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

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**FORM 10-Q**

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**QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

**For the quarterly period ended June 30, 2008**

**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 001-12019**

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**QUAKER CHEMICAL CORPORATION**

(Exact name of Registrant as specified in its charter)

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**Pennsylvania**  
(State or other jurisdiction of  
incorporation or organization)

**23-0993790**  
(I.R.S. Employer Identification No.)

**One Quaker Park, 901 Hector Street,  
Conshohocken, Pennsylvania**  
(Address of principal executive offices)

**19428-0809**  
(Zip Code)

**Registrant's telephone number, including area code: 610-832-4000**

**Not Applicable**

Former name, former address and former fiscal year, if changed since last report.

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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 is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

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

Accelerated filer   
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

Indicate the number of shares outstanding of each of the issuer's classes of common stock, as of the latest practicable date.

**Number of Shares of Common Stock  
Outstanding on June 30, 2008**

10,612,269

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**PART I**  
**FINANCIAL INFORMATION**

**Item 1. Financial Statements.**

**Quaker Chemical Corporation**  
**Condensed Consolidated Balance Sheet**

	Unaudited (Dollars in thousands, except par value and share amounts)	
	June 30, 2008	December 31, 2007*
<b>ASSETS</b>		
Current assets		
Cash and cash equivalents	\$ 22,170	\$ 20,195
Construction fund (restricted cash)	9,325	—
Accounts receivable, net	121,599	118,135
Inventories		
Raw materials and supplies	27,893	24,447
Work-in-process and finished goods	38,667	36,291
Prepaid expenses and other current assets	14,516	14,433
Total current assets	<u>234,170</u>	<u>213,501</u>
Property, plant and equipment, at cost	190,596	175,878
Less accumulated depreciation	(123,836)	(113,591)
Net property, plant and equipment	66,760	62,287
Goodwill	47,129	43,789
Other intangible assets, net	7,480	7,873
Investments in associated companies	7,972	7,323
Deferred income taxes	30,480	30,257
Other assets	40,315	34,019
Total assets	<u>\$ 434,306</u>	<u>\$ 399,049</u>
<b>LIABILITIES AND SHAREHOLDERS' EQUITY</b>		
Current liabilities		
Short-term borrowings and current portion of long-term debt	\$ 2,818	\$ 4,288
Accounts and other payables	73,718	67,380
Accrued compensation	11,403	17,287
Other current liabilities	17,280	17,396
Total current liabilities	105,219	106,351
Long-term debt	87,405	78,487
Deferred income taxes	8,784	7,583
Other non-current liabilities	75,118	71,722
Total liabilities	<u>276,526</u>	<u>264,143</u>
Minority interest in equity of subsidiaries	4,883	4,513
Shareholders' equity		
Common stock \$1 par value; authorized 30,000,000 shares; issued 2008 – 10,612,269; 2007 – 10,147,239 shares	10,612	10,147
Capital in excess of par value	19,029	10,104
Retained earnings	120,375	115,767
Accumulated other comprehensive income (loss)	2,881	(5,625)
Total shareholders' equity	<u>152,897</u>	<u>130,393</u>
Total liabilities and shareholders' equity	<u>\$ 434,306</u>	<u>\$ 399,049</u>

\* Condensed from audited financial statements.

*The accompanying notes are an integral part of these condensed consolidated financial statements.*

**Quaker Chemical Corporation**  
**Condensed Consolidated Statement of Income**

	Unaudited			
	(Dollars in thousands, except per share and share amounts)			
	Three Months Ended June 30,		Six Months Ended June 30,	
	2008	2007	2008	2007
Net sales	\$ 158,188	\$ 137,598	\$ 305,906	\$ 262,489
Cost of goods sold	113,402	94,986	217,485	181,331
Gross margin	44,786	42,612	88,421	81,158
Selling, general and administrative expenses	37,153	35,409	71,657	67,328
CEO transition costs	1,880	—	1,880	—
Operating income	5,753	7,203	14,884	13,830
Other income, net	1,687	909	1,848	1,236
Interest expense	(1,337)	(1,660)	(2,756)	(3,215)
Interest income	358	159	595	364
Income before taxes	6,461	6,611	14,571	12,215
Taxes on income	2,116	2,298	4,881	4,142
	4,345	4,313	9,690	8,073
Equity in net income of associated companies	187	266	299	391
Minority interest in net income of subsidiaries	(211)	(428)	(575)	(776)
Net income	<u>\$ 4,321</u>	<u>\$ 4,151</u>	<u>\$ 9,414</u>	<u>\$ 7,688</u>
Per share data:				
Net income – basic	\$ 0.42	\$ 0.42	\$ 0.92	\$ 0.77
Net income – diluted	\$ 0.41	\$ 0.41	\$ 0.91	\$ 0.76
Dividends declared	\$ 0.23	\$ 0.215	\$ 0.46	\$ 0.43
Based on weighted average number of shares outstanding:				
Basic	10,285,121	9,983,535	10,185,490	9,945,819
Diluted	10,559,449	10,118,653	10,366,569	10,074,060

*The accompanying notes are an integral part of these condensed consolidated financial statements.*

**Quaker Chemical Corporation**  
**Condensed Consolidated Statement of Cash Flows**

	Unaudited (Dollars in thousands)	
	For the Six Months Ended June 30,	
	2008	2007
<b>Cash flows from operating activities</b>		
Net income	\$ 9,414	\$ 7,688
Adjustments to reconcile net income to net cash provided by (used in) operating activities:		
Depreciation	5,457	5,500
Amortization	606	611
Equity in undistributed earnings of associated companies, net of dividends	(299)	(26)
Minority interest in earnings of subsidiaries	575	776
Deferred compensation and other, net	2,498	1,276
Stock-based compensation	1,762	561
(Gain) loss on disposal of property, plant and equipment	(76)	6
Insurance settlement realized	(685)	(913)
Pension and other postretirement benefits	(3,311)	(1,773)
Increase (decrease) in cash from changes in current assets and current liabilities, net of acquisitions:		
Accounts receivable	1,013	(14,785)
Inventories	(3,806)	(3,921)
Prepaid expenses and other current assets	(885)	(989)
Accounts payable and accrued liabilities	(4,146)	3,123
Net cash provided by (used in) operating activities	<u>8,117</u>	<u>(2,866)</u>
<b>Cash flows from investing activities</b>		
Investments in property, plant and equipment	(7,038)	(4,180)
Payments related to acquisitions	(1,000)	(1,527)
Proceeds from disposition of assets	117	106
Insurance settlement received and interest earned	5,178	5,326
Change in restricted cash, net	(13,818)	(4,413)
Net cash used in investing activities	<u>(16,561)</u>	<u>(4,688)</u>
<b>Cash flows from financing activities</b>		
Net decrease in short-term borrowings	(1,488)	(2,841)
Proceeds from long-term debt	10,000	10,921
Repayments of long-term debt	(2,120)	(448)
Dividends paid	(4,550)	(4,304)
Stock options exercised, other	7,628	2,605
Distributions to minority shareholders	—	(270)
Net cash provided by financing activities	<u>9,470</u>	<u>5,663</u>
<b>Effect of exchange rate changes on cash</b>		
Net increase (decrease) in cash and cash equivalents	1,975	(1,545)
Cash and cash equivalents at beginning of period	20,195	16,062
Cash and cash equivalents at end of period	<u>\$ 22,170</u>	<u>\$ 14,517</u>

*The accompanying notes are an integral part of these condensed consolidated financial statements.*

**Quaker Chemical Corporation**  
**Notes to Condensed Consolidated Financial Statements**  
**(Dollars in thousands, except per share amounts)**  
**(Unaudited)**

**Note 1 – Condensed Financial Information**

The condensed consolidated financial statements included herein are unaudited and have been prepared in accordance with generally accepted accounting principles in the United States for interim financial reporting and the United States Securities and Exchange Commission regulations. Certain information and footnote disclosures normally included in financial statements prepared in accordance with generally accepted accounting principles in the United States have been condensed or omitted pursuant to such rules and regulations. In the opinion of management, the financial statements reflect all adjustments (consisting only of normal recurring adjustments, except as discussed below) which are necessary for a fair statement of the financial position, results of operations and cash flows for the interim periods. The results for the three and six months ended June 30, 2008 are not necessarily indicative of the results to be expected for the full year. These financial statements should be read in conjunction with the Company's Annual Report filed on Form 10-K for the year ended December 31, 2007.

During the first quarter of 2008 and as required by SFAS No. 158, "Employers' Accounting for Defined Benefit Pension and Other Postretirement Plans," the Company changed the measurement date of its U.S. pension plan from November 30 to December 31 in order to coincide with the Company's fiscal year end. This change did not have a material impact to the Company's consolidated financial statements.

As previously disclosed on May 7, 2008, Ronald J. Naples, Chairman and Chief Executive Officer of the Company, has announced his plan to retire as Chief Executive Officer, effective October 3, 2008. The Company is recognizing certain accelerated and other costs in accordance with Mr. Naples' Employment, Transition and Consulting Agreement. Over the course of the next three years, the Company anticipates taking a charge to earnings of approximately \$5,800 of which \$3,500 would be incurred in 2008, \$1,900 in 2009, and \$400 in 2010. The \$1,880 charge, or approximately \$0.12 per diluted share, incurred in the second quarter of 2008 includes incremental equity compensation expense of \$975, a special bonus of \$642, \$65 related to his annual bonus, and incremental expense of \$198 related to the Company's Supplemental Retirement Income Plan. Refer to Note 5 – Stock-Based Compensation and the Company's current report on Form 8-K, filed on May 13, 2008 for further information.

During the second quarter of 2008, the Company received a net arbitration award of \$956, or approximately \$0.04 per diluted share, related to litigation with one of the former owners of the Company's Italian affiliate. This net award was recorded in "Other income."

As part of the Company's chemical management services, certain third-party product sales to customers are managed by the Company. Where the Company acts as principal, revenues are recognized on a gross reporting basis at the selling price negotiated with customers. Where the Company acts as an agent, such revenue is recorded using net reporting as service revenues at the amount of the administrative fee earned by the Company for ordering the goods. Third-party products transferred under arrangements resulting in net reporting totaled \$16,880 and \$26,848 for the six months ended June 30, 2008 and 2007, respectively.

**Note 2 – Recently Issued Accounting Standards**

In December 2007, the FASB issued Statement of Financial Accounting Standards No. 141 (revised 2007) ("SFAS 141(R)"), *Business Combinations*, and Statement of Financial Accounting Standards No. 160 ("SFAS 160"), *Noncontrolling Interests in Consolidated Financial Statements, an amendment of ARB No. 51*. SFAS 141(R) will significantly change how business acquisitions are accounted for and will impact financial statements both on the acquisition date and in subsequent periods. Some of the changes, such as the accounting for contingent consideration, will introduce more volatility into earnings. SFAS 160 will change the accounting and reporting for minority interests, which will be recharacterized as noncontrolling interests and classified as a component of equity. SFAS 141(R) will be applied prospectively. SFAS 160 requires retroactive adoption of the presentation and disclosure requirements for existing minority interests. All other requirements of SFAS 160 shall be applied prospectively. SFAS 141(R) and SFAS 160 are effective for fiscal years beginning on or after December 15, 2008. The Company is currently assessing the impact of these standards on its financial statements.

In March 2008, the FASB issued Statement of Financial Accounting Standard No. 161 ("SFAS 161"), *Disclosures about Derivative Instruments and Hedging Activities*. SFAS 161 requires expanded disclosure about the Company's hedging activities and use of derivative instruments in its hedging activities. SFAS 161 is effective for fiscal years beginning on or after November 15, 2008 and for interim periods within those fiscal years. The Company is currently assessing the impact of this standard on its financial statements.

In June 2008, the FASB issued FASB Staff Position, FSP EITF 03-6-1, *Determining Whether Instruments Granted in Share-Based Payment Transactions Are Participating Securities*. FSP EITF 03-6-1 changes the way earnings per share is calculated for share-based payments that have not vested. FSP EITF 03-6-1 is effective for fiscal years beginning on or after December 15, 2008 and for interim periods within those fiscal years. The Company is currently assessing the impact of this standard on its financial statements.

**Quaker Chemical Corporation**  
**Notes to Condensed Consolidated Financial Statements**  
**(Dollars in thousands, except per share amounts)**  
**(Unaudited)**

**Note 3 – Uncertain Income Tax Positions**

In June 2006, the Financial Accounting Standards Board issued FASB Interpretation No. 48, “Accounting for Uncertainty in Income Taxes, an interpretation of FASB Statement No. 109” (“FIN 48”). FIN 48 prescribes the recognition threshold and measurement attributes for financial statement recognition and measurement of tax positions taken or expected to be taken on a tax return. FIN 48 requires the determination of whether the benefits of tax positions will be more likely than not sustained upon audit based upon the technical merits of the tax position. For tax positions that are determined to be more likely than not sustained upon audit, a company recognizes the largest amount of benefit that is greater than 50% likely of being realized upon ultimate settlement in the financial statements. For tax positions that are not determined to be more likely than not sustained upon audit, a company does not recognize any portion of the benefit in the financial statements. FIN 48 also provides guidance on de-recognition, classification, penalties and interest, accounting in interim periods, disclosure, and transition. FIN 48 is effective for fiscal years beginning after December 15, 2006. The Company adopted the provisions of FIN 48, effective January 1, 2007.

At December 31, 2007, the Company’s cumulative liability for gross unrecognized tax benefits was \$10,861. As of June 30, 2008, the Company’s cumulative liability for gross unrecognized tax benefits was \$12,226.

The Company continues to recognize interest and penalties associated with uncertain tax positions as a component of taxes on income in its Consolidated Statement of Income. The Company had accrued \$1,211 for cumulative interest and \$809 for cumulative penalties at December 31, 2007. The Company has recognized \$191 and \$376 for interest and \$10 and \$45 for penalties on its Consolidated Statement of Income for the three-month period and six-month period ended June 30, 2008, respectively, and, as of June 30, 2008, the Company had accrued \$1,675 for cumulative interest and \$895 for cumulative penalties.

The Company and its subsidiaries are subject to U.S. Federal income tax, as well as the income tax of various state and foreign tax jurisdictions. Tax years that remain subject to examination by major tax jurisdictions include the United Kingdom from 2001, Brazil from 2002, the Netherlands and Spain from 2003, Italy and the United States from 2004, China and India from 2005, and various domestic state tax jurisdictions from 1993.

In 2007, the Internal Revenue Service commenced a routine examination of the Company’s U.S. corporate income tax returns for the tax years ended December 31, 2005 and December 31, 2006. Based on the outcome of this examination, the Company may recognize changes to its unrecognized tax benefit.

In addition, the Company was under audit by the French tax authorities for tax years 2001 through 2004. The French tax authorities made several adjustments to the Company’s transfer pricing transactions and inter-company charges. During the three-month period ended March 31, 2008, the Company resolved several of these issues through the French administrative appeals process and with Competent Authority as provided under the U.S./French tax treaty. As a result of this partial resolution of the issues, the Company recognized a \$381 decrease in its cumulative liability for gross unrecognized tax benefits for the six-month period ended June 30, 2008.

**Note 4 – Fair Value Measurements**

In September 2006, the FASB issued Statement of Financial Accounting Standards No. 157 (“SFAS 157”), *Fair Value Measurement*. Subsequently, the FASB issued FASB Staff Position (“FSP”) 157-1 and FSP 157-2, which provided exceptions to applying the guidance to leasing transactions and to non-recurring nonfinancial assets and liabilities. Effective January 1, 2008, the Company adopted SFAS 157, with the exception of the application of the statement to non-recurring nonfinancial assets and nonfinancial liabilities. Non-recurring nonfinancial assets and nonfinancial liabilities for which the Company has not applied the provisions of SFAS 157 include those measured at fair value in goodwill impairment testing, indefinite lived intangible assets measured at fair value for impairment testing, asset retirement obligations initially measured at fair value, and those initially measured at fair value in a business combination. SFAS 157 establishes a common definition for fair value to be applied to U.S. GAAP guidance requiring use of fair value, establishes a framework for measuring fair value, and expands disclosure about such fair value measurements. This standard does not require any new fair value measurements, but rather applies to all other accounting pronouncements that require or permit fair value measurements.

The statement utilizes a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value into three broad levels. The following is a brief description of those three levels:

- Level 1: Observable inputs such as quoted prices (unadjusted) in active markets for identical assets or liabilities.
- Level 2: Inputs other than quoted prices that are observable for the asset or liability, either directly or indirectly. These include quoted prices for similar assets or liabilities in active markets and quoted prices for identical or similar assets or liabilities in markets that are not active.
- Level 3: Unobservable inputs that reflect the reporting entity’s own assumptions.

**Quaker Chemical Corporation**  
**Notes to Condensed Consolidated Financial Statements**  
**(Dollars in thousands, except per share amounts)**  
**(Unaudited)**

The Company values its interest rate swaps, company-owned life insurance policies and various deferred compensation assets and liabilities at fair value. The Company's assets and liabilities subject to fair value measurement are as follows (in thousands):

	Fair Value as of June 30, 2008	Fair Value Measurements at June 30, 2008 Using Fair Value Hierarchy		
		Level 1	Level 2	Level 3
<b>Assets</b>				
Company-owned life insurance	\$ 3,602	\$ —	\$3,602	\$ —
Company-owned life insurance—Deferred compensation assets	2,196	—	2,196	—
Other deferred compensation assets	2,028	2,028	—	—
<b>Total</b>	<b>\$ 7,826</b>	<b>\$2,028</b>	<b>\$5,798</b>	<b>\$ —</b>
<b>Liabilities</b>				
Deferred compensation liabilities	\$ 4,862	\$4,862	\$ —	\$ —
Interest rate derivatives	1,131	—	1,131	—
<b>Total</b>	<b>\$ 5,993</b>	<b>\$4,862</b>	<b>\$1,131</b>	<b>\$ —</b>

The fair values of Company-owned life insurance ("COLI") and COLI deferred compensation assets are based on quotes for like instruments with similar credit ratings and terms. The fair values of Other deferred compensation assets and liabilities are based on quoted prices in active markets. The fair values of interest rate derivatives are based on quoted market prices from various banks for similar instruments.

#### **Note 5 – Stock-Based Compensation**

The Company applies Statement of Financial Accounting Standards No. 123 (revised 2004) ("SFAS 123(R)"), *Share-Based Payment*. SFAS 123(R) requires the recognition of the fair value of stock compensation in net income. The Company elected the modified prospective method in adopting SFAS 123(R). Under this method, the provisions of SFAS 123(R) apply to all awards granted or modified after the date of adoption.

On May 7, 2008, Ronald J. Naples, Chairman and Chief Executive Officer of the Company, announced that he plans to retire as the Company's Chief Executive Officer, effective October 3, 2008. In accordance with Mr. Naples' Employment, Transition and Consulting Agreement, Mr. Naples' equity-based compensation awards (both nonvested stock and stock options) had to be re-measured and vesting accelerated to coincide with the October 3, 2008 retirement date. These actions resulted in incremental equity compensation expense of approximately \$975 (\$396 nonvested stock and \$579 stock options) during the six months ended June 30, 2008. These incremental expenses are included in the following reconciliation of total equity-based compensation expense.

The Company recognized approximately \$1,762 of share-based compensation expense and \$617 of related tax benefits in our unaudited condensed consolidated statement of income for the six months ended June 30, 2008. The compensation expense was comprised of \$869 related to stock options, \$806 related to nonvested stock awards, \$23 related to the Company's Employee Stock Purchase Plan, and \$64 related to the Company's Director Stock Ownership Plan.

Based on our historical experience, we have assumed a forfeiture rate of 13% on the nonvested stock. Under the true-up provisions of SFAS 123(R), we will record additional expense if the actual forfeiture rate is lower than we estimated, and we will record a recovery of prior expense if the actual forfeiture rate is higher than we estimated.

The Company has a long-term incentive program ("LTIP") for key employees which provides for the granting of options to purchase stock at prices not less than market value on the date of the grant. Most options become exercisable between one and three years after the date of the grant for a period of time determined by the Company not to exceed seven years from the date of grant for options issued in 1999 or later and ten years for options issued in prior years. Beginning in 1999, the LTIP program provided for common



**Quaker Chemical Corporation**  
**Notes to Condensed Consolidated Financial Statements**  
(Dollars in thousands, except per share amounts)  
(Unaudited)

stock awards, the value of which was generally derived from Company performance over a three-year period. Common stock awards issued in 2006, 2007 and 2008 under the LTIP program are subject only to time vesting over a three to five-year period. In addition, as part of the Company's Global Annual Incentive Plan ("GAIP"), nonvested shares may be issued to key employees, which generally vest over a two to five-year period.

Stock option activity under all plans is as follows:

	Number of Shares	Weighted Average Exercise Price per Share	Weighted Average Remaining Contractual Term (years)
Balance at December 31, 2007	1,033,175	\$ 21.36	
Options granted	145,184	19.45	
Options exercised	(464,020)	21.39	
Options forfeited	—	—	
Options expired	(76,112)	17.80	
Balance at June 30, 2008	638,227	\$ 21.33	4.5
Exercisable at June 30, 2008	355,347	\$ 21.73	3.3

The total intrinsic value of options exercised during the six months ended June 30, 2008 was approximately \$3,682. Intrinsic value is calculated as the difference between the current market price of the underlying security and the strike price of a related option. As of June 30, 2008, the total intrinsic value of options outstanding was approximately \$3,401, and the total intrinsic value of exercisable options was approximately \$1,751.

A summary of the Company's outstanding stock options at June 30, 2008 is as follows:

Range of Exercise Prices	Number Outstanding at 6/30/2008	Weighted Average Contractual Life	Weighted Average Exercise Price	Number Exercisable at 6/30/2008	Weighted Average Exercise Price
\$15.97 - \$18.62	1,200	0.2	\$ 16.50	1,200	\$ 16.50
\$18.63 - \$21.28	347,541	4.6	19.81	165,157	20.10
\$21.29 - \$23.94	242,586	4.7	22.61	142,090	22.25
\$23.94 - \$26.60	46,900	2.8	26.07	46,900	26.07
	<u>638,227</u>	4.5	21.33	<u>355,347</u>	21.73

As of June 30, 2008, unrecognized compensation expense related to options granted during 2006 was \$174, for options granted during 2007 was \$453 and for options granted during 2008 was \$716.

During the first quarter of 2008, the Company granted 145,184 stock options under the Company's LTIP plan that are subject only to time vesting over a three-year period. The options were valued using the Black-Scholes model with the following assumptions: dividend yield of 4.1%, expected volatility of 30.31%, risk free interest rate of 3.15%, an expected term of 6 years, and a forfeiture rate of 3% over the remaining life of the options. Approximately \$404 of expense was recorded on these options during the six months ended June 30, 2008. The fair value of these awards is amortized on a straight-line basis over the vesting period of the awards.

Under the Company's LTIP plan, 72,110 shares of nonvested stock were outstanding at December 31, 2007. In the first quarter of 2008, 48,431 shares of nonvested stock were granted at a weighted average grant date fair value of \$19.45. In the second quarter of 2008, 5,000 shares of nonvested stock were granted at a weighted average grant date fair value of \$30.51. In addition, in the second quarter of 2008, 1,536 shares of nonvested stock were granted to Directors at a weighted average grant date fair value of \$31.10. As of June 30, 2008, 1,200 of these awards were vested, 900 shares were forfeited and 124,977 shares were outstanding. The fair value of the nonvested stock is based on the trading price of the Company's common stock on the date of grant. The Company adjusts the grant date fair value for expected forfeitures based on historical experience for similar awards. As of June 30, 2008, unrecognized compensation expense related to these awards was \$1,651, to be recognized over a weighted average remaining period of 1.5 years.

Under the Company's GAIP, 42,500 shares of nonvested stock were granted during the second quarter of 2005 at a weighted average grant date fair value of \$20.12 per share. At December 31, 2007, 27,500 shares were outstanding. Through June 30, 2008, 13,750 shares vested and were issued, no shares were forfeited and 13,750 shares were outstanding. As of June 30, 2008, unrecognized compensation expense related to these awards was \$75, to be recognized over a weighted average remaining period of 1.3 years.

**Quaker Chemical Corporation**  
**Notes to Condensed Consolidated Financial Statements**  
(Dollars in thousands, except per share amounts)  
(Unaudited)

**Employee Stock Purchase Plan**

In 2000, the Board adopted an Employee Stock Purchase Plan (“ESPP”) whereby employees may purchase Company stock through a payroll deduction plan. Purchases are made from the plan and credited to each participant’s account at the end of each month, the “Investment Date.” The purchase price of the stock is 85% of the fair market value on the Investment Date. The plan is compensatory and the 15% discount is expensed on the Investment Date. All employees, including officers, are eligible to participate in this plan. A participant may withdraw all uninvested payment balances credited to a participant’s account at any time by giving written notice to the Committee. An employee whose stock ownership of the Company exceeds five percent of the outstanding common stock is not eligible to participate in this plan.

**2003 Director Stock Ownership Plan**

In March 2003, the Company’s Board of Directors approved a stock ownership plan for each member of the Board to encourage the Directors to increase their investment in the Company. The Plan was effective on the date it was approved and remains in effect for a term of ten years or until it is earlier terminated by the Board. The maximum number of shares of Common Stock which may be issued under the Plan is 75,000, subject to certain conditions that the committee may elect to adjust the number of shares. As of June 30, 2008, the Committee has not made any elections to adjust the shares under this plan. Each Director is eligible to receive an annual retainer for services rendered as a member of the Board of Directors. Currently, each Director who owns less than 7,500 shares of Company Common Stock is required to receive 75% of the annual retainer in Common Stock and 25% of the annual retainer in cash. Each Director who owns 7,500 or more shares of Company Common Stock receives 20% of the annual retainer in Common Stock and 80% of the annual retainer in cash with the option to receive Common Stock in lieu of the cash portion of the retainer. The annual retainer is \$28. The number of shares issued in payment of the fees is calculated based on an amount equal to the average of the closing prices per share of Common Stock as reported on the composite tape of the New York Stock Exchange for the two trading days immediately preceding the retainer payment date. The retainer payment date is June 1. For the three and six months ended June 30, 2008, the Company recorded approximately \$34 and \$64 of compensation expense, respectively. For the three and six months ended June 30, 2007, the Company recorded approximately \$30 and \$61, respectively.

**Note 6—Earnings Per Share**

The following table summarizes earnings per share (EPS) calculations:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2008	2007	2008	2007
Numerator for basic EPS and diluted EPS— net income	\$ 4,321	\$ 4,151	\$ 9,414	\$ 7,688
Denominator for basic EPS—weighted average shares	10,285,121	9,983,535	10,185,490	9,945,819
Effect of dilutive securities, primarily employee stock options and non-vested stock	274,328	135,118	181,079	128,241
Denominator for diluted EPS—weighted average shares and assumed conversions	10,559,449	10,118,653	10,366,569	10,074,060
Basic EPS	\$ 0.42	\$ 0.42	\$ 0.92	\$ 0.77
Diluted EPS	\$ 0.41	\$ 0.41	\$ 0.91	\$ 0.76

The following number of stock options is not included in the earnings per share since in each case the exercise price is greater than the market price: 0 and 127,200 for the three months ended June 30, 2008 and 2007, and 150,954 and 277,940 for the six months ended June 30, 2008 and 2007, respectively.

**Note 7 – Business Segments**

The Company’s reportable segments are as follows:

- (1) Metalworking process chemicals – industrial process fluids for various heavy industrial and manufacturing applications.
- (2) Coatings – temporary and permanent coatings for metal and concrete products and chemical milling maskants.
- (3) Other chemical products – other various chemical products.

Segment data includes direct segment costs as well as general operating costs.

**Quaker Chemical Corporation**  
**Notes to Condensed Consolidated Financial Statements**  
(Dollars in thousands, except per share amounts)  
(Unaudited)

The table below presents information about the reported segments:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2008	2007	2008	2007
<b>Metalworking Process Chemicals</b>				
Net sales	\$ 146,223	\$ 126,798	\$ 283,638	\$ 243,146
Operating income	17,069	19,735	35,480	37,248
<b>Coatings</b>				
Net sales	10,717	9,803	20,028	18,157
Operating income	2,610	2,295	4,826	4,167
<b>Other Chemical Products</b>				
Net sales	1,248	997	2,240	1,186
Operating income	65	145	56	85
<b>Total</b>				
Net sales	158,188	137,598	305,906	262,489
Operating income	19,744	22,175	40,362	41,500
Non-operating expenses	(11,805)	(14,700)	(22,992)	(27,059)
CEO transition costs	(1,880)	—	(1,880)	—
Amortization	(306)	(272)	(606)	(611)
Interest expense	(1,337)	(1,660)	(2,756)	(3,215)
Interest income	358	159	595	364
Other income, net	1,687	909	1,848	1,236
Consolidated income before taxes	<u>\$ 6,461</u>	<u>\$ 6,611</u>	<u>\$ 14,571</u>	<u>\$ 12,215</u>

Operating income comprises revenue less related costs and expenses. Non-operating items primarily consist of general corporate expenses identified as not being a cost of operation, interest expense, interest income, and license fees from non-consolidated associates.

**Note 8 – Comprehensive Income**

The following table summarizes comprehensive income:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2008	2007	2008	2007
Net income	\$ 4,321	\$ 4,151	\$ 9,414	\$ 7,688
Change in fair value of derivatives	727	346	(19)	229
Unrealized gain on available-for-sale securities	(25)	91	(212)	132
SFAS 158 liability	176	266	345	519
Foreign currency translation adjustments	3,155	2,861	8,392	4,140
Comprehensive income	<u>\$ 8,354</u>	<u>\$ 7,715</u>	<u>\$ 17,920</u>	<u>\$ 12,708</u>

**Note 9 – Debt and Restricted Cash**

In May 2008, the Company entered into a financing agreement to issue a \$10,000 Industrial Development Revenue Bond to finance the expansion of the Company's Middletown, OH manufacturing facility. The bond is redeemable on May 1, 2028, and bears interest at an annual rate of 4.76%, payable monthly.

Proceeds from the bond issuance are restricted, and can be used only for capital expenditures related to the expansion. Of the \$10,000 received from the bond issuance, approximately \$675 had been expended at June 30, 2008.

**Note 10 – Business Acquisitions and Divestitures**

In March 2005, the Company acquired the remaining 40% interest in its Brazilian joint venture for \$6,700. In addition, annual \$1,000 payments for four years will be paid subject to the former minority partners' compliance with the terms of the purchase agreement. The third \$1,000 payment was made in February 2008 and was recorded as goodwill assigned to the Metalworking Process Chemicals segment.

**Quaker Chemical Corporation**  
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(Dollars in thousands, except per share amounts)  
(Unaudited)

**Note 11 – Goodwill and Other Intangible Assets**

The changes in carrying amount of goodwill for the six months ended June 30, 2008 are as follows:

	<u>Metalworking Process Chemicals</u>	<u>Coatings</u>	<u>Total</u>
Balance as of December 31, 2007	\$ 35,708	\$ 8,081	\$43,789
Goodwill additions	1,000	—	1,000
Currency translation adjustments	2,340	—	2,340
Balance as of June 30, 2008	<u>\$ 39,048</u>	<u>\$ 8,081</u>	<u>\$47,129</u>

Gross carrying amounts and accumulated amortization for definite-lived intangible assets as of June 30, 2008 and December 31, 2007 are as follows:

	<u>Gross Carrying Amount</u>		<u>Accumulated Amortization</u>	
	<u>2008</u>	<u>2007</u>	<u>2008</u>	<u>2007</u>
Amortized intangible assets				
Customer lists and rights to sell	\$ 8,614	\$ 8,391	\$ 3,693	\$3,340
Trademarks and patents	1,788	1,788	1,788	1,788
Formulations and product technology	3,278	3,278	2,063	1,931
Other	3,547	3,384	2,803	2,509
Total	<u>\$17,227</u>	<u>\$16,841</u>	<u>\$10,347</u>	<u>\$9,568</u>

The Company recorded \$606 and \$611 of amortization expense in the first six months of 2008 and 2007, respectively. Estimated annual aggregate amortization expense for the current year and subsequent five years is as follows:

For the year ended December 31, 2008	\$1,203
For the year ended December 31, 2009	\$1,139
For the year ended December 31, 2010	\$ 909
For the year ended December 31, 2011	\$ 838
For the year ended December 31, 2012	\$ 739
For the year ended December 31, 2013	\$ 553

The Company has one indefinite-lived intangible asset of \$600 for trademarks recorded in connection with the Company's 2002 acquisition of Epmar.

**Note 12 – Pension and Other Postretirement Benefits**

The components of net periodic benefit cost, for the three and six months ended June 30, are as follows:

	<u>Three Months Ended June 30,</u>				<u>Six Months Ended June 30,</u>			
	<u>Pension Benefits</u>		<u>Other Postretirement Benefits</u>		<u>Pension Benefits</u>		<u>Other Postretirement Benefits</u>	
	<u>2008</u>	<u>2007</u>	<u>2008</u>	<u>2007</u>	<u>2008</u>	<u>2007</u>	<u>2008</u>	<u>2007</u>
Service cost	\$ 748	\$ 621	\$ 6	\$ 5	\$ 1,402	\$ 1,230	\$ 12	\$ 10
Interest cost and other	1,666	1,460	125	135	3,259	2,907	250	270
Expected return on plan assets	(1,566)	(1,261)	—	—	(3,113)	(2,512)	—	—
Other amortization, net	283	324	—	—	495	646	—	—
Net periodic benefit cost	<u>\$ 1,131</u>	<u>\$ 1,144</u>	<u>\$ 131</u>	<u>\$ 140</u>	<u>\$ 2,043</u>	<u>\$ 2,271</u>	<u>\$ 262</u>	<u>\$ 280</u>

**Employer Contributions:**

The Company previously disclosed in its financial statements for the year ended December 31, 2007, that it expected to make minimum cash contributions of \$6,669 to its pension plans and \$1,000 to its other postretirement benefit plan in 2008. As of June 30, 2008, \$5,087 and \$610 of contributions have been made, respectively.

During the first quarter of 2008 and as required by SFAS No. 158, "Employers' Accounting for Defined Benefit Pension and Other Postretirement Plans," the Company changed the measurement date of its U.S. pension plan from November 30 to December 31 in order to coincide with the Company's fiscal year end. This change did not have a material impact to the Company's consolidated financial statements.

**Quaker Chemical Corporation**  
**Notes to Condensed Consolidated Financial Statements**  
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**(Unaudited)**

**Note 13 – Commitments and Contingencies**

In April of 1992, the Company identified certain soil and groundwater contamination at AC Products, Inc. (“ACP”), a wholly owned subsidiary. In voluntary coordination with the Santa Ana California Regional Water Quality Board, ACP has been remediating the contamination, the principal contaminant of which is perchloroethylene (“PERC”). On or about December 18, 2004, the Orange County Water District (“OCWD”) filed a civil complaint in Superior Court, in Orange County, California against ACP and other parties potentially responsible for groundwater contamination. OCWD was seeking to recover compensatory and other damages related to the investigation and remediation of the contamination in the groundwater. Effective October 17, 2007, ACP and OCWD settled all claims related to this litigation. Pursuant to the settlement agreement with OCWD, ACP agreed to pay \$2,000 in two equal installments of \$1,000 (the first installment paid October 31, 2007 and the second installment paid on February 15, 2008). In addition to the \$2,000 payment, ACP agreed to operate the two existing groundwater treatment systems associated with its extraction wells P-2 and P-3 so as to hydraulically contain groundwater contamination emanating from ACP’s site until such time as the concentrations of PERC are below the Federal maximum contaminant level for four consecutive quarterly sampling events. During the third quarter of 2007, the Company recognized a \$3,300 charge made up of \$2,000 for the settlement of the litigation, plus an increase in its reserve for its soil and water remediation program of \$1,300. As of June 30, 2008, the Company believes that the range of potential-known liabilities associated with ACP contamination, including the water and soil remediation program, is approximately \$2,200 to \$4,200, for which the Company has sufficient reserves.

The low and high ends of the range are based on the length of operation of the two extraction wells as determined by groundwater modeling with planned higher maintenance costs in later years if a longer treatment period is required. Costs of operation include the operation and maintenance of the extraction wells, groundwater monitoring, one-time expenses to insure P-3 is hydraulically containing the PERC plume and program management. The duration of the well operation was estimated based on historical trends in concentrations in the monitoring wells within the proximity of the applicable extraction wells. Also factored into the model was the impact of water injected into the underground aquifer from a planned recharge basin adjacent to the ACP site, as well as from an injection well to be installed and operated by OCWD as part of the groundwater treatment system for contaminants which are the subject of the aforementioned litigation. Based on the modeling, it is estimated that P-2 will operate for three and half years to up to five years and P-3 will operate for six years to up to nine years. Operation and maintenance costs were based on historical expenditures and estimated inflation. As mentioned above, a significantly higher maintenance expense was factored into the range if the system operates for the longer period. Also included in the reserve are anticipated expenditures to operate an on-site soil vapor extraction system.

The Company believes, although there can be no assurance regarding the outcome of other unrelated environmental matters, that it has made adequate accruals for costs associated with other environmental problems of which it is aware. Approximately \$99 and \$159 was accrued at June 30, 2008 and December 31, 2007, respectively, to provide for such anticipated future environmental assessments and remediation costs.

An inactive subsidiary of the Company that was acquired in 1978 sold certain products containing asbestos, primarily on an installed basis, and is among the defendants in numerous lawsuits alleging injury due to exposure to asbestos. The subsidiary discontinued operations in 1991 and has no remaining assets other than the proceeds from insurance settlements received. To date, the overwhelming majority of these claims have been disposed of without payment and there have been no adverse judgments against the subsidiary. Based on a continued analysis of the existing and anticipated future claims against this subsidiary, it is currently projected that the subsidiary’s total liability over the next 50 years for these claims is approximately \$13,800 (excluding costs of defense). Although the Company has also been named as a defendant in certain of these cases, no claims have been actively pursued against the Company, and the Company has not contributed to the defense or settlement of any of these cases pursued against the subsidiary. These cases were handled by the subsidiary’s primary and excess insurers who had agreed in 1997 to pay all defense costs and be responsible for all damages assessed against the subsidiary arising out of existing and future asbestos claims up to the aggregate limits of the policies. A significant portion of this primary insurance coverage was provided by an insurer that is now insolvent, and the other primary insurers have asserted that the aggregate limits of their policies have been exhausted. The subsidiary has challenged the applicability of these limits to the claims being brought against the subsidiary. In response to this challenge, two of the three carriers entered into separate settlement and release agreements with the subsidiary in late 2005 and in the first quarter of 2007 for \$15,000 and \$20,000, respectively. The payments under the latest settlement and release agreement are structured to be received over a four-year period with annual installments of \$5,000, the first of which was received early in the second quarter of 2007 and the second of which was received in the first quarter of 2008. The subsequent installments are contingent upon whether or not Federal asbestos legislation is adopted by the due date of each annual installment. If Federal asbestos legislation is so enacted and such legislation eliminates the carrier’s obligation to make the installment payment and requires the carrier to contribute into a trust or similar vehicle as a result of the policies issued to the subsidiary, the insurance carrier’s obligation to make the subsequent installments will be cancelled. The proceeds of both settlements are restricted and can only be used to pay claims and costs of defense associated with the

**Quaker Chemical Corporation**  
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subsidiary's asbestos litigation. During the third quarter of 2007, the subsidiary and the remaining primary insurance carrier entered into a Claim Handling and Funding Agreement, under which the carrier will pay 27% of defense and indemnity costs incurred by or on behalf of the subsidiary in connection with asbestos bodily injury claims for a minimum of five years beginning July 1, 2007. At the end of the term of the agreement, the subsidiary may choose to again pursue its claim against this insurer regarding the application of the policy limits. The Company also believes, that if the coverage issues under the primary policies with the remaining carrier are resolved adversely to the subsidiary and all settlement proceeds were used, the subsidiary may have limited additional coverage from a state guarantee fund established following the insolvency of one of the subsidiary's primary insurers. Nevertheless, liabilities in respect of claims may exceed the assets and coverage available to the subsidiary.

If the subsidiary's assets and insurance coverage were to be exhausted, claimants of the subsidiary may actively pursue claims against the Company because of the parent-subsidiary relationship. Although asbestos litigation is particularly difficult to predict, especially with respect to claims that are currently not being actively pursued against the Company, the Company does not believe that such claims would have merit or that the Company would be held to have liability for any unsatisfied obligations of the subsidiary as a result of such claims. After evaluating the nature of the claims filed against the subsidiary and the small number of such claims that have resulted in any payment, the potential availability of additional insurance coverage at the subsidiary level, the additional availability of the Company's own insurance and the Company's strong defenses to claims that it should be held responsible for the subsidiary's obligations because of the parent-subsidiary relationship, the Company believes it is not probable that the Company will incur any material losses. All of the asbestos cases pursued against the Company challenging the parent-subsidiary relationship are in the early stages of litigation. The Company has been successful in the past having claims naming it dismissed during initial proceedings. Since the Company may be in this early stage of litigation for some time, it is not possible to estimate additional losses or range of loss, if any.

The Company is party to other litigation which management currently believes will not have a material adverse effect on the Company's results of operations, cash flows or financial condition.

**Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations.**

**Executive Summary**

Quaker Chemical Corporation is a worldwide developer, producer, and marketer of chemical specialty products and a provider of chemical management services ("CMS") for various heavy industrial and manufacturing applications around the globe with significant sales to the steel and automotive industries.

The revenue growth in the second quarter of 2008 was primarily due to increased selling prices, as volume growth in Asia/Pacific and South America, as well as higher revenue from Chemical Management Services ("CMS"), was largely offset by volume declines in the Company's other regions. Higher selling prices helped to partially offset higher raw material costs resulting in a 5.1% increase in gross margin dollars but with a decrease in the gross margin percentage as compared to the second quarter of 2007. Raw material costs are significantly higher than the prior year with rapid increases occurring later in the second quarter and continuing into the third quarter of 2008. The Company's selling, general and administrative expenses as a percentage of sales declined to 23.5% for the second quarter of 2008, compared to 25.7% for the second quarter of 2007. Investments in higher growth areas, as well as inflationary increases, were more than offset by lower legal and environmental costs and lower incentive compensation expense.

The second quarter results include approximately \$1.9 million of incremental pre-tax charges, or approximately \$0.12 per diluted share, related to the previously announced retirement of the Company's Chief Executive Officer as discussed in the Company's 8-K filed on May 13, 2008.

The net result was earnings per diluted share of \$0.41 for the second quarter of 2008, consistent with \$0.41 for the second quarter of 2007. The continued strength of the business environment is subject to limited visibility due to continued raw material price volatility and an uncertain global economic environment. With crude oil at or near all time highs and animal fats and vegetable oils impacted by increased biodiesel consumption, raw material prices continue to be a challenge. Any improvement in gross margin as a percentage of sales will depend in part upon a sustained period of stable or declining raw material costs. While demand is generally expected to remain stable, there are some signs of lower economic activity and inflation in all regions. Volume in certain markets is limited by customer end-market issues, including reduced vehicle sales experienced by some automotive customers, particularly in North America. The Company will remain focused on pursuing revenue opportunities, managing its raw material and other costs, and pursuing pricing initiatives.

**CMS Discussion**

In 2003, the Company began entering into new contracts under which it receives a set management fee and the costs that relate to those management fees were and are largely dependent on how well the Company controls product costs and achieves product conversions from other third-party suppliers to its own products. This approach came with new risks and opportunities, as the profit earned from the management fee is subject to movements in product costs as well as the Company's own performance. The Company believes this expanded approach is a way for Quaker to become an integral part of our customers' operational efforts to improve manufacturing costs and to demonstrate value that the Company would not be able to demonstrate as purely a product provider.

Consistent with the foregoing approach, the Company was awarded a series of multi-year CMS contracts, primarily at General Motors Powertrain, Chrysler and Ford manufacturing sites over the last several years. This business was an important step in building the Company's share and leadership position in the automotive process fluids market and has positioned the Company well for penetration of CMS opportunities in other metalworking manufacturing sites. This alternative approach had a dramatic impact on the Company's revenue and margins. Under the traditional CMS approach, where the Company effectively acts as an agent, revenues and costs from these sales are reported on a net sales or "pass-through" basis. The alternative structure is different in that the Company's revenue received from the customer is a fee for products and services provided to the customer, which are indirectly related to the actual costs incurred. As a result, the Company recognizes in the alternative structure in reported revenues the gross revenue received from the CMS site customer, and in cost of goods sold the third-party product purchases, which substantially offset each other until the Company achieves significant product conversions. As some contracts have been renewed or renegotiated, some of the contracts have reverted to a "pass-through" basis, while others have remained on a gross basis. Currently, the Company has a mix of contracts with both the traditional product pass-through structure and fixed priced contracts covering all services and products. The Company's offerings will continue to include both approaches to CMS depending on customer requirements and business circumstances.

## **Liquidity and Capital Resources**

Quaker's cash and cash equivalents increased to \$22.2 million at June 30, 2008 from \$20.2 million at December 31, 2007. The increase resulted primarily from \$8.1 million of cash provided operating activities, \$16.6 million of cash used in investing activities, offset by \$9.5 million of cash provided by financing activities.

Net cash flows provided by operating activities were \$8.1 million for the first half of 2008, compared to \$2.9 million of cash used in operating activities for the first half of 2007. The increase in cash flows was largely due to higher net income and a decreased investment in working capital compared to the prior year period. The Company remains focused on limiting the pace of its investment in working capital despite significant factors impacting the working capital accounts for the first half of 2008, such as the first quarter payment of the Company's annual incentive compensation, as well as the final \$1.0 million payment pursuant to the settlement agreement between AC Products, Inc., a wholly owned subsidiary, and the Orange County Water District. See also Note 13 of Notes to Condensed Consolidated Financial Statements. In addition, the Company had higher pension contributions compared to the prior year, as a result of a refund of pension premiums attributable to one of its foreign pension plans received in 2007. Further, the Company incurred significantly more stock-based compensation in the 2008 period versus the prior year period largely due to the previously announced retirement of the Company's Chief Executive Officer.

Net cash flows used in investing activities were \$16.6 million for the first half of 2008, compared to \$4.7 million used in investing activities for the first half of 2007. The increased use of cash was primarily related to the restricted proceeds received from the Company's second quarter 2008 bond offering, discussed below. Capital expenditures were higher than the prior year primarily due to the Company's expansion of its Middletown, OH manufacturing facility. In the first quarter of 2008, the Company made the third of four annual payments of \$1.0 million related to the 2005 acquisition of the remaining 40% interest in its Brazilian joint venture. In addition, the second of four annual \$5.0 million payments was received in the first quarter of 2008 pursuant to the settlement agreement and release entered into during the first quarter of 2007 by an inactive subsidiary of the Company and one of its insurance carriers. These proceeds are restricted and can only be used to pay claims and costs of defense associated with the subsidiary's asbestos litigation. The subsequent installments are contingent upon whether or not Federal asbestos legislation is adopted by the due date of each annual installment. If Federal asbestos legislation is so enacted, and such legislation eliminates the carrier's obligation to make the installment payment and requires the carrier to contribute into a trust or similar vehicle as a result of the policies issued to the subsidiary, then the insurance carrier's obligation to make the subsequent installments will be cancelled.

Net cash flows provided by financing activities were \$9.5 million for the first half of 2008, as compared to \$5.7 million of cash provided by financing activities in the first half of 2007. During the second quarter of 2008, the Company completed a \$10.0 million industrial revenue bond offering related to the expansion of its Middletown, OH manufacturing facility. The proceeds of this bond are restricted and can only be used for capital expenditures related to the expansion. With strong cash flow from operations, the Company was able to make other debt repayments versus borrowings in the prior year period. A high level of cash received from stock option exercises as compared to the prior year also impacted the change in cash flows from financing activities.

The Company had a net debt-to-total-capital ratio of 28% at June 30, 2008, compared to 42% at June 30, 2007 and 32% at December 31, 2007. At June 30, 2008, the Company had approximately \$71.6 million outstanding on its credit lines, compared to \$73.8 million at December 31, 2007. At June 30, 2008, the Company's gross FIN 48 liability, including penalties and interest, was \$14.8 million. The Company cannot determine a reliable estimate of the timing of the cash flows by period related to its FIN 48 liability. However, should the FIN 48 liability be paid, the amount of the payment may be reduced by offsetting benefits in other tax jurisdictions by \$5.5 million. The Company believes it is capable of supporting its operating requirements, including pension plan contributions, payment of dividends to shareholders, possible acquisitions and business opportunities, capital expenditures and possible resolution of contingencies, through internally generated funds supplemented with debt as needed.

## **Operations**

### **Comparison of Second Quarter 2008 with Second Quarter 2007**

Net sales for the second quarter were \$158.2 million, up 15% compared to \$137.6 million for the second quarter of 2007. The increase in net sales was primarily due to higher sales prices and foreign exchange rate translation. Volume growth in Asia/Pacific and South America, as well as higher revenue from Chemical Management Services ("CMS"), was largely offset by volume declines in the Company's other regions. Foreign exchange rate translation increased revenues by approximately 8%. Selling price increases were realized, in part, as a result of an ongoing effort to offset higher raw material costs. CMS revenue was higher due to the impact of additional CMS accounts gained in 2007, as well as the renewal and restructuring of several of the Company's CMS contracts.

Gross margin dollars were up by approximately \$2.2 million, or 5%, over the second quarter of 2007. However, the gross margin percentage was 28.3%, compared to 31.0% in the second quarter of 2007. The Company's larger mix of CMS contracts reported on a gross versus pass-through basis decreased the gross margin percentage by approximately 0.5 percentage points. The remaining decline in the gross margin percentage is due to increased raw material costs in excess of price increases, as well as product and regional sales mix. The Company has announced and implemented a number of further price increases to aid in offsetting an unprecedented rise in the Company's key raw material costs.



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Selling, general and administrative expenses (“SG&A”) increased \$1.7 million, compared to the second quarter of 2007. Foreign exchange rate translation increased SG&A by \$2.5 million. Investments in higher growth areas, as well as inflationary increases, were more than offset by lower legal and environmental costs and lower incentive compensation expense.

As previously disclosed on May 7, 2008, Ronald J. Naples, Chairman and Chief Executive Officer of Quaker Chemical Corporation, has announced his plan to retire as Quaker’s Chief Executive Officer, effective October 3, 2008. As further discussed in the Company’s 8-K filed on May 13, 2008, the Company is recognizing certain accelerated and other costs, in accordance with Mr. Naples’ Employment, Transition and Consulting Agreement, which are expected to total \$5.8 million over the 2008-2010 period. Of the \$3.5 million in incremental costs estimated to be incurred in 2008, approximately \$1.9 million, or approximately \$0.12 per diluted share, was recognized in the second quarter of 2008.

Other income includes a net arbitration award of approximately \$1.0 million, or approximately \$0.04 per diluted share, related to litigation with one of the former owners of the Company’s Italian affiliate. The decrease in interest expense is due to lower average debt balances and interest rates, as well as higher interest income.

The second quarter 2008 effective tax rate was 32.8% versus 34.8% during the second quarter of 2007. Many external and internal factors can impact this rate and the Company will continue to refine this rate, if necessary, as the year progresses. Included in the effective tax rate for the first quarter of 2008 is a tax refund of \$0.5 million relating to the Company’s increased investment in China.

Net income for the second quarter of 2008 was \$4.3 million, up 4.1% compared to \$4.2 million for the second quarter of 2007, primarily as a result of increased net sales and gross margin offset in part by higher selling, general and administrative expenses. As discussed above, the results for the second quarter of 2008 include approximately \$1.9 million of incremental pre-tax charges, or approximately \$0.12 per diluted share, related to the announced retirement of the Company’s Chief Executive Officer, as well as \$1.0 million of pre-tax income, or approximately \$0.04 per diluted share, related to a net arbitration award.

### Segment Reviews – Comparison of the Second Quarter 2008 with Second Quarter 2007

#### Metalworking Process Chemicals

Metalworking Process Chemicals consists of industrial process fluids for various heavy industrial and manufacturing applications and represented approximately 92% of the Company’s net sales for the second quarter of 2008. Net sales were up \$19.4 million, or 15%, compared with the second quarter of 2007. Foreign currency translation positively impacted net sales by approximately 9%, driven by the euro to U.S. dollar, Brazilian real to U.S. dollar and Chinese renminbi to U.S. dollar exchange rates. The average euro to U.S. dollar exchange rate was 1.56 in the second quarter of 2008 compared to 1.35 in the second quarter of 2007, the average Brazilian real to U.S. dollar exchange rate was 0.60 in the second quarter of 2008 compared to 0.50 in the second quarter of 2007, and the average Chinese renminbi to U.S. dollar exchange rate was 0.14 in the second quarter of 2008 compared to 0.13 in the second quarter of 2007. Net sales were positively impacted by growth of 22.1% in Asia/Pacific, 4.9% in North America, 2.4% in Europe and 4.3% in South America, all on a constant currency basis. The growth in net sales was attributable to higher sales prices as volume growth in Asia/Pacific and South America was largely offset by volume declines in the Company’s other regions. The increased selling prices were implemented, in part, to offset higher raw material costs. The \$2.7 million decrease in this segment’s operating income, compared to the second quarter of 2007 on a sales increase of 15%, is reflective of the pace at which raw material costs have continued to increase versus the Company’s price increases. This segment’s operating income was also negatively impacted by higher selling costs, as well as CMS profitability being negatively impacted by reductions in automobile production and by the American Axle strike against certain key customers.

#### Coatings

The Company’s coatings segment, which represented approximately 7% of the Company’s net sales for the second quarter of 2008, contains products that provide temporary and permanent coatings for metal and concrete products and chemical milling maskants. Net sales for this segment were up \$0.9 million, or 9%, for the second quarter of 2008 compared with the prior year period, primarily due to higher chemical milling maskant product sales to the aerospace industry. This segment’s operating income was up \$0.3 million, consistent with the volume increases noted above.

#### Other Chemical Products

Other Chemical Products, which represented approximately 1% of the Company’s net sales for the second quarter of 2008, consists of sulfur removal products for industrial gas streams sold by the Company’s Q2 Technologies joint venture. Net sales were up \$0.3 million, reflective of this segment’s second quarter 2007 acquisition of Frontier Research and Chemicals Company. Operating income for the second quarter of 2008 decreased \$0.1 million compared to the second quarter of 2007.

**Comparison of the First Six Months of 2008 with the First Six Months of 2007**

Net sales for the first half of 2008 were \$305.9 million, up 16.5% from \$262.5 million for the first half of 2007. The increase in net sales was attributable to volume growth, higher sales prices and foreign exchange rate translation. Volume growth was realized in virtually all the Company's regions, including higher revenue related to the Company's CMS channel. Foreign exchange rate translation increased revenues by approximately 8%. Selling price increases were realized, in part, as a result of an ongoing effort to offset higher raw material costs. CMS revenues were higher due to the impact of additional CMS accounts gained in 2007, as well as the renewal and restructuring of several of the Company's CMS contracts.

Gross margin dollars were up \$7.3 million, or 9%, for the first half of 2008, compared to the first half of 2007. However, the gross margin percentage was 28.9% for the first half of 2008, compared to 30.9% in the first half of 2007. The Company's larger mix of CMS contracts reported on a gross versus pass-through basis decreased the gross margin percentage by approximately 0.5 percentage points. The remaining decline in the gross margin percentage is due to increased raw material costs in excess of price increases, as well as product and regional sales mix. The Company has announced and implemented a number of further price increases to aid in offsetting an unprecedented rise in the Company's key raw material costs.

SG&A for the first half of 2008 increased \$4.3 million, compared to the first half of 2007. Foreign exchange rate translation increased SG&A by \$4.8 million. Investments in higher growth areas, as well as inflationary increases, were more than offset by lower legal and environmental costs and lower incentive compensation expense.

Other income includes the net arbitration award noted above. The decrease in interest expense is due to lower average debt balances and interest rates, as well as higher interest income.

The effective tax rate was 33.5% for the first six months of 2008, compared to 33.9% for the first six months of 2007. Many external and internal factors can impact this rate and the Company will continue to refine this rate, if necessary, as the year progresses. Included in the effective tax rate for the first six months of 2008 is a tax refund of \$0.5 million relating to the Company's increased investment in China. At the end of 2007, the Company had net U.S. deferred tax assets totaling \$16.8 million, excluding deferred tax assets relating to additional minimum pension liabilities. The Company records valuation allowances when necessary to reduce its deferred tax assets to the amount that is more likely than not to be realized. The Company considers future taxable income and ongoing prudent and feasible tax planning strategies in assessing the need for a valuation allowance. However, in the event the Company were to determine that it would not be able to realize all or part of its net deferred tax assets in the future, an adjustment to the deferred tax assets would be a non-cash charge to income in the period such determination was made, which could have a material adverse impact on the Company's financial statements. The continued price pressure in the Company's raw materials has been negatively impacting profitability in certain taxing jurisdictions. The Company continues to closely monitor this situation as it relates to its net deferred tax assets and the assessment of valuation allowances. The Company is continuing to evaluate alternatives that could positively impact taxable income in these jurisdictions.

Net income for the first six months of 2008 was \$9.4 million, up 22.5% compared to \$7.7 million for the first six months of 2007, primarily as a result of increased net sales and gross margin offset in part by higher selling, general and administrative expenses. As discussed above, the results for the first half of 2008 include approximately \$1.9 million of incremental pre-tax charges, or approximately \$0.12 per diluted share, related to the announced retirement of the Company's Chief Executive Officer, as well as \$1.0 million of pre-tax income, or approximately \$0.04 per diluted share, related to a net arbitration award.

**Segment Reviews – Comparison of the First Six Months 2008 with the First Six Months 2007**

**Metalworking Process Chemicals**

Metalworking Process Chemicals consists of industrial process fluids for various heavy industrial and manufacturing applications and represented approximately 93% of the Company's net sales for the first half of 2008. Net sales were up \$40.5 million, or 17%, compared with the first half of 2007. Foreign currency translation positively impacted net sales by approximately 9%, driven by the euro to U.S. dollar, Brazilian real to U.S. dollar and Chinese renminbi to U.S. dollar exchange rates. The average euro to U.S. dollar exchange rate was 1.53 in the first half of 2008 compared to 1.33 in the first half of 2007, the average Brazilian real to U.S. dollar exchange rate was 0.59 in the first half of 2008 compared to 0.49 in the first half of 2007, and the average Chinese renminbi to U.S. dollar exchange rate was 0.14 in the first half of 2008 compared to 0.13 in the first half of 2007. Net sales were positively impacted by growth of 20.3% in Asia/Pacific, 8.0% in North America, 3.7% in Europe and 4.3% in South America, all on a constant currency basis. The growth in net sales was attributable to higher sales prices and mix, volume growth and higher CMS sales due to the renegotiation of certain contracts in 2007. The increased selling prices were implemented, in part, to offset higher raw material costs. The \$1.8 million decrease in this segment's operating income compared to the first six months of 2007 on a sales increase of 17% is reflective of the pace at which raw material costs have continued to increase versus the Company's price increases. This segment's operating income was also negatively impacted by higher selling costs, as well as CMS profitability being negatively impacted by reductions in automobile production and by the American Axle strike against certain key customers.

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### **Coatings**

The Company's coatings segment, which represented approximately 6% of the Company's net sales for the first half of 2008, contains products that provide temporary and permanent coatings for metal and concrete products and chemical milling maskants. Net sales for this segment were up \$1.9 million, or 10%, for the first half of 2008 compared with the prior year period, primarily due to higher chemical milling maskant product sales to the aerospace industry. This segment's operating income was up \$0.7 million, consistent with the volume increases noted above.

### **Other Chemical Products**

Other Chemical Products, which represented approximately 1% of the Company's net sales for the first half of 2008, consists of sulfur removal products for industrial gas streams sold by the Company's Q2 Technologies joint venture. Net sales were up \$1.1 million, reflective of this segment's second quarter 2007 acquisition of Frontier Research and Chemicals Company. Operating income for the first half of 2008 was flat with the first half of 2007.

### **Factors that May Affect Our Future Results**

(Cautionary Statements Under the Private Securities Litigation Reform Act of 1995)

Certain information included in this report and other materials filed or to be filed by Quaker with the SEC (as well as information included in oral statements or other written statements made or to be made by us) contain or may contain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. These statements can be identified by the fact that they do not relate strictly to historical or current facts. We have based these forward-looking statements on our current expectations about future events. These forward-looking statements include statements with respect to our beliefs, plans, objectives, goals, expectations, anticipations, intentions, financial condition, results of operations, future performance and business, including:

- statements relating to our business strategy;
- our current and future results and plans; and
- statements that include the words "may," "could," "should," "would," "believe," "expect," "anticipate," "estimate," "intend," "plan" or similar expressions.

Such statements include information relating to current and future business activities, operational matters, capital spending, and financing sources. From time to time, forward-looking statements are also included in Quaker's periodic reports on Forms 10-K and 8-K, press releases and other materials released to the public.

Any or all of the forward-looking statements in this report and in any other public statements we make may turn out to be wrong. This can occur as a result of inaccurate assumptions or as a consequence of known or unknown risks and uncertainties. Many factors discussed in this report will be important in determining our future performance. Consequently, actual results may differ materially from those that might be anticipated from our forward-looking statements.

We undertake no obligation to publicly update any forward-looking statements, whether as a result of new information, future events or otherwise. However, any further disclosures made on related subjects in Quaker's subsequent reports on Forms 10-K, 10-Q and 8-K should be consulted. These forward-looking statements are subject to risks, uncertainties and assumptions about us and our operations that are subject to change based on various important factors, some of which are beyond our control. A major risk is that the Company's demand is largely derived from the demand for its customers' products, which subjects the Company to uncertainties related to downturns in a customer's business and unanticipated customer production shutdowns. Other major risks and uncertainties include, but are not limited to, significant increases in raw material costs, worldwide economic and political conditions, foreign currency fluctuations, and terrorist attacks such as those that occurred on September 11, 2001. Furthermore, the Company is subject to the same business cycles as those experienced by steel, automobile, aircraft, appliance, and durable goods manufacturers. These risks, uncertainties, and possible inaccurate assumptions relevant to our business could cause our actual results to differ materially from expected and historical results. Other factors beyond those discussed could also adversely affect us. Therefore, we caution you not to place undue reliance on our forward-looking statements. This discussion is provided as permitted by the Private Securities Litigation Reform Act of 1995.

**Item 3. Quantitative and Qualitative Disclosures About Market Risk.**

Quaker is exposed to the impact of changes of interest rates, foreign currency fluctuations, changes in commodity prices, and credit risk.

*Interest Rate Risk.* Quaker's exposure to market rate risk for changes in interest rates relates primarily to its short and long-term debt. Most of Quaker's debt is negotiated at market rates which can be either fixed or variable. Accordingly, if interest rates rise significantly, the cost of debt to Quaker will increase. This can have an adverse effect on Quaker, depending on the extent of Quaker's borrowings. As of June 30, 2008, Quaker had \$71.6 million in borrowings under its credit facilities, compared to \$73.8 million at December 31, 2007, at a weighted average borrowing rate of approximately 5.8%. The Company uses derivative financial instruments primarily for purposes of hedging exposures to fluctuations in interest rates. The Company does not enter into derivative contracts for trading or speculative purposes. The Company has entered into seven interest rate swaps in order to fix a portion of its variable rate debt. The swaps had a combined notional value of \$35.0 million and a fair value of \$(1.1) million at June 30, 2008 and December 31, 2007, respectively. The counterparties to the swaps are major financial institutions. In February 2007, the Company completed a refinancing of its existing industrial development bonds to fix the interest rate of an additional \$5.0 million of debt.

*Foreign Exchange Risk.* A significant portion of Quaker's revenues and earnings is generated by its foreign operations. These foreign operations also hold a significant portion of Quaker's assets and liabilities. All of these operations use the local currency as their functional currency. Accordingly, Quaker's financial results are affected by risks typical of a global business, such as currency fluctuations, particularly between the U.S. dollar, the Brazilian real, the Chinese renminbi and the E.U. euro. As exchange rates vary, Quaker's results can be materially affected.

The Company generally does not use financial instruments that expose it to significant risk involving foreign currency transactions; however, the size of non-U.S. activities has a significant impact on reported operating results and the attendant net assets. During the past three most recent fiscal years, sales by non-U.S. subsidiaries accounted for approximately 55% to 58% of the consolidated net annual sales.

In addition, the Company often sources inventory among its worldwide operations. This practice can give rise to foreign exchange risk resulting from the varying cost of inventory to the receiving location, as well as from the revaluation of intercompany balances. The Company mitigates this risk through local sourcing efforts.

*Commodity Price Risk.* Many of the raw materials used by Quaker are commodity chemicals, and, therefore, Quaker's earnings can be materially adversely affected by market changes in raw material prices. In certain cases, Quaker has entered into fixed-price purchase contracts having a term of up to one year. These contracts provide for protection to Quaker if the price for the contracted raw materials rises, however, in certain limited circumstances, Quaker will not realize the benefit if such prices decline.

*Credit Risk.* Quaker establishes allowances for doubtful accounts for estimated losses resulting from the inability of its customers to make required payments. If the financial condition of Quaker's customers were to deteriorate, resulting in an impairment of their ability to make payments, additional allowances may be required. Downturns in the overall economic climate may also tend to exacerbate specific customer financial issues. A significant portion of Quaker's revenues is derived from sales to customers in the U.S. steel and automotive industries, where a number of bankruptcies occurred during recent years and companies have experienced financial difficulties. When a bankruptcy occurs, Quaker must judge the amount of proceeds, if any, that may ultimately be received through the bankruptcy or liquidation process. In addition, as part of its terms of trade, Quaker may custom manufacture products for certain large customers and/or may ship product on a consignment basis. These practices may increase the Company's exposure should a bankruptcy occur, and may require write-down or disposal of certain inventory due to its estimated obsolescence or limited marketability. Customer returns of products or disputes may also result in similar issues related to the realizability of recorded accounts receivable or returned inventory.

**Item 4. Controls and Procedures.**

*Evaluation of disclosure controls and procedures.* Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by an issuer in the reports that it files or submits under the Securities Exchange Act of 1934 (the “Exchange Act”) is accumulated and communicated to the issuer’s management, including its principal executive officer and principal financial officer, or persons performing similar functions, as appropriate, to allow timely decisions regarding required disclosure. Based on their evaluation of such controls and procedures as of the end of the period covered by this Quarterly Report on Form 10-Q, the Company’s principal executive officer and principal financial officer have concluded that the Company’s disclosure controls and procedures (as defined in Exchange Act Rule 13a-15(e)), are effective to reasonably assure that information required to be disclosed by the Company in the reports it files under the Exchange Act, is recorded, processed, summarized and reported within the time periods specified in the rules and forms of the Securities and Exchange Commission.

*Changes in internal controls.* The Company is in the process of implementing a global ERP system. At the end of 2007, subsidiaries representing more than 75% of consolidated revenue were operational on the global ERP system. Additional subsidiaries and CMS sites have been implemented and are planned to be implemented during 2008. The Company is taking the necessary steps to monitor and maintain its internal control over financial reporting (as defined in Exchange Act Rule 13a-15(f)) during this period of change.

**PART II.**  
**OTHER INFORMATION**

Items 1, 1A, 3, and 5 of Part II are inapplicable and have been omitted.

**Item 2. Unregistered Sales of Equity Securities and Use of Proceeds.**

The following table sets forth information concerning shares of the Company's common stock acquired by the Company during the period covered by this report, all of which were acquired from employees in payment of the exercise price of employee stock options exercised during the period.

**Issuer Purchases of Equity Securities**

<u>Period</u>	<u>(a)</u> <u>Total Number</u> <u>of Shares</u> <u>Purchased (1)</u>	<u>(b)</u> <u>Average</u> <u>Price Paid</u> <u>per Share (2)</u>	<u>(c)</u> <u>Total Number of</u> <u>Shares Purchased as</u> <u>Part of Publicly</u> <u>Announced Plans</u> <u>or Programs (3)</u>	<u>(d)</u> <u>Maximum Number</u> <u>of Shares that May</u> <u>Yet Be Purchased</u> <u>Under the Plans or</u> <u>Programs (3)</u>
April 1 – April 30	34,015	\$30.88	—	252,600
May 1 – May 31	17,106	\$30.34	—	252,600
June 1 – June 30	26,688	\$31.64	—	252,600
Total	77,809	\$31.02	—	252,600

- (1) All of the 77,809 shares acquired by the Company during the period covered by this report were acquired from employees upon their surrender of previously owned shares in payment of the exercise price of employee stock options.
- (2) The price per share, in each case, represented either a) the average of the high and low price of the Company's common stock on date of exercise; or b) the closing price of the Company's common stock on date of exercise, as specified by the plan pursuant to which the applicable option was granted.
- (3) On February 15, 1995, the Board of Directors of the Company authorized a share repurchase program authorizing the repurchase of up to 500,000 shares of Quaker common stock, and, on January 26, 2005, the Board authorized the repurchase of up to an additional 225,000 shares. Under the 1995 action of the Board, 27,600 shares may yet be purchased. Under the 2005 action of the Board, none of the shares authorized has been purchased and, accordingly, all of those shares may yet be purchased. Neither of the share repurchase authorizations has an expiration date.

**Item 4. Submission of Matters to a Vote of Security Holders.**

The Annual Meeting of the Company's shareholders was held on May 7, 2008. At the meeting, management's nominees, Robert E. Chappell, Ronald J. Naples and Robert H. Rock were elected Class I directors. Voting (expressed in number of votes) was as follows: Robert E. Chappell, 18,262,891 votes for, 534,786 votes withheld; Ronald J. Naples, 18,310,818 votes for, 486,859 votes withheld; Robert H. Rock, 18,408,324 votes for, 389,353 votes withheld.

In addition, at the meeting, the shareholders ratified the appointment of PricewaterhouseCoopers, LLP as the Company's independent registered public accounting firm to examine and report on its financial statements for the year ending December 31, 2008 by a vote of 18,563,877 for, 205,874 against, and 27,926 abstentions.

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### **Item 6. Exhibits.**

#### (a) Exhibits

- 10.1 - Financing Agreement by and among Butler County Port Authority and Registrant and Brown Brothers Harriman & Co. dated May 15, 2008.
- 10.2 - Engineering, Procurement and Construction Contract by and between Registrant and FMC Technologies, Inc. effective May 14, 2008.
- 10.3 - Employment, Transition and Consulting Agreement by and between Registrant and Ronald J. Naples dated May 22, 2008, effective May 7, 2008. \*
- 10.4 - 1995 Naples Supplemental Retirement Income Program and Agreement (as amended and restated effective May 7, 2008) dated May 22, 2008. \*
- 10.5 - Employment Agreement by and between Registrant and Michael F. Barry dated July 1, 2008. \*
- 10.6 - Change in Control Agreement by and between Registrant and Michael F. Barry dated July 1, 2008. \*
- 10.7 - Butler County Port Authority Industrial Development Revenue Bond dated May 15, 2008.
- 31.1 - Certification of Chief Executive Officer of the Company pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934
- 31.2 - Certification of Chief Financial Officer of the Company pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934
- 32.1 - Certification of Ronald J. Naples Pursuant to 18 U.S. C. Section 1350
- 32.2 - Certification of Mark A. Featherstone Pursuant to 18 U.S. C. Section 1350

\* This exhibit is a management contract or compensation plan or arrangement required to be filed as an exhibit.

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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.

QUAKER CHEMICAL CORPORATION  
(Registrant)

/s/ Mark A. Featherstone

**Mark A. Featherstone, officer duly authorized to sign this report, Vice President and Chief Financial Officer**

Date: August 1, 2008

FINANCING AGREEMENT

By and Among

BUTLER COUNTY PORT AUTHORITY

And

QUAKER CHEMICAL CORPORATION.

And

BROWN BROTHERS HARRIMAN & CO.

Dated May 15, 2008

Relating to

\$10,000,000

Butler County Port Authority  
Industrial Development Revenue Bond  
(Quaker Chemical Corporation Project)  
Series 2008

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## FINANCING AGREEMENT

FINANCING AGREEMENT dated May 15, 2008 (the "Agreement"), is made by and among QUAKER CHEMICAL CORPORATION, a Pennsylvania business corporation (the "Borrower"), BUTLER COUNTY PORT AUTHORITY (the "Authority"), a port authority and public body corporate and politic, organized and existing under the laws of the State of Ohio (the "State"), including Revised Code Sections 4582.21 through 4582.59 (collectively with the authorities therein mentioned, as amended and supplemented (the "Act") and BROWN BROTHERS HARRIMAN & CO., a private bank organized as a partnership (the "Bank").

### W I T N E S S E T H

WHEREAS, the Authority was created and exists under the provisions of the Act to issue revenue bonds for the acquisition, construction, furnishing, or equipping of any real or personal property, or any combination thereof, related to, useful for, or in furtherance of any authorized purpose, including all costs in connection with or incidental thereto; and

WHEREAS, the Borrower is a corporation organized under the laws of the Commonwealth of Pennsylvania, which operates a chemical manufacturing facility, located in the City of Middletown, County of Butler, State of Ohio; and

WHEREAS, the Borrower has applied to the Authority for financial assistance in connection with a project consisting generally of (a) paying the costs of expanding its manufacturing facility located at 3431 Yankee Road, Middletown, Ohio; and (b) paying all or any portion of the issuance costs related to the hereinafter defined "Bond" (collectively, the "Project"), and has requested that the Authority issue \$10,000,000 of its Industrial Development Revenue Bond (Quaker Chemical Corporation Project), Series 2008 (the "Bond"), which together with a loan in the amount of \$3,500,000 from the Ohio Department of Development ("ODOD") to the Borrower (the "ODOD Loan") and funds of the Borrower, are to be used to fund the costs of the Project; and

WHEREAS, the Bond is being issued pursuant to the Act and a resolution of the Authority adopted on April 29, 2008 (the "Resolution"); and

WHEREAS, the Authority intends to sell the Bond to the Bank at the face amount thereof and to lend the proceeds from the sale of the Bond to the Borrower to assist in financing the Project (such loan being hereinafter referred to as the "Loan"), which loan will be repaid by the Borrower in accordance with the terms hereof; and

WHEREAS, payment of the Bond will be secured by an assignment of the Authority's rights hereunder (other than its rights to payment of certain fees and expenses and to indemnification) to the Bank and its successors and assigns; and

WHEREAS, all acts and things have been done and performed which are necessary to make the Bond, when executed and delivered by the Authority, the legal, valid and binding limited obligation of the Authority in accordance with its terms and to make this Agreement a valid and binding agreement;

NOW, THEREFORE, in consideration of the purchase and acceptance of the Bond by the Bank and of the mutual covenants and agreements herein contained, and intending to be legally bound, the parties hereby agree as follows:

ARTICLE 1.  
DEFINITIONS

SECTION 1.1 Definitions.

In this Agreement and any supplement hereto (except as otherwise expressly provided), the following words and terms shall have the meanings specified in the foregoing recitals:

ACT	LOAN
AGREEMENT	ODOD
AUTHORITY	ODOD LOAN
BANK	PROJECT
BOND	RESOLUTION
BORROWER	STATE

In addition, the following words and terms shall have the following meanings, unless a different meaning clearly appears from the context:

“AFFILIATE” means, as to any entity, any corporation controlling, controlled by, or under common control with such entity.

“ATTRIBUTABLE INDEBTEDNESS” means, on any date, (a) in respect of any capital lease of any Person, the capitalized amount thereof that would appear on a balance sheet of such Person prepared as of such date in accordance with GAAP, and (b) in respect of any Synthetic Lease Obligation, the capitalized amount of the remaining lease payments under the relevant lease that would appear on a balance sheet of such Person prepared as of such date in accordance with GAAP if such lease were accounted for as a capital lease.

“AUTHORIZED OFFICER” means in the case of the Authority, its Chairman or Vice Chairman and Secretary or Treasurer or any other individual or individuals duly authorized in writing by the Authority to act on its behalf, and in the case of each Borrower, the individuals duly authorized by such Borrower to act on its behalf as provided in the certificate delivered in accordance with Section 7.2(b) hereof.

“BASE RATE” means the reference interest rate determined from time to time by the Bank as its “base rate.”

“BOND COUNSEL” means Counsel having a national reputation in the field of municipal and tax-exempt finance whose opinions are generally accepted by purchasers of municipal bonds and who are reasonably satisfactory to the Authority and the Bank.

“BORROWER FINANCING DOCUMENTS” means the Security Agreement, the Bond, this Agreement, the Tax Representation Letter and all other documents or instruments now or hereafter executed, issued or delivered by the Borrower in connection with the Loan, as the same may be amended from time to time.

“BUSINESS DAY” means any day other than (i) a Saturday or Sunday or a legal holiday, or (ii) a day on which banking institutions located in the State are required or authorized by law or executive order to be closed for commercial banking purposes, or (iii) so long as the Bank is the owner of the Bond, any day on which the Bank’s office in Philadelphia, Pennsylvania, is not open for banking business.

“CAPITAL EXPENDITURES” shall mean, with respect to any Person for any period, the aggregate of all expenditures (whether paid in cash or accrued as a liability) by such Person during that period which, in accordance with GAAP, are or should be included in “additions to property, plant or equipment” or similar items reflected in the statement of cash flows of such Person (other than expenditures incurred in connection with any Permitted Acquisition).

“CODE” means the Internal Revenue Code of 1986, as amended, and all applicable regulations promulgated thereunder.

“COLLATERAL” means all the real and personal property subject to the lien of the Security Agreement, as well as all those assets, of the Borrower to which the Bank is granted a security interest in order to secure the Bond.

“COMMONWEALTH” means the Commonwealth of Pennsylvania.

“COMPLIANCE CERTIFICATE” shall have the meaning set forth in Section 11.4 of this Agreement.

“CONSOLIDATED EBITDA” means, for any period, for the Borrower and its Subsidiaries on a consolidated basis, an amount equal to Consolidated Net Income for such period plus (a) the following to the extent deducted in calculating such Consolidated Net Income: (i) Consolidated Interest Charges for such period, (ii) the provision for Federal, state, local and foreign income taxes includable in Net Income for such period including, without limitation, Permitted Non-Cash Reversals, (iii) depreciation and amortization expense, (iv) non-cash charges in respect of any write down of assets taken in the ordinary course of business, (v) commencing on January 1, 2006, non-cash compensation expenses related to the application of financial accounting standard 123-R and (vi) charges taken to Consolidated Net Income in an aggregate amount not to exceed \$7,500,000 as a result of the Permitted Environmental Obligations minus (b) the following to the extent included in calculating such Consolidated Net Income: (x) Federal, state, local and foreign income tax credits of the Borrower and its Subsidiaries for such period and (y) non-cash items increasing Consolidated Net Income in respect of any write up of assets taken in the ordinary course of business. Calculations of Consolidated EBITDA shall give effect, on a *pro forma* basis, to all Permitted Acquisitions and Dispositions permitted under this Agreement made during the quarter or year to which the required compliance relates, as if such Permitted Acquisition or Disposition had been consummated on the first day of the applicable period.

“CONSOLIDATED FUNDED INDEBTEDNESS” means, as of any date of determination, for the Company and its Subsidiaries on a consolidated basis, but without duplication, the sum of (a) the outstanding principal amount of all obligations, whether current or long-term, for borrowed money (including Obligations hereunder) and all obligations evidenced by bonds, debentures, notes, loan agreements or other similar instruments, (b) all purchase money Indebtedness, (c) all direct obligations arising under letters of credit (including standby and commercial), bankers’ acceptances, bank guaranties, surety bonds and similar instruments (other than letters of credit to the extent such letters of credit support Indebtedness otherwise included in clauses (a) through (g) hereof), (d) all obligations in respect of the deferred purchase price of property or services (other than trade accounts payable in the ordinary course of business), (e) Attributable Indebtedness in respect of capital leases and Synthetic Lease Obligations, (f) without duplication, all Guarantees with respect to outstanding Indebtedness of the types specified in clauses (a) through (e) above of Persons other than the Company or any Subsidiary, and (g) all Indebtedness of the types referred to in clauses (a) through (f) above of any partnership or joint venture (other than a joint venture that is itself a corporation or limited liability company) in which the Company or a Subsidiary is a general partner or Joint Venturer unless such Indebtedness is expressly made non-recourse to the Company or such Subsidiary; provided that each

of clauses (a) through (g) (except Synthetic Lease Obligations) shall only be included in Consolidated Funded Indebtedness to the extent the foregoing appears as a liability on the balance sheet of the Company in accordance with GAAP.

“CONSOLIDATED INTEREST CHARGES” means, for any period, for the Company and its Subsidiaries on a consolidated basis, the sum of (a) all interest, premium payments, debt discount, fees, charges and related expenses of the Company and its Subsidiaries in connection with (i) borrowed money (including capitalized interest), (ii) the deferred purchase price of assets, and (iii) off-balance sheet liabilities, in each case to the extent treated as interest in accordance with GAAP, and (b) the portion of rent expense of the Company and its Subsidiaries with respect to such period under capital leases that is treated as interest in accordance with GAAP, plus or minus the benefits or detriments, as the case may be, of any interest rate protection.

“CONSOLIDATED INTEREST COVERAGE RATIO” means, as of any date of determination, the ratio of (a) Consolidated EBITDA for the period of the four prior fiscal quarters ending on such date to (b) Consolidated Interest Charges for such period.

“CONSOLIDATED LEVERAGE RATIO” means, as of any date of determination, the ratio of (a) Consolidated Funded Indebtedness as of such date to (b) Consolidated EBITDA for the period of the four fiscal quarters most recently ended.

“CONSOLIDATED NET INCOME” means, for any period, for the Company and its Subsidiaries on a consolidated basis, the net income of the Company and its Subsidiaries (excluding extraordinary gains and extraordinary losses) determined in accordance with GAAP for such period.

“CONTRACTUAL OBLIGATION” means, as to any Person, any provision of any security issued by such Person or of any agreement, instrument or other undertaking to which such Person is a party or by which it or any of its property is bound.

“COUNSEL” means an attorney or firm of attorneys duly admitted to the practice of law before the highest court of any state in the United States of America or the District of Columbia.

“DETERMINATION OF TAXABILITY” means (a) the enactment of legislation to or with the effect that interest payable on the Bond is includable in the gross income of the Bank (other than by reason of the Bank being a “substantial user” or “related Person,” as each such term is defined in the Code) under the federal income tax laws, any such determination being deemed to have occurred on the effective date of such legislation; or (b) receipt by the Borrower, the Authority or the Bank of notice that the Commissioner of Internal Revenue or any district director of the Internal Revenue Service, based upon filings of the Borrower, any review, examination of the Borrower, or any other ground, shall have determined that a Taxable Event has occurred; provided that the Borrower shall have been afforded a reasonable opportunity to appeal such determination, but only so long as (i) the Borrower shall diligently pursue such appeal, and (ii) the Borrower shall provide the Bank with reasonable assurance of payment of all obligations to the Bank in connection with the Bond as a result of an adverse determination of such appeal, and (iii) the prosecution of such appeal does not otherwise adversely affect the Bank in the Bank’s reasonable judgment; or (c) issuance of a published or private ruling or a technical advice memorandum by the Internal Revenue Service, or a determination by any court of competent jurisdiction, that the interest payable on the Bond is includable for federal income tax purposes in the gross income of the Bank (except as aforesaid); or (d) an opinion of Bond Counsel addressed to the Bank that such Bond Counsel cannot conclude that the interest on the Bond qualifies as exempt income under Section 103 of the Code; provided, however, that the Borrower shall have been given thirty (30) days’ notice and an opportunity to consult with such Bond Counsel.

“DISPOSITION” or “DISPOSE” means the sale, transfer, exclusive license (other than any such license as to which exclusivity is granted by the licensor as to geographic scope only) or other disposition (including any sale and leaseback transaction) of any property by any Person, including any sale, assignment, transfer or other disposal, with or without recourse, of any notes or accounts receivable or any rights and claims associated therewith.

“ERISA” means the Employee Retirement Income Security Act of 1974.

“ERISA AFFILIATE” means any trade or business (whether or not incorporated) under common control with the Borrower within the meaning of Section 414(b) or (c) of the Code (and Sections 414(m) and (o) of the Code for purposes of provisions relating to Section 412 of the Code).

“ERISA EVENT” means (a) a Reportable Event with respect to a Pension Plan (as defined in ERISA); (b) a withdrawal by the Borrower or any ERISA Affiliate from a Pension Plan subject to Section 4063 of ERISA during a plan year in which it was a substantial employer (as defined in Section 4001(a)(2) of ERISA) or a cessation of operations that is treated as such a withdrawal under Section 4062(e) of ERISA; (c) a complete or partial withdrawal by the Borrower or any ERISA Affiliate from a Multiemployer Plan or notification that a Multiemployer Plan (as defined in ERISA) is in reorganization; (d) the filing of a notice of intent to terminate, the treatment of a Pension Plan amendment as a termination under Sections 4041 or 4041A of ERISA, or the commencement of proceedings by the PBGC to terminate a Pension Plan or Multiemployer Plan; or (e) an event or condition which constitutes grounds under Section 4042 of ERISA for the termination of, or the appointment of a trustee to administer, any Pension Plan or Multiemployer Plan.

“EVENT OF DEFAULT” means any of the events enumerated in Section 14.1.

“FAVORABLE OPINION OF BOND COUNSEL” means an opinion of a nationally recognized bond counsel, reasonably acceptable to the Authority, addressed to the Authority to the effect that the action proposed to be taken either(i) will not adversely affect the excludability of interest on the Bond from gross income of the holders thereof for federal income tax purposes or (ii) that all federal income tax requirements have been met with respect to a technical reissuance of the Bond.

“FUNDAMENTAL CHANGE” means: (i) any merger (except where the Borrower is the surviving entity), dissolution, liquidation or consolidation of the Borrower with our into another Person; (ii) any Disposition of the majority of the assets (whether now owned or hereinafter acquired) of the Borrower to or in favor of any Person, in any one or series of transaction; (iii) a fundamental change in the business lines or operations of the Borrower, as determined by the Bank in its reasonable discretion; (iv) a sale of more than 25% of the stock of the Borrower except in connection with acquisitions or similar transactions; or (v) a delisting of the Borrower from the New York Stock Exchange.

“GAAP” means generally accepted accounting principles and practices applied on a consistent basis.

“GOVERNMENTAL AUTHORITY” means the government of the United States or any other nation, or of any political subdivision thereof, whether state or local, and any agency, authority, instrumentality, regulatory body, court, central bank or other entity exercising executive, legislative, judicial, taxing, regulatory or administrative powers or functions of or pertaining to government.



“GOVERNMENT OBLIGATIONS” means direct obligations of, or obligations the principal and interest on which are unconditionally guaranteed by, the United States of America.

“GUARANTEE” means, as to any Person, any (a) any obligation, contingent or otherwise, of such Person guaranteeing or having the economic effect of guaranteeing any Indebtedness or other obligation payable or performable by another Person (the “primary obligor”) in any manner, whether directly or indirectly, and including any obligation of such Person, direct or indirect, (i) to purchase or pay (or advance or supply funds for the purchase or payment of) such Indebtedness or other obligation, (ii) to purchase or lease property, securities or services for the purpose of assuring the obligee in respect of such Indebtedness or other obligation of the payment or performance of such Indebtedness or other obligation, (iii) to maintain working capital, equity capital or any other financial statement condition or liquidity or level of income or cash flow of the primary obligor so as to enable the primary obligor to pay such Indebtedness or other obligation, or (iv) entered into for the purpose of assuring in any other manner the obligee in respect of such Indebtedness or other obligation of the payment or performance thereof or to protect such obligee against loss in respect thereof (in whole or in part), or (b) any Lien on any assets of such Person securing any Indebtedness or other obligation of any other Person, whether or not such Indebtedness or other obligation is assumed by such Person (or any right, contingent or otherwise, of any holder of such Indebtedness to obtain any such Lien). The amount of any Guarantee shall be deemed to be an amount equal to the stated or determinable amount of the related primary obligation, or portion thereof, in respect of which such Guarantee is made or, if not stated or determinable, the maximum reasonably anticipated liability in respect thereof as determined by the guaranteeing Person in good faith. The term “Guarantee” as a verb has a corresponding meaning.

“INDEBTEDNESS” means, as to any Person at a particular time, without duplication, all of the following, whether or not included as indebtedness or liabilities in accordance with GAAP:

(a) all obligations of such Person for borrowed money and all obligations of such Person evidenced by bonds, debentures, notes, loan agreements or other similar instruments;

(b) all direct or contingent obligations of such Person arising under letters of credit (including standby and commercial), bankers’ acceptances, bank guaranties, surety bonds and similar instruments;

(c) net obligations of such Person under any Swap Contract;

(d) all obligations of such Person to pay the deferred purchase price of property or services (other than trade accounts payable in the ordinary course of business and, in each case, not past-due for more than 90 days after the date on which the related invoice was originally payable, which date is not more than 90 days after the date the invoice was originally issued.

(e) indebtedness (excluding prepaid interest thereon) secured by a Lien on property owned or being purchased by such Person (including indebtedness arising under conditional sales or other title retention agreements), whether or not such indebtedness shall have been assumed by such Person or is limited in recourse;

(f) capital leases and Synthetic Lease Obligations;

(g) all obligations of such Person to purchase, redeem, retire, defease or otherwise make any payment in respect of the acquisition of any Equity Interest in such Person or any other Person, valued, in the case of a redeemable preferred interest, at the greater of its voluntary or involuntary liquidation preference plus accrued and unpaid dividends; and

(h) all Guarantees of such Person in respect of any of the foregoing.

For all purposes hereof, the Indebtedness of any Person shall include the Indebtedness of any partnership or joint venture (other than a joint venture that is itself a corporation or limited liability company) in which such Person is a general partner or a Joint Venturer, unless such Indebtedness is expressly made non-recourse to such Person. The amount of any net obligation under any Swap Contract on any date shall be deemed to be the Swap Termination Value thereof as of such date. The amount of any capital lease or Synthetic Lease Obligation as of any date shall be deemed to be the amount of Attributable Indebtedness in respect thereof as of such date.

“INDEMNIFIED PARTIES” means the State, the Authority, the Bank, any Person who “controls” the Authority or the Bank, within the meaning of Section 15 of the Securities Act of 1933, as amended, any member, officer, director, official or employee of and attorney for the Authority or the Bank (including any partner of the Bank) and their respective executors, administrators, heirs, successors and assigns.

“INTEREST PAYMENT DATE” for the Bond means the first day of each month, commencing June 1, 2008.

“INTERNAL CONTROL EVENT” means a material weakness in, or fraud that involves management or other employees who have a significant role in, the Borrower’s internal controls over financial reporting within the meaning of Item 308 of Regulation S-K promulgated by the SEC, in each case as described in the Securities Laws.

“JOINT VENTURER” means any Person holding an equity interest in an entity for whose obligations and liabilities such Person is jointly and severally liable.

“LIEN” means any mortgage, pledge, hypothecation, assignment, deposit arrangement, encumbrance, lien (statutory or other), charge, or preference, priority or other security interest or preferential arrangement in the nature of a security interest of any kind or nature whatsoever (including any conditional sale or other title retention agreement, any easement, right of way or other encumbrance on title to real property, and any financing lease having substantially the same economic effect as any of the foregoing).

“LOAN ACCOUNTS” has the meaning set forth in Section 8.3 hereof.

“MATERIAL AMOUNT” means an amount in excess of the lesser of: (i) \$15,000,000 or (ii) five percent (5%) of the value of the total consolidated assets of the Company and its Subsidiaries.

“MATERIAL ADVERSE EFFECT” means (a) a material adverse change in, or a material adverse effect upon, the operations, business, properties, or financial condition of the Borrower; (b) a material impairment of the ability of the Borrower to perform its obligations under this Agreement; or (c) a material adverse effect upon the legality, validity, binding effect or enforceability against the Borrower of any Borrower Financing Document. As used in this definition, “material” shall mean an amount of five percent (5%) or more of the total consolidated assets of the Company and its Subsidiaries as of the relevant date of determination.

“MATURITY DATE” means May 1, 2028.

“OBLIGATIONS” means all advances to, and debts, liabilities, obligations, covenants and duties of, any Borrower arising under any loan, including the Loan, or letter of credit of the Borrower or any of its Affiliates, whether direct or indirect (including those acquired by assumption), absolute or contingent, due or to become due, now existing or hereafter arising and including interest and fees that accrue after the commencement by or against any Borrower or any Affiliate thereof of any proceeding under any Debtor Relief Laws naming such Person as the debtor in such proceeding, regardless of whether such interest and fees are allowed claims in such proceeding.

“OUTSTANDING” shall mean, as of the time in question, the Bond issued and delivered under this Agreement, except all or any portion of the principal amount thereof, as the case may be, such as:

- (a) is cancelled or required to be cancelled under the terms of this Agreement; or
- (b) in substitution for which another Bond has been authenticated and delivered pursuant hereto; or
- (c) is paid in part without presentation and surrender of the Bond in accordance with Section 6.1(d) hereof (but only to the extent of such payments).

“PERMITTED ACQUISITIONS” means any purchase of or investments in the capital stock or other equity or assets of any entity by the Borrower or any Subsidiary:

(a) provided that (i) the sum of the aggregate purchase price and the aggregate amount of all such acquisitions and investments made in any fiscal year, does not exceed \$50,000,000, in the aggregate; and (ii) if after giving effect to such acquisitions and any related dispositions of assets purchased in connection therewith, the Borrower or Subsidiary is in compliance with Section 12.5; provided further that the aggregate value of all “Unrelated Lines of Business” acquired and continuing to be held after the Closing Date pursuant to Permitted Acquisitions does not exceed the Material Amount; and

(b) provided that no Event of Default has occurred and is continuing; and

(c) which, after giving effect to such acquisition, including without limitation, recalculating the covenants set forth in Sections 12.3 and 12.4 on a pro forma basis, including the stock or assets and concomitant liabilities then being acquired, the Borrower will not be in default under this Agreement.

“PERMITTED ENVIRONMENTAL OBLIGATIONS” means amounts to be paid (including without limitation, costs of litigation) on account of either a court-approved settlement or final judgment rendered against the Company or any of its Subsidiaries with respect to current pending litigation in Superior Court, Orange County, California by the Orange County Water District against AC Products, Inc., a subsidiary of the Company, relating to a groundwater contamination claim.

“PERMITTED NON-CASH REVERSALS” means a one-time reversal on the balance sheet of non-cash U.S. deferred tax assets which primarily relate to differences in when certain items are deductible for tax purposes vs. expensed for GAAP purposes, the realization of which is contingent upon future taxable income, provided that the aggregate amount of such reversals does not exceed \$20,000,000.

“PERSON” means any natural person, firm, association, public body, corporation, partnership, limited liability company or other entity.

“PROJECT COSTS” shall mean the costs of the Project to the extent permitted to be paid pursuant to the Act, including, without limitation, the cost of construction of the Project, the cost of acquisition and installation of machinery and equipment, the costs of issuance of the Bond, and all costs related thereto incurred by the Borrower.

“PROJECT FACILITIES” means the improvements, equipment and other property constituting the Borrower’s facilities located at 3431 Yankee Road, Middletown, Ohio, for the improvement of which the Authority is undertaking the Project.

“PROJECT FUND” means the fund created by Section 9.1 hereof.

“RECORD DATE” means, with respect to any Interest Payment Date, the Business Day preceding such Interest Payment Date.

“REGISTERED PUBLIC ACCOUNTING FIRM” has the meaning specified in the Securities Laws and shall be independent of the Borrower as prescribed by the Securities Laws.

“REGULATIONS” means the United States Treasury Regulations and any pertinent Revenue Rulings, Revenue Procedures, Notices or Announcements promulgated by the Secretary of the Treasury of the United States or by the Internal Revenue Service.

“RESERVED RIGHTS” means the rights of the Authority to (1) execute and deliver supplements and amendments to this Agreement pursuant to Section 15.1 hereof, (2) be held harmless and indemnified pursuant to Section 16.6 hereof, (3) receive any funds for its own use, whether as administration fees pursuant to Section 8.2 or reimbursement or indemnification pursuant to Section 16.6 hereof, (4) receive notices and other documents and (5) provide any consent, acceptance or approval with respect to matters as provided herein.

“SEC” means the Securities and Exchange Commission, or any Governmental Authority succeeding to any of its principal functions.

“SECURITY AGREEMENT” means the Security Agreement by and between the Bank and the Borrower, dated the date hereof in connection with the Loan.

“SECURITIES LAWS” means the Securities Act of 1933, the Securities Exchange Act of 1934, Sarbanes-Oxley and the applicable accounting and auditing principles, rules, standards and practices promulgated, approved or incorporated by the SEC or the Public Company Accounting Oversight Board, as each of the foregoing may be amended and in effect on any applicable date hereunder.

“SUBSIDIARY” of a Person means a corporation, partnership, joint venture, limited liability company or other business entity of which a majority of the shares of securities or other interests having ordinary voting power for the election of directors or other governing body (other than securities or interests having such power only by reason of the happening of a contingency) are at the time beneficially owned, or the management of which is otherwise controlled, directly, or indirectly through one or more intermediaries, or both, by such Person. Unless otherwise specified, all references herein to a “Subsidiary” or to “Subsidiaries” shall refer to a Subsidiary or Subsidiaries of the Borrower.

“SWAP CONTRACT” means (a) any and all rate swap transactions, basis swaps, credit derivative transactions, forward rate transactions, commodity swaps, commodity options, forward commodity contracts, equity or equity index swaps or options, bond or bond price or bond index swaps or options or forward bond or forward bond price or forward bond index transactions, interest rate

options, forward foreign exchange transactions, cap transactions, floor transactions, collar transactions, currency swap transactions, cross-currency rate swap transactions, currency options, spot contracts, or any other similar transactions or any combination of any of the foregoing (including any options to enter into any of the foregoing), whether or not any such transaction is governed by or subject to any master agreement, and (b) any and all transactions of any kind, and the related confirmations, which are subject to the terms and conditions of, or governed by, any form of master agreement published by the International Swaps and Derivatives Association, Inc., any International Foreign Exchange Master Agreement, or any other master agreement (any such master agreement, together with any related schedules, a "Master Agreement"), including any such obligations or liabilities under any Master Agreement.

"SWAP TERMINATION VALUE" means, in respect of any one or more Swap Contracts, after taking into account the effect of any legally enforceable netting agreement relating to such Swap Contracts, (a) for any date on or after the date such Swap Contracts have been closed out and termination value(s) determined in accordance therewith, such termination value(s), and (b) for any date prior to the date referenced in clause (a), the amount(s) determined as the mark-to-market value(s) for such Swap Contracts, as determined based upon one or more mid-market or other readily available quotations provided by any recognized dealer in such Swap Contracts (which may include the Bank or any Affiliate of the Bank).

"SYNTHETIC LEASE OBLIGATION" means the monetary obligation of a Person under (a) a so-called synthetic, off-balance sheet or tax retention lease, or (b) an agreement for the use or possession of property creating obligations that do not appear on the balance sheet of such Person but which, upon the insolvency or bankruptcy of such Person, would be characterized as the indebtedness of such Person (without regard to accounting treatment).

"TAX REPRESENTATION LETTER" means, collectively, the certificate regarding the total financed property and the expenditure of funds executed by the Borrower, concurrently with the delivery of the Bond, relating to the expectations, representations and covenants of the Borrower with respect to the expenditure of the proceeds of the Bond and the compliance by the Borrower with the provisions of the Code required to ensure the exclusion from gross income for federal income tax purposes of the interest on the Bond and the Tax Exemption Certificate and Agreement between the Authority and the Borrower dated the date of delivery of the Bonds.

"TAXABLE EVENT" means the application of the proceeds of the Bond in such manner, or the occurrence or non-occurrence of any other event (except the enactment of legislation described in clause (a) of the definition of Determination of Taxability above), whether within or without the control of the Borrower, with the result that, under the Code, the interest on the Bond is or becomes includable in the gross income for federal income tax purposes of the Bank (except as aforesaid).

"TAXABLE RATE" means the rate as determined by the Bank and as set forth on the Bond upon a Determination of Taxability.

"TAX-EXEMPT RATE" mean the rate as determined by the Bank and as set forth on the Bond upon the date hereof.

"UNRELATED LINES OF BUSINESS" means any line of business substantially different from those lines of business conducted by the Company and its Subsidiaries on the date hereof or any business substantially related or incidental thereto.

SECTION 1.2 Rules of Construction.

In this Agreement (except as otherwise expressly provided), the following rules shall apply unless a different meaning clearly appears from the context:

(a) This Agreement shall be governed by and construed in accordance with the laws of the Commonwealth.

(b) The section and other headings contained in this Agreement and the table of contents preceding this Agreement are for reference purposes only and shall not control or affect the construction of this Agreement or the interpretation thereof in any respect.

(c) Unless the context of this Agreement clearly requires otherwise, references to the plural include the singular, the singular the plural, and the part the whole. The words "hereof," "herein," "hereunder" and similar terms in this Agreement refer to this Agreement as a whole and not to a particular provision of this Agreement.

(d) The provisions of this Agreement are intended to be severable. If any provision of this Agreement shall be held invalid or unenforceable in whole or in part, such provision shall be ineffective to the extent of such invalidity or unenforceability without in any manner affecting the validity or enforceability of the remaining provisions of this Agreement.

(e) Words importing the singular number include the plural number and vice versa; and all words importing the masculine gender include the feminine gender.

(f) All references herein to financial or accounting terms, except as the context may clearly otherwise require, shall be construed in accordance with GAAP.

(g) All references to the time of any day shall mean Eastern Standard or Daylight Savings Time, as prevailing on the applicable date in Philadelphia, Pennsylvania.

ARTICLE 2.  
AUTHORITY REPRESENTATIONS

The Authority represents and warrants as follows:

SECTION 2.1 Organization; Authority To Issue Bond.

The Authority is a port authority and public body corporate and politic constituting an instrumentality of the State, duly organized, established and existing under the laws of the State, with the power and authority set forth in the Act. The Authority is authorized to issue the Bond in accordance with the Act and to use the proceeds thereof to make the Loan.

SECTION 2.2 Authorization for Financing.

The Authority has complied with the provisions of the Act and has full power and authority pursuant to the Act to consummate all transactions contemplated by this Agreement, the Bond, the Resolution, and any and all agreements relating thereto and to perform its obligations thereunder and to issue, sell and deliver the Bond to the Bank as provided herein.

SECTION 2.3 Resolution.

Pursuant to the Resolution adopted by the Authority and still in force and effect, the Authority has duly authorized the execution, delivery and due performance of this Agreement and the Bond and the Authority has duly authorized the taking of any and all action as may be required on the part of the Authority pursuant to the express provisions of this Agreement to perform, give effect to and consummate the transactions contemplated by this Agreement and all approvals necessary in connection with the foregoing have been received.

SECTION 2.4 The Bond.

When the Bond is issued, transferred and delivered in accordance with the provisions of this Agreement, the Bond will have been duly authorized, executed, issued and delivered and will constitute the valid and special, limited obligation of the Authority payable solely from the revenues derived by the Authority from this Agreement. The Bond and the interest thereon do not constitute a general obligation, debt, bonded indebtedness or a pledge of the faith and credit, of the Authority or of the State or any political subdivision of the State, and the holders or owners of the Bond has no right to have taxes levied by the general assembly or taxing authority of any political subdivision of the State for the payment of the principal of or interest on the Bond, but the Bond is payable solely from the revenues and funds pledged for its payment as authorized under the Act. The Bond shall contain on its face thereof a statement to the effect that the Bond, as to both principal and interest, is not debts of the State or any political subdivision of the State, but is payable solely from revenues and funds pledged for its payment.

SECTION 2.5 No Conflict or Violation.

The execution and delivery of this Agreement and the Bond and compliance with the provisions thereof, will not conflict with or constitute on the part of the Authority a violation of the Constitution of the State or violation, breach of or default under its By-Laws or any statute, indenture, mortgage, deed of trust, note agreement or other agreement or instrument to which the Authority is a party or by which the Authority is bound, or, to the knowledge of the Authority, any order, rule or regulation of any court or governmental agency or body having jurisdiction over the Authority or any of its activities or properties, and all consents, approvals, authorizations and orders of governmental or regulatory authorities which are required to be obtained by the Authority for the consummation of the transactions contemplated thereby have been obtained.

SECTION 2.6 Litigation.

There is no action, suit, proceeding or investigation at law or in equity or before or by any court, public board or body pending or threatened against or affecting the Authority, or, to the best knowledge of the Authority, any basis therefor, wherein an unfavorable decision, ruling or finding would adversely affect the transactions contemplated hereby, or which in any way would contest or adversely affect the validity of the Bond or this Agreement or the power of the Authority for the issuance of the Bond, the validity of the Resolution, the validity of, or power of the Authority to execute and deliver, any agreement or instrument to which the Authority is a party and which is used or contemplated for use in consummation of the transactions contemplated hereby or the right of the Authority to finance the Project.

SECTION 2.7 No Repeal.

No authority or proceedings for the issuance of the Bond or documents executed in connection therewith has been repealed, revoked, rescinded or superseded.

SECTION 2.8 Limitations on the Representation and Warranties of the Authority.

The Authority makes no representation as to (a) the financial position or business condition of the Borrower, (b) the value of the Project or its suitability for any particular purpose, or (c) the correctness, completeness or accuracy of any of the statements, materials (financial or otherwise), representations or certifications furnished or to be made by the Borrower in connection with the sale or transfer of the Bond, the execution and delivery of this Agreement or the consummation of the transactions contemplated hereby.



ARTICLE 3.  
BORROWER REPRESENTATIONS

The Borrower represents and warrants as follows:

SECTION 3.1 Organization and Existence.

The Borrower is a corporation duly organized and existing in good standing under the laws of the Commonwealth, with full power and legal right to enter into the Borrower Financing Documents and to perform its obligations thereunder. The making and performance by the Borrower of its obligations under this Agreement have been duly authorized by proper corporate action.

SECTION 3.2 Consents.

No authorization, consent, approval, license, exemption by or filing or registration with any court or governmental department, commission, board (including the Board of Governors of the Federal Reserve System), bureau, agency or instrumentality is or will be necessary for the valid execution, delivery or performance by the Borrower of any Borrower Financing Document.

SECTION 3.3 No Conflict or Violation.

The execution and delivery of the Borrower Financing Documents and the consummation of the transactions contemplated thereby do not conflict with or cause or constitute a breach of or default under any material bond, contract, indenture, agreement or other instrument to which the Borrower is a party or by which it or its property is bound.

SECTION 3.4 Litigation or Proceedings.

There is no action, suit, proceeding or investigation at law or in equity before or by any court, arbitration board or tribunal, public board or body pending or, to the best knowledge of the Borrower, threatened against or affecting the Borrower, or, to the best knowledge of the Borrower, any basis therefor, wherein an unfavorable decision, ruling or finding would (i) adversely affect in a material way the transactions contemplated by the Borrower Financing Documents, or any other agreement or instrument to which the Borrower is a party, which is used or contemplated for use in the consummation of the transactions contemplated by the Borrower Financing Documents, or (ii) adversely affect the exemption of interest on the Bond from federal income taxation or any state tax-exemption applicable thereto.

SECTION 3.5 Legal and Binding Obligation.

Each of the Borrower Financing Documents is a legal, valid and binding obligation of the Borrower enforceable against it in accordance with its terms except as the same may be limited by bankruptcy, insolvency, reorganization, moratorium or other laws relating to or affecting the enforcement of creditors' rights generally and except to the extent that the enforceability thereof may be limited by the application of general principles of equity.

SECTION 3.6 ERISA.

Each defined benefit pension plan as to which the Borrower may have any liability complies in all material respects with all applicable provisions of ERISA, including minimum funding requirements except with respect to any non-compliance that reasonably could be expected not to exceed \$1,500,000, and (i) no "prohibited transaction" (as defined under ERISA) has occurred with respect

to any such plan, (ii) no “reportable event” (as defined under Section 4043 of ERISA) has occurred with respect to any such plan which would cause the Pension Benefit Guaranty Corporation to institute proceedings under Section 4042 of ERISA, (iii) the Borrower has not withdrawn from any such plan or initiated steps to do so, and (iv) no steps have been taken to terminate any such plan.

SECTION 3.7 Indebtedness.

The Borrower is not liable to any Person for Indebtedness that is not disclosed on the financial statements heretofore provided to the Bank or has been otherwise disclosed in writing to the Bank.

SECTION 3.8 Contingent Liabilities.

There are no suretyship agreements, guarantees or other contingent liabilities of the Borrower that are not disclosed on the financial statements heretofore provided to the Bank or as otherwise disclosed in writing to the Bank.

SECTION 3.9 Investment Company Act.

The Borrower is not an “investment company,” or a company “controlled” by an “investment company,” within the meaning of the Investment Company Act of 1940, as amended.

SECTION 3.10 Federal Reserve Regulations.

No indebtedness that is required to be, or will be, reduced or retired from the proceeds of the Bond was incurred for the purpose of purchasing or carrying any “margin stock” within the meaning of Regulation U of the Board of Governors of the Federal Reserve System (12 C.F.R. 221, as amended), and the Borrower does not own or have any present intention to acquire any such margin stock.

SECTION 3.11 Payment of Taxes.

Except for such amounts as the Borrower is contesting in good faith through proper proceedings, the Borrower has filed or caused to be filed all federal, state and local tax returns which are required to be filed, and has paid or caused to be paid all taxes as shown on said returns or on any assessment received by it, to the extent that such taxes have become due.

SECTION 3.12 No Default

The Borrower is not in default in the performance, observance or fulfillment of any of the obligations, covenants or conditions contained in any agreement or instrument to which it is a party or by which it is bound, to the extent such default would have a Materially Adverse Effect on the Borrower.

SECTION 3.13 Financial Statements.

All financial statements now and heretofore furnished to the Authority and the Bank by the Borrower are true, accurate and correct in all material respects as of the date thereof and have been, or will be, with respect to the financial statements hereafter furnished to the Authority and the Bank, prepared in accordance with GAAP. Such financial statements do, or will, fairly present the Borrower’s financial condition, as of the date of such statements, in all material respects, and the results of its respective operations for the fiscal period then ended and there has been no change, financial or otherwise that has a Material Adverse Effect on the Borrower, since the date of the last financial statement furnished to the Authority and the Bank.

SECTION 3.14 Title; Encumbrances.

Except as otherwise disclosed in writing to the Bank, the Borrower has good and marketable title to all of its properties and assets.

SECTION 3.15 Tax Status of Bond.

The Borrower has not taken any action and knows of no action that any Person has taken or intends to take, and will not take or permit any Person to take, which would cause interest on the Bond to be includable in the gross income of the Bank for federal income tax purposes.

SECTION 3.16 Environmental Laws.

To Borrower's knowledge, except as set forth under Schedule 3.16 hereof, the Borrower is in compliance, in all material respects, with all Environmental Laws (as defined below), including, without limitation, all Environmental Laws in jurisdictions in which the Borrower owns or operates, or has owned or operated, a facility or site, arranges or has arranged for disposal or treatment of hazardous substances, solid waste or other waste, accepts or has accepted for transport any hazardous substances, solid waste or other wastes or holds or has held any interest in real property or otherwise. Except as disclosed to the Bank in writing, no litigation, action, proceeding, inquiry, request for information, administrative action or overt investigation arising under, relating to or in connection with any Environmental Law is pending or, to the best knowledge of the Borrower, threatened against the Borrower, any real property which the Borrower holds or has held an interest or any past or present operation of the Borrower. Except as disclosed to the Bank in writing, to the Borrower's knowledge, no release, threatened release or disposal of hazardous waste, solid waste or other wastes is occurring, or to the best knowledge of the Borrower, has occurred, on, under or to any real property in which the Borrower holds any interest or performs any of its operations, in violation of any Environmental Law. As used in this Section, "Environmental Laws" means all provisions of laws, statutes, ordinances, rules, regulations, permits, licenses, judgments, writs, injunctions, decrees, orders, awards and standards promulgated by any Governmental Authority concerning health, safety and protection of, or regulation of the discharge of substances into, the environment.

SECTION 3.17 No False Statements.

As of the date hereof, neither any Borrower Financing Document nor any other document, certificate or statement furnished to the Authority or the Bank by or on behalf of the Borrower contains any untrue statement of a material fact with respect to the Borrower or omits to state a material fact with respect to the Borrower necessary in order to make the statements contained herein and therein not misleading. It is specifically understood by the Borrower that all such statements, representations and warranties shall be deemed to have been relied upon by the Authority as an inducement to make the Loan and issue the Bond and by the Bank to purchase the Bond.

ARTICLE 4.  
BANK REPRESENTATIONS

The Bank represents and warrants as follows:

SECTION 4.1 Independent Investigation.

The Bank has made an independent investigation and evaluation of the financial position and business condition of the Obligors and the value of the Equipment or has caused such investigation and evaluation to be made by Persons it deems competent to do so. All information relating to the business and affairs of the Obligors that the Bank has requested in connection with the transactions referred to herein have been provided to the Bank. The Bank hereby expressly waives the right to receive such information from the Authority and relieves the Authority and its agents, representatives and attorneys of any liability for failure to provide such information or for the inclusion in such information or in any of the documents, representations or certifications to be provided by the Borrower under this Agreement of any untrue fact or for the failure therein to include any fact.

SECTION 4.2 Purchase for Own Account.

The Bank is purchasing the Bond for its own account, with the purpose of investment and not with the intention of distribution or resale thereof. The Bond will not be sold unless registered in accordance with the rules and regulations of the Securities and Exchange Commission or unless the Authority is furnished with an opinion of Counsel or a "No Action" letter from the Securities and Exchange Commission that such registration is not required.

ARTICLE 5.  
THE BOND

SECTION 5.1 Form; Amount and Terms.

(a) In order to provide funds for the Project, the Bond is hereby authorized to be issued in the aggregate principal amount of \$10,000,000, and shall be issued as a fully registered Bond, without coupons, substantially in the form set forth as Exhibit A hereto, with appropriate insertions and deletions. The Bond shall be issued in a single denomination equal to the entire outstanding principal amount thereof.

(b) The Bond shall mature on May 1, 2028, shall be subject to optional and mandatory redemption prior to maturity as provided in Section 6.1 hereof and in the Bond and shall bear interest from and including the date thereof, or from the most recent Interest Payment Date to which interest has been fully paid or provided, until payment of the principal thereof shall have been made in accordance with the provisions thereof. Principal of and interest on the Bond shall be paid as provided for in the form thereof set forth as Exhibit A hereto and made a part hereof, and as otherwise set forth in this Agreement.

SECTION 5.2 Payment and Dating of the Bond.

Principal of the Bond shall be payable to the Bank upon presentation and surrender of the Bond at the principal office of the Borrower on the Maturity Date shown thereon unless previously redeemed by the Authority pursuant to Section 6.1 hereof. Interest on the Bond shall be payable on each Interest Payment Date in the manner provided in Section 8.1(c) hereof. The Bond shall bear interest on overdue principal and, to the extent permitted by law, on overdue interest, at the Base Rate plus 2%. Payment as aforesaid shall be made in such coin or currency of the United States of America as, at the respective times of payment, shall be legal tender for the payment of public and private debts.

The Bond shall be dated the date of delivery thereof.

SECTION 5.3 Execution

(a) The Bond shall be executed on behalf of the Authority by its Chairman or Vice Chairman and the Secretary or Treasurer by their manual or facsimile signatures. In case any officer whose signature (or facsimile thereof) shall appear on the Bond shall cease to be such officer before the delivery of the Bond, such signature or such facsimile shall nevertheless be valid and sufficient for all purposes, the same as if such officer had remained in office until delivery.

(b) The Bond shall not be valid or obligatory for any purpose unless and until the Certificate of Authentication attached thereto shall have been duly executed by the Borrower. The executed certificate of the Borrower upon the Bond shall be conclusive evidence that the Bond has been authenticated and delivered hereunder. The Borrower is hereby authorized and empowered to authenticate the Bond on the date of execution hereof and to deliver the Bond to the Bank upon receipt of the purchase price therefor in accordance with Section 7.3 hereof.

ARTICLE 6.  
REDEMPTION OF BOND BEFORE MATURITY

SECTION 6.1 Redemption of the Bond.

(a) Optional Redemption; Notice. The Bond shall be subject to optional redemption by the Authority, at the written direction of the Borrower, in whole or in part (but if in part in the principal amount of \$100,000 or integral multiples of \$5,000 in excess thereof), on the last day of any Interest Period (as defined in the form of Bond attached hereto as Exhibit A), at a price equal to 100% of the principal amount thereof to be redeemed, together with accrued interest to the date of redemption. The Borrower shall provide the Bank with notice of the date of any optional redemption pursuant to this paragraph and the principal amount of the Bond to be redeemed to the Bank at least one (1) Business Day prior to such redemption date to the Bank. On each such redemption date, payment of the redemption price having been made to the Bank as provided herein and in the Bond, the Bond or the portion thereof so called for redemption shall become due and payable on the redemption date and interest shall cease to accrue on such redeemed principal from and after the redemption date. Any amounts applied to an optional redemption shall reduce the mandatory scheduled redemption obligations of the Authority described below in the order selected by the Borrower and approved by the Bank (or in the absence of such approval in inverse order of payment obligations).

(b) Mandatory Redemption at Option of Bank. At any time on or after the third anniversary of the date of original issuance of the Bond, all of the Bond shall be redeemed by the Authority, in whole and not in part, at a redemption price equal to 100% of the principal amount thereof, together with accrued interest to the date of redemption, upon the written demand of the Bank in the form attached as Exhibit B to this Agreement, to the Borrower, with a copy to the Authority. The Bank shall provide the Borrower with notice of the date of any mandatory redemption pursuant to this paragraph and the principal amount of the Bond to be redeemed by first-class mail, postage prepaid, sent at least ninety (90) days before such redemption date to the Borrower at the Borrower's address for notice appearing in this Agreement as of the close of business on the Business Day prior to such mailing. The Bond shall be redeemed, and the redemption price of the Bond shall be paid to the owner of the Bond, on the date specified by the Bank. Notwithstanding the foregoing, if the Bank shall demand the redemption of the Bond in whole pursuant to this paragraph, in lieu of such redemption, the Borrower shall have the right to (A) purchase the Bond from the Bank on any date after the date of the Bank's written demand and prior to the next Business Day preceding the date of the proposed redemption, at a purchase price equal to 100% of the principal amount of the Bond, plus accrued interest to the date of purchase; or (B) after delivery of a Favorable Opinion of Bond Counsel, deliver a letter of credit to the benefit of the Bank on any date after the date of the Bank's written demand and prior to the next Business Day preceding the date of the proposed redemption which shall satisfy the following requirements:

- (i) the letter of credit shall be in an amount equal to the aggregate principal amount of the Bond plus thirty-five (35) days of interest on the Bond;
- (ii) the letter of credit shall provide for payment in immediately available funds, upon receipt of request for such payment with respect to any Interest Payment Date, or Mandatory Redemption Date pursuant to this Agreement;
- (iii) the letter of credit shall (a) provide for an expiration date no earlier than the earlier of (1) the date on which the Bond is to mature and is to be paid in full or (2) the date on which the Bond becomes secured by an substitute letter of credit which meets the conditions of this Section 6.1(c), or (b) permit a draw on the letter of credit by the Bank thirty (30) days prior to the

expiration date of the letter of credit in the event the Borrower has not provided to the Bank a written commitment, to the reasonable satisfaction of the Bank, that (x) the letter of credit will be renewed on the expiration date, or (y) a substitute letter of credit, meeting the conditions of this Section 6.1(c), will be provided to the Bank by the Borrower;

(iv) the letter of credit shall be issued by a financial institution reasonably acceptable to the Bank and which has at least Aa2/P-1 rating from Moody's; and

(v) such other terms and conditions as the Bank or the Authority may reasonably require.

In the event the Borrower delivers a letter of credit pursuant to this Section 6.1(b), the interest rate on the Bond shall be reduced by 80 basis points.

(c) Mandatory Redemption Upon Determination of Taxability. On the date of the occurrence of a Determination of Taxability, the Bond shall be called for redemption on the date selected by the Borrower, but not more than ninety (90) days following the date of the occurrence of the Determination of Taxability, at a redemption price equal to 100% of the principal amount thereof plus accrued interest to the date of redemption.

If there shall have occurred a Determination of Taxability, and the Borrower shall fail to give notice thereof within thirty (30) days or shall fail to select a date within ninety (90) days of the date of the occurrence of the Determination of Taxability for the redemption of the Bond as provided in this Section 6.1(c), the Authority shall call the Bond for redemption on the date ninety (90) days following the date of the occurrence of the Determination of Taxability.

The Authority or the Borrower, on behalf of the Authority, shall provide the Bank with notice of the date of a redemption pursuant to this Section 6.1(c) and the principal amount of the Bond to be redeemed by first-class mail, postage prepaid, sent at least fifteen (15) days before such redemption date to the Bank at the address of the Bank appearing in this Agreement as of the close of business on the Business Day prior to such mailing. On each such redemption date, payment or provision for payment of the redemption price having been made, the Bond or the portion thereof so called for redemption shall become due and payable on the redemption date, and interest shall cease to accrue thereon from and after the redemption date.

(d) Payment Upon Redemption or Prepayment. Payment in respect of the redemption or prepayment of the Bond shall be made by the Borrower by wire transfer of immediately available funds to the bank account specified by the Bank. Except in the event of the redemption of the Bond in its entirety, any such redemption shall be made without surrender of the Bond by the Bank for payment, provided that the Borrower's records of such payment shall be conclusive and binding on the Bank, absent manifest error.

(e) Breakage Costs. In addition to any amounts due in connection with the redemption of the Bond as set forth above, in the event of any redemption or prepayment of the Bond for any reason, whether by redemption, prepayment, acceleration or otherwise, there shall be paid to the Bank an additional amount equal to the sum of all actual losses or expenses suffered or incurred by the Bank as a result of the redemption or prepayment, including any loss, breakage or other cost or expense incurred by reason of the termination of any interest rate protection agreement or the liquidation or reemployment of deposits or other funds acquired by the Bank to make or maintain its investment in the principal amount of the Bond at a fixed interest rate, it being understood that any variance between taxable rates and tax exempt rates at the time, shall not be taken into account in calculating the Bank's actual loss. The Bank shall provide the calculation of any such loss at the Borrower's request, which calculation shall be final in the absence of manifest error.

ARTICLE 7.  
ISSUE OF BOND

SECTION 7.1 Sale and Purchase of the Bond; Loan of Proceeds; Application of Proceeds.

In order to provide funds for the payment of the costs of the Project, the Authority agrees to issue the Bond, concurrently with the execution and delivery hereof, and to sell the Bond to the Bank. The Bank shall purchase the Bond at a purchase price of 100% of the principal amount thereof in accordance with the terms and conditions hereof. The proceeds of the Bond are hereby loaned to the Borrower to be applied to pay Project Costs in accordance with Section 7.3 below.

SECTION 7.2 Delivery of the Bond.

The Authority will issue and deliver the Bond to the Bank upon payment of the purchase price therefor and the execution and delivery to the Bank of the following:

(a) Copies of the proceedings of the Authority relating to the issuance of the Bond, duly certified by an Authorized Officer of the Authority;

(b) A copy of the resolutions of the Board of the Borrower certified by the Secretary or Assistant Secretary thereof authorizing and approving the execution and delivery of this Agreement and all other documents delivered pursuant to this Agreement; and such other corporate documents and records as the Bank may reasonably request;

(c) A written certificate by an authorized officer of the Borrower as to the names and signatures of the officers of the Borrower authorized to sign this Agreement and the other documents or certificates of the Borrower to be executed and delivered pursuant hereto. The Bank may conclusively rely on, and be protected in acting upon, such certificate until it shall receive a further certificate by the Secretary or an Assistant Secretary of the Borrower amending the prior certificate;

(d) Original executed counterparts of this Agreement, the Tax Representation Letter and other appropriate documents;

(e) Opinions in form and substance satisfactory to the Authority and the Bank dated as of the date of the closing of (i) Counsel for the Authority, (ii) Bond Counsel and (iii) Counsel for the Borrower;

(f) Evidence satisfactory to the Bank of the maintenance by the Borrower of insurance as required by Section 11.12 hereof;

(g) Evidence satisfactory to the Bank of the filing of all UCC-1 financing statements required to perfect the assignment by the Authority to the Bank of its rights hereunder in accordance with Section 11.13 hereof; and

(h) Other customary closing certificates and documents as may reasonably be required by the Bank, the Authority or by Bond Counsel.

SECTION 7.3 Disposition of Proceeds of the Bond.

Upon the issuance and sale of the Bond in accordance with Article 7 hereof, the Bank shall deposit the proceeds of the Bond in accordance with Section 9.1 of this Agreement; provided, however, that certain costs of the Project previously paid by the Borrower or due and payable on the date hereof, including costs of issuing the Bond in an amount not greater than 2% of the principal amount thereof advanced, shall be paid to or upon the order of the Borrower as provided in a closing statement signed by the Borrower and delivered in connection with the sale and delivery of the Bond.



ARTICLE 8.  
LOAN PAYMENTS AND ADDITIONAL SUMS

SECTION 8.1 Loan Payments.

(a) The Borrower shall pay to the Bank, on behalf of the Authority, the following sums as Loan payments hereunder at the following times, in immediately available funds:

(i) on each Interest Payment Date during the term of this Agreement, an amount which is sufficient to pay the interest then due on the Bond. The amount of interest due shall be determined by the Bank and communicated in such manner as the Bank and the Borrower shall mutually agree.

(ii) on the Maturity Date of the Bond, the principal amount thereof then maturing;

(iii) on the redemption dates established for the Bond to be redeemed pursuant to Section 6.1 hereof (if any), an amount equal to the redemption price due on such date.

(b) In any event, the sum of the Loan payments payable under this Section 8.1 shall be sufficient to pay the total amount due with respect to such principal and redemption price of and interest (including but not limited to interest and late charges payable pursuant to the Bond on any overdue amount) on the Bond, including any breakage fees due to the Bank, as and when due, and the Borrower shall forthwith pay any deficiency to the Bank. If at any time the Bond has been fully paid and discharged within the meaning of the terms hereof, the Borrower shall not be obligated to make any further payments under this Section.

(c) Payment by the Borrower of the Loan payments set forth above shall be made by bank wire transfer in immediately available funds to such account of the Bank as the Bank shall designate or by debit of a deposit account maintained by the Borrower with the Bank, in either case as the Bank and the Borrower shall agree.

SECTION 8.2 Payment of Fees, Charges and Expenses.

(a) The Borrower shall pay to, or upon the order of, the Authority, upon request of the Authority, such amounts required to pay the Authority's customary administrative fees and to pay or reimburse its reasonable administrative expenses (including counsel fees) incurred from time to time in connection with the making by the Authority of the Loan to the Borrower of the proceeds of the Bond and all other services or actions of the Authority in connection with this Agreement.

(b) The Borrower (1) will reimburse the Bank on demand for the reasonable costs and expenses of the Bank in connection with the preparation, execution, issuance and delivery of this Agreement, the Bond and the other instruments and documents to be delivered hereunder (including the reasonable fees and out-of-pocket expenses of Counsel with respect thereto) and (2) will reimburse the Bank on demand for the reasonable costs and expenses, if any, of the Bank in connection with the enforcement or amendment of this Agreement and the Bond (including the reasonable fees and out-of-pocket expenses of Counsel with respect thereto).

### SECTION 8.3 Maintenance of Loan Account.

The Bank shall open and maintain on its books a loan account (the "Loan Account") with respect to advances made, repayments, prepayments, the computation and payment of interest and fees and the computation and final payment of all other amounts due and sums paid to the Bank under this Agreement and the Bond. Unless the Borrower objects in writing to the information contained in a statement delivered to the Borrower by the Bank regarding the Loan Account within thirty (30) days of receipt of such statement, the information contained in such statement and in the Loan Account will, absent manifest error, be conclusive and binding on the Borrower as to the amount at any time due to the Bank from the Borrower under this Agreement and from the Authority to the Bank under the Bond. The Authority shall have the right to receive copies of all statements of the Bank with respect to the Loan Account upon its written request to the Bank.

### SECTION 8.4 Repayment.

After payment in full of all sums due hereunder, the Bond shall be marked "paid in full" but retained by the Bank until the regular limitations period within which the Internal Revenue Service may claim the interest payable pursuant to the Bond to be not exempt from federal income taxes has elapsed without such claim being made. Notwithstanding such marking of the Bond or its return by the Bank, the Borrower shall remain liable for payment of sums, if any, required to be paid under this Agreement.

### SECTION 8.5 No Abatement or Setoff.

The Borrower shall pay all loan payments and all additional sums required hereunder without suspension or abatement of any nature, notwithstanding that all or any part of the Borrower's facilities shall have been wholly or partially destroyed, damaged or injured and shall not have been repaired, replaced or rebuilt. So long as any portion of the Bond remains Outstanding, the obligation of the Borrower to pay all sums due from the Borrower hereunder shall be absolute and unconditional for which the Borrower pledges its full faith and credit and shall not be suspended, abated, reduced, abrogated, waived, diminished or otherwise modified in any manner or to any extent whatsoever, regardless of any rights of setoff, recoupment or counterclaim that the Borrower might otherwise have against the Authority, the Bank or any other party or parties and regardless of any contingency, act of god, event or cause whatsoever and notwithstanding any circumstances or occurrence that may arise or take place after the date hereof, including but without limiting the generality of the foregoing:

(a) any damage to or destruction of any part or all of the Borrower's facilities, including the Project Facilities;

(b) the taking or damaging of any part or all of the Borrower's facilities, by any public authority or agency in the exercise of the power of or in the nature of eminent domain or by way of a conveyance in lieu of such exercise or otherwise;

(c) any assignment, novation, merger, consolidation, or transfer of assets, whether with or without the approval of the Authority;

(d) any failure of the Authority to perform or observe any agreement or covenant, whether express or implied, or any duty, liability or obligation arising out of or in connection with this Agreement and the Bond;

(e) any act or circumstances that may constitute an eviction or constructive eviction;

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(f) failure of consideration, failure of title or commercial frustration;

(g) any change in the tax laws or other laws of the United States or of any state or other Governmental Authority; or

(h) any determination that the Bond or the interest payable thereon is subject to Federal taxation.

ARTICLE 9.  
PROJECT FUND

SECTION 9.1 Project Fund; Deposit of Series A Bond Proceeds.

The net proceeds of the sale of the Bond excluding any amounts authorized to be applied directly to the costs of issuance pursuant to Section 7.3 hereof to the extent legally permitted, shall be promptly deposited in a Project Fund established with the Bank, as the disbursing agent therefor (in such capacity, the "Disbursing Agent") for the account of the Authority, constituting the Loan of the proceeds thereof by the Authority to the Borrower. The moneys in the Project Fund shall be invested until disbursed in investment securities as directed by the Borrower and approved by the Bank and shall be applied solely to the payment or reimbursement of Project Costs; provided, however, that from and after the occurrence of an Event of Default hereunder and so long as the same shall be continuing, moneys held by the Disbursing Agent hereunder shall be held by it for the benefit and security of the owner of the Bond and shall be applied only in accordance with the provisions of this Article. The Borrower hereby covenants to the Authority and to the Bank that, notwithstanding any other provision of this Agreement or any other instrument, the Borrower will neither make nor instruct the Bank to make any investment or other use of the Project Fund or other proceeds of the Bond which would cause the Bond to be an arbitrage bond under Section 148 of the Code and the regulations thereunder, and that it will comply with the requirements of such section and regulations throughout the term of the Bond. The Disbursing Agent is entitled to rely on such written directions and shall not be liable for any direct or consequential damages which may result from the Disbursing Agent's compliance with such directions, absent gross negligence or willful misconduct.

SECTION 9.2 Disbursements from Project Fund.

So long as no Event of Default shall have occurred and be continuing hereunder, disbursements from the Project Fund shall be made by the Disbursing Agent to reimburse the Borrower for Project Costs (or indebtedness incurred to pay Project Costs), as directed by requisitions in the form of Exhibit "C" hereto signed by the Borrower, setting forth the amount of the payment or reimbursement due, the nature of the goods or other property or services received in reasonable detail, the name and address of the person to whom payment or reimbursement is due and containing a certification that:

(a) it is for Project Costs which have not been the basis of a prior or contemporaneous requisition or of a prior payment of an external loan or of a prior reimbursement of internal advances; that it is for work actually performed or material, equipment or other property actually supplied for the Project in accordance with the applicable plans and specifications; that it contains no amount entitled to be retained; and

(b) that the work and material, equipment or other property covered by the requisition have been performed or delivered to the Borrower and are in accordance in all material respects with all applicable building, zoning, land use, environmental protection, sanitary, and safety laws, rules and regulations, all applicable grant, reimbursement and insurance requirements and the provisions of this Agreement; and that all permits, licenses and approvals required for the items covered by the requisition have been obtained.

SECTION 9.3 Use of Project Fund.

The Borrower shall use amounts requisitioned or received from the Project Fund only for the payment or reimbursement of Project Costs and shall not use any such amount in any manner which would adversely impair the exclusion from gross income for Federal income tax purposes of the interest on the Bond. The Borrower shall apply the proceeds of the Bond as set forth in this Agreement and as further set forth in the Tax Representation Letter.

SECTION 9.4 Certificate of Completion.

Completion of the Project shall be evidenced by the filing with the Bank and the Authority of a certificate signed by the Borrower stating that the Project has been substantially completed and setting forth any Project Costs remaining to be paid and specifying any such Project Costs to be paid from the Project Fund.

SECTION 9.5 Transfer of Funds from Project Fund.

All moneys in the Project Fund (including moneys earned thereon by investment) remaining after delivery of the certificate of completion and payment or provision for payment in full of the costs referred to above in Section 9.4 above shall promptly at the written direction of the Borrower be used at the earliest practicable time for the redemption of the Bond pursuant to Section 6.1(a) hereof; provided, however, that amounts approved by the Borrower shall be retained in the Project Fund for payment of Project Costs referred to in Section 9.4 above not then due and payable. Any such retained funds remaining after full payment of all such Project Costs shall be likewise applied as aforesaid.

SECTION 9.6 Application of Project Fund Upon Event of Default.

Upon the occurrence of any Event of Default, amounts in the Project Fund shall be applied by the Disbursing Agent, upon the written demand of the Bank, to the payment (i) first to the payment of any costs of the Bank in enforcing its remedies under the Bond or any Borrower Financing Document, (ii) second, to the payment of any unpaid interest accrued on the Bond, and (iii) to the payment of any principal then due on the Bond.

ARTICLE 10.  
COVENANTS AND AGREEMENTS OF AUTHORITY

SECTION 10.1 Payment of the Bond.

The Authority covenants that it will promptly pay, or cause to be paid, the principal and redemption price of and interest on the Bond at the places, on the dates and in the manner provided herein and in the Bond according to the true intent and meaning thereof, but only from the amounts payable by the Borrower under this Agreement. It is hereby acknowledged and agreed that the Bond is a special and limited obligation of the Authority payable as above provided, shall not be in any way a general obligation, debt, bonded indebtedness or liability of the Authority or of the State or any political subdivision thereof, except the non-recourse obligation of the Authority, and shall not create or constitute any indebtedness, liability or obligation of the Authority or of the State or any political subdivision thereof, except the non-recourse obligation of the Authority, either legal, moral or otherwise. The Bond does not now and shall never constitute a charge against the general credit of the Authority.

SECTION 10.2 Bond Not to Become Taxable.

(a) The Authority hereby covenants that, notwithstanding any other provision of this Agreement or any other instrument, it will not make any investment or other use of the proceeds of the Bond which, if such investment or use had been reasonably expected on the date of issue of the Bond, would cause the Bond to be an "arbitrage bond" under Section 148 of the Code and the regulations promulgated thereunder; that it will comply with the requirements of such Section 148 and regulations throughout the term of the Bond; and that it will not take or omit to take any action over which it has control, which action or omission, as the case may be, would impair the exclusion from gross income for federal income tax purposes of the interest on the Bond.

(b) The Authority hereby covenants to abide by the representations and agreements made by the Authority in the Tax Exemption Certificate and Agreement, the terms and provisions of which are herein incorporated by reference.

SECTION 10.3 Performance of Covenants.

The Authority covenants that it will faithfully perform at all times all covenants, undertakings, stipulations and provisions contained in this Agreement, in the Bond and in all proceedings of the Authority pertaining thereto.

SECTION 10.4 Priority of Pledge.

The pledge herein made of certain payments made by the Borrower hereunder shall at no time be impaired by the Authority and such payments shall not otherwise be pledged and no Persons shall have any rights with respect thereto except as provided herein.

SECTION 10.5 Rights Under Agreement.

The Authority and the Borrower agree that the Bank may, as owner of the Bond, in its own name or to the extent permitted by law in the name of the Authority, enforce all rights of the Authority and all obligations of the Borrower under and pursuant to this Agreement (except the Reserved Rights of the Authority, and the obligations of the Borrower related thereto, that are not assigned for the benefit of the Bank as specified in Section 10.6 hereof) for and on behalf of the Bank, whether or not the Authority is in default hereunder.

SECTION 10.6 Assignment to Bank; Security Agreement.

(a) As security for the performance of the Authority's obligations hereunder and with respect to the Bond, the Authority hereby pledges, assigns and conveys to the Bank, and grants to the Bank a security interest in, all right, title and interest of the Authority in and to this Agreement, and all sums payable in respect of the indebtedness of the Borrower evidenced hereby, other than the Reserved Rights of the Authority. The Authority directs that all payments by the Borrower hereunder (except for payments to the Authority pursuant to Sections 8.2 or 16.6 hereof) be paid directly to the Bank. If, notwithstanding these arrangements, the Authority shall receive any such payments, the Authority shall immediately pay over the same to the Bank.

(b) The Borrower consents to such assignment and, except as otherwise provided in subsection (a) hereof, agrees to pay all amounts payable hereunder directly to the Bank.

SECTION 10.7 Instruments of Further Assurance.

The Authority covenants that it will do, execute, acknowledge and deliver or cause to be done, executed, acknowledged and delivered, such agreements supplemental hereto and such further acts, instruments and documents as the Bank may reasonably require for the better assuring, transferring, conveying, pledging and assigning to the Bank the rights assigned hereby for the payment of the principal or redemption price of and interest on the Bond.

SECTION 10.8 Continued Existence, etc.

The Authority agrees that it will do or cause to be done in a timely manner all things necessary to preserve and keep in full force and effect its existence so long as the Bond remains Outstanding and to carry out the terms of this Agreement.

SECTION 10.9 General Compliance with All Duties.

The Authority shall faithfully and punctually perform all duties, with respect to the Project required by the Constitution and laws of the State, and by the terms and provisions of this Agreement.

SECTION 10.10 Enforcement of Duties and Obligations of the Borrower.

The Authority may, and at the written direction of the Bank shall (at the cost and expense of the Borrower), take any legally available action to cause the Borrower to fully perform all duties and acts and fully comply with the covenants of the Borrower imposed by this Agreement in the manner and at the times provided therein. So long as no Event of Default hereunder shall have occurred and be continuing, the Authority may exercise all its rights under this Agreement, but the Authority shall not, without the consent of the Bank, amend any of the same so as to diminish the amounts payable thereunder or otherwise so as to adversely affect the Authority's or the Borrower's ability to perform its covenants under this Agreement.

SECTION 10.11 Inspection of Books.

The Authority covenants and agrees that all books and documents in its possession relating to the Project and the Bond shall at all reasonable times be open to inspection by such accountants or other agents as the Bank or the Borrower may from time to time designate.

SECTION 10.12 Filing and Recording.

The Authority, as directed by the Bank and at the cost of the Borrower, shall cause all documents, statements, memoranda or other instruments to be registered, filed or recorded in such manner and at such places as may be required by law fully to protect the security of the Bank and the right, title and interest of the Bank in and to any moneys or securities held hereunder or any part thereof (including any refilings, continuation statements or such other documents as may be required under the Uniform Commercial Code).



ARTICLE 11.  
COVENANTS OF THE BORROWER

SECTION 11.1 Maintenance and Operation of Project Facilities; Completion of Project.

(a) The Borrower shall cause the Project Facilities to be maintained in good condition, subject to ordinary wear and tear. This covenant shall not require the Borrower to operate any portion of the Project Facilities after it is no longer economic to do so.

(b) No funds of the Authority, other than the proceeds of the sale of the Bond, shall be available to pay any of the costs of the Project. To the extent amounts up to the principal amount of the Bond advanced by the Bank are insufficient to complete the Project, the Borrower shall use its own funds and/or the ODO Loan to complete the Project, and in such event the Borrower will not be entitled to any reimbursement from the Authority or the Bank, nor will it be entitled to any diminution in or postponement of its payments hereunder.

(c) Completion of the Project shall be evidenced by the filing with the Bank and the Authority of a certificate signed by the Borrower stating that the Project has been substantially completed and setting forth any costs of the Project then remaining to be paid.

SECTION 11.2 Bond Not to Become Taxable.

(a) The Borrower hereby covenants to the Authority and to the Bank that, notwithstanding any other provision of this Agreement or any other instrument, it will not make any investment or other use of the proceeds of the Bond which, if such investment or use had been reasonably expected on the date of issue of the Bond, would cause the Bond to be an "arbitrage bond" under Section 148 of the Code and the regulations promulgated thereunder; that it will comply with the requirements of Sections 103 and 141 through 150 of the Code and any regulations applicable thereto throughout the term of the Bond; and that it will not take or omit to take any action over which it has control, which action or omission, as the case may be, would impair the exclusion from gross income for federal income tax purposes of the interest on the Bond. The terms and provisions of the Tax Representation Letter are hereby incorporated by reference.

SECTION 11.3 Books and Records; Financial Statements and Other Information.

The Borrower shall deliver to the Bank (which delivery may be effected by posting on Intralinks or filing with the SEC), in form and detail satisfactory to the Bank:

(a) as soon as available, but in any event (i) not later than the date provision thereof is required by the SEC (so long as the Borrower remains a reporting company under the applicable Securities Laws and (ii) if the Borrower is no longer such a reporting company, by such dates as would be required if the Borrower were a reporting borrower and not an "accelerated filer" within the meaning of Rule 12b-2 of the Securities Exchange Act of 1934, as amended (the "SEC Required Filing Date"), a consolidated balance sheet of the Borrower as at the end of such fiscal year, and the related consolidated statements of income or operations, shareholders' equity and cash flows for such fiscal year, setting forth in each case in comparative form the figures for the previous fiscal year, all in reasonable detail and prepared in accordance with GAAP, such consolidated statements to be audited and accompanied by (i) a report and opinion of a Registered Public Accounting Firm of nationally recognized standing reasonably acceptable to the Bank, which report and opinion shall be prepared in accordance with generally accepted auditing standards and applicable Securities Laws and shall not be subject to any "going concern" or like qualification or exception or any qualification or exception as to the scope of

such audit and (ii) an attestation report of such Registered Public Accounting Firm as to the Borrower's internal controls pursuant to Section 404 of Sarbanes-Oxley expressing no concern that would result in such firm's inability to issue a clean and unqualified audit opinion;

(b) as soon as available, but in any event not later than the SEC Required Filing Date for each fiscal quarter of each fiscal year of the Borrower, a balance sheet of the Borrower and its Subsidiaries as at the end of such fiscal quarter, and the related statements of income or operations, shareholders' equity and cash flows for such fiscal quarter and for the portion of the Borrower's fiscal year then ended, setting forth in each case, in comparative form, the figures for the corresponding fiscal quarter of the previous fiscal year and the corresponding portion of the previous fiscal year, all in reasonable detail, such consolidated statements to be certified by an Authorized Officer of the Borrower as fairly presenting the financial condition, results of operations, shareholders' equity and cash flows of the Borrower in accordance with GAAP, subject only to normal year-end audit adjustments and the absence of footnotes; and

(c) as soon as available, but in any event no later than seventy-five (75) days after the end of each fiscal year of the Borrower, forecasts prepared by management of the Borrower, in form reasonably satisfactory to the Bank, of consolidated balance sheets and statements of income or operations and cash flows of the Borrower on a quarterly basis for the immediately following fiscal year (including the fiscal year in which the Bond matures).

(d) As to any information contained in materials furnished pursuant to Section 11.4(b) herein, the Borrower shall not be separately required to furnish such information under Section 11.3 (a) or (b), but the foregoing shall not be in derogation of the obligation of the Borrower to furnish the information and materials described in Section 11.3(a) and (b) at the times specified therein.

The Authority shall have the right to receive the statements referred to in this Section from the Borrower upon its written request therefor at the expense of the Borrower.

SECTION 11.4 Certificates; Other Information.

(a) The Borrower shall deliver to the Bank, including by filing with the SEC, in form and detail reasonably satisfactory to the Bank:

(i) concurrently with the delivery of the financial statements referred to in Section 11.3(a), a Compliance Certificate of its independent certified public accountants certifying such financial statements and stating that, in the course of its regular audit of the financial statements of the Borrower and its Subsidiaries, which audit was conducted in accordance with generally accepted auditing standards, but without independent investigation, such accounting firm obtained no knowledge that any Event of Default insofar as it relates to financial or accounting matters has occurred or, if in the opinion of such accounting firm such an Event of Default has occurred, specifying the nature and extent thereof;

(ii) concurrently with the delivery of the financial statements referred to in Section 11.3(a) and (b), a duly completed Compliance Certificate signed by an Authorized Officer of the Borrower;

(iii) promptly after any request by the Bank, copies of any detailed audit reports, management letters or recommendations submitted to the board of directors (or the audit committee of the board of directors) of the Borrower by independent accountants in connection with the accounts or books of the Borrower, or any audit of any of them;

(iv) promptly after the same are available, copies of each annual report, proxy or financial statement or other report or communication sent to the stockholders of the Borrower, and copies of all annual, regular, periodic and special reports and registration statements which the Borrower may file or be required to file with the SEC including without limitation (i) under Section 13 or 15(d) of the Securities Exchange Act of 1934, and (ii) with respect to any Internal Control Event required to be so disclosed, in each case, not otherwise required to be delivered to the Bank pursuant to this Agreement;

(v) promptly after the furnishing thereof, copies of any statement (other than administrative notices) or report furnished to any holder of debt securities of the Borrower or any Subsidiary, the aggregate principal amount outstanding of which is not less than \$5,000,000, pursuant to the terms of any indenture, loan or credit or similar agreement and not otherwise required to be furnished to the Bank pursuant to Section 11.3 or any other clause of this Section 11.4;

(vi) promptly, and in any event within five (5) Business Days after receipt thereof by the Borrower, copies of each notice or other correspondence received from the SEC (or comparable agency in any applicable non-U.S. jurisdiction) concerning any investigation or possible investigation or other inquiry (other than routine communications regarding the Borrower's filings with the SEC or such agency) by such agency regarding financial or other operational results of the Borrower; and

(vii) promptly, such additional information regarding the business, financial or corporate affairs of the Borrower, or compliance with the terms of this Agreement, as the Bank may from time to time reasonably request.

(b) Documents required to be delivered pursuant to Section 11.3 (Financial Statements) or Section 11.4 (Certificates; Other Information) may be delivered electronically, and if so delivered, shall be deemed to have been delivered on the date (i) on which the Borrower posts such documents, or provides a link thereto on the Borrower's website on the Internet; or (ii) on which such documents are posted on the Borrower's behalf on an Internet or intranet website, if any, to which the Bank has access (whether a commercial or third-party website); provided that: (i) the Borrower shall deliver paper copies of such documents to the Bank upon request until the Borrower receives a written request to cease delivering paper copies and (ii) the Borrower shall notify the Bank (by telecopier or electronic mail) of the posting of any such documents and provide to the Bank by electronic mail electronic versions (i.e., soft copies) of such documents. Notwithstanding anything contained herein, in every instance the Borrower shall be required to provide paper copies of the Compliance Certificates required by Section 11.4(a)(ii) to the Bank. Except for the Compliance Certificates required by Section 11.4(a)(i), the Bank shall have no obligation to request the delivery or to maintain copies of the documents referred to above, and in any event shall have no responsibility to monitor compliance by the Borrower with any such request for delivery, and the Bank shall be solely responsible for requesting delivery to it or maintaining its copies of such documents.

SECTION 11.5 Notices.

The Borrower shall promptly notify the Bank:

(a) of the occurrence of any Event of Default;

(b) of any matter that, individually or in the aggregate, has resulted or could reasonably be expected to result in a Material Adverse Effect, including (i) breach or non-performance of, or any default under, a Contractual Obligation of the Borrower; (ii) any dispute, litigation, investigation, proceeding or suspension between the Borrower and any Governmental Authority; or (iii) the commencement of, or any material development in, any litigation or proceeding affecting the Borrower, including pursuant to any applicable Environmental Laws, in each case for clauses (i) through (iii) above, individually or collectively, that has resulted or could reasonably be expected to result in a Material Adverse Effect;

(c) of the occurrence of any ERISA Event;

(d) of any material change in accounting policies by the Borrower or any Subsidiary; or

(e) of the occurrence of any Internal Control Event.

Each notice pursuant to this Section shall be accompanied by a statement of an Authorized Officer of the Borrower setting forth details of the occurrence referred to therein and stating what action the Borrower has taken and proposes to take with respect thereto. Each notice pursuant to Section 11.5(a) shall describe with particularity any and all provisions of this Agreement and any other Borrower's Financing Documents that have been breached.

SECTION 11.6 Compliance with Applicable Laws.

In the acquisition, construction, equipping, maintenance, improvement and operation of the Project Facilities, the Borrower shall comply in all material respects with the requirements of all applicable building, zoning and land use, environmental protection, sanitary, safety and other laws, rules, regulations and orders of any Governmental Authority and shall not permit a nuisance thereon, provided that it shall not be a breach of this Section if the Borrower fails to comply with such laws, rules, regulations and orders during any period in which the Borrower shall in good faith be diligently contesting the validity or applicability thereof but only so long as such contest does not adversely affect the security for the Bond.

SECTION 11.7 ERISA.

Each defined benefit pension plan as to which the Borrower may have any liability shall comply in all material respects with all applicable provisions of ERISA, including minimum funding requirements, and (i) no Prohibited Transaction (as defined under ERISA) shall occur with respect to any such plan, (ii) no Reportable Event (as defined under Section 4043 of ERISA) shall occur with respect to any such plan which would cause the Pension Benefit Guaranty Corporation to institute proceedings under Section 4042 of ERISA, (iii) the Borrower shall not withdraw from any such plan or initiate steps to do so, and (iv) no steps shall be taken by the Pension Benefit Guaranty Corporation to terminate any such plan involuntarily.

SECTION 11.8 Corporate Existence.

The Borrower covenants that it will preserve, renew and maintain in full force and effect its legal existence and good standing under the laws of the Commonwealth and shall take all reasonable action to maintain all rights, privileges, permits, licenses and franchises necessary or desirable in the normal conduct of its business.

SECTION 11.9 Inspection.

The Borrower covenants that the Authority, by its duly authorized representatives, and the Bank, for purposes of determining compliance with this Agreement or any of the Borrower Financing Documents may examine the Borrower's corporate, financial and operating records, make copies thereof or abstracts therefrom, discuss the Borrower's affairs, finances and accounts with its designated officers, all at the expense of the Bank or the Authority at such reasonable times during normal business hours and as often as may be reasonably desired, upon at least three (3) Business Days' advance notice to the Borrower provided, however, that when an Event of Default exists, the Bank (or any of their respective representatives or independent contractors) may do any of the foregoing at the expense of the Borrower at any time during normal business hours and without advance notice.

SECTION 11.10 Additional Information.

The Borrower, whenever requested by the Authority, will provide and certify or cause to be provided and certified such information as the Authority may reasonably require concerning the Borrower, the finances of the Borrower and other topics as the Authority considers necessary to enable it to make any reports or supply any information required by this Agreement, law, governmental regulation or otherwise.

SECTION 11.11 Payment of Taxes and Impositions.

The Borrower shall pay or cause to be paid to the public officers charged with the collection thereof, promptly as the same become due, all taxes (or contributions or payments in lieu thereof), including but not limited to income, profits or property taxes, which may now or hereafter be imposed by the United States of America, any state or municipality or any political subdivision or subdivisions thereof, and all assessments for public improvements or other assessments, levies, license fees, charges for publicly supplied water or sewer services, excises, franchises, imposts and charges, general and special, ordinary and extraordinary (including interest, penalties and all costs resulting from delayed payment of any of the foregoing) of whatever name, nature and kind and whether or not now within the contemplation of the parties, hereto, which are now or may hereafter be levied, assessed, charged or imposed or which are or may become a lien upon the revenues of the Borrower, the Borrower's facilities, the use or occupation thereof or upon the Borrower or the Authority, or upon any franchises, businesses, transactions, income, earnings and receipts (gross, net or otherwise) of the Authority in connection with this Agreement for payment or collection of which the Authority otherwise would be liable or accountable under any lawful authority whatsoever; provided, however, that the Borrower shall not be required to pay or discharge or cause to be paid or discharged any tax, assessment, lien or other matter hereunder so long as the validity thereof is being contested by the Borrower in good faith and by appropriate legal proceedings diligently pursued and neither the Borrower's facilities nor any rent or income therefrom would be in any immediate danger of being sold, forfeited, attached or lost. The Borrower will, upon request, provide the Authority and the Bank with copies of any tax returns and receipts for payments of taxes.

SECTION 11.12 Insurance.

The Borrower shall maintain, with a financially sound and reputable insurer, insurance or provide a funded plan of self-insurance with respect to its property and business, at the Borrower's expense, public liability and third party property damage insurance with such insurers, in such amounts and with such deductibles as is satisfactory to the Bank and maintain, at the Borrower's expense, insurance on the Collateral with such insurers, against such risks, in such amounts and with such deductibles as is satisfactory to the Bank (including without limitation, insurance against fire, explosion, boiler damage, theft, burglary, spoilage, pilferage, loss in transit and all other hazards and risks ordinarily insured against by other owners or users of such properties in similar businesses), which insurance shall be evidenced by policies:

(a) in form and substance satisfactory to the Bank,

(b) for such insured values as the Bank may require in order to replace the property in the event of actual or constructive total loss,

(c) designating the Bank and its assignees as additional co-insured or loss payees as its interests may appear from time to time,

(d) containing a "breach of warranty" or "Lender Loss Payee" clause whereby the insurer agrees that a breach of the insuring conditions or any negligence of the Borrower or any other person shall not invalidate the insurance as to the Bank and its assignee, and

(e) requiring at least thirty (30) days' prior written notice to the Bank and its assignee before cancellation or any material change shall be effective;

The Borrower shall, (i) upon written demand, deliver to the Bank the original or a certified copy of each policy evidencing insurance required by this Section 11.12, together with evidence of payment of all premiums therefor; (ii) in the event of loss or damage, forthwith notify the Bank and file proofs of loss satisfactory to the Bank with the appropriate insurer; and forthwith upon receipt, endorse and deliver insurance proceeds to the Bank.

**SECTION 11.13 Further Assurances; Financing Statements.**

The Borrower shall perform or cause to be performed any such acts, and execute and cause to be executed any and all further instruments as may be required by law or as shall reasonably be requested by the Authority or the Bank to carry out or effect the terms of this Agreement. The Borrower, if required by the Bank, will join with the Authority and the Bank in executing such financing statements and other documents under the Uniform Commercial Code as in effect in the State or other applicable law as the Authority or Bank may specify and will pay the costs of filing the same in such public offices as the Authority or Bank shall designate, in order to preserve the security interests granted under this Agreement or any other Borrower Financing Document.

**SECTION 11.14 Use of Project.**

The Borrower shall use or cause the Project Facilities to be used as an authorized project for a purpose and use as provided for under the Act until payment of the Bond.

**SECTION 11.15 Federal Reserve Regulations.**

No proceeds of the Bond shall be used by the Borrower, directly or indirectly to purchase or carry any margin stock or to extend credit to others for the purpose of purchasing or carrying any margin stock. The Borrower will not, directly or indirectly, otherwise take or permit to be taken any action which would result in the issuance of the Bond or the carrying out of any of the other transactions contemplated by this Agreement, being violative of such Regulation U or of Regulation T (12 C.F.R. 220, as amended) or of Regulation X (12 C.F.R. 224, as amended) or any other regulation of the Board of Governors of the Federal Reserve System.

SECTION 11.16 Deficiencies in Revenues.

If for any reason amounts paid by the Borrower hereunder would not be sufficient to make payments of principal of and interest on the Bond when and as the same shall become due and payable at maturity or otherwise, the Borrower will pay promptly the amounts required from time to time to make up any such deficiency.

SECTION 11.17 Maintenance of Project Facility.

The Borrower shall maintain, preserve and protect all of its material properties and equipment necessary in the operation of its business in good working order and condition, ordinary wear and tear excepted; and make all necessary repairs thereto and renewals and replacements thereof except where the failure to do so could not reasonably be expected to have a Material Adverse Effect; and use the standard of care typical in the relevant industries and countries in the operation and maintenance of its facilities.

SECTION 11.18 Books and Records.

The Borrower shall (a) maintain proper books of record and account, in which full, true and correct entries in conformity with GAAP consistently applied shall be made of all financial transactions and matters involving the assets and business of the Borrower, as the case may be; and (b) maintain such books of record and account in material conformity with all applicable requirements of any Governmental Authority having regulatory jurisdiction over the Borrower.

ARTICLE 12.  
NEGATIVE COVENANTS

SECTION 12.1 Liens.

The Borrower shall not create, incur, assume or suffer to exist any Lien upon any of its property, assets or revenues, whether now owned or hereafter acquired, other than the following:

(a) Liens pursuant to the Borrower Financing Documents;

(b) Liens existing on the date hereof and listed on Schedule 12.1 and any renewals or extensions thereof, provided that (i) the property covered thereby is not changed, (ii) the amount secured or benefited thereby is not increased, and (iii) the direct or any contingent obligor with respect thereto is not changed;

(c) Liens for taxes not yet due or which are being contested in good faith and by appropriate proceedings diligently conducted, if adequate reserves with respect thereto are maintained on the books of the applicable Person in accordance with GAAP;

(d) carriers', warehousemen's, mechanics', materialmen's, repairmen's or other like Liens arising in the ordinary course of business which are not overdue for a period of more than thirty (30) days or which are being contested in good faith and by appropriate proceedings diligently conducted, if adequate reserves under GAAP with respect thereto are maintained on the books of the applicable Person;

(e) pledges or deposits in the ordinary course of business in connection with workers' compensation, unemployment insurance and other social security legislation, other than any Lien imposed by ERISA;

(f) deposits to secure the performance of bids, trade contracts, liability to insurance carriers and leases (other than Indebtedness), statutory obligations, surety and appeal bonds, performance bonds, contractual or warranty obligations and other obligations of a like nature incurred in the ordinary course of business;

(g) easements, rights-of-way, restrictions and other similar encumbrances affecting real property which, in the aggregate, are not substantial in amount, and which do not in any case materially detract from the value of the property subject thereto or materially interfere with the ordinary conduct of the business of the applicable Person;

(h) Liens securing judgments for the payment of money not constituting an Event of Default;

(i) usual and customary rights of set off on deposit accounts in favor of depository institutions;

(j) Liens securing Indebtedness; provided that (i) such Liens do not at any time encumber any property other than the property financed by such Indebtedness and (ii) the Indebtedness secured thereby does not exceed the cost or fair market value, whichever is lower, of the property being acquired on the date of acquisition; and



(k) Liens not otherwise permitted by the foregoing clauses of this Section 12.1 securing obligations in an aggregate principal amount at any time outstanding (including unmatured obligations) not to exceed \$5,000,000.

SECTION 12.2 Fundamental Change.

The Borrower shall not permit to occur or enter into any Fundamental Change without the prior written consent of the Bank, which consent shall not unreasonably be withheld.

SECTION 12.3 Financial Covenants.

The Borrower shall not:

(a) **Consolidated Interest Coverage Ratio.** Permit the Consolidated Interest Coverage Ratio as of the end of any fiscal quarter of the Company to be less than 2.50 to 1.00; or

(b) **Consolidated Leverage Ratio.** Permit the Consolidated Leverage Ratio at any time during any period of four (4) fiscal quarters of the Company to be greater than 3.50 to 1.00.

SECTION 12.4 Capital Expenditures.

The Borrower shall not make or become legally obligated to make any Capital Expenditure (excluding normal replacements and maintenance which are properly charged to current operations), except for Capital Expenditures in the ordinary course of business not exceeding, in the aggregate for the Borrower during each fiscal year, \$20,000,000. To the extent any portion of the amount of permitted Capital Expenditures is not used in any fiscal year, such amount may be carried over to the next fiscal year, but in no event shall the aggregate amount of Capital Expenditures in any fiscal year, including such amount carried over, exceed \$40,000,000. In addition to the foregoing, the Borrower may make Capital Expenditures with the proceeds from the asset sales not prohibited hereunder and insurance and condemnation events, for the purpose of replacing the related assets sold, lost or condemned.

SECTION 12.5 Change in Nature of Business.

The Borrower shall not engage in any material Unrelated Line of Business without the written consent of the Bank, which consent shall not unreasonably be withheld.

ARTICLE 13.  
LIMITED OBLIGATION

SECTION 13.1 Source of Payment of the Bond.

The Bond and the interest thereon do not constitute a general obligation, debt, bonded indebtedness or a pledge of the faith and credit, of the Authority or of the State or any political subdivision of the State, and the holders or owners of the Bond has no right to have taxes levied by the general assembly or taxing authority of any political subdivision of the State for the payment of the principal of or interest on the Bond, but the Bond is payable solely from the revenues and funds pledged for its payment as authorized under the Act. The Bond shall contain on its face thereof a statement to the effect that the Bond, as to both principal and interest, is not a general obligation, debt, bonded indebtedness or a pledge of the faith and credit of the Authority or of the State or any political subdivision of the State, but is payable solely from revenues and funds pledged for its payment.

ARTICLE 14.  
EVENTS OF DEFAULT AND REMEDIES

SECTION 14.1 Events of Default.

Each of the following shall be an “Event of Default” under this Agreement:

- (a) Failure to pay any interest on the Bond prior to the tenth (10<sup>th</sup>) Business Day following any Interest Payment Date; or failure to pay any principal or redemption price of the Bond when due, whether by redemption or at the stated maturity thereof, by acceleration or otherwise; or
- (b) Failure to perform or observe any other of the covenants, agreements or conditions on the part of the Authority or the Borrower contained in this Agreement or any of the Borrower Financing Documents including, without limitation, the failure of the Borrower to observe its covenants contained in Section 16.6 hereunder; provided, however, that if such failure shall be curable, no such failure shall constitute an Event of Default hereunder unless and until the Borrower shall have become aware of such failure (or should have become so aware with the exercise of reasonable diligence) and shall not have cured such failure within thirty (30) days; or
- (c) The Borrower or the Authority shall commence a voluntary case or other proceeding seeking liquidation, reorganization or other relief with respect to itself or its debts under any bankruptcy, insolvency or other similar law now or hereafter in effect or seeking the appointment of a trustee, receiver, liquidator, custodian or other similar official of it or any substantial part of its property, or shall consent to any such relief or to the appointment of or taking position by any such official in an involuntary case or other proceeding commenced against it, or shall make a general assignment for the benefit of creditors, or shall fail generally to pay its debts as they become due, or shall take any corporate action to authorize any of the foregoing; or
- (d) An involuntary case or other proceeding shall be commenced against the Borrower or the Authority seeking liquidation, reorganization or other relief with respect to it or its debts under any bankruptcy, insolvency or other similar law now or hereafter in effect or seeking the appointment of a trustee, receiver, liquidator, custodian or other similar official of it or any substantial part of its property, and such involuntary case or other proceeding shall remain undismissed and unstayed for a period of sixty (60) days; or an order for relief shall be entered against the Borrower or the Authority under the Federal bankruptcy laws as now or hereafter in effect; or
- (e) If the Borrower shall fail to pay any obligation for the payment of borrowed money or the installment purchase price of property or on account of a lease of property, in the amount of \$5,000,000 or more (a “Credit Obligation”) owing by it, or any interest or premium thereon, when due, whether such Credit Obligation shall become due by scheduled maturity, by required prepayment, by acceleration, by demand or otherwise, or the Borrower shall fail to perform any term, covenant or agreement on its part to be performed under any agreement or instrument evidencing or securing or relating to any such Credit Obligation when required to be performed, if the effect of such failure is to accelerate, or to permit the holder or holders of such Credit Obligation to accelerate, the maturity of such Credit Obligation, whether or not such failure to perform shall be waived by the holder or holders of such Credit Obligation, unless such waiver has the effect of terminating the right of such holder or holders to accelerate the maturity of such Credit Obligation as a result of such failure; or

(f) Any attachment, lien or additional security interest placed upon any of the Collateral, without the written consent of the Bank, which is not dismissed or bonded against within thirty (30) days; or

(g) Acquisition at any time or from time to time of title to the whole or any part of the Collateral by any person, partnership or corporation other than Borrower or a Subsidiary, except for dispositions of Collateral in the ordinary course of Borrower's Business;

(h) If any default shall occur with respect to any other indebtedness of the Borrower to the Bank; or

(i) If any representation or warranty by or on behalf of the Borrower made herein or in any Borrower Financing Document, report, certificate, financial statement or other instrument shall prove to be false or misleading in any material respect when made; or

(j) If the Bank in good faith and reasonable credit judgment believes the prospect of timely payment of any obligation of the Borrower under or in connection with this Agreement, the Borrower Financing Document or each other document or instrument described herein or therein and entered into in connection with the issuance of the Bond to be materially impaired by reason of a change which has a Material Adverse Effect on the operations, financial condition, earnings, prospects or assets of the Borrower.

#### SECTION 14.2 Acceleration.

If any Event of Default under clause (c) or (d) of Section 14.1 occurs, then the principal of the Bond then Outstanding, together with interest accrued thereon, shall become due and payable immediately without notice or demand. Upon the occurrence of any Event of Default under Section 14.1 other than an Event of Default under clause (c) or (d), the Bank may, by notice in writing delivered to the Authority and the Borrower, declare the principal of the Bond and the interest accrued thereon to the date of such acceleration immediately due and payable, and the same shall thereupon become and be immediately due and payable. Upon any acceleration of the Bond under this Section 14.2, the all amounts payable under Sections 6.1(e) and 8.1 hereof shall be immediately due and payable.

#### SECTION 14.3 Legal Proceedings by Bank.

Upon the occurrence of any Event of Default under Section 14.1 hereof, the Bank may:

(a) by mandamus, or other suit, action or proceeding at law or in equity, enforce all of its rights as owner of the Bond, and require the Borrower to carry out any other agreements with or for the benefit of the owner of the Bond;

(b) bring suit upon the Bond; or

(c) by action or suit in law or equity enjoin any acts or things which may be unlawful or in violation of the rights of the owner of the Bond.

No remedy conferred upon or reserved to the Bank is intended to be exclusive of any other remedy, but each and every such remedy shall be cumulative and shall be in addition to any other remedy given to the Bank hereunder or now or hereafter existing at law, in equity or by statute. Nothing herein contained shall affect or impair the right of action, which is absolute and unconditional, of the owner of the Bond to institute suits to enforce payment thereof.

No delay or omission to exercise any right or power accruing upon any Event of Default shall impair any such right or power or shall be construed to be a waiver of any such Event of Default or acquiescence therein; and every such right and power may be exercised from time to time and as often as may be deemed expedient.

No waiver of any Event of Default hereunder shall extend to or shall affect any subsequent Event of Default or shall impair any rights or remedies consequent thereon.

SECTION 14.4 Application of Moneys.

All moneys received by the Bank upon the exercise of any remedies provided in Section 14.3 hereof shall be applied first to any fees and expenses due under this Agreement, then to the payment of the principal, redemption price and interest then due and unpaid upon the Bond (together with interest on overdue installments of principal and, to the extent permitted by law, on any overdue interest, at the rate per annum specified in the Bond for such overdue installments).

SECTION 14.5 Termination of Proceedings.

In case the Bank shall have proceeded to enforce any right under this Agreement, and such proceedings shall have been discontinued or abandoned for any reason, or shall have been determined adversely, then and in every such case, the Authority, the Bank and the Borrower shall be restored to their former positions and rights hereunder, and all rights, remedies and powers of the Bank shall continue as if no such proceedings had been taken.

SECTION 14.6 Waivers of Events of Default; Rescission of Declaration of Maturity.

The Bank may waive any Event of Default under the Agreement and its consequences, or rescind any declaration of maturity of principal of the Bond. In case of any such waiver or rescission, then and in every such case, the Authority, the Borrower and the Bank, respectively, shall be restored to their former positions and rights under the Agreement, but no such waiver or rescission shall extend to any subsequent or other default, or impair any right consequent thereon. All waivers under this Agreement shall be in writing and a copy of each waiver affecting the Bond shall be delivered to the Authority and the Borrower.

SECTION 14.7 Notice of Defaults; Opportunity of the Borrower to Cure Defaults.

Anything herein to the contrary notwithstanding, no default specified in Sections 14.1(b) or 14.1(g) shall constitute an Event of Default until notice of such default shall have been received by the Borrower and, if such default shall be curable, the Borrower shall have had thirty (30) days after receipt of such notice to correct said default or cause said default to be corrected, and shall not have corrected said default or caused said default to be corrected within the applicable period.

ARTICLE 15.  
AMENDMENTS TO AGREEMENT

SECTION 15.1 Amendments to Agreement.

This Agreement may be amended only by the written agreement of the Authority, the Borrower and the Bank, except that any of the covenants and agreements of the Borrower set forth in Sections 12.3 (except with respect to reports or notices required to be delivered to the Authority), 12.14 and 12.15 hereof may be amended by the Borrower and the Bank, without the consent of the Authority; provided, however, that prompt written notice of any such amendment shall be provided to the Authority, and provided, further, that no such amendment shall adversely affect the interest of the Authority.

ARTICLE 16.  
MISCELLANEOUS

SECTION 16.1 Limitation of Rights.

With the exception of rights herein expressly conferred, nothing expressed or mentioned in or to be implied from this Agreement, or the Bond, is intended or shall be construed to give to any Person, other than the Authority, the Borrower and the owner of the Bond, any legal or equitable right, remedy or claim under or in respect to this Agreement or any covenants, conditions and provisions herein contained; this Agreement and all of the covenants, conditions and provisions hereof being intended to be and being for the sole and exclusive benefit of the Authority, the Borrower and the owner of the Bond as herein provided.

SECTION 16.2 Severability.

If any provision of this Agreement shall be held or deemed to be or shall, in fact, be inoperative or unenforceable as applied in any particular case in any jurisdiction or jurisdictions or in all jurisdictions, or in all cases, because it conflicts with any other provision or provisions hereof or any Constitution or statute or rule of public policy, or for any other reason, such circumstances shall not have the effect of rendering the provision in question inoperative or unenforceable in any other case or circumstance, or of rendering any other provision or provisions herein contained invalid, inoperative, or unenforceable to any extent whatever.

The invalidity of any one or more phrases, sentences, clauses or Sections in this Agreement contained, shall not affect the remaining portions of this Agreement, or any part thereof.

SECTION 16.3 Notices.

All notices and directions to any party to this Agreement shall be in writing or sent electronically, and, except as otherwise provided, shall be deemed to be sufficiently given if sent by certified mail, by facsimile, by e-mail if an e-mail address is provided (with receipt confirmed), by overnight national courier service with charges prepaid, or by delivery during business hours to the parties, at the following addresses:

Borrower:

Quaker Chemical Corporation  
901 Hector Street  
Conshohocken, PA 19428  
Attention: Mark A. Fatherstone, Chief Financial Officer  
Fax: 610-832-4494

Authority:

Butler County Port Authority  
315 High Street, 6<sup>th</sup> Floor  
Hamilton, Ohio 45011  
Attention: Secretary  
FAX: 513-785-5756

Bank:

Brown Brothers Harriman & Co.  
1531 Walnut Street  
Philadelphia, Pennsylvania 19102  
Attention: John Wert  
FAX: (215) 864-3989

or to such other address as the addressee shall have indicated by prior notice to the one giving the notice or direction in question. Any notice required to be sent to the owner of the Bond shall be sent to the Bank at the address as shown on the registration books maintained by the Borrower with respect to the Bond.

SECTION 16.4 Acts of Owner of the Bond.

Any action to be taken by the Bank, as the owner of the Bond, may be evidenced by a written instrument signed or executed by the Bank in Person or by an agent appointed in writing. The fact and date of the execution by any Person of any such instrument may be proved by acknowledgment before a notary public or other officer empowered to take acknowledgments or by an affidavit of a witness to such execution. Any action by the owner of the Bond shall bind any future owner of the Bond.

SECTION 16.5 Exculpation of Authority.

(a) In the exercise of the power of the Authority and its members, officers, employees and agents hereunder, including (without limiting the foregoing) the application of moneys and any action taken by it in the Event of Default by the Borrower, neither the Authority nor its members, officers, employees, or agents shall be accountable to the Borrower or the Bank for any action taken or omitted by the Authority or its members, officers, employees and agents in good faith. The Authority and its members, officers, employees, or agents shall be protected in its or their acting upon any paper or document believed by it or them to be genuine, and it or they may conclusively rely upon the advice of Counsel (who may also be Counsel for the Borrower or the Bank) and may (but need not) require further evidence of any fact or matter before taking any action.

(b) No recourse under or upon any obligation, covenant, acceptance or agreement contained in this Agreement, or in the Bond, or under any judgment obtained against the Authority or by the enforcement of any assessment or by any legal or equitable proceedings by virtue of any constitution or statute or otherwise, or under any circumstances, shall be had against any member or officer, as such, past, present, or future, of the Authority, whether directly or through the Authority, or otherwise, for the payment for or to the Authority or any receiver thereof, or for or to any owner of the Bond, or otherwise, of any sum that may be due and unpaid by the Authority upon the Bond. Any and all personal liability of every nature, whether at common law or in equity, or by statute or



by constitution or otherwise, of any such member or officer, as such, to respond by reason of any act or omission on his or her part, or otherwise, for, directly or indirectly, the payment for or to the Authority or any receiver thereof, or for or to the owner of the Bond, or otherwise, of any sum that may remain due and unpaid upon the Bond, shall be deemed to be and is hereby expressly waived and released as a condition of and consideration for the execution and delivery of this Agreement and the issuance of the Bond. This provision shall survive the termination of this Agreement.

SECTION 16.6 Indemnification Concerning the Project; Accuracy of Application and Information in Connection Therewith.

(a) The Borrower covenants and agrees, at its expense, to pay and to indemnify and save the Indemnified Parties harmless of, from and against, any and all claims, damages, demands, expenses, liabilities, and losses of every kind, character and nature asserted by or on behalf of any Person arising out of, resulting from or in any way connected with the condition, use, possession, conduct, management, planning, design, acquisition, construction, installation, financing or sale of, the Project, or any part thereof, except for any claim, damage, demand, expense, liability or loss arising out of the Indemnified Parties' own gross negligence or willful misconduct.

(b) The Borrower agrees to indemnify and hold harmless the Indemnified Parties against any and all losses, claims, damages or liabilities caused by any untrue statement or alleged untrue statement of a material fact contained in the Application and pertaining to the Borrower or the Project or in information submitted to the Authority or the Bank by the Borrower with respect to the issuance and purchase of the Bond or otherwise (collectively, the "Borrower Information") or caused by any omission or alleged omission of any material fact necessary to be stated in the Borrower Information in order to make such statements in the Application and pertaining to the Borrower Information not misleading or incomplete. The Borrower shall not, however, indemnify the Authority or the Bank against claims based upon the bad faith, fraud or deceit of an Indemnified Party or due to an Indemnified Party's gross negligence or willful misconduct.

(c) In case any action shall be brought against any of the Indemnified Parties based upon any of the above and in respect to which indemnity may be sought against the Borrower, the party involved may request in writing that the Borrower assume the defense thereof, including the employment of counsel satisfactory to such party, the payment of all reasonable costs and expenses and the right to negotiate and consent to settlement. Any one or more of the Indemnified Parties shall have the right to employ separate counsel in any such action, to participate in defense thereof, and the Borrower shall assume the payment of all reasonable costs and expenses with respect thereto. The Borrower shall not be liable for any settlement of any such action effected without its consent, but if settled with the consent of the Borrower or if there be a final judgment for the plaintiff in any such action, the Borrower agrees to indemnify and hold harmless the Indemnified Parties from and against any loss or liability by reason of such settlement or judgment.

(d) Any provision herein or elsewhere to the contrary notwithstanding, this Section 16.6 shall survive the termination of this Agreement.

(e) The Borrower will reimburse the Authority and the Bank for the reasonable costs and expenses (including reasonable attorneys fees and expenses) of any action taken by the Authority or the Bank in connection with any Event of Default by the Borrower.

SECTION 16.7 Counterparts.

This Agreement may be simultaneously executed in several counterparts, each of which shall be an original and all of which shall constitute but one and the same instrument.

SECTION 16.8 No Personal Recourse.

No recourse shall be had for any claim based on this Agreement or the Bond against any member, officer or employee, past, present or future, of the Authority or of any successor body as such, either directly or through the Authority or any such successor body, under any constitutional provision, statute or rule of law or by the enforcement of any assessment or penalty or by any legal or equitable proceeding or otherwise. No covenant, stipulation, obligation or agreement of the Authority contained in this Agreement shall be deemed to be a covenant, stipulation, obligation or agreement of any present or future officer, employee or agent of the Authority in his individual capacity, and any officer, employee or agent of the Authority executing the Bond shall not be liable personally thereon or be subject to any personal liability or accountability by reason of the issuance thereof. This provision shall survive the termination of this Agreement.

SECTION 16.9 Termination.

Upon the payment in full of the principal of and interest and premium, if any, due on the Bond at maturity, or the earlier payment of the redemption price of the Bond then Outstanding (provided that in the case of payment of the redemption price of the Bond, the Bond shall have been redeemed and cancelled on the books of the Borrower), and the payment of, or provision for all other amounts (including expense reimbursements and indemnity payments) due hereunder to the satisfaction of the Authority, this Agreement and the parties obligations hereunder shall terminate, except for the obligations of the Borrower pursuant to Section 16.6 and Section 16.9, which shall survive the termination of this Agreement.

SECTION 16.10 Judicial Proceedings.

(a) The Borrower consents and agrees that any judicial proceedings relating in any way to this Agreement may be brought in any court of competent jurisdiction in the Commonwealth of Pennsylvania or the State of Ohio, or in the United States District Court for the Eastern District of Pennsylvania or the United States District Court for Ohio. Notwithstanding the foregoing, any judicial proceeding with respect to which the Authority is a party shall be brought in a court of competent jurisdiction in the State or in the United States District Court for the State. The Borrower hereby accepts, for itself and its properties, the non-exclusive jurisdiction of such courts, agrees to be bound by any judgments rendered by them in connection with this Agreement, and will not move to transfer any such proceeding to any different court. The Borrower waives the defense of forum non conveniens in any such action or proceeding.

(b) Service of process in any proceeding arising out of or relating to this Agreement may be made by any means permitted by the applicable rules of court as then in force, or may be made by any form of mail requiring a signed receipt.

(c) Nothing herein shall limit the right of the Bank to bring proceedings against the Borrower in the courts of any other jurisdiction or be deemed to constitute a consent to jurisdiction by any party hereto as to Persons not parties to this Agreement or as to matters not relating to this Agreement.

(d) THE BORROWER HEREBY EXPRESSLY WAIVES ANY RIGHT TO A TRIAL BY JURY IN ANY SUIT, ACTION OR PROCEEDING. THE BORROWER FURTHER ACKNOWLEDGES AND AGREES THAT WAIVER OF JURY TRIAL IS A SPECIFIC AND MATERIAL ASPECT OF THIS AGREEMENT AND THAT THE BANK WOULD NOT HAVE AGREED TO ACCEPT THIS AGREEMENT OR THE BOND WITHOUT SUCH AGREEMENT.

SECTION 16.11 Authorization of Agreement; Agreement to Constitute Contract.

This Agreement is entered into pursuant to the Act and the Resolution, and the provisions of this Agreement shall be deemed to be and shall constitute a contract among the Authority, the Borrower and the Bank from time to time.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed by their respective officers thereunto duly authorized all as of the date first above written.

BUTLER COUNTY PORT AUTHORITY

By: /s/ Richard W. Slagle  
Name: Richard W. Slagle  
Title: Chairman

QUAKER CHEMICAL CORPORATION

By: /s/ Mark A. Featherstone  
Name: Mark A. Featherstone  
Title: Vice President, Chief Financial  
Officer and Treasurer

BROWN BROTHERS HARRIMAN & CO.

By: /s/ John H. Wert, Jr.  
Name: John H. Wert, Jr.  
Title: Senior Vice President

[Signature page to Financing Agreement]

EXHIBIT A  
[FORM OF BOND]

THE SECURITY REPRESENTED BY THIS BOND HAS BEEN ACQUIRED FOR INVESTMENT AND HAS NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT") OR UNDER ANY STATE SECURITIES LAW. WITHOUT REGISTRATION, SUCH SECURITY MAY NOT BE SOLD, PLEDGED, HYPOTHECATED OR OTHERWISE TRANSFERRED, EXCEPT TO "ACCREDITED INVESTORS" AS SUCH TERM IS DEFINED IN RULE 501(a) OF REGULATION D OF THE SECURITIES ACT UPON COMPLIANCE WITH THE PROVISIONS OF THE SECURITIES ACT AND APPLICABLE STATE SECURITIES LAWS.

THE BOND, AS TO BOTH PRINCIPAL AND INTEREST, IS NOT A GENERAL OBLIGATION, DEBT, BONDED INDEBTEDNESS OR PLEDGE OF THE FAITH AND CREDIT OF THE BUTLER COUNTY PORT AUTHORITY OR OF THE STATE OF OHIO OR ANY POLITICAL SUBDIVISION OF THE STATE OF OHIO, BUT IS PAYABLE SOLELY FROM REVENUES AND FUNDS PLEDGED FOR THE REPAYMENT OF THE BOND. THIS BOND IS A SPECIAL, LIMITED OBLIGATION OF THE AUTHORITY, PAYABLE SOLELY OUT OF THE REVENUES OR OTHER RECEIPTS, FUNDS OR MONEYS OF THE AUTHORITY PLEDGED UNDER THE AGREEMENT (HEREAFTER DESCRIBED) AND FROM ANY AMOUNTS OTHERWISE AVAILABLE UNDER THE AGREEMENT FOR THE PAYMENT OF THE BOND.

BUTLER COUNTY PORT AUTHORITY  
Industrial Development Revenue Bond  
(Quaker Chemical Corporation Project)  
Series 2008

No. R-

\$10,000,000

BUTLER COUNTY PORT AUTHORITY (the "Authority"), a port authority and body corporate and politic existing under the laws of the State of Ohio (the "State"), for value received, hereby promises to pay (but only from the special revenues and funds hereinafter described) to BROWN BROTHERS HARRIMAN & CO., or its registered assigns (the "Bank"), on May 1, 2028, upon the presentation and surrender hereof at the principal office of the Borrower herein described, the principal sum of TEN MILLION DOLLARS (\$10,000,000), and to pay (but only out of the sources hereinafter mentioned) interest on said principal sum at the interest rate hereinafter described. Payment of the principal of and interest on this Bond shall be in any coin or currency of the United States of America as, at the respective times of payment, shall be legal tender for the payment of public and private debts.

The Agreement (defined below) and all rights of the Authority thereunder (except for certain Reserved Rights (defined below) of the Authority) have been assigned to the owner of this Bond to secure payment of such principal and interest.

This Bond is issued in the original aggregate principal amount of \$10,000,000 and is designated as Butler County Port Authority Industrial Development Revenue Bond (Quaker Chemical Corporation Project), Series 2008 (the "Bond"), issued under and pursuant to the laws of the State, including particularly Sections 4582.21 to 4582.59 of the Ohio Revised Code, as amended (the "Act"), and the Financing Agreement (the "Agreement") dated May 15, 2008, among the Authority, Quaker Chemical Corporation., a

Pennsylvania corporation (the “Borrower”), and Brown Brothers Harriman & Co. (the “Bank”) for the purpose of undertaking the Project more fully described in the Agreement. The Authority has assigned certain of its rights under the Agreement, including its right to receive loan payments from the Borrower thereunder, to the owner of this Bond to secure the Authority’s obligations with respect to this Bond. Reference is made to the Agreement for a description, *inter alia*, of the provisions with respect to the nature and extent of the security for this Bond, the rights, duties, obligations and immunities of the Authority, the Borrower, and the Bank related to this Bond, and the terms upon which this Bond is or may be issued or secured and transferred.

This Bond shall be issued in one denomination equal to the entire principal amount hereof. All payments of principal by the Authority whether pursuant to optional or mandatory redemption or prepayment or otherwise shall be made directly to the Bank.

#### INTEREST RATE PROVISIONS

Tax-Exempt Rate. The Bond shall bear interest at a rate of \_\_\_\_\_ per annum.

In the event the Bank shall become a beneficiary of a letter of credit pursuant to the terms of the Agreement for the payment on this Bond, the interest rate payable on this Bond in accordance with the provisions set forth herein shall be decreased by 80 basis points (0.80%).

“Interest Period” means the period commencing on the first day of the calendar month immediately following the end of the preceding Interest Period, or, in the case of the initial Interest Period, on the date of original issuance of this Bond, and continuing to, and including, the last day of the calendar month.

Taxable Rate. Notwithstanding the foregoing, if at any time hereafter, either before or after the payment of the entire principal of and interest on this Bond, there shall be a Determination of Taxability as defined in the Agreement (hereinafter a “Determination of Taxability”), then, in such event, the interest rate on this Bond, as in effect during any period from the date of the event giving rise to the Determination of Taxability through the date that this Bond is redeemed, shall be the Base Rate plus two percent (2%). The failure of the Bank to make a demand promptly following a Determination of Taxability shall not alter the rights or obligations of the Authority or the Bank. If there is more than one Determination of Taxability, this paragraph shall be fully applicable to each such Determination of Taxability, whether or not the Bank exercised any or all of the rights or remedies that arose under any prior Determination of Taxability, and all the Bank’s rights and remedies shall be cumulative except to the extent of any written waiver by the Bank. If the Bank receives written notice of any Determination of Taxability, it will give prompt written notice thereof to the Borrower and the Authority, and the Borrower shall have the right to require the Bank to prosecute any administrative or judicial remedies available to it unless the Bank determines, in its sole discretion, that the prosecution of such remedies is against its best interests, provided that the Borrower shall pay all expenses of prosecuting any such remedies.

Default and Overdue Interest. Upon the occurrence of any Event of Default under the Agreement, and so long as any such Event of Default shall be continuing, the interest rate payable on this Bond in accordance with the provisions set forth above shall be increased by adding two percent (2%) to the then applicable interest rate.

General. Interest, calculated on the basis of a 360-day year for the actual number of days elapsed, shall accrue daily in each Interest Period at the applicable rate or rates of interest described above and shall be payable quarterly in arrears on each Interest Payment Date to the registered owner hereof, as shown on the registration books of the Borrower on the Business Day preceding such Interest Payment Date. The interest due hereon shall be calculated by the Bank in accordance with Section 8.1(a)(i) of the Agreement. Interest on this Bond shall be paid in such manner as the Borrower and the Bank shall agree.

Tax Indemnification. If at any time, either: (a) in the reasonable opinion of counsel for the Bank, any payment of interest or principal or any amount in respect of or measured in whole or in part by reference to interest on or principal of this Bond, shall be subject to a preference tax (meaning a tax imposed by Sections 55-58 of the Code, or any successor sections thereto or any similar federal tax preferences or similar items), excess profits tax or other federal tax on a basis other than as existing on the date of original issuance hereof; or (b) there shall occur any material decrease in the highest marginal tax rate imposed on individuals for federal income tax purposes; or (c) the Bank shall otherwise be subject to any increased cost or diminished after-tax yield as a result of any change (whether as a result of a change in law or otherwise) in the tax consequences of ownership of this Bond (including by reason of the disallowance or diminishment of any deduction available to the Bank) (any of the foregoing being herein referred to as an "Adverse Tax Consequence"); then, in any case, upon notice to such effect from the Bank to the Borrower and the Authority, which notice shall set forth the date as of which such Adverse Tax Consequence shall have occurred, there shall be paid to the Bank, as additional interest on this Bond, such amount which, after giving effect to such change, and to all taxes, interest and penalties, and other charges required to be paid by the Bank in connection with, or as a consequence of, such Adverse Tax Consequence, is sufficient, in the reasonable determination of the Bank, to compensate the Bank for the direct cost or diminished after-tax yield with respect to its investment in the Bond following such Adverse Tax Consequence, it being the intent of the Authority, the Borrower and the Bank that the profit to the Bank with respect to the payment of interest to it on this Bond shall not be diminished by any Adverse Tax Consequence. Notwithstanding the foregoing, in no event shall the payments required under this provision result in a payment to the Bank in excess of the amount of the payments that would result from an imposition of the Taxable Rate.

#### REDEMPTION PROVISIONS

Optional Redemption. This Bond may be redeemed at the election of the Authority at the written direction of the Borrower, in whole or in part (but if in part, each in the principal amount of \$100,000 or integral multiples of \$5,000 in excess thereof), on the last day of any Interest Period (or the next succeeding Business Day if such last day is not a Business Day), at a redemption price equal to the principal amount so redeemed, together with accrued interest to the date of redemption. The Borrower shall provide the Bank with notice of the date of any optional redemption pursuant to this paragraph and the principal amount of this Bond to be redeemed by first-class mail, postage prepaid, sent at least fifteen (15) days before such redemption date to the Bank at the registered address of the Bank appearing in the Agreement on the registration books maintained pursuant to the Agreement as of the close of business on the Business Day prior to such mailing. On each such redemption date, payment of the redemption price having been made to the Bank as provided herein and in the Agreement or the portion thereof so called for redemption shall become due and payable on the redemption date and interest shall cease to accrue thereon from and after the redemption date. Any amounts applied to an optional redemption shall reduce the mandatory scheduled redemption obligations of the Authority described below in the order selected by the Borrower and approved by the Bank (or in the absence of such selection and approval, in inverse order of payment obligations).

Mandatory Redemption at Option of Bank. At any time on or after the third anniversary of the date of original issuance of the Bond, all of this Bond shall be redeemed by the Authority, in whole at a redemption price equal to 100% of the principal amount thereof plus accrued interest to the date of redemption, upon written demand of the Bank, in the form attached as Exhibit B to the Agreement, with a copy to the Authority. The Bank shall provide the Borrower with notice of the date of any mandatory redemption

pursuant to this paragraph and the principal amount of the Bond to be redeemed by first-class mail, postage prepaid, sent at least ninety (90) days before such redemption date to the Borrower at the Borrower's address for notice appearing in the Agreement as of the close of business on the Business Day prior to such mailing. This Bond, or any portion thereof, shall be redeemed, and the redemption of this Bond shall be paid to the owner of this Bond, on the date specified by the owner of this Bond. Notwithstanding the foregoing, in lieu of such redemption the Borrower shall have the right to (A) purchase the Bond from the Bank on any date after the date of the Bank's written demand and prior to the next Business Day preceding the date of the proposed redemption, at a purchase price equal to 100% of the principal amount of the Bond, plus accrued interest to the date of purchase; or (B) deliver a letter of credit to the benefit of the Bank on any date after the date of the Bank's written demand and prior to the next Business Day preceding the date of the proposed redemption which shall satisfy the requirements set forth under Section 6.1(b) of the Agreement.

Mandatory Redemption Upon Determination of Taxability. On the date of the occurrence of a Determination of Taxability, this Bond shall be called for redemption on the date selected by the Borrower, but not more than ninety (90) days following the date of the occurrence of the Determination of Taxability, at a redemption price equal to 100% of the principal amount thereof plus accrued interest to the date of redemption.

On each such redemption date, payment or provision for payment of the redemption price having been made, this Bond or the portion thereof so called for redemption shall become due and payable on the redemption date, and interest shall cease to accrue thereon from and after the redemption date.

In the event of a redemption of this Bond in whole, the redemption price shall be paid to the Bank only upon surrender of this Bond at the principal office of the Borrower or such other place as the Borrower shall designate on such Interest Payment Date. In the event of a partial optional or mandatory redemption, payment shall be made by wire transfer of immediately available funds without presentation and surrender of this Bond, provided that the Borrower's record of such payment shall be conclusive and binding upon the Bank and each succeeding owner of this Bond, absent manifest error.

In addition to any amounts due in connection with the redemption of this Bond as set forth above, in the event of any redemption or prepayment of this Bond for any reason, whether by redemption, prepayment, acceleration or otherwise, there shall be paid to the Bank an additional amount equal to the sum of all actual losses or expenses suffered or incurred by the Bank as a result of the redemption or prepayment, including any loss, breakage or other cost or expense incurred by reason of the termination of any interest rate protection agreement or the liquidation or reemployment of deposits or other funds acquired by the Bank to make or maintain its investment in the principal amount of this Bond at a fixed interest rate. The Bank shall provide the calculation of any such loss at the Borrower's request, which calculation shall be final in the absence of manifest error.

This Bond is transferable, in accordance with the provisions of the Agreement, by the owner hereof or its duly authorized attorney at the designated office of the Borrower, upon surrender of this Bond, accompanied by a duly executed instrument of transfer, in form satisfactory to the Borrower, and upon payment by the owner hereof of any taxes, fees or other governmental charges incident to such transfer. Upon any such transfer, a new fully-registered Bond in the same aggregate principal amount will be issued to the transferee. The Person in whose name this Bond is registered may be deemed the owner thereof by the Authority and the Borrower, and any notice to the contrary shall not be binding upon the Authority or the Borrower.



This Bond is issued under and pursuant to, and in full compliance with the laws of the State, including particularly the Act, which shall govern its construction, and by appropriate action duly taken by the Authority which authorizes the execution and delivery of the Agreement and this Bond.

The Authority and the Bank agree that this Bond is being purchased by the Bank for its own account and will not be transferred except as provided in Section 4.2 of the Agreement.

The Agreement permits the amendment thereof and the modifications of the rights and obligations of the Authority and the rights of the owner of this Bond upon the terms set forth therein. Any consent or waiver by the owner of this Bond shall be conclusive and binding upon such owner and upon all future owners of this Bond and of any Bond issued upon the transfer of this Bond whether or not notation of such consent or waiver is made hereon. The Agreement also contains provisions permitting the owner of this Bond to waive certain past defaults under the Agreement and their consequences.

The Act provides that neither the members of the Authority nor any Person executing this Bond for the Authority shall be liable personally on this Bond by reason of the issuance thereof. No recourse shall be had for the payment of principal or interest or premium, if any, on this Bond or for any claim based thereon, against any past, present or future official, officer or employee of the Authority or any successor corporation, as such, either directly or through the Authority, or any successor corporation, under any rule of law or equity, statute or constitution, or by the enforcement of any assessment or penalty or otherwise; and all such liability of any such official, officer or employee, as such, is hereby expressly waived and released as a condition of and in consideration for the issuance of this Bond.

This Bond shall not constitute the personal obligation, either jointly or severally, of any director, officer, employee or agent of the Authority.

IT IS HEREBY CERTIFIED, RECITED AND DECLARED that all acts, conditions and things required to exist, happen and be performed precedent to and in the execution and delivery of the Agreement and issuance of this Bond do exist, have happened, and have been performed.

IN WITNESS WHEREOF, the Butler County Port Authority has caused this Bond to be executed in its name by the manual or facsimile signature of its Chairman or Vice Chairman and Secretary or Treasurer.

Dated: May 15, 2008

BUTLER COUNTY PORT AUTHORITY

By: \_\_\_\_\_  
Chairman/Vice Chairman

By: \_\_\_\_\_  
Secretary/Treasurer

AUTHENTICATION CERTIFICATE

This Bond is one of the Bond of the issue described in the within-mentioned Agreement, entitled to the benefits thereof.

Date of Authentication May 15, 2008:

QUAKER CHEMICAL CORPORATION

By: \_\_\_\_\_  
Name:  
Title:

By: \_\_\_\_\_  
Name:  
Title:

EXHIBIT B

NOTICE OF MANDATORY REDEMPTION

To: QUAKER CHEMICAL CORPORATION  
Quaker Chemical Corporation  
910 Hector Street  
Conshohocken, PA 19428  
Attention: \_\_\_\_\_

The undersigned, being the owner of the Bond issued under and pursuant to that certain Financing Agreement dated May 15, 2008 (the "Agreement"), among the Butler County Port Authority (the "Authority"), Quaker Chemical Corporation (the "Borrower") and Brown Brothers, Harriman & Co. (the "Bank"), hereby irrevocably elects that the principal amount of said [all] [\$\_\_\_\_\_\*] of the principal amount of the Bond shall be redeemed by the Authority on \_\_\_\_\_ [DATE TO BE SPECIFIED BY THE BANK TO BE ON OR AFTER THIRD ANNIVERSARY OF DATE OF ORIGINAL ISSUANCE OF BOND].

The undersigned shall surrender the Bond, duly endorsed for transfer or accompanied by a bond power endorsed in blank, to the Borrower at its office at the address set forth in the Agreement against payment of the redemption price.

All capitalized terms not defined herein shall have the meanings assigned to them in the Agreement.

Dated:

\_\_\_\_\_  
Signature of Bank or Authorized Representative

\_\_\_\_\_  
Tax Identification Number of Bank

\* If less than all of the principal amount of the Bond is to be redeemed, the principal amount to be redeemed shall be \$100,000 or any integral multiple of \$5,000 in excess thereof.

EXHIBIT C  
FORM OF REQUISITION

BROWN BROTHERS HARRIMAN & CO.  
1531 Walnut Street  
Philadelphia, Pennsylvania 19102  
Attention: \_\_\_\_\_

RE: Requisition No. \_\_\_\_\_

Gentlemen:

We hereby request that you advance funds in accordance with Section 9.2 of the Financing Agreement dated May 15, 2008 (the "Agreement"), among the Butler County Port Authority (the "Authority"), Quaker Chemical Corporation (the "Borrower") and you, in the following amounts to the following named persons:

Payee

Amount

We hereby certify as follows:

1. The nature of the property and amount of costs of the Project covered by this requisition is described herein.

2. The amounts requisitioned hereunder (a) are for Project Costs which have not been the basis of a prior or contemporaneous requisition or of a prior payment of an external loan or of a prior reimbursement of internal advances and which have not been paid from gifts or grants received by us for the Project; (b) are for work actually performed or material, equipment or other property actually supplied for the Project in accordance with the applicable plans and specifications; and (c) contain no amount entitled to be retained.

3. The work and material, equipment or other property covered by this requisition have been performed or delivered to us and are in accordance in all material respects with all applicable building, zoning, land use, environmental protection, sanitary, safety and educational laws, rules and regulations, all applicable grant, reimbursement and insurance requirements and the provisions of the Agreement; and all permits, licenses and approvals required for the items covered by this requisition have been obtained.

4. All property provided by the net proceeds of the Bond is owned by the Borrower.

All capitalized terms used herein and not otherwise defined shall have the meanings set forth in the Agreement.

QUAKER CHEMICAL CORPORATION

By: \_\_\_\_\_

Name:

Title:

C- ii

**Engineering, Procurement and Construction Contract**

Between

QUAKER CHEMICAL CORPORATION

- and -

FMC TECHNOLOGIES, INC.

Effective Date: May 14, 2008

EPC Contract

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**Engineering, Procurement and Construction Contract**

This *Contract* is made effective this 14<sup>th</sup> day of May, 2008

Between

QUAKER CHEMICAL CORPORATION

- and -

FMC TECHNOLOGIES, INC.

**Introduction:**

A. The *Contractor* has agreed to perform the *Work* for the *Owner* as set out in this *Contract*, on the terms and conditions set forth in this *Contract*;

**IN CONSIDERATION of the mutual covenants and conditions contained herein, the parties agree as follows:**

**ARTICLE 1 - Definitions and Appendices**

1.1 The following terms, wherever capitalized and italicized in the *Contract*, or in any document produced pursuant to the terms of the *Contract*, shall have the following meanings:

- (a) *Appendix* or *Appendices*, as the case may be, means one or more of the schedules attached to and incorporated in this *Contract* as set forth in Section 1.2;
- (b) *As-Built Drawings* means the controlled and complete set of documents upon which the *Contractor* records each and every instance of differences between the *Work* as executed and the *Work* as designed and depicted in the documents issued by the *Contractor* for *Construction Work*;
- (c) *Change* means any change in, addition to, or deletion from the *Scope of Work*, *Owner's Specified Materials*, the *Milestones*, or the *Contract Time* that is effected by a *Change Directive*, *Change Order* or *Change Quotation* that has been approved in writing by *Owner*;
- (d) *Change Directive* means a written instruction from the *Owner* directing a *Change*;

- (e) *Change Order* means a written order signed by both the *Contractor* and the *Owner* authorizing a *Change*;
- (f) *Change Quotation* means a written quotation from the *Contractor* for an adjustment in the *Contract Time*, *Milestones* or the *Compensation*, or both;
- (g) *Commencement Date* means the date that the *Work* is to commence, which is May 14, 2008;
- (h) *Commissioning after Functional Completion* means those commissioning duties of the *Owner* and of the *Contractor* that shall take place after *Functional Completion* and which are described in the *Scope of Work* and allocated to either the *Owner* or the *Contractor*;
- (i) *Commissioning before Functional Completion* means those commissioning duties of the *Owner* and of the *Contractor* that shall take place before *Functional Completion* and which are described in the *Scope of Work* and allocated to either the *Owner* or the *Contractor*;
- (j) *Compensation* means the compensation which the *Owner* shall pay for performance of the *Work* in accordance with Appendix B – Compensation;
- (k) *Confidential Information* means all information relating to the *Work* and any process or technology relating thereto, and information relating to the nature of the *Contractor*'s and the *Owner*'s business and affairs, which either party directly or indirectly receives or acquires (or previously received or acquired) from the other party, or the other party's representative, either in writing or verbally, including information in the *Contract*, or through observation of the *Owner*'s *Site*, the *Work Site*, the *Work* or work performed by *Other Contractors*, except information falling into any one or more of the following categories:
  - (i) information which the disclosing party can show was in its possession on a non-confidential basis before receipt or acquisition of the information from the other party;
  - (ii) information which is lawfully in the public domain at the time of the disclosing party's receipt or acquisition of the information from the other party, other than from the *Scope of Work* or through the process of proposal calls or performing the *Work*;
  - (iii) information which, after the disclosing party's receipt or acquisition of the information from the other party, becomes part of the public domain through no act of the disclosing party or of any third party under an obligation of confidence with respect to such information, but only after such information becomes part of the public domain; or

- (iv) information which, after receipt or acquisition of the information from the other party, is lawfully obtained by the disclosing party from a third party, but only after such information is so received or acquired, and provided such third party is under no obligation of confidence with respect to such information.
- (l) *Construction Work* means delivery, fabrication, assembly, construction, testing, commissioning and correction, including professional and technical personnel, labor, supervision, administration, materials, transportation, supplies, tools, equipment, and such other work and materials necessary to be performed or supplied to meet the requirements of the *Contract*, including any work which is not expressly described in the *Contract* but which is nevertheless necessary for the proper execution of the *Work*, but does not include *Engineering Services* or *Procurement Services*;
- (m) *Contemplated Change Notice* means a written notice from the *Owner* advising the *Contractor* that the *Owner* is contemplating a *Change*;
- (n) *Contract* means:
  - (i) this Engineering, Procurement and Construction Contract;
  - (ii) *Change Orders*;
  - (iii) *Execution Plan*; and
  - (iv) other documents which come into existence and are incorporated into the *Contract* pursuant to the terms of this *Contract*;
- (o) *Contract Time* means the period of time from the *Commencement Date* to the *Scheduled Functional Completion Date*;
- (p) *Contractor* means FMC Technologies, Inc.;
- (q) *Contractor's Representative* means that person identified as such in Section 48.2, or an approved replacement;
- (r) *Deficiency* means any portion of the *Work* that has not been performed in accordance with the *Scope of Work*, the *Contract* or the *Law*;
- (s) *Engineering Services* means those services described in the *Scope of Work* and provided by the *Contractor* for the design, planning and engineering of the *Project*, but does not include *Construction Work* or *Procurement Services*;
- (t) *Event of Force Majeure* means any occurrence, other than the financial capability of a party or an event constituting a delay under Article 32 - Delays or Article 33 - Delays not Caused by the Contractor, which prevents or delays a party

from performing its obligations under the *Contract* (except an obligation to pay any amount) within the time required for the performance of such obligation and which is beyond the control and without the fault or negligence of the party relying on such occurrence, and which by the exercise of reasonable diligence that party could not, at the time the *Contract* was executed, have reasonably contemplated happening and which at the time of such occurrence, is beyond the reasonable control of the party required by the *Contract* to perform such obligation and such party is unable to reasonably prevent or provide against such occurrence. In no event shall weather conditions be deemed to be an *Event of Force Majeure* unless such weather conditions are abnormal and exceed the normally expected inclement weather in the area of the *Project* based on a 15-year moving average of climate data maintained by the National Atmospheric and Oceanic Administration;

- (u) *Execution Plan* means the schedule developed by the *Contractor* and approved by the *Owner* for the *Work* in accordance with Section 4.2 and which shall be updated from time to time as may be required by the *Owner* and which shall include, but not be limited to:
  - (i) the sequences and methods for the performance of the *Work*; and
  - (ii) a detailed schedule with dates for the completion of *Milestones*;
- (v) *Facilities* means the physical works engineered, procured and constructed as a result of the *Work* being performed;
- (w) *Final Completion Notice* means that notice in the form contained in Appendix G – Forms issued by the *Owner* to the *Contractor* pursuant to Section 20.2 certifying completion and acceptance of the *Work* under the *Contract*;
- (x) *Functional Completion* means that date when the *Work*:
  - (i) has passed the required *Performance Tests* that are stipulated in the *Scope of Work* to be performed before *Functional Completion*; and
  - (ii) is certified by the *Owner's Representative* pursuant to Article 19 as being complete or ready to be put into service, or being used for the purpose intended and a *Functional Completion Certificate* is issued; and
  - (iii) only non-critical punch list items remain to be completed by the *Contractor*. Non-critical punch list items are items that do not measurably affect safety, protection of the environment, efficiency or quality.
- (y) *Functional Completion Certificate* means that notice, in the form attached hereto as Appendix G – Forms, issued by the *Owner* to the *Contractor* pursuant to Article 19, certifying achievement of *Functional Completion* of the *Work* and identifying the date that the *Owner* takes over the *Work*.

- (z) *Goods* means any goods, supplies, materials or equipment required as part of the *Work*, or to perform the *Work*, and which are supplied or fabricated by the *Contractor*, but do not include *Procured Goods*;
- (aa) *Hazardous Material* means any substances which are hazardous to persons, animals, property or the environment and includes hazardous substances, hazardous waste, ozone depleting substances and dangerous goods, all as identified or defined under applicable law.
- (bb) *Incentive Fee* means that fee that shall be paid by the *Owner* to the *Contractor*, if applicable, and which is set out in Appendix F – Incentive Fee;
- (cc) *Inspection and Test Plan* means the plan for inspection and testing, which shall be prepared by either the *Owner* or the *Contractor* as specified in the *Scope of Work*;
- (dd) *Key Personnel* means the *Contractor*'s key personnel for the *Work* identified in Appendix I – Key Personnel , or if not determined before the execution of this *Contract*, identified in an organizational chart in accordance with Article 15 - Key Personnel and approved by the *Owner*;
- (ee) *Law* means the common law, the law of equity and all federal or state statutes or municipal by-laws and all regulations, orders, directives, permits and licenses thereunder, which apply to or otherwise affect the *Work*, the *Owner* or the *Contractor* with respect to the *Work*, or the property of the *Owner* or the *Contractor*, real or personal, including, but not limited to, all environmental, occupational, health and safety laws;
- (ee\*) *Leased Equipment* means those items of equipment identified in Schedule 1 to Appendix B and which will be leased by *Owner*. *Owner* will perform certain inspection and acceptance activities for the lessor of the equipment, but only in a role as the representative of the lessor.
- (ff) *Liquidated Damages* means those damages agreed by the parties to be a genuine pre-estimate of damages in the event the *Performance Guarantees* are not met or the *Work* is not completed in the *Contract Time* and which are set out in Appendix E– Liquidated Damages;
- (gg) *Milestone* or *Milestones* means, as the case may be, one or more milestones that the *Contractor* must meet as set forth in the *Scope of Work*;
- (hh) *Other Contractors* means the contractors, consultants, or engineers retained by the *Owner*, to perform any work or services at, or related to, the *Owner's Site*, other than the *Contractor*;

- (ii) *Owner* means the owner of the Project, Quaker Chemical Corporation;
- (jj) *Owner's Representative* means that person identified as such in Section 48.1 which may include a consultant hired by the *Owner*, if so designated, or that person's designated replacement;
- (kk) *Scope of Work* means the description of the scope, standards, design criteria, *Performance Guarantees*, *Milestones* and the schedule of work set out in Appendix A–Scope of Work, as amended by any *Changes*;
- (ll) *Owner's Site* means the *Owner's* land upon which the *Work Site* is located and which may have on it other projects by *Other Contractors* or existing facilities, activities or operations;
- (mm) *Owner's Specified Materials* means those materials, goods, products, processes, and equipment specified in Section 3 of the *Scope of Work* to be used in, or to be incorporated into, the *Work* by the *Contractor*;
- (nn) *Performance Guarantees* means the performance guarantees set out in the *Scope of Work*;
- (oo) *Performance Tests* mean the performance tests set out in the *Scope of Work* for the purpose of determining achievement of the *Performance Guarantees* for the *Work*, and such other tests as may be agreed between the *Owner* and *Contractor* in order to compare actual performance of the *Work* with the *Performance Guarantees*;
- (pp) Intentionally omitted.
- (qq) *Procured Goods* means those goods, supplies, materials or equipment obtained by the *Contractor* for incorporation in, or to perform, the *Construction Work*, and procured by the *Contractor* as part of its *Procurement Services*;
- (rr) *Procurement Services* means the procurement of *Procured Goods* performed by the *Contractor*, for its own account, as stipulated in the *Scope of Work*;
- (ss) *Project* means the Middletown Plant Expansion Turnkey Project;
- (tt) *Proprietary Information* means all inventions, discoveries, improvements and technical information not in the public domain, which the *Contractor*, *Subcontractors*, or their respective employees or agents who are performing the *Work*, may conceive of, reduce to practice or develop during the *Contract Time* or within 12 months thereafter, as a result of *Confidential Information*;
- (uu) *Records* means the books, statements, records and accounts pertaining to the *Contract* and the performance of the *Work*, whether in paper or electronic form;



- (vv) *Safety Plan* means the plan, as prepared by the *Contractor* and approved by the *Owner*, to be enforced by the *Contractor* with regard to all *Work* performed at the *Work Site*;
- (ww) *Scheduled Functional Completion Date* means the date on which the *Work* is scheduled to achieve *Functional Completion*, which is 15 months after the *Commencement Date*;
- (xx) *Subcontractors* means any subcontractors, consultants, suppliers or vendors hired by the *Contractor* to perform any portion of the *Work* or supply any *Goods*;
- (yy) *Suspended Work* means any *Work*, or portion thereof, which the *Owner* has suspended pursuant to Article 34 - Suspension;
- (zz) *System* means any component system of the *Work*, or any part thereof as the context requires;
- (aaa) *Warranty Item* means any *Deficiency* that is identified after the *Functional Completion Certificate* is issued or is incorporated into the *Functional Completion Certificate* to be remedied after *Functional Completion*;
- (bbb) *Warranty Period* commences on the date of *Functional Completion* of the *Work*, and continues for 12 months from the date of *Functional Completion* as stated in the *Functional Completion Certificate*;
- (ccc) *Work* means all *Engineering Services*, project management, *Procurement Services*, *Goods*, *Procured Goods*, *Construction Work* and those duties allocated to the *Contractor* in the *Commissioning before Functional Completion and Commissioning after Functional Completion*, as may be necessary to fulfill the *Scope of Work* and includes anything that is ancillary or necessary by implication to fulfill the *Scope of Work*;
- (ddd) *Work Day* means any day, except for a Saturday, Sunday, a federal holiday or a holiday which is regularly observed in the construction industry in Middletown, Ohio, or defined as a holiday in a collective agreement pertaining to the *Work Site*; and
- (eee) *Work Site* means those lands where the *Project* is located and which are generally depicted on Appendix C.

1.2 The following schedules attached hereto shall form part of and are incorporated in this *Contract*:

- (a) Appendix A – Scope of Work
- (b) Appendix B – Compensation
- (c) Appendix C – Work Site
- (d) Appendix D – Warranty Items Procedure

- (e) Appendix E – Liquidated Damages
- (f) Appendix F – Incentive Fee
- (g) Appendix G – Forms
  - Key Employee Confidentiality, Proprietary Information and Consent Agreement
  - Change Order
  - Functional Completion Notice
  - Final Completion Notice
  - Release and Certificate of Final Payment
  - Statutory Declaration
- (h) Appendix H – Dispute Resolution Procedure
- (i) Appendix I – Key Personnel

## **ARTICLE 2 - Interpretation and Order of Precedence**

- 2.1 Unless the context otherwise requires, words importing the singular shall include the plural and vice-versa and words importing gender shall include the masculine, feminine and neuter genders.
- 2.2 The headings and sub-headings of the *Contract* are used for convenience and ease of reference only and in no way define, limit, describe or interpret the scope or intent of the *Contract*.
- 2.3 If there is a conflict in the *Contract*, the order of precedence of documents, from highest to lowest, shall be:
  - (a) this Engineering, Procurement and Construction Agreement, including the *Appendices*;
  - (b) *Change Orders*;
- 2.4 The following shall, in all instances, apply:
  - (a) for documents revised by either party and approved by the *Owner*, the latest revision shall govern;
  - (b) figured dimensions on drawings shall govern, even though they may differ from scaled dimensions;
  - (c) drawings of larger scale shall govern over those of smaller scale of the same date; and
  - (d) specifications shall govern over drawings regardless of time.

- 2.5 Wherever this *Contract* requires an action to be performed or an obligation to be undertaken, such action or obligation shall be performed in a reasonable manner by the party taking the action or fulfilling its obligation.

### **ARTICLE 3 - Scope of Work**

- 3.1 The *Scope of Work* describes the scope of the *Work*.
- 3.2 The *Scope of Work* shall specify the requirements of the *Safety Plan* and identify the party, or parties, responsible for the development and implementation of the *Safety Plan*.

### **ARTICLE 4 - General Requirements of the Work**

- 4.1 The scope of the *Work* includes correction of defects and deficiencies by the *Contractor* in accordance with the *Contract*.
- 4.2 Set forth in the *Scope of Work* is an *Execution Plan* for the performance of the *Work* required under the *Contract*. The *Contractor* shall control the progress of the *Work* to achieve compliance with the *Execution Plan*.
- 4.3 In the execution of the *Work* the *Contractor* shall comply with, and the completed *Work* shall comply with, the *Law*, including, without limitation, applicable building codes, technical standards, building construction and environmental regulations and the standards specified in the *Contract*.
- 4.4 References in the *Contract* to applicable codes, standards or regulations shall be understood to be references to the edition applicable on the date of the *Contract*, unless stated otherwise. If substantially changed or new applicable codes, standards or regulations come into force after the date of the *Contract*, the *Contractor* shall submit a *Change Quotation* for compliance to those new codes, standards or regulations to the *Owner's Representative*. Any *Change* in the *Work*, the *Contract Time* or the *Compensation* as a result shall be dealt with under Article 13 - Changes.
- 4.5 The *Contractor* accepts the *Owner's Site*, the *Work Site* and the obligation to perform the *Work* in the condition existing at the effective date of this *Contract* and acknowledges that it has investigated and satisfied itself as to:
- (a) the nature of the *Work*;
  - (b) the location of and all conditions relating to the *Owner's Site* and the *Work Site*, including, but not limited to, accessibility, general character, surface conditions, utilities, roads, uncertainties of seasonal weather and all other physical, topographical and geographical conditions but excluding subsurface or other physical conditions not disclosed by the *Owner* or specified in the *Scope of Work*;

- (c) environmental risks resulting from the *Work, Law* and restrictions applicable to the *Contractor* or the *Work* that may affect the *Work*; and
  - (d) the magnitude of the *Work*.
- 4.6 The *Contractor* accepts the obligation to perform the *Work* in accordance with the terms of this *Contract* for the *Compensation* and within the *Contract Time*, and acknowledges that it has investigated and accepts:
- (a) the character, quality, quantity and availability of equipment and materials required to execute and complete the *Work* for the *Compensation* and within the *Contract Time*; and
  - (b) all conditions affecting labor, including, without limitation, availability, productivity and administrative practices, including those relating to safety, prevailing at or applicable to the *Work*.
- 4.7 To the extent diligent and reasonable inquiry would lead to discovery, failure by the *Contractor* to discover matters which affect, or could affect, the *Work* shall not relieve the *Contractor* from its obligations under the *Contract* or otherwise affect the *Contract Time* or the *Compensation*.
- 4.8 The *Owner* reserves the right to award separate contracts to *Other Contractors* for work to be performed at the *Work Site* and to perform work with its own forces at the *Work Site*. In such event, the *Contractor* shall co-ordinate and schedule the *Work* with the work of the *Other Contractors* and the *Owner's* own forces, and the *Contractor* shall share access to and use of the *Work Site* to accommodate the work of *Other Contractors*. If work performed by *Other Contractors* or *Owner's* own forces as directed by the *Owner* materially interferes with the *Work* performed by the *Contractor*, the *Contractor* may issue a *Change Quotation* in accordance with Section 13.7.
- 4.9 The *Contractor* shall co-operate fully with the *Owner, Other Contractors* and all other parties with whom the *Contractor* or *Owner* may be involved during the performance of the *Work*. The *Contractor* shall supervise its employees and *Subcontractors* and inspect their work to ensure that the *Work* conforms in each and every respect to the *Scope of Work* and in accordance with Section 10.1.
- 4.10 Approval of the *Engineering Services*, acceptance of any part of the *Goods, Procured Goods* or the *Construction Work* by the *Owner*, or payment to the *Contractor*, or any one or more of them, shall not relieve the *Contractor* from its responsibilities under the *Contract*, whether pursuant to any of the warranties or guarantees herein, or otherwise.
- 4.11 The *Contractor* shall provide the *Owner* with written reports detailing the status of the *Work* and all issues relating to the *Work*, promptly upon the reasonable request of the *Owner*, and shall attend meetings as required by the *Contract*, or as otherwise requested by the *Owner's Representative*.

- 4.12 The *Contractor* shall have those responsibilities for managing the *Work* as stipulated in the *Scope of Work* or elsewhere in this *Contract*, including, but not limited to:
- (a) cost monitoring, scheduling and reporting to the *Owner*;
  - (b) scheduling the *Work* and monitoring and reporting on the progress of the *Work* relative to the *Milestones* to the *Owner*;
  - (c) coordination, scheduling and supervision of *Subcontractors*;
  - (d) coordination and management of transportation and related services for the *Work*;
  - (e) management of the *Work* to ensure the *Work* is performed in an efficient and coordinated manner; and
  - (f) preparation of reports and attendance at meetings with the *Owner*.
- 4.13 The *Contractor* shall ensure that no activities or actions are undertaken in the performance of the *Work*, or otherwise by the *Contractor*, which would adversely affect, restrict or limit in any way the continued operation of the *Owner*'s facilities which are in operation, unless required to perform the *Work*, done in accordance with the *Execution Plan*, authorized in writing by the *Owner*'s *Representative*.
- 4.14 In the performance of the *Work*, the *Contractor* shall give due consideration to the interest and property of others wherever involved, and shall carry out and perform the *Work* in a reasonable manner which shall cause the minimum of inconvenience, injury, and damage to others.
- 4.15 The *Owner* shall provide and the *Contractor* shall abide by all documents provided by the *Owner* relating to the *Owner*'s *Site*, including, but not limited to, any special restrictions and conditions contained in any easement, regulatory board order, crossing agreement, or other permit relating to the *Work Site*.
- 4.16 Each of the parties shall promptly and fully inform each other of any errors, omissions or inconsistencies in the *Contract*, defects or deficiencies in the *Work* and of any inconsistencies between the *Contract* and the *Law*, of which they become aware. The *Contractor* shall exercise reasonable care and diligence to prevent any actions or conditions which could result in any such inconsistencies, defect or deficiencies. . If the *Contractor* discovers any inconsistencies in the *Contract*, or between the *Contract* and the *Law*, or discovers any defects or deficiencies in the *Work*, and proceeds without resolution with the *Owner*, the *Contractor* shall proceed at the *Contractor*'s own risk and expense and waives all rights to claim against the *Owner* for the same.
- 4.17 All documents and drawings prepared as part of the *Work* shall be in English.

## ARTICLE 5 - Engineering Services

- 5.1 The *Contractor* shall perform the *Engineering Services* and be responsible for the design and engineering necessary to execute the *Work*. The *Engineering Services* shall be prepared under the supervision of the *Contractor's* engineers. The *Contractor's* responsibilities in this section 5.1 shall not apply to the selection of the sizes and/or quantities of the materials designated in the *Scope of Work* as *Owner's Specified Materials* or the conceptual design of the Project as shown on Attachment 7.1 to the *Scope of Work*.
- 5.2 The engineers referred to in Section 5.1 shall be available to meet with the *Owner's Representative* at all reasonable times during the *Contract Time* and *Warranty Period*.
- 5.3 The *Owner* shall have the right of inspection and review of the design drawings and specifications at all reasonable times. No inspection, or failure to inspect, by the *Owner* shall relieve the *Contractor* of the *Contractor's* obligations under the *Contract*. The *Contractor* shall provide to the *Owner* for *Owner's* written approval design documents sufficient to establish the size, quality and character of the *Project*; its architectural, structural, mechanical and electrical systems; and the materials and such other elements of the *Project* to the extent required by the *Scope of Work*. Deviations, if any, from the *Scope of Work* shall be expressly disclosed in writing by the *Contractor* to the *Owner*. Upon the *Owner's* written approval of the design documents submitted by the *Contractor*, the *Contractor* shall provide construction documents for review and written approval by the *Owner* (the "*Construction Documents*"). The *Construction Documents* shall set forth in detail the requirements for construction of the *Project*. The *Construction Documents* shall include plans, drawings and specifications that establish the quality levels of materials and systems required. Deviations, if any, from the *Scope of Work* or the previously approved design documents shall be expressly disclosed in writing by the *Contractor* to the *Owner*. *Construction Documents* may include drawings, specifications, and other documents and electronic data setting forth in detail the requirements for construction of the *Work*. Upon completion and approval by *Owner*, the *Construction Documents* shall be deemed to be part of the *Scope of Work*.
- 5.4 Prior to commencement of the *Performance Tests*, the *Contractor* shall prepare, and submit to the *Owner's Representative*, operation and maintenance manuals in accordance with the *Scope of Work*. The *Work* shall not be considered to be completed for the purposes of achieving *Functional Completion* until such operation and maintenance manuals have been submitted to the *Owner's Representative*.
- 5.5 The *Contractor* shall:
- (a) prepare, and keep up-to-date, the *As-Built Drawings*;
  - (b) record the exact locations of each of these differences, sizes and details of the *Construction Work* as executed, with cross-references to relevant specifications and other requirements on the *As-Built Drawings*

- (c) keep the *As-Built Drawings* on the *Work Site*;
  - (d) during the *Contract Time*, provide the *Owner* with access to the *As-Built Drawings*; and
  - (e) upon completion of the *Work*, submit the *As-Built Drawings* and copies (including paper and electronic versions) to the *Owner's Representative* in accordance with the *Scope of Work*.
- 5.6 The preparation and delivery to *Owner* of *As-Built Drawings* shall not relieve *Contractor* of responsibility for any differences or deviations between the *Work* as constructed and the requirements of the *Scope of Work*, the *Construction Documents* and the plans and specifications that have not been accepted and approved in writing by *Owner*.

#### **ARTICLE 6 - Owner's Specified Materials**

- 6.1 Where the *Scope of Work* directs the *Contractor* to use the *Owner's Specified Materials*, the *Contractor* shall review the *Owner's Specified Materials* to determine whether such materials are acceptable to meet the *Engineering Services* and *Construction Work* and can be made available for procurement without interfering with the achievement of the *Milestones*.
- 6.2 If the *Contractor* determines that the *Owner's Specified Materials* are acceptable for the *Work*, then the *Owner's Specified Materials* shall be used and incorporated in the *Work* in the same manner as those materials and pieces of equipment proposed by the *Contractor* and the *Contractor* shall take responsibility for the *Owner's Specified Materials* and all warranty provisions that apply thereto; or
- 6.3 If the *Contractor* determines that the *Owner's Specified Materials* are not acceptable for the *Work*, then the *Contractor* shall give notice to the *Owner* that the *Owner's Specified Materials* are not suitable for the *Work*, which notice will provide details of the reasons why the *Owner's Specified Materials* are not acceptable for use or incorporation into the *Work*.
- 6.4 Where the *Contractor* has provided notice to the *Owner* that the *Owner's Specified Materials* are not acceptable for the *Work*, the *Owner* shall promptly notify the *Contractor* of the *Owner's* decision as to whether or not to include the *Owner's Specified Materials* in the *Work*.
- 6.5 If the *Owner* chooses to direct the *Contractor* to use the *Owner's Specified Materials* after the *Contractor* has notified the *Owner* that the *Owner's Specified Materials* are not acceptable for the *Work*, then the *Owner* shall take full responsibility for the *Owner's Specified Materials*, including any warranty claims and damages, including failure to achieve *Functional Completion*, that may occur from the use or incorporation of the *Owner's Specified Materials*.

## **ARTICLE 7 - Procurement Services**

- 7.1 As specified in the *Scope of Work*, the *Contractor* shall perform the *Procurement Services*.
- 7.2 Where specified in the *Scope of Work*, the *Contractor* shall provide *Procurement Services* using such selected vendor lists specified in the *Scope of Work*.
- 7.3 Payment of invoices for *Procured Goods* shall be made by the *Contractor* to its suppliers in accordance with the terms established between the *Contractor* and his suppliers. Payment on account of *Procured Goods* to be made by the *Owner* to the *Contractor* shall be made when the *Procured Goods* are delivered and suitably stored at the *Work Site* for subsequent incorporation in the *Work*, in accordance with Appendix B.

## **ARTICLE 8 - Construction Work**

- 8.1 The *Contractor* shall perform the *Construction Work* in accordance with the *Construction Documents* and the *Contract*.
- 8.2 Except for those materials, services and equipment to be provided by the *Owner* and described in Appendix A–Scope of Work, the *Contractor* shall supply or cause to be supplied all services, equipment and materials required for the proper execution and completion of the *Construction Work*.
- 8.3 The *Contractor* shall take full responsibility for the adequacy, stability and safety of the *Work* and the *Work Site* operations under its control, of all methods of construction and of all of the *Construction Work*, unless the *Contractor* has received written instructions from the *Owner's Representative* absolving the *Contractor* of responsibility.

## **ARTICLE 9 - Commissioning**

- 9.1 The duties of the *Owner* and of the *Contractor* in relation to *Commissioning before Functional Completion* and *Commissioning after Functional Completion*, together with the *Milestones* to be reached for commissioning, are as set out in the *Scope of Work*.

## **ARTICLE 10 - Contractor's Obligations and Representations**

- 10.1 The *Contractor* shall:
  - (a) perform the *Work* in a professional, efficient and workmanlike manner, using only qualified, skilful and careful workers, in strict accordance with the *Contract* and in accordance with sound and currently accepted design, engineering, procurement, construction and commissioning practices normally employed in industrial construction similar to the *Work*;



- (b) perform the *Work* in a safe and environmentally sound manner and in compliance with the *Law*;
- (c) ensure that the title to any and all *Goods* and *Procured Goods* shall, upon transfer of title to the *Owner*, be free from any and all claims, liens, charges, encumbrances or security interests of any kind whatsoever;
- (d) ensure equipment and materials furnished, manufactured or fabricated by the *Contractor*, or its *Subcontractors*, for incorporation into the *Work*, shall:
  - (i) meet the specifications in the *Contract*, if so specified, and if not specified then be of the quality best suited for the required operating conditions and intended use and purpose of the materials and services; and
  - (ii) shall be fit for the purpose for which the equipment and materials have been manufactured or fabricated;
- (e) perform the *Work* to meet the *Scope of Work*;
- (f) comply with the *Contract*, including, but not limited to, all time schedules and Milestones set out in, or called for by, the *Contract* or the *Execution Plan*; and
- (g) ensure the *Work* shall be fit for its intended purpose as specified in the *Scope of Work* and successfully completes all inspections and tests under Article 17 and all *Performance Tests* under Article 18.
- (h) strictly comply with the requirements of Chapters 4115 and 4582 of the Ohio Revised Code relative to prevailing wages including, without limitation the provisions of Revised Code Section 4582.37. *Contractor* shall ensure that all laborers and mechanics employed in connection with the *Project* are paid at the prevailing rates of wages of laborers and mechanics for the class of work called for by the *Project*, which wages shall be determined in accordance with the requirements of Chapter 4115 of the Ohio Revised Code for determination of prevailing wage rates. *Contractor* further acknowledges and understands that construction of the *Project* is deemed to be construction of a public improvement within the meaning of Revised Code Section 4115.03 and that, as a result, the *Contractor* shall and shall cause all *Subcontractors* working on the *Project* to comply with all applicable requirements of Revised Code Sections 4115.03 to 4115.16 and other Applicable Laws related thereto. Upon request from time to time by the *Owner*, the *Contractor* shall promptly deliver to the *Owner* evidence satisfactory to the *Owner*, that *Contractor* and all *Subcontractors* have complied with the foregoing requirement. *Contractor* agrees, at the request of the *Owner*, that the prevailing wage coordinator required pursuant to Chapter 4115 in respect of the *Project* shall be such person or entity as may hereafter be designated by the Butler County Port Authority to perform the duties of wage coordinator. The *Contractor* specifically represents and warrants and covenants that neither it, nor any *Subcontractor* has been or will be included on any list described in Revised Code Section 4115.133.

10.2 The Contractor represents and warrants to the *Owner* that:

- (a) it has the experience, resources, personnel and capability to perform the *Work*;
- (b) it is duly incorporated and validly existing under the laws of the jurisdiction(s) of its incorporation and is registered to carry on business in the State of Ohio;
- (c) it has all required permits, licenses and authorizations necessary to carry on its business; and
- (d) the *Contractor* has the right to use, employ and incorporate in the *Work* those things or ideas to which the *Contractor* gives the *Owner* a license under Section 28.2.

**ARTICLE 11 - Contract Time**

- 11.1 Subject to any *Change Order*, the *Contractor* shall commence the *Work* on the *Commencement Date* and shall achieve *Functional Completion* of all of the *Work* by the *Scheduled Functional Completion Date*.
- 11.2 The *Contractor* shall, unless otherwise provided for in this *Contract* or altered by any *Change Order*, perform the *Work* in accordance with the *Execution Plan*.
- 11.3 If a party fails to meet its obligations set out in this *Contract* in a timely manner, the other party may raise the failure of a timely action as provided for in Appendix H – Dispute Resolution Procedure. Nothing in this Section 11.3 shall limit *Owner*'s right to receive Liquidated Damages as provided in Appendix E or *Owner*'s rights under Article 36.

**ARTICLE 12 - Payment**

- 12.1 As full and complete compensation for the *Work*, the *Owner* shall pay the *Contractor* the *Compensation* pursuant to the terms of Appendix B – Compensation which shall in no event exceed the *Compensation* payable in accordance with the *Contract*, as adjusted by any *Change Order*.
- 12.2 The *Contractor* shall prepare and submit invoices for all *Work* performed in accordance with Appendix B – Compensation.

**ARTICLE 13 - Changes**

- 13.1 The *Owner* shall have the right, at any time, to make a *Change*.

- 13.2 When a *Change* is proposed by the *Owner*, then the *Owner* shall provide a *Contemplated Change Notice* to the *Contractor* describing the proposed *Change*.
- 13.3 The *Contractor*, upon receipt of a *Contemplated Change Notice*, shall within five (5) *Work Days* provide the *Owner's Representative* with a *Change Quotation* which shall include a method of adjustment or an amount of adjustment to the *Compensation*, if any, and any adjustment in the *Contract Time* for the proposed *Change*.
- 13.4 Following receipt of a *Change Quotation*, the *Owner* shall within five (5) *Work Days* either agree to the adjustments in the *Contract Time* and the *Compensation* or to the method to be used to determine the adjustments, or give the *Contractor* notice that the *Change Quotation* is not acceptable.
- 13.5 If the *Change Quotation* is agreed to, then the *Owner* shall issue a *Change Order* recording the *Change*, which shall be signed by the *Owner* and the *Contractor*. The value of the *Work* performed as a result of a *Change Order* shall be included in invoices for payment given by the *Contractor* in accordance with the terms of payment in Appendix B – Compensation and shall identify those portions of the invoice charged for the *Change Order*.
- 13.6 If the *Owner* requests the *Contractor* to provide a *Change Quotation* and subsequently elects not to proceed with the *Change*, the *Contractor* shall be reimbursed in accordance with Appendix B – Compensation, or as otherwise agreed between the parties, for its reasonable costs incurred including design and engineering services, and the *Owner* shall issue a *Change Order* for these costs.
- 13.7 If, during the performance of the *Work*, the *Contractor* is of the reasonable opinion that any written instruction, interpretation, decision or direction from the *Owner* should have, but has not, resulted in a *Contemplated Change Notice* being issued, the *Contractor* shall give the *Owner* five (5) *Work Days* notice with a *Change Quotation* requesting an adjustment in *Contract Time* and the *Compensation* required. If the *Contractor* does not issue a *Change Quotation* within five (5) *Work Days* after the aforesaid instruction, interpretation, decision or direction is given by the *Owner*, then the *Contractor* shall have no claim for any claim against the *Owner* attributable to that instruction, interpretation, decision or direction.
- 13.8 If the *Owner* receives a *Change Quotation* from the *Contractor* pursuant to Section 13.7, the *Owner* shall promptly consider the *Change Quotation* and immediately issue a *Change Order*, within three (3) *Working Days* or advise the *Contractor* in writing that the *Contractor's* request is denied or such *Change Quotation* shall be deemed denied. To the extent there is a dispute as to whether the *Change Quotation* is appropriate, such dispute shall be resolved in accordance with Appendix H – Dispute Resolution Procedure.
- 13.9 No modification, addition, deletion or other revision to the *Scope of Work* shall be binding on either party unless set out in a *Change Order*, or determined by Appendix H – Dispute Resolution Procedure.

- 13.10 The *Contractor* shall include in its *Change Quotation* all costs and changes in *Contract Time* reasonably expected to result from a *Change* including any impact costs or costs of acceleration.
- 13.11 If the *Contractor* encounters actual subsurface or other concealed physical conditions at the *Work Site* which are materially different from any representations or written disclosures (including e-mails) of existing conditions made by *Owner* or described in the *Scope of Work*, then the *Contractor* shall provide notice to the *Owner* within 5 *Work Days* of encountering the conditions and shall allow the *Owner* the opportunity for inspection before the conditions are further disturbed. If the *Contractor* fails to provide such notice to the *Owner* within the specified time then the *Contractor* shall have no claim for any additional costs or delays attributable to such subsurface or concealed physical conditions.
- 13.12 The *Owner* shall promptly investigate the conditions described by the *Contractor* pursuant to Section 13.11 and if the actual conditions encountered by the *Contractor* at the *Work Site* differ materially from the conditions represented or disclosed in writing (including e-mails) by *Owner* or described in the *Scope of Work* so as to increase the cost to the *Contractor* or impact the *Contract Time*, then the *Owner* shall issue a *Change Order* to cover the increased cost and *Contract Time*.

#### **ARTICLE 14 - Personnel**

- 14.1 All communications between the *Owner* and the *Contractor* and all documents of whatever kind submitted to the *Owner* by the *Contractor* and its *Subcontractors* shall be in the English language. All of the *Contractor*'s and the *Subcontractors*' personnel that deal with or communicate with the *Owner* shall be fluent in the English language. All training and supervision of the *Owner*'s operating personnel shall be in the English language.
- 14.2 The *Contractor* shall employ, or cause to be employed, only supervisory personnel who are appropriately qualified, trained and experienced in safety, efficiency and quality of work supervision.
- 14.3 At the *Owner*'s request, the *Contractor* shall reassign, replace or remove personnel who, in the *Owner*'s opinion, acting in good faith, negatively affect the efficiency, safety or *Scheduled Functional Completion Date* of the *Work*.

#### **ARTICLE 15 - Key Personnel**

- 15.1 If not agreed to before the execution of the *Contract*, the *Contractor* shall submit a proposed organizational chart for the *Owner*'s approval, as part of the *Execution Plan*. The organizational chart shall show the *Key Personnel* and other supervisory and staff personnel who shall be executing the *Work*, together with their respective job titles and contact information.

- 15.2 The *Owner* shall identify any of the *Key Personnel* to which the *Owner* objects within 14 *Work Days* and if the *Owner* does not provide the *Contractor* with its objections to the *Key Personnel*, the *Owner* shall be deemed to have accepted the *Key Personnel*.
- 15.3 If the *Owner* objects to any of the *Key Personnel* in accordance with Section 15.2, then the *Contractor* will promptly prepare a new organizational chart identifying the *Key Personnel* for the *Owner*'s approval. This process shall be repeated until the *Owner* approves the *Key Personnel*.
- 15.4 Once the *Owner* has approved the organizational chart identifying the *Key Personnel*, the *Contractor* shall within five (5) *Work Days* arrange for each of the *Key Personnel* to complete and execute an agreement in the form of the Key Employee Confidentiality Proprietary Information and Consent Agreement, attached as part of Appendix G-Forms.
- 15.5 Subject to Section 15.6, the *Contractor* shall not, without the *Owner*'s consent, make any changes to the *Key Personnel* or an organizational chart that has been approved by the *Owner*.
- 15.6 If any *Key Personnel* leave the *Contractor*'s workforce, the *Contractor* shall forthwith replace such *Key Personnel* with personnel possessing those qualifications necessary for the proper performance of the functions to which assigned.

#### **ARTICLE 16 - Subcontracts and Assignment**

- 16.1 The *Contractor* has identified in the *Scope of Work* and in Appendix I its intention to subcontract the performance of specified portions of the *Work* and/or the supply of specified equipment and materials and the names of the intended *Subcontractors* or suppliers. The *Owner* may for reasonable cause, and acting in good faith, object to the use of a proposed *Subcontractor* and require the *Contractor* to obtain another *Subcontractor*. Any reviews or approvals by the *Owner* pursuant to the provisions of this Article or elsewhere in this *Contract* shall not release or relieve the *Contractor* of any of its obligations under this *Contract* or create any contractual relations between the *Owner* and any *Subcontractor*. The *Contractor* shall require any *Subcontractor* to agree to be bound by this *Contract* and to abide by the *Scope of Work* for safety and loss management.
- 16.2 Prior to the *Commencement Date*, the *Contractor* shall provide the *Owner*'s *Representative* with a list of the names and addresses of all *Subcontractors* and others who the *Contractor* proposes to perform any part of the *Work*. The *Contractor* shall provide the *Owner*'s *Representative* with any proposed changes to this list during the *Contract Time*.
- 16.3 The *Contractor* shall be fully responsible for any part of the *Work* performed by *Subcontractors* and for the acts or omissions of *Subcontractors* and all persons either directly or indirectly employed by them, to the same extent as the *Contractor* is for its

own acts or omissions. Without in any way limiting the *Contractor*'s obligations pursuant to the provisions of this Article or elsewhere under this *Contract*, the *Contractor* shall secure compliance with and enforce, at its own expense, for the benefit of the *Owner*, each of the contracts concluded by the *Contractor* with *Subcontractors*.

- 16.4 This *Contract* shall inure to the benefit of and bind any successor in interest to a party to this *Contract*. This *Contract* may not be assigned by either party without the prior written consent of the other party. Notwithstanding the foregoing, *Contractor* may assign this *Contract* to any successor in interest to that portion of *Contractor*'s business involved in the subject matter of this *Contract*, provided, however, that FMC Technologies, Inc. shall remain liable for all obligations of "*Contractor*" hereunder and shall not be released from such liability as a result of any such assignment.
- 16.5 The *Owner* shall not assign this *Contract* including all rights and obligations hereunder, at any time without the prior agreement of the *Contractor*, except for any collateral assignment required in connection with *Owner*'s financing of the *Work*.
- 16.6 The *Contractor* shall enforce the warranty obligations of its *Subcontractors*, and upon the request of the *Owner*, shall assign any warranty to the *Owner*. All contracts between the *Contractor* and its *Subcontractors* shall provide that warranties given by the *Subcontractor* shall be given to both the *Contractor* and the *Owner* and the warranties may be enforced by either the *Contractor* or the *Owner*.
- 16.7 The *Contractor* shall request and use its best efforts to obtain for the benefit of the *Owner*, the best warranties and guarantees that it is possible to secure from its *Subcontractors* without impact to cost and, as a minimum, shall obtain and provide to the *Owner* the warranties required by the *Contract*. The *Contractor* shall do all things and provide all assistance reasonably necessary to enable the *Owner* to enforce warranties and guarantees provided by its *Subcontractors*.

#### **ARTICLE 17 - Inspection and Testing**

- 17.1 The *Inspection and Test Plan* shall be prepared by the party specified in the *Scope of Work* as having responsibility for the preparation of it and shall be followed when any inspection or testing of the *Work* is performed.
- 17.2 At all times during the progress of the *Work*, the *Owner* shall have the right to inspect or witness any part of the *Work*.
- 17.3 The *Contractor* shall inspect and be solely responsible for the inspection of all workmanship, materials and equipment furnished by itself or its *Subcontractors* in respect of the *Work*, to ensure conformity in each and every respect to the *Contract* (including, without limitation, the *Construction Documents*) and the *Law* and to ensure that good and proper construction practices are followed and that the *Work* is performed in a safe and environmentally sound manner.

- 17.4 If the *Law* requires testing of any part of the *Work*, the *Contractor* shall provide the *Owner* with sufficient advance notice of the arrangements for the test and shall thereafter conduct the test in compliance with *Law*.
- 17.5 The *Contractor* shall provide the *Owner's Representative* with sufficient advance notice of its readiness for any test and the *Owner* shall then promptly witness the test. If the *Owner* fails to witness the test when scheduled, any re-testing required by the *Owner* shall constitute a *Change*.
- 17.6 If any portion of the *Work* is closed or covered by the *Contractor* without the *Owner's* permission and before the *Owner* has been given the opportunity to perform or witness a required test, then, if required by the *Owner*, that portion of the *Work* shall be opened or uncovered for testing and re-closed or recovered, all at the *Contractor's* expense and without increasing the *Contract Time*.
- 17.7 Any *Work* which must be tested shall not be considered ready for inspection by the *Owner* until the *Contractor* has satisfied itself and notified the *Owner's Representative*, that, in the *Contractor's* opinion, that portion of the *Work* can successfully pass the test.
- 17.8 Any inspection, testing or witnessing of any of the *Work* or tests by the *Owner*, or omission or failure on the part of the *Owner* to inspect or test any of the *Work* shall not be construed to be an acceptance of any such *Work*, or as relieving the *Contractor* of its responsibilities pursuant to the *Contract* or the *Law*.
- 17.9 The *Contractor* shall ensure that all tools, equipment, temporary facilities and other items used in accomplishing the *Work*, whether purchased, rented, manufactured or fabricated by, or under the direction of the *Contractor*, or otherwise provided by the *Contractor* or *Subcontractors*, are safe, environmentally sound and maintained in good condition, capable of performing their required functions. In the case of tools, meters and other devices which require calibration, the *Contractor* shall ensure that such calibration is performed on the frequency recommended by the manufacturer and in accordance with normal industry practice.
- 17.10 The *Owner* reserves the right to inspect all tools and equipment brought on to the *Work Site* at any time during the progress of the *Work* upon reasonable notice. The *Owner's Representative* may require the *Contractor* to supply a qualified, independent engineering evaluation or certification that any item in question is suitable for its intended purpose, or to reject any item and require replacement with a proper and suitable item which is satisfactory to the *Owner's Representative* and shall constitute a *Change* with cost to *Owner*. If any tool or item of equipment is determined via independent engineering evaluation or certification to be unsafe, environmentally unsound or incapable of doing the work for which it is intended, then the *Contractor* shall pay for the cost of the independent evaluation or certification and repair or replace it with a safe, environmentally sound and suitable tool or item of equipment at the *Contractor's* expense.

17.11 The *Owner* may, at any time during the progress of the *Work*, conduct additional inspections or tests on any part thereof (in addition to those specified in the *Scope of Work*), to determine whether the *Work* is in accordance with the *Scope of Work*. Such tests shall be at the sole expense of the *Owner* except as otherwise set forth in the *Scope of Work*. If such additional testing causes a delay in the *Scheduled Functional Completion Date*, Contractor shall submit to Owner a *Change Quotation* setting forth the proposed new *Scheduled Functional Completion Date* in accordance with Section 13.7.

17.12 The *Contractor* shall develop and provide to the *Owner*, for the *Owner*'s review and approval, an *Inspection and Test Plan* in time to allow the *Owner* to perform the inspections contemplated by this Article 17 – Inspection and Testing.

#### **ARTICLE 18 - Performance Tests**

18.1 If *Performance Tests* are specified in the *Scope of Work*, this Article shall apply.

18.2 *Performance Tests* may be stipulated in the *Scope of Work* to be performed before, after, or both before and after *Functional Completion* and shall be performed by that party specified in the *Scope of Work*.

18.3 Unless otherwise stipulated in the *Scope of Work*:

- (a) the *Owner* shall provide the necessary labor, materials, electricity, fuel, heat, chemicals, disposal of fluids and materials and water for the *Performance Tests*;
- (b) the *Contractor* shall carry out the *Performance Tests* in accordance with the manuals provided by the *Contractor* under Section 5.4; and
- (c) the *Contractor* shall provide such guidance as specified in the *Scope of Work* during the course of such *Performance Tests*.

18.4 When the *Contractor* considers that the *Work*, or any *System*, will pass the *Performance Tests*, the *Contractor* shall notify the *Owner* that the *Contractor* may perform the *Performance Tests* on, or to, the *Work* or a *System*.

18.5 If the *Work* or a *System*, or part thereof, passes one or more *Performance Tests*, the *Owner* shall promptly give notice acknowledging the success of the same to the *Contractor*. Such acknowledgement shall not be deemed to be an acceptance by Owner of the *Work or System*, or limit or relieve the *Contractor* of its obligation to achieve *Functional Completion* of the entirety of the *Work* in accordance with Article 19, the *Scope of Work* or any other provision of this *Contract*.



- 18.6 If the *Work* or a *System*, or part thereof, fails one or more of the *Performance Tests*, then the *Contractor* shall:
- (a) prepare a report to the *Owner*, for the *Owner*'s approval, proposing the alterations the *Contractor* will make to the *Work* or *System*, or part thereof, to bring the *Work* or *System* to a condition which the *Contractor* considers will pass the *Performance Tests*; provided, however, that the *Owner*'s review and approval of any such proposed alterations shall not limit or relieve the *Contractor* of its obligation to bring the *Work* or *System* to a condition which actually passes the *Performance Test*;
  - (b) redo or repair the *Work* or *System*, or part thereof, and repair any damage to the *Work* or *System* caused by the same in failing to meet the *Performance Test*, to make such *Work* or *System*, or part thereof, ready for a repeat and successful completion of the failed *Performance Tests*.
- 18.7 To the extent the *Work* or a *System*, or part thereof, fails to pass one or more *Performance Tests* solely as a result of actions or omissions by the *Owner*, the *Owner* shall promptly issue a *Change Order* providing a *Change* in the *Contract Time* or the *Compensation*, or both, as the case may be, to the *Contractor* for such *Performance Tests* and the *Contractor* shall proceed with its obligations relating to the *Performance Tests* as set out in the *Scope of Work*.

#### **ARTICLE 19 - Functional Completion**

- 19.1 Intentionally omitted.
- 19.2 The *Contractor* may apply by notice to the *Owner*'s *Representative* for a *Functional Completion Certificate* not earlier than 3 days before the *Work* will, in the *Contractor*'s reasonable opinion, be complete and ready for taking over by the *Owner*. Such notice shall include the *Deficiencies* which are acknowledged by the *Contractor*. In no event shall the *Contractor* make application for a *Functional Completion Certificate* until the *Work* has successfully passed or completed all applicable tests and inspections under the *Inspection and Test Plan* and any applicable *Performance Tests*.
- 19.3 After receipt of the *Contractor*'s application for a *Functional Completion Certificate*, the *Owner*'s *Representative* shall, within 3 days after the receipt of the same:
- (a) reject the application, giving reasons and specifying the work required to be done by the *Contractor*, which reasons shall specify (to the extent known to *Owner*) Category "A" *Deficiencies*, related to the *Work*, and which, if not remedied, will prevent the *Owner* from commissioning or starting-up the *Facilities* and thereafter being able to use the same in the manner contemplated, and the Category "B" *Deficiencies*, related to the *Work*, which will not prevent the *Owner* from commissioning or starting-up the *Facilities*; or
  - (b) issue the *Functional Completion Certificate* to the *Contractor*, stating the date on which the *Work* was completed in accordance with the *Contract*, attaching a list (to the extent known to *Owner*) of Category "B" *Deficiencies*, related to the

*Work*, and which if not remedied will not prevent the *Owner* from commissioning or starting-up the *Facilities*, and the *Contractor* shall cease to be liable for, and shall relinquish care, custody and control of, the *Facilities* from the date of the *Functional Completion Certificate* and responsibility shall pass to the *Owner*.

- 19.4 If the *Owner* reasonably determines that the *Work* does not meet *Functional Completion*, as set out in this Article 19 or the *Scope of Work*, the *Owner* shall provide a notice to the *Contractor* as specified in Section 19.3(a) and the *Owner's Representative* may:
- (a) order further repetition of *Performance Tests* specified to be performed before *Functional Completion* in the *Scope of Work*, or other tests necessary to determine *Functional Completion*; or
  - (b) issue a *Functional Completion Certificate*, in which case, if the *Owner* so requires, the *Compensation* shall then be reduced by such amount as may be agreed by the *Owner* and the *Contractor* (in full satisfaction of such failure only), and the *Contractor* shall then proceed in accordance with the *Contractor's* other obligations under the *Contract*.
- 19.5 If the *Owner's Representative* fails either to issue the *Functional Completion Certificate* or to reject the *Contractor's* properly submitted application within the period of 3 days, the *Functional Completion Certificate* shall be deemed to have been issued on the date specified by the *Contractor* for *Functional Completion* in the notice in accordance with Section 19.2.
- 19.6 Where the *Contractor's* application for a *Functional Completion Certificate* is rejected by the *Owner* in accordance with 19.3(a), the *Contractor* shall not re-apply for a *Functional Completion Certificate* under Section 19.2 until the Category "A" *Deficiencies* are remedied.
- 19.7 The *Owner* shall not use any part of the *Work* unless the *Owner's Representative* has issued a *Functional Completion Certificate* for the *Work*, or a *Functional Completion Certificate* has been deemed to have been issued in accordance with Section 19.5.
- 19.8 If the *Contractor* is prevented from carrying out a *Performance Test* by a cause for which the *Owner* or one or more Other *Contractors* are responsible, the *Contractor* shall notify the *Owner* within 48 hours of such delay and if the *Contractor* is further prevented during the next 48 hours from doing so, the *Owner* shall issue a *Change Order* to compensate the *Contractor* for a change in *Compensation* or *Contract Time*, as may be applicable.
- 19.9 After a *Functional Completion Certificate* is issued, the *Owner* may continue to identify *Deficiencies*. Where *Deficiencies* are identified after issuance of a *Functional Completion Certificate*, the procedure for dealing with and resolving such *Deficiencies* shall be as set forth in Appendix D – Warranty Items Procedure.

## ARTICLE 20 - Final Completion

20.1 It is a condition precedent to the issuance of a *Final Completion Notice* that the *Contractor* satisfy each of the following requirements:

- (a) the *Work* has been fully completed in accordance with the terms and conditions of this *Contract*;
- (b) all Deficiencies with respect to the *Work* have been remedied to meet the requirements of the *Contract*;
- (c) all obligations of the *Contractor* to other parties in relation to the *Work*, for which the *Owner* could in any way be held responsible, have been fully satisfied; and
- (d) the *Contractor* has delivered to the *Owner* the following:
  - (i) a statutory declaration in the form included in Appendix G–Forms and modified as required to include the following:
    - (a) the amount of final sums payable;
    - (b) the date the *Contractor* completed the *Work*, to evidence the expiration of the term for filing liens.
  - (ii) any *As-Built Drawings* and operations manuals for which the *Contractor* is responsible;
  - (iii) assignments of any warranties provided by manufacturers or suppliers of materials;
  - (iv) a Release and Certificate of Final Payment, in the form provided in Appendix G–Forms, releasing all of the *Contractor*'s claims against the *Work* and the *Owner* arising under or by virtue of this *Contract*.
  - (v) A final lien release from the *Contractor* and each *Subcontractor* and material supplier that performed any portion of the *Work* or supplied any *Goods* or *Procured Goods* in connection with the *Work*.
  - (vi) a final certificate of occupancy for the *Project* and the *Project* has passed all other governmental inspections.

20.2 When conditions precedent set out in Section 20.1 have been met by the *Contractor*, the *Owner* shall issue to the *Contractor* a *Final Completion Notice*.

## ARTICLE 21 - Liquidated Damages

21.1 *Liquidated Damages* shall be paid by the *Contractor* to the *Owner* in accordance with Appendix E–Liquidated Damages.

## ARTICLE 22 - Incentive Fee

22.1 The *Incentive Fee* shall be paid to the *Contractor* by the *Owner* in accordance with Appendix F–Incentive Fee.

## ARTICLE 23 - Warranty

- 23.1 If a defect in the *Facilities* is discovered during the *Warranty Period* and if the *Owner* has notified the *Contractor* in writing of such *Deficiency* no later than 30 days after the expiry of the *Warranty Period*, the *Contractor* shall, at its own risk and expense remedy without delay, and in a manner substantially consistent with the original *Work*, cure such defect;
- 23.2 The *Contractor* further warrants any and all corrective actions it performs in respect of defects appearing during the *Warranty Period* for a period of up to the later of (i) the end of the original *Warranty Period*, or (ii) 6 months from completion of the remedial work.
- 23.3 The *Contractor* shall immediately advise the *Owner's Representative* of any defects in workmanship, defects, errors, omissions or mistakes in the *Work* that it discovers or becomes aware of during the *Contract Time* or the *Warranty Period*.
- 23.4 The *Contractor* shall perform its warranty obligations set forth in this Article 23 - Warranty in a manner that keeps disruptions to the *Owner's* continued operations at a minimum.
- 23.5 Neither acceptance of the *Work* by the *Owner*, nor payment for performance of the *Work*, shall relieve the *Contractor* from any responsibility for defects in the *Work*.
- 23.6 The sole remedy for breach of this warranty is the repair or replacement, at the option of *Contractor* of the defective *Work*, including, without limitation, labor to remove and/or reinstall the *Work*.
- 23.7 Goods which have been subjected to abuse or other improper use will not be entitled to the benefits of any warranty by *Contractor*.
- 23.8 EXCEPT AS EXPRESSLY SET FORTH IN THIS CONTRACT (INCLUDING, WITHOUT LIMITATION, CONTRACTOR'S OBLIGATIONS UNDER SECTION 10.1(d)(ii) ABOVE, THERE ARE NO OTHER WARRANTIES, STATUTORY, AT LAW, EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY, AND FITNESS FOR A PARTICULAR PURPOSE, WHICH EXTEND BEYOND THE FACE OF THIS AGREEMENT.

## **ARTICLE 24 - Compliance with Law**

- 24.1 The *Contractor* shall act in accordance with the *Law* and with a view to the timely and cost effective completion of the *Work* in accordance with the *Milestones*.
- 24.2 Where there is a change in the *Law* after the effective date of this *Contract*, the *Contractor* shall be responsible for ensuring that the *Work* complies with the *Law*, but any time or cost associated with such change shall be to the account of the *Owner*. If the *Contractor* considers such change to be a *Change*, the *Contractor* may make a claim for such *Change* under Section 13.7.
- 24.3 The *Contractor* shall comply with and shall ensure that its employees and agents comply with and shall contractually require its *Subcontractors* and their respective employees and agents to comply with all applicable *Law* in connection with the *Work*.
- 24.4 The *Contractor* shall obtain from governmental authorities or other third parties, and pay for, those licenses, permits and approvals required by the *Law* and the *Contract* to perform the *Work*, except those licenses, permits and approvals required with respect to the land-use aspects of the *Work* to be performed on the *Work Site*, and except for any licenses, permits and approvals required by the *Contract* to be obtained by the *Owner* as stipulated in Appendix A – Scope of Work.

## **ARTICLE 25 - Safety and Loss Management**

- 25.1 The *Owner* and the *Contractor* are committed to safety and the application of loss management principles in the conduct of their business. The parties recognize that excellence in safety and loss management can only be achieved through the active participation of everyone, including *Subcontractors* and their respective employees, consultants and agents.
- 25.2 The *Contractor* shall have the highest regard for safety, emergency procedures and loss management at all times during the performance of the *Work*. Accordingly, the *Contractor* shall at all times be responsible for safety and loss management in the performance of the *Work*, including, but not limited to, protecting the employees of the *Owner*, the *Contractor*, *Other Contractors*, *Subcontractors*, visitors to the *Work Site* and the general public from injury or death and protecting the *Work Site*, the *Owner*'s property and the property of third parties from loss or damage. Without limiting the generality of the foregoing, the *Contractor* shall comply with all safety requirements specified in the *Contract*.
- 25.3 The *Contractor* shall comply with the *Safety Plan*.
- 25.4 All employees of the *Contractor* and *Subcontractors* and all *Work Site* visitors must successfully complete any of the *Owner*'s safety orientation courses and other similar courses stipulated in the *Scope of Work* before being allowed access to the *Work Site*, and it shall be the *Contractor*'s responsibility to ensure that they have done so.

25.5 For all *Work* performed on the *Work Site*, the *Contractor* shall have an alcohol and drug policy that is reasonably acceptable to *Owner*.

#### **ARTICLE 26 - Work Area and Clean Up**

26.1 The *Contractor* shall be responsible for keeping all its working and storage areas clean, orderly and secure.

26.2 The *Owner* is not responsible for theft, loss or damage to the *Contractor's* tools, equipment or materials howsoever caused.

26.3 The *Contractor* shall not, and shall ensure that its *Subcontractors* do not, use, transport, or store *Hazardous Material* at the *Work Site* except with the prior approval of the *Owner's Representative*. All *Hazardous Material* used, transported or stored shall be dealt with in accordance with, and the *Contractor* shall comply with, the *Law* and the *Contract*.

26.4 During the performance of the *Work*, the *Contractor* shall comply fully with the *Contract* and the *Owner's* safety and emergency guidelines and publications regarding clean up. The *Contractor* shall clean up, remove and dispose of all surplus materials, containers, trash and debris resulting from the *Work*. Upon completion of the *Work*, or earlier termination of the *Contract*, the *Contractor* shall promptly clean up and remove all equipment, tools and surplus materials from the *Work Site* as reasonably specified by the *Owner* and shall leave the *Work Site* clean and ready for the *Owner's* use and occupancy.

#### **ARTICLE 27 - Title and Responsibility**

27.1 Except for any proprietary processes of the *Contractor* listed in Appendix A - Scope of *Work*, all of the *Work* shall belong to the *Owner*; and accordingly the *Contractor* shall have no proprietary right or interest in the *Work*. The *Contractor* shall not use, copy or disclose any of the *Scope of Work* or the *Work* for any purpose other than performing the *Work*. Subject to the foregoing, the *Contractor* may retain for its own records a copy of the plans and specifications.

27.2 Notwithstanding Section 27.1, where a technology, process or work method belongs to, or is developed by the *Contractor* or *Subcontractor* and is not the result of *Confidential Information* provided by the *Owner*, the proprietary rights to that technology, process or work method shall remain with the *Contractor* or *Subcontractor*. Where proprietary rights remain with a party other than the *Owner*, then the *Owner* and its assignees shall, and are hereby granted, the right and irrevocable license without charge to have, retain and use information in respect thereof, for the purpose of the *Work* and the operation, repair, maintenance, re-building or renovation of the *Work* or any portion thereof.

- 27.3 Notwithstanding Section 27.1, or any other provision of the *Contract*, the *Contractor* shall be responsible for possession of the *Engineering Services* until received by the *Owner*. If the *Engineering Services*, or any part thereof is lost, damaged or destroyed prior to receipt by the *Owner*, then the *Engineering Services*, or portion thereof, as applicable, shall be promptly redone and replaced by the *Contractor*, at its expense, unless the loss, damage, or destruction was caused by the *Owner* or persons for whom in Law it is responsible.
- 27.4 Subject to the *Owner*'s rights under Section 16.5, the *Owner* agrees that it shall not:
- (a) sell to third parties the *Engineering Services*, except as part of the sale of the *Project*;
  - (b) distribute the *Engineering Services*, to third parties except for the purpose of operating, maintaining, repairing or replacing, re-building or renovating the *Owner*'s property encompassing or relating to the *Work*, or, for the purpose of performing other work directly related to the *Work*, or for building other facilities, plants or structures of a similar nature or purpose.
- 27.5 The title to all *Work* completed or in the course of construction at the *Work Site* and all *Goods*, except tools and equipment owned or rented by the *Contractor* or *Subcontractors* and not intended to be incorporated into the *Work*, shall become the property of the *Owner* upon payment by the *Owner* on account thereof.
- 27.6 Notwithstanding the provisions of Section 27.5, until the *Owner* has issued a *Final Completion Notice*, the *Contractor* shall retain all risk (including loss, theft, damage or destruction), but subject to the application of any insurance proceeds maintained by *Owner* or *Contractor* on account of any such risk, with respect to and be responsible for:
- (a) all items supplied by the *Contractor* or its *Subcontractors* which are to be incorporated into the *Work* or used in performance of the *Work*;
  - (b) all items supplied by the *Owner* to the *Contractor* for incorporation into the *Work* or for use in performing the *Work*;
  - (c) all temporary structures or facilities used in the performance of the *Work*; and
  - (d) any *Work* completed or in progress.
- 27.7 No materials, supplies or equipment incorporated into the *Work* shall be subject to any general security agreement, chattel mortgage, financing contract or other agreement by which an interest therein is retained by the seller, or any other party.

#### **ARTICLE 28 - Patents and Licenses**

- 28.1 The *Contractor* shall indemnify and save the *Owner* harmless from all claims costs and demands, including legal fees, arising out of any suits, claims or demands for patent, trademark, copyright or industrial design infringement pertaining to any

equipment, machinery, materials, compositions, processes, methods or designs supplied by the *Contractor*, or its *Subcontractors*, in the performance of the *Work*. The *Contractor* shall pay all royalties and license fees pertaining to any equipment, machinery, materials, compositions, processes, methods or designs supplied by the *Contractor*, or its *Subcontractors*, in the performance of the *Work*.

- 28.2 The *Contractor* shall own all right, title and interest in any Project Intellectual Property (as hereinafter defined) that relates to products or services manufactured or provided by the *Contractor*. The *Contractor* hereby grants to the *Owner* an irrevocable, worldwide, non-exclusive license to use any Project Intellectual Property owned by the *Contractor*, solely for the purpose of the operation and maintenance but not the manufacture of any equipment provided to the *Owner* by the *Contractor* under this Contract. Where software is embedded or accompanies the systems delivered in the *Work*, a non-exclusive license is granted to the *Owner* to govern the access to and use of such software for the limited purpose of operating or using the *Work*. "Project Intellectual Property" shall mean all Intellectual Property, including, without limitation, proprietary technical, engineering, and business information, reports, studies, analysis, models, or other similar data and documents that are developed in the performance of any *Work* under this Contract by *Contractor* or its employees, agents or contractors.
- 28.3 The rights granted to the *Owner* by the *Contractor* under Section 28.2 shall be assignable by the *Owner* to any party to whom the *Owner* may transfer all or part of title to the *Work* or the *Project*.
- 28.4 The *Owner* shall be entitled, at its own expense, to participate in or conduct the defense of any claim with respect to which it is entitled to indemnity under Section 28.1

#### **ARTICLE 29 - Confidential Information and Publicity**

- 29.1 Each party shall keep all *Confidential Information* in confidence and shall not disclose it to others without the prior approval of the other party. The *Contractor* shall not use the *Confidential Information*, except in performance of the *Work*.
- 29.2 Notwithstanding Section 29.1, the *Contractor* may disclose *Confidential Information* to those of its employees, *Subcontractors* and their respective employees to whom disclosure is required in order for the *Contractor* to perform the *Work*, provided the *Contractor* shall ensure that its employees and agents comply with, and shall contractually require its *Subcontractors* and their respective employees and agents to comply with Section 29.1.
- 29.3 The *Contractor* shall not disclose any of the *Scope of Work* or the *Work* to others without the prior approval of the *Owner's Representative*, except as necessary to perform the *Work*.



- 29.4 Notwithstanding Section 29.1 or Section 29.3, *Confidential Information* may be disclosed by a party if that party is required to disclose the *Confidential Information* as a result of an arbitrator appointed under Appendix H - Dispute Resolution Procedure or an order of a court of competent jurisdiction. If disclosure is required by an arbitrator or an order of a court, the disclosing party shall provide the other party with immediate notice of such arbitration or court order and shall only disclose the minimum amount of *Confidential Information* to comply with the arbitration or court order. In addition, notwithstanding anything herein to the contrary, it is acknowledged that *Owner* is a publicly traded company; consequently, *Owner* shall have the absolute and unbridled right to disclose any information regarding the transaction contemplated by this *Contract* required by law to satisfy disclosure and reporting obligations of *Owner* or its affiliates
- 29.5 The *Contractor* shall not use the *Owner*'s name, or the names of any of its affiliates and the registered or unregistered trademarks of the *Owner* or its affiliates in any slogans or otherwise in any advertising or promotional materials or publicity releases, and shall not take, permit to be taken or use any photographs of the *Work Site*, without the prior approval of the *Owner*'s *Representative*.

#### **ARTICLE 30 - Proprietary Information**

- 30.1 Where proprietary rights remain with a party other than the *Owner*, the *Owner* and its assigns, shall have the right, and are hereby granted the right, to have and to retain a copy for their own use, and to use, any *Engineering Services*, *As-Built Drawings* or other information, for the purpose of the *Work* or the operation, repair, maintenance, replacement, re-building or renovations of the *Facilities*.
- 30.2 The *Contractor* shall keep and maintain adequate and current records of all *Proprietary Information*.
- 30.3 *Contractor* shall keep all *Proprietary Information* in confidence, shall not use it, or any part of it except in the performance of the *Work* and shall not disclose it to others, without the *Owner*'s prior consent.

#### **ARTICLE 31 - Force Majeure**

- 31.1 Either the *Owner* or the *Contractor* may claim that an *Event of Force Majeure* has taken place, by giving the other party verbal notice within 48 hours of the *Event of Force Majeure*, and, in addition, written notice, together with a proposed plan of corrective action to resolve or minimize the effect of the *Event of Force Majeure*, within 72 hours of the *Event of Force Majeure*. *Contractor* shall be deemed to have waived any claim for adjustments to the *Contract Time* resulting from an *Event of Force Majeure* if the aforesaid notice is not timely given to *Owner*.
- 31.2 If the *Owner* has given a notice of an *Event of Force Majeure*, or the *Owner* agrees with a notice of an *Event of Force Majeure* issued by the *Contractor* that the *Work* or a portion thereof is affected by an *Event of Force Majeure*, then the *Owner* shall:
- (a) cause the *Contractor* to complete the *Work*, with such time adjustments to the *Contract Time* as permitted under Section 31.4 below; or

(b) suspend the *Work* or any portion thereof in accordance with Article 34 - Suspension; or

(c) terminate the *Contract* or any portion thereof in accordance with Section 35.1 and Section 36.6.

31.3 If the *Owner* acting reasonably and in good faith does not agree that the *Work* or any portion of the *Work* is affected as a result of an *Event of Force Majeure* for which the *Contractor* has given notice under Section 31.1, then the *Contractor* shall complete the *Work* in accordance with the *Execution Plan*

31.4 Notwithstanding anything to the contrary contained herein, no request for an adjustment to the *Contract Time* shall be allowed unless the *Work* is affected as a result of an *Event of Force Majeure* for which the *Contractor* has given notice under Section 31.1 and (a) the delay resulting therefrom increases the overall critical path duration of the schedule in effect at the time of the delay and (b) the *Contractor* has used its best efforts to offset such delay by making appropriate changes to the other parts of the schedule. The *Contractor* shall not be entitled in any circumstances to any adjustments in the *Compensation* or any damages or other compensation whatsoever in the event of any delays in the progress of the *Work* unless such delays were solely caused by *Owner*. Otherwise *Contractor* hereby waives any rights to such adjustments to *Compensation* or damages and agrees that the sole remedy for delay, if appropriate and warranted under the provisions of this *Contract*, shall be an extension of the *Contract Time*.

#### **ARTICLE 32 - Delays**

32.1 Except as provided in Article 33 below, if there is any delay in the progress of the *Work*, or if *Contractor* fails to complete any portion of the *Work* within the time limits set forth in the *Execution Plan* or fails to complete the *Work* by the *Scheduled Functional Completion Date*, then the *Contractor* shall, at no additional cost to the *Owner* and without limiting any other rights or remedies available to *Owner* hereunder, provide a recovery plan and perform whatever acts are required or reasonably requested by the *Owner's Representative* to make up the lost time and to avoid any further delay in the performance of the *Work*, including, without limitation, work overtime, and acquire and use any necessary additional labor and equipment.

#### **ARTICLE 33 - Delays not Caused by the Contractor**

33.1 If the *Contractor* is delayed in the performance of the *Work* solely by an act or omission of the *Owner* or *Other Contractors*, contrary to the provisions of the *Contract*, then the *Contract Time* shall be extended for such reasonable time as may be necessary to allow the *Contractor* to make up the delay and adjustment to *Compensation* shall be made accordingly.

- 33.2 If the *Contractor* is delayed in the performance of the *Work* by an order issued by a court or other public authority having jurisdiction, providing that such order was not issued as the result of an act or fault of the *Contractor* or any person employed or engaged by the *Contractor* directly or indirectly, then the *Contract Time* shall be extended as agreed by the parties or as resolved under Appendix H - Dispute Resolution Procedure.
- 33.3 No claim for delay and no extension of time on account of delay under this Article 33 shall be made by the *Contractor* unless notice of claim with a *Change Quotation* is given to the *Owner* not later than 5 *Work Days* after the commencement of delay, provided however, that in the case of a continuing cause of delay only one notice of claim shall be necessary.

#### **ARTICLE 34 - Suspension**

- 34.1 In addition to any other right that the *Owner* may have under the *Contract* or in *Law*, the *Owner* may, at any time or times, by notice to the *Contractor* specifying the effective date of the suspension, require the *Contractor* to suspend the *Work*, or any portion thereof.
- 34.2 Upon providing notice under Section 34.1, the *Owner* shall arrange to immediately discuss with the *Contractor* the specific requirements of the suspension and whether or not the *Owner* anticipates that demobilization, remobilization or idle equipment or personnel will occur as a result of the suspension.
- 34.3 Upon receiving notice, the *Contractor* shall discontinue the *Suspended Work*, place no further purchase orders or subcontracts with respect to the *Suspended Work*, and promptly make reasonable efforts to obtain suspension terms satisfactory to the *Owner* with respect to all purchase orders, subcontracts, supply contracts and rental agreements related to the *Suspended Work*. The *Contractor* shall continue to perform all other portions of the *Work* which have not been suspended by the *Owner*.
- 34.4 Where requested by the *Owner*, the *Contractor* shall advise the *Owner* of:
- (a) the number of the *Contractor*'s personnel made idle by the suspension;
  - (b) the labor costs resulting from the *Contractor*'s, personnel made idle by the suspension;
  - (c) transportation costs for the *Contractor*'s personnel released during the suspension;
  - (d) the equipment made idle and associated equipment costs resulting from the suspension; and
  - (e) any other costing, labor, material or equipment information relating to the suspension that the *Owner* may require.

- 34.5 The *Owner* may at any time authorize resumption of the *Suspended Work* or any part thereof, by giving the *Contractor* reasonable notice specifying the part of the *Suspended Work* to be resumed and the effective date of such resumption. The *Contractor* shall resume the *Suspended Work* on the date and to the extent reasonably specified in the notice.
- 34.6 The *Contractor* shall use its employees, equipment and materials in such manner, and take such other steps as may be necessary or desirable to minimize the costs associated with the *Suspended Work*. During the period of *Suspended Work*, the *Contractor* shall secure and protect the *Suspended Work* and all materials and equipment to be used or incorporated therein.
- 34.7 In relation to *Suspended Work*, the *Owner* shall reimburse the *Contractor* for those costs, including profit, reasonably incurred by the *Contractor* as a direct result of the suspension of the *Work* in accordance with Appendix B – Compensation.
- 34.8 In the event that the *Owner*, without cause, fails to make payments as described in Appendix B *Compensation*, the *Contractor* will have the option, upon twenty (20) days prior written notice to the *Owner*, to suspend all *Work* until the payments have been brought current.

#### **ARTICLE 35 - Termination for Convenience**

- 35.1 In addition to any other rights that the *Owner* may have under the *Contract* or in *Law*, the *Owner* may, at any time, terminate the *Contract*, the *Work* or any portion thereof by giving notice to the *Contractor* specifying the *Work* or portion thereof to be terminated and the effective date of the termination.
- 35.2 Upon receipt of a notice under Section 35.1, the *Contractor* shall discontinue the *Work* in accordance with the notice, and shall take whatever steps are necessary or desirable to terminate the *Work* in a safe, cost effective and timely manner with due consideration to environmental impacts and the mitigation of costs and damages. The *Contractor* shall continue to perform all other portions of the *Work* not terminated, if any, in accordance with the *Contract*. The *Owner* shall reimburse the *Contractor* for those costs reasonably incurred by the *Contractor* for *Work* properly executed up to the date of termination, actual losses incurred by the *Contractor* as a direct result of the termination of the *Contract*, the *Work*, or any portion thereof, and profit on completed *Work*, but no further damages.

## ARTICLE 36 - Termination for Cause

- 36.1 Without limiting the generality of Section 35.1, the *Owner* may immediately terminate the *Contract* by notice to the *Contractor* in any of the following circumstances:
- (a) if the *Contractor* becomes insolvent or makes a general assignment for the benefit of its creditors, enters into a plan of arrangement for the benefit of its creditors or otherwise acknowledges its insolvency or if a bankruptcy or receiving order is filed or made against the *Contractor*;
  - (b) if an order is made or resolution is passed for the winding up or liquidation of the *Contractor*;
  - (c) if a custodian, receiver, manager or other officer with similar powers is appointed in respect of the *Contractor* or any of the *Contractor*'s property;
  - (d) if the *Contractor* ceases to carry on business in the ordinary course; and
  - (e) if a creditor takes possession of any of the *Contractor*'s property or if a distress, execution or any similar process is levied or enforced against such property and remains unsatisfied by the *Contractor*.
- 36.2 Upon receipt of a notice pursuant to Section 36.1, the *Contractor* shall discontinue the *Work* in accordance with the notice, and shall take such steps as may be necessary or desirable to minimize the costs associated with the termination of the *Work*.
- 36.3 In addition to any rights the *Owner* may have at *Law*, if the *Contractor* is in default in carrying out any of the terms, conditions, covenants or obligations of the *Contract*, or has made a false representation, declaration or warranty, the *Owner* may give the *Contractor* notice of default.
- 36.4 Where the *Owner* gives the *Contractor* a notice of default pursuant to Section 36.3, the *Contractor* shall have fifteen (15) Working Days immediately following receipt of the notice, or such longer time as the *Owner* determines to be reasonable and has specified in the notice of default or has subsequently agreed upon in writing, to remedy such default. If the *Contractor* fails to remedy the default within the aforesaid fifteen (15) Working Days, the *Owner* may terminate the whole or any part of the *Contract*.
- 36.5 In the event the *Contract* or any portion of the *Work* is terminated pursuant to Section 36.1 or Section 36.4:
- (a) the *Contractor* shall discontinue the *Work* in accordance with the notice and shall take such steps as may be necessary or desirable to minimize the costs to the *Owner* associated with the termination of the *Work*;
  - (b) the *Owner* shall have the right to take possession of the *Goods*, materials and plant and shall have the right to use the same to complete the *Work*;

- (c) the *Contractor* shall execute and deliver to the *Owner* all documents required by the *Owner*, and shall take all steps required by the *Owner*, to assign to and fully vest in the *Owner* the rights and benefits of the *Contractor* under existing agreements with the *Contractor's* *Subcontractors*, which are related to the *Work*.
- 36.6 Subject to the terms of Section 42.5 below, damages to the *Owner* for which the *Contractor* shall be liable in the event of a default by *Contractor* shall consist of an amount equal to the amount by which the cost to the *Owner* of achieving *Functional Completion* and final completion within the *Contract Time* (or attempting to achieve *Functional Completion* and final completion within the *Contract Time*), including amounts paid hereunder, exceeds the *Compensation*.
- 36.7 The *Contractor* may immediately terminate the *Contract* by notice to the *Owner* in any of the following circumstances:
- (a) if the *Owner* becomes insolvent or makes a general assignment for the benefit of its creditors, enters into a plan of arrangement for the benefit of its creditors or otherwise acknowledges its insolvency or if a bankruptcy or receiving order is filed or made against the *Owner*;
  - (b) if an order is made or resolution is passed for the winding up or liquidation of the *Owner*;
  - (c) if a custodian, receiver, manager or other officer with similar powers is appointed in respect of the *Owner* or any of the *Owner's* property;
  - (d) if the *Owner* ceases to carry on business in the ordinary course; and
  - (e) if a creditor takes possession of any of the *Owner's* property or if a distress, execution or any similar process is levied or enforced against such property and remains unsatisfied by the *Owner*;
- 36.8 Should the *Owner* be in material default, including delayed payments, of its obligations under this *Contract*, the *Contractor* may provide a written notice to the *Owner* that should the material default not be remedied within fifteen (15) *Work Days* after delivery of such written notice, that the *Contractor* may suspend or terminate the *Contractor's* obligations under the *Contract*.
- 36.9 The rights and remedies provided in this Article 36 - Termination for Cause are in addition to the rights and remedies provided by the Law, or under any other provision of the *Contract*.

## ARTICLE 37 - Taxes

37.1 The *Contractor* shall be responsible for the payment of:

- (a) all taxes imposed by reason of the performance or completion of the *Work* including but not limited to license, permit and registration fees and the *Contractor's* income, profit, franchise, business, and personal property taxes;
- (b) all employment taxes and contributions imposed by the *Law* or required to be paid on behalf of the employees of the *Contractor* or its *Subcontractors*, including but not limited to taxes and contributions for income tax, workers' compensation, unemployment insurance, old age benefits, welfare funds, pensions and annuities and disability insurance;
- (c) all taxes, other than property taxes, on the *Work Site* and arising out of the *Work*, to the date of *Functional Completion*; and
- (d) all customs, sales and excise taxes and duties owing with respect to any labor, machinery, materials and equipment to be supplied by the *Contractor* and used in performance of or incorporated into the *Work*, except for goods and services tax payable by the *Owner* with respect to payments due to the *Contractor*.

37.2 Any increase in taxes and charges described in Section 37.1(a) and Section 37.1(b) shall be the sole responsibility of the *Contractor*. In the event of an increase in taxes or charges described in Section 37.1(c), the *Contractor* shall be entitled to a *Change Order* altering the *Compensation* to account for the difference between the amount of tax that would have been payable by the *Contractor* as of the effective date of this *Contract* and the actual amount of tax that becomes payable as a result of the tax increase.

37.3 The *Contractor* shall indemnify and hold the *Owner* harmless from any liability resulting from the failure of the *Contractor* or its *Subcontractors* to make timely payments of the items referred to in this Section or such similar items for which the *Contractor* is responsible. Any interest, penalties or other liabilities arising from such failure shall be the sole responsibility of and be paid for by the *Contractor*.

## ARTICLE 38 - Intentionally Omitted

- (a)

## ARTICLE 39 - Liens

39.1 The *Contractor* shall at all times reimburse, protect, indemnify and save free and harmless the *Owner*, the *Work Site* and the other lands and property of the *Owner* from and against all liens and claims made or liability incurred by the *Owner* on account of the *Work* performed or materials supplied by employees of the *Contractor* and *Subcontractors* (provided that *Owner* has made all payments to *Contractor* then due and payable in accordance with the terms of *Appendix B*), or on account of an exaggerated lien filed by the *Contractor*, including, without limitation, legal fees. The *Contractor* shall cause any such lien or claim which may be filed or made, to be released and discharged forthwith at the expense of the *Contractor*. If the *Contractor*

fails to release or obtain the release and discharge of any such lien or claim, then the *Owner* may, but shall not be obliged to, discharge, release or otherwise deal with the lien or claim, and the *Contractor* shall pay any and all costs and expenses incurred by the *Owner* in so releasing, discharging or otherwise dealing with the claim or lien, including but not limited to, legal fees on a solicitor-and-own-client (indemnity) basis. Any amounts so paid by the *Owner* may be deducted from any amounts due the *Contractor* whether under the *Contract* or otherwise.

#### **ARTICLE 40 - Survival**

- 40.1 If the *Contract* or any part of the *Work* is terminated pursuant to Article 35 - Termination for Convenience or Article 36 - Termination for Cause, then Article 23 - Warranty shall survive such termination, and the *Warranty Period*, with respect to the *Work* (or portion thereof then completed), shall remain in effect notwithstanding the termination of this *Contract*.
- 40.2 Any terms, covenants, provisions or conditions of the *Contract* which expressly or by their nature survive the termination of the *Contract* shall continue in full force and effect subsequent to and notwithstanding such termination, and shall not be merged with the termination, until such terms, covenants, provisions and conditions are satisfied or by their nature expire.

#### **ARTICLE 41 - Liability and Indemnity for Third Party Claims**

- 41.1 The *Contractor* shall be liable to and shall indemnify, and hold harmless the *Owner*, its officers, directors, employees, consultants and agents for all losses, damages and expenses, including legal fees, which they or any of them may incur as a result of claims, demands, actions or proceedings made or taken against them by persons not party to the *Contract* for:
- (a) any acts or omissions in connection with the performance, purported performance or non-performance of the *Contract* or of the *Work* by the *Contractor* or its *Subcontractors* or their respective employees or agents;
  - (b) any acts or omissions of the *Owner*, *Other Contractors* or their respective employees or agents, or in connection with such acts or omissions, to the extent acting under the direction and control of the *Contractor*, its *Subcontractors* or their respective employees or agents;
  - (c) any liability, claims, damages, costs and expenses arising from the failure of the *Contractor* or its *Subcontractors*, or their respective employees or agents to comply with the *Law*.



- 41.2 The *Contractor* shall, at its sole expense, if requested by the *Owner*, defend those persons entitled to be indemnified pursuant to Section 41.1. The *Owner* shall have the right, if it so elects, to participate in any such defence and the *Contractor* shall have the right to settle said claims without first consulting with the *Owner*.
- 41.3 The *Owner* shall indemnify and hold harmless the *Contractor*, its *Subcontractors*, and their respective officers and directors from and against all claims, demands, losses, damages, expenses, actions and proceedings made or taken by persons not party to the *Contract* and which arise on account of and are attributable to the *Owner's* obligations hereunder.
- 41.4 In the event that the *Owner* accepts the responsibility to indemnify the *Contractor*, its *Subcontractors*, officers and directors pursuant to Section 41.3, then it shall be entitled to retain and instruct counsel to act for and on behalf of those persons and to settle, compromise and pay any claim, demand, action or proceeding without first obtaining prior approval from the party in whose favour the indemnity has been provided. The *Contractor* shall and shall cause any indemnified party to co-operate in all respects in contesting any third party claim for which the *Owner* has accepted responsibility.

#### **ARTICLE 42 - Liability and Indemnity**

- 42.1 The *Contractor* shall be liable to and shall indemnify the *Owner*, its officers, directors, employees, consultants and agents for all losses, damages and expenses on account of:
- (a) all physical damage caused by the *Contractor* or its *Subcontractors* to the *Work*, the *Work Site*, the property of the *Owner* or *Other Contractors* or property under the care, custody or control of the *Owner* or *Other Contractors*; and
  - (b) the cost to repair or make good any and all damage to roads, bridges, railroads, highways, land adjacent to the *Owner's Site*, irrigation canals or facilities, ditches or equipment relating thereto caused by or resulting from the actions howsoever of the *Contractor* or its *Subcontractors*.
- 42.2 *Contractor* shall defend, indemnify and hold *Owner*, its officers, agents and employees harmless from and against any and all liability, loss, expense (including reasonable attorneys' fees) or claims for injury or damages arising out of the performance of this Agreement but only in proportion to and to the extent such liability, loss expense, attorneys' fees, or claims for injury or damages are caused by or result from the negligent or intentional acts or omissions of *Contractor*, *Subcontractors*, and their respective officers, agents or employees.
- 42.3 *Owner* shall defend, indemnify and hold *Contractor*, its officers, agents and employees harmless from and against any and all liability, loss, expense (including reasonable attorneys' fees) or claims for injury or damages arising out of the performance of

this Agreement but only in proportion to and to the extent such liability, loss, expense, attorneys' fees, or claims for injury or damages are caused by or result from the negligent or intentional acts or omissions of *Owner*, *Other Contractors* and their respective officers, agents or employees.

- 42.4 Notwithstanding anything to the contrary contained herein, neither party shall be liable to the other in contract or in tort, directly or under any indemnity, for lost profits or for any indirect, special, or consequential damages, arising out of or related to this Contract.
- 42.5 Notwithstanding any other provision of the *Contract*, each party's total liability to the other for damages hereunder (excluding any damages owed to the other party pursuant to any indemnification obligation hereunder, where such damages relate to claims by third parties against the indemnified party) shall be limited to \$18,403,721.00.
- 42.6 *Contractor* shall release, defend, indemnify and hold harmless *Owner*, its affiliates and its other contractors from and against any and all liability, loss, expense (including reasonable attorneys' fees) or claims for injury or damages arising out of or relating to *Hazardous Material* which escapes or emanates directly from *Contractor's* or any *Subcontractor's* equipment or which is otherwise released as a result of the acts or omissions of *Contractor* or any *Subcontractors* or their respective officers, agents or employees. *Owner* shall release, defend, indemnify and hold harmless *Contractor* from and against any and all liability, loss, expense (including reasonable attorneys' fees) or claims for injury or damages arising out of or relating to *Hazardous Material* which exists on the *Work Site* as of the date of this *Contract*, or which is released as a result of the acts or omissions of *Owner*.
- 42.7 The *Owner* and *Contractor* waive all rights against each other and any of their Subcontractors, sub-subcontractors, agents and employees, each of the other, for damages caused by fire or other causes of loss to the extent covered by property insurance obtained pursuant to Sections 43.1(d) or 44.1(a) or other property insurance applicable to the Work. The policies shall provide such waivers of subrogation by endorsement or otherwise.

#### **ARTICLE 43 - Insurance Provided by Contractor**

- 43.1 The *Contractor* shall, and shall ensure that its *Subcontractors* shall, without limiting any of the obligations or liabilities under the *Contract*, continuously carry during the performance of the *Work* and any time the *Contractor* or its *Subcontractors* are on the *Work Site*, at their own expense and cost, the following insurance coverage with limits where applicable not less than those shown in the respective items as set out below:
- (a) workers' compensation coverage for all employees engaged in the *Work* in accordance with the statutory requirements of The State of Ohio;
  - (b) employer's liability coverage for all employees engaged on the *Work Site* and not covered by workers' compensation, in the amount of \$1,000,000;

- (c) automobile liability insurance covering all licensed motor vehicles owned or leased having a limit of not less than \$1,000,000 inclusive per occurrence for bodily injury, death, and damage to property;
  - (d) property and contractor's equipment insurance covering property, equipment, tools and construction machinery owned, rented or leased by and to be used for the performance of the *Work*, including machinery, equipment, materials and supplies stored outside of the *Work Site* or in transit to the *Work Site* and intended to become a part of the finished *Work*, but excluding all machinery, materials and supplies at the *Work Site*, for the full replacement cost value of such property on an "all risks" basis;
  - (e) commercial general liability insurance policy, including (but not limited to) contractor's liability coverage, contractual liability coverage (including any indemnification obligations of Contractor set forth in this Contract), completed operations coverage, broad form property damage endorsement and contractor's protective liability coverage, to afford protection with respect to personal injury, death or property damage of not less than Two Million Dollars (\$2,000,000.00) per occurrence combined single limit/Three Million Dollars (\$3,000,000.00) general aggregate (but not less than \$3,000,000.00 per location aggregate).
  - (f) umbrella excess liability insurance, on an occurrence basis, that applies in excess of the commercial general liability, automobile liability, aircraft and watercraft liability, professional errors & omissions insurance and employer's liability insurance described above, having limits of not less than (i) \$10,000,000 per occurrence, and (ii) 10,000,000 for the annual aggregate. These limits shall be in addition to and not including those stated for the underlying commercial general liability, automobile liability, aircraft and watercraft liability, professional errors & omissions insurance and employer's liability insurance required herein. Such excess liability policy shall name Owner as additional insured.
- 43.2 Where a claim is paid by the insurer in respect of losses for which coverage is provided under Section 43.1, the *Contractor* shall be responsible for the deductibles relating to insurance proceeds under the insurance required,
- 43.3 The *Contractor* shall, and shall ensure that its *Subcontractors* shall:
- (a) provide the *Owner* with certificates of insurance for the policies described in Section 43.1 within 15 *Work Days* of written notice of award of the *Contract* or prior to the commencement of the *Work*, whichever is earlier, and certificates of insurance evidencing renewal of these policies no fewer than 30 *Work Days* prior to their expiry date where such policies expire prior to *Functional Completion*;

- (b) place all policies with insurers which are licensed to provide insurance in Ohio with an A.M. Best rating no less than A+, and in a form acceptable to the *Owner*;
  - (c) ensure that such policies provide for at least 30 days prior written notice to the *Owner* of cancellation or change that is material to the *Contract*;
  - (d) with the exception of the insurance as required by Section 43.1(c), ensure that all insurance provided by the *Contractor* and its *Subcontractors* pursuant to Section 43.1 is primary and non-contributory with, or in excess of, any other insurance carried by the *Owner*;
  - (e) ensure that the *Owner* is added as an additional insured with respect to the policies of insurance required under Sections 43.1(e) and 43.1(f), as its interests may appear; and
  - (f) require the waiver of subrogation in favor of the *Owner*, its officers, directors, employees, consultants and agents described in Section 42.7 above be included with respect to the insurance coverage required under Section 43.1(d).
- 43.4 If the *Contractor* or its *Subcontractors* fail to furnish the *Owner* with a certificate of insurance for each policy required to be obtained and continually carried, or if after furnishing the certificates of insurance, the policies lapse, are cancelled, or are materially changed, then in every case the *Owner* may, but shall not be obligated to, obtain and maintain such insurance in the name of the *Contractor* or any *Subcontractor*. The cost thereof (including *Subcontractor*'s insurance costs) shall be payable by the *Contractor* to the *Owner* on demand, and the *Owner* may at its election deduct the cost from any monies which are due or may become due to the *Contractor*.
- 43.5 Neither the providing of insurance by the *Contractor* in accordance with the requirements of this Article 43 - Insurance Provided by Contractor, nor the insolvency, bankruptcy, or failure of any insurance company to pay any claim shall be held to relieve the *Contractor* from any other provisions of the *Contract* with respect to liability of the *Contractor*, or otherwise.

**ARTICLE 44 - Insurance Provided by Owner**

- 44.1 The *Owner* shall obtain and, during the progress of the *Work*, maintain in force the policies of insurance described in this Article 44 - Insurance Provided by Owner, with the *Owner* as named insured. The actual policies of insurance may be examined by the *Contractor* upon request to the *Owner*. This insurance applies only to the *Work* performed in connection with the *Contract*:
- (a) Property insurance written on a builder's risk "all-risk" or equivalent policy form in the amount of the *Compensation*, plus value of subsequent *Contract* modifications and cost of materials supplied or installed by others, comprising total value

for the entire *Work* at the site on a replacement cost basis without optional deductibles. Such property insurance shall be maintained, unless otherwise provided in this *Contract* or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until no person or entity other than the *Owner* has an insurable interest in the *Work*.

#### **ARTICLE 45 - Independent Contractor**

- 45.1 For the purposes of the *Contract* and the *Work*, the *Contractor* shall be an independent contractor and not the agent or employee of the *Owner*.
- 45.2 All persons employed or retained by the *Contractor* in connection with the performance of its obligations shall be its employees or those of its *Subcontractors*, as the case may be, and not the employees or agents of the *Owner* in any respect.
- 45.3 The *Contractor* shall indemnify and hold harmless the *Owner*, against all claims, demands, losses, damages, expenses, actions and proceedings whatsoever, including legal fees, which may be incurred by the *Owner* as a result of any determination by any tribunal or court that any personnel provided by the *Contractor* pursuant to the terms of this *Contract* are for any purposes agents or employees of the *Owner*.
- 45.4 The *Contractor* shall have no authority whatsoever to make any statement, representation or commitment of any kind, or to take any action, which may be binding on the *Owner*.

#### **ARTICLE 46 - Conflict of Interest**

- 46.1 The *Contractor* shall exercise reasonable care and diligence to prevent any actions or conditions which could result in a conflict with the *Owner*'s best interests. This obligation shall apply to the activities of the *Contractor* and its *Subcontractors* and their respective employees and agents, in their relations or dealings with the employees of the *Owner* and their families, and other third parties, arising from the *Contract* or the performance of the *Work*. The efforts made by the *Contractor* in this regard shall include, but shall not be limited to, establishing reasonable precautions to prevent *Subcontractors* and their respective employees from offering, or providing entertainment, gifts, loans, payments or other considerations to the *Owner*'s employees, consultants and agents or their family members. *Owner* shall establish reasonable precautions to prevent its employees from offering, or providing entertainment, gifts, loans, payments or other considerations to the *Contractor* or any *Subcontractor* or their respective employees, consultants and agents or their family members.

#### **ARTICLE 47 - Audit Access**

- 47.1 The *Contractor* shall preserve the *Records* in good order during the *Contract Time* and for a period of three (3) years thereafter.

- 47.2 The *Contractor* shall permit authorized representatives of the *Owner* to review the *Records* at all reasonable times during the *Contract Time*, and for a period of two years thereafter for the purposes of:
- (a) determining the *Contractor's* compliance with all of the terms of the *Contract*, including, but not limited to:
    - (i) Article 13 - Changes and Article 32 - Delays; and
    - (ii) the *Law*; and
  - (b) verifying of all *Work* performed and all reimbursable costs and other charges payable under the *Contract*.
- 47.3 Where the *Compensation* is not on a cost reimbursable basis, the *Contractor* may black out any information in the *Records* relating to price before access is given to the *Owner*.

**ARTICLE 48 - Representatives and Notices**

- 48.1 The *Owner's Representative* is Fred Sansom. The *Owner's Representative* has the authority to bind the *Owner* on all matters relating to the *Work* and the *Contract*, and all communications to or with the *Owner's Representative* shall be deemed to be communications to or with the *Owner*.
- 48.2 *Contractor's Representative* is Jeff Syed. The *Contractor* shall not change the *Contractor's Representative*, except with the prior approval of the *Owner*. The *Contractor's Representative* has the authority to bind the *Contractor* on all matters relating to the *Work* and the *Contract*, and all communications to or with *Contractor's Representative* shall be deemed to be communications to or with the *Contractor*.
- 48.3 Unless otherwise specifically indicated in the *Contract*, all notices, approvals, consents, authorizations and other communications required or permitted pursuant to the *Contract*, shall be in writing and shall be communicated to the *Contractor's Representative* or the *Owner's Representative*, as the case may be, and shall be delivered by personal delivery, overnight courier or facsimile to the parties at the addresses and facsimile numbers shown below:
- (a) *Contractor*:
    - Address: 200 East Randolph Drive  
Chicago, IL 60601
    - Attention:
    - Fax: 312-861-6335

(b) *Owner:*

Address: 3431 Yankee Road  
Middletown, OH 45044

Attention: Fred Sansom  
Fax:

*With a copy to:*

Address: One Quaker Park  
901 Hector Street  
Conshohocken, PA 19428

Attention: Robert Traub, Esq.  
Fax: 610-832-4494

48.4 Either party may change its contact information for the purposes of Section 48.3 by providing the other party with 10 days notice of such a change.

48.5 Invoices and all supporting documentation shall be mailed or delivered to the address shown below:

Address: 3431 Yankee Road  
Middletown, OH 45044

Attention: Fred Sansom  
Fax:

48.6 E-mail may be used for communication between the parties, but e-mail shall not be used for the communication of a notice which is prescribed by the *Contract*.

#### **ARTICLE 49 - General**

49.1 No failure or delay on the part of either party in exercising any right, power or privilege hereunder shall operate as a waiver thereof.

49.2 No waiver of any right, power or privilege by a party shall limit or affect that party's rights with respect to any breach of the *Contract* by the other party.

49.3 Each of the parties hereto shall execute such further documents and give such further assurances as are required to give effect to the *Contract*.

49.4 If a court of competent jurisdiction determines that any provision of this *Contract* is invalid or unenforceable, such determination shall not affect the validity or enforceability of the remaining provisions of the *Contract*.

- 49.5 All of the covenants and agreements herein contained on the part of either party shall apply and enure to the benefit of and be binding upon their respective legal representatives, successors and assigns.
- 49.6 Each of the parties hereby represents and warrants that it has the power and authority to enter into the *Contract* and to perform all of its obligations hereunder.
- 49.7 The *Contract* constitutes the entire agreement between the parties with respect to the *Work* and supersedes and replaces all previous communications, representations and agreements, either written or verbal.
- 49.8 This *Contract* shall be governed by and construed in accordance with the laws of the State of Ohio.
- 49.9 The execution of this *Contract* may be effected by facsimile or other electronically transmitted signatures (such as by electronic scanning and e-mail), all of which shall be treated as originals; provided, however, that the party receiving a document with an electronic signature may, by notice to the other, require the prompt delivery of an original signature to evidence and confirm the delivery of the electronic signature. This *Contract* may be executed in as many counterparts as may be required. It shall not be necessary that the signature on behalf of both parties hereto appear on each counterpart hereof. All counterparts hereof shall collectively constitute a single agreement.

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49.10 This *Contract* shall be executed by the parties, or their representatives, in person with original signatures, but may be executed in counterpart. Subsequent documents may be executed by the parties, or their representatives, and such execution may be by way of facsimile or electronic transfer.

TO EVIDENCE THEIR AGREEMENT, the parties have executed and delivered this *Contract*, by their duly authorized officers, as of the effective date indicated on the first page.

*Owner:* **QUAKER CHEMICAL CORPORATION**

*By:* /s/ Michael F. Barry  
Name: Michael F. Barry

[apply corporate seal]

*Contractor:* **FMC TECHNOLOGIES, INC.**

*By:* /s/ Edward Barth  
Name: Edward Barth

[apply corporate seal]

EPC Contract  
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**Appendix A — Scope of Work**

**FMC Scope of Work for the  
Middletown Plant Expansion  
Turnkey Project  
May, 2008**

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# 1 Contractor (FMC) Scope of Supply and Services

## 1.1 Process Equipment

### 1.1.1 Blenders and Reactors

- Supply and install four 6,000-gallon automated blender systems, including:
  - 6000 gallon, 304 SS, cone bottom, baffled, internal polish finish, two section half-pipe jacket (150 psig rated), insulated, atm. tank.
  - Agitator with VFD
  - Weigh cells (three cells)
  - Steam and cooling tower water piped to jacket
  - Blackmer (or equivalent) product/recirculation pump with VFD
  - SS Product bag-style filter
  - SS product recirculation line and “pigged” transfer line to storage and truck loading
  - Instruments, gauges and controls
  - 5’ x 5’ pallet scale for weighing raw materials into blender, installed flush to floor level.
  - Sodium Nitrite Screw Conveyor for unloading supersacks into BBV-01–water based blender
- Supply and install one 4,500-gallon automated blender system, including:
  - 4500 gallon, 304 SS, cone bottom, baffled, internal polish finish, two section half-pipe jacket (150 psig rated), insulated, atm. tank.
  - Agitator with VFD
  - Weigh cells (three cells)
  - Steam and cooling tower water piped to jacket
  - Blackmer (or equivalent) product/recirculation pump with VFD
  - SS Product bag-style filter
  - SS product recirculation line and “pigged” transfer line to storage and truck loading
  - Instruments, gauges and controls
  - 5’ x 5’ pallet scale for weighing raw materials into blender, installed flush to floor level.
- Supply and install one 1,100-gallon manual blender system, including:
  - 1,100 gallon, 304 SS, cone bottom, baffled, internal polish finish, two section half-pipe jacket (150 psig rated), insulated, atm. tank.
  - Agitator with VFD
  - Weigh cells
  - Steam and cooling tower water piped to jacket, automated heating and cooling
  - Blackmer (or equivalent) product/recirculation pump with VFD
  - SS Product bag-style filter
  - SS product recirculation line and line to scale for local packaging
  - Instruments, gauges and controls
  - 5’ x 5’ pallet scale for weighing raw materials into blender, installed flush to floor level.
- Supply and install one 350-gallon manual blender system, including:
  - 350 gallon, 304 SS, cone bottom, baffled, internal polish finish, two section half-pipe jacket (150 psig rated), insulated, atm. Tank.

- Agitator with VFD
- Weigh cell
- Steam and cooling tower water piped to jacket, automated heating and cooling
- Blackmer (or equivalent) product/recirculation pump with VFD
- Product bag-style filter
- SS product recirculation line and line to scale for local packaging
- Instruments, gauges and controls
- Pallet scale for weighing raw materials into blender, installed flush to floor.
- Supply and install two 7,500-gallon automated Reactor systems, including:
  - 7500 gallon, 304 SS, dish bottom, baffled, internal polish finish, three section half-pipe jacket (100 psig @ 550 F rated), insulated, 70 psig/FV rated tank.
  - Agitator with VFD
  - 3' diameter packed 304 SS fractionation column with structured packing
  - Nash Liquid Ring Vacuum pump (or equivalent) with oil seal with capacity to achieve 26 in HG. Absolute on reactor system.
  - Vapor condenser - SS
  - Condensate receiver and pump - SS
  - Weigh cells (three cells)
  - SS inlet manifold with connections for bulk raw materials
  - Line for unloading from tank trucks direct to reactors
  - Hot Oil piped to jacket
  - Oil cooler using cooling tower water - CS
  - Product/recirculation pump - SS
  - Product cooler using cooling tower water - SS
  - SS Product bag-style filter
  - SS product recirculation line and "pigged" transfer line to Finishing tank, packaging, bulk storage and truck loading
  - Instruments, gauges and controls
  - 5' x 5' pallet scale for weighing raw materials into blender installed flush with floor level.
  - Mechanism for opening and closing manway lid
- Supply and install one 9,000-gallon automated blender system, including:
  - 9000 gallon, 304 SS, cone bottom, baffled, internal polish finish, two section half-pipe jacket (150 psig rated), insulated, atm. tank.
  - Agitator with VFD
  - Weigh cells (three cells)
  - SS inlet manifold with connections for bulk raw
  - Steam piped to jacket
  - Product/recirculation pump-SS
  - Product cooler piped with cooling tower water-SS
  - Pressure Leaf Filter-SS
  - Pre-coat tank-SS
  - SS product recirculation line and "pigged" transfer line to packaging, storage and truck loading
  - Instruments, gauges and controls

- 5' x 5' pallet scale for weighing raw materials into blender, installed flush to floor level.

### 1.1.2 Filling Equipment

- One 50 drum per hour drum filling line for reactors and finishing tank, with manual roller
- The drum filler has one pallet of in feed conveyor and one pallet of outflow conveyor. Both are manual. Filler will handle four drums on a pallet or an IBC.

### 1.1.3 Storage Tanks

- Rework existing bulk storage tanks:
  - Install 6 pumps
  - Run existing tank level signals to new control system.
  - Tank 35 — new welded carbon steel floor. It is assumed that the sidewalls are in good condition. Repair or reinforcement of the sidewalls, if necessary, is not included in this scope.
  - Add level transmitters to thirteen of the existing storage tanks
  - All existing storage tanks with heating coils need new temperature transmitters
  - Run lines from tank to hose board inside building
  - Add heating coils, steam & condensate pipe, insulation (of pipe and tanks) and controls to 8 tanks- 7 new, 1 replacement (Tank #24)
  - Add temperature element to 7 existing tanks that get new heating coils
  - Cleaning and associated logistics (including waste disposal) of the 8 existing tanks is not included in this scope
  - Two grease tanks (OS-2 and OS-8) get side agitators and bag filters for truck unloading
  - Each line from a bulk tank to the production area (hose board) will have an automatic valve and a dry break disconnect.
- Purchase and install 9 new storage tanks (UL-142 construction)
  - Existing tank farm berm will be extended to contain the additional
  - Tanks foundations (concrete pads), catwalk and ladders will be provided. Fall protection is not included.
  - Pumps
  - Controls
  - Piping
  - Steam coils, heating controls, steam and condensate piping.
  - Insulation of piping and tanks
  - Two of these tanks will be installed in new process and storage building. These tanks will also have containment, catwalk and access ladders.

### 1.1.4 Plant Control System

- Plant control system to operate the plant in a safe and efficient manner including:
  - Hardware and software needed to automate the following processes as indicated in P&IDs
  - Truck loading/unloading
  - Tank level monitoring
  - Blender loading, sequencing, recirculation, heating, cooling, unloading
  - Reactor loading, sequencing, heating, cooling, vacuum, unloading
  - Finishing tank loading, sequencing, filtering, heating, cooling, unloading
  - Drum/bin filling for reactor area only

- Transfer line pigging
- Caustic process operation
- Utilities operation and monitoring
- Report generation of batch history, tank inventories, alarms, etc.
- Software safety interlocks
- 3 Remote HMI's – 2 in new building, 1 in truck unloading
- Training of two Owner personnel to maintain hardware and modify programming.
- Participate in safety review of software when complete.

## 1.2 Building

### 1.2.1 New Blend and Storage Building

- Provide and construct a 12,000 sq ft Butler style building and foundation
  - Roof will be 40 feet over blenders and reactors
  - Building will be built at same floor elevation as existing building
  - One manual overhead door at west end of building with ramp to grade for forklift egress from new building. Make provisions for owner-installed 40' x 40' concrete pad with containment curb to west of building.
  - Mezzanine will be designed for to handle 42"x42" pallets weighing 2,200 lbs at each vessel
  - The mezzanine will be 15ft above grade (I thought this was no 16'??)
  - The mezzanine will have checker plate construction with non-slip coating
  - Fork truck safety gates for loading materials to balcony
  - Three docks (with dock levelers, and seals) relocated from the existing loading area. The old location for the dock levelers will be filled in level with existing floor.
  - Roof and/or walls to have sky-light panels
  - Steam heated drum ovens to maintain 32 drums (2 x 16 arrangement) on skids at 160 F.
  - Building structures designed in accordance with ASCE-7 guidelines, specifically addressing local factors for occupancy, weather, and terrain.
  - Building wall construction utilizes noncombustible materials.
  - Two stairway for access to balcony.
  - New building will be designed to be kept at 65 F in winter
  - The link between the old and new building will be enclosed to keep the weather out with a fire door at one end
  - New dock locks will need to be purchased when docks are moved to west end of new building.

## 1.3 Utilities

### 1.3.1 Cooling Tower

- Supply and Install a Cooling Tower (pad mounted) outside the production building.
  - Evapco USS-112-312 1200 USGPM from 95F to 85F WBT, or equivalent
  - Sump
  - Dual pumps
  - Flow meter
  - Cooling tower should have two fans and two pumps

### 1.3.2 Scrubber

- Supply and Install a Scrubber:
  - Ceilcote EVS-16 venturi scrubber, or equivalent
  - The scrubber equipment includes: scrubber, pump, piping, duct, stack, controls, panel, feed system, sump heater, and skid.
  - Supply and install 16" diameter, spiral wound stainless steel duct (or equivalent) from scrubber to process area. Duct upstream of reactors (i.e. will not be exposed to reactors) can be made of FRP of an appropriate resin, instead of stainless steel.
  - Supply and install branches from 16" scrubber header to process tanks (blenders and reactors).
  - Supply pad with containment walls on north side of production building for scrubber system
  - Pipe up water supply, power, signal wires (scrubber to main plant process control system) and blow down line to waste water tank.
  - Extend the scrubber header to the drum filling line and all drum unloading scales. Header to be 6-inch frp with 3" drops
  - Scrubber line needs to be run to two storage tanks located inside building.

### 1.3.3 Steam Boiler

- Steam Boiler:
  - Upgrade burners on existing boilers from 100 HP to 200 HP, to meet steam demands of plant.
  - Determine if a new gas line is required from main to supply new boilers and hot oil equipment.
  - Provide collection and return of all steam condensate from steam consuming equipment in plant.
  - Steam boiler capacity expansion includes any needed ancillary equipment that also needs additional capacity
  - A new gas line is included in the scope of work
  - New burners should give better efficiency than old burners (as much as 12%)

### 1.3.4 Hot Oil Heater

- Provide two (2) gas-fired hot oil heaters (GTS DH-V-13/40, 4.0 MM BTU/hr. or equivalent)
- Install heaters on pad outside production building with containment to hold all of hot oil liquid.
- Provide all connections to gas supply, and process connections
- Install controls and run signals to main plant process control system.
- Supply initial fill of Therminol heat transfer fluid.
- New oil heaters must comply with GE GAP guidelines

### 1.3.5 Air Compressor

- Air Compressor:
  - Expand air compressor & air dryer capacity, one new 1,000 cfm air compressor with one receiver and one regenerative dryer sized for the application



- Air compressor/dryer system will not exceed 80 db noise limits outside compressor shed.
- Dryer will provide -40 F dew point air with system operating at full air flow,
- One compressor shed

### **1.3.6 Soft Water**

- Soft Water:
  - Install new softwater system including surge tank and pump to supply boilers and blenders
  - Soft water system will have a 1,500 gallon surge tank and 100 gpm pump to feed boiler and blenders. Automated level and pump controls will be provided.
  - CONTRACTOR will provide a 1,500 gallon city water surge tank and 100 gpm pump as well for feeding blenders. Automated level and pump controls will be provided.

### **1.3.7 Electrical Supply**

- Electrical supply:
  - Expand electrical supply to include a new 1600 amp, 480/277 volt service.
  - Electric utility will provide main transformer. CONTRACTOR will provide main transformer pad, and wiring from pole to transformer.
  - Provide all needed motor controls, fuses, breakers, local disconnects, etc. as needed and as required by code
  - Wiring will be run in cable tray and/or conduit
  - All electrical design work will comply with NFPA 70E arc flash requirements.

### **1.3.8 Plant Lighting**

- Plant Lighting:
  - Relocate existing and provide pole mounted lighting to properly light all outdoor areas of facility for night operations
  - Provide normal area lighting in new blending and storage building
  - Modify existing lighting, if required, in areas modified in project (tank farm, truck loadout, rail loadout, existing production warehouse area) to maintain good work environment.
  - Provide emergency lighting and emergency exit lights in blending and storage building to meet code and allow for safe exit during power outage.

## 1.4 Miscellaneous

### 1.4.1 Miscellaneous

- Participate in safety review of plant/process design and also of plant during commissioning
- Provide hard copy and electronic versions of final as-built drawings after project completion
- Provide equipment files after job completion
- Apply for (or assist Owner in applying for) all required permits and comply with all regulations related to:
  - Environmental permit to install (Owner will apply for this)
  - Building permits
  - Ohio fire code (Owner will apply for storage tank licenses as needed)
  - BOCA
  - GE GAP building guidelines
  - Middletown building codes
  - State of Ohio building codes
- CONTRACTOR will commission and start up all equipment, with the assistance of Owner personnel.
- Provide training to Owner personnel for control system and maintenance of new instrumentation and equipment
- Parking lot:
  - Expand asphalt parking lot by 25 spaces as per drawing,
  - Add new truck/car exit from south side of plant property
  - Add two lighting poles for this area
- Add 5 Hot Water stations in new production area
- Security gate and fencing:
  - Install manual operated security gates at plant entrance and exit
  - Repair/replace any fencing disturbed by construction process.
- Plant road:
  - Road will be gravel
  - Road around plant will be moved as needed for new building and graded to retain swale along fence line
- Demo old equipment once new plant operational and all production has been moved out of old blenders
  - Demo and remove old plant piping
  - Demo and remove old blenders
  - Demo and remove old storage racks

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- Demo and repair old production area floor
  - Note: caustic production process remains as is.
  - Labels and painting
    - Paint all appropriate exposed metal for new installaion
  - Safety Showers / Eye washes
    - Install as per OSHA regulations (approx every 75' in production, warehouse, tankfarm and truckloading). Freeze protection is included
  - Relocate Truck Scale:
    - Remove truck scale from truck loading area, repair pad to make smooth.
    - Install truck scale & controls in pit (install flush to ground) between office building and parking lot
    - Install remote controls/readout of scale in shipping office, camera not included
    - Underground cabling for relocated truck weigh scale shall be in PVC pipe
    - Have scale recalibrated once it is relocated.
  - Truck loading/unloading platform:
    - CONTRACTOR will remove existing tank truck access platform and provide an adequate (meets OSHA weight limits) trolley rail over the four truck loading/unloading locations to facilitate owner-provided fall protection.
  - Telephone/Computer:
    - Install all cabling as required for plant control system
  - Provide and install all instrumentation, valves and gauging as indicated in P&IDs and required for operation of CONTRACTOR supplied equipment
  - Plant control system:
    - Provide appropriate training of two Owner personnel to maintain hardware and modify programming.
  - CONTRACTOR will provide storm water retention swales and trenches as necessary for complying with Middletown, OH permit requirement

## 1.5 Clarifications

### 1.5.1 Clarifications on Contractor Scope

1. Offer does not include fire protection for new blend and storage building
2. Offer does not include insulation and heat tracing for piggable piping except for all launching and receiving stations.
3. Valves and instruments on existing tanks will be reused as is.
4. Existing valves, traps and strainers on the steam and condensate branches to existing coils will remain as is. Mains are understood to be reused as is. CONTRACTOR will install branches to 7 existing tanks.
5. The floor in one tank will be replaced; any repairs to sidewalls would be done at an additional cost.
6. The reactor system design, steam requirements, and hot oil requirements have been specified by the OWNER.

### Civil

- a) Following assumptions relating to civil work at plant site were made:
  - Soil at the site is free of any Toxic Contamination and/or any other environmentally unsafe chemical substances, and any under ground obstacles that may interfere with excavation of the site. CONTRACTOR price does not include any costs associated with special handling and disposal of such unsafe soils.
  - No Seismic Zone requirements or provisions are included in the CONTRACTOR price.
  - Since the upgrading work will be constructed within the existing plant facility, no allowance is included for site survey and coordinates verification. CONTRACTOR assumes this data is available at the plant.
- b) The Geotechnical Study performed by H.C. Nutting Co. in August 2006, was used to prepare the quote for the civil work.
- c) Owner shall, at its own expense, apply for and obtain any required environmental permits from the proper authorities. CONTRACTOR role shall be limited to assisting owner in assembling technical information on an as needed basis for obtaining permits.
- d) Owner is responsible for any underground obstructions not on the drawings provided to CONTRACTOR

### Miscellaneous

- e) Owner will pay for power used during the total construction period. The contractor will pay any costs associated with wiring, transformer, disconnects, etc. to provide such power.

- f) The tie-in to existing facilities and demolition and/or reconstruction of existing system will cause operation interruptions. The CONTRACTOR price does not include any temporary facilities required to avoid operation interruptions. It is assumed that the production activities will be planned and scheduled to make existing system available for modification/upgrade/tie-ins etc. based on a tie in schedule from the on-site Construction Manager. Any changes to the provided schedule must be made no less than two working days prior to the tie in activities.
- g) All raw materials required to commission and test the blending system shall be provided by Owner at no charge to CONTRACTOR.
- h) References to "CONTRACTOR" throughout this document shall mean CONTRACTOR or its authorized subcontractors unless specifically stated otherwise.
- i) Paint and other Material at the existing site that is to be dismantled, removed and/or handled by CONTRACTOR and its subcontractor will be free of asbestos.
- j) All tanks are UL rated.

## 2 Owner (Quaker) Scope of Supply and Services

- Railcar spill containment:
- Labels and painting
  - Apply appropriate resilient labeling to all piping, controls and equipment.
  - Install appropriate plant direction signs, including truck entrance,/exit, visitor, employee, etc.
  - Paint yellow strips around safety equipment
  - Paint yellow row strips in all warehouse areas to direct pallet storage.
- Fire Extinguishers:
  - Hang fire extinguishers as required to meet regulations
- Railcar Loading Fall Protection:
  - Install fall protection over rail car unloading area.
- Telephone/Computer:
  - Install main runs of telephone and computer cabling from existing hub to new offices, rooms.
  - Owner will be responsible for final terminations for phone and cable NOT associated with plant control system.
- Participate in safety review of plant during commissioning
- Provide resources to commission all equipment and assist in start up of the facility
- Environmental permit to install
- Clean storage tanks and process equipment as required for construction activities.

- Related to the 12,000 sq ft Butler style building and foundation, If the owner desires it, owner will provide.:
  - Lunchroom/training room with HVAC, area to be separated by curtain, tables, free standing chairs, cabinets, power, lighting, exterior windows, phone, sink, computer driven projector in ceiling, screen, white boards, etc.
  - Control room with adequate utilities for main process control system, HVAC, CCTV security and gate controls, work stations, windows to plant production area
  - Laboratory with adequate utilities for sinks, wet testing, 2 work stations, HVAC, one walled off office, sample retain area, laboratory vent hoods, cabinets and work benches for chemical processing
  - Locker rooms. Women's for 20 people, Men's for 70 people. HVAC, Lockers, showers, benches, sinks, toilets, mirrors, etc.
  - Maintenance area with adequate utilities storage shelves and work benches as normally used in a maintenance area.
  - Owner will provide office furniture, including desks, chairs, file cabinets, partitions. Contractor to supply all else.
- Fire Sprinklers:
  - Install fire water system in new building and modify protection in old building as required for occupancy permit.
  - Install second fire water main and tie into existing to create fire "loop" per drawings if additional capacity is needed.
  - Move/install fire hydrants per drawings
  - Provide normal alarms and controls as required by code and consistent with existing.

### **3 Owner's Specified Materials and Subcontractors**

The size and quantity for the following equipment have been specified by the Owner:

#### **3.1 Process Equipment**

##### **3.1.1 Blenders and Reactors**

- Four 6,000-gallon automated blender systems
- One 4,500-gallon automated blender system,
- One 1,100-gallon manual blender system,
- One 350-gallon manual blender system,
- Two 7,500-gallon automated Reactor systems,
- One 9,000-gallon automated blender system.

##### **3.1.2 Filling Equipment**

- One 50 drum per hour drum/IBC filling line for reactors and finishing tank, with manual roller conveyors.

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### **3.1.3 Storage Tanks**

- Rework existing bulk storage tanks
- 9 new storage tanks (UL-142 construction)

## **3.2 Building**

### **3.2.1 New Blend and Storage Building**

- 12,000 sq ft Butler style building

## **3.3 Utilities**

### **3.3.1 Cooling Tower**

- delete this. FMC sized cooling tower.

### **3.3.2 Scrubber**

- A Scrubber - Ceilcote EVS-16 venturi scrubber, or equivalent

### **3.3.3 Steam Boiler**

- Steam Boiler - Upgrade burners on existing boilers from 100 HP to 200 HP, to meet steam demands of plant.

### **3.3.4 Hot Oil Heater**

- Two (2) gas-fired hot oil heaters (GTS DH-V-13/40, 4.0 MM BTU/hr. or equivalent)

### **3.3.5 Air Compressor**

- remove this. FMC sized the air compressor.

### **3.3.6 Soft Water**

- A 8,000 gal per hour new softwater system including surge tank and pump



## **4 Execution Plan**

CONTRACTOR proposes to execute the design and engineering, procurement, construction, commissioning, startup, and training of the Middletown Plant Expansion Project on a Turnkey basis as described below:

CONTRACTOR shall perform Process and Detail Engineering, and Procurement. CONTRACTOR shall supply all process equipment and material listed in Section 2 of this scope of work. This process & detailed design work and procurement activities can be commenced immediately upon receiving OWNER authorization.

CONTRACTOR shall modify the existing facility piping, electrical tie-ins, equipment setup, erection, installation, and other site activities associated with this expansion.

### **4.1 Execution Plan For Engineering and Procurement Work**

CONTRACTOR proposes to execute this phase of the Project using an experienced project task force. An organization chart for the proposed task force is attached at the end of this section. The task force will be working under the supervision of CONTRACTOR's project manager to execute the following project tasks:

#### **4.1.1 Engineering Services**

The Process Design task will be performed at CONTRACTOR's home office in Chicago utilizing highly experienced engineers, designers, and specialists. The Detailed Engineering will be performed by the project team under the supervision of CONTRACTOR. The responsibility of these groups shall be to develop the following items:

- perform all process design calculations and equipment selection and sizing
- prepare all process design drawing, operating manuals, and plant control philosophy
- prepare all instrument and equipment specifications
- prepare all construction drawings and specifications, and installation details
- Prepare all construction & installation package, issue package for bids and review bid prices.
- Prepare all instrument and/or equipment purchase requisitions
- Review all vendor drawings and data

#### **4.1.2 Procurement Services**

Procurement of process equipment will be performed using experienced CONTRACTOR home office staff in Chicago. CONTRACTOR utilizes the services of several freight forwarding organizations, which will be responsible for packaging and shipping of all equipment to the jobsite. The procurement activities for this project shall be performed under the direction of CONTRACTOR's Procurement Director and the Project Manager. The responsibilities of this procurement group include(s):

- Prepare quotation and bid documents and review with owner.
- Solicit suppliers' quotations
- Prepare purchase requisitions and review with owner.
- Perform expediting, inspection, freight forwarding and receiving of equipment at the site
- Receive, organize and coordinate distribution of all vendor data and drawing submittals
- Solicit subcontractor installation quotations

#### **4.1.2.1 Procurement Plan**

The Procurement Plan establishes critical items and purchasing procedures. It utilizes engineering input from equipment and control lists and integrated project schedules to define the equipment and material-purchasing schedule.

Major milestone activities included in CONTRACTOR's Procurement Plan are:

- Supplier's list is prepared for equipment and materials. This list is prepared early in the project as part of the planning cycle. It utilizes area resource and surveys of supplier capabilities.
- RFQ's (Request for Quotations) will be prepared by Engineering and Procurement Team (if required) and issued by the Purchasing Group. They will be date-controlled in conjunction with the project schedule.
- Quotation summaries will be technically reviewed by Engineering, commercially reviewed by Purchasing, and joint approvals are required prior to executing the purchase.

#### **4.1.2.2 Expediting**

The Procurement Plan identifies critical equipment needing special expediting and tracking. Expediting begins with contacting the vendor to confirm that he has entered the CONTRACTOR order into the vendor's manufacturing/supply program. Expediting continues with the checking of status of vendor engineering, procurement, manufacturing and shipping. CONTRACTOR expedites the review and return of reviewed vendor drawings and data. Comments from vendor data reviews will be transmitted to the vendor by e-mail and/or via courier. Expediting continues until equipment has been received on site.

Equipment deliveries will generally not be contingent on drawing reviews so the vendor may order critical raw materials as soon as he receives CONTRACTOR's purchase order.

Expediting of spare parts parallels the expediting of the equipment for which the parts are ordered. Major problems, which cannot be effectively resolved via fax or telephone, may require visit(s) to the vendor's shop. CONTRACTOR can send copies of all Expediting Reports and shop visits to OWNER.

#### **4.1.2.3 Inspection Prior to Shipment**

OWNER may wish to inspect equipment supplied by CONTRACTOR. Inspection schedule will be published by CONTRACTOR. OWNER must notify CONTRACTOR two weeks in advance regarding time, date and names of OWNER personnel who would like to witness the shop inspection. OWNER will pay the cost of trips made by OWNER personnel.

CONTRACTOR will develop with OWNER a mutually agreed upon inspection procedure for CONTRACTOR's scope of supply. This procedure will establish what equipment OWNER would like to inspect, tentative inspection milestones and reporting methods.

CONTRACTOR will submit to OWNER copies of all Inspection Reports within 10 days after receiving the manufacturer's final report.

#### **4.1.2.4 Ocean Freight**

All supplied equipment shall be tagged, containerized and shipped to Middletown, OH on CIP basis as part of the project.

#### 4.1.2.5 Vendor List

<u>EQUIPMENT</u>	<u>VENDOR</u>
<u>MECHANICAL PROCESS EQUIPMENT</u>	
Centrifugal Pumps	Durco
	Goulds
PD Pumps	Viking Pump
	Blackmer
	Plenty Pump (with owner approval)
Metering Pumps	Milton Roy
	Neptune
Agitators	Lightnin
	Chemineer
Vent Scrubber	Ceilcote
Hot Oil System	Sigma Thermal
	GTS
	Fulton Boiler
Steam Traps	Armstrong
Cooling Tower	BAC
	Marley
	Evapco
Loading Arms	FMC
Dry Disconnects	OPW
Strainers	Eaton
	Sure Flow
Demisters	Koch
	RICSA
Filters	FSI
	Sparkler
5'x5' Pallet Scale	Mettler-Toledo
	Hardy Instruments (with owner approval)
Air Compressor Systems	Sullair
	Quincy
	Atlas Copco
Flexible Hose	Flexible Components
	Hose Technologies
	Senior Flexonics
Spray Nozzles	BEX
	Lechler
	BETE

<u>EQUIPMENT</u>	<u>FILLING &amp; PACKAGING</u>	<u>VENDOR</u>
Drum/Tote Filling		Specialty Equipment Tri Cal Velcon
	<u>INSTRUMENTATION</u>	
Control Valves		Neles-Jamesbury
Air Regulator Valve		Norgren ASCO Control air
Pressure Regulator Valves		Fulflo Fisher Controls Watts Regulator
Back Pressure Regulator Valves		Fulflo Fisher Controls
Solenoid Valve		ASCO Parker Hannifin
Level Instruments		Endress & Hauser Rosemount Yokokawa
Pressure Indicators		Ashcroft US Gauge Weksler
Temperature Indicators		Ashcroft US Gauge Weksler
Temperature Transmitters		Fisher-Rosemount Endress & Hauser Yokogawa
Pressure Transmitters		Rosemount Endress & Hauser Yokogawa
Positive Displacement Meters		Brooks Instruments Smith Meter Brodie

#### 4.1.3 Operating Manuals

CONTRACTOR will supply three sets of operating manuals and user's guides for all equipment and measuring process units and others within CONTRACTOR's scope of supply.

CONTRACTOR will provide three sets of installation and maintenance manuals for all equipment within CONTRACTOR's scope of design supply.

A draft of the manuals for the Plant Control System will be issued to OWNER for review after the Factory Acceptance Test (FAT). Manuals shall be updated and issued at least one month before the facility is commissioned.

#### **4.2 Execution Plan For Construction Work**

Upon completion of Detail Engineering, CONTRACTOR will issue construction packages including:

- Civil and structural plant modification work
- Mechanical Package for pipe, pipe support, tie-in, equipment setting and installation
- Electrical package to install electrical equipment, conduit, cables, cable trays, and instrument cable and wiring.

CONTRACTOR will send its construction management personnel, which will award Construction Activities. Based on the above the execution plan for the construction work at the site is as follows:

##### **4.2.1 On-Site Construction Management**

On-Site construction of the Project shall be performed by local subcontractor(s), hired by CONTRACTOR, under the supervision of CONTRACTOR's Construction Manager. The subcontractor duties shall include:

- Obtaining all applicable construction permits.
- Installation of all furnished Process Equipment.
- Fabrication and installation of piping systems.
- Installation of utility piping, as applicable.
- Installation of electric cable and conduits.
- Installation of power supply and control wiring cables.
- Pre-commissioning and commissioning of the facility.
- On-Site material handling, storage and setting.
- Develop and administer quality control, safety and environmental site plans.
- Conduct weekly construction status meetings.
- Issue monthly progress reports.

##### **4.2.2 As-Built Drawings**

As-Built Drawings will be maintained on work site. The As-Built Drawings are a controlled and complete set of documents upon which the Contractor records each and every instance of differences between the Work as executed and the Work as designed and depicted in the documents issued by the Contractor for Construction Work.

##### **4.2.3 Safety Requirements**

CONTRACTOR will develop, with assistance from OWNER, Site Safety procedures and an orientation program required to meet OWNER's safety goals. All workers and visitors shall strictly follow the Project Site Safety Plan. Responsibility for administering all safety policies during construction shall rest with CONTRACTOR and its subcontractors.

#### **4.2.4 Temporary Facilities Requirements**

Temporary facilities (i.e., trailer, office, etc.) will be provided by CONTRACTOR'S subcontractors during the construction PHASE. Some large CONTRACTOR equipment, which cannot be stored in a trailer, will require adequate indoor storage space (30 feet x 10 feet) which is to be provided by OWNER. Owner will take reasonable measures to protect the equipment against damage by Quaker activities.

#### **4.2.5 Commissioning Before Functional Completion**

CONTRACTOR will provide technical support services for commissioning, startup and plant operator training of the facility. The commissioning and startup services shall consist of the following:

- Develop commissioning and startup activities schedules and identify manpower required per activity.
- Develop construction completion checklists and confirm raw materials and spare parts required for plant startup are available.
- Inspect equipment to ensure that installation and construction activities have been satisfactorily completed by subcontractors.
- Coordinate on site startup activities with equipment supplier representatives (as required).
- Witness instrumentation calibration and wiring checkout.
- Organize and witness dry run for all equipment as well as controls and instrumentation.
- Witness wet run for the plant and conduct performance verification tests.
- Conduct performance testing and custody hand over to OWNER personnel.

#### **4.2.6 Commissioning After Functional Completion**

CONTRACTOR will provide commissioning services following Functional Completion, which will consist of the following activities:

- Demo old equipment once new plant is operational and all production has been moved out of old blenders
- Demo and remove old plant piping
- Demo and remove old blenders
- Demo and remove old storage racks
- Demo and repair old production area floor

#### **4.2.7 Operator Training**

Operator Training shall consist of the following:

- Conduct no more than four days (32 hours) classroom training for operation personnel prior to commissioning.
- Conduct hands on training of operators during the commissioning of the plant.

#### **4.2.8 Performance Testing**

- Conduct performance tests in accordance with test procedures developed during the detail design to demonstrate the performance guarantee parameters listed in Section 5 of this scope of work.

#### **4.3 Inspection and Test Plan**

Contractor will prepare an Inspection and Test Plan and submit to the Owner prior to commissioning of the plant.

#### **4.4 Project Schedule**

A preliminary Project Schedule for this project is attached. The proposed project duration is 15 months after the Contract award. CONTRACTOR will develop a detailed master schedule for the project within four weeks after the Contract Award, to be issued to OWNER for review and comments.

CONTRACTOR's project scheduling function assists the Project Manager and Client in developing totally integrated engineering, procurement, construction and startup plans for accomplishing time objectives and in implementing these plans through detailed scheduling.

A preliminary schedule for the project is attached.

#### **4.5 Milestones**

There will be six major milestones in the project. These are:

1. Preconstruction Activities.
2. Obtaining Permits.
3. Equipment Order and Delivery.
4. Site Construction Activities.
5. Startup Activities.
6. Demolition of Existing Piping and Equipment.

#### **4.6 Health and Environmental Protection**

OWNER'S health and environment protection standards as well as requirements of local, city and state authorities will be incorporated into the CONTRACTOR execution plan. CONTRACTOR will work very closely with OWNER to ensure that CONTRACTOR has information on the latest state and local requirements.

#### 4.7 Project Team and Key Personnel

The Contractor's Project Team and Key Personnel for the Expansion Project are identified in Appendix I.

### 5 Performance Tests and Guarantees

#### 5.1 Measuring Accuracy

The blender/reactor weigh cells and in-line blending flow meters will demonstrate the following accuracy by filling blenders with a known amount of water pumped in from a bulk tank using the FMC blender control software and equipment. This will be demonstrated on three consecutive loadings/blendings of not less than 1000 lbs and three consecutive un-loadings of not less than 1000 lbs. For in-line blender accuracy, the PD meters will be tested to provide the below stated accuracy:

<u>Equipment</u>	<u>Accuracy</u>
200 Gallon	± 3 Lbs
900 Gallon	± 6 Lbs
1,500 Gallon	± 10 Lbs
6,000 Gallon	± 30 Lbs
9,000 Gallon	± 44 Lbs
PD (or MF) Meters	± 2%

The accuracy is the difference between the target amount dosed in the vessel and the actual amount in the vessel. So it includes both the error related to the dosing control equipment and the error in weigh cell reading.

#### 5.2 Contamination

The blender/reactor systems (vessel, inlet piping, outlet piping and piggable transfer lines) will not retain more than the amount of product indicated below when emptied. This will be demonstrated by chemical analysis of the first three production batches made in each of the blenders, reactors and drop tank.

<u>Blender</u>	<u>Max product retained (Lbs)</u>	<u>vessel volume (gal)</u>
V-1	132	6,000
V-2	132	6,000
V-3	132	6,000
V-4	132	6,000



V-5	100	4,500
V-6	24	1,100
V-7	10	350
V-8	150	7,500
V-9	150	7,500
V-10	165	9,000

**5.3 Homogeneity**

The blenders, reactors and drop tank will demonstrate proper mixing by loading two miscible liquid chemicals with a viscosity not greater than 500 cps and blending them for 15 minutes. Samples taken from the top and bottom of the blender will indicate not less than 99% homogeneous. This only needs be demonstrated one time in each vessel to be considered complete.

**5.4 Cooling Tower**

The cooling tower will circulate 1200 gpm for a demonstrated period of 60 minutes as measured by a flow meter with all plant users in cooling mode (minimal pressure drop through system). During this same period, it will demonstrate the capacity to cool water from 95 to 87 F with an ambient WBT of 85 F at full flow. This will be determined by actual measurements and determination of capacity using standard charts.

**5.5 Steam Boilers**

The two steam boilers running, both at the same time, will demonstrate the ability to generate 400 Hp of steam for a sustained period of one hour with water levels running at steady state.

**5.6 Hot Oil Heaters**

Both of the hot oil heaters and pumps will demonstrate the ability to generate 4.0 MM BTU per hour of heat for a period of one hour with the oil temperature greater than 450 F.

**5.7 Air Compressor**

The air compressor system will demonstrate the ability to generate the designed flow rate of 1,000 cfm compressed air, and a maximum dew point of -40F while generating less than 80 db of noise outside the compressor shed.

**5.8 Floor Scales**

All floor scales will be calibrated by the supplier and they shall provide certificates indicating the accuracy of the scales is within 2 lbs.

**5.9 Water Softener**

Water softener will demonstrate that it is adequate to produce 4,000 gal of soft water in 30 minutes.

## 5.10 Pumps

Each of the pumps listed below will demonstrate that they can deliver the design flow rate at the design pressure for a period of 15 minutes minimum:

V-1 recirculation pump  
V-2 recirculation pump  
V-3 recirculation pump  
V-4 recirculation pump  
V-5 recirculation pump  
V-6 recirculation pump  
V-7 recirculation pump  
V-8 recirculation pump  
V-9 recirculation pump  
V-10 recirculation pump  
V-8 oil recirculation pump  
V-9 oil recirculation pump

\* The above are based on viscosity of 500 cP.

Bulk water pump  
Bulk soft water pump

\* The above are based on viscosity of water.

All bulk raw material pumps

\* The above are based on viscosities of raw materials as shown in tank spreadsheet attachment 4 - BULK TANKS details 011508.xls.

## 5.11 Controls and Instrumentation

All controls and instrumentation will function as designed at Functional Completion of plant.

## 5.12 Drum Filling Line

Drum filling line must demonstrate 50 drums per hour equivalent production rate for a period of one hour for acceptance. This is based on viscosity not to exceed 100 cps.

## 5.13 Piggable Lines

Piggable lines must demonstrate normal flow and pigging performance under conditions of low and high viscosity material. Performance must also demonstrate cleanliness levels needed to support the criteria in Section 4.2. Since the piggable lines may perform differently in winter weather, if the plant is determined to be functionally complete before winter weather, contractor will make any changes necessary for piggable lines to operate correctly in winter weather as part of their performance guarantee.

#### **5.14 Reactor Vacuum**

Reactor systems will demonstrate a minimum vacuum of 26 inch HG absolute. With the reactor systems isolated, they will demonstrate “air-tightness” such that they do not loose more than 1 inch HG vacuum in 8 hours.

#### **6 Functional Completion**

Functional Completion means that date when the Work, or a System:

- a) has passed the required Performance Tests that are stipulated in the Scope of Work to be performed before Functional Completion; and
- b) is certified by the Owner’s Representative as being complete or ready to be put into service, or being used for the purpose intended and a Functional Completion Certificate is issued., and
- c) Only non-critical punch list items remain to be completed by contractor. Non-critical punch list items are items that do not measurably affect safety, protection of the environment, efficiency or quality.

#### **7 Attachments**

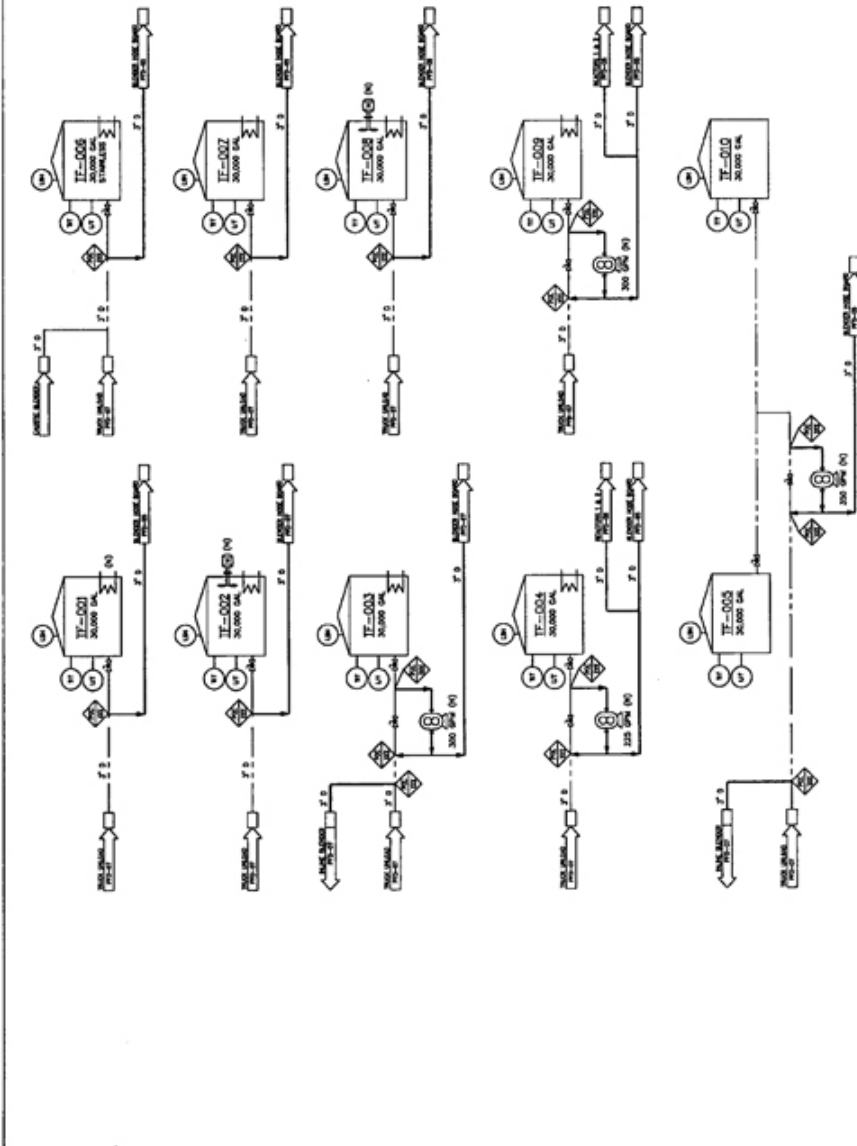
##### **7.1 Process Drawings**

##### **7.2 General Arrangement**

##### **7.3 Preliminary Project Schedule**

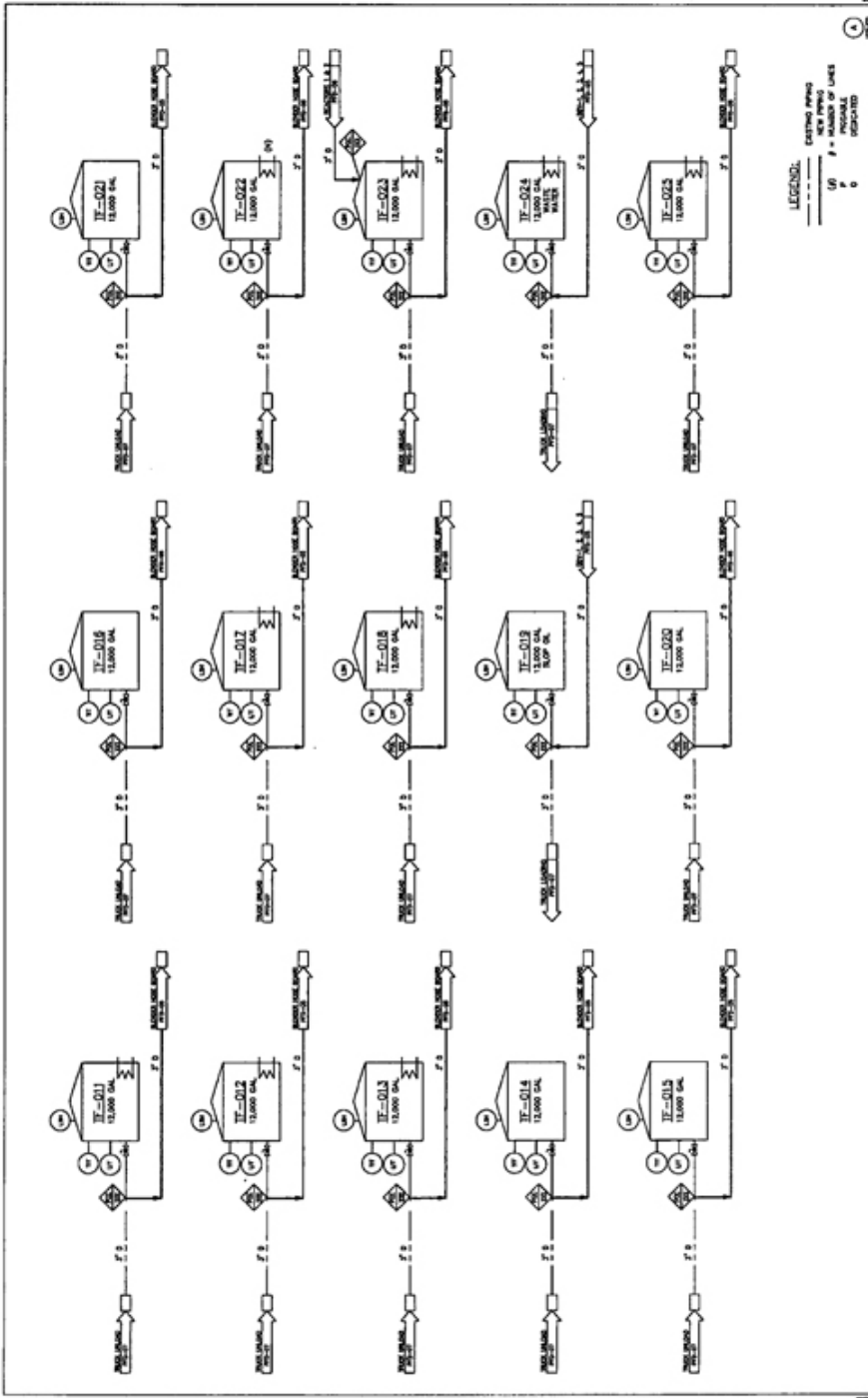
##### **7.4 BULK TANKS details 011508.xls (F Sansom note: I need to see a copy of this to validate is it the most recent verion)**

PROCESS DRAWINGS



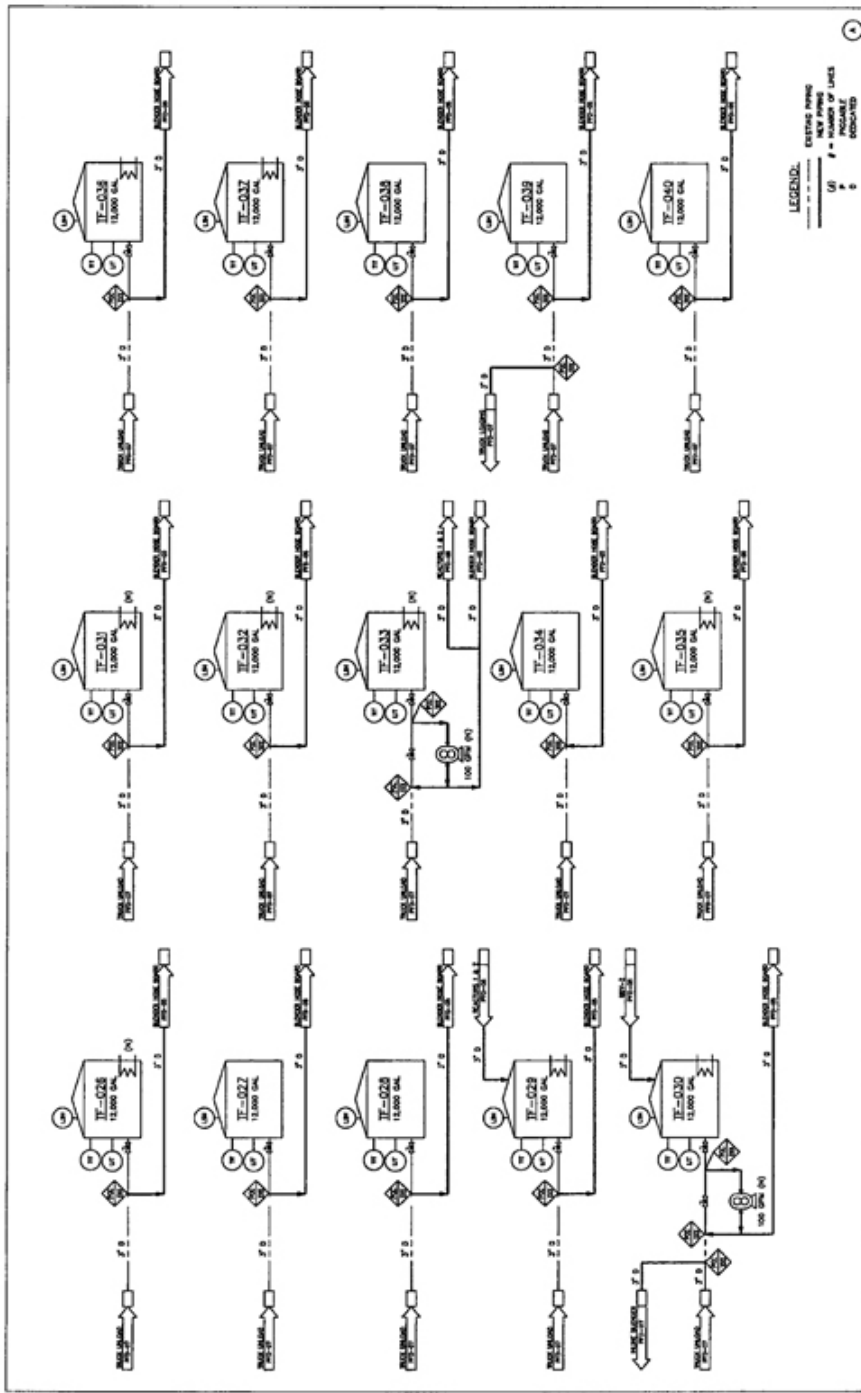
**LEGEND:**  
 EXPANSION SYMBOLS  
 NEW SYMBOLS  
 F = NUMBER OF LINES  
 CONTROL VALVES  
 DISCONNECTS

<b>FMC Technologies</b> <small>10000 North Central Expressway, Suite 100, Dallas, TX 75243</small>		<b>Fluor Chemical</b> <small>10000 North Central Expressway, Suite 100, Dallas, TX 75243</small>
<b>PROJECT AND DRAWING INFORMATION</b> PROJECT NUMBER: PD-01 DRAWING NUMBER: PD-01		DATE: 11/10/10 DRAWN BY: [Blank] CHECKED BY: [Blank]



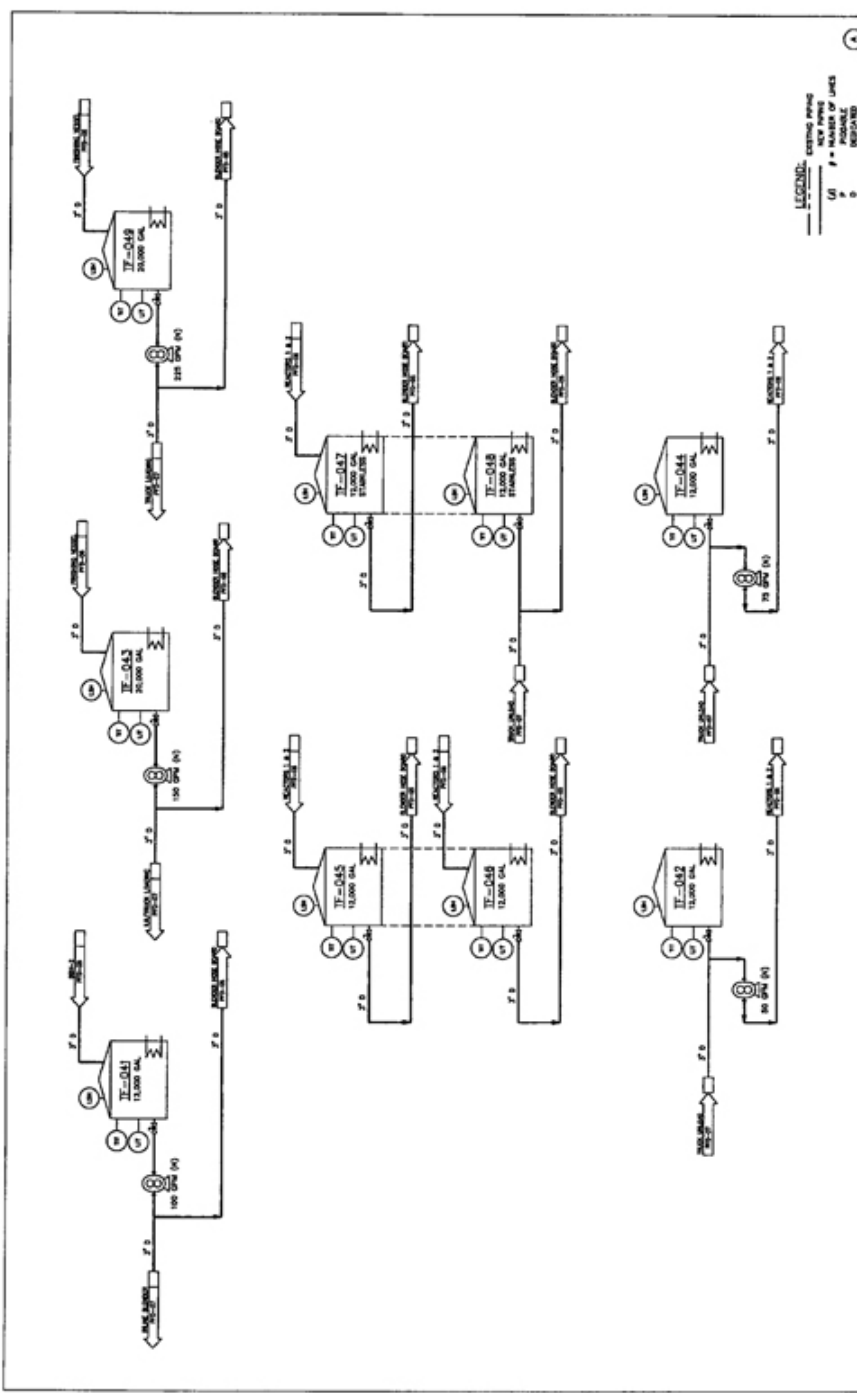
LEGEND:  
 --- EXISTING PIPING  
 --- NEW PIPING  
 (W) = NUMBER OF LINES  
 0 = DISCARDED

<b>PD-02</b> PROCESS FLOW DIAGRAM EXISTING TUBES 11-21-10		PROJECT NUMBER 11-21-10	
SHEET NO. 1 OF 1		DATE 11-21-10	
DRAWN BY: [blank] CHECKED BY: [blank]		APPROVED BY: [blank]	

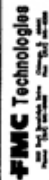


LEGEND:  
 --- EXISTING PIPING  
 --- NEW PIPING  
 (C) CONTROL LOOP  
 (R) RECYCLE LOOP  
 (P) PUMP  
 (T) TANK

PROJECT NAME EXISTING LINES 11-0-0		PROJECT NUMBER PD-03	
SHEET NO. 1		SHEET TOTAL 1	
DRAWN BY J. J. JONES		CHECKED BY J. J. JONES	
DATE 11-0-0		SCALE AS SHOWN	
APPROVED FOR CONSTRUCTION			



LEGEND:  
 --- SERVICE LINE  
 --- NEW PIPING  
 U = NUMBER OF LINES  
 S = STANDARD

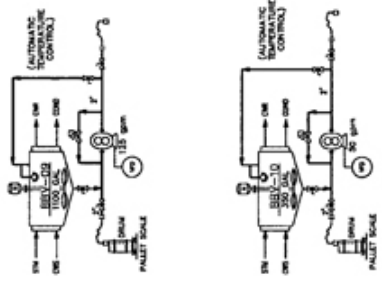
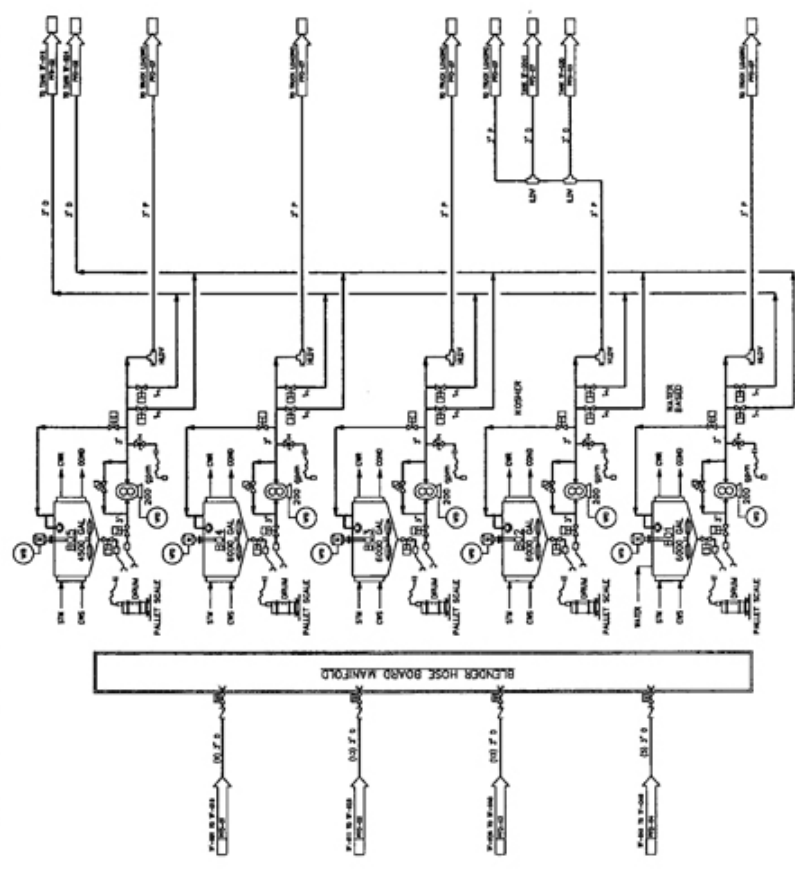



PROJECT NAME: \_\_\_\_\_  
 SHEET NO.: \_\_\_\_\_  
 TOTAL NO. SHEETS: \_\_\_\_\_  
 DATE: \_\_\_\_\_  
 DRAWN BY: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_  
 APPROVED BY: \_\_\_\_\_

FMC Technologies  
 Baker Chemical

PD-04

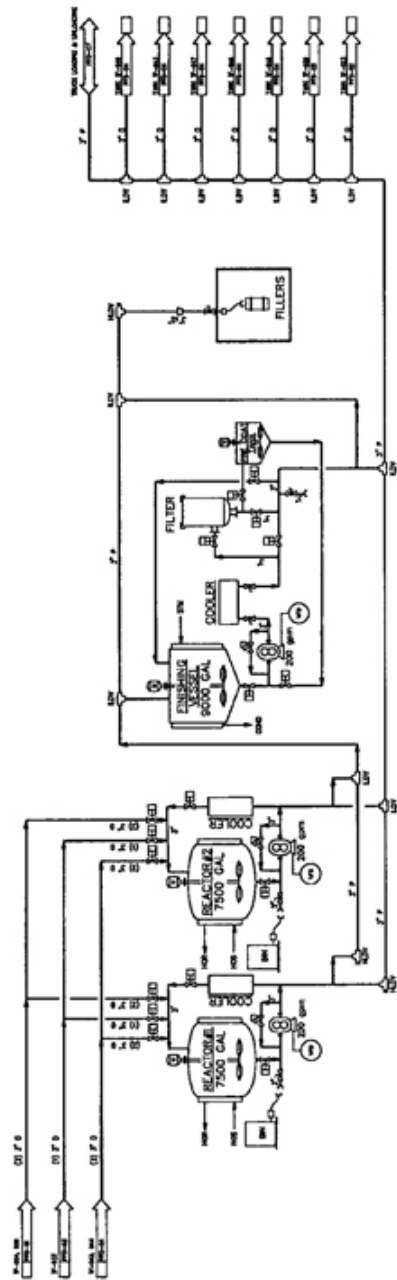




NOTE - EVERYTHING ON THIS SHEET IS NEW

LEGEND:  
 --- EXISTING PIPING  
 --- NEW PIPING  
 --- PALETT SCALE  
 --- INDICATED

FMC Technologies 10000 FMC DRIVE CLEVELAND, OHIO 44130		Quaker Chemical 10000 FMC DRIVE CLEVELAND, OHIO 44130	
PROJECT NO. 10000 SHEET NO. 10000	DATE 10/1/80	DRAWN BY 10000	CHECKED BY 10000
PROJECT FOR DATA AUTOMATIC BLENDING AND PRODUCT DISTRIBUTION			
PFD-05			



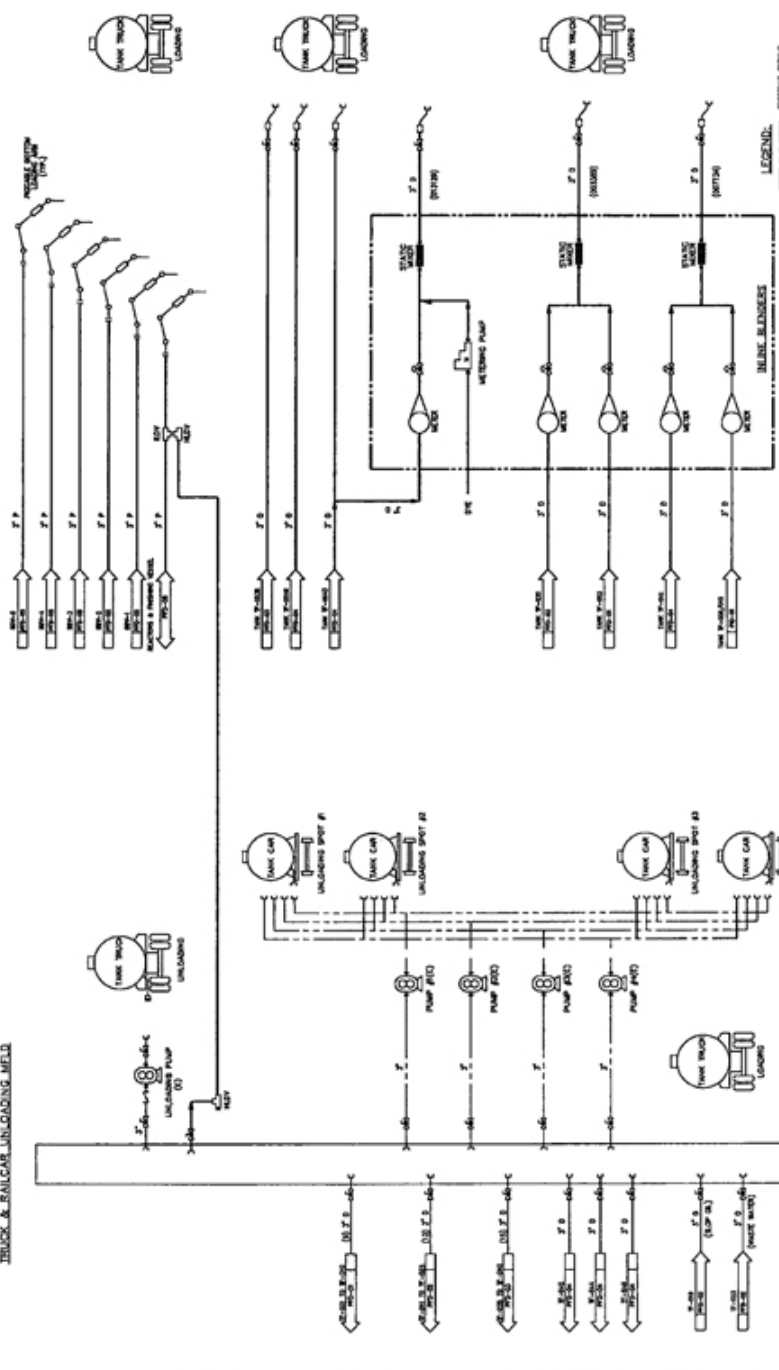
LEGEND:  
 --- EXISTING PIPING  
 --- NEW PIPING  
 (1) = NUMBER OF LINES  
 1 = VALVES  
 2 = INSTRUMENTS

NOTE - EVERYTHING ON THIS SHEET IS NEW

<b>FMC Technologies</b> <small>10000 W. 10th Ave. Suite 1000, Denver, CO 80202</small>		<b>Calkre Chemical</b> <small>10000 W. 10th Ave. Suite 1000, Denver, CO 80202</small>
PROJECT NO. 1000000000 SHEET NO. 1000000000 DATE 10/10/00	PROJECT NAME LOCATION CLIENT	PROJECT NO. 1000000000 SHEET NO. 1000000000 DATE 10/10/00

TRUCK & RAILCAR UNLOADING FIELD

FINISHED PRODUCT TRUCK LOADING



LEGEND:

--- CONTROL PANEL  
 --- MIX TANK  
 --- PUMP  
 --- BLENDER  
 --- TRUCK CAN  
 --- RAILCAR

PROJECT INFORMATION	
PROJECT NO.	FD-01
PROJECT NAME	TRUCK & RAILCAR UNLOADING AND TRUCK LOADING
DATE	10/10/00
SCALE	AS SHOWN
DESIGNED BY	
CHECKED BY	
APPROVED BY	
 <b>PMC Technologies</b> Process Control Systems & Instrumentation	
 <b>Tusker Chemical</b> Corporation Industrial Area	

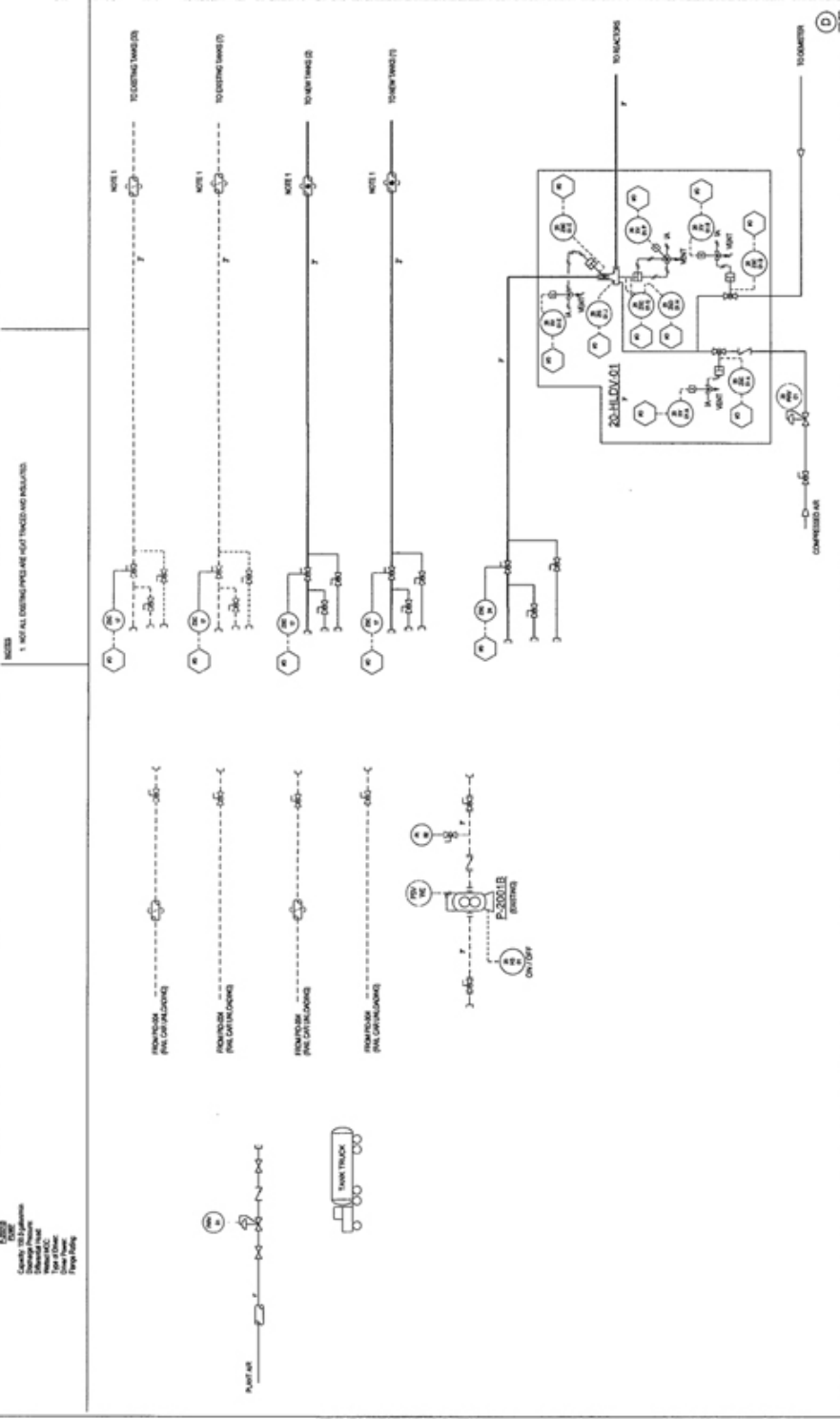




QUAKER CHEMICAL INC.  
GENERAL NOTES AND INSTRUCTIONS

1. WHERE USED, HOSE COUPLINGS SHALL BE "DRY-BREAK" DESIGN TO HELP PREVENT ACCIDENTAL SPILLS.
2. WHEREVER POSSIBLE, ALL INSTRUMENTS AND MANUAL VALVES SHALL BE ACCESSIBLE TO A TECHNICIAN WITHOUT THE USE OF A LADDER.
3. AUTOMATED CONTROL SYSTEM TO INCLUDE VISUAL AND AUDIBLE INDICATORS FOR ALARM CONDITIONS. IF POSSIBLE, TECHNICIAN SHALL BE ABLE TO DISCERN FROM THE INDICATOR THE SERIOUSNESS OF THE ALARM CONDITION (I.E., REQUEST ALARM VERSUS WARNING ALARM VERSUS EMERGENCY ALARM).
4. OPEN ENDED LINES SUCH AS VENTS AND OVERFLOWS SHALL BE DIRECTED TO A SAFE LOCATION TO MINIMIZE THE CHANCE OF CONTACT TO PERSONNEL.
5. BRANCH CONNECTIONS INTO VENT HEADER SHALL ALWAYS ENTER INTO TOP OF HEADER. THIS DESIGN LESSENS THE CHANCE OF BACK-FLOW OF FLUID FROM HEADER INTO BRANCH LINE.
6. EMERGENCY SHUTDOWN BUTTONS (ESD) SHALL BE LOCATED IN NORMAL WORKING AREAS TO ALLOW FOR THE AUTOMATIC SHUTDOWN OF EQUIPMENT AND/OR SYSTEMS. QUANTITY AND LOCATION OF BUTTONS SHALL BE DETERMINED DURING DETAIL DESIGN PHASE.
7. WHENEVER POSSIBLE, FLEXIBLE HOSES SHALL BE ORIENTED IN A HORIZONTAL POSITION WHEN CONNECTED TO WEIGH VESSELS (I.E, VESSELS ON LOAD CELLS).
- 8.
9. EACH AUTOMATED RAW MATERIAL INLET VALVE INTO A BLENDER OR REACTOR SHALL BE MOUNTED AS CLOSE AS IS FEASIBLE TO THE VESSEL THE PIPE LINE BETWEEN THE VALVE AND THE VESSEL SHALL BE SLOPED TO RESULT THAT THE LINE CAN FREE DRAIN INTO THE VESSEL THE IDEAL DESIGN IS FOR THE LINE TO BE ORIENTED VERTICALLY FROM THE VALVE INTO THE VESSEL. THIS DESIGN IMPROVES DOSING ACCURACY AND MINIMIZES DRIPPING OF RESIDUAL FLUID FROM LINE INTO THE VESSEL.
10. PUMPS, STRAINERS, FILTERS, VALVES, METERS AND OTHER FLUID-FILLED COMPONENTS THAT ARE INSTALLED IN PIPING SYSTEMS THAT ARE TRACED AND/OR INSULATED SHALL ALSO BE TRACED AND INSULATED TO MATCH THE REQUIREMENTS OF THE ATTACHED PIPING SYSTEM.
11. WHERE SIZE IS NOT INDICATED ON THE DRAWING FOR A DRAIN OR VENT VALVE, USE THE FOLLOWING GUIDELINES:
  - USE A15 MM (1/2 INCH) VALVE FOR VENT OR DRAIN WHEN CONNECTED TO A MAIN LINE OF 50 MM (2 INCHES) OR SMALLER;
  - USE A18 MM (3/4 INCH) VALVE FOR VENT OR DRAIN WHEN CONNECTED TO A MAIN LINE LARGER THAN 50 MM (2 INCHES);
12. VENT AND DRAIN VALVES SHALL HAVE ROUND OR OVAL HANDLES. THIS WILL LESSEN THE CHANCE OF ACCIDENTAL OPENING IF THE VALVE IS BUMPED. ALL VENT AND DRAIN VALVES SHOULD BE FITTED WITH A PLUG OR BLIND ON THE OPEN END WHEN NOT IN OPERATION.
13. WHERE INLET LINES TO A BLENDER ARE TRACED AND/OR INSULATED, THE TRACING AND/OR INSULATION SHALL STOP APPROXIMATELY 450 MM (18 INCHES) ABOVE THE TOP OF VESSEL. THIS WILL PREVENT THE TRACING AND/OR INSULATION FROM INTERFEREING WITH THE INSTALLATION OF THE SEAL BOOT BETWEEN THE LINE AND THE VESSEL.
14. FLEXIBLE HOSES THAT ARE USED TO CONNECT BETWEEN THERMAL LINES AND WEIGH VESSELS SHALL NOT BE TRACED OR INSULATED. THIS ALLOWS FOR FULL MOVEMENT OF THE HOSE WHICH RESULTS IN MORE ACCURATE WEIGHING USING THE LOAD CELL SYSTEM.
15. ALL AUTOMATED VALVES ARE "FAIL CLOSED" UNLESS OTHERWISE INDICATED.

Revision History No. Description 1 Initial Issue 2 Revised 3 Revised 4 Revised	Date 11/11/11 11/11/11 11/11/11 11/11/11	By J. Smith J. Smith J. Smith J. Smith	Checked By J. Smith J. Smith J. Smith J. Smith	Approved By J. Smith J. Smith J. Smith J. Smith	FMC Technologies Weighing & Transfer 444 West Riverside Drive, Atlanta, GA 30331 Phone: (404) 841-4444 Fax: (404) 841-4444	Quaker Chemical Chemicals solutions.com	P&ID GENERAL NOTES AND INSTRUCTIONS	P&ID GENERAL NOTES AND INSTRUCTIONS
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**NOTES**  
1. NOT ALL DRAWINGS ARE SHOWN AND INCLUDES

**LEGEND**  
 (M) MANIFOLD  
 (V) VALVE  
 (G) GAUGE  
 (S) SWITCH  
 (P) PRESSURE  
 (T) TEMPERATURE  
 (F) FLOW  
 (L) LEVEL  
 (D) DRAIN  
 (A) AIR  
 (O) OIL  
 (W) WATER

**REVISIONS**

NO.	DATE	DESCRIPTION	BY	CHKD.
1	08/13/2008	ISSUED FOR CONSTRUCTION	J. S. JONES	J. S. JONES
2	08/13/2008	REVISED FOR CONSTRUCTION	J. S. JONES	J. S. JONES
3	08/13/2008	REVISED FOR CONSTRUCTION	J. S. JONES	J. S. JONES
4	08/13/2008	REVISED FOR CONSTRUCTION	J. S. JONES	J. S. JONES
5	08/13/2008	REVISED FOR CONSTRUCTION	J. S. JONES	J. S. JONES
6	08/13/2008	REVISED FOR CONSTRUCTION	J. S. JONES	J. S. JONES

**PROJECT INFORMATION**

PROJECT NO. 08-13-2008  
 PROJECT NAME: PBLDs TYPICAL TRUCK UNLOADING  
 PROJECT LOCATION: ...

**COMPANY INFORMATION**

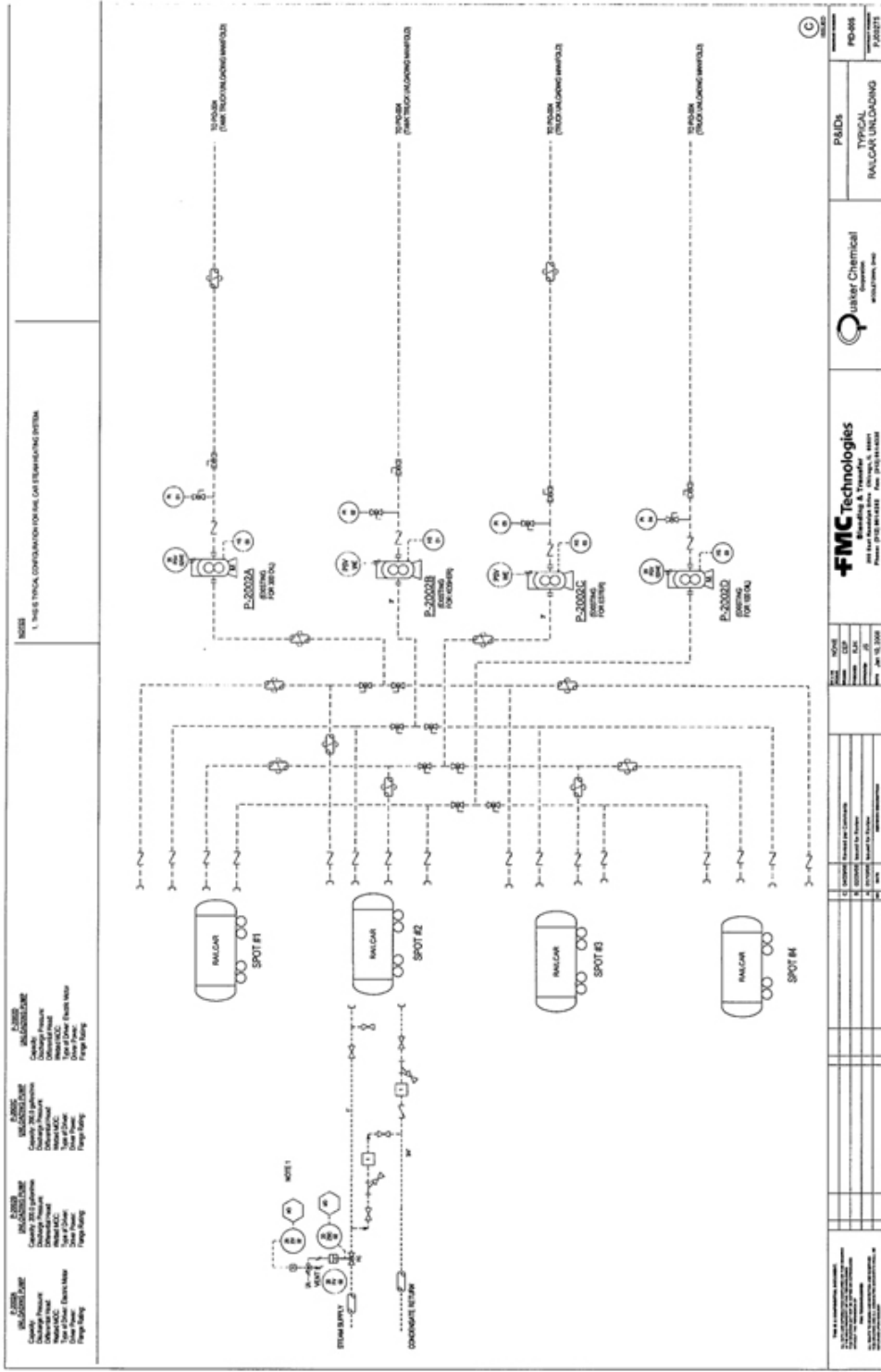
**FMC Technologies**  
 Manufacturing & Transfer  
 4000 WEST 10TH STREET, SUITE 100  
 DENVER, CO 80202  
 TEL: 303.440.8000  
 FAX: 303.440.8001  
 WWW.FMC-TECH.COM

**CLIENT INFORMATION**

**PBLDs**  
 TYPICAL TRUCK UNLOADING  
 PROJECT NO. ...

**DESIGNER INFORMATION**

**Wulfsberg Chemical**  
 4000 WEST 10TH STREET, SUITE 100  
 DENVER, CO 80202  
 TEL: 303.440.8000  
 FAX: 303.440.8001  
 WWW.WULFSBERG-CHEM.COM



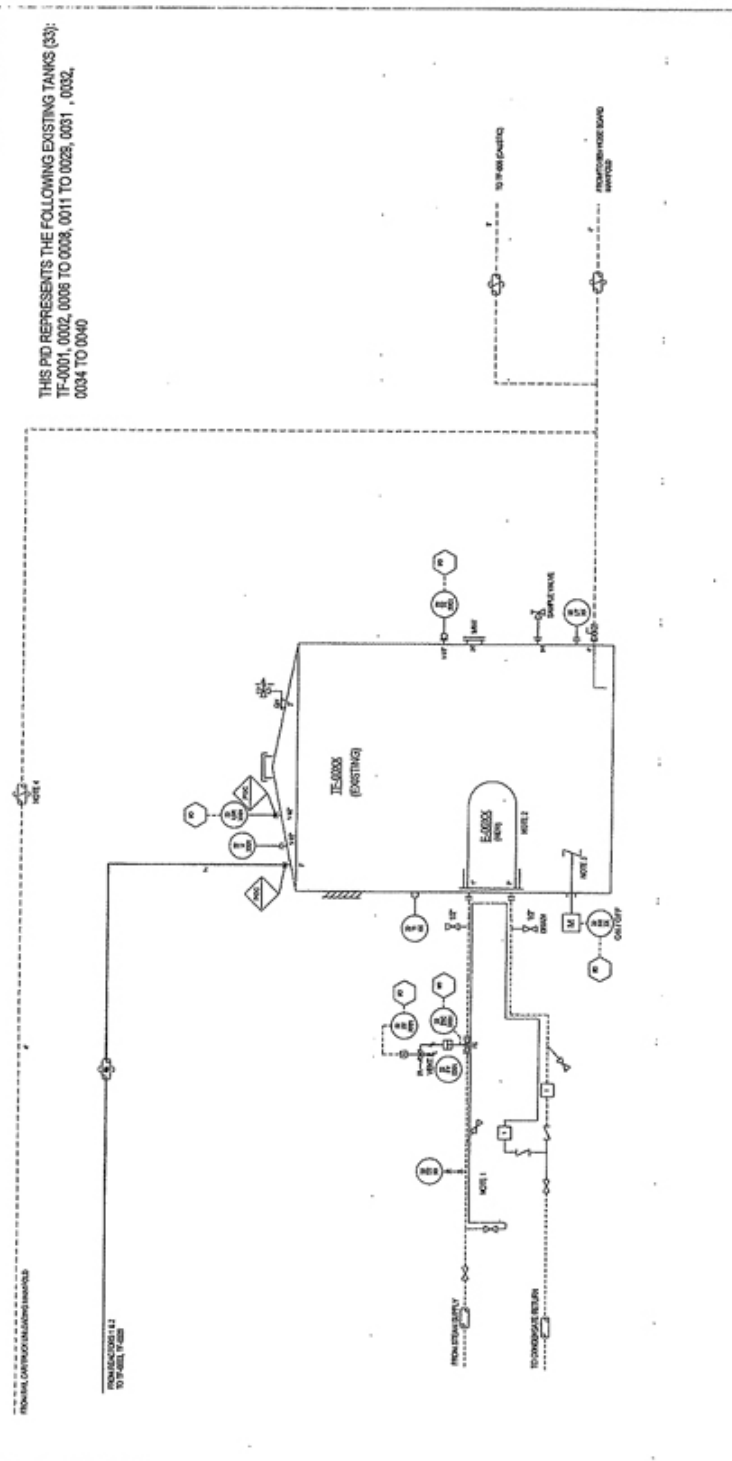


**PROJECT:**  
**CLIENT:**  
**DATE:**

**PROJECT LOCATION:**  
**ADDRESS:**  
**CITY:**  
**STATE:**  
**ZIP:**

**DESIGNER:**  
**PROJECT ENGINEER:**  
**DESIGNER:**  
**DATE:**

**SCALE:**  
 1. ALL DIMENSIONS UNLESS OTHERWISE SPECIFIED ARE IN INCHES.  
 2. ALL DIMENSIONS SHALL BE TO CENTERLINE UNLESS OTHERWISE SPECIFIED.  
 3. ALL DIMENSIONS SHALL BE TO FACE UNLESS OTHERWISE SPECIFIED.  
 4. ALL DIMENSIONS SHALL BE TO CENTERLINE UNLESS OTHERWISE SPECIFIED.



THIS PID REPRESENTS THE FOLLOWING EXISTING TANKS (S3):  
 TF-0001, 0002, 0006 TO 0008, 0011 TO 0029, 0031, 0032,  
 0034 TO 0040

<b>FMC Technologies</b> 4850 North County Road 22, Suite 100 Houston, TX 77057 Phone: (281) 997-1000 Fax: (281) 997-1001	<b>PROJECT NO.</b> PD-488
	<b>PROJECT TITLE</b> TYPICAL EXISTING STORAGE TANK
<b>DATE</b> 23	<b>SCALE</b> 25
<b>DESIGNER</b> 23	<b>DATE</b> 23
<b>PROJECT ENGINEER</b> 23	<b>DATE</b> 23
<b>DESIGNER</b> 23	<b>DATE</b> 23
<b>DATE</b> 23	<b>DATE</b> 23

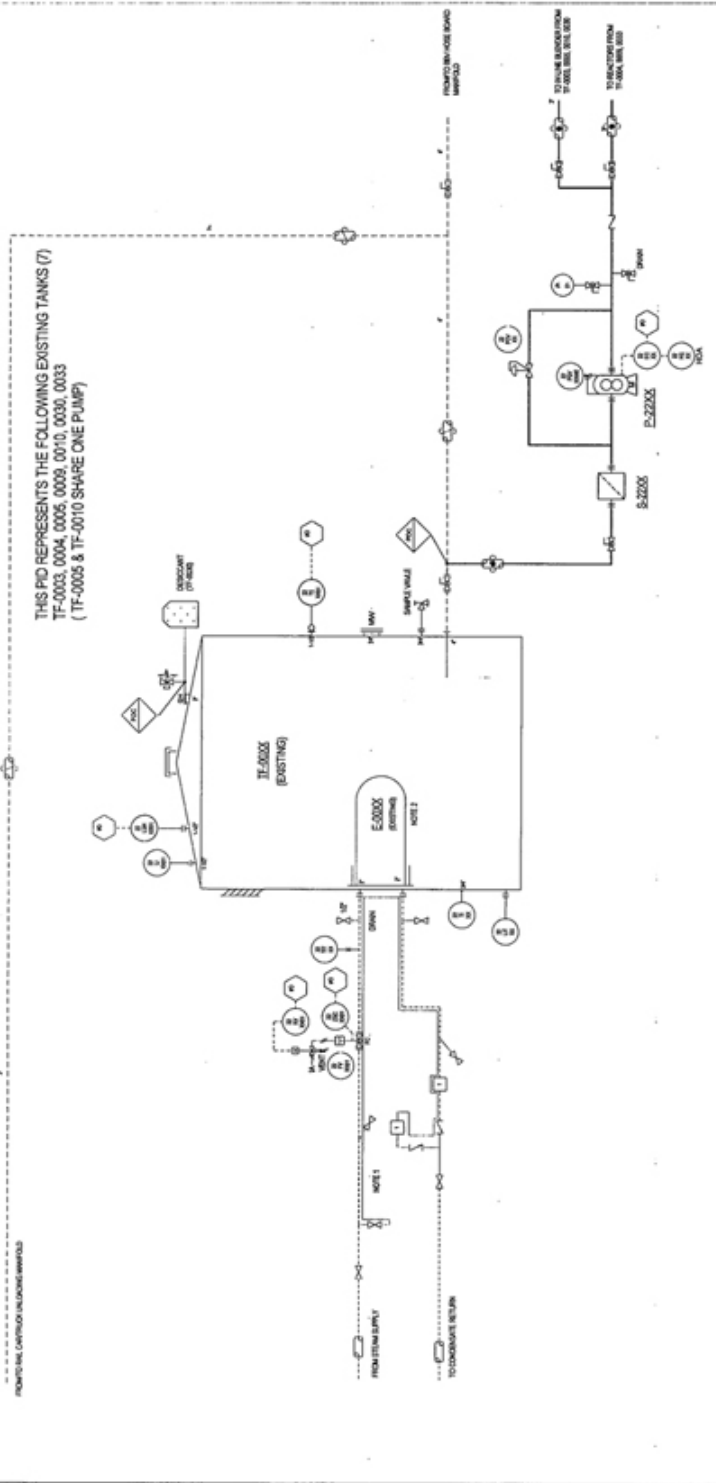
**CONNECTIONS**

**EXTERNAL CONNECTIONS**

1. 2" NPT COMPACT TUNGSTEN CARBIDE LINE TO INDIUM METAL (NONCORROSIVE) LINED PUMP/RELIEF  
 2. 2" NPT 316 SS BOWL WITH 316 SS BOWL AND 316 SS BOWL

**NOTES**

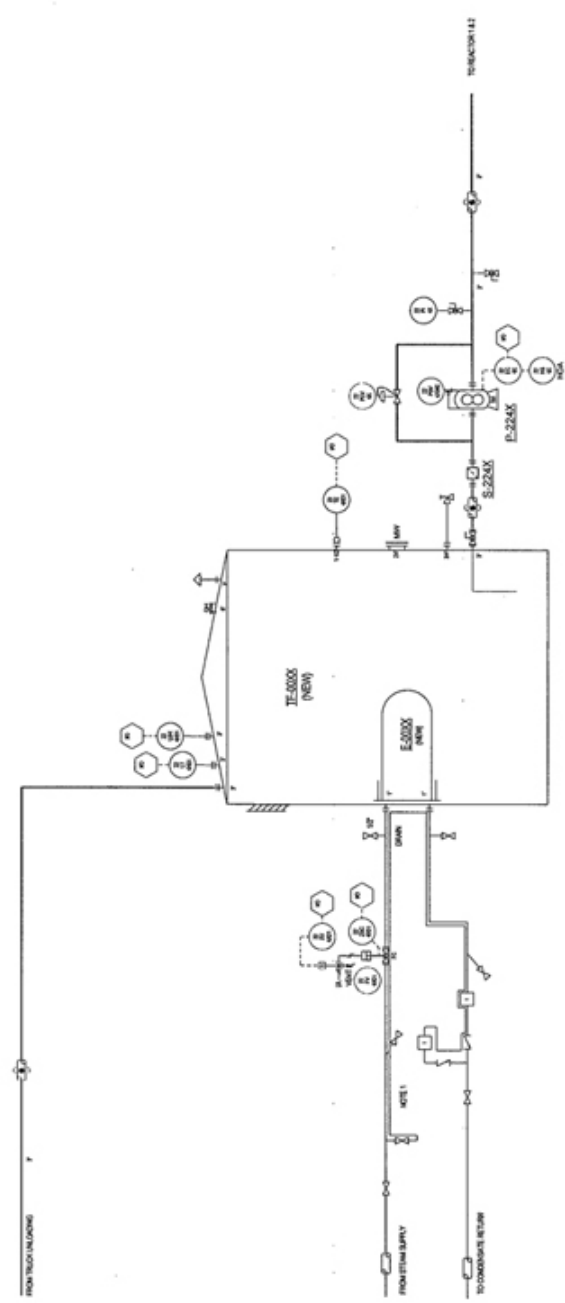
1. ALL COMPACT TUNGSTEN CARBIDE LINE TO INDIUM METAL (NONCORROSIVE) LINED PUMP/RELIEF  
 2. 2" NPT 316 SS BOWL WITH 316 SS BOWL AND 316 SS BOWL



<b>FMC Technologies</b> Building & Transfer 1001 East 10th Street Ames, IA 50010 Phone: 515-331-5200 Fax: 515-331-5210				P&ID: TYPICAL EXISTING STORAGE TANK
<b>Ustar Chemical</b> Corporation 1001 East 10th Street Ames, IA 50010				
DATE: 08/13/2008 TIME: 10:10:00	DESIGNED: Robert P. Cavanaugh CHECKED: Robert P. Cavanaugh APPROVED: Robert P. Cavanaugh DATE: 08/13/2008	DATE: 08/13/2008 TIME: 10:10:00	PROJECT NO.: P-0007 DRAWING NO.: P-0007	

<b>TE-0000X</b> 21 Tank Name Capacity Design Temperature Max. Fill (Cadm) Design Temp (T Max) Insulation Thickness 300(1.50)	<b>EL-000</b> INTERNAL LEAKAGE LOG Name Capacity Design Temperature Max. Fill (Cadm) Design Temp (T Max) Insulation Thickness 300(1.50)	<b>EX-100</b> Name Capacity Design Temperature Max. Fill (Cadm) Design Temp (T Max) Insulation Thickness 300(1.50)	<b>REVISIONS</b> 1. Bulkhead is being installed to prevent tank to tank overflows last modification
---	--	--	--

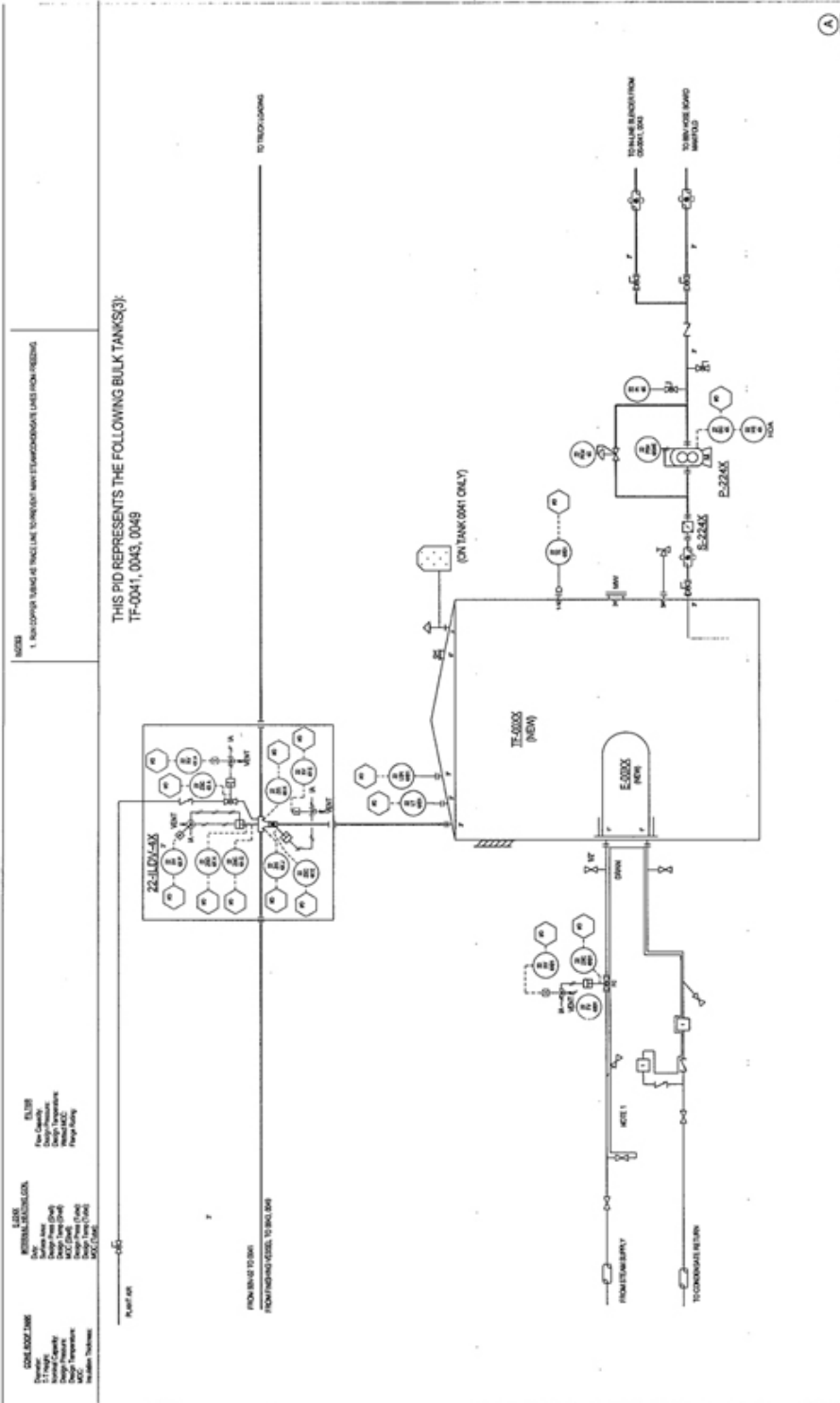
THIS PID REPRESENTS THE FOLLOWING BULK TANK(S):  
 TF-0042, 0044.



<b>PROJECT</b> NAME NO. DATE	<b>DATE</b> NO. DATE	<b>DESIGN</b> NAME NO. DATE	<b>REVISIONS</b> NO. DATE DESCRIPTION	<b>SCALE</b> NAME NO. DATE	<b>PROJECT</b> NAME NO. DATE
FROM TEGS DRAINAGE FROM SYSTEM SUPPLY TO CONDENSATE RETURN TO REACTION 142	TE-0000X (NEW) EL-0000X (NEW) E-0000X (NEW) F-2245 F-2246 F-2247 F-2248 S-2245 S-2246 S-2247 S-2248	<b>PIIDs</b> TYPICAL NEW STORAGE TANK	<b>PROJECT</b> NAME NO. DATE	<b>PROJECT</b> NAME NO. DATE	<b>PROJECT</b> NAME NO. DATE

**FMC Technologies**  
 Manufacturing & Technical Services  
 10000 FMC Drive, Houston, TX 77036-1000  
 Phone: 281.293.4000 Fax: 281.293.4001

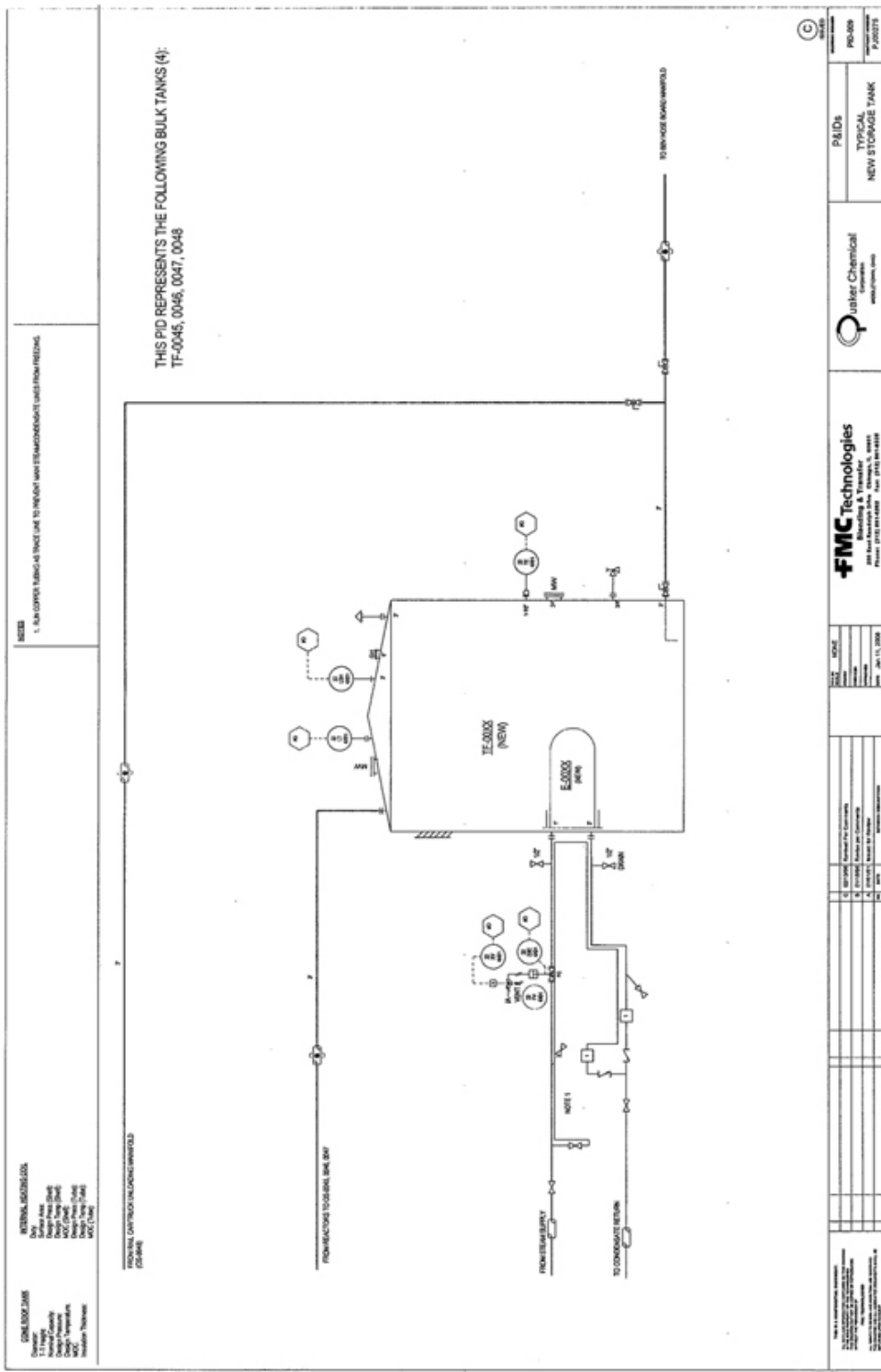
**Huber Chemical**  
 10000 FMC Drive, Houston, TX 77036-1000



THIS PID REPRESENTS THE FOLLOWING BULK TANK(S):  
 TF-0041, 0043, 0049

CODE	DESCRIPTION	UNIT
001	Flow	Flow
002	Temperature	Temp
003	Pressure	Pressure
004	Level	Level
005	Position	Position
006	Weight	Weight
007	Volume	Volume
008	Energy	Energy
009	Power	Power
010	Speed	Speed
011	Frequency	Frequency
012	Current	Current
013	Voltage	Voltage
014	Resistance	Resistance
015	Capacitance	Capacitance
016	Inductance	Inductance
017	Force	Force
018	Moment	Moment
019	Energy	Energy
020	Power	Power
021	Efficiency	Efficiency
022	Accuracy	Accuracy
023	Precision	Precision
024	Resolution	Resolution
025	Stability	Stability
026	Reliability	Reliability
027	Availability	Availability
028	Maintainability	Maintainability
029	Serviceability	Serviceability
030	Flexibility	Flexibility
031	Scalability	Scalability
032	Interoperability	Interoperability
033	Compatibility	Compatibility
034	Conformity	Conformity
035	Adaptability	Adaptability
036	Portability	Portability
037	Reconfigurability	Reconfigurability
038	Extensibility	Extensibility
039	Modifiability	Modifiability
040	Upgradeability	Upgradeability
041	Future-proofing	Future-proofing
042	Scalability	Scalability
043	Flexibility	Flexibility
044	Interoperability	Interoperability
045	Compatibility	Compatibility
046	Conformity	Conformity
047	Adaptability	Adaptability
048	Portability	Portability
049	Reconfigurability	Reconfigurability
050	Extensibility	Extensibility
051	Modifiability	Modifiability
052	Upgradeability	Upgradeability
053	Future-proofing	Future-proofing

<b>FMC Technologies</b> 10000 Highway 100, Houston, TX 77036 Phone: 281.281.1000 Fax: 281.281.1001		<b>Juliter Chemical</b> 10000 Highway 100, Houston, TX 77036	P&IDs TYPICAL NEW STORAGE TANK
PROJECT NO. SHEET NO. DATE	DRAWN BY CHECKED BY DATE	REVISIONS NO. DESCRIPTION DATE	SCALE UNIT



THIS PID REPRESENTS THE FOLLOWING BULK TANKS (4):  
TF-0045, 0046, 0047, 0048

**NOTES**  
1. ALL CONTROL VALVES USE TO PREVENT HIGH TEMPERATURES AND FROM FREEZING

**GENERAL INFORMATION**  
 Project Name: \_\_\_\_\_  
 Design Basis: \_\_\_\_\_  
 Design Standard: \_\_\_\_\_  
 Design Code: \_\_\_\_\_  
 Design Pressure: \_\_\_\_\_  
 Design Temperature: \_\_\_\_\_  
 Material: \_\_\_\_\_  
 Revision: \_\_\_\_\_

PROVISIONAL DRAWING SUBJECT TO CHANGE

<p>DATE: 11/20/2009          DRAWN BY: _____          CHECKED BY: _____          DESIGNED BY: _____          PROJECT: _____</p>		<p>DATE: 11/20/2009          DRAWN BY: _____          CHECKED BY: _____          DESIGNED BY: _____          PROJECT: _____</p>	<p>DATE: 11/20/2009          DRAWN BY: _____          CHECKED BY: _____          DESIGNED BY: _____          PROJECT: _____</p>	<p>DATE: 11/20/2009          DRAWN BY: _____          CHECKED BY: _____          DESIGNED BY: _____          PROJECT: _____</p>	<p>DATE: 11/20/2009          DRAWN BY: _____          CHECKED BY: _____          DESIGNED BY: _____          PROJECT: _____</p>	<p>DATE: 11/20/2009          DRAWN BY: _____          CHECKED BY: _____          DESIGNED BY: _____          PROJECT: _____</p>	<p>DATE: 11/20/2009          DRAWN BY: _____          CHECKED BY: _____          DESIGNED BY: _____          PROJECT: _____</p>	<p>DATE: 11/20/2009          DRAWN BY: _____          CHECKED BY: _____          DESIGNED BY: _____          PROJECT: _____</p>	<p>DATE: 11/20/2009          DRAWN BY: _____          CHECKED BY: _____          DESIGNED BY: _____          PROJECT: _____</p>	<p>DATE: 11/20/2009          DRAWN BY: _____          CHECKED BY: _____          DESIGNED BY: _____          PROJECT: _____</p>	<p>DATE: 11/20/2009          DRAWN BY: _____          CHECKED BY: _____          DESIGNED BY: _____          PROJECT: _____</p>
<p>DATE: 11/20/2009          DRAWN BY: _____          CHECKED BY: _____          DESIGNED BY: _____          PROJECT: _____</p>		<p>DATE: 11/20/2009          DRAWN BY: _____          CHECKED BY: _____          DESIGNED BY: _____          PROJECT: _____</p>		<p>DATE: 11/20/2009          DRAWN BY: _____          CHECKED BY: _____          DESIGNED BY: _____          PROJECT: _____</p>		<p>DATE: 11/20/2009          DRAWN BY: _____          CHECKED BY: _____          DESIGNED BY: _____          PROJECT: _____</p>		<p>DATE: 11/20/2009          DRAWN BY: _____          CHECKED BY: _____          DESIGNED BY: _____          PROJECT: _____</p>		<p>DATE: 11/20/2009          DRAWN BY: _____          CHECKED BY: _____          DESIGNED BY: _____          PROJECT: _____</p>	

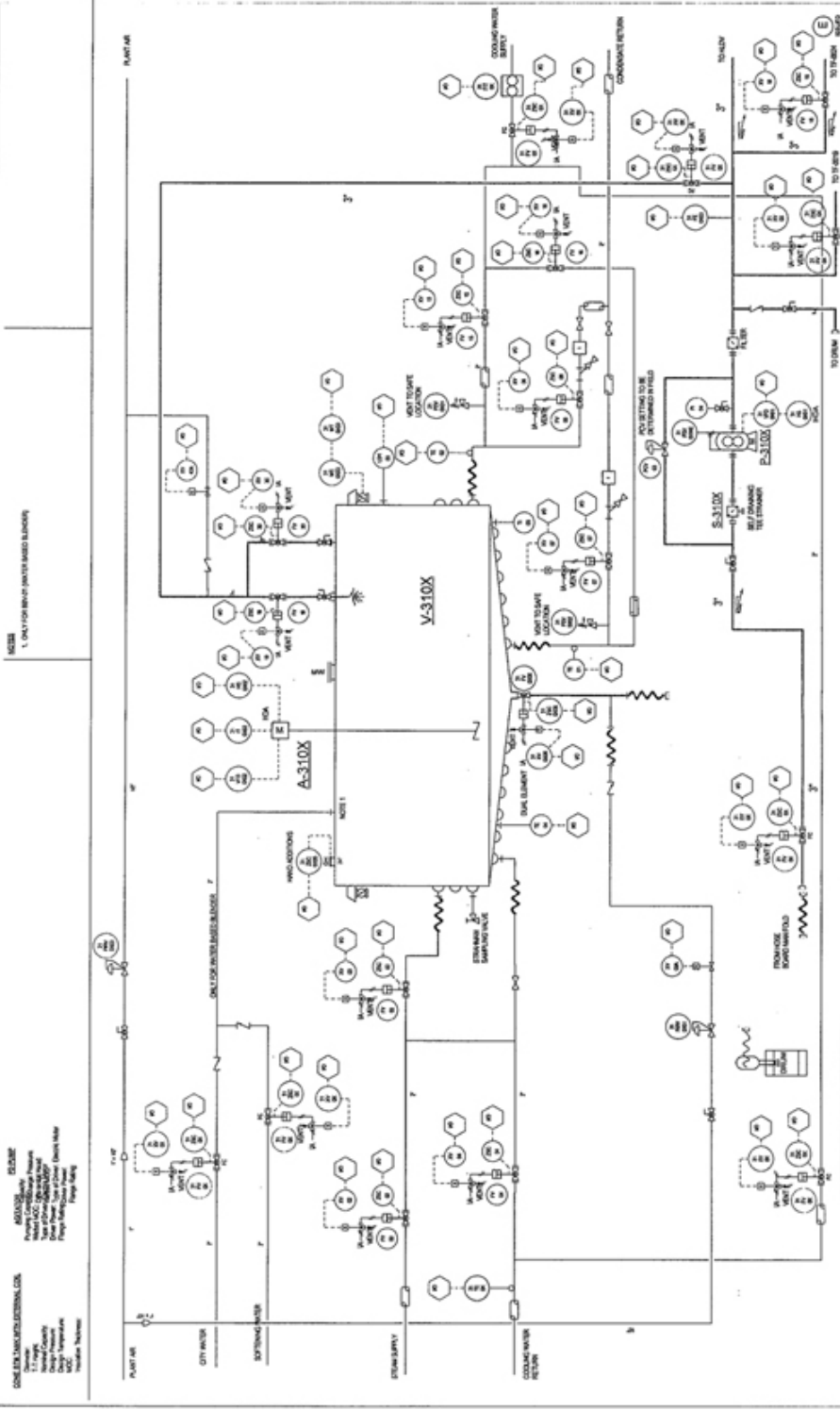
**FMC Technologies**  
 Piping & Transfer  
 Project: 11/20/2009  
 Date: 11/20/2009

**Juniper Chemical**  
 Company  
 11/20/2009

PIIDs  
 TYPICAL  
 NEW STORAGE TANK

PIID NO: \_\_\_\_\_

PIID TITLE: \_\_\_\_\_



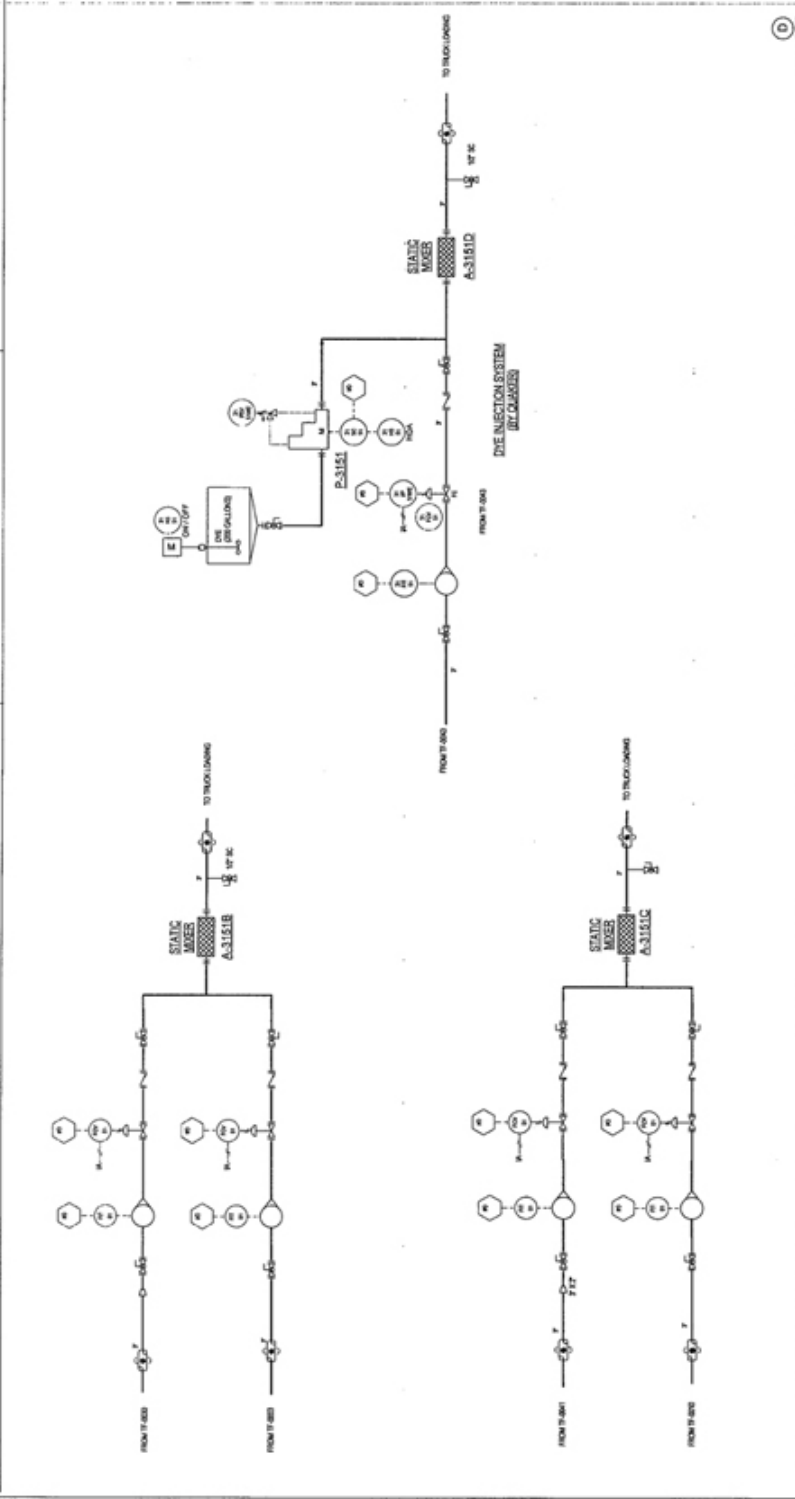
NOTES  
1. ONLY FOR INVERTED BATCH BLENDER

COMPENLAW ENGINEERING, LTD.  
 ENGINEER  
 PROJECT CONTROL  
 BATCH BLENDER  
 M.C.C.  
 INSTRUMENTATION  
 PIPING & ELECTRICAL

PROJECT  
 CONTRACT NO.  
 DATE  
 SHEET NO.  
 OF  
 SHEETS

<b>FMC Technologies</b> Handling & Transfer Dept. 31103 14650 Ave. 21710 W 14855 Phoenix, AZ 85044		<b>Juliker Chemical</b> Corporation 4800 CENTRALE AVE. PHOENIX, AZ 85044		P&ID's TYPICAL BATCH BLENDER 310X PID-119 P-20075
REVISIONS NO. DESCRIPTION DATE BY APPROVED DATE BY APPROVED		DATE: JAN 11, 2008 SHEET NO. 1 OF 1		

82283



<b>FMC Technologies</b> 380 East Main Street, Albany, N.Y. 12205 Phone: 518/437-4228 Fax: 518/437-4229		<b>Julmy Chemical</b> www.julmy.com	<b>P&amp;IDs</b> P-0011 TYPICAL INLINE BLENDERS
Title: _____ Author: _____ Date: _____ Rev: _____	Scale: _____ Unit: _____ Date: _____ Rev: _____	Project: _____ Location: _____ Drawing No.: _____	



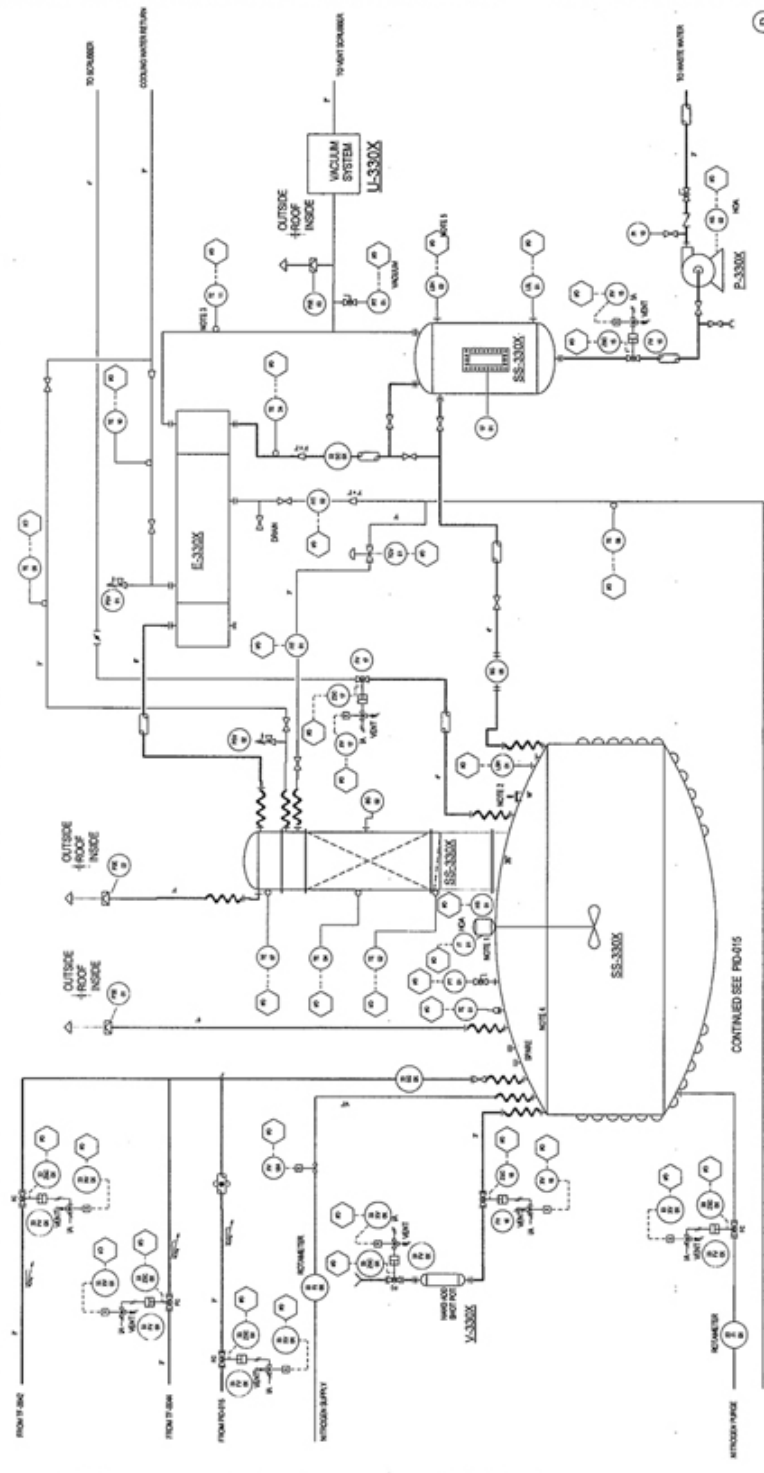




REACTOR VESSEL AND SEALS ON ALL ASSOCIATED EQUIPMENT AND VESSELS TO BE SUPPLIED FOR FULL NUCLEAR SERVICE.

NOTES:  
 1. MECHANICAL SEAL WITH SEAL RING ON REACTOR SHAFT.  
 2. REACTOR VESSEL TO BE CONNECTED TO REACTOR VESSEL.  
 3. REACTOR VESSEL TO BE CONNECTED TO REACTOR VESSEL.  
 4. REACTOR VESSEL TO BE CONNECTED TO REACTOR VESSEL.  
 5. ALL REACTOR VESSELS TO BE TANKS AND APPROX.  
 6. REACTOR VESSEL TO BE TANKS AND APPROX.  
 7. REACTOR VESSEL TO BE TANKS AND APPROX.  
 8. REACTOR VESSEL TO BE TANKS AND APPROX.

REACTOR	COLLECTOR	CONDENSER	SEPARATOR	DRUM
Quantity	Quantity	Quantity	Quantity	Quantity
Material	Material	Material	Material	Material
Design Pressure	Design Pressure	Design Pressure	Design Pressure	Design Pressure
Design Temperature	Design Temperature	Design Temperature	Design Temperature	Design Temperature
Design Code	Design Code	Design Code	Design Code	Design Code
Manufacturer	Manufacturer	Manufacturer	Manufacturer	Manufacturer

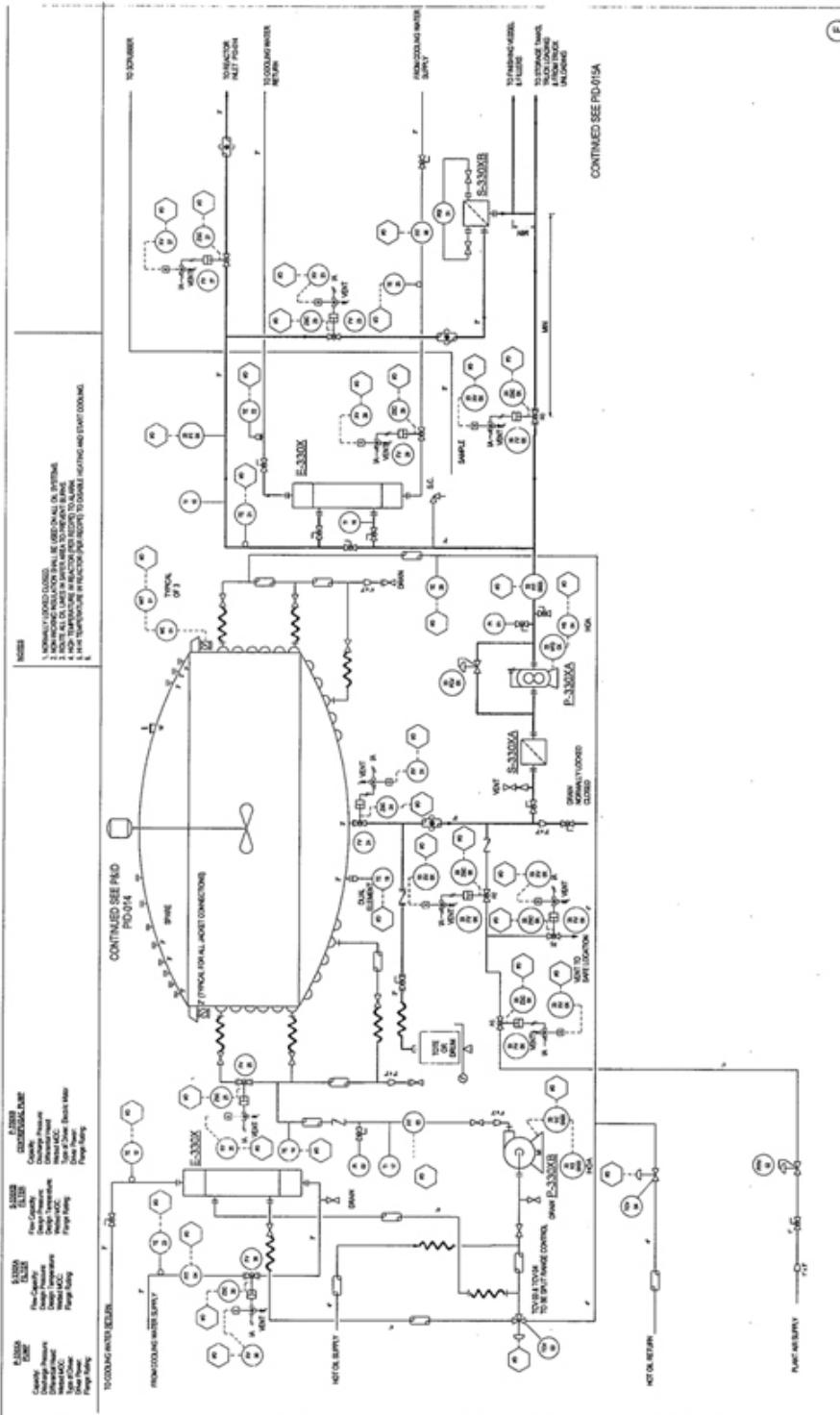


REV	DATE	BY	CHKD	APP'D
1	11/11/2008			
2	11/11/2008			
3	11/11/2008			
4	11/11/2008			
5	11/11/2008			

**FMC Technologies**  
 Manufacturing & Transfer  
 10000 FMC Drive, Houston, TX 77036  
 Phone: 281.961.4444 Fax: 281.961.4444

**Uthmaniyah Chemical**  
 Uthmaniyah Chemical  
 Uthmaniyah, Saudi Arabia

**P&IDs**  
 TYPICAL REACTOR SYSTEM  
 SHEET 1 OF 3



- NOTES
1. NORMAL OPERATING MODE
  2. NORMAL OPERATING MODE
  3. NORMAL OPERATING MODE
  4. NORMAL OPERATING MODE
  5. NORMAL OPERATING MODE
  6. NORMAL OPERATING MODE

- LEGEND
- | SYMBOL   | DESCRIPTION        |
|----------|--------------------|
| (Symbol) | Control Valve      |
| (Symbol) | Flow Control Valve |
| (Symbol) | Instrumentation    |
| (Symbol) | Heat Exchanger     |
| (Symbol) | Motor              |
| (Symbol) | Control Panel      |
| (Symbol) | Flow Meter         |
| (Symbol) | Temperature Sensor |
| (Symbol) | Pressure Sensor    |
| (Symbol) | Level Sensor       |
| (Symbol) | Flow Switch        |
| (Symbol) | Pressure Switch    |
| (Symbol) | Temperature Switch |
| (Symbol) | Level Switch       |
| (Symbol) | Flow Alarm         |
| (Symbol) | Pressure Alarm     |
| (Symbol) | Temperature Alarm  |
| (Symbol) | Level Alarm        |

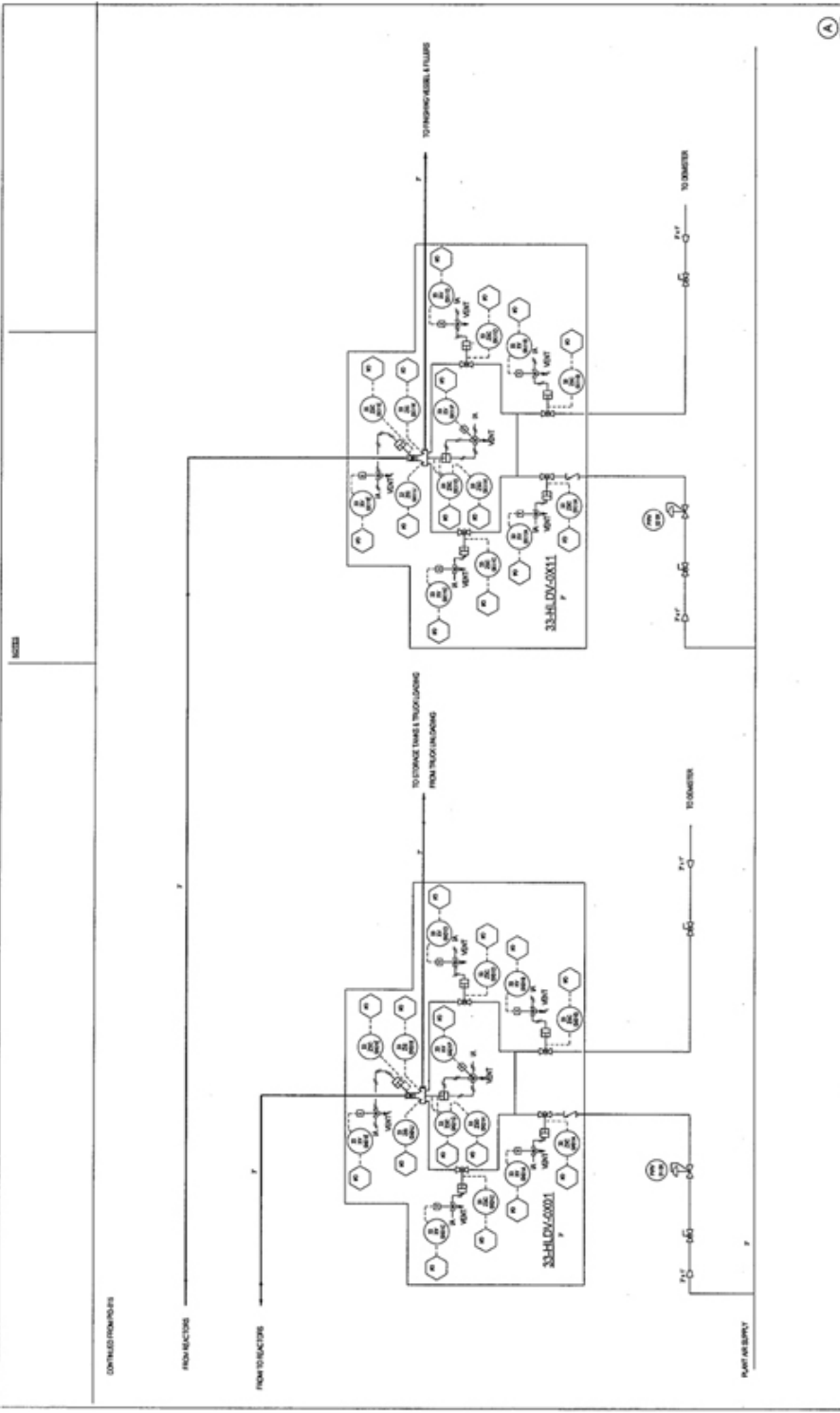
FMC Technologies  
 Manufacturing & Technical Services  
 10000 North 10th Street, Suite 100  
 Omaha, NE 68164  
 Phone: (402) 426-1000 Fax: (402) 426-1001

Jaker Chemical  
 10000 North 10th Street, Suite 100  
 Omaha, NE 68164

P&ID  
 TYPICAL REACTOR SYSTEM  
 SHEET 2 OF 3

PD-01A  
 SHEET 2 OF 3  
 PD-01SA

DATE: 01/11/2008  
 DRAWN BY: JAKER  
 CHECKED BY: JAKER  
 APPROVED BY: JAKER



<p>1000V/200PS          33-HLDV-COX11          1000V/200PS          33-HLDV-COX11</p>				<p>TO STORAGE TANKS (LOADING FROM REACTORS)</p>		<p>TO REFINING AREA (LTL/RS)</p>		<p>TO DAMPERS</p>	
<p>FROM REACTORS</p>		<p>FROM REACTORS</p>		<p>FROM REACTORS</p>		<p>FROM REACTORS</p>		<p>FROM REACTORS</p>	
<p>CONTROLS FROM PDS</p>		<p>CONTROLS FROM PDS</p>		<p>CONTROLS FROM PDS</p>		<p>CONTROLS FROM PDS</p>		<p>CONTROLS FROM PDS</p>	
<p>PLANT REBURN</p>				<p>PLANT REBURN</p>		<p>PLANT REBURN</p>		<p>PLANT REBURN</p>	
<p>P1</p>		<p>P2</p>		<p>P3</p>		<p>P4</p>		<p>P1</p>	

**FMC Technologies**  
 Refining & Transfer  
 4000 East 17th Avenue, Suite 300  
 Denver, Colorado 80202  
 Phone: 303.440.1234 Fax: 303.440.1234

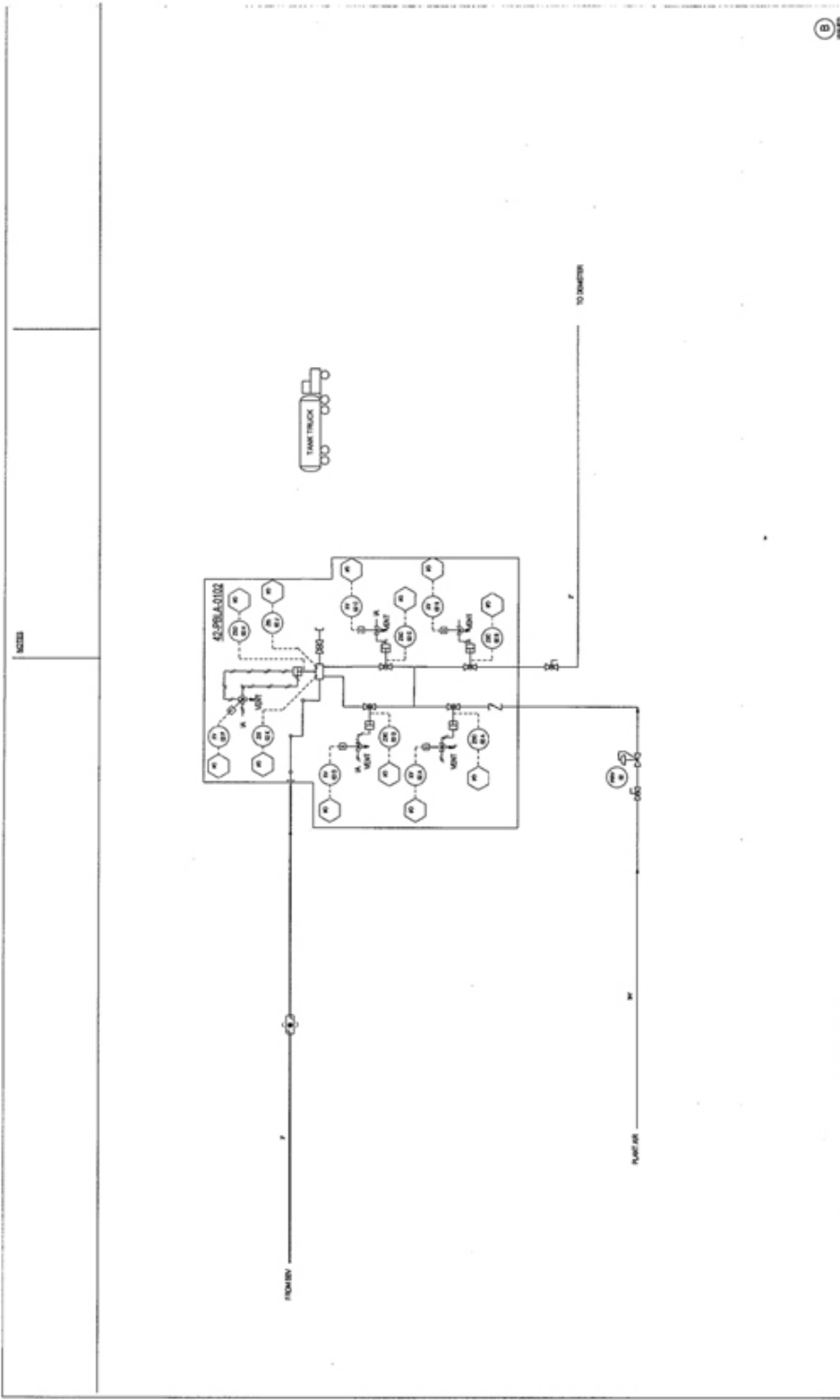
**Inhibitor Chemical**  
 www.inhibitor.com

**P&IDs**  
 TYPICAL REACTOR SS-300X  
 DISTRIBUTION SYSTEMS  
 (SHEET 3 OF 3)

NO. 1000V/200PS  
 NO. 33-HLDV-COX11  
 NO. 1000V/200PS  
 NO. 33-HLDV-COX11

DATE: 10/1/03  
 DRAWN BY: [REDACTED]  
 CHECKED BY: [REDACTED]  
 APPROVED BY: [REDACTED]

A



NOTES

<p>REV. 1.1 (2008) - REVISED</p> <p>DATE: 01/15/2008</p> <p>BY: [Signature]</p> <p>APP: [Signature]</p>		<p>PROJECT NO. 0000000000</p> <p>PROJECT NAME TYPICAL LOADING ARM</p>	<p>DATE: 01/15/2008</p> <p>BY: [Signature]</p> <p>APP: [Signature]</p>	<p>PROJECT NO. 0000000000</p> <p>PROJECT NAME TYPICAL LOADING ARM</p>	<p>DATE: 01/15/2008</p> <p>BY: [Signature]</p> <p>APP: [Signature]</p>
<p>REVISIONS</p> <p>NO. DESCRIPTION</p>		<p>DATE</p> <p>BY</p> <p>APP</p>		<p>DATE</p> <p>BY</p> <p>APP</p>	
<p>1. INITIAL DESIGN</p>		<p>01/15/2008</p>		<p>01/15/2008</p>	

**FMC Technologies**

Blending & Transfer

Phone: 877.844.4278 Fax: 877.844.4278

Lubrizol Chemical

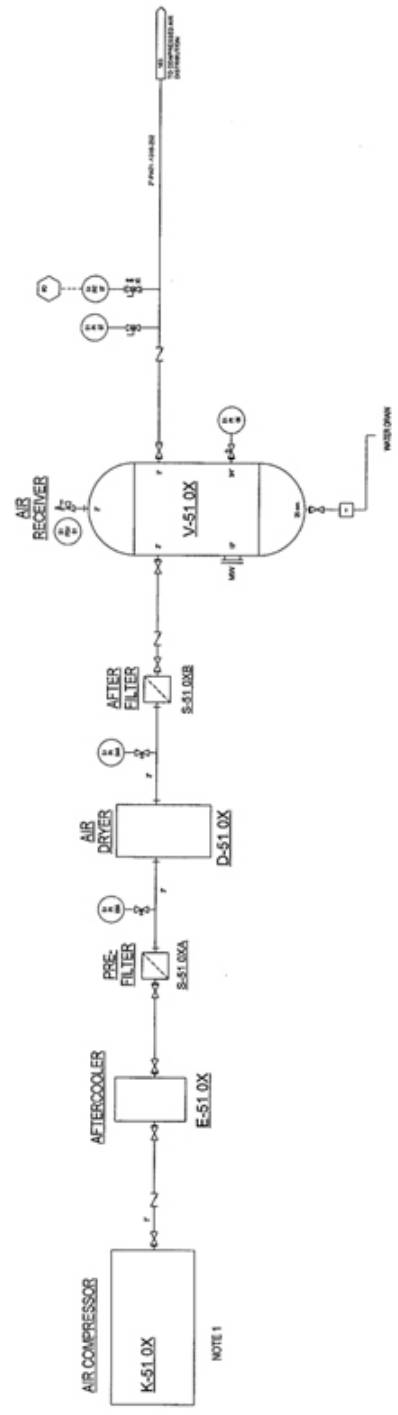
Corporation

Wickliffe, Ohio

**REVISIONS**  
 ALL REVISIONS  
 Drawn by: [Blank]  
 Checked by: [Blank]  
 Design Engineer: [Blank]  
 MJC / [Blank]  
 Revision Number: [Blank]

**NOTES**  
 1. CONSULTATION AND VERIFICATION OF SCHEMATIC FOR SYSTEMS IS REPRESENTATIVE ONLY.  
 EXACT DETAILS SHALL BE SUPPLIED BY MANUFACTURERS.

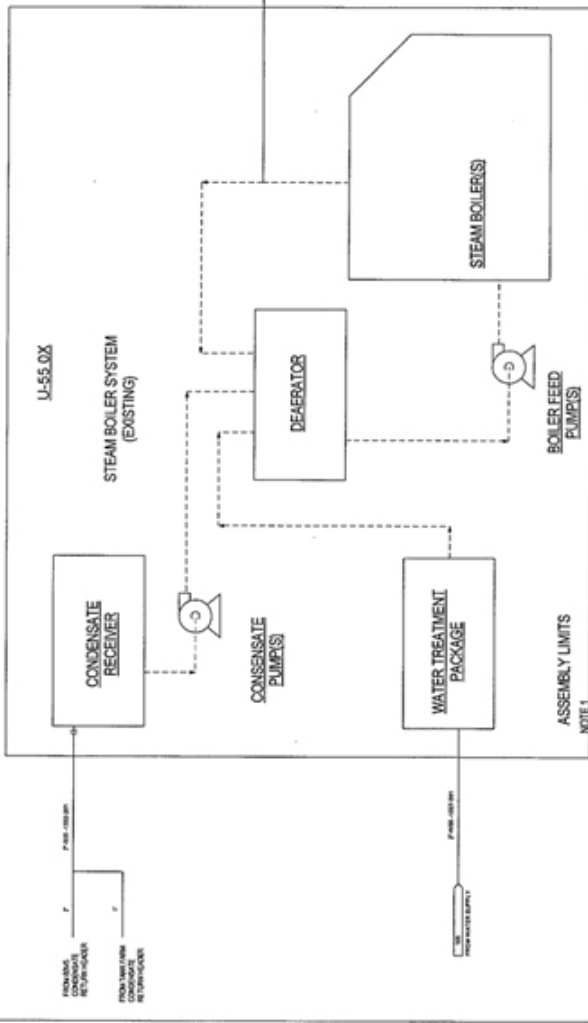
**AIR COMPRESSOR  
 (NEW)**



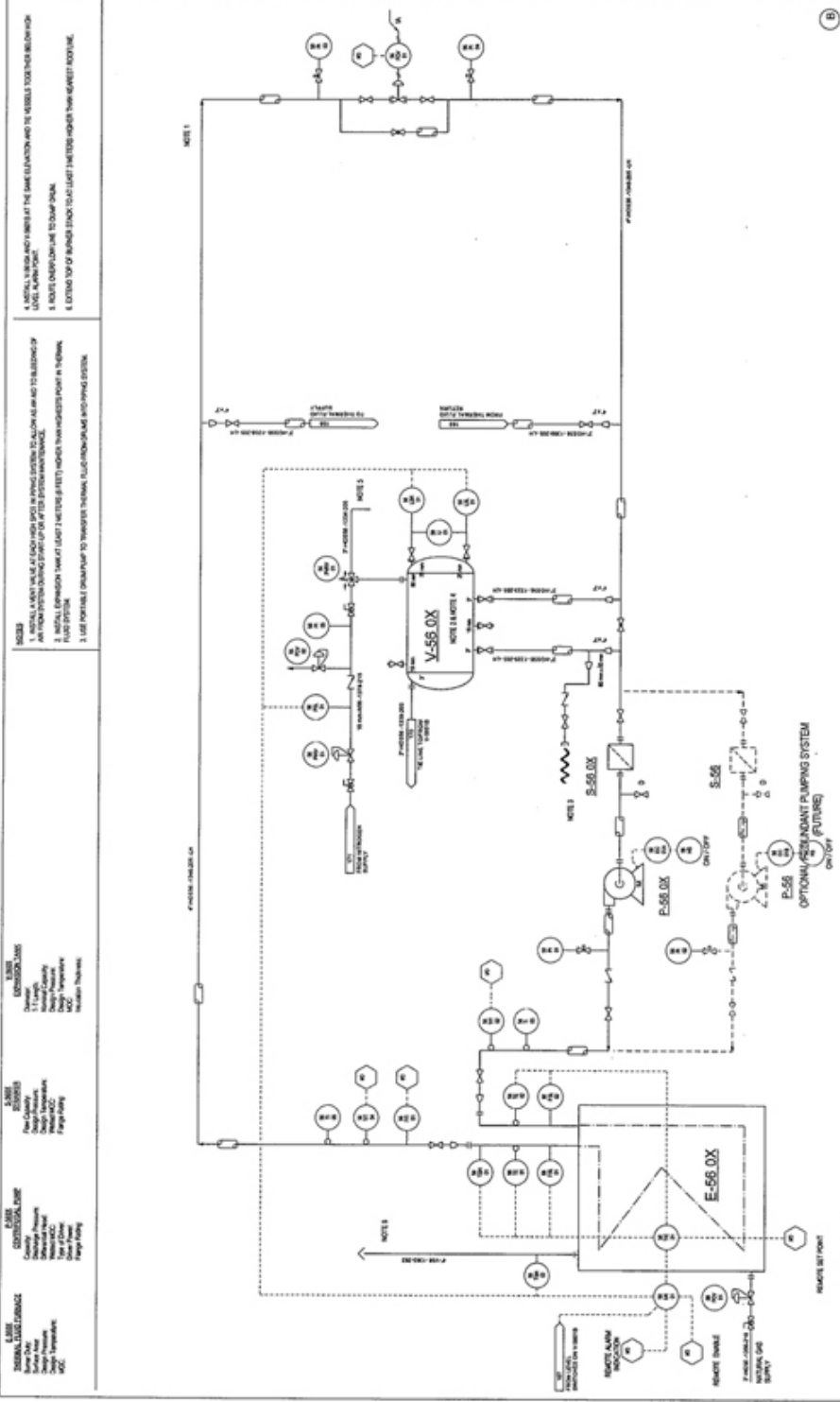
NOTE 1

<p><b>FMC Technologies</b>          Handling &amp; Transfer          100 S. 17th Street, Suite 100          Phoenix, AZ 85004-1000 Fax: (602) 961-1433</p>		<p><b>Juliker Chemical</b>          SOLUTIONS, INC.</p>	P&IDs TYPICAL COMPRESSED AIR SYSTEM	PD-447 P-00070
DATE: [Blank] DRAWN BY: [Blank] CHECKED BY: [Blank] DATE: [Blank]	REVISIONS NO. 1 DATE: [Blank]	APPROVED BY: [Blank] DATE: [Blank]	PROJECT NO.: [Blank] SHEET NO.: [Blank]	

NOTES  
 1. CONSULTING ENGINEER'S DESIGN RESPONSIBILITY IS LIMITED TO THE DESIGN OF THE PIPING AND EQUIPMENT SHOWN ONLY. CONSULT THE OWNER FOR ALL OTHERS.



<b>FMC Technologies</b> Building & Transfer 3000 North 10th Street Phoenix, AZ 85018-1441 Phone: (602) 944-1441 Fax: (602) 944-1441		<b>Graham Chemical</b> Corporation 10000 North 10th Street Phoenix, AZ 85020	<b>PKIDS</b> TYPICAL STEAM SUPPLY SYSTEM P-000078
DATE: 01/15/2008 DRAWN BY: J. B. BROWN CHECKED BY: J. B. BROWN APPROVED BY: J. B. BROWN	PROJECT: L-55-0X SHEET: 1 OF 1 SCALE: AS SHOWN DATE: 01/15/2008	REVISIONS: NO. DESCRIPTION 1. ISSUE FOR CONSTRUCTION	PROJECT NO.: L-55-0X SHEET NO.: 1 OF 1 SCALE: AS SHOWN DATE: 01/15/2008



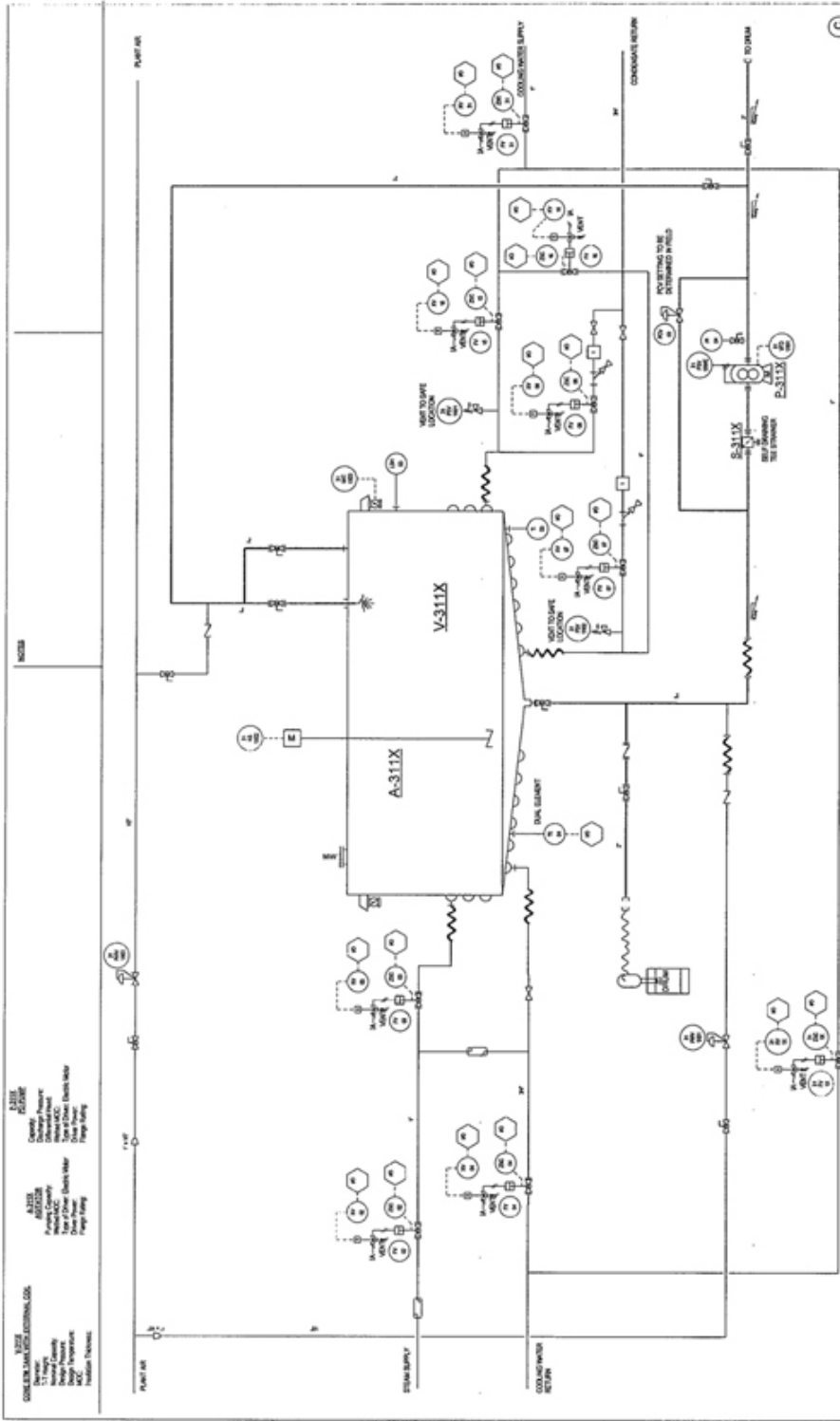
**GENERAL REQUIREMENTS:**  
 1. ALL MATERIALS SHALL BE AS SPECIFIED IN THE DATA SHEET.  
 2. ALL PIPING SHALL BE 304 STAINLESS STEEL UNLESS OTHERWISE SPECIFIED.  
 3. ALL PIPING SHALL BE 1/2" OR GREATER.  
 4. ALL PIPING SHALL BE WELDED TO THE DESIGN AND SHALL BE WELDED TO THE DESIGN AND SHALL BE WELDED TO THE DESIGN.

**DESIGN BASIS:**  
 1. DESIGN BASIS: AS SPECIFIED IN THE DATA SHEET.  
 2. DESIGN BASIS: AS SPECIFIED IN THE DATA SHEET.  
 3. DESIGN BASIS: AS SPECIFIED IN THE DATA SHEET.

**NOTES:**  
 1. ALL PIPING SHALL BE 304 STAINLESS STEEL UNLESS OTHERWISE SPECIFIED.  
 2. ALL PIPING SHALL BE 1/2" OR GREATER.  
 3. ALL PIPING SHALL BE WELDED TO THE DESIGN AND SHALL BE WELDED TO THE DESIGN.

<p><b>PROJECT:</b>          THERMAL FLUID SYSTEM</p>	<p><b>CLIENT:</b>          Baker Chemical</p>	<p><b>DATE:</b>          11/11/11</p>
<p><b>DESIGNER:</b>          [Name]</p>	<p><b>REVIEWER:</b>          [Name]</p>	<p><b>SCALE:</b>          1:1</p>
<p><b>PROJECT NO.:</b>          [Number]</p>	<p><b>PROJECT NAME:</b>          THERMAL FLUID SYSTEM</p>	<p><b>PROJECT LOCATION:</b>          [Location]</p>
<p><b>PROJECT PHASE:</b>          [Phase]</p>	<p><b>PROJECT STATUS:</b>          [Status]</p>	<p><b>PROJECT MANAGER:</b>          [Name]</p>





**GENERAL INFORMATION:**

DATE: 04/15/2008  
 DRAWN BY: [Name]  
 CHECKED BY: [Name]  
 APPROVED BY: [Name]

**PROJECT:** [Project Name]

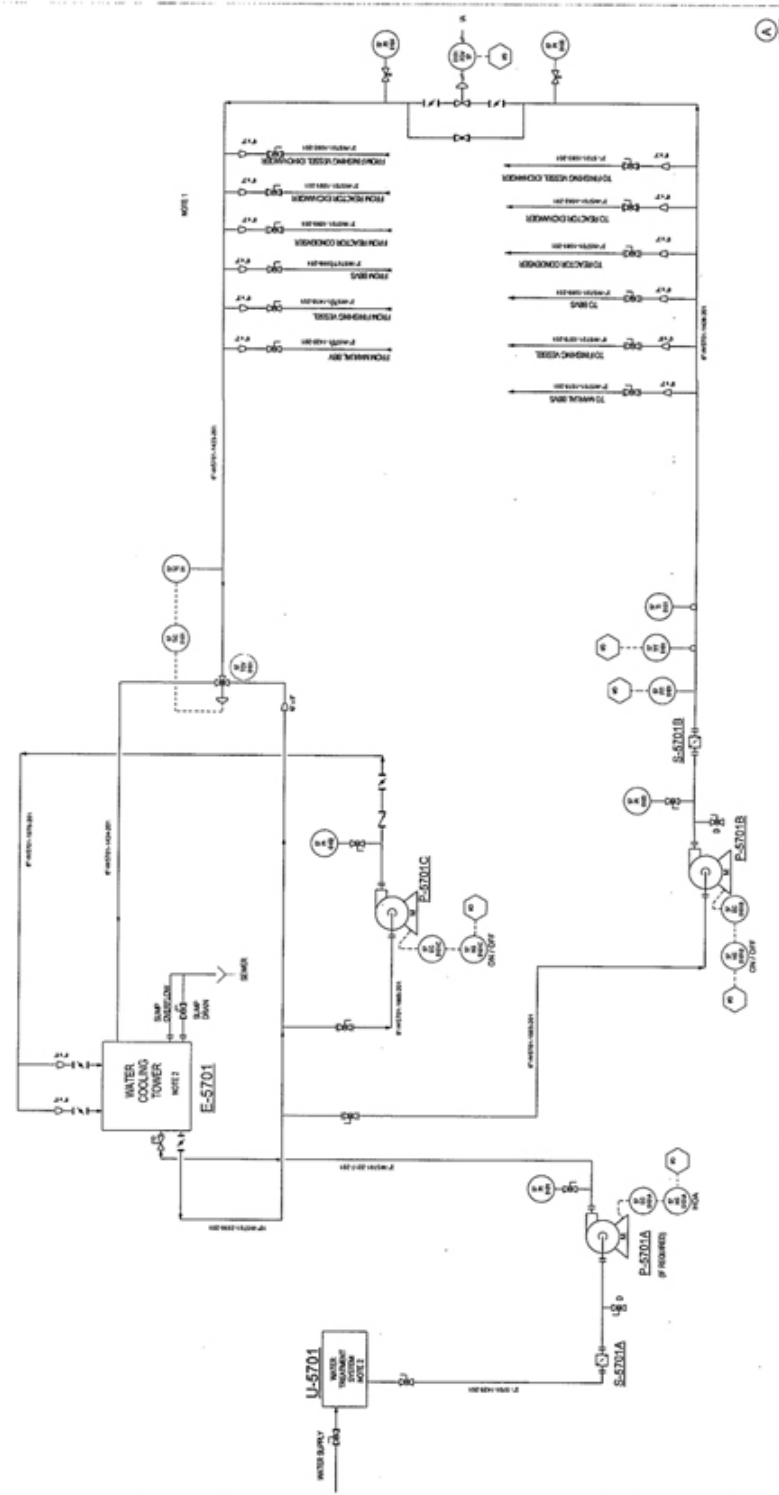
**DESCRIPTION:** [Description]

**REVISIONS:**

NO.	DATE	DESCRIPTION
1	04/15/2008	Issue for Construction
2	04/15/2008	Issue for Procurement
3	04/15/2008	Issue for Installation
4	04/15/2008	Issue for Start-up

<p><b>FMC Technologies</b>          Blending &amp; Transfer          Division          10000 FMC Drive          Houston, TX 77036          Phone: 281-991-1000 Fax: 281-991-1001</p>	<p><b>Oilfield Chemical</b>          Division          10000 FMC Drive          Houston, TX 77036          Phone: 281-991-1000 Fax: 281-991-1001</p>	<p><b>PLUIDS</b>          TYPICAL          MANUAL BLENDING VESSELS          P-0029          04/2007</p>
--	--	---

NOTES		
<p>1. MATERIALS AND FINISHES ARE TO BE DETERMINED BY THE ENGINEER AND TO BE LISTED IN THE PROJECT SPECIFICATIONS.</p> <p>2. CONFIRMATION AND INSTALLATION OF THESE DETAILS TO BE PROVIDED BY SELECTED VENDOR.</p>	<p><b>E-5701</b>  <b>WATER COOLING TOWER</b>            Capacity: 1000 GPM            Cooling Water: 1000 GPM            Motor: 10 HP            Drive: Direct Drive            Pump: Vertical</p>	<p><b>E-5702</b>  <b>WATER COOLING TOWER</b>            Capacity: 1000 GPM            Cooling Water: 1000 GPM            Motor: 10 HP            Drive: Direct Drive            Pump: Vertical</p>



PROJECT INFORMATION	
PROJECT NO.	PA101
PROJECT NAME	COOLING WATER SYSTEM
DATE	10/12/2008
DESIGNED BY	
CHECKED BY	
APPROVED BY	
SCALE	
DATE	
PROJECT NO.	PA101
PROJECT NAME	COOLING WATER SYSTEM
DATE	10/12/2008
DESIGNED BY	
CHECKED BY	
APPROVED BY	
SCALE	
DATE	

**FMC Technologies**  
 10000 W. 10th Street, Suite 100  
 Denver, CO 80202  
 Phone: (303) 441-1000 Fax: (303) 441-1001



**Water Chemical**  
 Corporation  
 10000 W. 10th Street, Suite 100  
 Denver, CO 80202  
 Phone: (303) 441-1000 Fax: (303) 441-1001

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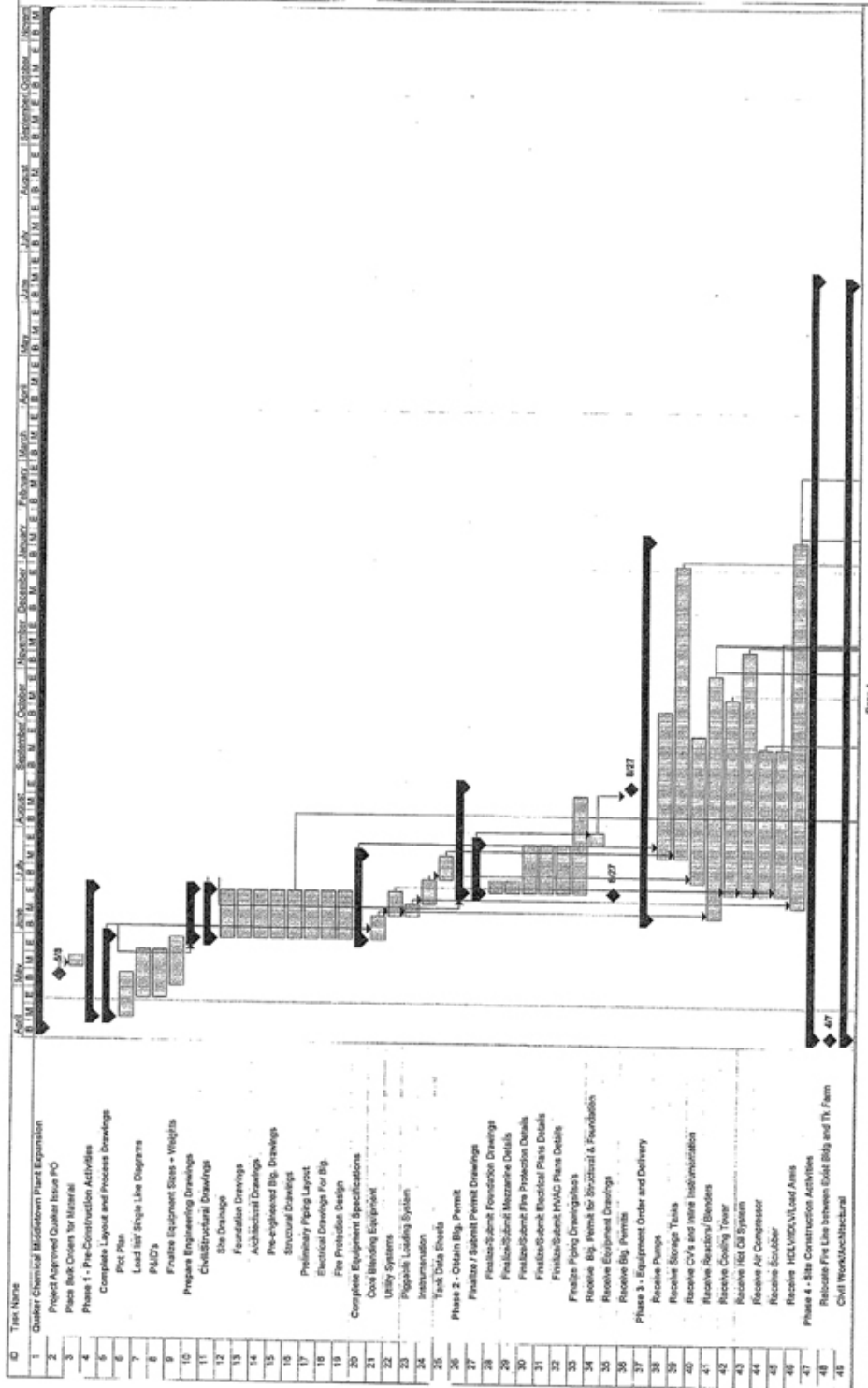
**ATTACHMENT 7.2**  
**GENERAL ARRANGEMENT**



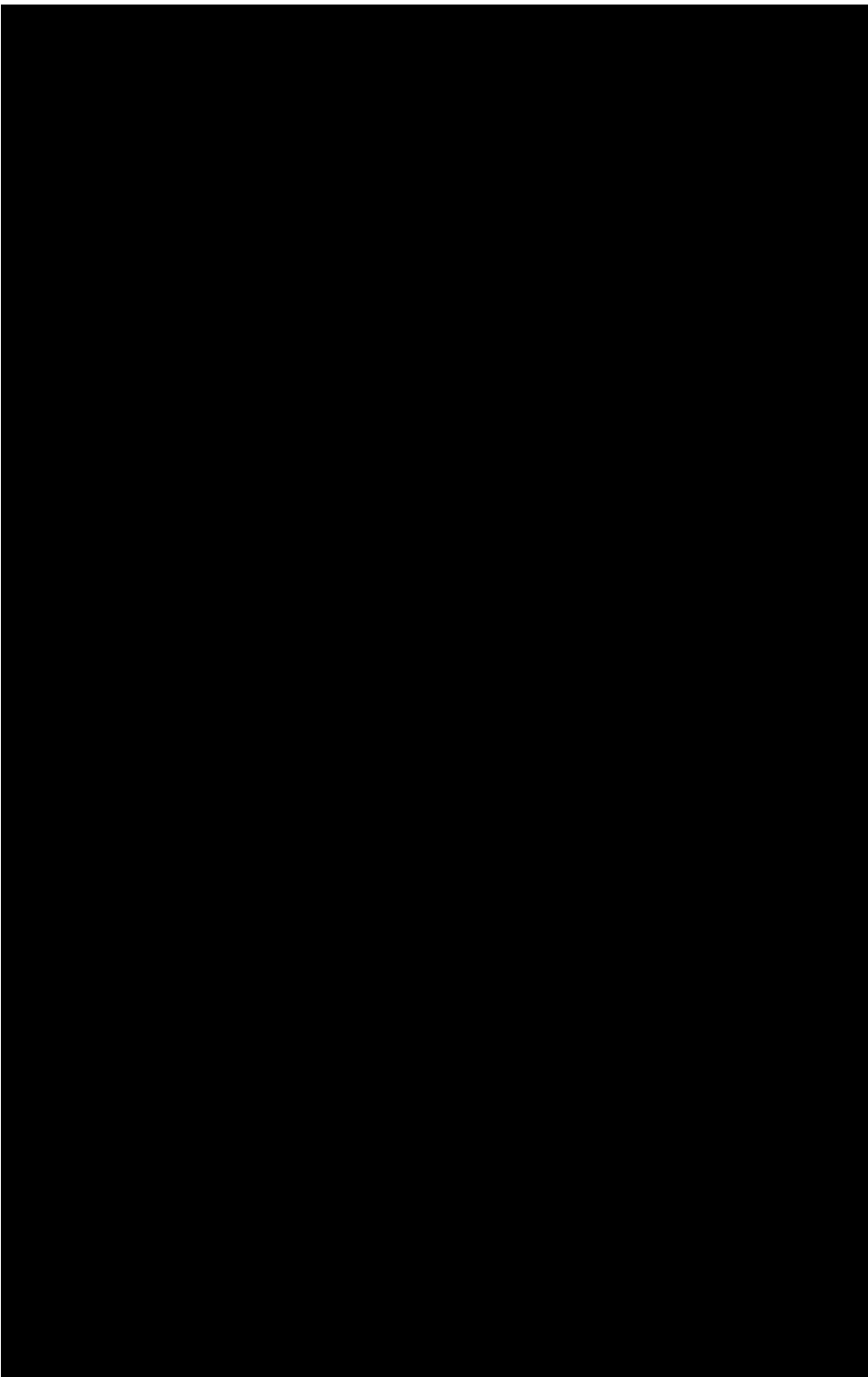
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**ATTACHMENT 7.3**

**PRELIMINARY PROJECT SCHEDULE**

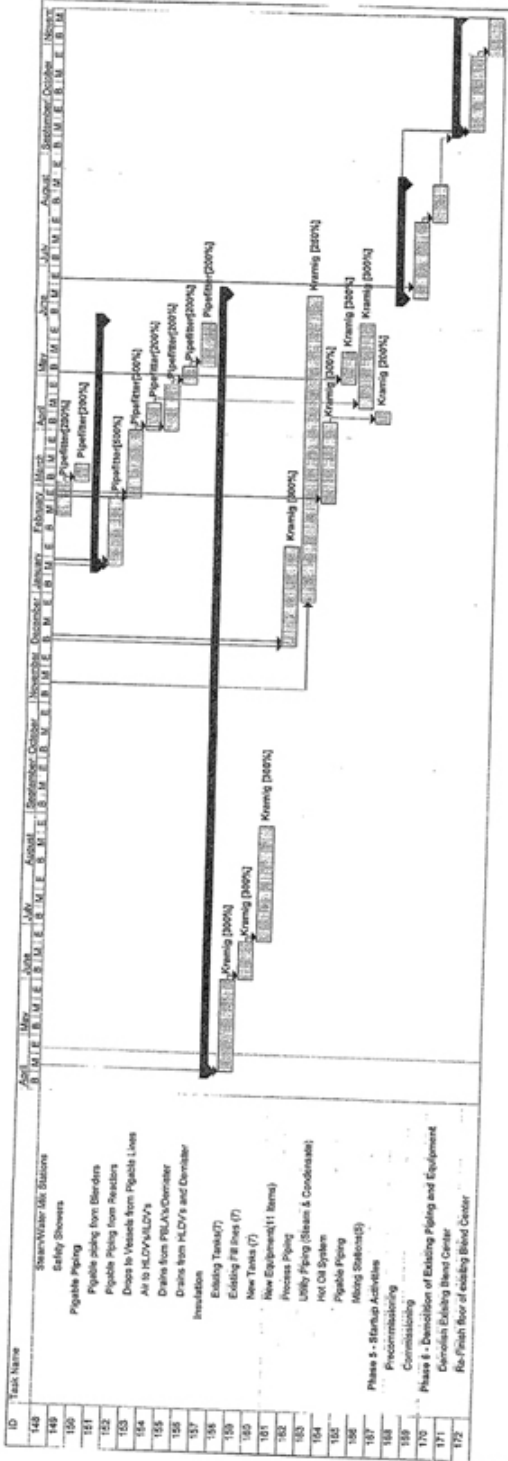


ID	Task Name
1	Quaker Chemical Shutdown Plant Expansion
2	Project Approved Quaker Issue PO
3	Place Bulk Orders for Material
4	Phase 1 - Pre-Construction Activities
5	Complete Layout and Process Drawings
6	PIC Plan
7	Lead 1st' Single Line Diagrams
8	P&IDs
9	Finalize Equipment Specs - Weights
10	Prepare Engineering Drawings
11	Civil/Structural Drawings
12	Site Drainage
13	Foundation Drawings
14	Architectural Drawings
15	Pre-engineered Bldg. Drawings
16	Structural Drawings
17	Preliminary Piping Layout
18	Electrical Drawings For Bldg.
19	Fire Protection Design
20	Complete Equipment Specifications
21	Civil/Planting Equipment
22	Utility Systems
23	Pipework, Loading System
24	Instrumentation
25	Track Data Sheets
26	Phase 2 - Obtain Bldg. Permit
27	Finalize/Submit Permit Drawings
28	Finalize/Submit Foundation Drawings
29	Finalize/Submit Mechanical Details
30	Finalize/Submit Fire Protection Details
31	Finalize/Submit Electrical Plans Details
32	Finalize/Submit HVAC Plans Details
33	Finalize Piping Drawings/Isos
34	Receive Bldg. Permit for Structural & Foundation
35	Receive Equipment Drawings
36	Receive Bldg. Permit
37	Phase 3 - Equipment Order and Delivery
38	Receive Pumps
39	Receive Storage Tanks
40	Receive CVA and Valve Installation
41	Receive Reactors/Blenders
42	Receive Cooling Tower
43	Receive 160 GPM System
44	Receive Air Compressor
45	Receive Scrubber
46	Receive HCV/MSX/Load Arms
47	Phase 4 - Site Construction Activities
48	Relocate Fire Line between Exist Bldg and TV Farm
49	Civil Work/Architectural



ID	Task Name	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
100	Set Scrubber																					
101	Equipment Inside New Blending																					
102	Metrazine supported Equipment																					
103	Set BV-1																					
104	Set BV-2																					
105	Set BV-3																					
106	Set BV-4																					
107	Set BV-5																					
108	Set FDC-01																					
109	Set FDC-02																					
110	Set FC-10																					
111	Pre-cool TIC																					
112	Install Load Cells																					
113	Constanters Equipment																					
114	BBV-09																					
115	BBV-10																					
116	OS-42																					
117	OS-44																					
118	Piping																					
119	Mechanics																					
120	Pipe Fabrication																					
121	Exciling and New Tank Pans																					
122	Water/Reuse Existing Pipe Rack																					
123	Piping to Existing Tanks 3,20,4,3,31,5																					
124	Piping to New Tanks 41,43,44,45,46,47,48,4																					
125	Add Steam to Vessels 1,22,27,31,32,33,36																					
126	Steam to New Vessels 41,43,44,45,46,47,48,49																					
127	Install AI (Process Truck Horse)																					
128	Wastewater Piping																					
129	Extend product lines to end of existing rack																					
130	Pipe Rack Tie Ins for new Horse Board(60 Ft)																					
131	Truck Loading & Unloading																					
132	Install Truck Unloading Pumps																					
133	Install Trip Stations in Reactor Unloading																					
134	Piping in New building																					
135	Piping to Reactors																					
136	Process Piping to Tanks 42 and 44																					
137	Piping to Reactor																					
138	Piping to Flash Vessel																					
139	Steam to Vessels 42 & 44																					
140	Utility Piping (Steam)																					
141	Cooling Water																					
142	Steam Condensate																					
143	Hot Oil Piping																					
144	Scrubber Piping																					
145	Cry-Soft Water																					
146	Nitrogen Piping																					
147	Air Motor/Compressor																					





---

**ATTACHMENT 7.4**

**BULK TANKS**

<b>Component Code</b>	<b>Raw Material Name</b>	<b>Tank ID</b>	<b>HOSE BOARD column #</b>	<b>Tank Cap. (gal)</b>	<b>Tank Status</b>	<b>Tank Type</b>	<b>Tank Dimensions (dta x ht)</b>	<b>Tank Material of Construction</b>	<b>Tank Heating Available</b>	<b>Heating Reg'd for Item in storage (dog F)</b>	<b>Recommended Storage Temperature</b>
102495	Fatty Acid Methyl Ester	OS-0001	1	30,000	Existing	Flat Btm	12' x 35'	Carbon Steel	No (exist)	Yes (100)	90 to 120 F
100752	Grease - Yellow	OS-0002	1	30,000	Existing	Flat Btm	12' x 35'	Carbon Steel	Yes (exist)	Yes (120)	120 to 130 F
100485	Nap Oil 20 cST @ 40C	OS-0003	2	30,000	Existing	Flat Btm	12' x 35'	Carbon Steel	Yes (exist)	Yes (90)	80 to 100 F
100132	Oleic Acid	OS-0004	2	30,000	Existing	Flat Btm	12' x 35'	Carbon Steel	Yes (new)	Yes (100)	100 to 110 F
101733	Nap Oil 22 cST @ 40C	OS-0005	3	30,000	Existing	Flat Btm	12' x 35'	Carbon Steel	No (exist)	No	Ambient
100364	Sodium Hydroxide 50%	OS-0006	1	17,000	Existing	Flat Btm	12' x 35'	Carbon Steel	Yes (exist)	Yes (135)	130 to 140 F
102958	White Grease - Middletown	OS-0007	1	30,000	Existing	Flat Btm	12' x 35'	Carbon Steel	Yes (exist)	Yes (120)	120 F
100512	White Grease - Detroit	OS-0008	2	30,000	Existing	Flat Btm	12' x 35'	Carbon Steel	Yes (exist)	Yes (120)	120 F
100133	Technical Acid 47	OS-0009	2	30,000	Existing	Flat Btm	12' x 35'	Carbon Steel	Yes (exist)	Yes (120)	120 to 130 F
101733	Nap Oil 22 cST @ 40C	OS-0010	3	30,000	Existing	Flat Btm	12' x 35'	Carbon Steel	No (exist)	No	Ambient
100315	Nap Oil 240 cST @ 40C	OS-0011	10	12,000	Existing	Flat Btm	11' x 17'	Carbon Steel	Yes (exist)	Yes (100)	100 to 120 F
102673	Coconut Oil Crude	OS-0012	8	12,000	Existing	Flat Btm	11' x 17'	Carbon Steel	Yes (exist)	Yes (110)	105 to 130 F
101757	P&G methyl Palmatate	OS-0013	8	12,000	Existing	Flat Btm	12' x 35'	Carbon Steel	Yes (exist)	Yes (100)	90 to 105 F
spare	Spare	OS-0014	6	12,000	Existing	Flat Btm	12' x 35'	Carbon Steel	No (exist)	No	
101726	Para Oil 3.5 cSt @ 40C	OS-0015	5	12,000	Existing	Flat Btm	11' x 17'	Carbon Steel	No (exist)	No	Ambient
101409	Severely Hydrotreated Light Distillates Naphtheric	OS-0016	3	12,000	Existing	Flat Btm	11' x 17'	Carbon Steel	No (exist)	No	Ambient
100326	Coconut Oil Refined	OS-0017	10	12,000	Existing	Flat Btm	11' x 17'	Carbon Steel	Yes (exist)	Yes (115)	110 to 120 F
100932	Calcium Sulfonate In Mineral Oil	OS-0018	8	12,000	Existing	Flat Btm	11' x 17'	Carbon Steel	Yes (exist)	Yes (130)	120 to 130 F
000001	Stop Oil	OS-0019	8	12,000	Existing	Flat Btm	11' x 17'	Carbon Steel	No (exist)	NO	Ambient
101734	Para Oil 20 cST @ 40C	OS-0020	6	12,000	Existing	Flat Btm	11' x 17'	Carbon Steel	No (exist)	NO	Ambient
102651	Paraflex Ht-10/ Conosol	OS-0021	5	12,000	Existing	Flat Btm	11' x 17'	Carbon Steel	No (exist)	NO	Ambient
102316	Grease - Yellow Sulfurized	OS-0022	3	12,000	Existing	Flat Btm	11' x 17'	Carbon Steel	No (exist)	Yes (120)	100 to 140 F
014199	U14199BS (Made in Reactor)	OS-0023	10	12,000	Existing	Flat Btm	11' x 17'	Carbon Steel	Yes (exist)	Yes (90)	80 to 100 F
000000	Waste water	OS-0024	9	12,000	Existing	Flat Btm	11' x 17'	Carbon Steel	Yes (exist)	Yes (40)	>32 F
101539	Sodium Alkaryl Sulfonate MW 430	OS-0025	7	12,000	Existing	Flat Btm	13' x 14'	Carbon Steel	Yes (new)	Yes (135)	120 to 130 F
101448	Calcium Sulfonate In Mineral Oil 1448	OS-0026	6	12,000	Existing	Flat Btm	11' x 17'	Carbon Steel	No (exist)	Yes (120)	120 F
100469	Low Odor Base Solvent (LOBS)	OS-0027	5	12,000	Existing	Flat Btm	11' x 17'	Carbon Steel	No (exist)	No	Ambient
0	spare	OS-0028	4	12,000	Existing	Flat Btm	11' x 17'	Carbon Steel	No (exist)		
014198	U14198BS (Made in Reactor)	OS-0029	10	12,000	Existing	Flat Btm	11' x 17'	Carbon Steel	Yes (exist)	Yes (90)	80 to 100 F
013590	Intermediate 013590 (Made in Reactor)	OS-0030	9	12,000	Existing	Flat Btm	11' x 17'	Carbon Steel	Yes (exist)	Yes (105)	100 to 110 F
100116	Monoethanolamine	OS-0031	7	12,000	Existing	Flat Btm	11' x 17'	Carbon Steel	No (exist)	Yes (95)	95 F
100413	LARD OIL SULFURIZED 10%	OS-0032	6	12,000	Existing	Flat Btm	11' x 17'	Carbon Steel	No (exist)	Yes (135)	130 to 140 F
101847	Coconut Fatty Acid,	OS-0033	5	12,000	Existing	Flat Btm	13' x 14'	Carbon Steel	No (exist)	Yes (115)	115 F
102154	Severely Hydrotreated Heavy Naphthenic Distillates	OS-0034	4	12,000	Existing	Flat Btm	11' x 17'	Carbon Steel	No (exist)	No	Ambient
100741	Severely Hydrotreated Heavy Naphthenic Distillates	OS-0035	9	12,000	Existing	Flat Btm	11' x 17'	Carbon Steel	No (exist)	Yes (125)	120 to 130 F
102416	Sulfurized Fattyacid Ester 10%	OS-0036	9	12,000	Existing	Flat Btm	11' x 17'	Carbon Steel	Yes (exist)	Yes (110)	90 to 130 F
100854	Reclaimed Oil 40 cST @ 40C	OS-0037	7	12,000	Existing	Flat Btm	11' x 17'	Carbon Steel	Yes (exist)	Yes (80)	80 F
spare	spare	OS-0038	7	12,000	Existing	Flat Btm	11' x 17'	Carbon Steel	No (exist)	No	
102639	Para/Nap Solvent 113C	OS-0039	4	12,000	Existing	Flat Btm	11' x 17'	Carbon Steel	No (exist)	No	Ambient
102667	Poly ester blend	OS-0040	4	12,000	Existing	Flat Btm	11' x 17'	Carbon Steel	No (exist)	No	
013473	Ferrocate x 61A-Us Conc. (Made in Blender)	OS-0041		12,000	New		13' x 14'	Carbon Steel		Yes (105)	100 to 110 F
100187	Trimethylolpropane (locate tank in reactor bldg)	OS-0042		12,000	New		13' x 14'	Carbon Steel		Yes (200)	195 to 210 F
013725	Quintolubric 888 68 (Made in finishing tank)	OS-0043		20,000	New			Carbon Steel		Yes (105)	100 to 110 F
100793	Neopenlyl Glycol (locate tank in reactor bldg)	OS-0044		12,000	New		13' x 14'	Carbon Steel		Yes (135)	130 to 140 F
008055	TMP Monomerate (Made in Reactor)	OS-0045		12,000	New		13' x 14'	Carbon Steel		Yes (105)	100 to 110 F
004918	Intermediate 4918 (Made in Reactor)	OS-0046		12,000	New		13' x 14'	Carbon Steel		Yes (125)	120 to 130 F
005510	Quaker Draw 5510 (Made in Reactor)	OS-0047		12,000	New		13' x 14'	Stainless Steel		Yes (100)	90 to 100 F
100071	Diethanolamine	OS-0048		12,000	New		13' x 14'	Stainless Steel		Yes (125)	122 F
014113	Quintolubric 888-46 (Made in finishing tank)	OS-0049		20,000	New			Carbon Steel		Yes (105)	100 to 110 F

**REV 2**  
**TANK DATA**

Component Code	Raw Material Name	Tank ID	Tank # item is currently stored in Mdt	Recommended Metallurgy for item in storage	Raw Material Type Description	Total Thruput (lb)	No. of Products	Blends/ Yr	Tc/mo	Truck/ mo	Tote/wk
102495	Fatty Acid Methyl Ester	OS-0001	4	Carbon Steel	Bulk Component	2,126,452	10	347.7	0.9	3.7	10.2
100752	Grease - Yellow	OS-0002		Carbon Steel	Bulk Component	5,000,130	12	321.8	2.1	8.7	24
100485	Nap Oil 20 cSt @ 40C	OS-0003		Carbon Steel	Bulk Component	21,437,019	42	968.1	8.9	37.2	103.1
100132	Oleic Acid	OS-0004		Stainless Steel	Bulk and Drum Component	10,059,558	44	959.2	4.2	17.5	48.4
101733	Nap Oil 22 cSt @ 40C	OS-0005	1	Carbon Steel	Bulk and Drum Component	20,531,858	33	684.3	8.6	35.6	98.7
100364	Sodium Hydroxide 50%	OS-0006	6	Stainless Steel	Bulk Component	2,078,898	25	611.3	0.9	3.6	10.0
102958	White Grease - Middletown	OS-0007	7	Carbon Steel	Bulk Component	12,000,000	5	112.4	5.0	20.8	57.7
100512	White Grease - Detroit	OS-0008		Carbon Steel	Bulk and Drum Component	11,641,477	17	552.5	4.9	20.2	56.0
100133	Tachnical Acid 47	OS-0009		Carbon Steel	Bulk Component	12,140,580	7	323.1	5.1	21.1	58.4
101733	Nap Oil 22 cSt @ 40C	OS-0010	1	Carbon Steel	Bulk and Drum Component	20,531,856	33	684.3	8.6	35.6	98.7
100315	Nap Oil 240 cSt @ 40C	OS-0011	11	Carbon Steel	Bulk and Drum Component	2,332,768	38	657.2	1.0	4.0	11.2
102673	Coconut Oil Crude	OS-0012	12	Carbon Steel	Bulk Component	1,130,034	6	85.0	0.5	2.0	5.4
101757	P& G Methyl palmatate	OS-0013	3	Carbon Steel	Bulk and Drum Component	1,566,423	20	332.6	0.7	2.7	7.5
spare	Spare	OS-0014		Carbon Steel							
101726	Para Oil 3.5 cSt @ 40C	OS-0015		Carbon Steel	Bulk Component	2,748,841	5	103.5	1.1	4.8	13.2
101409	Sevarely Hydrotreated Light Naphthenic Distillates	OS-0016		Carbon Steel	Bulk and Drum Component	966,739	18	260.9	0.4	1.7	4.6
100326	Coconut Oil Refined	OS-0017		Carbon Steel	Bulk Component	2,546,208	11	327.8	1.1	4.4	12.2
100932	Calcium Sulfonate In Mineral Oil	OS-0018		Carbon Steel	Bulk and Drum Component	2,120,989	15	353.8	0.9	3.7	10.2
000001	Stop Oil	OS-0019		Carbon Steel	Slop Oil						
101734	Para Oil 20 cSt @ 40C	OS-0020		Carbon Steel	Bulk Component	3,608,379	11	362.2	1.5	6.3	17.3
102651	Paraflex Ht-10/Conosol	OS-0021	21	Carbon Steel	Bulk Component	743,325	2	27.9	0.3	1.3	3.6
102316	Grease - Yellow Sulfurized	OS-0022		Carbon Steel	Bulk Component	3,211,217	12	383.4	1.3	5.6	15.4
101499	U14199BS (Made in Reactor)	OS-0023	23	Carbon Steel	Bulk Component	1,561,497	6	131.6	0.7	2.7	7.5
000000	Waste water	OS-0024	24	Carbon Steel	Waste water	625,000					
101539	Sodium Alkylaryl Sulfonate MW 430	OS-0025		Carbon Steel	Bulk and Drum Component	1,120,735	21	465.6	0.5	1.9	5.4
101448	Calcium Sulfonate In Mineral Oil 1448	OS-0026		Carbon Steel	Bulk and Drum Component	1,161,918	5	167.3	0.5	2.0	5.6
100469	Low Odor Base Solvent (LOBS)	OS-0027		Carbon Steel	Bulk Component	1,372,489	14	157.7	0.6	2.4	6.6
0	spare	OS-0028		Carbon Steel							
014198	U14198BS (Made in Reactor)	OS-0029	2	Carbon Steel	Bulk Component	501,804	5	75.6	0.2	0.9	2.4
013590	Intermediate 013590 (Made in Blender)	OS-0030		Carbon Steel	Bulk Component	2,430,311	1	184.0	1.0	4.2	11.7
100116	Monoethanolamine	OS-0031		Carbon Steel	Bulk and Drum Component	1,546,774	68	1,026.3	0.6	2.7	7.4
100413	LARD OIL SULFURIZED 10%	OS-0032	8	Carbon Steel	Bulk Component	2,078,898	25	611.3	0.9	3.6	10.0
101847	Coconut Fatty Acid,	OS-0033		Carbon Steel	Bulk and Drum Component	1,449,634	4	109.8	0.6	2.5	7.0
102164	Sevarely Hydrotreated Heavy Naphthenic Distillates	OS-0034		Carbon Steel	Bulk Component	794,338	3	86.3	0.3	1.4	3.8
100741	Sevarely Hydrotreated Heavy Naphthenic Distillates	OS-0035		Carbon Steel	Bulk and Drum Component	560,342	14	177.0	0.2	1.0	2.7
102416	Sulfurized Fattyacid Ester 10%	OS-0036	36	Carbon Steel	Bulk Component	829,433	8	228.6	0.3	1.4	4.0
100854	Reclaimed Oil 40 cSt @ 40C	OS-0037		Carbon Steel	Bulk Component	1,038,306	5	81.4	0.4	1.8	5.0
spare	spare	OS-0038		Carbon Steel							
102639	Para/Nap Solvent 113C	OS-0039	39/40	Carbon Steel	Bulk Component	1,875,950	3	67.8	0.8	3.3	9.0
102667	Poly ester blend	OS-0040	10	Carbon Steel	Bulk Component	206,000			0.1	0.4	1.0
013473	Ferrocote x 61A-Us Conc. (Made in Blender)	OS-0041		Carbon Steel	Bulk Component	3,632,271	1	275.2	1.5	6.3	17.5
100187	Trimethylolpropane (locate tank in reactor bldg)	OS-0042		Carbon Steel	Bulk and Drum Component	2,279,864	8	339.0	0.9	4.0	11.0
013725	Quintolubric 888 66 (Made in finishing tank)	OS-0043		Carbon Steel	Bulk Component and Finished Product	251,574	1	12.0	0.1	0.4	1.2
100793	Neopentyl Glycol (locate tank in reactor bldg)	OS-0044		Carbon Steel	Bulk Component	1,899,923	9	253.5	0.8	3.3	9.1
008055	TMP Monomerate (Made in Reactor)	OS-0045		Carbon Steel	Bulk and Drum Component	6,619,473	33	727.2	2.8	11.5	31.8
004918	Intermediate 4918 (Made in Reactor)	OS-0046		Carbon Steel	Bulk Component	888,624	3	147.3	0.4	1.5	4.3
005510	Quaker Draw 5510 (Made in Reactor)	OS-0047		Stainless Steel	Bulk and Drum Component	1,441,679	8	303.5	0.6	2.5	6.9
100071	Diethanolamine	OS-0048		Stainless Steel	Bulk and Drum Component	1,453,231	14	266.2	0.6	2.5	7.0
014113	Quintolubric 888-46 (Made in finishing tank)	OS-0049		Carbon Steel	Finished Product						

BULK TANKS

REV 2  
TANK DATA

Component Code	Raw Material Name	Tank ID	Drum/day	Gal/day	Max Dose (lb)	Rept Mode	Receipt (gal)	Lead Time (days)	Safety (gal)	Total (gal)	Approx 2xMax Dose (gal)	Recommended Tank Size (gal)
102495	Fatty Acid Methyl Ester	OS-0001	18.9	1,063	25,025	Truck	6,000	10	10,632	10,632	6,256	16,632
100752	Grease - Yellow	OS-0002	44.4	2,500	28,995	Truck	6,000	3	7,500	13,500	7,249	13,500
100485	Nap Oil 20 cSt @ 40C	OS-0003	190.6	10,719	52,800	Railcar	30,000	7	75,030	105,030	13,200	105,030
100132	Oleic Acid	OS-0004	89.4	5,030	38,837	Railcar	30,000	7	35,208	65,208	9,709	65,208
101733	Nap Oil 22 cSt @ 40C	OS-0005	182.5	10,266	52,800	Railcar	30,000	3	30,798	60,798	13,200	60,798
100364	Sodium Hydroxide 50%	OS-0006	18.5	1,039	6,600	Truck	6,000	10	10,394	16,394	1,650	16,394
102958	White Grease - Middletown	OS-0007	106.7	6,000	33,572	Truck	6,000	6	36,000	42,000	8,393	42,000
100512	White Grease - Detroit	OS-0008	103.5	5,821	42,812	Truck	6,000	3	17,462	23,462	10,703	23,462
100133	Technical Acid 47	OS-0009	107.9	6,070	40,831	Truck	6,000	7	42,492	48,492	10,208	48,492
101733	Nap Oil 22 cSt @ 40C	OS-0010	182.5	10,266	52,800	Railcar	30,000	3	30,798	60,798	13,200	60,798
100315	Nap Oil 240 cSt @ 40C	OS-0011	20.7	1,166	12,111	Truck	6,000	8	6,998	12,998	3,028	12,998
102673	Coconut Oil Crude	OS-0012	10.0	565	20,218	Truck	6,000	6	3,390	9,390	5,055	9,390
101757	P&G methyl palmitate	OS-0013	13.9	783	18,506	Truck	6,000	10	7,832	13,832	4,627	13,832
spare	Spare	OS-0014				Truck	6,000					
101726	Para Oil 3.5 cSt @ 40C	OS-0015	24.4	1,374	43,780	Truck	6,000	6	8,247	14,247	10,945	14,247
101409	Severely Hydrotreated Light Naphthenic Distillates	OS-0016	8.6	483	13,425	Railcar	23,000	10	4,834	27,834	3,356	27,834
100326	Coconut Oil Refined	OS-0017	22.6	1,273	17,776	Truck	6,000	10	12,731	18,731	4,444	18,731
100932	Calcium Sulfonate In Mineral Oil	OS-0018	18.9	1,060	23,496	Truck	6,000	10	10,605	16,605	5,874	16,605
000001	Slop Oil	OS-0019				Process	6,000					
101734	Para Oil 20 cSt @ 40C	OS-0020	32.1	1,804	21,593	Truck	6,000	6	10,825	16,825	5,398	16,825
102651	Paraflex Ht-10/ Conosol	OS-0021	6.6	372	27,806	Truck	6,000	10	3,717	9,717	6,951	9,717
102316	Grease - Yellow Sulfurized	OS-0022	28.5	1,606	11,936	Truck	6,000	6	9,634	15,634	2,984	15,634
014199	U14199BS (Made in Reactor)	OS-0023	13.9	781	21,080	Rxt	6,000	3	2,342	8,342	5,270	8,342
000000	Waste water	OS-0024				Process	6,000					
101539	Sodium Alkylaryl Sulfonate MW 430	OS-0025	10.0	560	4,950	Truck	6,000	10	5,604	11,604	1,238	11,604
101448	Calcium Sulfonate In Mineral Oil 1448	OS-0026	10.3	581	11,880	Truck	6,000	10	5,810	11,810	2,970	11,810
100469	Low Odor Base Solvent (LOBS)	OS-0027	12.2	686	29,775	Truck	6,000	10	6,862	12,862	7,444	12,862
0	spare	OS-0028										
014198	U14198BS (Made in Reactor)	OS-0029	4.5	251	10,925	Rxt	6,000	3	753	8,753	2,731	6,753
013590	Intermediate 013590 (Made in Blender)	OS-0030	21.6	1,215	13,200	Blender	6,000	3	3,645	9,645	3,300	9,645
100116	Monoethanolamine	OS-0031	13.7	773	6,187	Truck	6,000	10	7,734	13,734	1,547	13,734
100413	LARD OIL SULFURIZED 10%	OS-0032	18.5	1,039	6,600	Truck	6,000	10	10,394	16,394	1,650	16,394
101847	Coconut Fatty Acid,	OS-0033	12.9	725	31,260	Truck	6,000	10	7,248	13,248	7,815	13,248
102164	Severely Hydrotreated Heavy Naphthenic Distillates	OS-0034	7.1	397	24,993	Truck	6,000	10	3,972	9,972	6,248	9,972
100741	Severely Hydrotreated Heavy Naphthenic Distillates	OS-0035	5.0	280	8,712	Truck	6,000	10	2,802	8,802	2,178	8,802
102416	Sulfurized Fattyacid Ester 10%	OS-0036	7.4	415	5,720	Truck	6,000	10	4,147	10,147	1,430	10,147
100854	Reclaimed Oil 40 cSt @ 40C	OS-0037	9.2	519	23,760	Truck	6,000	10	5,182	11,192	5,940	11,192
spare	spare	OS-0038				Truck	6,000					
102639	Para/Nap Solvent 113C	OS-0039	16.7	938	33,990	Railcar	30,000	10	9,380	39,380	8,497	39,380
102667	Poly ester blend	OS-0040	1.8	103		Truck	6,000					
013473	Ferrocote x 61A-Us Conc. (Made in Blender)	OS-0041	32.3	1,816	13,200	Blender	6,000	3	5,448	11,448	3,300	11,448
100187	Trimethylolpropane (locate tank in reactor bldg)	OS-0042	20.3	1,140	8,887	Truck	6,000	10	11,399	17,399	2,222	17,399
013725	Quintolubric 888 68 (Made in finishing tank)	OS-0043	2.2	126	21,005	Finish tank	8,000	3	377	8,377	5,251	8,377
100793	Neopentyl Glycol (locate tank in reactor bldg)	OS-0044	16.9	950	9,183	Truck	6,000	10	9,500	15,500	2,296	15,500
008055	TMP Monomerete (Made in Reactor)	OS-0045	58.8	3,310	22,022	Rxt	6,000	3	9,929	15,929	5,506	15,929
004918	Intermediate 4918 (Made in Reactor)	OS-0046	7.9	444	9,075	Rxt	6,000	3	1,333	7,333	2,269	7,333
005510	Quaker Draw 5510 (Made in Reactor)	OS-0047	12.8	721	7,424	Rxt	6,000	3	2,163	8,163	1,856	8,163
100071	Diethanolamine	OS-0048	12.9	727	21,534	Truck	6,000	10	7,266	13,266	5,383	13,266
014113	Quintolubric 888-46 (Made in finishing tank)	OS-0049				Finish tank	8,000					

REV 2  
TANK DATA

Component Code	Raw Material Name	Tank ID	Goes to Reactor	pump needed due to ILB or dye Injector?	pump needed due to ILB or direct loadout?	Is a pump needed for this tank?	Agitation needed?	vent dryer needed?	Proposed Pump Capacity (gpm)	Proposed Discharge Line Size (inch)	Trace and Insulate Outside
102495	Fatty Acid Mathyl Ester	OS-0001				NO	No	No		3	Yes
100752	Grease - Yellow	OS-0002				NO	Yes	No		3	Yes
100485	Nap Oil 20 cSt @ 40C	OS-0003		yes		YES, FOR ILB	No	No	300	3	Yes
100132	Oleic Acid	OS-0004	yes			YES, TO GET IT TO THE REACTOR	No	No	225	3	Yes
101733	Nap Oil 22 cSt @ 40C	OS-0005		Yes	yes	YES, FOR ILB	No	No	350	3	No
100364	Sodium Hydroxide 50%	OS-0006				NO	No	No		3	Yes
102958	White Grease - Middletown	OS-0007				NO	No	No		3	Yes
100512	White Grease - Detroit	OS-0008				NO	Yes	No		3	Yes
100133	Technical Acid 47	OS-0009	yes			YES, TO GET IT TO THE REACTOR	No	No	300	3	Yes
101733	Nap Oil 22 cSt @ 40C	OS-0010		yes	gang tank with OS-05	NO, BECAUSE IT WILL SHARE A PUMP WITH OS-05	No	No	350	3	No
100315	Nap Oil 240 cSt @ 40C	OS-0011				NO	No	No		3	Yes
102673	Coconut Oil Crude	OS-0012				NO	No	No		3	Yes
101757	P&G methyl palmitate	OS-0013				NO	No	No	100	3	Yes
spare	Spare	OS-0014				NO				3	
101726	Para Oil 3.5 cSt @ 40C	OS-0015		yes, but we only make once per week, so remove is \$ too high		NO, WE DO NOT MAKE 014019 OFTEN ENOUGH TO JUSTIFY A PUMP	No	No	300	3	No
101409	Severely Hydrotreated Light Naphthenic Distillates	OS-0016			yes for HLB in TT. Use loading line in reverse with new meter	NO, WE WILL LOAD IT OUT THROUGH BLENDER	No	No	50	3	No
100326	Coconut Oil Refined	OS-0017				NO	No	No		3	Yes
100932	Calcium Sulfonate In Mineral Oil	OS-0018		yes, but we only make once per week, so remove is \$ too high		NO, WE DO NOT MAKE 014019 OFTEN ENOUGH TO JUSTIFY A PUMP	No	No	60	3	Yes
000001	Slop Oil	OS-0019			no, use pump on truck	NO	No	No	75	3	No
101734	Para Oil 20 cSt @ 40C	OS-0020				NO	No	No		3	No
102651	Paraflex Ht-10/ Conosol	OS-0021				NO	No	No		3	Yes
102316	Grease - Yellow Sulfarized	OS-0022				NO	No	No		3	Yes
014199	U14199BS (Made in Reactor)	OS-0023				NO	No	No		3	Yes
000000	Waste water	OS-0024			no, use pump on truck	NO	No	No	100	3	Yes
101539	Sodium Alkylaryl Sulfonate MW 430	OS-0025				NO	No	No	40	3	Yes
101448	Calcium Sulfonate in Mineral Oil 1448	OS-0026				NO	No	No	60	3	Yes
100469	Low Odor Base Solvent (LOBS)	OS-0027				NO	No	No		3	No
0	spare	OS-0028				NO				3	
014198	U14198BS (Made in Reactor)	OS-0029				NO	No	No		3	Yes
013590	Intermediate 013590 (Made in Blender)	OS-0030		yes, 1-2 loads per day		YES FOR ILB	No	Yes	100	3	Yes
100116	Monoethanolamine	OS-0031				NO	No	No		3	Yes
100413	LARD OIL SULFURIZED 10%	OS-0032				NO	No	No		3	Yes
101847	Coconut Fatty Acid,	OS-0033	yes			YES, TO GET IT TO THE REACTOR	No	No	200	3	Yes
102164	Severely Hydrotreated Heavy Naphthenic Distillates	OS-0034				NO	No	No		3	No
100741	Severely Hydrotreated Heavy Naphthenic Distillates	OS-0035				NO	No	No		3	Yes
102416	Sulfurized Fattyacid Ester 10%	OS-0036				NO	No	No		3	Yes
100854	Reclaimed Oil 40 cSt @ 40C	OS-0037				NO	No	No		3	Yes
spare	spare	OS-0038				NO				3	
102639	Para/Nap Solvent 113C	OS-0039			once per week TT to Ispat.	NO, WE DO NOT DO WAND JOB OFTEN ENOUGH, WE WILL LOAD OUT THROUGH BLENDER	No	No	250	3	No
102667	Poly ester blend	OS-0040				NO	No	No		3	No
013473	Ferrocote x 61A-Us Conc. (Made in Blender)	OS-0041		yes		YES FOR ILB	No	Yes	100	3	Yes
100187	Trimethylpropane (locate tank in reactor bldg)	OS-0042	yes			YES, TO GET IT TO THE REACTOR	No	No	50	3	Yes
013725	Quintolubric 888 68 (Made in finishing tank)	OS-0043		yes, 1-4 TT per month, Currently do it in a bin and add to bulk truck	yes, with meter	YES, FOR INJECTING DYE AND FOR FG LOADOUT	No	No	150	3	Yes
100793	Neopentyl Glycol (locate tank in reactor bldg)	OS-0044	yes			YES, TO GET IT TO THE REACTOR	No	No	75	3	Yes
008055	TMP Monomerate (Made in Reactor)	OS-0045				NO	No	No		3	Yes
004918	Intermediate 4918 (Made in Reactor)	OS-0046				NO	No	No		3	Yes
005510	Quaker Draw 5510 (Made in Reactor)	OS-0047				NO	No	No	50	3	Yes
100071	Diethanolamine	OS-0048	yes			NO, we only made 3 batches 5510 per month in reactor. It takes 8 bins per batch. Either use bins, or continue to produce in Detroit. Add pump later if justified.	No	No	75	3	Yes
014113	Quintolubric 888-46 (Made in finishing tank)	OS-0049			yes, with meter	YES, TO GET IT TO THE LOADOUT	No	No	100	3	Yes

		REV 2 TANK DATA										
Component Code	Raw Material Name	Tank ID	Trace and Insulate Inside	V-01 water-based	V-05 Kosher	V-02-V-04 oil based	V-06 - V-7 manual	Caustic Blender	Reactor V-08 & V-09	to ILB or Dye Injector	Direct to TT	
102495	Fatty Acid Methyl Ester	OS-0001	Yes			X						
100752	Grease - Yellow	OS-0002	Yes			X						
100485	Nap Oil 20 cSt @ 40C	OS-0003	No		X	X				X 003385, sometimes use 1733 based on cost		
100132	Oleic Acid	OS-0004	No	YES		X		X				
101733	Nap Oil 22 cSt @ 40C	OS-0005	No		X	X				X 007734		
100364	Sodium Hydroxide 50%	OS-0006	Yes	YES		X		X				
102958	White Grease - Middletown	OS-0007	Yes			X						
100512	White Grease - Detroit	OS-0008	Yes			X						
100133	Technical Acid 47	OS-0009	Yes					X				
101733	Nap Oil 22 cSt @ 40C	OS-0010	No		X	X				X 007734		
100315	Nap Oil 240 cSt @ 40C	OS-0011	Yes		X	X						
102673	Coconut Oil Crude	OS-0012	Yes			X						
101757	P&G methyl palmitate	OS-0013	Yes			X						
spare	Spare	OS-0014										
101726	Para Oil 3.5 cSt @ 40C	OS-0015	No			X				X 014019 we do not make this often enough to warrant cost, so we will make in a blender		
101409	Severely Hydrotreated Light Naphthenic Distillates	OS-0016	No			X						
100326	Coconut Oil Refined	OS-0017	Yes			X						
100932	Calcium Sulfonate In Mineral Oil	OS-0018	Yes		X	X				X 014019 we do not make this often enough to warrant cost, so we will make in a blender		
000001	Slop Oil	OS-0019	No								yes, but just flow back wards through loading line and use portable pump to load to truck. No meter needed	
101734	Para Oil 20 cSt @ 40C	OS-0020	No	YES		X						
102651	Paraflex Ht-10/ Conosol	OS-0021	No			X						
102316	Grease - Yellow Sulfurized	OS-0022	Yes			X						
014199	U14199BS (Made in Reactor)	OS-0023	Yes			X						
000000	Waste water	OS-0024	No								yes, but just flow back wards through loading line and use portable pump to load to truck. No meter needed	
101539	Sodium Alkylaryl Sulfonate MW 430	OS-0025	Yes	YES		X						
101448	Calcium Sulfonate In Mineral Oil 1448	OS-0026	Yes		X	X						
100469	Low Odor Base Solvent (LOBS)	OS-0027	No		X	X						
0	spare	OS-0028										
014198	U14198BS (Made in Reactor)	OS-0029	No			X						
013590	Intermediate 013590 (Made in Blender)	OS-0030	Yes		X					X 003385		
100116	Monoethanolamine	OS-0031	Yes			X						
100413	LARD OIL SULFURIZED 10%	OS-0032	Yes			X						
101847	Coconut Fatty Acid,	OS-0033	Yes			X		X				
102164	Severely Hydrotreated Heavy Naphthenic Distillates	OS-0034	No		X	X						
100741	Severely Hydrotreated Heavy Naphthenic Distillates	OS-0035	Yes		X	X						
102416	Sulfurized Fattyacid Ester 10%	OS-0036	No			X						
100854	Reclaimed Oil 40 cSt @ 40C	OS-0037	No			X						
spare	spare	OS-0038										
102639	Para/Nap Solvent 113C	OS-0039	No			X						
102667	Poly ester blend	OS-0040	No			X						
013473	Ferrocote x 61A-Us Conc. (Made in Blender)	OS-0041	No		X					X 007734		
100187	Trimethylpropane (locate tank in reactor bldg)	OS-0042	Yes					X				
013725	Quintolubric 888 68 (Made in finishing tank)	OS-0043	No							dye mixer 013129	yes	
100793	Neopentyl Glycol (locate tank in reactor bldg)	OS-0044	Yes					X				
008055	TMP Monomerate (Made in Reactor)	OS-0045	No			X						
004918	Intermediate 4918 (Made in Reactor)	OS-0046	No			X						
005510	Quaker Draw 5510 (Made in	OS-0047	Yes	YES		X						

Reactor)						
100071	Diethanolamine	OS-0048	Yes	YES	X	X
014113	Quintolubric 888-46 (Made in finishing tank)	OS-0049	No			yes

BULK TANKS



**REV 2**  
**TANK DATA**

Component Code	Raw Material Name	Tank ID	Comments	Quaker tech resource	Specific Gravity	Freeze Point	Flash Point
102495	Fatty Acid Methyl Ester	OS-0001		purchasing	0.88	N/A	>300 F
100752	Grease - Yellow	OS-0002		purchasing	0.89	100 F	550 F
100485							260 to 496 F
	Nap Oil 20 cSt @ 40C	OS-0003		purchasing	0.911	-60 F	CCC
100132	Oleic Acid	OS-0004		purchasing	0.891	39 F	364 F
101733	Nap Oil 22 cSt @ 40C	OS-0005		purchasing	0.91	-51 F	>320 F
100364	Sodium Hydroxide 50%	OS-0006		purchasing	0.99	65 F Pour PL	350 F
102958	White Grease - Middletown	OS-0007		purchasing	0.89	60 F	600 F
100512	White Grease - Detroit	OS-0008		purchasing	0.89	60 F	600 F
100133	Technical Acid 47	OS-0009		purchasing	0.84	93 F	385 F COC
101733	Nap Oil 22 cSt @ 40C	OS-0010		purchasing	0.91	-51 F	>320 F
100315	Nap Oil 240 cSt @ 40C	OS-0011		purchasing	0.92	30 F	>400 F COC
102673	Coconut Oil Crude	OS-0012		purchasing	0.9	75 to 80 F	<600 F
101757	P&G Methyl palmitate	OS-0013		purchasing	0.872	>41 F	425 F
spare	Spare	OS-0014		purchasing			
101726	Para Oil 3.5 cSt @ 40C	OS-0015		purchasing	0.84	-11 F	248 to 275 F CC
101409	Severely Hydrotreated Light Naphthenic Distillates	OS-0016		purchasing	0.911	<0 F	258 F
100326	Coconut Oil Refined	OS-0017		purchasing	0.92	80 F	>900 F
100932	Calcium Sulfonate In Mineral Oil	OS-0018		purchasing	0.96	-30 F	350 F
000001	Slop Oil	OS-0019		Michel	0.90	-51 F	>320 F
101734	Para Oil 20 cSt @ 40C	OS-0020		purchasing	0.86	0 F	381 F
102651	Paraflex Ht-10/Conosol	OS-0021		purchasing	0.851	0 F MAX	340 F
102316	Grease - Yellow Sulfurized	OS-0022		purchasing	0.9729	60 F	442 F PMCC
014199	U14199BS (Made in Reactor)	OS-0023		J Frelin	0.92	40 F	435 F
000000	Waste water	OS-0024		Sansom	1.00	32 F	NONE
101539	Sodium Alkylaryl Sulfonate MW 430	OS-0025		purchasing	0.79	-15 F	>200 F
101448	Calcium Sulfonate In Mineral Oil 1448	OS-0026		purchasing	1.21	16 F pour pt	320 F
100469							150 to 165 F
	Low Odor Base Solvent (LOBS)	OS-0027		purchasing	0.82	-45 F	TCC
0	spare	OS-0028					
1014198	U14198BS (Made in Reactor)	OS-0029		J Frelin	0.91	<23 F	570 F
013590	Intermediate 013590 (Made in Blender)	OS-0030		J Krmetz	0.92	<0 F	340 F
100116	Monoethanolamine	OS-0031	careful how this is heated to avoid hazard	purchasing	1.018	51 F	205 F
100413	LARD OIL SULFURIZED 10%	OS-0032		purchasing	0.99	65 F Pour PL	350 F
101847	Coconut Fatty Acid.	OS-0033		purchasing	0.89	57 F	315 F COC
102164	Severely Hydrotreated Heavy Naphthenic Distillates	OS-0034		purchasing	0.9	-20 F	304 F
100741	Severely Hydrotreated Heavy Naphthenic Distillates	OS-0035		purchasing	0.93	10 F	468 F COC
102416						N/A WILL CALL	>350 F COC
	Sulfurized Fattyacid Ester 10%	OS-0036		purchasing	0.94		>500 F
100854	Reclaimed Oil 40 cSt @ 40C	OS-0037		purchasing	0.875	10 F	>500 F
spare	spare	OS-0038					
102639	Para/Nap Solvent 113C	OS-0039		purchasing	0.79	-15 F	>200 F
102667	Poly ester blend	OS-0040			0.97		
013473	Ferrocote x 61A-Us Conc. (Made in Blender)	OS-0041		J Krmetz	0.90	13 F	363 F
100187	Trimethylolpropane (locate tank in reactor bldg)	OS-0042		purchasing	1.09	136 F	302 F COC
013725	Quintolubric 888 68 (Made in finishing tank)	OS-0043		L Palmerio	0.92	-15 F	550 F
100793	Neopentyl Glycol (locate tank in reactor bldg)	OS-0044		purchasing	0.94	<95 F	270 F COC
008055	TMP Monomerate (Made in Reactor)	OS-0045		J Frelin	0.90	34 F	435 F
004918	Intermediate 4918 (Made in Reactor)	OS-0046		J Krmetz	0.87	26 F	200 F
005510						<50 F pour pt	370 F
100071	Quaker Draw 5510 (Made in Reactor)	OS-0047		S Thomas	0.99		345 F COC (375 F PMCC)
	Diethanolamine	OS-0048		purchasing	1.092	82 F	
014113	Quintolubric 888-46 (Made in finishing tank)	OS-0049		L Palmerio	0.92	-15 F	550 F

**REV 2  
TANK DATA**

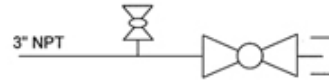
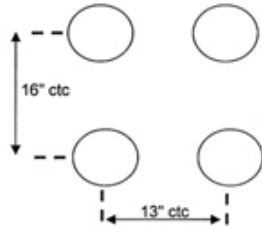
Component Code	Raw Material Name	Tank ID	Molecular Weight	VOC Content	HAP Content	Recommended Pumping Temperature	Vapor Pressure Recommended Pumping Temperature
102495	Fatty Acid Methyl Ester	OS-0001	290	59 grams per liter		90 to 120 F	
100752	Grease - Yellow	OS-0002				120 to 130 F	
100485	Nap Oil 20 cSt @ 40C	OS-0003	540	24C	8	80 to 100 F	Negligible
100132	Oleic Acid	OS-0004	278	N/D	N/D	100 to 110 F	Negligible
101733	Nap Oil 22 cSt @ 40C	OS-0005	305	26.5	NIL	Ambient	Negligible
100364	Sodium Hydroxide 50%	OS-0006				130 to 140 F	
102958	White Grease - Middletown	OS-0007	270			120 F	
100512	White Grease - Detroit	OS-0008	270			120 F	
100133	Technical Acid 47	OS-0009				120 to 130 F	Negligible
101733	Nap Oil 22 cSt @ 40C	OS-0010	305	26.5	NIL	Ambient	Negligible
100315	Nap Oil 240 cSt @ 40C	OS-0011	460	NIL	NIL	100 to 120 F	
102673	Coconut Oil Crude	OS-0012	-210	0%	0%	105 to 130 F	
101757	P&G methyl palmitate	OS-0013	287			90 to 105 F	Negligible
spare	spare	OS-0014					
101726	Para Oil 3.5 cSt @ 40C	OS-0015	237	93.8% Per EPA Method 24	NIL	Ambient	Negligible
101409					0.348 PPM CHROMIUM (NOT HEXAVALENT)		
	Severely Hydrotreated Light Naphthenic Distillates	OS-0016	226	99.9% Per EPA Method 24		Ambient	Negligible
100326	Coconut Oil Refined	OS-0017				110 to 120 F	
100932	Calcium Sulfonate In Mineral Oil	OS-0018	1080	NIL	NIL	120 to 130 F	Negligible
000001	Slop Oil	OS-0019	305	26.5	NIL	Ambient	Negligible
101734			370 to 400				
	Para Oil 20 cSt @ 40C	OS-0020	(est)			Ambient	Negligible
102651	Paraflex H1-10/ Conosol	OS-0021	292	N/A	N/A	68 F	
102316	Grease - Yellow Sulfurized	OS-0022	270	0%	0%	100 to 140 F	Negligible
014199	U14199BS (Made in Reactor)	OS-0023	-1028			80 to 100 F	
000000	Waste water	OS-0024	18	0	0	>32 F	
101539	Sodium Alkylaryl Sulfonate MW 430	OS-0025	196	100% Per EPA Method 24	NIL	120 to 130 F	
101448	Calcium Sulfonate in Mineral Oil 1448	OS-0026	UNKNOWN	NIL	NIL	120 F	
100469	Low Odor Base Solvent (LOSS)	OS-0027				Ambient	Negligible
0	spare	OS-0028					
014198	U14198BS (Made in Reactor)	OS-0029	-916			80 to 100 F	
013590	Intermediate 013590 (Made in Blender)	OS-0030				100 to 110 F	Negligible
100116	Monoethanolamine	OS-0031	61			95 F	Negligible
100413	LARD OIL SULFURIZED 10%	OS-0032				130 to 140 F	
101847	Coconut Fatty Acid,	OS-0033	207	N/D	N/D	115 F	Negligible
102164	Severely Hydrotreated Light Naphthenic Distillates	OS-0034				Ambient	
100741	Severely Hydrotreated Light Naphthenic Distillates	OS-0035	500	0.3	N/A	120 to 130 F	Negligible
102416	Sulfurized Fattyacid Ester 10%	OS-0036				90 to 130 F	
100854	Reclaimed Oil 40 cSt @ 40C	OS-0037	N/A	N/A		80 F	
spare	spare	OS-0038					
102639	Para/Nap Solvent 113 C	OS-0039	196	100% EPA24	NIL	Ambient	
102667	Poly ester blend	OS-0040					
013473	Ferrocile x 61A-Us Conc. (Made in Blender)	OS-0041				100 to 110 F	
100187	Trimethylolpropane (locate tank in reactor bldg)	OS-0042	134	0%	0%	195 to 210 F	1 psi @ 210 C
013725	Quintolubric 888 68 (Made in finishing tank)	OS-0043				100 to 110 F	
100793	Neopentyl Glycol (locate tank in reactor bldg)	OS-0044	N/A	0%	0%	130 to 140 F	1.7 psi
008055	TMP Monomerate (Made in Reactor)	OS-0045	-1030			100 to 110 F	
004918	Intermediate 4918 (Made in Reactor)	OS-0046				120 to 130 F	
005510	Quaker Draw 5510 (Made in Reactor)	OS-0047				90 to 100 F	
100071	Diethanolamine	OS-0048	105	1087 grams per liter		122 F	Negligible
014113	Quintolubric 888 46 (Made in finishing tank)	OS-0049				100 to 110 F	

**REV 2**  
**TANK DATA**

<b>Component Code</b>	<b>Raw Material Name</b>	<b>Tank ID</b>	<b>Viscosity at Recommended Pumping Temperature (centipoise)</b>	<b>Viscosity at 40 deg C (104 deg F)</b>	<b>Viscosity at 100 deg C (212 deg F)</b>
102495	Fatty Acid Methyl Ester	OS-0001	6	5 cSt	2 cSt
100752	Grease - Yellow	OS-0002	24	32 cP	8 cP
100485	Nap Oil 20 cSt @ 40C	OS-0003	100	20 cP	1 cP
100132	Oleic Acid	OS-0004	60	17 cP	4 cP
101733	Nap Oil 22 cSt @ 40C	OS-0005	200	22 cSt	4 cSt
100364	Sodium Hydroxide 50%	OS-0006	2820	6100 cp	407 cp
102958	White Grease - Middletown	OS-0007	40	44 cSt	9 cSt
100512	White Grease - Detroit	OS-0008	40	44 cSt	9 cSt
100133	Technical Acid 47	OS-0009	15	19 cP	7 cP
101733	Nap Oil 22 cSt @ 40C	OS-0010	200	22 cSt	4 cSt
100315	Nap Oil 240 cSt @ 40C	OS-0011	210		
102673	Coconut Oil Crude	OS-0012	28	28 cp	6 cp
101757	P&G methyl palmitate	OS-0013	7	7 cSt	N/A
spare	Spare	OS-0014			
101726	Para Oil 3.5 cSt @ 40C	OS-0015	35	4 cP	not avail & not needed
101409	Severely Hydrotreated Light Naphthenic Distillates	OS-0016	9	5 cSt	2 cSt
100326	Coconut Oil Refined	OS-0017	30	30 cP	6 cP
100932	Calcium Sulfonate In Mineral Oil	OS-0018	480 cps @ 73 F	not avail	20 cps
000001	Slop Oil	OS-0019	200	22 cSt	4 cSt
101734	Para Oil 20 cSt @ 40C	OS-0020	103	20 cSt	4 cSt (TYP)
102651	Paraflex Ht-10/Conosol	OS-0021	50	10 cp	2 cp
102316	Grease - Yellow Sulfurized	OS-0022	250	250 cP	44 cSt
014199	U14199BS (Made in Reactor)	OS-0023	170	93 cSt	12.0 cSt
000000	Waste water	OS-0024	1		
101539			2100 cps @ 120 F, 880 cps @ 140	not avail, but hard to pump at this temp!	100 cps
	Sodium Alkylaryl Sulfonate MW 430	OS-0025	F		80 cP
101448	Calcium Sulfonate In Mineral Oil 1448	OS-0026	1000	1800 cP	< 2 cP
100469	Low Odor Base Solvent (LOBS)	OS-0027	2	< 2 cP	< 2 cP
0	spare	OS-0028			
014198	U14198BS (Made in Reactor)	OS-0029	145	45 cSt	10.5 cSt
013590	Intermediate 013590 (Made in Blender)	OS-0030	85	85 cSt	10 cSt
100116	Monoethanolamine	OS-0031	13	10 cP	2 cP
100413	LARD OIL SULFURIZED 10%	OS-0032	2820	6100 cp	407 cP
101847	Coconut Fatty Acid,	OS-0033	7	9 cP	3 cP
102164	Severely Hydrotreated Heavy Naphthenic Distillates	OS-0034	200	21 cP	4 cP
100741	Severely Hydrotreated Heavy Naphthenic Distillates	OS-0035	40	369	18 cSt
102416	Sulfurized Fattyacid Ester 10%	OS-0036	18	18 cps	not avail
100854	Reclaimed Oil 40 cSt @ 40C	OS-0037	285	34 cSt	6 cSt
spare	spare	OS-0038			
102639	Para/Nap Solvent 113C	OS-0039	10 (assumed)	2.2 cSt	not avail & not needed
102667	Poly ester blend	OS-0040			
013473	Ferrocote x 61A-Us Conc. (Made in Blender)	OS-0041	230	40 cSt	6 cSt
100187	Trimethylpropane (locate tank in reactor bldg)	OS-0042	120	SOLID	80 cP
013725	Quintolubric 888 68 (Made in finishing tank)	OS-0043	325	68 cSt	11 cSt
100793	Neopentyl Glycol (locate tank in reactor bldg)	OS-0044	50	80 to 120 cP	<20 Cp
008055	TMP Monomerate (Made in Reactor)	OS-0045	40	80 cSt	12.1 cSt
004918	Intermediate 4918 (Made in Reactor)	OS-0046	155	37 cP	7 cSt
005510	Quaker Draw 5510 (Made in Reactor)	OS-0047	1000	544 cSt	25 cSt
100071	Diethanolamine	OS-0048	100	200 cP	NA
014113	Quintolubric 888-46 (Made in finishing tank)	OS-0049	210	40 cSt	8 cSt

HOSE BOARD LAYOUT

←----- South					North -----→				
2	4	16	40	21	32	25	18	36	17
7	9	22	39	15	26	31	12	35	11
1	3	5	34	33	20	38	19	30	29
6	8	10	28	27	14	37	13	24	23



## **APPENDIX B**

### **COMPENSATION**

1. The "Compensation" to be paid by the Owner to the Contractor for performance of the Work shall be Eighteen Million Four Hundred Three Thousand Seven Hundred Twenty One and zero/100 Dollars (\$18,403,721.00). The Compensation shall be paid in installments, in accordance with the terms of this Appendix B.
2. Contractor shall prepare a schedule of values (the "Schedule of Values"), which allocates the entire Compensation among the various portions of the Work. Compensation for Engineering Services, Procurement Services and the Construction Work shall each be shown separately. In addition, the Compensation allocated to those items of equipment shown on Schedule 1 attached hereto (the "Leased Equipment") shall also be shown separately on the Schedule of Values. The Schedule of Values shall be prepared in such form and supported by such data to substantiate its accuracy as the Owner may require. This Schedule of Values, unless objected to by the Owner, shall be used as a basis for reviewing the Contractor's Requests for Payment (as hereinafter defined).
3. The Contractor shall submit to Owner monthly requests for payment (each a "Request for Payment"), each of which shall cover the immediately-preceding calendar month. Each Request for Payment shall state the percentage of completion of each portion of the Work, as set forth in the Schedule of Values, as of the end of the period covered by the Request for Payment, and the amount of payment to be made by Owner in connection with such Request for Payment. Except with the Owner's prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site. The amount of payment to be made by Owner in connection with a Request for Payment shall be calculated as follows:
  - a. Take that portion of the Consideration properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the Consideration allocated to that portion of the Work in the Schedule of Values, less retainage ten percent (10%) on the Work;
  - b. Add that portion of the Consideration properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction, less retainage often percent (10%);
  - c. Subtract the aggregate of previous payments made by the Owner; and
  - d. Subtract amounts, if any, for which the Owner has withheld payment as permitted under the terms of the Agreement.
4. With each Request for Payment, and before issuance of and as a condition precedent to any payment to Contractor under this Agreement, Contractor shall submit: (i) a release and

waiver of all liens, claims, security interests or encumbrances of any kind arising out of the Work covered by the preceding Requests for Payment (except as to retainage), in a form acceptable to Owner, from Contractor and each subcontractor, sub-subcontractor, each vendor that has supplied equipment or materials for the Work and supplier who has performed Work for which payment is being requested in the preceding Requests for Payment, releasing such parties' right to file a lien with respect to Work done through the date of the Request of Payment; (ii) such other documents, releases, waivers, assignments, papers, estoppel certificates and statements as may be requested by Owner; and (iii) a certification from Contractor stating: "There are no known mechanics' or materialmen's liens, or any other liens or claims, outstanding as of the date of this payment; all due and payable bills with respect to the Work have been paid to date and there is no known basis for the filing of any mechanics' or materialmen's lien or any other lien or claim on the Work; and any waivers from all contractors, subcontractors, sub-subcontractors, vendors, suppliers and materialmen for Work done or materials furnished for which payment has been made, or, pursuant to this Request for Payment, is to be made, to Contractor have been obtained and provided to Owner in such form as to constitute an effective waiver of all such liens under applicable law."



5. Each Request for Payment shall be submitted to Owner no later than the fifth (5<sup>th</sup>) day of each calendar month, and, if such Request for Payment is approved for payment as provided in Section 6 below, Owner shall remit payment in connection with such Request for Payment no later than the twenty-fifty (25<sup>th</sup>) day of the month in which such Request for Payment was received; provided, however, that in the event any such Request for Payment includes payment on account of any Leased Equipment, then Owner shall use its commercially reasonable efforts to remit the portion of the payment allocated to such Leased Equipment no later than the tenth (10<sup>th</sup>) day of the month following the month in which such Request for Payment was received.

6. Upon receipt of a Request for Payment, Owner shall review the submissions made by the Contractor and either approve the same for payment or withhold such approval. Approval may be withheld, or prior approval of a previous Request for Payment may be revoked (upon subsequent discovery of evidence), if (i) the Work is not in accordance with the requirements of the Contract, (ii) the Work has not been completed to the extent indicated in the Request for Payment, (iii) there is reasonable evidence that the remainder of the Work cannot be completed for the balance of unpaid Compensation, (iv) there is reasonable evidence that the remainder of the Work cannot be completed within the Contract Time and the balance of the Consideration is inadequate to cover actual or liquidated damages for the anticipated delay, (v) there is reasonable evidence that subcontractors, sub-subcontractors, vendors or suppliers have not been paid by Contractor for Work that was the subject of prior Requests for Payment, (vi) failure to carry out the Work in accordance with the Contract, (vii) reasonable evidence that a lien or other claim has been or will be filed by a subcontractor, sub-subcontractor, vendor or supplier without acceptable security being posted by Contractor, or (viii) any other default by the Contractor is not cured within the applicable cure period. When the above reasons for withholding approval are removed, approval will be made for amounts previously withheld.

7. Notwithstanding anything to the contrary contained herein, upon execution of the Contract, the Owner shall pay to the Contractor an amount equal to fifteen percent (15%) of the Consideration (the "Initial Payment"), which shall be used by the Contractor to secure Contract

pricing and material delivery schedules. Said Initial Payment shall be applied against the first monthly Requests for Payment made by Contractor until fully credited. Contractor shall timely make monthly Requests for Payments, showing the Initial Payment made by Owner and application of said Initial Payment to costs shown on the Schedule of Values.

8. Upon issuance of a Final Completion Notice in accordance with the terms of Article 20 of the Contract, Owner shall pay to Contractor the balance of the Consideration, including all amounts held as retainage, less any amounts payable by the Contractor to the Owner as liquidated damages in accordance with the Contract.

	REVISION : <b>A</b>	
Project: <u>QUAKER CHEMICAL - MIDDLETOWN EXPANSION</u> Location: <u>MIDDLETOWN, OH</u>		Page: 1 By: jcm Date: 04/17/08 Type: Print Time: 10:59 AM
FMC Project Contact: <u>EXB, JC</u>		<b>Hard Costs</b>
	<u>ACCOUNT</u>	
DESCRIPTION		

DESCRIPTION

	HARD COST
Blender #1 - 6,000 Gallon, Pallet Scale, Pump, Agitator, Instruments, Screw Conveyor	255,563
Blender #2 - 6,000 Gallon, Pallet Scale, Pump, Agitator, instruments	239,563
Blender #3 - 6,000 Gallon, Pallet Scale, Pump, Agitator, Instruments	239,563
Blender #4 - 6,000 Gallon, Pallet Scale, Pump, Agitator, Instruments	239,563
Blender #5 - 4,500 Gallon, Pallet Scale, Pump, Agitator, Instruments	186,061
Blender #6 - 1,100 Gallon, Pallet Scale, Pump, Agitator, Instruments	105,224
Blender #7 - 350 Gallon, Pallet Scale, Pump, Agitator, Instruments	78,046
Reactor #1 - 7,500 Gallon, Pallet Scale, Pump, Agitator, Instruments	403,936
Reactor #2 - 7,600 Gallon, Pallet Scale, Pump, Agitator, Instruments	403,936
Finishing Vessel - 9,000 Gallon, Pallet Scale, Pump, Agitator, Instruments	367,733
Drum Filing Line, 55 Gallon Drum Semi-Automatic	83,285
OS-0041 Storage Tank #1, 12,000 Gallon, Carbon Steel, Pump, Instruments	48,257
OS-0042 Storage Tank #2, 12,000 Gallon, Carbon Steel, Pump, Instruments	48,257
OS-0043 Storage Tank #3, 20,000 Gallon, Carbon Steel, Pump, Instruments	56,240
OS-0044 Storage Tank #4, 12,000 Gallon, Carbon Steel, Pump, Instruments	48,257
OS-45/46 Storage Tank #5, Dual Compartment, 12,000 Gallon Each, Carbon Steel, instruments	76,095
OS-47/48 Storage Tank #6, Dual Compartment, 12,000 Gallon Each, Stainless Steel, instruments	142,911
OS -0049 Storage Tank #7, 20,000 Gallon, Carbon Steel, Pump, Instruments	56,240
Pumps, Agitators and Instruments for Existing Tank Farm	136,510
Steam Heated Drum Ovens, (16) 55 Gallon Drum Capacity	50,066
Cooling Tower including Pumps and Flow Meter, Evapco Model USS-112-312 with TEAO Fan. Motor	123,976
Vent Scrubber Skid, EST 925 Type 650 acfm Ejector Venturi	90,000
Vacuum Pumps, Nash XL-45 Direct Drive Iron Recirc Oil Package	43,700
Hot Oil Heaters, Thermal Fluid System Model kwkh 1.0 S/25,4.0 MM Btu/hr	348,798
Air Compressor System, 1000 cfm Atlas Copco GA200 Air Cooled Rotary Screw, Dryer, Receiver	112,197
Soft Water System, includes Water Storage Tanks	88,576
Truck Loading Platforms, Carbia Red-Rack II units	37,485
Hose Board Manifold isolation Valves	122,585
Piggable Components, Including Instruments	536,247
In-Line Blenders, (as Components, not as skids)	59,125
Process Control Hardware	281,988
<b>Total</b>	<b>5,109,983</b>

REV: A April 17, 2008 BASED ON REVISED QUAKER WRITE-UP AND PFD / P&IDS.

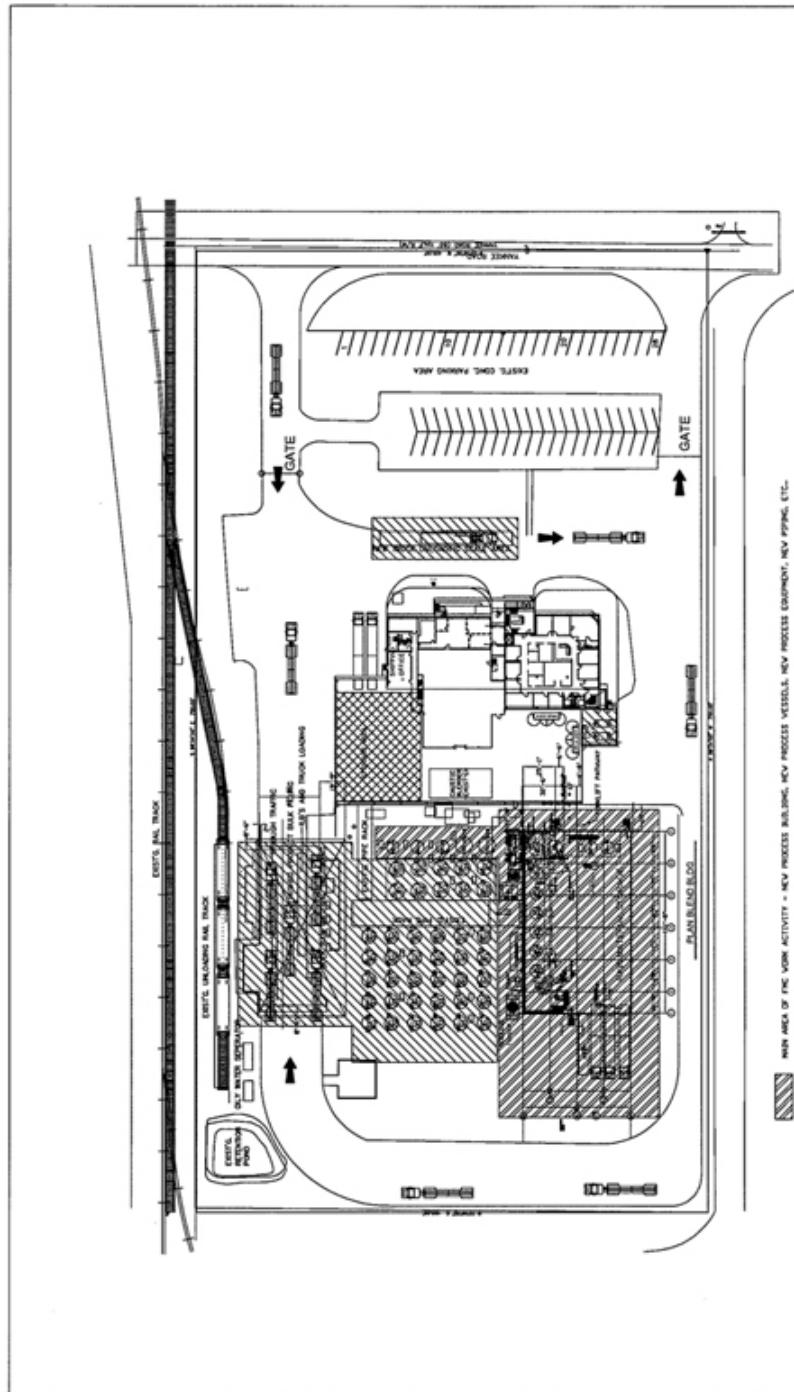
Comments: \_\_\_\_\_



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**APPENDIX C**

**WORK SITE**



- MAIN AREA OF THE WORK ACTIVITY - NEW PROCESS BUILDING, NEW PROCESS VESSEL, NEW PROCESS EQUIPMENT, NEW PIPING, ETC.
- SECONDARY AREA OF THE WORK ACTIVITY - ADDING NEW EQUIPMENT, INSTRUMENTS, AND PIPING TIE-INS TO EXISTING PROCESS AREAS
- EXISTING PROCESS EQUIPMENT TO BE DEMOLISHED AFTER COMMISSIONING OF NEW PROCESS AREA

1/11/2009

**GA-OI**

OVERALL PLAT PLAN

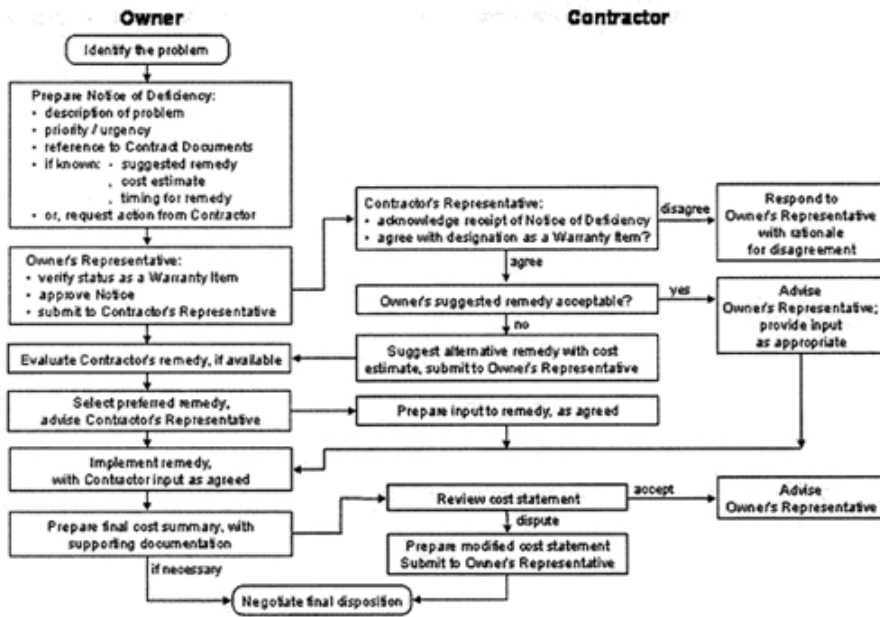
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<p><b>GA-OI</b></p> <p>1/11/2009</p>	<p><b>GA-OI</b></p> <p>OVERALL PLAT PLAN</p>
<p><b>GA-OI</b></p> <p>OVERALL PLAT PLAN</p>	

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<p><b>FMC Technologies</b></p> <p>1000 East 17th Avenue, Suite 1000</p> <p>Denver, CO 80202</p> <p>781.384.7200</p> <p>www.fmc-tech.com</p>	<p><b>GAFKOR Chemical</b></p> <p>1000 East 17th Avenue, Suite 1000</p> <p>Denver, CO 80202</p> <p>781.384.7200</p> <p>www.gafkor.com</p>
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# Warranty Items Procedure



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**APPENDIX E**

**LIQUIDATED DAMAGES**

In the event that Contractor fails to achieve Functional Completion of the Work by the date that is one month after the Scheduled Functional Completion Date (the "Grace Period"), the Contractor shall pay to the Owner, as liquidated damages and not as a penalty, the sum of Thirteen Thousand Dollars (\$13,000) for each and every week (or that sum pro-rated, on a per diem basis, in the case of a partial week) up to a maximum of \$250,000 following the expiration of the Grace Period until Functional Completion of the Work is achieved. Owner and Contractor agree that, in the event of such a delay in Functional Completion, the actual damages that Owner would sustain as a result thereof would be difficult if not impossible to ascertain, and that these liquidated damages are a reasonable estimate of such actual damages. Owner's right to receive these liquidated damages shall be Owner's exclusive remedy for any delay in achieving Functional Completion by the Scheduled Functional Completion Date (but not for any default by Contractor under the Contract arising from or related to such delay). The foregoing shall not be deemed to limit Owner's rights or the damages to which Owner might be entitled under Article 36 of the Contract, including, without limitation, those rights or damages arising from a default by Contractor under the Contract relating to such delay. Said liquidated damages shall be payable by Contractor to Owner within three (3) Business Days after (i) Final Completion is achieved, or (ii) the termination of the Contract in accordance with its terms.

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**APPENDIX F**

**INCENTIVE FEE**

In the event that Contractor achieves Functional Completion of the Work prior to the Scheduled Functional Completion Date, Contractor shall be entitled to an additional sum of Thirteen Thousand Dollars (\$13,000) for each and every week (or that sum pro-rated, on a per diem basis, in the case of a partial week) that date of Functional Completion precedes the Scheduled Functional Completion Date. Said additional sum shall be payable by Owner to Contractor within three (3) Business Days after Final Completion is achieved.

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**APPENDIX G**

**FORMS**

- Key Employee Confidentiality, Proprietary Information and Consent Agreement
- Change Order
- Functional Completion Notice
- Final Completion Notice
- Release and Certificate of Final Payment
- Statutory Declaration

**THESE FORMS WILL BE JOINTLY DEVELOPED AND APPROVED BY OWNER AND CONTRACTOR AFTER EXECUTION OF THE CONTRACT**

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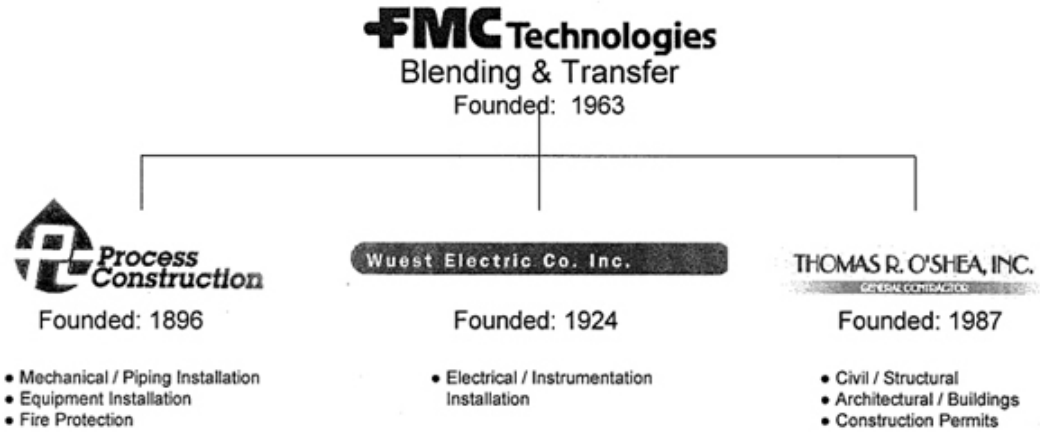
**APPENDIX H**

**DISPUTE RESOLUTION PROCEDURE**

In the event of any dispute, or difference arising out of, or relating to this Contract, or the breach thereof, the parties shall use their best endeavors to settle such dispute, or difference by consulting and negotiating with each other, in good faith, and understanding of their mutual interests, to reach a just and equitable resolution which is satisfactory to the parties. In the event the parties cannot resolve such dispute up to the level of each party's Division Manager or President within ninety (90) days after a party's initial notice of the dispute, the parties shall be free to litigate their differences in accordance with the Laws of the state of Ohio without regard to conflicts of laws rules.

**1.1 Project Team and Key Personnel**

The Project Team for the Expansion Project has extensive experience in similar projects.



**1.1.1 Key Personnel for Contractor**

1.1.1.1 FMC Technologies:

- Jeff Syed- Project Manager
- Jogesh Chandran - Engineering Manager
- John Lawlor - Lead Process Engineer
- Tai Tran - Process Engineer

**1.1.2 Key Personnel for Subcontractors**

1.1.2.1 Process Construction:

- Doug Doxsey - Engineering Manager
- Joe Doxsey - Project Manager

1.1.2.2 Wuest Electric Co:

- Todd Wuest - Owner
- Brian Kile - Project Manager

1.1.2.3 Thomas R. O'Shea Inc:

- Jim Matson - President



EMPLOYMENT, TRANSITION AND CONSULTING AGREEMENT

THIS EMPLOYMENT, TRANSITION AND CONSULTING AGREEMENT is entered into May 22, 2008, effective as of May 7, 2008 ("Employment Agreement"), by and between QUAKER CHEMICAL CORPORATION, a Pennsylvania corporation (the "Company"), and RONALD J. NAPLES ("Executive").

BACKGROUND:

Executive has been employed by the Company as its Chairman of the Board and Chief Executive Office pursuant to an employment agreement dated March 11, 1999, as amended in part effective July 21, 2004 ("Prior Agreement"). The term of employment under the Prior Agreement automatically extended effective January 1, 2008. Executive has informed the Company of his intention to retire in 2008. The Company and Executive desire to provide for the continuation of the employment relationship between Executive and the Company until the date of Executive's retirement, to provide certain retirement benefits and to provide for continued services in a consulting capacity following retirement, all to ensure smooth transition. The Company and Executive intend, by this Employment Agreement, to establish the terms and conditions of Executive's continued employment and retirement.

NOW, THEREFORE, in consideration of the mutual promises and covenants herein contained and intending to be legally bound hereby, the Company and Executive amend and restate the Prior Agreement to read as follows:

1. Employment. The Company hereby continues to employ Executive and Executive hereby accepts continued employment with the Company as the Chairman of the Board and Chief Executive Officer of the Company upon the terms and conditions contained herein.

2. Duties.

(a) During the Term of Employment, Executive shall perform all duties consistent with the position of Chairman of the Board and Chief Executive Officer of the Company, as well as any other duties which are assigned to him by the Board which are commensurate with his position. Executive will devote his entire time and best efforts to fulfill faithfully, responsibly and satisfactorily those duties and to further the Company's best interests.

(b) During the Term of Employment, Executive shall not engage in any commercial activities which are in any way in competition with the activities of the Company (provided, however, that this shall not restrict Executive from holding up to 1% of the outstanding capital stock or other securities of any publicly traded entity which conducts activities in competition with the activities of the Company) or which may in any way interfere with the performance of his duties or responsibilities to the Company.

(c) Subject to Paragraph 8, nothing contained in this Employment Agreement shall restrict or prohibit Executive from serving on boards of eleemosynary institutions or on the boards of up to two publicly traded entities.

3. Term. The term of Executive's employment hereunder shall commence on May 7, 2008 and shall end on the Retirement Date (the "Term of Employment") unless either the Company or Executive shall have given the other at least ninety days' notice of a desire to terminate before the Retirement Date.

4. Base Salary and Bonuses. In exchange for Executive's promises contained herein, the Company shall compensate him in the following manner:

(a) Base Salary. Effective March 1, 2008 the Company shall compensate Executive at the Base Salary of \$682,500 per annum, payable in equal installments on the same basis as other senior salaried officers of the Company for services prior to Executive's Separation from Service.

(b) Bonuses. During the Term of Employment, Executive will continue to participate in the Quaker Global Annual Incentive Plan ("GAIP"); for the purposes of Executive's participation under GAIP as currently in effect, he will have a mid/target award percentage of 75% of base salary, with a maximum potential award equal to 140% of base salary. Executive shall participate in such other bonus and annual incentive plans applicable to senior salaried officers of the Company as may be hereafter adopted by the Company. The Company may pay Executive such other bonus or bonuses, if any, as the Board, in its sole discretion, shall determine.

(c) Special Bonuses. A one-time bonus of \$565,000 shall be paid on the date this Employment Agreement is executed in 2008 and a one-time bonus of \$77,326 shall be paid on December 30, 2008.

(d) Withholding. The amounts set forth herein are subject to appropriate withholdings and deductions as required by law.

5. Long-Term Performance Incentive Plan. During the Term of Employment, Executive shall continue to be eligible for continued participation in the Company's Long-Term Performance Incentive Plan (the "Incentive Plan"). The Compensation Committee may grant Executive awards under the Incentive Plan in the Compensation Committee's sole discretion. Executive shall be eligible to participate in such other long-term incentive based compensation plans as may be hereafter adopted by the Company.

6. Retirement and Other Benefit Plans.

(a) During the Term of Employment, Executive shall be entitled to participate in the Company's employee benefit plans as they are in existence on the date of this Employment Agreement or as they may be amended hereafter. At the present time, Executive is entitled to participate in various plans, including, without limitation, the following plans to the same extent as other senior salaried officers of the Company: Group Medical Insurance Plan, Dental Plan, Disability (short and long term) Plan, Group Term Life Insurance, and Retirement Savings Plan.

Notwithstanding the foregoing, Executive may elect that the Company provide him with insured "indemnity type" medical insurance coverage (as opposed to the type of coverage which would otherwise have been provided) and, in that event, Executive shall reimburse the Company in the amount he would have been required to pay for HMOQPOS coverage.

(b) The Quaker Chemical Corporation 1995 Naples Supplemental Retirement Income Program and Agreement, as amended and restated effective May 14, 2004 (the "Naples SURP"), shall continue in effect, subject to amendment as hereinafter provided. The Naples SURP may be amended in a manner consistent with any amendments made to the Quaker Chemical Corporation Supplemental Retirement Income Program; provided, however, no such amendment will reduce or limit any of the benefits thereunder. In addition, the Naples SURP shall be amended to (i) comply with Section 409A of the Code, (ii) provide that Executive's March 2001 award of 100,000 restricted shares shall be taken into account as a bonus payment of \$343,200 (20,000 shares at \$17.16 per share) in each year beginning with 1997 and ending with 2001 (and not when income was recognized), (iii) provide that the annual incentive bonuses in the highest three of the last ten years (not five years) will be taken into account, and (iv) provide that in the event of Executive's Separation from Service on account of Retirement or a Severance Event, (A) there shall be no reduction in the benefit payable under the Naples SURP because Executive completes fewer than 15 years of employment with the Company or commences payment of the benefit prior to attainment of age 65, and (B) for the right of Executive to elect, in 2008 and on or before the earlier of the Retirement Date or a Severance Event (the "Applicable Date"), to receive his benefit under the Naples SURP in the form of three approximately equal installments. The first such installment shall be paid to Executive on the Delayed Payment Date and the remaining two installments shall be paid to Executive on the first and second anniversaries of the Applicable Date (or the next business day if such date or anniversary is not a business day). For purposes of determining the amount of the installments, the actuarial equivalent present value as of the Applicable Date of the benefit otherwise payable to Executive under the Naples SURP in the form of a single life annuity commencing at the Applicable Date shall be determined, and the installments shall be the actuarial equivalent of such present value. Actuarial equivalent shall be determined using the applicable interest rate under Section 417(e)(3) of the Code and, for purposes of determining present value (and not the amount of the installments), the applicable mortality table under Section 417(e)(3) of the Code, in both cases prior to amendment by the Pension Protection Act of 2006 if the Applicable Date is prior to December 1, 2008, consistent with the methodology shown in the example attached hereto as Exhibit A. In the event Executive makes a timely election to receive the Naples SURP benefit in the form of three installments and dies after the Applicable Date and before the three installments have been paid, the installments not paid to Executive shall be paid to Executive's Beneficiary. Exhibit A shows the amount payable to Executive under the Naples SURP in the event the Applicable Date is the Retirement Date and Executive makes a timely election to receive the Naples SURP benefit in the form of three installments. Executive continues to waive any rights he may have to participate in or to receive benefits under the Quaker Chemical Corporation Supplemental Retirement Income Program. Executive shall be fully vested in the benefits accrued under the Naples SURP and such benefits shall be nonforfeitable, notwithstanding the termination of his employment with the Company prior to his reaching normal retirement age.

7. Other Benefits. During the Term of Employment, Executive shall be provided with the following additional benefits:

(a) The Company shall reimburse Executive for the cost of his membership in one country club for his business related use thereof.

(b) The Company shall reimburse Executive, upon proper accounting, for reasonable expenses and disbursements incurred by him in the course of his performance of the duties hereunder.

(c) Executive shall be entitled to five weeks of vacation each year without reduction in salary.

(d) The Company shall reimburse Executive up to \$8,000 per calendar year for annual tax preparation and financial planning services.

(e) The Company shall make available to Executive an automobile (and appropriate insurance thereon) for business related use, said vehicle to be of his choosing up to a vehicle cost of \$45,000.

8. Executive Covenants. In order to induce the Company to enter into this Employment Agreement, Executive hereby agrees as follows:

(a) Except for and on behalf of the Company and except with the consent of or as directed by the Board, Executive will keep confidential and shall not divulge to any other person or entity during the Term of Employment or thereafter any of the business or trade secrets, names and purchase histories of customers, formulae and processes of manufacture, or other confidential information regarding the Company which has not otherwise become public knowledge.

(b) All papers, books and records of every kind and description relating to the business and affairs of the Company, whether or not prepared by Executive, shall be the sole and exclusive property of the Company, and Executive shall surrender them to the Company at any time upon the request by the Board.

(c) During the Term of Employment and for a period of two years after the termination of Executive's employment, regardless of the reason for such termination, Executive will not (i) participate, directly or indirectly, as a director, stockholder or partner, or have any direct or indirect financial interest as creditor, in any business which, directly or indirectly, competes with the Company; provided, however, that this subparagraph (c) shall not restrict Executive from holding up to 1% of the outstanding capital stock or other securities of any publicly traded entity which conducts activities in competition with the activities of the Company, or (ii) solicit any customers of the Company on behalf of himself or any other person, firm or company; or (iii) within any place in the world (the Company being global in nature and its business being international), directly or indirectly, individually or jointly, as employee or in any other capacity enter into or become engaged in the exploitation, development, manufacture or sale of any products used or capable of use in competition with the products of the Company or in any process, method, or apparatus which would facilitate the manufacture or sale of products used or capable of use in competition with the Company's products.

(d) The Company shall, in addition to other remedies provided by law, have the right and remedy to have the provisions of this Paragraph 8 specifically enforced by any court having equity jurisdiction. Executive acknowledges that any breach or threatened breach of the provisions of this Paragraph 8 will cause irreparable injury to the Company and that money damages will not provide an adequate remedy. Nothing contained herein shall be construed as prohibiting the Company from pursuing any other remedies available to it for such breach or threatened breach, including any recovery of damages from Executive.

9. Definitions. As used in this Employment Agreement, the following capitalized words and terms shall have the following meanings:

“Beneficial Owner” shall have the meaning ascribed to it in Rule 13(d)-3 under the Exchange Act.

“Beneficiary” shall mean (a) the person or persons designated by Executive to receive benefits payable to a beneficiary under this Employment Agreement as a result of Executive’s death, such designation to be in a writing filed by Executive with the Company’s human resources department on or before Executive’s death, or (b) if Executive fails to so designate a beneficiary or the designated beneficiary predeceases Executive, Executive’s surviving spouse or, if Executive has no surviving spouse, his estate.

“Benoliel Family” shall mean Peter A. Benoliel, his wife, his children and their respective spouses and children, and all trusts created by or for the benefit of any of them.

“Board” means the Company’s Board of Directors.

“Cause” means:

(i) The willful and continued neglect (after having received notice thereof and a reasonable opportunity to cure or correct from the Board) by Executive of Executive’s duties under this Employment Agreement; or

(ii) The willful engaging by Executive in a continued course of misconduct (after having received notice thereof and a reasonable opportunity to cure or correct from the Board) which is materially injurious to the Company, monetarily or otherwise;

and Executive shall have been given notice thereof from the Board and an opportunity (with counsel) to be heard by the Board and the Board shall have made a reasonable and good faith finding that Executive was guilty of the conduct set forth in subparagraph (i) or (ii) hereof.

“Code” means the Internal Revenue Code of 1986, as amended.

“Compensation Committee” means the Compensation/Management Development Committee of the Board.

“Delayed Payment Date” means (i) in the case of a payment or benefit due on account of a Severance Event, the date that is six months after the Severance Event (or, if such day is not a business day, the next business day), or (ii) in the case of a payment or benefit due on account of Retirement, the date that is six months after the Retirement Date (or, if such day is not a business day, the next business day).

“Disability” shall have the definition contained in Paragraph 11(b).

“Effective Date” means the date on which a Significant Transaction occurs.

“Escrow Agent” means Wachovia Bank, National Association, or such other national banking association designated by the Company on or before the Effective Date.

“Exchange Act” means the Securities Exchange Act of 1934, as amended.

“Good Reason” means any of the following which occurs or is effective before the Retirement Date:

(i) Other than in connection with Executive’s retirement as contemplated in Paragraph 11(f), the failure of Executive to be elected as a director of the Company, or the failure of Executive to be elected the Chairman of the Board of the Company, or the failure of the Company to elect Executive as, or to permit Executive to perform the duties of, the Chief Executive Officer of the Company, which failure is not remedied within thirty (30) days after the receipt by the Company of notice thereof from Executive; or

(ii) A breach by the Company of any material provision of this Employment Agreement, which breach is not remedied within thirty (30) days after the receipt by the Company of notice thereof from Executive; or

(iii) An amendment of the Company’s By-Laws (which amendment is not approved by Executive), the effect of which is a material adverse change in the duties and responsibilities of the Company’s Chief Executive Officer; or

(iv) The relocation of the principal executive offices of the Company (including the principal office of Executive) to a location outside the continental United States, which relocation is not initiated or proposed by Executive; or

(v) The Company is not or ceases to be a corporation with stock registered pursuant to Sections 12(b) or 12(g) of the Exchange Act; or

(vi) A determination to terminate employment for any reason whatsoever is made by Executive during the period beginning nine (9) and ending eighteen (18) months after the occurrence of a Significant Transaction.

“In-Kind Benefits Rule” means, with respect to in-kind benefits subject to Section 409A of the Code, that in-kind benefits provided during any calendar year shall not affect the in-kind benefits to be provided in any other calendar year.

“Person” shall have the meaning ascribed to it in Sections 13(d) and 14(d) of the Exchange Act.

“Reimbursement Rule” means, with respect to reimbursements subject to Section 409A of the Code, that (i) the amount of expenses eligible for reimbursement during any calendar year shall not affect the expenses eligible for reimbursement in any other calendar year, and (ii) the reimbursement of an eligible expense shall be made as soon as practicable after Executive requests such reimbursement, but not later than the December 31 following the calendar year in which the expense was incurred and not earlier than the Delayed Payment Date.

“Retirement” means Executive’s Separation from Service on the Retirement Date which shall occur automatically pursuant to the terms of this Employment Agreement in the event Executive’s Separation from Service has not occurred before the Retirement Date.

“Retirement Date” means October 3, 2008.

“Separation from Service” means Executive’s separation from service with the Company and its affiliates within the meaning of Treas. Reg. §1.409A-1(h) or any successor thereto.

“Severance Allowance” means:

(i) For the purposes of Paragraph 10(a)(i) (i.e., with respect to a Severance Event following a Significant Transaction), an amount equal to 300% of the sum of (x) Executive’s then current annual rate of Base Salary, plus (y) the greatest of the annual amounts paid to Executive by the Company under all bonus and annual incentive plans and discretionary bonuses during any of the three (3) calendar years immediately preceding the year in which the Significant Transaction occurred, but in no event shall the amount under (y) be less than the amount of a mid-level bonus which would otherwise have been payable to Executive for the calendar year in which the Significant Transaction occurred.

(ii) For the purposes of Paragraph 11(e) (i.e., with respect to all other Severance Events), an amount equal to 300% of the sum of (x) Executive’s then current annual rate of Base Salary plus (y) the greater of the average of the amounts paid to Executive by the Company under all bonus and annual incentive plans and discretionary bonuses for the two (2) calendar years immediately preceding the year in which the Severance Event occurred or the amount of a mid-level bonus which would otherwise have been payable to Executive for the calendar year in which the Severance Event occurred.

“Severance Event” means Executive’s Separation from Service before the Retirement Date for any reason other than (i) Executive’s death or Disability, (ii) by the Company for Cause, (iii) by Executive for other than Good Reason, or (iv) by reason of Executive having given the Company notice of intention to terminate pursuant to Paragraph 3. A Severance Event shall include Executive’s Separation from Service by reason of the Company having given Executive notice of termination pursuant to Paragraph 3, but shall not include Executive’s Separation from Service on the Retirement Date.

“Significant Transaction” means the occurrence of any of the following before the Retirement Date:

(i) A Person (other than the Company or its wholly-owned subsidiaries; or any ESOP or other employee benefit plan of the Company and any trustee or other fiduciary in such capacity holding securities under such plan; any corporation owned, directly or indirectly, by the shareholders of the Company in substantially the same proportions as their ownership of capital stock of Company; or any other Person who is as of the date of this Employment Agreement an executive officer of the Company or any group of Persons of which he or she voluntarily is a part) is or becomes the Beneficial Owner of securities of the Company representing 30% or more of the combined voting power of the Company’s then outstanding securities or such lesser percentage of voting power, but not less than 15%, as determined by the members of the Board who are independent directors (as defined in the New York Stock Exchange, Inc. Listed Company Manual); provided, however, that a Significant Transaction shall not be deemed to have occurred under the provisions of this subparagraph (i) by reason of the Beneficial Ownership of voting securities by members of the Benoliel Family unless the Beneficial Ownership of all members of the Benoliel Family (including any other individuals or entities who or which, together with any member or members of the Benoliel Family are deemed to constitute a Person) exceeds 50% of the combined voting power of the Company’s then outstanding securities; or

(ii) During any two-year period during the Term of Employment, directors of the Company in office at the beginning of such period plus any new director (other than a director designated by a Person who has entered into an agreement with the Company to effect a transaction described in subparagraphs (i) or (iii) hereof) whose election to the Board or whose nomination for election by the Company’s shareholders was approved by a vote of at least two-thirds ( $\frac{2}{3}$ ) of the directors then still in office who either were directors at the beginning of the period or whose election or nomination for election was previously so approved, shall cease for any reason to constitute at least a majority of the Board; or

(iii) The consummation of (1) any consolidation or merger of the Company in which the Company is not the continuing or surviving corporation or pursuant to which the Company’s Common Stock would be converted into cash, securities or other property, other than a merger of the Company in which holders of the Company’s Common Stock immediately prior to the merger have the same proportionate ownership of voting shares of the surviving corporation immediately after merger as they had in the Common Stock immediately before, or (2) any sale, lease, exchange, or other transfer (in one transaction or a series of related transactions) of all or substantially all the assets or earning power of the Company; or

(iv) The Company’s shareholders or the Board shall approve the liquidation or dissolution of the Company.

10. Significant Transaction.

(a) (i) On or before the Effective Date, the Company shall deliver to Escrow Agent a sum (“Escrow Fund”) equal to the applicable Severance Allowance; provided, however, that notwithstanding any provision of this Employment



Agreement to the contrary (A) such transfer shall not be made if it would result in the imposition of additional tax under Section 409A(b)(5) of the Code, and (B) after such transfer, the funds shall remain available to satisfy claims of the Company's general creditors. The Escrow Fund shall be invested by Escrow Agent in certificates of deposit with duration not more than thirty (30) days issued by any bank (including Escrow Agent) or savings institution the accounts of which are insured by the FDIC (and, unless otherwise agreed by the Company and Executive, with a maximum of \$100,000 in any single such institution). Any cash accumulation with respect to the Escrow Fund in the form of interest shall be the property of and shall be payable by Escrow Agent to the Company (or to any successor to the Company) as received by Escrow Agent and are not part of the Escrow Fund.

(ii) In the event of the occurrence of a Severance Event during the three (3) year period following a Significant Transaction, Executive shall send Escrow Agent and the Company (or its successor) a demand, within thirty (30) days of the Severance Event, that the Escrow Fund be paid to him in accordance with this subparagraph (ii) and subparagraph (vi) (a "Demand"). If the Company (or its successor) does not send an objection to the Demand which states that a Severance Event has not occurred and sets forth specific and detailed facts for the reason for said statement (an "Objection") to Escrow Agent and Executive prior to the end of the Objection Period (hereafter defined), Escrow Agent shall pay (or commence to pay) the Escrow Fund to Executive on the Delayed Payment Date. The Objection Period shall begin on the date of the Demand and shall end at 5:00 p.m. Philadelphia time, on the tenth calendar day following the date of the Demand, or if such day is not a day when Escrow Agent is generally open for business in Philadelphia, the Objection Period shall end at 5:00 p.m. Philadelphia time on the next day after such tenth day that Escrow Agent is generally open for business in Philadelphia. For purposes of this Paragraph 10(a), notwithstanding the provisions of Paragraph 18, a Demand and an Objection shall not be deemed received until Escrow Agent shall have actually received the Demand or Objection, as the case may be, and all time frames specified in this subparagraph (ii) shall be measured from the actual date of Escrow Agent's receipt.

(iii) If Escrow Agent receives an Objection before the end of the Objection Period, Escrow Agent shall not pay (or commence to pay) the Escrow Fund to Executive, and, except as provided herein, shall not comply with any claims, demands or instructions from Executive and/or the Company (or its successor) with respect to the Escrow Fund. Escrow Agent shall not be or become liable in any way to the Company (or its successor), Executive or any other person or entity for its failure or refusal to comply with such conflicting claims or demands. Escrow Agent shall be entitled to refuse to act until (1) such conflicting claims or demands shall have been finally determined by an award in an arbitration proceeding (pursuant to Paragraph 17), or settled by agreement between the conflicting parties as evidenced in a writing satisfactory to Escrow Agent, or (2) Escrow Agent shall have received security or indemnity satisfactory to Escrow Agent sufficient to save it harmless from and against any and all loss, liability or expense which it may incur by reason of its acting. Escrow Agent may, in addition, elect to commence an interpleader action or seek other judicial relief or orders as it may deem necessary. All of Escrow Agent's reasonable costs and expenses of bringing and maintaining such action, including but not limited to reasonable fees and expenses of separate counsel for Escrow Agent, shall be paid by the Company (or its successor). Escrow Agent shall pay (or commence to pay) the Escrow Fund to Executive as soon as practicable after, but no later than the end of the first calendar year in which, Executive and the Company enter into a legal binding settlement of the dispute, the Company concedes that the Escrow Fund is payable to Executive, or the Company is required to make such payment pursuant to a final and nonappealable judgment or other binding decision.

(iv) If an arbitration proceeding or an interpleader action is commenced by reason of the Company having sent an Objection to a Demand and if said proceeding or action results in a finding or decision in favor of Executive (i.e., that the Objection was improper or inappropriate), then (A) the amount the Company shall pay to Executive under Paragraph 10(a)(iii) shall be increased by (I) interest earned on the Escrow Fund from the date of the Objection to the date the Escrow Fund is paid to Executive, and (II) an amount equal to 25% of the Escrow Fund, and (B) the Company shall reimburse Executive for Executive's costs and expenses (including counsel fees) in said proceeding or action, subject to the Reimbursement Rule.

(v) If Escrow Agent does not receive a timely Demand from Executive by November 30, 2008, Escrow Agent shall pay the Escrow Fund to the Company (or its successor) with ten (10) business days of such date.

(vi) The Escrow Fund (and any other amounts due to Executive under this Paragraph 10(a)) shall be paid (A) in a single sum if (I) the Significant Transaction also constitutes a "change in control event" within the meaning of Treas. Reg. §1.409A-3(i)(5) or any successor thereto, and (II) the Severance Event occurs within two (2) years following such Significant Transaction, or (B) in monthly installments in any other case, where the amount of the first monthly installment shall equal the Escrow Fund (and any other amounts due to Executive under this Paragraph 10(a)) multiplied by a fraction, the numerator of which is the number of full months between the Severance Event and the date payment of the Escrow Fund commences (but not more than thirty-six), and the denominator of which is thirty-six (36). The number of additional monthly installments, if any, shall equal the positive excess of thirty-six (36) over the numerator of the fraction described in the previous sentence and each such installment shall be equal to one thirty-sixth ( $1/36^{\text{th}}$ ) of the Escrow Fund (and any other amounts due to Executive under this Paragraph 10(a)).

(vii) Escrow Agent's duties and responsibilities shall be limited to those expressly set forth herein. Escrow Agent shall not be subject to, nor obligated to recognize, any other agreement between or direction or instruction of any of the parties to this Employment Agreement or of any third party even though reference thereto may be made herein. If any portion of the Escrow Fund is at any time attached, garnished or levied upon, or in case the transfer or delivery of the Escrow Fund shall be stayed or enjoined, or in the case of any other legal process or judicial order affecting the Escrow Fund, then Escrow Agent is authorized to comply with any such order in any manner as it or legal counsel of its own choosing deems appropriate; and if it complies with any process, order, writ, judgment or decree, it shall not be liable to any of the parties hereto or to any other person or entity even though such order or process may be subsequently modified or vacated or otherwise determined to have been without legal force or effect.

(viii) Escrow Agent shall not be liable for any act taken or omitted under this Employment Agreement except for its gross negligence or willful misconduct. Escrow Agent shall be fully protected in relying upon any instruction, notice, demand, certificate or document which Escrow Agent in good faith believes to be genuine. Escrow Agent may consult with legal counsel at the expense of the Company (or its successor) as to the construction of any of the provisions of this Employment Agreement, and Escrow Agent shall be fully protected in acting in good faith in accordance with any such advice.

(ix) Escrow Agent shall not be responsible in any respect for the form, execution, validity or genuineness of documents deposited under this Employment Agreement, or for any description therein, or for the identity, authority or rights of persons executing or delivering or purporting to execute or deliver any such document.

(x) The Company (and its successors) shall indemnify, defend and hold Escrow Agent harmless against any loss, liability, costs, damages and expenses, including reasonable counsel fees, that are incurred by Escrow Agent and that are out of or in connection with its acceptance or administration of this Employment Agreement or being Escrow Agent under this Employment Agreement, except for those arising solely from Escrow Agent's gross negligence or willful misconduct.

(xi) Escrow Agent may resign at any time by giving at least thirty (30) days written notice thereof. Within twenty (20) days after receiving the aforesaid notice, the Company (or its successor) and Executive shall jointly agree on and appoint a successor Escrow Agent at which time Escrow Agent shall distribute the Escrow Fund then held hereunder to the successor Escrow Agent.

(xii) The Company (or its successor) shall pay all usual and customary charges and fees of Escrow Agent due to the Escrow Agent for its services hereunder.

(xiii) This Paragraph 10(a) may be amended or canceled by and upon written notice to Escrow Agent at any time by each of the Company (or its successor) and Executive, but the duties, responsibilities or liabilities of Escrow Agent may not be increased without its prior consent.

(b) In the event of the occurrence of a Severance Event during the three (3) year period following a Significant Transaction, Executive shall be entitled to the payments and benefits provided for in Paragraphs 11(e)(i)(B) through (G).

#### 11. Termination, Severance and Retirement Benefits.

(a) Death of Executive. In the event of the death of Executive (i) during the Term of Employment and before either the Retirement Date or the occurrence of a Severance Event, or (ii) during the period Executive is receiving Disability payments from the Company under Paragraph 11(b), all rights, benefits and obligations of Executive under this Employment Agreement shall cease except for benefits accrued to or accelerated at the date of death, and except that the Company shall pay a death benefit to Executive's Beneficiary. The aggregate death benefit shall be an amount equal to 300% of the annual rate of Executive's Base Salary in the calendar year in which death occurred or the Disability Termination occurred (under Paragraph 11(b)), and it shall be paid in thirty-six (36) equal consecutive monthly installments commencing thirty (30) days after the date of death.

(b) Disability of Executive. In the event that during the Term of Employment and before either the Retirement Date or the occurrence of a Severance Event, a mutually acceptable physician determines that Executive is unable to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment that can be expected to result in death or can be expected to last for a continuous period of not less than twelve (12) months ("Disability"), Executive or his legal representatives shall be entitled to elect to have his Retirement Date commence beginning thirty (30) days after such medical determination and upon such timely election the provisions of Paragraph 11(f) hereof shall govern in lieu of this Paragraph 11(b). If Executive or his legal representatives do not make such election within said thirty (30) day period, then Executive's employment under this Employment Agreement (except for Executive's obligations under Paragraph 8) shall terminate (the "Disability Termination") on the thirty-first (31<sup>st</sup>) day after such medical determination and all rights, benefits and obligations hereunder shall cease except for benefits accrued to or accelerated at the date of the Disability Termination, and except that during the five (5) year period following the Disability Termination the Company (i) shall pay to Executive monthly an amount equal to the difference between one-twelfth (1/12) of the annual rate of Executive's Base Salary in the calendar year in which the Disability Termination occurred and the gross monthly amount of disability payments by insurance or otherwise provided by Company for Executive, and (ii) shall continue in force medical insurance, dental insurance and term life insurance then being provided Executive pursuant to this Employment Agreement.

(c) Cause. The Company shall have the right to terminate Executive's employment under this Employment Agreement for Cause. In the event of the termination of employment for Cause prior to the Retirement Date, all rights, benefits and obligations of the parties under this Employment Agreement (except for Executive's obligations under Paragraph 8) shall immediately terminate except for benefits accrued to the date of termination.

(d) Good Reason. Executive shall have the right to terminate his employment under this Employment Agreement for Good Reason.

(e) Severance Events.

(i) Payments/Benefits. If a Severance Event occurs before Executive's death, Disability Termination or the Retirement Date, Executive shall be entitled to the payments and benefits set forth in this Paragraph 11(e). Executive shall not be entitled to any benefits under this Paragraph 11(e) if Executive's death, Disability Termination or the Retirement Date occurs before the Severance Event.

(A) The Company shall pay to Executive (or his Beneficiary) the applicable Severance Allowance. Except as otherwise provided in Paragraph 10(a)(vi) with respect to a Severance Event following a Significant Transaction, one-sixth (1/6<sup>th</sup>) of the Severance Allowance shall be paid to Executive (or his Beneficiary) on the Delayed Payment Date and one-thirty-sixth (1/36<sup>th</sup>) of the Severance Allowance shall be paid to Executive (or his Beneficiary) on the first business day of each of the following thirty (30) months.

(B) The Company shall pay to Executive (or his Beneficiary) the pro rata portion of any and all bonuses and annual incentive awards for the calendar year in which the Severance Event occurs, said pro rata portion to be

calculated on the fractional portion (the numerator of said fraction being the number of days between January 1 and the date of the Severance Event, and the denominator of which is 365) of the target bonuses and annual incentive awards for such calendar year; provided, however, that such amount shall be offset by any annual incentive award payable to Executive (or his Beneficiary) under GAIP for the calendar year in which the Severance Event occurs. Such payment shall be made during the ninety (90) day period immediately following the end of the calendar year in which the Severance Event occurs or, if later, on the Delayed Payment Date.

(C) The Company shall pay to Executive (or his Beneficiary) the pro rata portion of any and all performance-based awards under the Incentive Plan or other long-term incentive based compensation plans in which Executive is then participating; provided, however, that such amount shall be offset by any awards payable to Executive (or his Beneficiary) under the Incentive Plan or other long-term incentive based compensation for the performance periods in which the Severance Event occurs. The pro rata portion shall be calculated on the fractional portion (the numerator of said fraction being the number of days between the first day of the applicable performance period and the date of the Severance Event, and the denominator of which is the total number of days in the applicable performance period) of the amount of the award which would have been payable had (i) the Severance Event not occurred, and (ii) the target level of performance been achieved for the applicable performance period. Such payment shall be made during the ninety (90) day period immediately following the end of the calendar year in which the Severance Event occurs or, if later, on the Delayed Payment Date.

(D) Executive shall be entitled to benefits under the Naples SURP as provided in Paragraph 6(b).

(E) The benefits under Paragraphs 7(a), (d), (e) and the medical, dental, disability and term life insurance coverage (or coverage similar thereto) being provided Executive immediately prior to the date of Separation from Service shall be continued in effect, at the Company's expense, for a period ending on the earliest of five (5) years from the date of the Severance Event, the date on which Executive obtains new employment which provides him with such benefits or coverage, or the date of Executive's death. The expenses eligible for reimbursement under Paragraphs 7(a) and (d) shall be subject to the Reimbursement Rule. Executive shall be required to pay for the use of the automobile and insurance thereon under Paragraph 7(e) during the six-month period following the Severance Event and shall be reimbursed (subject to clause (i) of the Reimbursement Rule) for such payment on the Delayed Payment Date; provided, however, that such payment and reimbursement shall not be required if Executive could otherwise deduct such expenses under Section 162 or 167 of the Code as business expenses incurred in connection with the performance of services (ignoring any applicable limitation based on adjusted gross income). The in-kind benefits provided under Paragraph 7(e) shall be subject to the In-Kind Benefits Rule.

(F) For a period of one (1) year following the date of the Severance Event, the Company shall make or cause to be made available to Executive at its expense reasonable outplacement counseling and other placement services comparable to those made available to the Company's senior salaried officers prior to the earlier of the Effective Date or the date of the Severance Event.

(G) For a period equal to the shorter of (x) from the date of the Severance Event until Executive becomes Employed (hereafter defined), or (y) five (5) years from the Severance Event, the Company will provide Executive with a private office and secretarial service in the Company's principal offices or, in Executive's discretion, a comparable office and service elsewhere. Executive shall be required to pay for such office space and secretarial services during the six-month period following the Severance Event and shall be reimbursed (subject to clause (i) of the Reimbursement Rule) for such payment on the Delayed Payment Date; provided, however, that such payment and reimbursement shall not be required if Executive could otherwise deduct such expenses under Section 162 or 167 of the Code as business expenses incurred in connection with the performance of services (ignoring any applicable limitation based on adjusted gross income). The in-kind benefits provided under this subparagraph shall be subject to the In-Kind Benefits Rule.

(ii) Subsequent Employment. If Executive becomes Employed during the period with respect to which payments or benefits are continuing pursuant to Paragraphs 11(e)(i)(E) and/or 11(e)(i)(G): (1) Executive shall notify the Company not later than the day such employment commences; and (2) the benefits provided for in said subparagraphs shall terminate as of the date of such employment. For the purposes of this Paragraph 11(e)(ii), Executive shall be deemed to have become "Employed" by another entity or person only if Executive becomes essentially a full-time employee of a person or an entity (not more than 30% of which is owned by Executive and/or members of his family) and, for purposes of discontinuance of benefits under Paragraph 11(e)(i)(E), to the extent Executive's new employment provides him with the particular benefits and coverage described therein. For purposes of this Paragraph 11(e)(ii), Executive's "family" shall mean his parents, his siblings and their spouses, his children and their spouses, and Executive's spouse and her parents and siblings. Nothing herein shall relieve the Company of its obligations accrued up to the time of termination.

(f) Retirement.

(i) In General. If Executive's Retirement occurs before Executive's death, Disability Termination or the date a Severance Event occurs, Executive shall be entitled to the Retirement benefits set forth in this Paragraph 11(f) and, notwithstanding any other provision of this Employment Agreement to the contrary, Executive shall not be entitled to any other payments or benefits under Paragraph 11. Executive shall not be entitled to any benefits under this Paragraph 11(f) if Executive's death, Disability Termination or other Separation from Service occurs before the Retirement Date.

(ii) Consulting Arrangement. Executive shall provide services to the Company as a nonemployee consultant for the twenty-seven (27) month period following the Retirement Date (the "Consulting Period") as follows:

(A) During the Consulting Period, Executive shall have such duties and responsibilities as are determined from time to time by the Board, subject to the last sentence of clause (B) of this Paragraph 11(f)(ii).

(B) During the Consulting Period, Executive's services to the Company are expected to include, among other things, advice and assistance with strategic opportunities. However, Executive will not act as an agent of the Company without the prior written consent of the Board, Executive's time commitment to the Company shall not exceed 20% of the average level of services performed by Executive during the 36-month period immediately preceding the Retirement Date, and Executive shall not be required to travel outside of the Philadelphia area more than five business days in any calendar month.

(C) On the Delayed Payment Date, the Company shall pay Executive (or his Beneficiary) \$233,125 for consulting services during the first six months of the Consulting Period. During the remaining twenty-one (21) months of the Consulting Period, the Company shall pay Executive (or his Beneficiary) \$20,834 per month for consulting services on the first business day of each such month. Such payments shall be made regardless of the amount of services provided by Executive during the Consulting Period.

(D) During the Consulting Period, the Company shall reimburse Executive (or his Beneficiary), upon proper accounting, for reasonable expenses and disbursements incurred by Executive in the course of his performance of the consulting services; provided, however, that such reimbursement shall be subject to the Reimbursement Rule.

(E) Except as otherwise required by applicable law, Executive will be solely responsible for the payment of all applicable federal, state and local income and employment taxes with respect to amounts paid during the Consulting Period.

(iii) Annual Bonus. The Company shall pay Executive (or his Beneficiary) a lump sum payment during the 2- 1/2 month period ending March 15, 2009 equal to the positive excess (if any) of (A) 100% of the annual bonus that would have been payable to Executive under the terms of the GAIP had Executive been employed by the Company on December 31, 2008, over (B) the annual bonus actually paid to Executive (or his Beneficiary), prior to any withholdings, under GAIP with respect to 2008.

(iv) Naples SURP. Executive shall be entitled to benefits under the Naples SURP as provided in Paragraph 6(b).

(v) Performance Incentive Units. With respect to each Incentive Plan three-year performance period that begins before and ends after the Retirement Date, the amount payable (if any) with respect to Performance Incentive Units granted before the Retirement Date shall be determined separately with respect to each such performance period and shall equal the positive excess (if any) of (i) the Applicable Percentage (as defined below) of the amount that would have been payable to Executive under the terms of the Incentive Plan with respect to such performance period had Executive been employed by the Company on the last day of such period, over (ii) the amount actually paid to Executive (or his Beneficiary), prior to any withholdings, under the Incentive Plan with respect to Performance Incentive Units granted to Executive with respect to such period. The Applicable Percentage shall be (x) 100% for the performance period ending December 31, 2008, (y) 67% for the performance period ending December 31, 2009, and (z) 33% for the performance period ending December 31, 2010. Such excess shall be paid in a lump sum to Executive (or his Beneficiary) during the 3- 1/2 month period immediately following the last day of the applicable performance period. For the avoidance of doubt, all amounts payable under this Paragraph 11(f)(v) shall be based on actual performance during the applicable performance period.

(vi) Options and Time-Based Restricted Stock. The Compensation Committee shall take any and all actions necessary under the Incentive Plan to (A) cause all options and time-based restricted stock granted to Executive and outstanding on the Retirement Date to become fully vested on the Retirement Date, and (B) cause all such options to remain exercisable until the earliest of (I) the stated expiration date of the option, (II) the third anniversary of the Retirement Date, or (III) the tenth anniversary of the original date of grant of the option.

(vii) Benefits. Upon Executive's Retirement:

(A) The Company shall continue, at its expense, to make available to Executive the automobile made available under Paragraph 7(e) (the "Automobile") until the earlier of Executive's death or the expiration of the term of the Automobile lease in effect on December 31, 2010; provided, however, that Executive shall be required to pay for such lease during the six-month period following the Retirement Date and shall be reimbursed (subject to clause (i) of the Reimbursement Rule) for such payment on the Delayed Payment Date, except that such payment and reimbursement shall not be required if Executive could otherwise deduct such expenses under Section 162 or 167 of the Code as business expenses incurred in connection with the performance of services (ignoring any applicable limitation based on adjusted gross income); and further provided that the in-kind benefits provided under this subparagraph shall be subject to the In-Kind Benefits Rule;

(B) If the Company or Executive has an option to purchase the Automobile at the expiration of the term of the lease referred to in Paragraph 11(f)(vii)(A), Executive shall have the right to cause such purchase option to be exercised and to purchase the Automobile (at Executive's expense) at its lease contract price;

(C) The Company shall provide Executive with a private office and secretarial service in the Company's principal offices or, in Executive's discretion, a comparable office and service elsewhere for the period ending on the earlier of December 31, 2013 or Executive's death; provided, however, that Executive shall be required to pay for such office space and secretarial services during the six-month period following the Retirement Date and shall be reimbursed (subject to clause (i) of the Reimbursement Rule) for such payment on the Delayed Payment Date, except that such payment and reimbursement shall not be required if Executive could otherwise deduct such expenses under Section 162 or 167 of the Code as business expenses incurred in connection with the performance of services (ignoring any applicable limitation based on adjusted gross income); and further provided that the in-kind benefits provided under this subparagraph shall be subject to the In-Kind Benefits Rule;

(D) The Company shall continue to provide the tax preparation and financial planning services reimbursement provided under Paragraph 7(d) for a period ending on the earlier of December 31, 2011 or Executive's death; provided, however, that such reimbursement shall be subject to the Reimbursement Rule;



(E) Executive and Executive's spouse at the Retirement Date shall be eligible to participate in, and receive the same benefits as Executive and his spouse receive on the Retirement Date under, the Company's medical and dental plans until Executive's death; provided, however, that (i) such benefits shall be changed after the Retirement Date to the extent such benefits are changed for actively employed executives of the Company, (ii) Executive shall be entitled to make elections regarding his and his spouse's coverage during open enrollment periods made available to actively employed executives of the Company, and such benefits shall be changed after the Retirement Date to reflect any such election, (iii) the Company shall pay the full cost of the medical and dental coverage provided to Executive and his spouse under this Paragraph 11(f)(vii)(E), (iv) upon Executive's eligibility for coverage under Medicare, Executive's coverage under the Company's medical and dental plans shall be secondary to the coverage under Medicare, (v) upon Executive's spouse's eligibility for coverage under Medicare, Executive's spouse's coverage under the Company's medical and dental plans shall be secondary to the coverage under Medicare, and (vi) the Company's obligation to provide medical and dental coverage under this Paragraph 11(f)(vii)(E), but not the level of coverage provided, is independent of whether such coverage is available for retired executives under the Company's health insurance program for actively employed executives;

(F) The Company shall reimburse Executive for fees and dues payable on account of his membership in one country club, such fees and dues to cover membership beginning on the Retirement Date and ending on the earlier of December 31, 2010 or Executive's death; provided, however, that such reimbursement shall be subject to the Reimbursement Rule;

(G) The Company shall make annual installment payments to Executive in the amount of \$11,500 each, with the first such installment to be paid on the Delayed Payment Date and subsequent installments to be paid in each January thereafter; provided, however, that no installments shall be due under this paragraph (G) after Executive's death; and

(H) The Company shall continue to provide the following perquisites (to the extent provided to Executive on the day before the Retirement Date and in accordance with Company procedures as in effect on the day before the Retirement Date) to Executive during the period beginning on the Retirement Date and ending on the earlier of December 31, 2010 or Executive's death: cellular telephone (including usage charges); BlackBerry (including usage charges); laptop computer; internet access; American Express platinum business credit card fee; airline club fees; publications; newspapers; periodicals; and dues and fees payable with respect to memberships in the organizations listed on Exhibit B. Notwithstanding the foregoing, (I) any such perquisite which is a reimbursement shall be subject to the Reimbursement Rule, and (II) with respect to any such perquisite which is provided in kind, Executive shall be required to pay for such perquisite during the six-month period following the Retirement Date and shall be reimbursed (subject to clause (i) of the Reimbursement Rule) for such payment on the Delayed Payment Date, except that such payment and reimbursement shall not be required with respect to any perquisite for which Executive would otherwise be entitled to a deduction under Section 162 or 167 of the Code as business expenses incurred in connection with the performance of services (ignoring any applicable limitation based on adjusted gross income); and further provided that the in-kind benefits provided under this subparagraph shall be subject to the In-Kind Benefits Rule.

12. Certain Additional Payments by the Company.

(a) Notwithstanding anything in this Employment Agreement to the contrary, if it shall be determined that any payment or distribution by the Company to or for the benefit of Executive (whether paid or payable or distributed or distributable pursuant to the terms of this Employment Agreement or otherwise, but determined without regard to any additional payments required under this Paragraph 12) (a "Payment") would be subject to the excise tax imposed by Section 4999 of the Code or any interest or penalties are incurred by Executive with respect to such excise tax (such excise tax, together with any such interest and penalties, are hereinafter collectively referred to as the "Excise Tax"), the Company shall pay to Executive (a "Gross-Up Payment") an amount such that after payment by Executive of all taxes (including any interest or penalties imposed with respect to such taxes), including, without limitation, any income taxes, and Excise Tax (and interest and penalties thereon) imposed upon the Gross-Up Payment, Executive retains an amount of the Gross-Up Payment equal to the amount of the Excise Tax imposed upon the Payments. For purposes of this Paragraph 12, any additional tax under Section 409A(a)(1)(B)(i) shall not be taken into account for purposes of determining the amount of any payment due to or on behalf of Executive.

(b) Subject to the provisions of Paragraph 12(c), all determinations required to be made under this Paragraph 12, including whether and when a Gross-Up Payment is required and the amount of such Gross-Up Payment and the assumptions to be utilized in arriving at such determination, shall be made by the Company's independent certified public accountants (the "Accounting Firm") which shall provide detailed supporting calculations both to the Company and Executive within fifteen (15) business days of the receipt of notice from Executive that there has been a Payment, or such earlier time as is requested by the Company; provided that such notice or request shall be made prior to the date of the payment of any Excise Tax. All fees and expenses of the Accounting Firm shall be borne solely by the Company. Any Gross-Up Payment, as determined pursuant to this Paragraph 12 by the Accounting Firm, shall be paid by the Company to Executive within five (5) days of the receipt of the Accounting Firm's determination or, if later, on the Delayed Payment Date. If the Accounting Firm determines that no Excise Tax is payable by Executive, it shall furnish Executive with a written opinion that failure to report the Excise Tax on Executive's applicable federal income tax return would not result in the imposition of a negligence or similar penalty. Any determination by the Accounting Firm shall be binding upon the Company and Executive. As a result of the uncertainty in the application of Section 4999 of the Code at the time of the initial determination by the Accounting Firm hereunder, it is possible that Gross-Up Payments which will not have been made by the Company should have been made ("Underpayment"), consistent with the calculations required to be made hereunder. In the event that the Company exhausts its remedies pursuant to Paragraph 12(c) and Executive thereafter is required to make a payment of any Excise Tax, the Accounting Firm shall determine the amount of the Underpayment that has occurred in accordance with the provisions of this Paragraph 12 and any such Underpayment shall be paid by the Company to or for the benefit of Executive within five (5) days of the remittance of the Excise Tax to the Internal Revenue Service or, if later, on the Delayed Payment Date.

(c) Executive shall notify the Company in writing of any claim by the Internal Revenue Service that, if successful, would require the payment by the Company of the Gross-Up Payment (including an Underpayment). Such notification shall be given as soon as practicable but no later than (10) ten business days after Executive is informed in writing of such claim and shall apprise the Company of the nature of such claim and the date on which such claim is requested to be paid. Executive shall not pay such claim prior to the expiration of the 30-day period following the date on which he gives such notice to the Company (or such shorter period ending on the date that any payment of taxes with respect to such claim is due). If the Company notifies Executive in writing prior to the expiration of such period that it desires to contest such claim, Executive shall (i) give the Company any information reasonably requested by the Company relating to such claim, (ii) take such action in connection with contesting such claim as the Company shall reasonably request in writing from time to time, including, without limitation, accepting legal representation with respect to such claim by an attorney reasonably selected by the Company, (iii) cooperate with the Company in good faith in order effectively to contest such claim, and (iv) permit the Company to participate in any proceeding relating to such claim; provided, however, that the Company shall bear and pay directly all costs and expenses (including additional interest and penalties) incurred in connection with such contest and shall indemnify and hold Executive harmless, on an after-tax basis, for any Excise Tax or income tax (including interest and penalties with respect thereto) imposed as a result of such representation and payment of costs and expenses. All such costs and expenses incurred due to a tax audit or litigation addressing the existence of or amount of a tax liability under this Paragraph 12 shall be paid by the Company within thirty (30) days of the date payment of such expenses is due, but in any event not later than (A) December 31 of the year following the year in which the taxes are remitted to the taxing authority, or (B) where as a result of such audit or litigation no taxes are remitted, December 31 of the year following the year in which the audit is complete or there is a final and nonappealable settlement or other resolution of the litigation. Without limitation on the foregoing provisions of this Paragraph 12(c), the Company shall control all proceedings taken in connection with such contest and, at its sole option, may pursue or forego any and all administrative appeals, proceedings, hearings and conferences with the taxing authority in respect of such claim and may, at its sole option, either direct Executive to pay the tax claimed and sue for a refund or contest the claim in any permissible manner, and Executive agrees to prosecute such contest to a determination before any administrative tribunal, in a court of initial jurisdiction and in one or more appellate courts, as the Company shall determine; provided, however, that if the Company directs Executive to pay such claim and sue for a refund, the Company shall advance the amount of such payment to Executive, on an interest-free basis and shall indemnify and hold Executive harmless, on an after-tax basis, from any Excise Tax or income tax (including interest or penalties with respect thereto) imposed with respect to such advance or with respect to any imputed income with respect to such advance; and further provided that any extension of the statute of limitations relating to payment of taxes for the taxable year of Executive with respect to which such contested amount is claimed to be due is limited solely to such contested amount. Furthermore, the Company's control of the contest shall be limited to issues with respect to which a Gross-Up Payment would be payable hereunder, and Executive shall be entitled to settle or contest, as the case may be, any other issue raised by the Internal Revenue Service or any other taxing authority.

(d) The Accounting Firm shall determine, in accordance with the provisions of this Paragraph 12, the amount of any Underpayment associated with an amount advanced by the Company pursuant to Paragraph 12(c), and any such Underpayment shall be paid by the Company to Executive on the earlier of (i) December 31 of the year following the year in which the advance is paid to the Internal Revenue Service, or (ii) the date the Company exhausts its remedies pursuant to Paragraph 12(c). If, after the receipt by Executive of an amount advanced by the Company pursuant to Paragraph 12(c), Executive becomes entitled to receive any refund with respect to such claim, Executive shall (subject to the Company's complying with the requirements of Paragraph 12(c)) promptly pay to the Company the amount of such refund (together with any Underpayment previously paid to Executive under the first sentence of this Paragraph 12(d) and associated with the refunded advance). If, after the receipt by Executive of an amount advanced by the Company pursuant to Paragraph 12(c), a determination is made that Executive shall not be entitled to any refund with respect to such claim and the Company does not notify Executive in writing of its intent to contest such denial of refund prior to the expiration of thirty (30) days after such determination, then such advance shall be forgiven and shall not be required to be repaid and the amount of such advance (and any Underpayment previously paid to Executive under the first sentence of this Paragraph 12(d) and associated with the refunded advance) shall offset, to the extent thereof, the amount of any Underpayment required to be paid.

(e) Notwithstanding any other provision of this Paragraph 12, the Company may, to the extent required by applicable law and rulings, withhold and pay over to the Internal Revenue Service or any other applicable taxing authority, for the benefit of Executive, all or any portion of the Gross-Up Payment, and Executive hereby consents to such withholding.

13. Indemnification. The Company shall defend and hold Executive harmless to the fullest extent permitted by applicable law in connection with any claim, action, suit, investigation or proceeding arising out of or relating to performance by Executive of services for, or action of Executive as a director, officer or employee of the Company or any parent, subsidiary or affiliate of the Company. Expenses incurred by Executive in defending a claim, action, suit or investigation or criminal proceeding shall be paid by the Company in advance of the final disposition thereof upon the receipt by the Company of an undertaking by or on behalf of Executive to repay said amount unless it shall ultimately be determined that Executive is entitled to be indemnified hereunder; provided, however, that this shall not apply to a non-derivative action commenced by the Company against Executive.

14. Insurance. Executive consents and agrees that the Company may, at its expense, purchase key man life and/or disability insurance coverage on Executive. Executive will, if requested to do so, cooperate and assist the Company in obtaining such insurance and will execute such applications and related documents and submit to such physical examinations as shall be reasonably required.

15. Conflicting Agreements. Each party hereto hereby represents and warrants to the other party that the entering into this Employment Agreement, and the obligations and duties undertaken by such party hereunder, will not conflict with, constitute a breach of, or otherwise violate the terms of, any other employment or other agreement to which he or it is a party.

16. Successors and Assigns. This Employment Agreement may not be assigned by Executive. This Employment Agreement shall be binding upon and inure to the benefit of the parties hereto and Executive's heirs and personal representatives and Company's successors and assigns.

17. Arbitration. If a dispute between the parties arising out of or relating to this Employment Agreement cannot be resolved by informal meetings and discussions, the dispute shall be settled by binding arbitration, and a corresponding award and judgment may be entered in a court of competent jurisdiction. Arbitration of any dispute may be initiated by one party by sending a demand for arbitration to the other party, which demand will preclude any party hereto from initiating an action in any court. The demand must specify the matter in dispute and request the appointment of an arbitration panel. The arbitration panel will consist of one arbitrator named by the Company, one arbitrator named by Executive and a third arbitrator named by the two arbitrators so chosen. The arbitration hearing will be conducted in accordance with the procedural rules set forth in the commercial arbitration rules of the American Arbitration Association. The situs of the arbitration shall be Philadelphia, Pennsylvania.

18. Notices. All notices, requests, demands and other communications hereunder must be in writing and shall be deemed to have been duly given if delivered by hand or mailed within the continental United States by first class certified mail, return receipt requested, postage prepaid, to the other party, addressed as follows:

If to Company:            Quaker Chemical Corporation  
                                 One Quaker Park  
                                 901 Hector Street  
                                 Conshohocken, PA 19428-0809  
                                 Attn: Chairman of the Compensation/Management  
                                 Development Committee

If to Executive:            Mr. Ronald J. Naples  
                                 411 Wister Road  
                                 Wynnewood, PA 19096

Addresses may be changed by written notice sent to the other party at the last recorded address of that party.

19. Compliance With Code Section 409A. This Employment Agreement is intended to comply with the requirements of Section 409A of the Code and shall be construed and interpreted in accordance therewith in order to avoid the imposition of additional tax thereunder.

20. Severability. If any provision of this Employment Agreement shall be adjudged by any court of competent jurisdiction to be invalid or unenforceable for any reason, such judgment shall not affect, impair or invalidate the remainder of this Employment Agreement.

21. Legal Fees. The Company shall reimburse Executive for reasonable legal fees incurred by him during his lifetime in connection with the negotiation and execution of this Employment Agreement, or its interpretation, or its enforcement, subject to the Reimbursement Rule.

22. Prior Understandings. This Employment Agreement supersedes the Prior Agreement and all other oral or written agreements or understandings between the Company and Executive regarding the subject matter hereof; provided, however, this Employment Agreement shall not affect the rights of Executive under the Quaker Chemical Corporation Deferred Compensation Plan. No change, alteration or modification hereof may be made except in a writing, signed by the parties hereto. The headings in this Employment Agreement are for convenience and reference only and shall not be construed as part of this Employment Agreement or to limit or otherwise affect the meaning hereof.

23. Execution in Counterparts. This Employment Agreement may be executed by the parties hereto in counterparts, each of which shall be deemed to be original, but all such counterparts shall constitute one and the same instrument, and all signatures need not appear on any one counterpart.

24. Choice of Laws. Jurisdiction over disputes with regard to this Employment Agreement shall be exclusively in the courts of the Commonwealth of Pennsylvania, and this Employment Agreement shall be construed and interpreted in accordance with and governed by the laws of the Commonwealth of Pennsylvania (without reference to principles of conflicts of laws).

IN WITNESS WHEREOF, the parties hereto have executed and delivered this Employment Agreement as of the day and year first above written.

QUAKER CHEMICAL CORPORATION

By: /s/ Robert H. Rock  
Robert H. Rock, Chairman  
Compensation/Management Development Committee

/s/ Ronald J. Naples  
RONALD J. NAPLES

**Exhibit "A"**

**Quaker Chemical Corporation**

**Naples Supplemental Retirement Income Program and Agreement (SURP)**

Benefit Estimate Assuming Retirement on October 1, 2008

**Net Pre-retirement Income**

(1) Average of the three highest consecutive years of total salary			\$ 1,217,696.19
	2008	\$ 1,421,875.00	
	2007	1,505,166.58	
	2006	726,047.00	
	2005	674,906.36	
	2004	575,000.00	
	2003	799,743.38	
	2002	600,000.00	
	2001	1,188,467.00	
	2000	1,163,200.00	
	1999	1,073,750.00	
	1998	1,024,606.00	
	1997	820,092.00	
(2) Last full year of base pay			\$ 644,166.58
<i>Plus:</i>			
Average of the best three of the last 10 annual incentive bonuses			\$ 821,213.33
	2008	\$ 910,000.00	
	2007	861,000.00	
	2006	111,047.00	
	2005	86,250.00	
	2004	0.00	
	2003	260,160.00	
	2002	100,000.00	
	2001	692,640.00	
	2000	683,200.00	
	1999	648,750.00	
(3) Salary Plus Bonus: the larger of (1) and (2)			\$ 1,465,379.91
(4) Actual Social Security Taxes paid on Salary Plus Bonus			\$ 27,572.01
(5) Pennsylvania Income Tax on Salary Plus Bonus at the rate in effect on the retirement date (3.07%)			\$ 44,987.16
(6) Federal Income Tax on Salary Plus Bonus			\$ 479,009.52
(7) Net pre-retirement income: (3) - (4) - (5) - (6)			\$ 913,811.22

**Quaker Chemical Corporation****Naples Supplemental Retirement Income Program and Agreement (SURP)**

Benefit Estimate Assuming Retirement on October 1, 2008

**Net Post-retirement Income**

(8) Annual benefit from Quaker Chemical's Pension Plan payable as a single life annuity on the assumed retirement date	\$ 10,141.48
(9) Annual Social Security benefit payable on the assumed retirement date, assuming the participant is married and his spouse is the same age: PIA x 12 x 1.5	\$ 31,662.00
(10) Pennsylvania Income Tax, if any, on the Pension Plan and Social Security benefits	\$ 0.00
(11) Federal Income Tax on the Pension Plan and Social Security benefits	\$ 0.00
(12) Net post-retirement income: (8) + (9) - (10) - (11)	\$ 41,803.48

**SURP Benefit Payable in the Single Life Annuity Form**

(13) 80% x net pre-retirement income in (7) to determine the target SURP benefit	\$ 731,048.98
(14) Annual SURP benefit payable as a single life annuity on the normal retirement date: (13) - (12)	\$ 689,245.50
(15) Longevity factor, if any	1.0000
(16) Early retirement reduction factor, if any	1.0000
(17) Annual SURP benefit as of the assumed retirement date, payable in the single life annuity form: (14) x (15) x (16)	\$ 689,245.50

**SURP Benefit Payable in Three Guaranteed Installments**

(18) Factor for converting the annual benefit in (17) to a present value of benefits	12.6459
(19) Present value of the SURP benefit: (17) x (18)	\$ 8,716,129.67
(20) Factor for converting the present value in (19) to three guaranteed installments	2.8425
(21) SURP benefit as of the assumed retirement date, payable in three guaranteed installments: (19) x (20)	\$ 3,066,405.14



Membership Dues and Fees:

The Harvard Business School Club  
World President Organization  
The CEO Organization  
Global Interdependence Center  
World Affairs Council  
Foreign Policy Research Institute  
Sunday Breakfast Club  
White House Fellows Association

QUAKER CHEMICAL CORPORATION  
1995 NAPLES SUPPLEMENTAL RETIREMENT INCOME PROGRAM AND AGREEMENT  
(As Amended and Restated Effective May 7, 2008)

1. Background

Quaker Chemical Corporation (the "Company") and Ronald J. Naples ("Naples") entered into the Quaker Chemical Corporation 1995 Naples Supplemental Retirement Income Program and Agreement (the "Program"), effective as of October 2, 1995, to provide Naples with an improved retirement program that enhances the Company's ability to retain the services of Naples as well as to reflect Naples' achievements and valued contributions to the Company. This amendment and restatement of the Program is effective May 7, 2008 and reflects (i) Section 6(b) of the Employment, Transition and Consulting Agreement (effective May 7, 2008) between Naples and the Company (the "Agreement"), and (ii) changes required under §409A of the Internal Revenue Code of 1986, as amended (the "Code").

2. Administration

The Program is a non-qualified and unfunded plan of deferred compensation for Federal income tax purposes and an unfunded program maintained for a select member of management who is also a highly compensated employee, for purposes of the Employee Retirement Income Security Act of 1974, as amended. The Program shall be administered by the Company's Compensation/Management Development Committee (the "Committee"), whose determinations shall be final, binding and conclusive. As the Program contemplates payment of benefits on a post-retirement basis, the Company will continue to maintain on the Company's books and records an accrual of the benefits earned pursuant to the Program according to Generally Accepted Accounting Principles.

3. Basic Program Concept

The benefits payable under the Program are based on a formula which will provide the maximum supplemental retirement income benefit to Naples if he shall (a) remain employed by the Company for 15 or more years, or (b) incur a Separation from Service on account of Retirement or a Severance Event (as such terms are defined in the Agreement). If Naples' employment with the Company is less than 15 years, the retirement income benefit under the Program will be reduced by 2.667% for each full and fractional year less than 15 years of employment with the Company; provided, however, that such reduction shall not apply if Naples incurs a Separation from Service on account of Retirement or a Severance Event (as such terms are defined in the Agreement). For purposes of the Program (other than for purposes of determining whether Naples has had a Separation from Service), employment with any corporation, partnership or other entity of which 40% or more of the voting power is held, directly or indirectly, by the Company, shall be deemed employment with the Company. Naples' rights to benefits under the Program shall continue to be fully vested and nonforfeitable.

4. **Benefit Calculation**

The Supplemental Retirement Income Benefit payable under the Program in the form of a Single Life Annuity (as defined in Section 5), shall be determined as follows:

**First Calculation**

Salary Plus Bonus (hereinafter defined)

- less Actual Social Security taxes paid on Salary Plus Bonus.
- less Applicable state income tax on Salary Plus Bonus at the rate in effect on Separation from Service.
- less Federal income tax on Salary Plus Bonus, calculated at the tax rate for a joint return with no dependents in effect on Separation from Service.

Computation of the above will generate the "Net Pre-Retirement Income."

**Second Calculation**

Pension (hereinafter defined)

- plus Social Security benefit payable to Naples at age 65, assuming that he is married, that he and his spouse are the same age, and that Naples continues employment to age 65 at the level of compensation in effect at termination of Naples' employment with the Company.

Computation of the above will generate the "Net After-Retirement Income."

**Third Calculation**

The Supplemental Retirement Income Benefit, in the form of a Single Life Annuity, shall be equal to the amount (if any) by which the Net After-Retirement Income is less than 80% of the Net Pre-Retirement Income, reduced by 2.667% for each full and fractional year of employment with the Company less than 15; provided, however, that such reduction shall not apply if Naples incurs a Separation from Service on account of Retirement or a Severance Event (as such terms are defined in the Agreement).

**Definitions**

For purposes of determining the Supplemental Retirement Income Benefit, the following definitions shall apply:

Salary Plus Bonus means the higher of (a) the final calendar year of base salary prior to Separation from Service, plus the average of the highest three of the last ten years of annual incentive bonuses earned prior to Separation from Service; or (b) the average of the three highest consecutive years of base salary and annual incentive bonuses during the period of Naples' employment with the Company. For purposes of determining "annual incentive bonuses," Naples' March 2001 award of 100,000 restricted shares under the 2001 Global Annual Incentive Plan shall be treated as a bonus payment of \$343,200 (20,000 shares at \$17.16 per share) in each year beginning with 1997 and ending with 2001, and not as a bonus in the year(s) income

was recognized with respect to such shares. Contributions made to the Company's Retirement Savings Plan (or any other plan of deferred compensation sponsored by the Company) other than elective pre-tax contributions by Naples shall not be included within the definition of Salary Plus Bonus. Moreover, none of the income realized by Naples pursuant to his participation in the 1995 Restricted Stock Plan and Agreement or in any stock option plan sponsored by the Company shall be included in the definition of Salary Plus Bonus.

Pension means the benefit payable from the Quaker Chemical Corporation Pension Plan, as amended and restated effective January 1, 2001, or any successor thereto (the "Qualified Pension Plan"), based on Naples' Accrued Benefit (including Naples' Prior Pension Benefit and Cash Balance Benefit, as such terms are defined in the Qualified Pension Plan) as of Separation from Service; and determined (i) the form of the "single life annuity" option, and (ii) as if such benefit were payable at Separation from Service (or the actual commencement date, if earlier, under the Qualified Pension Plan), adjusted in accordance with the actuarial assumptions set forth in the Qualified Pension Plan in the event such date is prior to Naples' Normal Retirement Date.

Normal Retirement Date means the first day of the month coincident with or next following Naples' 65<sup>th</sup> birthday.

Separation from Service means the date of Naples' separation from service with the Company and its affiliates within the meaning of Treas. Reg. §1.409A-1(h) or any successor thereto.

5. Payments and Term

The Supplemental Retirement Income Benefit shall be paid in equal monthly installments, shall be paid for Naples' life only, and shall terminate on the first day of the month following Naples' death (a "Single Life Annuity"). Notwithstanding the foregoing, Naples may make an irrevocable election, prior to Separation from Service and in accordance with procedures established by the Committee, to receive the Supplemental Retirement Income Benefit (i) in the form of Three Installments in the event Naples so elects in 2008 and incurs a Separation from Service on account of Retirement or a Severance Event (as such terms are defined in the Agreement), or (ii) in the form of a Joint and Survivor Annuity.

For purposes of this Program, Three Installments shall mean three payments with the first such installment to be paid to Naples on the date that is six months after Separation from Service (or, if such day is not a business day, the next business day) and the remaining two installments to be paid to Naples on the first and second anniversaries of Separation from Service (or the next business day if such anniversary is not a business day). For purposes of determining the amount of the installments, the actuarial equivalent present value as of Separation from Service of the benefit otherwise payable to Naples under the Program in the form of a Single Life Annuity commencing at Separation from Service shall be determined, and the installments shall be the actuarial equivalent of such present value. For this purpose, actuarial equivalent shall be determined using the applicable interest rate under Code §417(e)(3) and, for purposes of determining present value (and not the amount of the installments), the applicable mortality table under Code

§417(e)(3), in both cases prior to amendment by the Pension Protection Act of 2006 if the Separation from Service is prior to December 1, 2008, consistent with the methodology shown in Exhibit A to the Agreement. In the event Naples makes a timely election to receive his benefit under the Program in the form of Three Installments and dies after his Separation from Service and before the Three Installments have been paid, the installments not paid to Naples shall be paid to his Beneficiary. For this purpose, Beneficiary shall mean (a) the person or persons designated by Naples to receive any such remaining installments on Naples' death, such designation to be in a writing filed by Naples with the Company's human resources department on or before Naples' death, or (b) if Naples fails to so designate a beneficiary or the designated beneficiary predeceases Naples, Naples' surviving spouse or, if Naples has no surviving spouse, his estate. Exhibit A to the Agreement shows the amount payable to Naples under the Program in the event Naples incurs a Separation from Service on October 3, 2008 on account of Retirement (as defined in the Agreement) and makes a timely election to receive his benefit in the form of Three Installments.

For purposes of this Program, a Joint and Survivor Annuity is a monthly annuity payable during Naples' lifetime and, if Naples' spouse on his Separation from Service survives him (his "Surviving Spouse"), an annuity for his Surviving Spouse's lifetime equal to 50%, 75% or 100% (as elected by Naples prior to Separation from Service) of the monthly amount payable during Naples' lifetime. The Joint and Survivor Annuity shall be the actuarial equivalent of the Single Life Annuity otherwise payable to Naples under the Program. For purposes of determining the amount of the Joint and Survivor Annuity, to the extent benefits payable hereunder are paid through an insurance product, "actuarial equivalent" shall be determined under the terms of the insurance product; otherwise, "actuarial equivalent" shall have the meaning set forth in the Qualified Pension Plan (for purposes of converting one form of annuity to another form of annuity) as of Separation from Service.

Payment of the Supplemental Retirement Income Benefit under this Program in the form of a Single Life Annuity or a Joint and Survivor Annuity shall commence on the first day of the seventh month subsequent to Naples' Separation from Service. The payment made in such seventh month shall equal seven times the monthly payment otherwise due. However, in the event that Naples dies after Separation from Service and prior to the first day of the seventh month subsequent to his Separation from Service, his Surviving Spouse (if any) shall receive (i) a lump sum payment on the first day of the seventh month subsequent to Naples' Separation from Service equal to a multiple of the monthly payment Naples would have received in the eighth month following his Separation from Service had he survived, and (ii) if Naples made an irrevocable election to receive his benefit under the Program in the form of a Joint and Survivor Annuity, a survivor annuity for her lifetime in monthly payments commencing on the first day of the seventh month subsequent to Naples' Separation from Service equal to the monthly amount his Surviving Spouse would have received under the elected form had Naples survived to such date, but with the first payment equal to a multiple of the monthly amount so determined. The multiple used in clause (i) shall equal six minus the number of full calendar months between Naples' death and his Separation from Service, and the multiple used in clause (ii) shall equal seven minus the multiple used in clause (i). In the event Naples' benefit under the Program is payable as a Single Life Annuity or Joint and Survivor Annuity, no benefit shall be payable to Naples' Surviving Spouse under the Program in the event she dies prior to the date benefits are due to be paid to her hereunder.

No benefit shall be payable under the Program in the event of Naples' Separation from Service as a result of death.

In the event payments hereunder commence on a date other than Naples' Normal Retirement Date, no adjustment shall be made to the benefit payable hereunder to reflect the fact that the benefit is being paid before or after Naples' Normal Retirement Date.

6. Successors and Assigns

The benefits payable under the Program shall be binding contractual obligations of the Company and such obligations shall be binding on any successor company resulting from any acquisition, merger, reorganization, or amalgamation of the Company with or into any other company or juridical entity.

7. Construction

The place of administration of this Program shall be in the Commonwealth of Pennsylvania and the validity, construction, interpretation, administration and effect of the Program, and rights relating to this Program shall be determined solely in accordance with the laws of the Commonwealth of Pennsylvania (without reference to principles of conflicts of laws). This Program is intended to comply with Code §409A and shall be construed and interpreted in accordance with such section in order to avoid the imposition of additional tax thereunder.

Entered into May 22, 2008, effective as of May 7, 2008.

QUAKER CHEMICAL CORPORATION

/s/ Ronald J. Naples

Ronald J. Naples

By: /s/ Robert H. Rock

Robert H. Rock

## QUAKER CHEMICAL CORPORATION

EMPLOYMENT AGREEMENT

This EMPLOYMENT AGREEMENT is made as of July 1, 2008, by and between QUAKER CHEMICAL CORPORATION, a Pennsylvania corporation (the "Company"), and Michael F. Barry (the "Executive").

WHEREAS, the Executive is presently employed by the Company in the capacity of Senior Vice President and Managing Director – North America;

WHEREAS, the Chief Executive Officer of the Company will retire effective October 3, 2008;

WHEREAS, the Company wishes the Executive to continue employment in his current capacity and provide additional services to ensure a smooth transition through October 3, 2008; and

WHEREAS, the Company wishes to employ the Executive as the Chief Executive Officer and President effective October 4, 2008;

NOW THEREFORE, in consideration of the foregoing and of the mutual covenants and agreements of the parties set forth in this Agreement, and of other good and valuable consideration the receipt and sufficiency of which are hereby acknowledged, the parties hereto, intending to be legally bound, agree as follows:

## SECTION 1. CAPACITY AND DUTIES

1.1 Employment. The Company employs the Executive and the Executive accepts employment by the Company for the period and upon the terms and conditions set forth below.

1.2 Capacity and Duties.

(a) The Executive shall continue to be employed by the Company as its Senior Vice President and Managing Director – North America through October 3, 2008. Effective as of July 1, 2008, the Executive shall perform such other duties as are assigned to him by the Board of Directors of the Company (the "Board") in order to ensure a smooth transition in contemplation of the Chief Executive Officer's retirement. Effective October 4, 2008, the Executive shall be employed by the Company as the Chief Executive Officer and President and shall perform all duties consistent with the positions of Chief Executive Officer and President as well as any other duties which are assigned to him by the Board which are commensurate with his position.

(b) The Executive shall devote his full working time, energy, skill and best efforts to the performance of his duties set forth in this Agreement, in a manner which will faithfully and diligently further the business and interests of the Company, and shall not be employed by or participate or engage in or be a part of in any manner the management or operation of any business enterprise other than the Company without the prior written consent of the Board, which consent may be granted or withheld in its sole discretion.

## SECTION 2. TERM OF EMPLOYMENT

2.1 Term. The term of the Executive's employment under this Agreement shall be 18 months commencing on July 1, 2008 and shall thereafter automatically be renewed from calendar year to calendar year unless and until either party shall give notice of his or its election to terminate the Executive's employment at least 90 days prior to the end of the then-current term, unless earlier terminated as provided below (the "Term of Employment").

## SECTION 3. COMPENSATION AND BENEFITS

3.1 Base Salary. As compensation for the Executive's services, the Company shall pay to the Executive a base salary at the annual rate of \$450,000, payable in semi-monthly installments during the Term of Employment. The rate of base salary shall be reviewed and if merited, adjusted by the Board on an annual basis, starting in 2009.

### 3.2 Bonuses.

(a) GAIP. The Executive shall continue to participate in the Quaker Chemical Corporation 2001 Global Annual Incentive Plan (or any successor thereto) ("GAIP") during the Term of Employment. For the performance period coinciding with the 2008 calendar year, the Executive's bonus under GAIP shall be determined under the goals, mid/target bonus amount and maximum bonus amount established by the Compensation/Management Development Committee (the "Committee") in the first quarter of 2008. For the performance period coinciding with the 2009 calendar year and subsequent performance periods, the Executive's bonus under GAIP shall be a maximum of not less than 118% of base salary with a mid/target of not less than 65% of base salary.

(b) Additional Bonuses. During the 2<sup>1</sup>/<sub>2</sub> month period ending March 15, 2009, the Executive shall be paid a cash bonus equal to the positive excess (if any) of (i) the bonus that would have been paid to the Executive under GAIP with respect to 2008 performance had the Executive's maximum bonus been 118% of base salary and had the Executive's mid/target been 65% of base salary, over (ii) the bonus actually paid to the Executive under GAIP with respect to 2008 performance. The Company may pay the Executive such other bonus or bonuses, if any, as the Board, in its sole discretion, shall determine.

### 3.3 Long-Term Incentives.

(a) One-Time Award. On July 1, 2008, an award of 15,000 shares of restricted stock shall be granted to the Executive under the Quaker Chemical Corporation 2006 Long-Term Performance Incentive Plan (the "2006 LTIP"). On each of the first five anniversaries of July 1, 2008, the Executive shall become vested with respect to 3,000 shares covered by the restricted stock award; provided, however, that the Executive shall forfeit any unvested shares of restricted stock on the Executive's Termination of Service (as defined in the 2006 LTIP).

(b) Annual Awards. The Executive shall continue to be eligible for participation in the 2006 LTIP and any successor thereto (the "LTIP"). Starting in 2009, the Committee shall make annual grants to the Executive under the LTIP during the Term of Employment. The types of awards comprising each annual grant (e.g., options, restricted stock,



performance incentive units, etc.) shall be determined by the Committee, in its sole discretion. The aggregate value of the awards comprising each such annual grant shall not be less than 115% of the Executive's base salary at the time of the grant. For purposes of determining the value of an award based on performance criteria, the mid/target value of the award shall be used. The value of awards not payable in cash shall be determined by the Committee, in its sole discretion, using a method (or methods) generally recognized for accounting purposes.

3.4 Vacation. During the Term of Employment, the Executive shall be entitled to four weeks of vacation each calendar year without reduction in base salary.

### 3.5 Other Benefits.

(a) In General. During the Term of Employment, the Executive shall be entitled to participate in the Company's employee benefit plans that are generally available to the Company's employees from time to time including, but not limited to, the Quaker Chemical Corporation Pension Plan (under which benefit accruals are frozen), the Quaker Chemical Corporation Retirement Savings Plan, the group medical, dental and life insurance plans, the disability (short and long-term) plan, and the flexible spending account plan.

(b) Executive Retirement Programs. The Executive shall be entitled to the benefit he has accrued under the Quaker Chemical Corporation Deferred Compensation Plan (to the extent such benefit has not already been distributed to the Executive) in accordance with the terms of such Plan and the Executive's elections thereunder. During the Term of Employment, the Executive shall be entitled to continue participation in the Quaker Chemical Corporation Supplemental Retirement Income Program, as amended and restated effective January 1, 2005 and as amended from time to time thereafter (to the extent amendment is permitted under the terms of such Program) (the "SRIP").

(c) Business Club. The Company shall reimburse the Executive for the cost of his membership fees and dues in one business club in the Philadelphia area during the Term of Employment.

(d) Expense Reimbursement. During the Term of Employment, the Company shall reimburse the Executive for all reasonable expenses incurred by him in connection with the performance of his duties upon receipt of itemized vouchers and such other supporting information as the Company may reasonably require.

(e) Tax Preparation and Financial Planning Expenses. The Company shall reimburse the Executive up to \$8,000 per calendar year for annual tax preparation and financial planning services.

## SECTION 4. TERMINATION OF EMPLOYMENT

4.1 Death of Executive. If the Executive dies during the Term of Employment, the Company shall not thereafter be obligated to make any further payments under this Agreement

except for amounts accrued as of the date of the Executive's death, and except that the Company shall pay a single-sum cash death benefit to the Executive's Beneficiary equal to 200% of the annual rate of the Executive's base salary as in effect on the day before the Executive's death. If a higher death benefit (as a multiple of base salary) is provided to each of the Company's executive officers, the Executive shall be entitled to the higher benefit in lieu of the benefit stated in the preceding sentence. Such single-sum payment shall be paid within 30 days of the Executive's death. "Beneficiary" shall mean the person designated by the Executive to receive benefits under this Agreement in a writing filed by the Executive with the Company's human resources department before the Executive's death or, if the Executive fails to designate a beneficiary or the designated beneficiary predeceases the Executive, the Executive's Beneficiary shall be his surviving spouse or, if the Executive has no surviving spouse, his estate.

**4.2 Disability of Executive.** If the Executive is unable to perform his duties hereunder by reason of disability as defined in the Company's Long-Term Disability Plan ("Disability"), then the Board shall have the right to terminate the Executive's employment upon 30 days prior written notice to the Executive at any time during the continuation of such Disability. In the event the Executive is terminated pursuant to this Section 4.2, the Company shall not thereafter be obligated to make any further payments under this Agreement except for amounts accrued as of the date of such termination, and except that the Executive shall receive supplemental disability payments. Such supplemental disability payments shall be paid to the Executive after the Executive's Separation from Service (as defined in Section 4.4) at the same time that disability payments are due to be paid to the Executive under the Company's Long-Term Disability Plan and each such payment shall be equal to the excess of (a) the amount that would be payable under the Company's Long-Term Disability Plan (disregarding any withholding) if the Executive elected a benefit of 50% of applicable pay and such plan did not limit the dollar amount of periodic payments thereunder, over (b) the amount that would be payable under the Company's Long-Term Disability Plan (disregarding any withholding) if the Executive elected a benefit of 50% of applicable pay. The "Company's Long-Term Disability Plan" shall mean the long-term disability plan maintained by the Company for employees generally; provided, however, that if the Company does not maintain such a long-term disability plan at the time of the Executive's termination under this Section 4.2, or terminates such plan after the Executive's termination of employment but before all disability payments have been paid to the Executive under the terms of such plan as in effect prior to its termination, (x) the "Company's Long-Term Disability Plan" shall mean the long-term disability plan most recently maintained by the Company for employees generally, and (y) the amount determined under subsection (b) shall equal zero dollars (\$0). Such supplemental disability payments shall be payable from the Company's general assets or, if the Company so elects, from a supplemental disability policy purchased by the Company.

**4.3 Termination for Cause.** The Company shall have the right to terminate the Executive's employment hereunder for Cause. "Cause" shall mean (a) the Executive's willful and material breach of the terms of this Agreement (after having received notice thereof and a reasonable opportunity to cure or correct), (b) dishonesty, fraud, willful malfeasance, gross negligence, or other gross misconduct, in each case relating to the performance of the Executive's duties hereunder which is materially injurious to the Company, or (c) conviction of the Executive or plea by the Executive of guilty to a felony, such Cause to be determined, in each case, by a resolution approved by at least two-thirds of the Board after having afforded the Executive a reasonable opportunity to appear before the Board and present his position. In the event the Executive is terminated pursuant to this Section 4.3, the Company shall not thereafter be obligated to make any further payments hereunder other than amounts accrued under this Agreement as of the date of such termination.

#### 4.4 Termination without Cause.

(a) Severance Benefits. Subject to subsection (c), the Executive shall be entitled to the payments and benefits set forth in this subsection if (I) the Executive incurs a Separation from Service (as defined below) by action of the Company (including by reason of the Company having given the Executive notice of non-renewal under Section 2.1) for any reason other than Cause or the death or Disability of the Executive, (II) such Separation from Service is not a Covered Termination (as defined in the Change in Control Agreement entered into between the Executive and the Company as of July 1, 2008 or any successor thereto), and (III) such Separation from Service occurs before July 1, 2023 (the fifteenth anniversary of the effective date of this Agreement).

(i) Within 30 days after such Separation from Service, the Company shall pay the Executive all amounts accrued under Section 3 of this Agreement as of the date of such Separation from Service.

(ii) Commencing on the 60<sup>th</sup> day after such Separation from Service, the Company shall pay to the Executive a severance allowance in eighteen monthly installments. Each monthly installment shall be equal to one-eighteenth (1/18<sup>th</sup>) of 150% of the sum of (A) the Executive's annual rate of base salary under Section 3.1 (at the rate in effect on such Separation from Service), and (B) the average of the aggregate annual amounts paid to the Executive in the Applicable Three-Year Period under all applicable annual incentive compensation plans maintained by the Company and its affiliates (other than compensation relating to relocation expense, the grant, exercise, or settlement of stock options, restricted stock or performance incentive units or the sale or other disposition of shares received upon exercise or settlement of such awards); provided, however, that in determining the average amount paid under such annual incentive compensation plans during the Applicable Three-Year Period, there shall be excluded any year in which no amounts were paid to the Executive under such annual incentive compensation plans. The Applicable Three-Year Period shall be (A) if the Executive has received an annual incentive compensation plan payment in the calendar year of his Separation from Service, the calendar year in which such Separation from Service occurs and the two preceding calendar years, or (B) in any other case, the three calendar years preceding the calendar year in which the Executive's Separation from Service occurs. In the event the Executive dies after his Separation from Service under circumstances described in subsection (a) and before receiving eighteen monthly installments, the remainder of such installments shall be paid to the Executive's Beneficiary on the date they would have been paid to the Executive had he survived. The right to such monthly payments shall be treated as a right to a series of separate payments for purposes of §409A of the Internal Revenue Code of 1986, as amended (the "Code").

(iii) During the eighteen month period following such Separation from Service the Executive shall be entitled to participate in the medical and dental plans generally available to the Company's employees on the same basis as would have been applicable to the Executive had the Separation from Service not occurred, except that any premiums the Executive is required to pay shall be paid on an after-tax basis.

(iv) For purposes of determining the Executive's benefit under the SRIP, (A) the severance allowance payable under paragraph (ii) (without regard to Section 5.1) shall be taken into account in determining the Executive's salary plus bonus under the Prior SRIP, Compensation and Average Annual Compensation (as such terms are defined in the SRIP), (B) for purposes of determining the Executive's years of employment under the Prior SRIP and Years of Service (as such terms are defined in the SRIP) the Executive shall be treated as if he were employed 18 months before his actual date of hire, and (C) for purposes of determining the Executive's age under the SRIP (including the Prior SRIP), eighteen (18) months shall be added to the Executive's age.

(b) Separation from Service. "Separation from Service" shall mean the Executive's separation from service with the Company and its affiliates within the meaning of Treas. Reg. §1.409A-1(h) or any successor thereto.

(c) Release. Notwithstanding the foregoing, if the Company provides a Release to the Executive, the Executive shall not be entitled to any payments under Section 4.4(a)(ii) unless the Executive executes the Release within 45 days of the later of the date he receives the Release or his Separation from Service, and Executive does not revoke the Release. "Release" shall mean a release (in a form satisfactory to the Company) of any and all claims against the Company and all related parties with respect to all matters arising out of the Executive's employment by the Company and its affiliates, or the termination thereof (other than claims for any entitlements under the terms of this Agreement or under any plans or programs of the Company under which the Executive has accrued a benefit) that the Company provides to the Executive no later than three days after the date of the Executive's Separation from Service.

(d) No Further Obligations. In the event the Executive is terminated pursuant to this Section 4.4, except for the provisions of this Section 4.4, the Company shall have no further obligation to the Executive hereunder.

4.5 Voluntary Termination. In the event the Executive's employment is voluntarily terminated by the Executive (including by reason of the Executive having given the Company notice of non-renewal under Section 2.1), the Company shall not be obligated to make any further payments to the Executive under this Agreement other than amounts accrued as of the date of the Executive's termination.

## SECTION 5. CERTAIN CODE §409A RULES

5.1 Six-Month Delay. Notwithstanding any provision of this Agreement to the contrary, any payment or benefit under this Agreement that constitutes deferred compensation subject to Code §409A and for which the payment event is Separation from Service shall not be made or provided before the date that is six months after the date of the Executive's Separation from Service. Any payment or benefit that is delayed pursuant to this Section 5.1 shall be made or provided on the first business day of the seventh month following the month in which the Executive's Separation from Service occurs. With respect to any cash payment delayed pursuant to this Section, the first payment shall include interest, at the Wall Street Journal Prime Rate published in the Wall Street Journal on the date of the Executive's Separation from Service (or the previous business day if such date is not a business day), for the period from the date the payment would have been made but for this Section 5.1 through the date payment is made. The provisions of this Section 5.1 shall apply only to the extent required to avoid the Executive's incurrance of any additional tax or interest under Code §409A.

5.2 Reimbursement and In-Kind Benefits. Notwithstanding any provision of this Agreement to the contrary, with respect to in-kind benefits provided or expenses eligible for reimbursement under this Agreement which are subject to Code §409A, (i) the benefits provided or the amount of expenses eligible for reimbursement during any calendar year shall not affect the benefits provided or expenses eligible for reimbursement in any other calendar year, except as otherwise provided in Treas. Reg. §1.409A-3(i)(1)(iv)(B), and (ii) the reimbursement of an eligible expense shall be made as soon as practicable after the Executive requests such reimbursement (subject to Section 5.1), but not later than the December 31 following the calendar year in which the expense was incurred.

5.3 Interpretation and Construction. This Agreement is intended to comply with Code §409A and shall be administered, interpreted and construed in accordance therewith to avoid the imposition of additional tax under Code §409A.

## SECTION 6. RESTRICTIVE COVENANTS

6.1 Confidential Information. The Executive acknowledges that information concerning the method and conduct of the Company's (and any affiliate's) business, including, without limitation, strategic and marketing plans, budgets, corporate practices and procedures, financial statements, customer and supplier information, formulae, formulation information, application technology, manufacturing information, and laboratory test methods and all of the Company's (and any affiliate's) manuals, documents, notes, letters, records, and computer programs ("Proprietary Business Information"), are the sole and exclusive property of the Company (and/or the Company's affiliates, as the case may be) and are likely to constitute, contain or reveal trade secrets ("Trade Secrets") of the Company (and/or the Company's affiliate's, as the case may be). The term "Trade Secrets" as used herein does not include Proprietary Business Information that is known or becomes known to the public through no act or failure to act on the part of the Executive, or which can be clearly shown by written records to have been known by the Executive prior to the commencement of his employment with the Company.

(a) The Executive agrees that at no time during or following his employment with the Company will he use, divulge, or pass on, directly or through any other individual or entity, any Trade Secrets.

(b) Upon termination of the Executive's employment with the Company regardless of the reason for the termination of the Executive's employment hereunder, or at any other time upon the Company's request, the Executive agrees to forthwith surrender to the Company any and all materials in his possession or control which constitute or contain any Proprietary Business Information.

6.2 Noncompetition. The Executive agrees that during his employment and for a period of eighteen (18) months thereafter, regardless of the reason for the termination of the Executive's employment, he will not:

(a) directly or indirectly, together or separately or with any third party, whether as an individual proprietor, partner, stockholder, officer, director, joint venturer, investor, or in any other capacity whatsoever actively engage in business or assist anyone or any firm in business as a manufacturer, seller, or distributor of specialty chemical products or chemical management services which are the same, like, similar to, or which compete with the products and services offered by the Company (or any of its affiliates);

(b) directly or indirectly recruit, solicit or encourage any employee of the Company (or any of its affiliates) or otherwise induce such employee to leave the employ of the Company (or any of its affiliates) or to become an employee or otherwise be associated with his or any firm, corporation, business or other entity with which he is or may become associated; or

(c) solicit, directly or indirectly, for himself or as agent or employee of any person, partnership, corporation, or other entity (other than for the Company), any then or former customer, supplier, or client of the Company with the intent of actively engaging in business which would cause competitive harm to the Company (or any of its affiliates).

6.3 Severability. The Executive acknowledges and agrees that all of the foregoing restrictions are reasonable as to the period of time and scope. However, if any paragraph, sentence, clause, or other provision is held invalid or unenforceable by a court of competent and relevant jurisdiction, such provision shall be deemed to be modified in a manner consistent with the intent of such original provision so as to make it valid and enforceable, and this Agreement and the application of such provision to persons and circumstances other than those with respect to which it would be invalid or unenforceable shall not be affected thereby.

6.4 Remedies. The Executive agrees and recognizes that in the event of a breach or threatened breach of the provisions of the restrictive covenants contained in this Section 6, the Company may suffer irreparable harm, and monetary damages may not be an adequate remedy. Therefore, if any breach occurs or is threatened, the Company shall be entitled to seek equitable remedies, including injunctive relief in any court of applicable jurisdiction. In the event of any breach of the restrictive covenant contained in this Section 6, the term of the restrictive covenant specified herein shall be extended by a period of time equal to that period beginning on the date such violation commenced and ending when the activities constituting such violation cease. Furthermore, if a court or arbitration panel determines that the Executive has breached any of the provisions of this Section 6, the Company's obligations to pay amounts under this Agreement to the Executive (and his Beneficiary) shall immediately terminate.

## SECTION 7. MISCELLANEOUS

7.1 Withholding. Notwithstanding any provision of this Agreement to the contrary, the Company may, to the extent required by law, withhold applicable Federal, state and local income and other taxes from any payments due to the Executive hereunder.

7.2 Litigation. At the request of the Company, the Executive shall during and after the Term of Employment render reasonable assistance to the Company in connection with any litigation or other proceeding involving the Company or any of its affiliates. The Company shall provide reasonable compensation to the Executive for such assistance rendered after the Term of Employment.

### 7.3 Assignment; Benefit.

(a) This Agreement is personal to the Executive and shall not be assignable by the Executive, by operation of law, or otherwise without the prior written consent of the Company otherwise than by will or the laws of descent and distribution. This Agreement shall inure to the benefit of and be enforceable by the Executive's heirs and legal representatives.

(b) This Agreement shall inure to the benefit of and be binding upon the Company and its successors and assigns; provided, however, that no assignment of this Agreement by the Company, by operation of law, or otherwise shall relieve it of its obligations hereunder except an assignment of this Agreement to, and its assumption by, a successor pursuant to subsection (c).

(c) The Company shall require any successor (whether direct or indirect, by purchase, merger, consolidation, operation of law, or otherwise) to all or substantially all of the business and/or assets of the Company to assume expressly and agree to perform this Agreement in the same manner and to the same extent that the Company would be required to perform it if no such succession had taken place, but, irrespective of any such assignment or assumption, this Agreement shall inure to the benefit of and be binding upon such a successor.

7.4 Notices. All notices hereunder shall be in writing and shall be sufficiently given if hand-delivered, sent by documented overnight delivery service or registered or certified mail, postage prepaid, return receipt requested or by facsimile (confirmed by U.S. mail), receipt acknowledged, addressed as set forth below or to such other person and/or at such other address as may be furnished in writing by any party hereto to the other. Any such notice shall be deemed to have been given as of the date received, in the case of personal delivery, or on the date shown on the receipt or confirmation therefor, in all other cases. Any and all service of process and any other notice in any action, suit or proceeding shall be effective against any party if given as provided in this Agreement; provided that nothing herein shall be deemed to affect the right of any party to serve process in any other manner permitted by law.

- (a) If to Company:  
Quaker Chemical Corporation  
One Quaker Park  
901 Hector Street  
Conshohocken, PA 19428-0809
- (b) If to the Executive:  
Michael F. Barry  
549 South Heilbron  
Media, PA 19063

7.5 Entire Agreement; Modification; Advice of Counsel.

(a) This Agreement supersedes the Employment Agreement entered into between the Executive and the Company in 1998, which agreement shall be null and void as of July 1, 2008. Except for the Change in Control Agreement entered into between the Executive and the Company as of July 1, 2008, this Agreement constitutes the entire agreement and understanding between the parties hereto with respect to the matters contemplated herein and supersedes all prior agreements and understandings with respect thereto.

(b) The Company reserves the right to unilaterally amend this Agreement without the consent of the Executive to the extent the Company (in its sole discretion) determines is necessary or appropriate to avoid the additional tax under Code §409A(a)(1)(B); otherwise, this Agreement may not be altered or amended except by an agreement in writing executed by the Company and the Executive. Neither the failure nor any delay on the part of any party to exercise any right or remedy hereunder shall operate as a waiver thereof, nor shall any single or partial exercise of any right or remedy preclude any other or further exercise of the same or of any other right or remedy with respect to such occurrence or with respect to any other occurrence.

(c) The Executive acknowledges that he has been afforded an opportunity to consult with his counsel with respect to this Agreement.

7.6 Governing Law. This Agreement is made pursuant to, and shall be construed and enforced in accordance with, the laws of the Commonwealth of Pennsylvania and the federal laws of the United States of America, to the extent applicable, without giving effect to otherwise applicable principles of conflicts of law.

7.7 Indemnification. The Company shall defend and hold the Executive harmless to the fullest extent permitted by applicable law in connection with any claim, action, suit, investigation or proceeding arising out of or relating to performance by the Executive of services for, or action of the Executive as a director, officer or employee of the Company or any parent, subsidiary or affiliate of the Company, or of any other person or enterprise at the Company's request. Expenses incurred by the Executive in defending such a claim, action, suit or investigation or criminal proceeding shall be paid by the Company in advance of the final disposition thereof upon the receipt by the Company of an undertaking by or on behalf of the Executive to repay said amount unless it shall ultimately be determined that the Executive is entitled to be indemnified hereunder; provided, however, that this shall not apply to a nonderivative action commenced by the Company against the Executive.



7.8 Headings; Counterparts. The headings of sections in this Agreement are for convenience only and shall not affect its interpretation. This Agreement may be executed in two or more counterparts, each of which shall be deemed to be an original and all of which, when taken together, shall be deemed to constitute the same Agreement.

IN WITNESS WHEREOF, the Executive has hereunto set his hand and, pursuant to the authorization from its Board of Directors, the Company has caused these presents to be executed in its name and on its behalf and attested by its Secretary or Assistant Secretary, all as of the day and year first above written.

QUAKER CHEMICAL CORPORATION

By: /s/ Robert H. Rock  
Robert H. Rock, Chairman  
Compensation/Management Development Committee

EXECUTIVE

/s/ Michael F. Barry  
Michael F. Barry

ATTEST:

/s/ D. Jeffry Benoliel  
D. Jeffry Benoliel

**CHANGE IN CONTROL AGREEMENT**

THIS AGREEMENT, dated July 1, 2008, between QUAKER CHEMICAL CORPORATION, a Pennsylvania corporation (the "Company"), and Michael F. Barry (the "Executive"),

**WITNESSETH THAT**

WHEREAS, the Executive and the Company entered into a change in control agreement dated August 5, 2004 (the "Prior Agreement"); and

WHEREAS, the Executive and the Company wish to enter into a new Change in Control Agreement effective July 1, 2008 (the "Agreement") which supersedes the Prior Agreement and reflects additional duties assigned by the Board of Directors of the Company effective July 1, 2008, Executive's appointment as Chief Executive Officer and President of the Company effective October 4, 2008, and changes required to comply with section 409A of the Internal Revenue Code of 1986;

NOW, THEREFORE, IN CONSIDERATION of the mutual obligations and agreements contained herein and intending to be legally bound hereby, the Executive and the Company agree as follows:

**1. Term of Agreement.**

This Agreement shall become effective on July 1, 2008 (the "Effective Date"), and shall continue in effect through December 31, 2009; provided, however, that the term of this Agreement shall automatically be extended for one additional year beyond December 31, 2009, and successive one-year periods thereafter, unless, not later than eighteen (18) months (sixteen (16) months with respect to the automatic extension that would otherwise begin on January 1, 2010) preceding the calendar year for which the term would otherwise automatically extend, the Company shall have given written notice to the Executive of intention not to extend this Agreement for an additional year, in which event this Agreement shall continue in effect until December 31 of the calendar year immediately preceding the calendar year for which the term would have otherwise automatically extended. Notwithstanding any such notice not to extend, if a Change in Control (as defined in Section 2) occurs during the original or extended term of this Agreement, this Agreement shall remain in effect after a Change in Control until all obligations of the parties hereto under this Agreement shall have been satisfied.

**2. Change in Control.**

As used in this Agreement, a "Change in Control" of the Company shall be deemed to have occurred if:

(a) Any person (a "Person"), as such term is used in Sections 13(d) and 14(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act") (other than (i) the Company and/or its wholly owned subsidiaries; (ii) any ESOP or other employee benefit plan of the Company and any trustee or other fiduciary in such capacity holding securities under such plan;

(iii) any corporation owned, directly or indirectly, by the shareholders of the Company in substantially the same proportions as their ownership of stock of the Company; or (iv) any other Person who, within the one year prior to the event which would otherwise be a Change in Control, is an executive officer of the Company or any group of Persons of which he voluntarily is a part), is or becomes the “beneficial owner” (as defined in Rule 13d-3 under the Exchange Act), directly or indirectly, of securities of the Company representing 30% or more of the combined voting power of the Company’s then outstanding securities or such lesser percentage of voting power, but not less than 15%, as determined by the members of the Board of Directors of the Company who are independent directors (as defined in the New York Stock Exchange, Inc. Listed Company Manual); provided, however, that a Change in Control shall not be deemed to have occurred under the provisions of this subsection (a) by reason of the beneficial ownership of voting securities by members of the Benoliel family (as defined below) unless and until the beneficial ownership of all members of the Benoliel family (including any other individuals or entities who or which, together with any member or members of the Benoliel family, are deemed under Sections 13(d) or 14(d) of the Exchange Act to constitute a single Person) exceeds 50% of the combined voting power of the Company’s then outstanding securities;

(b) During any two-year period after the Effective Date, Directors of the Company in office at the beginning of such period plus any new Director (other than a Director designated by a Person who has entered into an agreement with the Company to effect a transaction within the purview of subsections (a) or (c)) whose election by the Board of Directors of the Company or whose nomination for election by the Company’s shareholders was approved by a vote of at least two-thirds of the Directors then still in office who either were Directors at the beginning of the period or whose election or nomination for election was previously so approved shall cease for any reason to constitute at least a majority of the Board;

(c) The consummation of (i) any consolidation or merger of the Company in which the Company is not the continuing or surviving corporation or pursuant to which the Company’s voting common shares (the “Common Shares”) would be converted into cash, securities, and/or other property, other than a merger of the Company in which holders of Common Shares immediately prior to the merger have the same proportionate ownership of voting shares of the surviving corporation immediately after the merger as they had in the Common Shares immediately before; or (ii) any sale, lease, exchange, or other transfer (in one transaction or a series of related transactions) of all or substantially all the assets or earning power of the Company; or

(d) The Company’s shareholders or the Company’s Board of Directors shall approve the liquidation or dissolution of the Company.

As used in this Agreement, “members of the Benoliel family” shall mean Peter A. Benoliel, his wife and children and their respective spouses and children, and all trusts created by or for the benefit of any of them.

**3. Entitlement to Change in Control Benefits; Certain Definitions.**

The Executive shall be entitled to the benefits provided in this Agreement in the event the Executive has a Separation from Service under the circumstances described in (a) below (a "Covered Termination"), provided the Executive executes and does not revoke a Release (as defined below), if any, provided by the Company.

(a) A Covered Termination shall have occurred in the event the Executive's employment with the Company or its affiliates is terminated within two (2) years following a Change in Control by:

- (i) The Company or its affiliates without Cause (as defined below); or
- (ii) Resignation of the Executive for Good Reason (as defined below).

The Executive shall have no rights to any payments or benefits under this Agreement in the event the Executive's employment with the Company and its affiliates is terminated (i) as a result of death or Disability (as defined below), or (ii) by the Company or its affiliates for Cause. In the event the Executive's employment is terminated for any reason prior to a Change in Control, the Executive shall have no rights to any payments or benefits under this Agreement and, after any such termination, this Agreement shall be of no further force or effect.

"Cause" shall mean (i) the Executive's willful and material breach of the employment agreement between the Executive and the Company (after having received notice thereof and a reasonable opportunity to cure or correct), (ii) dishonesty, fraud, willful malfeasance, gross negligence, or other gross misconduct, in each case relating to the performance of the Executive's employment with the Company or its affiliates which is materially injurious to the Company, or (iii) conviction of or plea of guilty to a felony, such Cause to be determined, in each case, by a resolution approved by at least two-thirds of the Directors of the Company after having afforded the Executive a reasonable opportunity to appear before the Board of Directors of the Company and present his position.

"Code" shall mean the Internal Revenue Code of 1986, as amended, together with any applicable regulations thereunder.

"Disability" shall mean covered total and permanent disability as defined in the long-term disability plan maintained by the Company for employees generally or, if the Company does not maintain such a plan, the long-term disability plan most recently maintained by the Company for employees generally.

"Good Reason" shall mean any of the following actions without the Executive's consent, other than due to the Executive's death or Disability: (i) any reduction in the Executive's base salary from that provided immediately before the Covered Termination or, if higher, immediately before the Change in Control; (ii) any reduction in the Executive's bonus opportunity (including cash and noncash incentives) or increase in the goals or standards required to accrue that opportunity, as compared to the opportunity and goals or standards in effect immediately before the Change in Control; (iii) a material adverse change in the nature or scope of the

Executive's authorities, powers, functions, or duties from those in effect immediately before the Change in Control; (iv) a reduction in the Executive's benefits from those provided immediately before the Change in Control, disregarding any reduction under a plan or program covering employees generally that applies to all employees covered by the plan or program; (v) if a Change in Control occurs prior to October 4, 2008, the failure of Executive to be appointed or elected as Chief Executive Officer and President of the Company within ninety (90) days of such Change in Control; or (vi) the Executive being required to accept a primary employment location which is more than twenty-five (25) miles from the location at which he primarily was employed during the ninety (90) day period prior to a Change in Control.

"Payment Date" shall mean the 60<sup>th</sup> day after the Executive's Separation from Service, subject to Section 10.

"Release" shall mean a release (in a form satisfactory to the Company) of any and all claims against the Company and all related parties with respect to all matters arising out of the Executive's employment by the Company and its affiliates, or the termination thereof (other than claims for any entitlements under the terms of this Agreement, under the employment agreement between the Executive and the Company, or under any plans or programs of the Company under which the Executive has accrued a benefit) that the Company provides to the Executive no later than three days after the date of the Executive's Covered Termination. Notwithstanding any provision of this Agreement to the contrary, if the Company provides a Release to the Executive, the Executive shall not be entitled to any payments or benefits under this Agreement unless the Executive executes the Release within 45 days of the later of the date he receives the Release or the date of his Covered Termination, and the Executive does not revoke the Release.

"Separation from Service" shall mean the Executive's separation from service with the Company and its affiliates within the meaning of Treas. Reg. §1.409A-1(h) or any successor thereto.

"Specified Employee" shall mean the Executive if he is a specified employee as defined in Section 409A of the Code as of the date of his Separation from Service.

#### **4. Severance Allowance.**

(a) Amount of Severance Allowance. In the event of a Covered Termination, the Company shall pay or cause to be paid to the Executive in cash a severance allowance (the "Severance Allowance") equal to two times the sum of the amounts determined in accordance with the following paragraphs (i) and (ii):

- (i) An amount equivalent to the highest annualized base salary which the Executive was entitled to receive from the Company and its subsidiaries at any time during his employment prior to the Covered Termination; and
- (ii) An amount equal to the average of the aggregate annual amounts paid to the Executive in the Applicable Three-Year Period under all applicable annual incentive compensation plans maintained by the Company and its affiliates (other than compensation relating to relocation expense; the grant, exercise, or settlement of stock options, restricted stock

or performance incentive units or the sale or other disposition of shares received upon exercise or settlement of such awards); provided, however, that (x) in determining the average amount paid under the annual incentive plan during the Applicable Three-Year Period there shall be excluded any year in which no amounts were paid to the Executive under that plan; (y) there shall be excluded from such calculation any amounts paid to the Executive under any such incentive compensation plan as a result of the acceleration of such payments under such plan due to termination of the plan, a Change in Control, or a similar occurrence; and (z) in no event shall the amount under this paragraph (ii) be less than the amount of the mid/target bonus which would otherwise have been payable to the Executive under the annual incentive compensation plans for the calendar year in which the Change in Control occurred. The Applicable Three-Year Period shall be (A) if the Executive has received an annual incentive compensation plan payment in the calendar year of his Covered Termination, the calendar year in which such Covered Termination occurs and the two preceding calendar years, or (B) in any other case, the three calendar years preceding the calendar year in which the Executive's Covered Termination occurs; provided, however, that the Applicable Three-Year Period shall be determined by substituting "Change In Control" for "Covered Termination" if such substitution results in a higher amount under this subsection (ii).

In no event shall any retention bonus or change in control or success fee be taken into account when determining the amount of the Severance Allowance hereunder.

(b) Payment of Severance Allowance. The Severance Allowance shall be paid to the Executive in a lump sum on the Payment Date if the applicable Change in Control is also a change in control event as defined in Treas. Reg. §1.409A-3(i)(5) (or any successor thereto). In any other case, the Severance Allowance shall be paid in twenty-four monthly installments commencing on the Payment Date, each of which is equal to one-twenty-fourth (1/24th) of the amount of the Severance Allowance determined under Section 4(a), which are treated as a right to a series of separate payments for purposes of Section 409A of the Code.

#### **5. Enhanced SRIP Benefit.**

In the event of a Covered Termination, for purposes of determining the Executive's benefit under the Quaker Chemical Corporation Supplemental Retirement Income Program, as amended and restated effective January 1, 2005 and as amended from time to time thereafter (to the extent amendment is permitted under the terms of such Program) (the "SRIP"):

(a) The Severance Allowance shall be taken into account in determining the Executive's salary plus bonus under the Prior SRIP, Compensation and Average Annual Compensation (as such terms are defined in the SRIP) as if such Severance Allowance were paid in 24 monthly installments commencing as of the first day of the month following the Executive's Covered Termination;

(b) For purposes of determining the Executive's years of employment under the Prior SRIP and Years of Service (as such terms are defined in the SRIP) the Executive shall be treated as if he were employed 24 months before his actual date of hire; and

(c) For purposes of determining the Executive's age under the SRIP (including the Prior SRIP), two (2) years shall be added to the Executive's actual age.

**6. Outplacement and Welfare Benefits.**

(a) Outplacement. Subject to Section 7, for a period of one year following a Covered Termination of the Executive, the Company shall make or cause to be made available to the Executive, at its expense, outplacement counseling and other outplacement services comparable to those available for the Company's senior executives prior to the Change in Control.

(b) Welfare Benefits. Subject to Section 7, for a period of 24 months following a Covered Termination of the Executive, the Executive and the Executive's dependents shall be entitled to participate in the Company's life, medical, and dental insurance plans at the Company's expense, in accordance with the terms of such plans at the time of such Covered Termination as if the Executive were still employed by the Company or its affiliates under this Agreement. If, however, life, medical, or dental insurance benefits are not paid or provided under any such plan to the Executive or his dependents because the Executive is no longer an employee of the Company or its subsidiaries, the Company itself shall, to the extent necessary, pay or otherwise provide for such benefits to the Executive and his dependents.

**7. Effect of Other Employment.**

In the event the Executive becomes employed (as defined below) during the period with respect to which benefits are continuing pursuant to Section 6: (a) the Executive shall notify the Company not later than the day such employment commences; and (b) the benefits provided for in Section 6 shall terminate as of the date of such employment. For the purposes of this Section 7, the Executive shall be deemed to have become "employed" by another entity or person only if the Executive becomes essentially a full-time employee of a person or an entity (not more than 30% of which is owned by the Executive and/or members of his family); and the Executive's "family" shall mean his parents, his siblings and their spouses, his children and their spouses, and the Executive's spouse and her parents and siblings. Nothing herein shall relieve the Company of its obligations for compensation or benefits accrued up to the time of termination provided for herein.

**8. Other Payments and Benefits.**

On the Payment Date, the Company shall pay or cause to be paid to the Executive the aggregate of: (a) the Executive's earned but unpaid base salary through the Covered Termination at the rate in effect on the date of the Covered Termination, or if higher, at the rate in effect at any time during the 90-day period preceding the Change in Control; (b) any unpaid bonus or annual incentive payable to the Executive in respect of the calendar year ending prior to the Covered Termination; (c) the pro rata portion of any and all unpaid bonuses and annual incentive awards for the calendar year in which the Covered Termination occurs, said pro rata portion

to be calculated on the fractional portion (the numerator of said fraction being the number of days between January 1 and the date of the Covered Termination, and the denominator of which is 365) of the mid/target bonuses or annual incentive awards for such calendar year; and (d) the pro rata portion of any and all awards under the Company's long term incentive plan for the performance period(s) in which the Covered Termination occurs, said pro rata portion to be calculated on the fractional portion (the numerator of said fraction being the number of days between the first day of the applicable performance period and the date of the Covered Termination, and the denominator of which is the total number of days in the applicable performance period) of the amount of the award which would have been payable had (i) the Covered Termination not occurred, and (ii) the mid/target level of performance been achieved for the applicable performance period. The Executive shall be entitled to receive any other payments or benefits that the Executive is entitled to pursuant to the express terms of any compensation or benefit plan or arrangement of the Company or any of its affiliates; provided that: (x) the Severance Allowance (i) shall be in lieu of any severance payments to which the Executive might otherwise be entitled under the terms of any severance pay plan, policy, or arrangement maintained by the Company or the employment agreement between the Executive and the Company, and (ii) shall be credited against any severance payments to which the Executive may be entitled by statute; (y) any annual incentive described in subsection (b) or (c) shall decrease (or shall be decreased by), but not below zero, the amount of the annual incentive payable (or paid) with respect to the same calendar year under the Company's annual incentive plan (currently the 2001 Global Annual Incentive Plan); and (z) any amount described in (d) shall decrease (or shall be decreased by), but not below zero, the amount of the analogous performance award payable (or paid) with respect to the same performance period(s) under the Company's long term incentive plan(s) (currently the 2006 Long-Term Performance Incentive Plan).

**9. Death After Covered Termination.**

In the event the Executive dies after a Covered Termination occurs, (a) any payments due to the Executive under Section 4 and the first sentence of Section 8 and not paid prior to the Executive's death shall be made to the person or persons who may be designated by the Executive in writing or, in the event he fails to so designate, to the Executive's personal representatives, (b) the Executive's spouse and dependents shall be eligible for the welfare benefits described in Section 6(b), and (c) Section 5 shall be taken into account to determine any death benefit payable under the SRIP. Payments pursuant to subsection (a) shall be made on the later of (i) the date payment would have been made to the Executive without regard to Section 10, or (ii) the date of the Executive's death.

**10. Certain Section 409A Rules.**

(a) Specified Employee. Notwithstanding any provision of this Agreement to the contrary, if the Executive is a Specified Employee, any payment or benefit under this Agreement that constitutes deferred compensation subject to Section 409A of the Code and for which the payment event is Separation from Service shall be not be made or provided before the date that is six months after the date of the Executive's Separation from Service. Any payment or benefit that is delayed pursuant to this Section 10 shall be made or provided on the first business day of the seventh month following the month in which the Executive's Separation from Service



occurs. With respect to any cash payment delayed pursuant to this Section 10, the first payment shall include interest, at the Wall Street Journal Prime Rate published in the Wall Street Journal on the date of the Executive's Covered Termination (or the previous business day if such date is not a business day), for the period from the date the payment would have been made but for this Section 10 through the date payment is made. The provisions of this Section 10 shall apply only to the extent required to avoid the Executive's incurrence of any additional tax or interest under Section 409A of the Code.

(b) Reimbursement and In-Kind Benefits. Notwithstanding any provision of this Agreement to the contrary, with respect to in-kind benefits provided or expenses eligible for reimbursement under this Agreement which are subject to Section 409A of the Code, (i) the benefits provided or the amount of expenses eligible for reimbursement during any calendar year shall not affect the benefits provided or expenses eligible for reimbursement in any other calendar year, except as otherwise provided in Treas. Reg. §1.409A-3(i)(1)(iv)(B), and (ii) the reimbursement of an eligible expense shall be made as soon as practicable after the Executive requests such reimbursement (subject to Section 10(a)), but not later than the December 31 following the calendar year in which the expense was incurred.

(c) Interpretation and Construction. This Agreement is intended to comply with Section 409A of the Code and shall be administered, interpreted and construed in accordance therewith to avoid the imposition of additional tax under Section 409A of the Code.

#### **11. Confidentiality and Noncompetition**

(a) Confidential Information. The Executive acknowledges that information concerning the method and conduct of the Company's (and any affiliate's) business, including, without limitation, strategic and marketing plans, budgets, corporate practices and procedures, financial statements, customer and supplier information, formulae, formulation information, application technology, manufacturing information, and laboratory test methods and all of the Company's (and any affiliate's) manuals, documents, notes, letters, records, and computer programs ("Proprietary Business Information"), are the sole and exclusive property of the Company (and/or the Company's affiliates, as the case may be) and are likely to constitute, contain or reveal trade secrets ("Trade Secrets") of the Company (and/or the Company's affiliate's, as the case may be). The term "Trade Secrets" as used herein does not include Proprietary Business Information that is known or becomes known to the public through no act or failure to act on the part of the Executive, or which can be clearly shown by written records to have been known by the Executive prior to the commencement of his employment with the Company.

- (i) The Executive agrees that at no time during or following his employment with the Company will he use, divulge, or pass on, directly or through any other individual or entity, any Trade Secrets.
- (ii) Upon termination of the Executive's employment with the Company regardless of the reason for the termination of the Executive's employment hereunder, or at any other time upon the Company's request, the Executive agrees to forthwith surrender to the Company any and all materials in his possession or control which constitute or contain any Proprietary Business Information.

(b) Noncompetition. The Executive agrees that during his employment and for a period of two (2) years thereafter, regardless of the reason for the termination of the Executive's employment, he will not:

- (i) directly or indirectly, together or separately or with any third party, whether as an individual proprietor, partner, stockholder, officer, director, joint venturer, investor, or in any other capacity whatsoever actively engage in business or assist anyone or any firm in business as a manufacturer, seller, or distributor of specialty chemical products or chemical management services which are the same, like, similar to, or which compete with the products and services offered by the Company (or any of its affiliates);
- (ii) directly or indirectly recruit, solicit or encourage any employee of the Company (or any of its affiliates) or otherwise induce such employee to leave the employ of the Company (or any of its affiliates) or to become an employee or otherwise be associated with his or any firm, corporation, business or other entity with which he is or may become associated; or
- (iii) solicit, directly or indirectly, for himself or as agent or employee of any person, partnership, corporation, or other entity (other than for the Company), any then or former customer, supplier, or client of the Company with the intent of actively engaging in business which would cause competitive harm to the Company (or any of its affiliates).

(c) Severability. The Executive acknowledges and agrees that all of the foregoing restrictions are reasonable as to the period of time and scope. However, if any paragraph, sentence, clause, or other provision is held invalid or unenforceable by a court of competent and relevant jurisdiction, such provision shall be deemed to be modified in a manner consistent with the intent of such original provision so as to make it valid and enforceable, and this Agreement and the application of such provision to persons and circumstances other than those with respect to which it would be invalid or unenforceable shall not be affected thereby.

(d) Remedies. The Executive agrees and recognizes that in the event of a breach or threatened breach of the provisions of the restrictive covenants contained in this Section 11, the Company may suffer irreparable harm, and monetary damages may not be an adequate remedy. Therefore, if any breach occurs or is threatened, the Company shall be entitled to seek equitable remedies, including injunctive relief in any court of applicable jurisdiction notwithstanding the provisions of Section 13. In the event of any breach of the restrictive covenant contained in this Section 11, the term of the restrictive covenant specified herein shall be extended by a period of time equal to that period beginning on the date such violation commenced and ending when the activities constituting such violation cease. Furthermore, if a court or arbitration panel determines that the Executive has breached any of the provisions of this Section 11, the Company's obligations to pay amounts and continue the benefits under this Agreement to the Executive (and his dependents) shall immediately terminate.

**12. Set-Off Mitigation.**

Except as provided in Section 7, the Company's obligation to make the payments provided for in this Agreement and otherwise to perform its obligations hereunder shall not be affected by any set-off, counterclaim, recoupment, defense, or other claim, right, or action which the Company may have against the Executive or others. In no event shall the Executive be obligated to seek other employment or take any other action by way of mitigation of the amounts payable to the Executive under any of the provisions of this Agreement.

**13. Arbitration: Costs and Expenses of Enforcement.**

(a) Arbitration. Except as otherwise provided in Sections 11(d) and 14, any controversy or claim arising out of or relating to this Agreement or the breach thereof which cannot promptly be resolved by the parties shall be promptly submitted to and settled exclusively by arbitration in the City of Philadelphia, Pennsylvania, in accordance with the laws of the Commonwealth of Pennsylvania by three arbitrators, one of whom shall be appointed by the Company, one by the Executive, and the third of whom shall be appointed by the first two arbitrators. The arbitration shall be conducted in accordance with the rules of the American Arbitration Association, except with respect to the selection of arbitrators which shall be as provided in this Section 13. Judgment upon the award rendered by the arbitrators may be entered in any court having jurisdiction thereof.

(b) Costs and Expenses. In the event that it shall be necessary or desirable for the Executive to retain legal counsel and/or incur other costs and expenses in connection with the enforcement of any and all of his rights under this Agreement at any time during his lifetime, the Company shall pay (or the Executive shall be entitled to recover from the Company, as the case may be) his reasonable attorneys' fees and costs and expenses in connection with the enforcement of his said rights (including those incurred in or related to any arbitration proceedings provided for in subsection (a) and the enforcement of any arbitration award in court), regardless of the final outcome.

**14. Limitation on Payment Obligation.**

(a) Definitions. For purposes of this Section 14, all terms capitalized but not otherwise defined herein shall have the meanings as set forth in Section 280G of the Code. In addition:

- (i) the term "Parachute Payment" shall mean a payment described in Section 280G(b)(2)(A) or Section 280G(b)(2)(B) of the Code (including, but not limited to, any stock option rights, stock grants, and other cash and noncash compensation amounts that are treated as payments under either such section) and not excluded under Section 280G(b)(4)(A) or Section 280G(b)(6) of the Code;
- (ii) the term "Reasonable Compensation" shall mean reasonable compensation for prior personal services as defined in Section 280G(b)(4)(B) of the Code and subject to the requirement that any such reasonable compensation must be established by clear and convincing evidence; and

(iii) the portion of the “Base Amount” and the amount of “Reasonable Compensation” allocable to any “Parachute Payment” shall be determined in accordance with Section 280G(b)(3) and (4) of the Code.

(b) Limitation. Notwithstanding any other provision of this Agreement, Parachute Payments to be made to or for the benefit of the Executive but for this subsection (b), whether pursuant to this Agreement or otherwise, shall be reduced if and to the extent necessary so that the aggregate Present Value of all such Parachute Payments shall be at least one dollar (\$1.00) less than the greater of (i) three times the Executive’s Base Amount and (ii) the aggregate Reasonable Compensation allocable to such Parachute Payments. Any reduction in Parachute Payments caused by reason of this subsection (b) shall be applied in the manner least economically detrimental to the Executive. In the event reduction of two or more types of payments would be economically equivalent, the reduction shall be applied pro-rata to such types of payments.

This subsection (b) shall be interpreted and applied to limit the amounts otherwise payable to the Executive under this Agreement or otherwise only to the extent required to avoid any material risk of the imposition of excise taxes on the Executive under Section 4999 of the Code or the disallowance of a deduction to the Company under Section 280G(a) of the Code. In the making of any such interpretation and application, the Executive shall be presumed to be a disqualified individual for purposes of applying the limitations set forth in this subsection (b) without regard to whether or not the Executive meets the definition of disqualified individual set forth in Section 280G(c) of the Code. In the event that the Executive and the Company are unable to agree as to the application of this subsection (b), the Company’s independent auditors shall select independent tax counsel to determine the amount of such limits. Such selection of tax counsel shall be subject to the Executive’s consent, provided that the Executive shall not unreasonably withhold his consent. The determination of such tax counsel under this Section 14 shall be final and binding upon the Executive and the Company.

(c) Illegal Payments. Notwithstanding any other provision of this Agreement, no payment shall be made hereunder to or for the benefit of the Executive if and to the extent that such payments are determined to be illegal.

**15. Notices.**

Any notices, requests, demands, and other communications provided for by this Agreement shall be sufficient if in writing, and if hand delivered or if sent by registered or certified mail, if to the Executive, at the last address he had filed in writing with the Company or if to the Company, at its principal executive offices. Notices, requests, etc. shall be effective when actually received by the addressee or at such address.

**16. Withholding.**

Notwithstanding any provision of this Agreement to the contrary, the Company may, to the extent required by law, withhold applicable Federal, state and local income and other taxes from any payments due to the Executive hereunder.

**17. Assignment and Benefit.**

(a) This Agreement is personal to the Executive and shall not be assignable by the Executive, by operation of law, or otherwise without the prior written consent of the Company otherwise than by will or the laws of descent and distribution. This Agreement shall inure to the benefit of and be enforceable by the Executive's heirs and legal representatives.

(b) This Agreement shall inure to the benefit of and be binding upon the Company and its successors and assigns, including, without limitation, any subsidiary of the Company to which the Company may assign any of its rights hereunder; provided, however, that no assignment of this Agreement by the Company, by operation of law, or otherwise shall relieve it of its obligations hereunder except an assignment of this Agreement to, and its assumption by, a successor pursuant to subsection (c).

(c) The Company shall require any successor (whether direct or indirect, by purchase, merger, consolidation, operation of law, or otherwise) to all or substantially all of the business and/or assets of the Company to assume expressly and agree to perform this Agreement in the same manner and to the same extent that the Company would be required to perform it if no such succession had taken place, but, irrespective of any such assignment or assumption, this Agreement shall inure to the benefit of and be binding upon such a successor. As used in this Agreement, "Company" shall mean the Company as hereinbefore defined and any successor to its business and/or assets as aforesaid.

**18. Governing Law.**

The provisions of this Agreement shall be construed in accordance with the laws of the Commonwealth of Pennsylvania without reference to principles of conflicts of laws.

**19. Entire Agreement; Amendment.**

(a) This Agreement supersedes the Change in Control Agreement entered into between the Executive and the Company on August 5, 2004, which agreement shall be null and void as of the Effective Date. Except for the change in control provisions set forth in the Company's annual incentive plan, long term incentive plans and the SRIP, this Agreement represents the entire agreement and understanding of the parties with respect to the subject matter hereof. The Executive understands and acknowledges that the Company's severance plan, annual incentive plan and long term incentive plans are hereby amended with respect to the Executive to avoid duplication of benefits, as provided in Section 8.

(b) The Company reserves the right to unilaterally amend this Agreement without the consent of the Executive to the extent the Compensation/Management Development Committee of the Company's Board of Directors (in its sole discretion) determines is necessary or appropriate to avoid the additional tax under Section 409A(a)(1)(B) of the Code; otherwise, this Agreement may not be altered or amended except by an agreement in writing executed by the Company and the Executive.

**20. No Waiver.**

The failure to insist upon strict compliance with any provision of this Agreement by any party shall not be deemed to be a waiver of any future noncompliance with such provision or of noncompliance with any other provision.

**21. Severability.**

In the event that any provision or portion of this Agreement shall be determined to be invalid or unenforceable for any reason, the remaining provisions of this Agreement shall be unaffected thereby and shall remain in full force and effect.

**22. Indemnification.**

The Company shall defend and hold the Executive harmless to the fullest extent permitted by applicable law in connection with any claim, action, suit, investigation or proceeding arising out of or relating to performance by the Executive of services for, or action of the Executive as a director, officer or employee of the Company or any parent, subsidiary or affiliate of the Company, or of any other person or enterprise at the Company's request. Expenses incurred by the Executive in defending such a claim, action, suit or investigation or criminal proceeding shall be paid by the Company in advance of the final disposition thereof upon the receipt by the Company of an undertaking by or on behalf of the Executive to repay said amount unless it shall ultimately be determined that the Executive is entitled to be indemnified hereunder; provided, however, that this shall not apply to a nonderivative action commenced by the Company against the Executive.

IN WITNESS WHEREOF, the Executive has hereunto set his hand and, pursuant to the authorization from its Board of Directors, the Company has caused these presents to be executed in its name and on its behalf and attested by its Secretary or Assistant Secretary, all as of the day and year first above written.

QUAKER CHEMICAL CORPORATION

By: /s/ Robert H. Rock  
Robert H. Rock, Chairman  
Compensation/Management Development Committee

EXECUTIVE

/s/ Michael F. Barry  
Michael F. Barry

ATTEST:

/s/ D. Jeffrey Benoliel  
D. Jeffrey Benoliel

**THE SECURITY REPRESENTED BY THIS BOND HAS BEEN ACQUIRED FOR INVESTMENT AND HAS NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT") OR UNDER ANY STATE SECURITIES LAW. WITHOUT REGISTRATION, SUCH SECURITY MAY NOT BE SOLD, PLEDGED, HYPOTHECATED OR OTHERWISE TRANSFERRED, EXCEPT TO "ACCREDITED INVESTORS" AS SUCH TERM IS DEFINED IN RULE 501(a) OF REGULATION D OF THE SECURITIES ACT UPON COMPLIANCE WITH THE PROVISIONS OF THE SECURITIES ACT AND APPLICABLE STATE SECURITIES LAWS.**

**THE BOND, AS TO BOTH PRINCIPAL AND INTEREST, IS NOT A GENERAL OBLIGATION, DEBT, BONDED INDEBTEDNESS OR PLEDGE OF THE FAITH AND CREDIT OF THE BUTLER COUNTY PORT AUTHORITY OR OF THE STATE OF OHIO OR ANY POLITICAL SUBDIVISION OF THE STATE OF OHIO, BUT IS PAYABLE SOLELY FROM REVENUES AND FUNDS PLEDGED FOR THE REPAYMENT OF THE BOND. THIS BOND IS A SPECIAL, LIMITED OBLIGATION OF THE AUTHORITY, PAYABLE SOLELY OUT OF THE REVENUES OR OTHER RECEIPTS, FUNDS OR MONEYS OF THE AUTHORITY PLEDGED UNDER THE AGREEMENT (HEREAFTER DESCRIBED) AND FROM ANY AMOUNTS OTHERWISE AVAILABLE UNDER THE AGREEMENT FOR THE PAYMENT OF THE BOND.**

BUTLER COUNTY PORT AUTHORITY  
 Industrial Development Revenue Bond  
 (Quaker Chemical Corporation Project)  
 Series 2008

No. R-

\$10,000,000

BUTLER COUNTY PORT AUTHORITY (the "Authority"), a port authority and body corporate and politic existing under the laws of the State of Ohio (the "State"), for value received, hereby promises to pay (but only from the special revenues and funds hereinafter described) to BROWN BROTHERS HARRIMAN & CO., or its registered assigns (the "Bank"), on May 1, 2028, upon the presentation and surrender hereof at the principal office of the Borrower herein described, the principal sum of TEN MILLION DOLLARS (\$10,000,000), and to pay (but only out of the sources hereinafter mentioned) interest on said principal sum at the interest rate hereinafter described. Payment of the principal of and interest on this Bond shall be in any coin or currency of the United States of America as, at the respective times of payment, shall be legal tender for the payment of public and private debts.

The Agreement (defined below) and all rights of the Authority thereunder (except for certain Reserved Rights (defined below) of the Authority) have been assigned to the owner of this Bond to secure payment of such principal and interest.

This Bond is issued in the original aggregate principal amount of \$10,000,000 and is designated as Butler County Port Authority Industrial Development Revenue Bond (Quaker Chemical Corporation Project), Series 2008 (the "Bond"), issued under and pursuant to the laws of the State, including particularly Sections 4582.21 to 4582.59 of the Ohio Revised Code, as amended (the "Act"), and the Financing Agreement (the "Agreement") dated May 15, 2008, among the Authority, Quaker Chemical Corporation., a

Pennsylvania corporation (the “Borrower”), and Brown Brothers Harriman & Co. (the “Bank”) for the purpose of undertaking the Project more fully described in the Agreement. The Authority has assigned certain of its rights under the Agreement, including its right to receive loan payments from the Borrower thereunder, to the owner of this Bond to secure the Authority’s obligations with respect to this Bond. Reference is made to the Agreement for a description, *inter alia*, of the provisions with respect to the nature and extent of the security for this Bond, the rights, duties, obligations and immunities of the Authority, the Borrower, and the Bank related to this Bond, and the terms upon which this Bond is or may be issued or secured and transferred.

This Bond shall be issued in one denomination equal to the entire principal amount hereof. All payments of principal by the Authority whether pursuant to optional or mandatory redemption or prepayment or otherwise shall be made directly to the Bank.

#### INTEREST RATE PROVISIONS

Tax-Exempt Rate. The Bond shall bear interest at a rate of 4.76% per annum.

In the event the Bank shall become a beneficiary of a letter of credit pursuant to the terms of the Agreement for the payment on this Bond, the interest rate payable on this Bond in accordance with the provisions set forth herein shall be decreased by 80 basis points (0.80%).

“Interest Period” means the period commencing on the first day of the calendar month immediately following the end of the preceding Interest Period, or, in the case of the initial Interest Period, on the date of original issuance of this Bond, and continuing to, and including, the last day of the calendar month.

Taxable Rate. Notwithstanding the foregoing, if at any time hereafter, either before or after the payment of the entire principal of and interest on this Bond, there shall be a Determination of Taxability as defined in the Agreement (hereinafter a “Determination of Taxability”), then, in such event, the interest rate on this Bond, as in effect during any period from the date of the event giving rise to the Determination of Taxability through the date that this Bond is redeemed, shall be the Base Rate plus two percent (2%). The failure of the Bank to make a demand promptly following a Determination of Taxability shall not alter the rights or obligations of the Authority or the Bank. If there is more than one Determination of Taxability, this paragraph shall be fully applicable to each such Determination of Taxability, whether or not the Bank exercised any or all of the rights or remedies that arose under any prior Determination of Taxability, and all the Bank’s rights and remedies shall be cumulative except to the extent of any written waiver by the Bank. If the Bank receives written notice of any Determination of Taxability, it will give prompt written notice thereof to the Borrower and the Authority, and the Borrower shall have the right to require the Bank to prosecute any administrative or judicial remedies available to it unless the Bank determines, in its sole discretion, that the prosecution of such remedies is against its best interests, provided that the Borrower shall pay all expenses of prosecuting any such remedies.

Default and Overdue Interest. Upon the occurrence of any Event of Default under the Agreement, and so long as any such Event of Default shall be continuing, the interest rate payable on this Bond in accordance with the provisions set forth above shall be increased by adding two percent (2%) to the then applicable interest rate.

General. Interest, calculated on the basis of a 360-day year for the actual number of days elapsed, shall accrue daily in each Interest Period at the applicable rate or rates of interest described above and shall be payable quarterly in arrears on each Interest Payment Date to the registered owner hereof, as shown on the registration books of the Borrower on the Business Day preceding such Interest Payment Date. The interest due hereon shall be calculated by the Bank in accordance with Section 8.1(a)(i) of the Agreement. Interest on this Bond shall be paid in such manner as the Borrower and the Bank shall agree.



Tax Indemnification. If at any time, either: (a) in the reasonable opinion of counsel for the Bank, any payment of interest or principal or any amount in respect of or measured in whole or in part by reference to interest on or principal of this Bond, shall be subject to a preference tax (meaning a tax imposed by Sections 55-58 of the Code, or any successor sections thereto or any similar federal tax preferences or similar items), excess profits tax or other federal tax on a basis other than as existing on the date of original issuance hereof; or (b) there shall occur any material decrease in the highest marginal tax rate imposed on individuals for federal income tax purposes; or (c) the Bank shall otherwise be subject to any increased cost or diminished after-tax yield as a result of any change (whether as a result of a change in law or otherwise) in the tax consequences of ownership of this Bond (including by reason of the disallowance or diminishment of any deduction available to the Bank) (any of the foregoing being herein referred to as an "Adverse Tax Consequence"); then, in any case, upon notice to such effect from the Bank to the Borrower and the Authority, which notice shall set forth the date as of which such Adverse Tax Consequence shall have occurred, there shall be paid to the Bank, as additional interest on this Bond, such amount which, after giving effect to such change, and to all taxes, interest and penalties, and other charges required to be paid by the Bank in connection with, or as a consequence of, such Adverse Tax Consequence, is sufficient, in the reasonable determination of the Bank, to compensate the Bank for the direct cost or diminished after-tax yield with respect to its investment in the Bond following such Adverse Tax Consequence, it being the intent of the Authority, the Borrower and the Bank that the profit to the Bank with respect to the payment of interest to it on this Bond shall not be diminished by any Adverse Tax Consequence. Notwithstanding the foregoing, in no event shall the payments required under this provision result in a payment to the Bank in excess of the amount of the payments that would result from an imposition of the Taxable Rate.

#### REDEMPTION PROVISIONS

Optional Redemption. This Bond may be redeemed at the election of the Authority at the written direction of the Borrower, in whole or in part (but if in part, each in the principal amount of \$100,000 or integral multiples of \$5,000 in excess thereof), on the last day of any Interest Period (or the next succeeding Business Day if such last day is not a Business Day), at a redemption price equal to the principal amount so redeemed, together with accrued interest to the date of redemption. The Borrower shall provide the Bank with notice of the date of any optional redemption pursuant to this paragraph and the principal amount of this Bond to be redeemed by first-class mail, postage prepaid, sent at least fifteen (15) days before such redemption date to the Bank at the registered address of the Bank appearing in the Agreement on the registration books maintained pursuant to the Agreement as of the close of business on the Business Day prior to such mailing. On each such redemption date, payment of the redemption price having been made to the Bank as provided herein and in the Agreement or the portion thereof so called for redemption shall become due and payable on the redemption date and interest shall cease to accrue thereon from and after the redemption date. Any amounts applied to an optional redemption shall reduce the mandatory scheduled redemption obligations of the Authority described below in the order selected by the Borrower and approved by the Bank (or in the absence of such selection and approval, in inverse order of payment obligations).

Mandatory Redemption at Option of Bank. At any time on or after the third anniversary of the date of original issuance of the Bond, all of this Bond shall be redeemed by the Authority, in whole at a redemption price equal to 100% of the principal amount thereof plus accrued interest to the date of redemption, upon written demand of the Bank, in the form attached as Exhibit B to the Agreement, with a copy to the Authority. The Bank shall provide the Borrower with notice of the date of any mandatory redemption

pursuant to this paragraph and the principal amount of the Bond to be redeemed by first-class mail, postage prepaid, sent at least ninety (90) days before such redemption date to the Borrower at the Borrower's address for notice appearing in the Agreement as of the close of business on the Business Day prior to such mailing. This Bond, or any portion thereof, shall be redeemed, and the redemption of this Bond shall be paid to the owner of this Bond, on the date specified by the owner of this Bond. Notwithstanding the foregoing, in lieu of such redemption the Borrower shall have the right to (A) purchase the Bond from the Bank on any date after the date of the Bank's written demand and prior to the next Business Day preceding the date of the proposed redemption, at a purchase price equal to 100% of the principal amount of the Bond, plus accrued interest to the date of purchase; or (B) deliver a letter of credit to the benefit of the Bank on any date after the date of the Bank's written demand and prior to the next Business Day preceding the date of the proposed redemption which shall satisfy the requirements set forth under Section 6.1(b) of the Agreement.

Mandatory Redemption Upon Determination of Taxability. On the date of the occurrence of a Determination of Taxability, this Bond shall be called for redemption on the date selected by the Borrower, but not more than ninety (90) days following the date of the occurrence of the Determination of Taxability, at a redemption price equal to 100% of the principal amount thereof plus accrued interest to the date of redemption.

On each such redemption date, payment or provision for payment of the redemption price having been made, this Bond or the portion thereof so called for redemption shall become due and payable on the redemption date, and interest shall cease to accrue thereon from and after the redemption date.

In the event of a redemption of this Bond in whole, the redemption price shall be paid to the Bank only upon surrender of this Bond at the principal office of the Borrower or such other place as the Borrower shall designate on such Interest Payment Date. In the event of a partial optional or mandatory redemption, payment shall be made by wire transfer of immediately available funds without presentation and surrender of this Bond, provided that the Borrower's record of such payment shall be conclusive and binding upon the Bank and each succeeding owner of this Bond, absent manifest error.

In addition to any amounts due in connection with the redemption of this Bond as set forth above, in the event of any redemption or prepayment of this Bond for any reason, whether by redemption, prepayment, acceleration or otherwise, there shall be paid to the Bank an additional amount equal to the sum of all actual losses or expenses suffered or incurred by the Bank as a result of the redemption or prepayment, including any loss, breakage or other cost or expense incurred by reason of the termination of any interest rate protection agreement or the liquidation or reemployment of deposits or other funds acquired by the Bank to make or maintain its investment in the principal amount of this Bond at a fixed interest rate. The Bank shall provide the calculation of any such loss at the Borrower's request, which calculation shall be final in the absence of manifest error.

This Bond is transferable, in accordance with the provisions of the Agreement, by the owner hereof or its duly authorized attorney at the designated office of the Borrower, upon surrender of this Bond, accompanied by a duly executed instrument of transfer, in form satisfactory to the Borrower, and upon payment by the owner hereof of any taxes, fees or other governmental charges incident to such transfer. Upon any such transfer, a new fully-registered Bond in the same aggregate principal amount will be issued to the transferee. The Person in whose name this Bond is registered may be deemed the owner thereof by the Authority and the Borrower, and any notice to the contrary shall not be binding upon the Authority or the Borrower.

This Bond is issued under and pursuant to, and in full compliance with the laws of the State, including particularly the Act, which shall govern its construction, and by appropriate action duly taken by the Authority which authorizes the execution and delivery of the Agreement and this Bond.

The Authority and the Bank agree that this Bond is being purchased by the Bank for its own account and will not be transferred except as provided in Section 4.2 of the Agreement.

The Agreement permits the amendment thereof and the modifications of the rights and obligations of the Authority and the rights of the owner of this Bond upon the terms set forth therein. Any consent or waiver by the owner of this Bond shall be conclusive and binding upon such owner and upon all future owners of this Bond and of any Bond issued upon the transfer of this Bond whether or not notation of such consent or waiver is made hereon. The Agreement also contains provisions permitting the owner of this Bond to waive certain past defaults under the Agreement and their consequences.

The Act provides that neither the members of the Authority nor any Person executing this Bond for the Authority shall be liable personally on this Bond by reason of the issuance thereof. No recourse shall be had for the payment of principal or interest or premium, if any, on this Bond or for any claim based thereon, against any past, present or future official, officer or employee of the Authority or any successor corporation, as such, either directly or through the Authority, or any successor corporation, under any rule of law or equity, statute or constitution, or by the enforcement of any assessment or penalty or otherwise; and all such liability of any such official, officer or employee, as such, is hereby expressly waived and released as a condition of and in consideration for the issuance of this Bond.

This Bond shall not constitute the personal obligation, either jointly or severally, of any director, officer, employee or agent of the Authority.

IT IS HEREBY CERTIFIED, RECITED AND DECLARED that all acts, conditions and things required to exist, happen and be performed precedent to and in the execution and delivery of the Agreement and issuance of this Bond do exist, have happened, and have been performed.

IN WITNESS WHEREOF, the Butler County Port Authority has caused this Bond to be executed in its name by the manual or facsimile signature of its Chairman or Vice Chairman and Secretary or Treasurer.

Dated: May 15, 2008

BUTLER COUNTY PORT AUTHORITY

By: /s/ Richard W. Slagle  
Chairman

By: /s/ Brian Coughlin  
Secretary

AUTHENTICATION CERTIFICATE

This Bond is one of the Bond of the issue described in the within-mentioned Agreement, entitled to the benefits thereof.

Date of Authentication May 15, 2008:

QUAKER CHEMICAL CORPORATION

By: /s/ Mark A. Featherstone

Name: Mark A. Featherstone

Title: Vice President, Chief Financial  
Officer and Treasurer

By: /s/ D. Jeffry Benoiel

Name: D. Jeffry Benoiel

Title: Vice President, Corporate  
Secretary and General Counsel

**CERTIFICATION OF CHIEF EXECUTIVE OFFICER OF THE COMPANY PURSUANT TO RULE 13a-14(a) OF THE SECURITIES EXCHANGE  
ACT OF 1934**

I, Ronald J. Naples, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Quaker Chemical Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
  - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
  - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
  - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
  - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
  - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
  - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: August 1, 2008

/s/ Ronald J. Naples

Ronald J. Naples  
Chief Executive Officer

**CERTIFICATION OF CHIEF FINANCIAL OFFICER OF THE COMPANY PURSUANT TO RULE 13a-14(a) OF THE SECURITIES EXCHANGE  
ACT OF 1934**

I, Mark A. Featherstone, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Quaker Chemical Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
  - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
  - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
  - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
  - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
  - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
  - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: August 1, 2008

/s/ Mark A. Featherstone

Mark A. Featherstone  
Chief Financial Officer

**CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350**

The undersigned hereby certifies that the Form 10-Q Quarterly Report of Quaker Chemical Corporation (the "Company") for the quarterly period ended June 30, 2008 filed with the Securities and Exchange Commission (the "Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and that the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: August 1, 2008

/s/ Ronald J. Naples

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Ronald J. Naples

Chief Executive Officer of Quaker Chemical Corporation



**CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350**

The undersigned hereby certifies that the Form 10-Q Quarterly Report of Quaker Chemical Corporation (the "Company") for the quarterly period ended June 30, 2008 filed with the Securities and Exchange Commission (the "Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and that the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: August 1, 2008

/s/ Mark A. Featherstone

Mark A. Featherstone

Chief Financial Officer of Quaker Chemical Corporation