



FOR IMMEDIATE RELEASE

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CPEX Pharmaceuticals Reports Second-Quarter 2008 Financial Results

Exeter, NH, August 14, 2008 – CPEX Pharmaceuticals, Inc. (NASDAQ: CPEX) today reported revenues of \$3.9 million and a net loss of \$1.7 million for the second quarter ended June 30, 2008, compared to revenues of \$2.7 million and a net loss of \$1.8 million in the same period of the prior year.

CPEX began operating as an independent publicly traded company after its spin-off from Bentley Pharmaceuticals, Inc. was completed on June 30, 2008. The financial results reported for the three and six months ended June 30, 2008 include costs associated with the spin-off transaction and other allocated expenses of Bentley. Therefore, the results for these periods and comparable periods of 2007 are not indicative of the results that might have occurred if CPEX had operated as an independent public company for those periods. The balance sheet as of June 30, 2008 represents the stand-alone balance sheet of CPEX and its subsidiaries.

Second-Quarter Highlights

- Revenues increased 49% to \$3.9 million from \$2.7 million.
- Operating expenses increased 26% to \$5.7 million from \$4.5 million.
- Net loss decreased to \$1.7 million, or \$0.74 per share, from \$1.8 million, or \$0.78 per share.

The increase in revenues for the second quarter of 2008 was primarily due to higher royalties on sales of Testim[®] in the quarter. Testim's market share is reported to have increased to 22% as of June 30, 2008, compared with 20% a year earlier. Also included in revenues for the second quarter of 2008 were approximately \$0.3 million in funded research related to an ongoing collaboration agreement. CPEX does not expect significant research revenues in subsequent quarters of 2008. The higher operating expenses were primarily attributable to increased costs of approximately \$1.4 million associated with the spin-off from Bentley. Also included in operating expenses is a \$0.3 million charge resulting from the modification of equity awards associated with the spin-off transaction. The computation of loss per share is based on the net loss divided by 2,274,000 common shares, which is the number of CPEX shares distributed to Bentley stockholders on June 30, 2008. The same number of shares is being used for the loss per share computation for all prior periods because no CPEX equity awards were outstanding prior to the spin-off. In addition, since CPEX is in

a net loss position, any potential incremental shares were not used to compute diluted loss per share because the effect would have been anti-dilutive.

Year-to-Date Highlights

- Revenues increased 54% to \$7.4 million from \$4.8 million.
- Operating expenses increased 27% to \$9.8 million from \$7.7 million.
- Net loss decreased to \$2.2 million, or \$0.97 per share, from \$2.7 million, or \$1.19 per share.

The increase in revenues for the six months ended June 30, 2008 was primarily due to growth in royalties on sales of Testim[®]. Revenues for the period also included approximately \$0.4 million in funded research. The increased operating expenses were primarily attributable to increased costs of approximately \$2.3 million associated with the spin-off from Bentley. As of June 30, 2008, CPEX had unrestricted cash of approximately \$11.3 million, working capital of \$14.2 million and no debt.

Business Update

Collaboration Agreement with Serenity Pharmaceuticals: On August 4, 2008, CPEX and privately held Serenity Pharmaceuticals Corporation announced that they are collaborating on an intranasal drug candidate for a urology indication, which has entered Phase I clinical trials. New York-based Serenity's drug candidate will be delivered using CPEX's patented drug delivery technology.

Nasulin[™] Phase II Clinical Trials: CPEX's intranasal insulin product candidate, Nasulin, is currently in Phase II clinical trials. Recent Phase II trials in patients with Type 2 diabetes indicate Nasulin may have a time/action profile similar to insulin naturally secreted by the pancreas. CPEX is moving to demonstrate this positive clinical profile and improved HbA1c values for patients with Type 2 diabetes in long-term Phase II studies. CPEX expects to complete Phase II trials for Nasulin in mid-2010. On August 12, 2008, CPEX announced the signing of a contract manufacturing agreement with DPT Laboratories, Ltd. providing CPEX with the capacity to supply Nasulin clinical materials in volumes sufficient both for the remainder of Phase II trials and through Phase III trials. Should Nasulin be registered and approved by the Food and Drug Administration, the agreement also provides for validation of the manufacturing process and the opportunity for manufacturing capacity that CPEX expects will be sufficient for the first years of commercial marketing.

Management Comments

"We are excited about the prospects for CPEX as an independent public company, and we are optimistic about the opportunities the spin-off affords our shareholders and employees," said John A. Sedor, president and chief executive officer. "CPEX is well-positioned with a balance sheet that provides financial flexibility to support our planned development activities.

"We have a high level of confidence in the prospects for our CPE-215[®] drug delivery platform," said Sedor. "Including the launch of Serenity's Phase I trial, our technology has formed the basis for the filing of three separate INDs, which together represent diverse therapeutic areas: testosterone replacement, diabetes and urology. This diversity demonstrates the platform's broad applicability and its potential to deliver effectively pharmaceutically active molecules across a variety of membranes. Our strategic goal is to capitalize on this potential in ways that can drive profitable growth for CPEX and create shareholder value over the long-term."

About CPEX Pharmaceuticals

CPEX Pharmaceuticals, Inc. (NASDAQ: CPEX) is a specialty pharmaceutical company focused on the development, licensing and commercialization of pharmaceutical products utilizing CPEX's validated drug delivery technology. CPEX has U.S. and international patents and other proprietary rights to technologies that facilitate the absorption of drugs. CPEX has licensed applications of its proprietary CPE-215[®] drug delivery technology to Auxilium Pharmaceuticals, Inc., which launched its Testim[®] topical testosterone gel in 2003. CPEX also is developing an intranasal insulin product candidate, Nasulin[™], which is in Phase II clinical trials. CPEX maintains its headquarters in Exeter, NH. For more information about CPEX, please visit www.cpexpharm.com.

Safe Harbor Statement under the U.S. Private Securities Litigation Reform Act of 1995:

This press release contains forward-looking statements, including, without limitation, statements regarding the prospects for the applicability of CPEX's drug delivery technology, future prospects and opportunities for profitable growth of CPEX as an independent public company, the prospects for internal financing of CPEX's development activities, the prospects of CPEX's collaboration agreements and the potential for Nasulin. These forward-looking statements are subject to a number of risks and uncertainties that could cause actual results to differ materially from future results expressed or implied by such statements. Factors that may cause such differences include, but are not limited to, risks associated with the following: clinical trials may not demonstrate the efficacy and safety of CPEX products, regulatory approvals may be delayed or not obtained, CPEX's dependence on other parties to conduct clinical trials and commercialize its product candidates that use its drug delivery technology, CPEX's products may not achieve market acceptance, competition from other manufacturers of proprietary pharmaceuticals, intellectual property litigation, the unpredictability of patent protection, and other uncertainties detailed under "Risk Factors" in CPEX's Registration Statement on Form 10 dated June 17, 2008 in connection with the distribution of CPEX's common stock to stockholders of Bentley Pharmaceuticals, Inc. CPEX cautions investors not to place undue reliance on the forward-looking statements contained in this release. These statements speak only as of the date of this document, and CPEX undertakes no obligation to update or revise the statements, except as may be required by law.

CPEX Pharmaceuticals, Inc. and Subsidiaries
Unaudited Condensed Combined Statements of Operations

(in thousands, except per share data)

	For the Three Months Ended		For the Six Months Ended	
	June 30,		June 30,	
	<u>2008</u>	<u>2007</u>	<u>2008</u>	<u>2007</u>
Royalties and other revenue	\$ 3,948	\$ 2,655	\$ 7,398	\$ 4,818
Operating expenses:				
General and administrative	1,344	1,432	2,449	2,353
Research and development	2,632	2,756	4,528	4,812
Separation costs	1,565	119	2,502	154
Depreciation and amortization	<u>171</u>	<u>223</u>	<u>343</u>	<u>418</u>
Total operating expenses	<u>5,712</u>	<u>4,530</u>	<u>9,822</u>	<u>7,737</u>
Loss from operations	<u>(1,764)</u>	<u>(1,875)</u>	<u>(2,424)</u>	<u>(2,919)</u>
Other income (expenses):				
Interest income	79	115	226	232
Interest expense	(2)	(3)	(3)	(8)
Other, net	<u>—</u>	<u>—</u>	<u>—</u>	<u>(3)</u>
Net loss	<u>\$ (1,687)</u>	<u>\$ (1,763)</u>	<u>\$ (2,201)</u>	<u>\$ (2,698)</u>
Net loss per common share:				
Basic and Diluted	<u>\$ (0.74)</u>	<u>\$ (0.78)</u>	<u>\$ (0.97)</u>	<u>\$ (1.19)</u>
Weighted average common shares outstanding:				
Basic and Diluted	<u>2,274</u>	<u>2,274</u>	<u>2,274</u>	<u>2,274</u>

CPEX Pharmaceuticals, Inc. and Subsidiaries
Unaudited Condensed Consolidated and Combined Balance Sheets

(in thousands, except per share data)

	<u>June 30, 2008</u>	<u>December 31, 2007</u>
Assets		
Current assets:		
Cash and cash equivalents	\$ 11,328	\$ 21,659
Receivables	3,909	3,245
Prepaid expenses and other	<u>493</u>	<u>707</u>
Total current assets	<u>15,730</u>	<u>25,611</u>
Non-current assets:		
Fixed assets, net	2,789	2,800
Intangible assets, net	2,734	2,942
Restricted cash	1,000	1,000
Other	<u>1</u>	<u>44</u>
Total non-current assets	<u>6,524</u>	<u>6,786</u>
Total assets	<u>\$ 22,254</u>	<u>\$ 32,397</u>
Liabilities and Stockholders' Equity		
Current liabilities:		
Accounts payable	\$ 381	\$ 974
Accrued expenses	1,094	2,247
Other	<u>78</u>	<u>25</u>
Total current liabilities	<u>1,553</u>	<u>3,246</u>
Commitments and contingencies		
Stockholders' equity:		
Series A Preferred stock, \$0.01 par value, authorized 1,000 shares, issued and outstanding, none	—	—
Common stock, \$0.01 par value, authorized 35,000 shares, issued and outstanding, 2,274 shares	23	—
Additional paid-in capital	20,678	—
Bentley Pharmaceuticals, Inc. net investment	<u>—</u>	<u>29,151</u>
Total stockholders' equity	<u>20,701</u>	<u>29,151</u>
Total liabilities and stockholders' equity	<u>\$ 22,254</u>	<u>\$ 32,397</u>

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