2.8</u>
Total assets	<u>\$70.6</u>
Accounts payable	\$1.1
Accrued liabilities	<u>1.9</u>
Current liabilities	3.0
Long-term debt	-
Stockholders' equity	<u>67.6</u>
Total liabilities and stockholders' equity	<u>\$70.6</u>

Data source: Case writer analysis and company documents.

Exhibit 4

LONESTAR GRAPHITE

Pro Forma Downside Case

	1997	1998	1999	LTM*	2000	2001	<i>Forecast</i> 2002	2003	2004
Total revenues	\$44.30	\$45.10	\$46.00	\$46.40	\$51.20	\$56.40	\$58.10	\$64.80	\$70.90
Gross profit	21.80	23.80	27.60	18.10	27.60	28.70	29.10	33.40	35.30
EBITDA	14.00	11.80	14.80	12.40	12.90	12.40	11.90	15.00	15.50
EBIT				8.90	9.40	6.90	6.20	9.20	9.60
Total interest	0.00	0.00	0.00	6.00	6.00	5.80	5.30	4.70	4.40
CAPEX				1.00	0.70	4.10	3.70	4.70	5.20
Total debt					53.40	48.70	40.50	35.60	34.30
Change in NWC					-3.23	3.09	2.04	1.01	-2.55
<i>Revenue growth</i>	5.6%	1.7%	2.0%		11.4%	10.2%	3.0%	11.5%	9.4%
<i>Gross margin</i>	49.1%	52.7%	60.0%	39.0%	53.9%	50.9%	50.0%	51.5%	49.8%
<i>EBITDA margin</i>	31.6%	26.2%	32.3%	26.7%	25.2%	22.1%	20.5%	23.1%	21.9%
<i>Tax rate</i>					35.0%	35.0%	35.0%	35.0%	35.0%

* LTM stands for "last 12 months," ending August 31, 2000.

Data source: Case writer analysis and company documents.

Exhibit 5

LONESTAR GRAPHITE

Top-Ten Customer List
(in thousands of dollars)

Customer	Since	Business	1998 Sales	1999 Sales
Belmont Equipment Co.	1967	EDM	\$3,641	\$5,606
Graphel Corporation	1971	EDM	4,853	3,322
EDM Sales & Supplies	1982	EDM	2,044	1,930
LAM Research	1984	SIP	580	1,179
Bullen Ultrasonics, Inc.	1985	SIP	3,134	3,288
Applied Materials	1987	SIP	470	559
South Tech Industries	1982	EDM	1,249	814
Novetec BV	1987	EDM	917	1,100
Southern Tool	1986	EDM	1,670	1,308
Electrodes, Inc.	1974	EDM	2,624	2,789
Total			\$21,182	\$21,895
<i>Percentage of total sales</i>			<i>46%</i>	<i>48%</i>

Data source: Case writer analysis and company documents.

Exhibit 6

LONESTAR GRAPHITE

Proposed Deal Ownership Structure

Sources of Funds	Amount	Multiple LTM EBITDA*	Cumulative Multiple LTM EBITDA*	Use of Funds	Amount
Revolving credit facility (8.5%)	\$6.8	0.5×	0.5×	Purchase common stock	?
Senior term loan (8.5%)	30.0	2.4	3.0	Transaction fees/exp.	5.1
Mezzanine financing (11.5%)	15.0	1.2	4.2		
HCP: common and preferred equity	?	?	?		
Total sources	?	?	?	Total uses	?

* LTM stands for “last 12 months,” ending August 31, 2000.

Data source: Case writer analysis and company documents.

Exhibit 7

LONESTAR GRAPHITE

Public Comparables

Company	9/22/2000 Stock Price	52-Week High Price	52-Week Low Price	Market Value of Equity ^(a)	Enterprise Value ^(b)	EBITDA	Enterprise Value ÷		3-Year Revenue CAGR	Beta ^(c)
							LTM Sales	LTM EBITDA		
SGL CARBON AG -SPON ADR (SGG) ^(d)	\$22.0	\$37.3	\$17.0	\$1,401.2	\$1,767.1	\$170.6	1.8x	10.4x	-8.1%	0.57
UCAR INTERNATIONAL INC (UCR)	12.2	28.0	11.3	550.1	1,292.1	193.0	1.6	6.7	-13.0%	0.93
CARBIDE/GRAPHITE GROUP INC (CGGI)	3.8	10.8	2.3	31.2	145.4	22.4	0.7	6.5	-8.9%	1.09
MORGAN CRUCIBLE CO (060272) ^(e)	3.7	5.2	3.1	859.3	828.2	182.4	0.6	4.5	-1.6%	0.68
Mean							1.2x	6.9x	-7.9%	0.82
Median							1.1	6.6	-8.5%	0.80
High							1.8	10.4	-1.6%	1.09
Low							0.6	4.5	-13.0%	0.57

(a) Market value of equity calculated by multiplying current market price by number of common shares outstanding.

(b) Enterprise value equals net debt plus market value of equity plus book value of preferred stock and minority interests.

(c) Five-year adjusted beta ending September 22, 2000. Data source: Bloomberg.

(d) Beta calculated using DAX Index as comparison.

(e) Beta calculated using UKX Index as comparison.

Data source: Case writer analysis and company documents.

Exhibit 8

LONESTAR GRAPHITE

Comparable Transactions

Ann. Date	Transaction	Transaction Value	LTM				Transaction Value ÷			
			Revenue	EBITDA	EBIT	Income	LTM Rev.	LTM EBITDA	LTM EBIT	Net Income
7/25/1998	Acq: Hexcel Corp. Target: Clark-Schwebel Holdings Inc. ^(a)	\$453.00	\$228.60	\$38.70	\$17.30	\$9.35	1.98×	9.35×	11.71×	26.15×
6/20/2000	Acq: Loctite Corporation Target: Dexter Corporation ^(b)	400	325	40	32	NA	1.23	10	12.5	NA
7/10/1998	Acq: Safeguard International Fund Target: Metallurg Inc.	301.3	677.7	42.5	34.9	11.7	0.44	7.08	8.63	25.75
8/6/1998	Acq: GS Private Equity, AMP, Mgmt. Target: McKechnie plc ^(c)	110	183.3	16.9	NA	9.9	0.6	6.5	NA	11.1
4/16/1999	Acq: Cinven Mgmt. Target: Coats Viyella plc ^(d)	536.7	531.7	NA	NA	59	1.01	NA	NA	9.1
2/11/1999	Acq: Asbury Carbons Inc. Target: Dixon Ticonderoga ^(e)	23.5	12	NA	2.0 ^(f)	NA	1.96	NA	11.75	NA
Mean							1.05×	7.86×	10.96×	15.32×
Median							1.01	7.08	11.75	11.10
High							1.96	10.00	12.50	25.75
Low							0.44	6.50	8.63	9.10

(a) Excludes capital leases of PP&E not purchased.

(b) The purchase was Dexter's electronic materials, adhesives, and polymer systems businesses.

(c) The purchase was McKechnie's Australian aluminum, machined parts, plumbing components, and telecommunications, and automotive parts businesses.

(d) The purchase was Coats Viyella's Dynacast Precision Engineering Division.

(e) The purchase was Dixon's U.S. Graphite & Lubricants Division.

(f) Estimated from Dixon Ticonderoga September 30, 1999, 10-K.

Data source: Case writer analysis and company documents.

Exhibit 9

LONESTAR GRAPHITE
Market Data, September 2000

<u>Market Risk Premium</u>	6.00%
<u>Yield to Maturity on U.S. Government Bonds</u>	
One-year	6.13%
Three-year	6.02%
Five-year	5.93%
Ten-year	5.80%
Thirty-year	5.83%
<u>Yield to Maturity on Corporate Bonds</u>	
AAA	7.62%
BBB	8.35%

Data source: Federal Reserve Statistical Release, Historical Data.

Appendix

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Competitors

Ibiden: Based in Japan, Ibiden was the competitor that most resembled Lonestar. Ibiden was established in 1912 and was mainly engaged in the manufacture of electronic products (double-sided and multilayer printed circuit boards, packaging substrates such as chip on boards, memory cards, plastic pin grid arrays, and chip carriers), inorganic chemicals (graphite specialties, ceramics, ceramic fibers, and carbide), and housing materials (melamine decorative laminates, melamine processed goods, housing fitting, and structural materials). Ibiden's 1999 revenues were \$1,038.4 million. Printed circuit boards and related products/operations accounted for 77% of fiscal 1999 revenues; ceramic/carbon products, 8%; building materials, 7%; and other products and operations including styrene containers, automobile parts, packaging materials, food processing, and information services, 8%. The company had thirteen consolidated subsidiaries: seven in Japan, five in the United States, and one in Singapore. Sales outside Japan accounted for 56.7% of fiscal 1999 revenues.

SGL Carbon AG (SGL): Based in Germany, SGL was one of the world's largest manufacturers of carbon and graphite products. SGL's 1999 revenues were \$1,037.4 million. SGL divided its business areas into three segments: carbon and graphite, specialty graphite, and technical products. The carbon and graphite segment was the company's most important. Its core product was a graphite electrode used in the production of electric steel, which was recognized globally as an alternative to traditional methods of steelmaking. Products in the specialty graphite business segment included coarse grain blocks and precision-machined parts. Its three main business lines were electrical contacts, mechanical carbons, and industrial applications.

Tokai Carbon Ltd.: The company was established in 1918 to start domestic production of artificial graphite electrodes and other carbon products. Tokai Carbon was one of the leading manufacturers of carbon black and artificial graphite electrodes in Japan. Tokai's 1998 revenues (most recent available) were \$459.0 million. Carbon products accounted for 78% of 1998 revenues; industrial furnaces/ovens and related products, 10%; industrial gases and related products, 8%; and other, 4%. The company had 12 consolidated subsidiaries—11 in Japan and 1 in the United States. Overseas sales accounted for 17.5% of 1998 revenues. Ironically, while it was a competitor to Lonestar, it was also one of Lonestar's best customers.

Le Carbone Lorraine: Based in France, Le Carbone Lorraine had one-third of its business derived from graphite specialty products. The company produced and distributed carbon- and graphite-based products for industrial applications, aircraft and railroad brakes, and brushes for electric motors. 1999 revenues were \$730.7 million. Advanced systems and materials accounted for 31% of 1999 revenues; permanent magnets, 27%; electrical applications, 24%; and electric protection products, 18%.

Norton: Based in North America. Norton was a dominant player in the silicon carbide segment, which was a portion of the SIP division.

Source: Case writer analysis and company documents.