
SECURITIES AND EXCHANGE COMMISSION WASHINGTON, D.C. 20549

Form 10-0

 $|{\rm X}|$ QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934 For the quarterly period ended March 31, 2003

or

|_| TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(D) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from ______ to ______ to _____

Commission File No. 1-11596

PERMA-FIX ENVIRONMENTAL SERVICES, INC. (Exact name of registrant as specified in its charter)

Delaware (State or other jurisdiction of incorporation or organization)

(IRS Employer Identification Number)

1940 N.W. 67th Place, Gainesville, FL (Address of principal executive offices)

32653 (Zip Code)

(352) 373-4200 (Registrant's telephone number)

N/A

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

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 |X| No |

Indicate by checkmark whether the registrant is an accelerated filer (as defined in Rule 12b-2 of the Act). Yes |X| No $|_|$

Indicate the number of shares outstanding of each of the issuer's classes of Common Stock, as of the close of the latest practical date.

<TABLE>

<CAPTION>

Class

Outstanding at May 12, 2003

<\$>

<C> 34.799.254

Common Stock, \$.001 Par Value

(excluding 988,000 shares held as treasury stock)

</TABLE>

PERMA-FIX ENVIRONMENTAL SERVICES, INC.

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PERMA-FIX ENVIRONMENTAL SERVICES, INC. CONSOLIDATED FINANCIAL STATEMENTS

PART I, ITEM 1

The consolidated financial statements included herein have been prepared by the Company (which may be referred to as we, us or our), without an audit, pursuant to the rules and regulations of the Securities and Exchange Commission. Certain information and note disclosures normally included in financial statements prepared in accordance with generally accepted accounting principles have been condensed or omitted pursuant to such rules and regulations, although the Company believes the disclosures which are made are adequate to make the information presented not misleading. Further, the consolidated financial statements reflect, in the opinion of management, all adjustments (which include only normal recurring adjustments) necessary to present fairly the financial position and results of operations as of and for the periods indicated.

It is suggested that these consolidated financial statements be read in conjunction with the consolidated financial statements and the notes thereto included in the Company's Annual Report on Form 10-K for the year ended December 31, 2002.

The results of operations for the three months ended March 31, 2003, are not necessarily indicative of results to be expected for the fiscal year ending December 31, 2003.

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PERMA-FIX ENVIRONMENTAL SERVICES, INC. CONSOLIDATED BALANCE SHEETS

<TABLE>

(Amounts in Thousands, Except for Share Amounts)	March 31, 2003 (Unaudited)	December 31, 2002	
<\$>	<c></c>	<c></c>	
ASSETS			
Current assets:			
Cash	\$ 93	\$ 212	
Restricted cash	20	20	
Accounts receivable, net of allowance for doubtful accounts of \$1,277 and \$1,212	22,145	21,820	
Inventories	832	682	
Prepaid expenses	3,149	2,722	
Other receivables	83	113	
Total current assets		25,569	
Property and equipment:			
Buildings and land	20,737	16,161	
Equipment	29,410	29,125	
Vehicles	2,712	2,616	
Leasehold improvements	10,963	10,963	
Office furniture and equipment	1,996	1,954	
Construction-in-progress	5,089	4,325	
		65,144	
Less accumulated depreciation and amortization	(16,359)	(15,219)	
Net property and equipment	54,548	49,925	
Intangibles and other assets:			
Permits, net	16,578	20,759	
Goodwill, net	6,216	6,525	
Other assets	2,823	3,047	
Total assets	\$ 106,487		

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

<caption></caption>		
(Amounts in Thousands, Except for Share Amounts)	March 31, 2003 (Unaudited)	December 31, 2002
<\$>	<c></c>	<c></c>
LIABILITIES AND STOCKHOLDERS' EQUITY	(C)	(C)
Current liabilities:		
Accounts payable	\$ 9,899	\$ 9,759
Current environmental accrual	786	982
Accrued expenses	11,473	10,724
Current portion of long-term debt	3,412	3,373
current portion or long term debt	J, 412	
Total current liabilities	25,570	24,838
Environmental accruals	1,714	1,714
Accrued closure costs	4,929	4,929
Other long-term liabilities	1,414	1,332
Long-term debt, less current portion	26,743	27,142
Total long-term liabilities	34,800	35,117
Total liabilities	60,370	59 , 955
Commitments and Contingencies (see Note 5)		
Preferred Stock of subsidiary, \$1.00 par value; 1,467,396 shares authorized, 1,284,730 shares issued and outstanding,	1 005	1 005
liquidation value \$1.00 per share	1,285	1,285
Stockholders' equity:		
Preferred Stock, \$.001 par value; 2,000,000 shares authorized,		
2,500 shares issued and outstanding		
Common Stock, \$.001 par value; 75,000,000 shares authorized,		
35,687,254 and 35,326,734 shares issued, including 988,000		
shares held as treasury stock, respectively	35	35
Additional paid-in capital	67,463	66,799
Accumulated deficit	(20,603)	(20,172)
Interest rate swap	(201)	(215)
	46,694	46,447
Less Common Stock in treasury at cost; 988,000 shares	(1,862)	(1,862)
Less Common Stock in treasury at cost; 900,000 shares	(1,002)	(1,002)
Total stockholders' equity	44,832	44,585
Total liabilities and stockholders' equity	\$ 106,487	\$ 105,825
	=======	=======

 | |</TABLE>

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

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PERMA-FIX ENVIRONMENTAL SERVICES, INC. CONSOLIDATED STATEMENTS OF OPERATIONS (Unaudited)

<TABLE> <CAPTION>

		nths Ended h 31,
(Amounts in Thousands, Except for Per Share Amounts)		2002
<s> Net revenues Cost of goods sold</s>	<c> \$ 19,518 14,457</c>	<c></c>
Gross profit		3,140
Selling, general and administrative expenses	4,380	4,155
Income (loss) from operations	681	(1,015)
Other income (expense): Interest income Interest expense Interest expense-financing fees Other	(301)	(27)
Net loss		(1,999)
Preferred Stock dividends	(46)	(31)
Net loss applicable to Common Stock	\$ (431) =====	\$ (2,030) =====
Net loss per common share Basic		\$ (.06)
Diluted	\$ (.01)	\$ (.06)

Three Months Ended

Number of shares and potential common shares used in computing net loss per common share:

</TABLE>

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

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PERMA-FIX ENVIRONMENTAL SERVICES, INC. CONSOLIDATED STATEMENTS OF CASH FLOWS (Unaudited)

<TABLE> <CAPTION>

		ch 31,
(Amounts in Thousands)	2003	2002
<\$>	<c></c>	<c></c>
Cash flows from operating activities:		
Net loss	\$ (385)	\$(1,999)
Adjustments to reconcile net loss to cash provided by (used in) operations:	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	, , , , , , , , ,
Depreciation and amortization	1,140	1,027
Provision for bad debt and other reserves	52	44
Changes in assets and liabilities, net of effects from business acquisitions:		
Accounts receivable	(376)	705
Prepaid expenses, inventories and other assets	(243)	(679)
Accounts payable and accrued expenses	749	2,127
necessite parable and appropriate enpended		
Net cash provided by operations	937	1,225
Cash flows from investing activities:		
Purchases of property and equipment, net	(896)	(1,522)
Change in restricted cash, net	(1)	(2)
Net cash used in investing activities	(897)	(1,524)
Cash flows from financing activities:		
Net repayments on revolving credit facility	(258)	(81)
Principal repayments of long-term debt	(492)	(494)
Proceeds from issuance of stock	591	289
Net cash used in financing activities	(159)	(286)
Decrease in cash	(119)	(585)
Cash at beginning of period	212	860
Carbon and of moving		
Cash at end of period	\$ 93 =====	\$ 275 ======
Supplemental disclosure:		
Interest paid	\$ 540	\$ 608
Non-cash investing and financing activities:		
Issuance of Common Stock and Warrants for services	10	8
Issuance of Common Stock for payment of dividends	63	63
Gain on interest rate swap	14	38
Long-term debt incurred for purchase of property and equipment $\ensuremath{\text{\scriptsize $		

}} 308 | 164 |The accompanying notes are an integral part of these consolidated financial statements.

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PERMA-FIX ENVIRONMENTAL SERVICES, INC.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(Unaudited, for the three months ended March 31, 2003)

<TABLE> <CAPTION>

(Amounts in thousands,		Preferred Stock		Common Stock		Additional Paid-In	Accumulated	Interest	Common Stock Held In	Total Stockholders'
	except for share amounts)	Shares	Amount	Shares	Amount	Capital	Deficit	Rate Swap	Treasury	Equity
	<s></s>	<c></c>	<c></c>	<c></c>	<c></c>	<c></c>	<c></c>	<c></c>	<c></c>	<c></c>
	Balance at December 31, 2002	2,500	\$	35,326,734	\$ 35	\$ 66,799	\$ (20,172)	\$ (215)	\$ (1,862)	\$ 44,585
	Comprehensive loss:									
	Net loss						(431)			(431)
	Other Comprehensive loss:									
	Gain on interest rate swap							1.4		1.4
	swap							14		14
	Comprehensive loss									(417)
										(,
	Issuance of Common Stock for			25,165		63				63

Preferred Stock dividend Issuance of stock for cash and services		 335,355		601				601
Balance at March 31, 2003	2,500	\$ 35,687,254	\$ 35	\$ 67,463	\$ (20,603)	\$ (201) =====	\$ (1,862)	\$ 44,832

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

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PERMA-FIX ENVIRONMENTAL SERVICES, INC. NOTES TO CONSOLIDATED FINANCIAL STATEMENTS March 31, 2003 (Unaudited)

Reference is made herein to the notes to consolidated financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2002.

1. Summary of Significant Accounting Policies

Our accounting policies are as set forth in the notes to consolidated financial statements referred to above.

Stock-Based Compensation

The Company accounts for, and plans to continue accounting for, its stock-based employee compensation plans under the accounting provisions of APB Opinion 25, Accounting for Stock Issued to Employees, and has furnished the pro forma disclosures required under Statement of Financial Accounting Standards ("SFAS") 123, Accounting for Stock-Based Compensation, and SFAS 148, Accounting for Stock-Based Compensation - Transition and Disclosure.

SFAS 123 requires us to provide pro forma information regarding net income and earnings per share as if compensation cost for our employee and directors stock options had been determined in accordance with the fair market value-based method prescribed in SFAS 123. We estimate the fair value of each stock option at the grant date by using the Black-Scholes option-pricing model. During the first quarter of 2003, the Company awarded to certain employees 973,000 stock options, under the 1993 Non-qualified Stock Option Plan.

Under the accounting provisions of SFAS 123, our net loss and net loss per share would have been reduced to the pro forma amounts indicated below (in thousands except for per share amounts):

<TABLE> <CAPTION>

<caption></caption>	Three Months Ended March 31,		
	2003	2002	
<\$>	<c></c>	<c></c>	
Net (loss) applicable to Common Stock, as reported Deduct: Total Stock-based employee compensation expense determined under fair value based method for all awards, net of related	\$ (431)	\$ (2,030)	
tax effects	(77)	(68)	
Pro forma (loss) applicable to Common Stock	\$ (508) ======	\$ (2,098) ======	
Earnings per share:			
Basic - as reported	\$ (.01) ======	\$ (.06) =====	
Basic - pro-forma	\$ (.01) ======	\$ (.06) =====	
Diluted - as reported	\$ (.01) ======	\$ (.06) =====	
Diluted - pro forma	\$ (.01) =====	\$ (.06) =====	
/ Maria			

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2. Recently Adopted Accounting Standards

In June 2001, the Financial Accounting Standards Board (FASB) issued SFAS 143, Accounting for Asset Retirement Obligations, which addresses financial accounting and reporting for obligations associated with the retirement of tangible long-lived assets and the associated asset retirement costs. The standard applies to legal obligations associated with the retirement of long-lived assets that result from the acquisition, construction, development and normal use of the asset.

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SFAS 143 requires that the fair value of a liability for an asset retirement obligation be recognized in the period in which it is incurred if a reasonable estimate of fair value can be made, and that the associated asset retirement costs be capitalized as part of the carrying amount of the long-lived asset. In conjunction with the state mandated permit and licensing requirements, the Company is obligated to determine its best estimate of the cost to close, at some undetermined future date, its permitted and/or licensed facilities. The

Company recorded this liability at the date of acquisition, with its offsetting entry being to goodwill and/or permits and has subsequently increased this liability as a result of changes to the facility and/or for inflation. The Company's current accrued closure costs reflect the current fair value of the cost of asset retirement. The Company adopted SFAS 143 as of January 1, 2003, and pursuant to the adoption the Company reclassified from goodwill and permits approximately \$4,559,000, which represents the fair value of the Company's closing cost as recorded to goodwill or permits at the time each facility was acquired, into an asset retirement obligations account. The asset retirement obligation account is recorded as property and equipment (buildings). The Company will depreciate the asset retirement obligation on a straight line basis over a period of 50 years. The new standard did not have a material impact on net income in the first quarter of 2003, nor would it have had a material impact in the first quarter of 2002 assuming an adoption of this accounting standard on a pro forma basis.

3. Earnings Per Share

Basic EPS is based on the weighted average number of shares of Common Stock outstanding during the period. Diluted EPS includes the dilutive effect of potential common shares. Diluted loss per share for the three months ended March 31, 2003 and 2002, does not include potential common shares as their effect would be anti-dilutive.

The following are the potential shares excluded from weighted average share calculations due to their anti-dilutive effect for the three months ended March 31, 2003 and 2002:

<TABLE> <CAPTION>

Three Months Ended March 31,

	2003	2002
<\$>	<c></c>	<c></c>
Upon exercise of Options	3,675,000	2,867,300
Upon exercise of Warrants	13,749,827	14,468,052
Upon conversion of Preferred Stock	1,666,667	1,666,667

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4. Long-term Debt

Long-term debt consists of the following at March 31, 2003, and December 31, 2002:

<TABLE>

<caption> (Amounts in Thousands)</caption>	March 31, 2003 (Unaudited)	December 31, 2002
Revolving Credit facility dated December 22, 2000, borrowings based upon eligible accounts receivable, subject to monthly borrowing base calculation, variable interest paid monthly at prime rate plus 1% (5.25% at March 31, 2003), balance due in December 2005.	<c> \$ 8,734</c>	<c> \$ 8,742</c>
Term Loan dated December 22, 2000, payable in equal monthly installments of principal of \$83, balance due in December 2005, variable interest paid monthly at prime rate plus 1 $1/2$ % (5.75% at March 31, 2003).	4,833	5,083
Three promissory notes dated May 27, 1999, payable in equal monthly installments of principal and interest of \$90 over 60 months, due June 2004, interest at 7%.	1,293	1,538
Unsecured promissory note dated August 31, 2000, payable in lump sum in August 2005, interest paid annually at 7%.	3,500	3,500
Senior subordinated notes dated July 31, 2001, payable in lump sum on July 31, 2006, interest payable quarterly at an annual interest rate of 13.5%, net of unamortized debt discount of \$1,081.	4,544	4,462
Promissory note dated June 25, 2001, payable in semiannual installments on June 30 and December 31 through December 31, 2008, variable interest accrues at the applicable law rate determined under the IRS Code Section (8.0% on March 31, 2003 and is payable in one lump sum at the end of installment period.	3,594	3,594
Installment agreement dated June 25, 2001, payable in semiannual installments on June 30 and December 31 through December 31, 2008, variable interest accrues at the applicable law rate determined under the IRS Code Section (8.0% on March 31, 2003) and is payable in one lump sum at the end of installment period.	893	893
Various capital lease and promissory note obligations, payable 2003 to 2008, interest at rates ranging from 5.2% to 17.9% .	2,764	2,703
Less current portion of long-term debt	30,155 3,412	30,515 3,373
	\$ 26,743	\$ 27,142

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Revolving Credit and Term Loan

On December 22, 2000, the company entered into a Revolving Credit, Term Loan and Security Agreement ("Agreement") with PNC Bank, National Association, a national banking association ("PNC") acting as agent ("Agent") for lenders, and as issuing bank. The Agreement provides for a term loan ("Term Loan") in the amount of \$7,000,000, which requires principal repayments based upon a seven-year amortization, payable over five years, with monthly installments of \$83,000 and the remaining unpaid principal balance due on December 22, 2005. Payments commenced on February 1, 2001. The Agreement also provided for a revolving line of credit ("Revolving Credit") with a maximum principal amount outstanding at any one time of \$15,000,000. The Revolving Credit advances are subject to limitations of an amount up to the sum of a) up to 85% of Commercial Receivables aged 90 days or less from invoice date, b) up to 85% of Commercial Broker Receivables aged up to 120 days from invoice date, c) up to 85% of acceptable Government Agency Receivables aged up to 150 days from invoice date, and d) up to 50% of acceptable unbilled amounts aged up to 60 days, less e) reserves Agent reasonably deems proper and necessary. The Revolving Credit advances shall be due and payable in full on December 22, 2005. As of March 31, 2003, our excess availability under our revolving credit facility was \$3,033,000 based on our eligible receivables.

Pursuant to the Agreement the Term Loan bears interest at a floating rate equal to the prime rate plus 1 1/2%, and the Revolving Credit at a floating rate equal to the prime rate plus 1%. The loans are subject to a prepayment fee of 1 1/2% in the first year, 1% in the second and third years and 3/4% after the third anniversary until termination date.

In December 2000, the Company entered into an interest rate swap agreement related to its Term Loan. This hedge, has effectively fixed the interest rate on the notional amount of \$3,500,000 of the floating rate \$7,000,000 PNC Term Loan. The Company will pay the counterparty interest at a fixed rate equal to the base rate of 6.25%, for a period from December 22, 2000, through December 22, 2005, in exchange for the counterparty paying the Company one month LIBOR rate for the same term (1.31% at March 31, 2003). At March 31, 2003, the market value of the interest rate swap was in an unfavorable value position of \$201,000 and was recorded as a liability. During the three months ended March 31, 2003, the Company recorded a gain on the interest rate swap of \$14,000 which offset other comprehensive loss on the Statement of Stockholders' Equity.

Effective as of June 2002, the Company and PNC entered into Amendment No. 1 to the Agreement, which, among other things, increased the letter of credit commitment from \$500,000 to \$4,500,000 and provided for a \$4.0 million standby letter of credit. The standby Letter of Credit was issued to secure certain surety bond obligations. Pursuant to the terms of Amendment No. 1, as partial collateral for the issuance of the standby letter of credit, PNC will charge a reserve of approximately \$66,000 each month against the availability under the Revolving Credit beginning July 15, 2002, until such time as the standby letter of credit is fully reserved. As of March 31, 2003, \$600,000 has been charged against availability. As a condition precedent to this Amendment No. 1, the Company paid a \$50,000 amendment fee to PNC.

Three Promissory Notes

Pursuant to the terms of the Stock Purchase Agreements in connection with the acquisition of Perma-Fix of Orlando, Inc. ("PFO"), Perma-Fix of South Georgia, Inc. ("PFSG") and Perma-Fix of Michigan, Inc. ("PFMI"), a portion of the consideration was paid in the form of Promissory Notes, in the aggregate amount of \$4,700,000 payable to the former owners of PFO, PFSG and PFMI. The Promissory Notes are paid in equal monthly installments of principal and interest of approximately \$90,000 over five years and having an interest rate of 5.5% for the first three years and 7% for the remaining two years. The aggregate outstanding balance of the Promissory Notes total \$1,293,000 at March 31, 2003, of which \$1,013,000 is in the current portion. Payments of such Promissory Notes are guaranteed by PFMI under a non-recourse guaranty, which non-recourse guaranty is secured by certain real estate owned by PFMI. These Promissory Notes are subject to subordination agreements with the Company's senior and subordinated lenders.

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Unsecured Promissory Note

On August 31, 2000, as part of the consideration for the purchase of Diversified Scientific Services, Inc. ("DSSI"), the Company issued to Waste Management Holdings a long-term unsecured promissory note (the "Unsecured Promissory Note") in the aggregate principal amount of \$3,500,000, bearing interest at a rate of 7% per annum and having a five-year term with interest to be paid annually and principal due in one lump sum at the end of the term of the Unsecured Promissory Note (August 2005).

Senior Subordinated Notes

On July 31, 2001, the Company issued approximately \$5.6 million of its 13.50% Senior Subordinated Notes due July 31, 2006 (the "Notes"). The Notes were issued pursuant to the terms of a Note and Warrant Purchase Agreement, dated July 31, 2001 (the "Purchase Agreement"), between the Company, Associated Mezzanine Investors - PESI, L.P. ("AMI"), and Bridge East Capital, L.P. ("BEC"). The Notes are unsecured and are unconditionally guaranteed by the subsidiaries of the Company. The Company's payment obligations under the Notes are subordinate to the Company's payment obligations to its primary lender and to certain other debts of the Company up to an aggregate amount of \$25 million. The net proceeds from the sale of the Notes were used to repay the Company's previous short-term loan.

Under the terms of the Purchase Agreement, the Company also issued to AMI and BEC Warrants to purchase up to 1,281,731 shares of the Company's Common Stock ("Warrant Shares") at an initial exercise price of \$1.50 per share (the "Warrants"), subject to adjustment under certain conditions which were valued at \$1,622,000 and recorded as a debt discount and are being amortized over the term of the Notes. The Warrants, as issued, also contain a cashless exercise provision. The Warrant Shares are registered under an S-3 Registration Statement that was declared effective on November 27, 2002.

In connection with the sale of the Notes, the Company, AMI, and BEC entered into an Option Agreement, dated July 31, 2001 (the "Option Agreement"). Pursuant to the Option Agreement, the Company granted each purchaser an irrevocable option requiring the Company to purchase any of the Warrants or Warrant Shares then held by the purchaser (the "Put Option"). The Put Option may be exercised at any time commencing July 31, 2004, and ending July 31, 2008. In addition, each purchaser granted to the Company an irrevocable option to purchase all the Warrants or the Warrant Shares then held by the purchaser (the "Call Option"). The Call Option may be exercised at any time commencing July 31, 2005, and ending July 31, 2008. The purchase price under the Put Option and the Call Option is based on the quotient obtained by dividing (a) the sum of six times the Company's consolidated EBITDA for the period of the 12 most recent consecutive months minus Net Debt plus the Warrant Proceeds by (b) the Company's Diluted Shares (as the terms EBITDA, Net Debt, Warrant Proceeds, and Diluted Shares are defined in the Option Agreement). Pursuant to the guidance under EITF 00-19 on accounting for and financial presentation of securities that could potentially be settled in a Company's own stock, the put warrants would be classified outside of equity based on the ability of the holder to require cash settlement. Also, EITF Topic D-98 discusses the accounting for a security that will become redeemable at a future determinable date and its redemption is variable. This is the case with the Warrants as the date is fixed, but the put or call price varies. The EITF gives two possible methodologies for valuing the securities. The Company accounts for the changes in redemption value as they occur and the Company adjusts the carrying value of the security to equal the redemption value at the end of each reporting period. On March 31, 2003, the Put Option had no value and no liability was recorded.

Promissory Note

East Tennessee Materials and Energy Corporation (" M&EC") issued a promissory note for a principal amount of \$3.7 million to PDC, dated June 7, 2001, for monies advanced to M&EC for certain services performed by PDC. The promissory note is payable over eight years on a semiannual basis on June 30 and December 31. Interest is accrued at the applicable rate (8.00% on March 31, 2003) and payable in one lump sum at the end of the loan period. On March 31, 2003, the outstanding balance is \$4,210,000 including accrued interest of approximately \$616,000. PDC has directed M&EC to make all payments under the promissory note directly to the IRS to be applied to PDC's obligations under its installment agreement with the IRS.

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Installment Agreement

In conjunction with the Company's acquisition of M&EC, M&EC entered into an installment agreement with the Internal Revenue Service ("IRS") for a principal amount of \$923,000 dated June 7, 2001, for certain withholding taxes owed by M&EC. The installment agreement is payable over eight years on a semiannual basis on June 30 and December 31. Interest is accrued at the applicable law rate ("Applicable Rate") pursuant to the provisions of section 6621 of the Internal Revenue Code of 1986 as amended. Such rate is adjusted on a quarterly basis and payable in lump sum at the end of the installment period. On March 31, 2003, the rate was 8%. On March 31, 2003, the outstanding balance is \$1,041,000 including accrued interest of approximately \$148,000.

5. Commitments and Contingencies

Hazardous Waste

In connection with our waste management services, we handle both hazardous and non-hazardous waste which we transport to our own or other facilities for destruction or disposal. As a result of disposing of hazardous substances, in the event any cleanup is required, we could be a potentially responsible party for the costs of the cleanup notwithstanding any absence of fault on our part.

Legal

In the normal course of conducting our business, we are involved in various litigation. There has been no material change in legal proceedings from those disclosed previously in the Company's Form 10-K for year ended December 31, 2002, except as stated below. We are not a party to any litigation or governmental proceeding which our management believes could result in any judgements or fines against us that would have a material adverse affect on the Company's financial position, liquidity or results of operations.

In April, 2003, the plaintiffs, hundreds of individuals residing in or around Bayou Sorrel, Louisiana, filed their Fifth Supplemental and Amending Complaint naming, inter alia, Perma-Fix of Michigan, Inc. ("PFMI") and Perma-Fix of South Georgia ("PFSG") as defendants, both of which are subsidiaries of the Company and acquired by the Company in 1999. The lawsuit, which has been pending since 1999, includes as defendants hundreds of entities (and their insurers) which allegedly disposed of hazardous and toxic substances at a hazardous waste disposal site and hazardous waste injection well in Bayou Sorrel, Louisiana, both of which were permitted by the appropriate governmental authorities to treat and dispose of hazardous and toxic waste. The plaintiffs allege that the defendant entities, other than the insurers, including PFMI and PFSG, were

negligent in their selection of the sites for the treatment and/or disposal of hazardous and toxic substances, that the plaintiffs have suffered physical injuries, property damage and diminished property values as a result of the escape or migration of contaminants from the sites, and that the defendants are liable for the damages allegedly suffered by the plaintiffs. The plaintiffs seek unspecified amounts of compensatory and exemplary damages, interest, costs and attorney's fees.

The Company is investigating the alleged claim in this lawsuit. PFMI and PFSG will defend themselves vigorously in connection with this matter. However, at this point, we are unable to determine with any degree of certainty what exposure, if any, PFMI and/or PFSG may have in this regard. The Company is also in the process of determining whether this lawsuit is covered by its insurers and/or the insurers of PFMI and PFSG prior to their acquisition by the Company.

During April, 2003, certain groups filed a complaint against the EPA and U.S. Army alleging that the EPA and U.S. Army are violating a certain executive order shipping the hydrolysate by-product to PFD for processing and treating. The complainants allege that the shipment of the hydrolysate to PFD for treatment by PFD at its facility in Dayton, Ohio would be a violation of the executive order since it would have a disparate impact on the minority and low income groups who live in the vicinity of PFD's facility and that EPA is violating the executive order by failing to require PFD to have a Title V air permit. Based on studies performed by the Company, the Company does not believe that PFD is required to have a Title V air permit. These studies have been supplied to the Ohio EPA, and PFD is expecting the Ohio EPA's response to its studies in the near future. If it is determined that a Title V air permit is required at PFD, it will apply for the permit. Neither the Company nor PFD is a party to the complaint. An adverse decision as to this complaint could result in this subcontract being terminated.

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A letter dated May 13, 2003, from the same counsel who filed the complaint discussed above, representing some of the same parties on whose behalf the complaint was filed, addressed to PFD, the U.S. EPA and the Ohio EPA, advised that they intend to file a citizen suit against PFD for alleged violations of the Clean Air Act and the Ohio Administration Code for allegedly not having a certain air permit, emitting odors which endanger the health, safety and welfare of the public living near the facility and failing to submit a control equipment plan. The letter advises that under the Clean Air Act, suit will be filed against PFD if within 60 days PFD fails to remedy the allegations in the letter. Since PFD just received the letter, it is investigating these claims. As stated above, although the Company does not believe PFD is required to have a Title V air permit, it is currently performing studies to determine if a Title V air permit is required. If a lawsuit is filed against PFD, PFD intends to vigorously defend itself.

Permits

We are subject to various regulatory requirements, including the procurement of requisite licenses and permits at our facilities. These licenses and permits are subject to periodic renewal without which our operations would be adversely affected. We anticipate that, once a license or permit is issued with respect to a facility, the license or permit will be renewed at the end of its term if the facility's operations are in compliance with the applicable regulatory requirements.

Accrued Closure Costs and Environmental Liabilities

We maintain closure cost funds to insure the proper decommissioning of our RCRA facilities upon cessation of operations. Additionally, in the course of owning and operating on-site treatment, storage and disposal facilities, we are subject to corrective action proceedings to restore soil and/or groundwater to its original state. These activities are governed by federal, state and local regulations and we maintain the appropriate accruals for restoration. We have recorded accrued liabilities for estimated closure costs and identified environmental remediation costs.

Insurance

We believe we maintain insurance coverage adequate for our needs and which is similar to, or greater than, the coverage maintained by other companies of our size in the industry. There can be no assurances, however, that liabilities which may be incurred by us will be covered by our insurance or that the dollar amount of such liabilities which are covered will not exceed our policy limits. Under our insurance contracts, we usually accept self-insured retentions which we believe appropriate for our specific business risks. We are required by EPA regulations to carry environmental impairment liability insurance providing coverage for damages on a claims-made basis in amounts of at least \$1 million per occurrence and \$2 million per year in the aggregate. To meet the requirements of customers, we have exceeded these coverage amounts.

6. Operating Segments

Pursuant to FAS 131, we define an operating segment as:

- A business activity from which we may earn revenue and incur expenses;
- o Whose operating results are regularly reviewed by the chief operating decision maker to make decisions about resources to be allocated to the segment and assess its performance; and
- o $\,\,\,\,\,$ For which discrete financial information is available.

We have three operating segments which are defined as each business line that we operate. These segments however, excludes Corporate headquarters, which does not generate revenue.

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Our operating segments are defined as follows:

The Industrial Waste Management Services segment, which provides on-and-off site treatment, storage, processing and disposal of hazardous and nonhazardous industrial waste, commercial waste and wastewater through our six treatment, storage and disposal ("TSD") facilities; Perma-Fix Treatment Services, Inc., Perma-Fix of Dayton, Inc., Perma-Fix of Ft. Lauderdale, Inc., Perma-Fix of Orlando, Inc., Perma-Fix of South Georgia, Inc., and Perma-Fix of Michigan, Inc. We provide through Perma-Fix Government Services various waste management services to certain governmental agencies.

The Nuclear Waste Management Services segment, which provides treatment, storage, processing and disposal services. Included in such is research, development, on and off-site waste remediation of nuclear mixed and low-level radioactive waste through our three TSD facilities; Perma-Fix of Florida, Inc., Diversified Scientific Services, Inc., and East Tennessee Materials and Energy Corporation.

The Consulting Engineering Services segment provides environmental engineering and regulatory compliance services through Schreiber, Yonley & Associates, Inc. which includes oversight management of environmental restoration projects, air and soil sampling and compliance and training activities, as well as, engineering support as needed by our other segments.

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The table below presents certain financial information by business segment for the three months ended March 31, 2003 and 2002.

Segment Reporting March 31, 2003

<TABLE>

	Industrial Waste	Nuclear Waste		Segments		Consolidated
	Services	Services	Engineering	Total	Corporate(2)	Total
<\$>	<c></c>	<c></c>	<c></c>	<c></c>	<c></c>	<c></c>
Revenue from external customers	\$ 10,243	\$ 8,386(3)	\$ 889	\$ 19,518	\$	\$ 19,518
Intercompany revenues	1,143	407	133	1,683		1,683
Interest income	2			2		2
Interest expense	182	485	(3)	664	38	702
Interest expense-financing fees		2		2	299	301
Depreciation and amortization	534	577	10	1,121	19	1,140
Segment profit (loss)	(828)	316	81	(431)		(431)
Segment assets (1)	41,597	58,176	2,155	101,928	4,559	106,487
Expenditures for segment assets						

 446 | 669 | 2 | 1,117 | 87 | 1,204 |Segment Reporting March 31, 2002

<TABLE>

	Industrial Waste Services	Nuclear Waste Services	Engineering	Segments Total	Corporate(2)	Consolidated Total
<\$>	<c></c>	<c></c>	<c></c>	<c></c>	<c></c>	<c></c>
Revenue from external customers	\$ 8,338	\$ 7,194(3)	\$ 919	\$16,451	\$	\$ 16,451
Intercompany revenues	1,245	1,403	11	2,659		2,659
Interest income	4			4	1	5
Interest expense	166	540	3	709	(4)	705
Interest expense-financing fees		2		2	255	257
Depreciation and amortization	486	509	11	1,006	21	1,027
Segment profit (loss)	(1,317)	(835)	122	(2,030)		(2,030)
Segment assets (1)	40,995	52,005	2,304	95,304	4,525	99,829
Expenditures for segment assets						

 696 | 986 | | 1,682 | 4 | 1,686 |

- (1) Segment assets have been adjusted for intercompany accounts to reflect actual assets for each segment.
- (2) Amounts reflect the activity for corporate headquarters not included in the segment information.
- (3) The consolidated revenues within the Nuclear Waste Services segment include the Oak Ridge Contracts for the quarter ended March 31, 2003, which total \$4,821,000 (or 24.7\$) of total revenue and \$1,005,000 (or 6.1\$) for the same quarter in 2002.

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PERMA-FIX ENVIRONMENTAL SERVICES, INC.
MANAGEMENT'S DISCUSSION AND ANALYSIS OF
FINANCIAL CONDITION AND RESULTS OF OPERATIONS
PART I, ITEM 2

Certain statements contained within this report may be deemed "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 (collectively, the "Private Securities Litigation Reform Act of 1995"). All statements in this report other than a statement of historical fact are forward-looking statements that are subject to known and unknown risks, uncertainties and other factors which could cause actual results and performance of the Company to differ materially from such statements. The words "believe," "expect," "anticipate," "intend," "will," and similar expressions identify forward-looking statements. Forward-looking statements contained herein relate to, among other things,

- o ability or inability to continue and improve operations and become profitable;
- o anticipated improvement in the financial performance of the Company;
- o ability to comply with the Company's general working capital requirements;
- o ability to be able to continue to borrow under the Company's revolving line of credit;
- o ability to generate sufficient cash flow from operations to fund all costs of operations and remediation of certain formerly leased property in Dayton, Ohio, and the Company's facilities in Memphis, Tennessee; Valdosta, Georgia and Detroit Michigan;
- o ability to remediate certain contaminated sites for projected amounts;
- o ability to pay expenses to remediate the four sites from funds generated internally;
- o no intention to close any facilities;
- o ability to fund budgeted capital expenditures for 2003;
- o significant higher revenue under the Oak Ridge Contracts;
- o no expectation of material future inflationary changes
- o the volume of hydrolysate expected to be treated under the subcontract relating to the Newport Chemical Agent Disposal Facility
- o potential acquisition of another permitted mixed waste facility
- o increasing other sources of revenue at M&EC; and
- expectation that there will be an increase in revenues and operating profits during the second and third quarters of 2003, as in the past.

While the Company believes the expectations reflected in such forward-looking statements are reasonable, it can give no assurance such expectations will prove to have been correct. There are a variety of factors which could cause future outcomes to differ materially from those described in this report, including, but not limited to:

- o general economic conditions;
- o material reduction in revenues;
- o inability to collect in a timely manner a material amount of receivables;
- o increased competitive pressures;
- o the ability to maintain and obtain required permits and approvals to conduct operations;
- o the ability to develop new and existing technologies in the conduct of operations;
- o ability to retain or renew certain required permits;
- o discovery of additional contamination or expanded contamination at a certain Dayton, Ohio, property formerly leased by the Company or the Company's facilities at Memphis, Tennessee; Valdosta, Georgia and Detroit Michigan, which would result in a material increase in remediation expenditures;
- o changes in federal, state and local laws and regulations, especially environmental laws and regulations, or in interpretation of such;
- potential increases in equipment, maintenance, operating or labor costs;
- o management retention and development;

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o $\,$ financial valuation of intangible assets is substantially less than $\,$ expected;

- o termination of the Oak Ridge Contracts as a result of our lawsuit against Bechtel Jacobs or otherwise;
- o the requirement to use internally generated funds for purposes not presently anticipated;
- o inability to become profitable on an annualized basis;
- o the inability of the Company to maintain the listing of its Common Stock on the NASDAQ;
- o the determination that PFMI or PFO was responsible for a material amount of remediation at certain Superfund sites; and
- o terminations of contracts with federal agencies or subcontracts involving federal agencies, or reduction in amount of waste delivered to the Company under these contracts or subcontracts;

The Company undertakes no obligations to update publicly any forward-looking statement, whether as a result of new information, future events or otherwise.

Critical Accounting Policies

In preparing the consolidated financial statements in conformity with generally accepted accounting principles, management makes estimates and assumptions that affect the reported amounts of assets and liabilities and disclosures of contingent assets and liabilities at the date of the financial statements, as well as, the reported amounts of revenues and expenses during the reporting period. The Company believes the following critical accounting policies affect the more significant estimates used in preparation of the consolidated financial statements:

Allowance for Doubtful Accounts. The carrying amount of accounts receivable is reduced by an allowance for doubtful accounts which is a valuation allowance that reflects management's best estimate of the amounts that will not be collected. During the quarters ended March 31, 2003 and 2002 the allowance for doubtful accounts was increased, through a charge to bad debt expense, by \$52,000 and \$45,000, respectively, which remained consistent at 0.3% of net revenues. Management regularly reviews all accounts receivable balances that exceed 60 days from the invoice date and based on an assessment of current credit worthiness, estimates the portion, if any, of the balance that will not be collected, and writes off any uncollectible portion. These write-offs were approximately 0.9% and 0.8% of revenue and approximately 4.2% and 3.9% of accounts receivable for 2002 and 2001, respectively.

Intangible Assets. Intangible assets relating to acquired businesses consist primarily of the cost of purchased businesses in excess of the estimated fair value of net assets acquired ("goodwill") and the recognized permit value of the business. The Company continually reevaluates the propriety of the carrying amount of permits and goodwill to determine whether current events and circumstances warrant adjustments to the carrying value. Effective January 1, 2002, the Company adopted SFAS 142. The Company hired an independent appraisal firm to test goodwill and permits, separately, for impairment. The report provided by the appraiser indicated that no impairment existed as of January 1, 2002. Goodwill and permits were again tested as of October 1, 2002, which also indicated no impairment. Effective January 1, 2002, the Company discontinued amortizing indefinite life intangible assets (permits) and goodwill as required by SFAS 142.

Accrued Closure Costs. Accrued closure costs represent a contingent environmental liability to clean up a facility in the event the Company ceases operations in an existing facility. The accrued closure costs are estimates based on guidelines developed by federal and/or state regulatory authorities under RCRA. Such costs are evaluated annually and adjusted for inflationary factors and for approved changes or expansions to the facilities. Increases due to annual inflationary factors for 2003, 2002, and 2001are approximately 1.1%, 2.2% and 2.1%, respectively, and based on the historical information, the Company does not expect future inflationary changes to differ materially from the previous years. Increases or decreases in accrued closure costs resulting from changes or expansions at the facilities are determined based on specific RCRA guidelines applied to the requested change. This calculation includes certain estimates, such as disposal pricing, external labor, analytical costs and processing costs, which are based on current market conditions. However, the Company has no intention, at this time, to close any of its facilities.

Accrued Environmental Liabilities. The Company has four remediation projects currently in progress. The current and long-term accrual amounts for the projects are our best estimates based on proposed or approved

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processes for clean-up. The circumstances that could affect the outcome range from new technologies that are being developed every day to reduce the Company's overall costs, to increased contamination levels that could arise as the Company completes remediation which could increase the Company's costs, neither of which the Company anticipates at this time. In addition, significant changes in regulations could adversely or favorably affect our costs to remediate existing sites or potential future sites, which cannot be reasonably quantified.

Disposal Costs. The Company accrues for waste disposal based upon a physical count of the total waste at each facility at the end of each accounting period. Current market prices for transportation and disposal costs are applied to the end of period waste inventories to calculate the disposal accrual. Costs are calculated using current costs for disposal, but economic trends could materially affect our actual costs for disposal. As there are limited disposal sites available to us, a change in the number of available sites or an increase

or decrease in demand for the existing disposal areas could significantly affect the actual disposal costs either positively or negatively.

Self Insurance. We have a self-insurance program for certain health benefits. The cost of such benefits is recognized as expense in the period in which the claim occurred and includes an estimate of claims incurred but not reported ("IBNR"), with such estimates based upon historical trends. Actual health insurance claims may differ materially from the estimates, as a result of the nature and extent of the actual IBNR claims paid. The Company maintains separate insurance to cover the excess liability over an established specific single claim amount and also an aggregate annual claim total.

Results of Operations

The table below should be used when reviewing management's discussion and analysis for the three months ended March 31, 2003 and 2002:

<table></table>	
<caption></caption>	

CAPTION>				
Consolidated (amounts in thousands)	2003	왕	2002	왕
<\$>	<c></c>	<c></c>	<c></c>	<c></c>
Net Revenues	\$ 19,518	100.0	\$ 16,451	100.0
Cost of Goods Sold	14,457	74.1	13,311	80.9
Gross Profit	5,061	25.9	3,140	19.1
Selling, General and Administrative	4,380	22.4	4,155	25.3
Income (Loss) from Operations	\$ 681	3.5	\$ (1,015)	(6.2)
	======	====	======	=====
Interest Expense	(702)	(3.6)	(705)	(4.3)
Interest Expense - Finance Fees	(301)	(1.6)	(257)	(1.6)
Preferred Stock Dividend				

 (46) | (.3) | (31) | (.2) |Summary -- Quarters Ended March 31, 2003 and 2002

The Company provides services through three reportable operating segments. The Industrial Waste Management Services segment is engaged in on-and off-site treatment, storage, disposal and processing of a wide variety of by-products and industrial, hazardous and non-hazardous wastes. This segment competes for materials and services with numerous regional and national competitors to provide comprehensive and cost-effective waste management services to a wide variety of customers nationwide. The Company operates and maintains facilities and businesses in the waste by-product brokerage, on-site treatment and stabilization, and off-site blending, treatment and disposal industries. The Nuclear Waste Management Services segment provides treatment, storage, processing and disposal services of mixed waste (waste containing both hazardous and low-level radioactive materials) and low-level radioactive wastes, including research, development and on-site and off-site waste remediation. The presence of nuclear and low-level radioactive constituents within the waste streams processed by this segment create different and unique operational, processing and permitting/licensing requirements from those contained within the Industrial Waste

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Management Services segment. The Company's Consulting Engineering Services segment provides a wide variety of environmental related consulting and engineering services to industry and government. The Consulting Engineering Services segment provides oversight management of environmental restoration projects, air and soil sampling, compliance reporting, surface and subsurface water treatment design for removal of pollutants, and various compliance and training activities.

Net Revenue

Consolidated net revenues increased to \$19,518,000 for the quarter ended March 31, 2003, as compared to \$16,451,000 for the same quarter in 2002. This increase of \$3,067,000 or 18.6\$ is partially attributable to an increase in the Nuclear Waste Management Services segment of approximately \$1,192,000 resulting from the continued growth in mixed waste revenue driven by the greater volumes of waste received under certain contacts, such as the Oak Ridge Contracts. Consolidated revenues under the Oak Ridge Contracts totaled \$4,821,000 or 24.7% of total revenues for the three months ending March 31, 2003, compared to \$1,005,000 or 6.1% for the three months ended March 31, 2002. The backlog of stored waste within the nuclear segment at March 31, 2003, was approximately \$7,517,000 compared to \$9,000,000 at December 31, 2002. Additionally, the Industrial Waste Management Services segment experienced an increase of approximately \$1,904,000, which reflected increases throughout the segment. Event work, improved waste volumes and improved pricing structure associated with certain of our Defense Reutilization & Marketing Service ("DRMS") government contracts and the start-up of public relations and treatability studies related to the Army's Newport hydrolysate project contributed to these increases. Offsetting these increases, was a slight decrease in the Consulting Engineering Services segment of \$29,000. See "Known Trends and Uncertainties and Significant contracts" of this Management's Discussion and Analysis as to a lawsuit involving the Oak Ridge Contracts and a discussion as to a complaint filed as to the hydrolysate project.

Cost of Goods Sold

Cost of goods sold for the Company increased \$1,146,000 or 8.6% for the quarter ended March 31, 2003, as compared to the quarter ended March 31, 2002. This

increase in cost of goods sold reflects an increase in the Industrial Waste Management Services segment of \$1,296,000, primarily associated with increased disposal and transportation costs which directly correlates to the increase in revenues. Additionally, the Consulting Engineering Services Segment experienced an increase in cost of goods sold of \$30,000. Offsetting these increases was a decrease in the Nuclear Waste Management Services segment of \$180,000. This decrease reflects a decrease in disposal and treatment costs associated with the continued refinement of our treatment processes as the facilities continue their ramp-up process. Included within cost of goods sold is depreciation expense of \$1,036,000 and \$950,000 for the quarters ended March 31, 2003 and 2002, respectively.

Gross Profit

The resulting gross profit for the quarter ended March 31, 2003, increased \$1,921,000 to \$5,061,000, which as a percentage of revenue is 25.9%, reflecting an increase over the corresponding quarter in 2002 percentage of revenue of 19.1%. This increase in gross profit percentage principally reflects an increase in the Nuclear Waste Management Services segment from 20.1% in 2002 to 33.6% in 2003, reflecting the impact of higher margin revenue, increased volumes of waste received under the Oak Ridge Contracts and continued refinement of our treatment processes as the facilities continue their ramp-up process. Additionally, the Industrial Waste Management Services segment experienced an increase from 16.1% in 2002 to 19.0% in 2003. This increase reflects the impact of improved waste volumes and pricing structure associated with government DRMS contracts, the benefit of higher margin event work performed in conjunction with such government DRMS contracts and the positive impact of cost savings and operational changes within the segment. Offsetting this, however, was a decrease in the Consulting Engineering Services segment from 38.2% in 2002 to 32.8% in 2003. This decrease reflects the impact of lower margin projects that were subcontracted out during the guarter.

Selling, General and Administrative

Selling, general and administrative expenses increased \$225,000 or 5.5% for the quarter ended March 31, 2003, as compared to the quarter ended March 31, 2002. This increase reflects the impact of increased sales and marketing efforts within the Industrial Waste Management Services segment and certain other

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organizational changes made within the Company. Included in selling, general and administrative expenses is depreciation and amortization expense of \$104,000 and \$77,000 for the first quarters of 2003 and 2002, respectively. However, as a percentage of revenue, selling, general and administrative expenses decreased to 22.4% for the quarter ended March 31, 2003, compared to 25.3% for the same period in 2002.

Interest Expense

Interest expense decreased \$3,000 for the quarter ended March 31, 2003, as compared to the corresponding period of 2002. This decrease reflects the impact of lower interest rates and decreased borrowing levels on the revolving credit and term loans with PNC Bank, National Association ("PNC"), which resulted in a decrease in interest expense of \$4,000 when compared to the prior year. Additionally, the reduction in debt associated with past acquisitions resulted in a decrease in interest expense of \$9,000. Offsetting these decreases, was an increase in interest expenses of \$10,000 due to an increase in debt associated with facility and computer upgrades.

Interest Expense - Financing Fees

Interest expense-financing fees increased \$44,000 for the three months ended March 31, 2003, as compared to the corresponding period for 2002. These financing fees are principally associated with the credit facility and term loan with PNC and the senior subordinated notes, and are amortized to expense over the term of the loan agreements. This increase was primarily due to a one time writeoff of fees associated with other short term financing.

Preferred Stock Dividends

Preferred Stock dividends increased \$15,000 during the quarter ended March 31, 2003 as compared to the corresponding period of 2002. This increase was due to the accrual of preferred dividends on the preferred stock of our subsidiary, M&EC ("Series B Preferred"). The Series B Preferred was issued in conjunction with the acquisition of M&EC in June 2001, and began accumulating dividends in June 2002 at an annual interest rate of 5%.

Liquidity and Capital Resources of the Company

Our capital requirements consist of general working capital needs, scheduled principal payments on our debt obligations and capital leases, remediation projects and planned capital expenditures. Our capital resources consist primarily of cash generated from operations and funds available under our revolving credit facility. Our capital resources are impacted by changes in accounts receivable as a result of revenue fluctuation, economic trends, and collection activities.

At March 31, 2003, the Company had cash of \$93,000. This cash total reflects a decrease of \$119,000 from December 31, 2002, as a result of net cash provided by operations of \$937,000 offset by cash used in investing activities of \$897,000 (principally net purchases of equipment, totaling \$896,000 and cash used by financing activities of \$159,000 (principally repayments of long-term debt partially offset by proceeds from the issuance of common stock). The Company is in a net borrowing position and therefore attempts to move all excess cash balances immediately to the revolving credit facility, so as to reduce debt and

interest expense. During 2002 the Company implemented a centralized cash management system which included new remittance lock boxes and resulted in accelerated collection activities and reduced cash balances, as idle cash is moved without delay to the revolving credit facility.

Operating Activities

Accounts receivable, net of allowances for doubtful accounts, totaled \$22,145,000, an increase of \$325,000 from the December 31, 2002 balance of \$21,820,000. This increase reflects the impact of increased revenues within the Industrial Waste Management Services segment, which resulted in an increase of \$1,185,000. Offsetting this was a decrease in accounts receivable for the Nuclear Waste Management Services segment of \$826,000 and the Consulting Engineering Services segment of \$34,000. These decreases were a result of increased collections from certain customers which occurred toward the end of the quarter.

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As of March 31, 2003, total consolidated accounts payable was \$9,899,000, an increase of \$140,000 from the December 31, 2002, balance of \$9,759,000. This increase in accounts payable is reflective of the impact on liquidity which occurs during the first quarter of each year, our seasonally slowest period.

The working capital position at March 31, 2003, was \$752,000, as compared to a working capital position of \$731,000 at December 31, 2002, which reflects an increase of \$21,000 during the first quarter of 2003. This working capital increase principally reflects the increased accounts receivable balance at the end of the quarter, partially offset by the increased accounts payable balance. Such an improvement in working capital during our seasonally slow first quarter is favorable.

Investing Activities

Our purchases of capital equipment for the three-month period ended March 31, 2003, totaled approximately \$1,204,000, including financed purchases of \$308,000. These expenditures were for expansion and improvements to the operations principally within the waste management segments. These capital expenditures were funded by the cash provided by operations and from proceeds from the issuance of stock. We have budgeted capital expenditures of up to approximately \$6,500,000 for 2003, which included an estimated \$1,393,000 for completion of certain 2002 projects in process, as well as other identified capital purchases for the expansion and improvement to the operations and for certain compliance related enhancements. Our purchases during 2003 include approximately \$746,000 to complete certain of the 2002 projects in process. We anticipate funding capital expenditures by a combination of lease financing, internally generated funds, and/or the proceeds received from Option and Warrant exercises.

Financing Activities

On December 22, 2000, the company entered into a Revolving Credit, Term Loan and Security Agreement ("Agreement") with PNC Bank, National Association, a national banking association ("PNC") acting as agent ("Agent") for lenders, and as issuing bank. The Agreement provides for a term loan ("Term Loan") in the amount of \$7,000,000, which requires principal repayments based upon a seven-year amortization, payable over five years, with monthly installments of \$83,000 and the remaining unpaid principal balance due on December 22, 2005. Payments commenced on February 1, 2001. The Agreement also provided for a revolving line of credit ("Revolving Credit") with a maximum principal amount outstanding at any one time of \$15,000,000. The Revolving Credit advances are subject to limitations of an amount up to the sum of a) up to 85% of Commercial Receivables aged 90 days or less from invoice date, b) up to 85% of Commercial Broker Receivables aged up to 120 days from invoice date, c) up to 85% of acceptable Government Agency Receivables aged up to 150 days from invoice date, and d) up to 50% of acceptable unbilled amounts aged up to 60 days, less e) reserves Agent reasonably deems proper and necessary. The Revolving Credit advances shall be due and payable in full on December 22, 2005. As of March 31, 2003, our excess availability under our revolving credit facility was \$3,033,000 based on our eligible receivables.

Pursuant to the Agreement the Term Loan bears interest at a floating rate equal to the prime rate plus 1 1/2%, and the Revolving Credit at a floating rate equal to the prime rate plus 1%. The loans are subject to a prepayment fee of 1 1/2% in the first year, 1% in the second and third years and 3/4% after the third anniversary until termination date.

In December 2000, the Company entered into an interest rate swap agreement related to its Term Loan. This hedge, has effectively fixed the interest rate on the notional amount of \$3,500,000 of the floating rate \$7,000,000 PNC Term Loan. The Company will pay the counterparty interest at a fixed rate equal to the base rate of 6.25\$, for a period from December 22, 2000, through December 22, 2005, in exchange for the counterparty paying the Company one month LIBOR rate for the same term (1.31\$ at March 31, 2003). At March 31, 2003, the market value of the interest rate swap was in an unfavorable value position of \$201,000 and was recorded as a liability. During the three months ended March 31, 2003, the Company recorded a gain on the interest rate swap of \$14,000 which offset other comprehensive loss on the Statement of Stockholders' Equity.

Effective as of June 2002, the Company and PNC entered into Amendment No. 1 to the Agreement, which, among other things, increased the letter of credit commitment from \$500,000 to \$4,500,000 and provided for

a \$4.0 million standby letter of credit. The standby Letter of Credit was issued to secure certain surety bond obligations. Pursuant to the terms of Amendment No. 1, as partial collateral for the issuance of the standby letter of credit, PNC will charge a reserve of approximately \$66,000 each month against the availability under the Revolving Credit beginning July 15, 2002, until such time as the standby letter of credit is fully reserved. As of March 31, 2003, \$600,000 has been charged against availability. As a condition precedent to this Amendment No. 1, the Company paid a \$50,000 amendment fee to PNC.

Pursuant to the terms of the Stock Purchase Agreements in connection with the acquisition of Perma-Fix of Orlando, Inc. ("PFO"), Perma-Fix of South Georgia, Inc. ("PFSG") and Perma-Fix of Michigan, Inc. ("PFMI"), a portion of the consideration was paid in the form of the Promissory Notes, in the aggregate amount of \$4,700,000 payable to the former owners of PFO, PFSG and PFMI. The Promissory Notes are paid in equal monthly installments of principal and interest of approximately \$90,000 over five years and having an interest rate of 5.5% for the first three years and 7% for the remaining two years. The aggregate outstanding balance of the Promissory Notes total \$1,293,000 at March 31, 2003, of which \$1,013,000 is in the current portion. Payments of such Promissory Notes are guaranteed by PFMI under a non-recourse guaranty, which non-recourse guaranty is secured by certain real estate owned by PFMI. These Promissory Notes are subject to subordination agreements with the Company's senior and subordinated lenders.

On August 31, 2000, as part of the consideration for the purchase of Diversified Scientific Services, Inc. ("DSSI"), the Company issued to Waste Management Holdings a long-term unsecured promissory note (the "Unsecured Promissory Note") in the aggregate principal amount of \$3,500,000, bearing interest at a rate of 7% per annum and having a five-year term with interest to be paid annually and principal due in one lump sum at the end of the term of the Unsecured Promissory Note (August 2005).

On July 31, 2001, the Company issued approximately \$5.6 million of its 13.50% Senior Subordinated Notes due July 31, 2006 (the "Notes"). The Notes were issued pursuant to the terms of a Note and Warrant Purchase Agreement, dated July 31, 2001 (the "Purchase Agreement"), between the Company, Associated Mezzanine Investors - PESI, L.P. ("AMI"), and Bridge East Capital, L.P. ("BEC"). The Notes are unsecured and are unconditionally guaranteed by the subsidiaries of the Company. The Company's payment obligations under the Notes are subordinate to the Company's payment obligations to its primary lender and to certain other debts of the Company up to an aggregate amount of \$25 million. The net proceeds from the sale of the Notes were used to repay the Company's previous short-term loan.

Under the terms of the Purchase Agreement, the Company also issued to AMI and BEC Warrants to purchase up to 1,281,731 shares of the Company's Common Stock ("Warrant Shares") at an initial exercise price of \$1.50 per share (the "Warrants"), subject to adjustment under certain conditions which were valued at \$1,622,000 and recorded as a debt discount and are being amortized over the term of the Notes. The Warrants, as issued, also contain a cashless exercise provision. The Warrant Shares are registered under an S-3 Registration Statement that was declared effective on November 27, 2002.

In connection with the sale of the Notes, the Company, AMI, and BEC entered into an Option Agreement, dated July 31, 2001 (the "Option Agreement"). Pursuant to the Option Agreement, the Company granted each purchaser an irrevocable option requiring the Company to purchase any of the Warrants or Warrant Shares then held by the purchaser (the "Put Option"). The Put Option may be exercised at any time commencing July 31, 2004, and ending July 31, 2008. In addition, each purchaser granted to the Company an irrevocable option to purchase all the Warrants or the Warrant Shares then held by the purchaser (the "Call Option"). The Call Option may be exercised at any time commencing July 31, 2005, and ending July 31, 2008. The purchase price under the Put Option and the Call Option is based on the quotient obtained by dividing (a) the sum of six times the Company's consolidated EBITDA for the period of the 12 most recent consecutive months minus Net Debt plus the Warrant Proceeds by (b) the Company's Diluted Shares (as the terms EBITDA, Net Debt, Warrant Proceeds, and Diluted Shares are defined in the Option Agreement). Pursuant to the guidance under EITF 00-19 on accounting for and financial presentation of securities that could potentially be settled in a Company's own stock, the put warrants would be classified outside of equity based on the ability of the holder to require cash settlement. Also, EITF Topic D-98 discusses the accounting for a security that will become redeemable at a future determinable date and its redemption is variable. This is

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the case with the Warrants as the date is fixed, but the put or call price varies. The EITF gives two possible methodologies for valuing the securities. The Company accounts for the changes in redemption value as they occur and the Company adjusts the carrying value of the security to equal the redemption value at the end of each reporting period. On March 31, 2003, the Put Option had no value and no liability was recorded.

East Tennessee Materials and Energy Corporation ("M&EC") issued a promissory note for a principal amount of \$3.7 million to PDC, dated June 7, 2001, for monies advanced to M&EC for certain services performed by PDC. The promissory note is payable over eight years on a semiannual basis on June 30 and December 31. Interest is accrued at the applicable rate (8.00% on March 31, 2003) and payable in one lump sum at the end of the loan period. On March 31, 2003, the outstanding balance is \$4,210,000 including accrued interest of approximately \$616,000. PDC has directed M&EC to make all payments under the promissory note directly to the IRS to be applied to PDC's obligations under its installment agreement with the IRS.

In conjunction with the Company's acquisition of M&EC, M&EC entered into an $(M_{\rm A})$

installment agreement with the Internal Revenue Service ("IRS") for a principal amount of \$923,000 dated June 7, 2001, for certain withholding taxes owed by M&EC. The installment agreement is payable over eight years on a semiannual basis on June 30 and December 31. Interest is accrued at the applicable law rate ("Applicable Rate") pursuant to the provisions of section 6621 of the Internal Revenue Code of 1986 as amended. Such rate is adjusted on a quarterly basis and payable in lump sum at the end of the installment period. On March 31, 2003, the rate was 8%. On March 31, 2003, the outstanding balance is \$1,041,000 including accrued interest of approximately \$148,000.

The following table summarizes the Company's contractual obligations at March 31, 2003, and the effect such obligations are expected to have on its liquidity and cash flow in future periods, (in thousands):

<TABLE>

Pavments	-1	1	
Pavillents	aue	DV	perioa

Contractual Obligations	Total	2003	2004-2006	2007-2008	After 2008
<\$>	<c></c>	<c></c>	<c></c>	<c></c>	<c></c>
Long-term debt	\$ 30,155	\$ 2,709	\$ 25,542	\$ 1,904	\$
Operating leases	5,455	1,458	3,502	490	5
Total contractual obligations	\$ 35,610	\$ 4,167	\$ 29,044	\$ 2,394	\$ 5
	=======	======	=======	======	=====

</TABLE>

The accrued dividends on the outstanding Preferred Stock for the period July 1, 2002, through December 31, 2002, in the amount of approximately \$63,000 were paid in January 2003 in the form of 25,165 shares of Common Stock of the Company. The dividends for the period January 1, 2003, through March 31, 2003, total \$31,000, which will be paid in July 2003, in the form of Common Stock, or if approved by the lender, at the Company's option, in the form of cash. Under the Company's loan agreements, the Company is prohibited from paying cash dividends on its outstanding capital stock.

In summary, we have continued to take steps to improve our operations and liquidity as discussed above. However, we continue to invest our working capital back into our facilities to fund capital additions for expansion within both the nuclear and industrial segments. Also, as discussed, the first quarter is our seasonally slowest period, and when combined with the continued downturn in the economy and the impact of the war in the first quarter, our liquidity was negatively impacted. However, given the above, we were still able to improve our working capital position during the quarter. If we are unable to continue to improve our operations, successfully finalize the surcharges on the Oak Ridge Contracts and to become profitable in the foreseeable future, such would have a material adverse effect on our liquidity position.

Known Trends and Uncertainties

Seasonality. Historically the Company has experienced reduced revenues, operating losses or decreased operating profits during the first and fourth quarters of the Company's fiscal years due to a seasonal slowdown in operations from poor weather conditions and overall reduced activities during the holiday season. During the Company's second and third fiscal quarters there has historically been an increase in revenues and operating profits. Management expects this trend to continue in future years as this was evident in the first quarter of 2003.

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Economic conditions. Economic downturns or recessionary conditions can adversely affect the demand for the Company's services, principally within the Industrial Waste Management Services segment. Reductions in industrial production generally follow such economic conditions, resulting in reduced levels of waste being generated and/or sent off for treatment. The Company believes that its revenues and profits were negatively affected within this segment by the recessionary conditions in 2002, and that this trend has continued into 2003.

Significant contracts. The Company's revenues are principally derived from numerous varied customers. M&EC operates under three broad spectrum contracts ("Oak Ridge Contracts") which accounted for 24.7% of total consolidated revenues during the three months ended March 31, 2003. As the newly constructed M&EC facility continues to enhance its processing capabilities, completes certain expansion projects and with the amended pricing structure under the Oak Ridge Contracts, the Company could see significantly higher total revenue under the Oak Ridge Contracts. In February 2003, M&EC commenced legal proceedings against the general contractor under the Oak Ridge Contracts, seeking payment from Bechtel Jacobs of approximately \$4.3 million in surcharges relating to certain wastes that were treated by M&EC in 2001 and 2002 under the Oak Ridge Contracts. Bechtel Jacobs continues to deliver waste to M&EC for treatment, and M&EC continues to accept such waste. There is no quarantee of future business under the Oak Ridge Contracts, and the Oak Ridge Contracts may be terminated by either party at any time. Termination of these contracts could have a material adverse effect on the Company. The Company is working towards increasing other sources of revenues at M&EC to reduce the risk of reliance on one major source of revenues.

Our subsidiary, PFD, has entered into a subcontract to perform treatability studies to determine if its process can successfully and safely treat a neutralized VX gas by-product called hydrolysate generated and/or handled by the U.S. Army, and performs public outreach activities in the Dayton, Ohio area and the transportation route to PFD's Dayton, Ohio facility. The subcontract also provides, if the treatability studies are successful, for PFD to treat all or a certain portion of the hydrolysate by-product, at the option of the general

contractor, subject to PFD receiving authorization from the general contractor to treat the waste. Under the terms of the subcontract, PFD is to receive approximately \$1.8 million for the treatability studies; approximately \$1.3 million for the public outreach activities, of which \$260,000 is to be deposited in an escrow account for the exclusive use in Dayton, Ohio for public outreach activities, and approximately \$10.1 million to transport and treat 30% of the hydrolysate by-product. Under the subcontract, if the treatability studies are successful, the general contractor has the option to select whether PFD will treat either 30%, 70% or 100% of the hydrolysate by-products. It is anticipated that if the general contractor determines that PFD should treat 100% of the hydrolysate by-product, the total payments to be received by PFD for transportation and treatment will be approximately \$15 million. This subcontract may be terminated by the general contractor if the prime contract is terminated or at any other time upon 10 days notice.

During April, 2003, certain groups filed a complaint against the EPA and U.S. Army alleging that the EPA and U.S. Army are violating a certain executive order shipping the hydrolysate by-product to PFD for processing and treating. The complainants allege that the shipment of the hydrolysate to PFD for treatment by PFD at its facility in Dayton, Ohio would be a violation of the executive order since it would have a disparate impact on the minority and low income groups who live in the vicinity of PFD's facility and that EPA is violating the executive order by failing to require PFD to have a Title V air permit. Based on studies performed by the Company, the Company does not believe that PFD is required to have a Title V air permit. These studies have been supplied to the Ohio EPA, and PFD is expecting the Ohio EPA's response to its studies in the near future. If it is determined that a Title V air permit is required at PFD, it will apply for the permit. Neither the Company nor PFD is a party to the complaint. An adverse decision as to this complaint could result in this subcontract being terminated.

A letter dated May 13, 2003, from the same counsel who filed the complaint discussed above, representing some of the same parties on whose behalf the complaint was filed, addressed to PFD, the U.S. EPA and the Ohio EPA, advised that they intend to file a citizen suit against PFD for alleged violations of the Clean Air Act and the Ohio Administration Code for allegedly not having a certain air permit, emitting odors which endanger the health, safety and welfare of the public living near the facility and failing to submit a control equipment plan. The letter advises that under the Clean Air Act, suit will be filed against PFD if within 60

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days PFD fails to remedy the allegations in the letter. Since PFD just received the letter, it is investigating these claims. As stated above, although the Company does not believe PFD is required to have a Title V air permit, it is currently performing studies to determine if a Title V air permit is required. If a lawsuit is filed against PFD, PFD intends to vigorously defend itself.

Insurance. The Company maintains insurance coverage similar to, or greater than, the coverage maintained by other companies of the same size and industry, which complies with the requirements under applicable environmental laws. The Company evaluates its insurance policies annually to determine adequacy, cost effectiveness and desired deductible levels. Due to downturns in the economy and changes within the environmental insurance market, the Company has no guarantee that it will be able to obtain similar insurance in future years, or that the cost of such insurance will not increase materially.

Potential Acquisition

The Company is in the process of negotiating to acquire from a trustee another mixed waste permitted facility which is currently in bankruptcy. As of the date of this report, no agreements have been entered into with the seller, and the Company does not know if it will be successful in acquiring this mixed waste facility. If the Company is successful, it is anticipated that the purchase price to be paid by the Company will be approximately \$6,000,000, payable in notes or a combination of notes and cash, with the notes secured by certain assets of the acquired facility.

Environmental Contingencies

The Company is engaged in the waste management services segment of the pollution control industry. As a participant in the on-site treatment, storage and disposal market and the off-site treatment and services market, the Company is subject to rigorous federal, state and local regulations. These regulations mandate strict compliance and therefore are a cost and concern to the Company. Because of their integral role in providing quality environmental services, the Company makes every reasonable attempt to maintain complete compliance with these regulations. However, even with a diligent commitment, the Company, as with many of its competitors, may be required to pay fines for violations or investigate and potentially remediate its waste management facilities.

We routinely use third party disposal companies, who ultimately destroy or secure landfill residual materials generated at our facilities or at a client's site. We, compared to certain of our competitors, dispose of significantly less hazardous or industrial by-products from our operations due to rendering material nonhazardous, discharging treated wastewaters to publicly-owned treatment works and/or processing wastes into saleable products. In the past, numerous third party disposal sites have improperly managed wastes that subsequently required remedial action; consequently, any party utilizing these sites may be liable for some or all of the remedial costs. Despite our aggressive compliance and auditing procedures for disposal of wastes, we could, in the future, be notified that we are a PRP at a remedial action site, which could have a material adverse effect on the Company.

We have budgeted for 2003 approximately \$982,000 in environmental expenditures to comply with federal, state and local regulations in connection with

remediation of certain contaminates at four locations. The four locations where these expenditures will be made are the Leased Property in Dayton, Ohio (EPS), a former RCRA storage facility as operated by the former owners of PFD, PFM's facility in Memphis, Tennessee, PFSG's facility in Valdosta, Georgia and PFMI's facility in Detroit, Michigan. We have estimated the expenditures for 2003 to be approximately \$211,000 at the EPS site, \$338,000 at the PFM location, \$126,000 at the PFSG site and \$307,000 at the PFMI site of which \$10,000; \$16,000; \$37,000; and \$133,000, respectively, were spent during the first quarter of 2003. Additional funds will be required for the next one to seven years to properly remediate these sites. We expect to fund the 2003 expenses to remediate these four sites from funds generated internally and/or our revolving credit facility.

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At March 31, 2003, the Company had accrued environmental liabilities totaling \$2,500,000, which reflects a decrease of \$196,000 from the December 31, 2002, balance of \$2,696,000. The decrease represents payments on remediation projects. The March 31, 2003, current and long-term accrued environmental balance is recorded as follows:

<TABLE>

-0112 1 2 0111					
	PFD	PFM	PFSG	PFMI	Total
<s></s>	<c></c>	<c></c>	<c></c>	<c></c>	<c></c>
Current accrual	\$ 201,000	\$ 322,000	\$ 89,000	\$ 174,000	\$ 786,000
Long-term accrual		580,000	1,134,000		1,714,000
Total	\$ 201,000	\$ 902,000	\$ 1,223,000	\$ 174,000	\$ 2,500,000
	=======	=======	=========	=======	========

</TABLE>

Interest Rate Swap

The Company entered into an interest rate swap agreement effective December 22, 2000, to modify the interest characteristics of its outstanding debt from a floating basis to a fixed rate, thus reducing the impact of interest rate changes on future income. This agreement involves the receipt of floating rate amounts in exchange for fixed rate interest payments over the life of the agreement without an exchange of the underlying principal amount. The differential to be paid or received is accrued as interest rates change and recognized as an adjustment to interest expense related to the debt. The related amount payable to or receivable from counter parties is included in other assets or liabilities. At March 31, 2003, the market value of the interest rate swap was in an unfavorable value position of \$201,000 and was recorded as a liability. During the three months ended March 31, 2003, the Company recorded a gain on the interest rate swap of \$14,000 which offset other comprehensive loss in the stockholders' equity section of the balance sheet (see Note 4 to Notes to Consolidated Financial Statements).

Recently Adopted Accounting Policies

In June 2001, the Financial Accounting Standards Board (FASB) issued Statement of Financial Accounting Standard (SFAS) No. 143, Accounting for Asset Retirement Obligations, which addresses financial accounting and reporting for obligations associated with the retirement of tangible long-lived assets and the associated asset retirement costs. The standard applies to legal obligations associated with the retirement of long-lived assets that result from the acquisition, construction, development and normal use of the asset.

SFAS 143 requires that the fair value of a liability for an asset retirement obligation be recognized in the period in which it is incurred if a reasonable estimate of fair value can be made, and that the associated asset retirement costs be capitalized as part of the carrying amount of the long-lived asset. In conjunction with the state mandated permit and licensing requirements, the Company is obligated to determine its best estimate of the cost to close, at some undetermined future date, its permitted and/or licensed facilities. The Company recorded this liability at the date of acquisition, with its offsetting entry being to goodwill and/or permits and has subsequently increased this liability as a result of changes to the facility and/or for inflation. The Company's current accrued closure costs reflect the current fair value of the cost of asset retirement. The Company adopted SFAS 143 as of January 1, 2003, and pursuant to the adoption the Company reclassified from goodwill and permits approximately \$4,559,000, which represents the fair value of the Company's closing cost as recorded to goodwill or permits at the time each facility was acquired, into an asset retirement obligations account. The asset retirement obligation account is recorded as property and equipment (buildings). The Company will depreciate the asset retirement obligation on a straight line basis over a period of 50 years. The new standard did not have a material impact on net income in the first quarter of 2003, nor would it have had a material impact in the first quarter of 2002 assuming an adoption of this accounting standard on a pro forma basis.

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PART I, ITEM 3

The Company is exposed to certain market risks arising from adverse changes in interest rates, primarily due to the potential effect of such changes on the Company's variable rate loan arrangements with PNC, as described under Note 4 to

Notes to Consolidated Financial Statements. As discussed therein, the Company entered into an interest rate swap agreement to modify the interest characteristics of \$3.5 million of its \$7.0 million term loan with PNC Bank, from a floating rate basis to a fixed rate, thus reducing the impact of interest rate changes on this portion of the debt.

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PERMA-FIX ENVIRONMENTAL SERVICES, INC. CONTROLS AND PROCEDURES

PART 1, ITEM 4

The Company maintains disclosure controls and procedures that are designed to ensure that information required to be disclosed in the periodic reports filed by the Company with the Securities and Exchange Commission (the "SEC") is recorded, processed, summarized and reported within the time periods specified in the rules and forms of the SEC and that such information is accumulated and communicated to the Company's management. Based on their most recent evaluation, which was completed within 90 days of the filing of this Quarterly Report on Form 10-Q, the Company's Chief Executive Officer and Chief Financial Officer believe that the Company's disclosure controls and procedures (as defined in Rules 13a-14 and 15d-14 of the Securities Exchange Act of 1934, as amended) are effective. There were no significant changes in the Company's internal controls or in other factors that could significantly affect these internal controls subsequent to the date of the most recent evaluation.

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PERMA-FIX ENVIRONMENTAL SERVICES, INC.

PART II - Other Information

Item 1. Legal Proceedings

There are no additional material legal proceedings pending against the Company and/or its subsidiaries not previously reported by the Company in Item 3 of its Form 10-K for the year ended December 31, 2002, which Item 3 is incorporated herein by reference, except as follows:

Bryson Adams, et al. v. Environmental Purification Advancement Corporation, et al.; Civil Action No. 99-1998, United States District Court, Western District of Louisiana

In April, 2003, the plaintiffs, hundreds of individuals residing in or around Bayou Sorrel, Louisiana, filed their Fifth Supplemental and Amending Complaint naming, inter alia, Perma-Fix of Michigan, Inc. ("PFMI") and Perma-Fix of South Georgia ("PFSG") as defendants, both of which are subsidiaries of the Company and acquired by the Company in 1999. The lawsuit, which has been pending since 1999, includes as defendants hundreds of entities (and their insurers) which allegedly disposed of hazardous and toxic substances at a hazardous waste disposal site and hazardous waste injection well in Bayou Sorrel, Louisiana, both of which were permitted by the appropriate governmental authorities to treat and dispose of hazardous and toxic waste. The plaintiffs allege that the defendant entities, other than the insurers, including PFMI and PFSG, were negligent in their selection of the sites for the treatment and/or disposal of hazardous and toxic substances, that the plaintiffs have suffered physical injuries, property damage and diminished property values as a result of the escape or migration of contaminants from the sites, and that the defendants are liable for the damages allegedly suffered by the plaintiffs. The plaintiffs seek unspecified amounts of compensatory and exemplary damages, interest, costs and attorney's fees.

The Company is investigating the alleged claim in this lawsuit. PFMI and PFSG will defend themselves vigorously in connection with this matter. However, at this point, we are unable to determine with any degree of certainty what exposure, if any, PFMI and/or PFSG may have in this regard. The Company is also in the process of determining whether this lawsuit is covered by its insurers and/or the insurers of PFMI and PFSG prior to their acquisition by the Company.

Notice of Potential Litigation

A letter dated May 13, 2003, from the same counsel who filed the complaint against the U.S. EPA and the U.S. Army discussed in "Known Trends and Uncertainties - Significant contracts" of the Management Discussion and Analysis contained in this report, representing some of the same parties on whose behalf the complaint was filed, addressed to PFD, the U.S. EPA and the Ohio EPA, advised that they intend to file a citizen suit against PFD for alleged violations of the Clean Air Act and the Ohio Administration Code for allegedly not having a certain air permit, emitting odors which endanger the health, safety and welfare of the public living near the facility and failing to submit a control equipment plan. The letter advises that under the Clean Air Act, suit will be filed against PFD if within 60 days PFD fails to remedy the allegations in the letter. Since PFD just received the letter, it is investigating these claims. Based on studies performed by the Company, the Company does not believe PFD is required to have a Title V air permit. These studies have been supplied to the Ohio EPA, and PFD is expecting the Ohio EPA's response to its studies in the near future. If a lawsuit is filed against PFD, PFD intends to vigorously defend itself.

Item 5. Other Information

See discussion in " Known Trends and Uncertainties" of the Management's Discussion and Analysis contained in this report for a discussion as to a recently entered into subcontract by our subsidiary, PFD, regarding studies and treatment of certain product generated and/or handled by the U.S. Army.

Item 6. Exhibits and Reports on Form 8-K

- (a) Exhibits
- 10.1 Subcontract between PFD and Parsons Infrastructure and Technology Group, Inc.
- 99.1 Certification by Dr. Louis F. Centofanti, Chief Executive Officer of the Company pursuant to 18 U.S.C. Section 1350. A signed original of this written statement has been provided to Perma-Fix Environmental Services, Inc., will be retained by Perma-Fix Environmental Services, Inc. and furnished to the Securities & Exchange Commission or its staff upon request.
- 99.2 Certification by Richard T. Kelecy, Chief Financial Officer of the Company pursuant to A signed original of this written statement has been provided to Perma-Fix Environmental Services, Inc., will be retained by Perma-Fix Environmental Services, Inc. and furnished to the Securities & Exchange Commission or its staff upon request.
- (b) Reports on Form 8-K

A current report on Form 8-K (Item 5 - Other Events and Regulation FD Disclosures) was filed by the Company on February 24, 2003, disclosing the legal proceedings the Company commenced against Bechtel Jacobs Company, LLC.

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SIGNATURES

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

PERMA-FIX ENVIRONMENTAL SERVICES, INC.

Date: May 14, 2003

By: /s/ Dr. Louis F. Centofanti

Dr. Louis F. Centofanti
Chairman of the Board
Chief Executive Officer

Richard T. Kelecy Chief Financial Officer

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CERTIFICATIONS

I, Dr. Louis F. Centofanti, certify that:

- I have reviewed this quarterly report on Form 10-Q of Perma-Fix Environmental Services, Inc.;
- 2. Based on my knowledge, this quarterly 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 quarterly report;
- 3. Based on my knowledge, the financial statements, and other financial information included in this quarterly 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 quarterly 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-14 and 15d-14) for the registrant and we have:
 - a) designed such disclosure controls and procedures 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 quarterly report is being prepared;
 - evaluated the effectiveness of the registrant's disclosure controls and procedures as of a date within 90 days prior to the filing date of this quarterly report (the "Evaluation Date"); and
 - c) presented in this quarterly report our conclusions about the

effectiveness of the disclosure controls and procedures based on our evaluation as of the Evaluation Date;

- 5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent function):
 - a) all significant deficiencies in the design or operation of internal controls which could adversely affect the registrant's ability to record, process, summarize and report financial data and have identified for the registrant's auditors any material weaknesses in internal controls; and
 - any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal controls; and
- 6. The registrant's other certifying officer and I have indicated in this quarterly report whether or not there were significant changes in internal controls or in other factors that could significantly affect internal controls subsequent to the date of our most recent evaluation, including any corrective actions with regard to significant deficiencies and material weaknesses.

Date: May 14, 2003

/s/ Dr. Louis F. Centofanti

Dr. Louis F. Centofanti Chairman of the Board Chief Executive Officer

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CERTIFICATIONS

- I, Richard T. Kelecy, certify that:
 - I have reviewed this quarterly report on Form 10-Q of Perma-Fix Environmental Services, Inc.;
 - 2. Based on my knowledge, this quarterly 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 quarterly report;
 - 3. Based on my knowledge, the financial statements, and other financial information included in this quarterly 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 quarterly 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-14 and 15d-14) for the registrant and we have:
 - a) designed such disclosure controls and procedures 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 quarterly report is being prepared;
 - b) evaluated the effectiveness of the registrant's disclosure controls and procedures as of a date within 90 days prior to the filing date of this quarterly report (the "Evaluation Date"); and
 - presented in this quarterly report our conclusions about the effectiveness of the disclosure controls and procedures based on our evaluation as of the Evaluation Date;
 - 5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent function):
 - a) all significant deficiencies in the design or operation of internal controls which could adversely affect the registrant's ability to record, process, summarize and report financial data and have identified for the registrant's auditors any material weaknesses in internal controls; and
 - any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal controls; and
 - 6. The registrant's other certifying officer and I have indicated in this quarterly report whether or not there were significant changes in internal controls or in other factors that could significantly affect internal controls subsequent to the date of our most recent evaluation, including any corrective actions with regard to significant deficiencies and material weaknesses.

Date: May 14, 2003

/s/ Richard T. Kelecy

Richard T. Kelecy Chief Financial Officer

POG #24058

May 1, 2003

Perma-Fix of Dayton, Inc. 300 S. West End Avenue Dayton, Oh 45427

Attention: Mr. Larry McNamara

Subject: Newport Chemical Agent Disposal Facility (NECDF)

Subcontract #742168-40069

Treatability Studies and Transport, Storage, Disposal

Facility (TSDF) Subcontract Documents

Dear Mr. McNamara;

Transmitted herewith is a copy of the fully executed bilateral Subcontract Document for your records. Please initial and date the completion date correction, on the Subcontract Face Sheet upper right corner and complete the information as requested in the box located directly above the Parsons signature block regarding, Individual, Partnership, Incorporated in the State of ?.

Please return a copy of the Subcontract Face Sheet with the above information as corrected/provided.

Please call me at (765) 245-5984 should you have questions concerning the above.

PARSONS

/s/ Mel Mitchell

Mel Mitchell

Sr. Subcontract Administrator

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SUBCONTRACT NUMBER 742168-40069

TREATABILITY STUDIES, PUBLIC OUTREACH, TRANSPORT, STORAGE, TREATMENT AND DISPOSAL FACILITY (TSDF) THIRTY PERCENT (30%) PARTICIPATION (NECDF)

TAB

Subcontract: - Executed Subcontract Face Sheet

a. Section 0 - Statement of Work
b. Section 0 - Statement of Work Attachment 0.1 Material Safety Data Sheet MSDS.

c. Section 0 $\,$ - Statement of Work Attachment 0.2 Supplemental Property Data d. Section 0 $\,$ - Statement of Work Attachment 0.3 Hydrolysate Pretreatment Studies and Experience.

e. Section 0 - Statement of Work Attachment #1 Measurement of Success for

Treatability Studies

f. Section 0 - Attachment #2 Protocol For Treatability Studies

g. Section I - Deliverable Items List h. Section III - Supplier Data Requirements

i. Section IV - Compensation and Payment

j. Section IV - Compensation and Payment Attachment #1 Cost Details for Public Outreach

k. Section IV - Compensation and Payment Attachment #2 Final Release Certification

1. Section V - Special Provisions

- Special Provisions Attachment #1 Parent Company Guarantee m. Section V

n. Section V - Special Provisions Attachment #2 Documents Incorporated by Reference and Termination Clause for Treatability Studies

o. Section V - Special Provisions Attachment #3 Cell Phone Use on NECDF Depot

p. Section V - Special Provisions Attachment #4 Patents and Intellectual Property Ownership Identification

- Special Provisions Exhibit I to Section V, Rev 0

q. Section ${\tt V}$ - Special Provisions Exhibit 1 to Section V, Rev 0 Attachment #1 r. Section V

Additional FAR Clause

s. Section V - Special Provisions Exhibit 2 to Section V, Rev 0 RFI/RFD

Request Form

t. Section VI - General Provisions Standard Subcontract

<TABLE> <S>

Parsons Infrastructure & Technology Group Inc. SUBCONTRACT

<C> _____ PLEASE INCLUDE THE SUBCONTRACT NUMBER ON ALL CORRESPONDENCE

SUBCONTRACT NO. 742168 40069

SUBCONTRACTOR NAME AND ADDRESS REQUISITION NO. : 40069 PERMA-FIX OF DAYTON, INC. AMENDMENT DATE : 01-28-03 300 S. WEST END AVENUE EFFECTIVE DATE : 12-21-02 COMPLETION DATE : 07-01-04 DAYTON, OH 45427 TYPE OF S/C : Fixed Price/Fixed Unit Price PRIME CONTRACT NO. : DAAA09-99-C-0016 ATTN: Tom Trebonik PHONE: 937-268-6501 FAX NO: 937-268-9059 PRIORITY RATING SUBCONTRACTOR CODE: W6359 PREVIOUS TOTAL AMOUNT: 0.00 CLIENT SUBCONTRACTOR CODE: INCREASE / DECREASE: 0.00 \$10,106,335.00 SMALL NON-DISADVANTAGED BUSINESS NEW TOTAL AMOUNT: ORDER NOT TO EXCEED: \$10,106,335.00 JOBSTTE . ALL AMOUNTS IN: U.S. Dollars CONFIRMING NOTICE TO PROCEED DATED 12-21-02 PAY TERMS: SEE NOTES TO Perma-Fix or Dayton, Inc. THIS SUBCONTRACT IS ENTERED INTO BY AND BETWEEN PARSONS INFRASTRUCTURE & TECHNOLOGY GROUP INC. (HEREINAFTER CALLED THE "CONTRACTOR"), A CORPORATION ORGANIZED AND EXISTING UNDER THE LAWS OF THE STATE OF NEVADA AND THE INDIVIDUAL, PARTNERSHIP, OR CORPORATION (HEREINAFTER CALLED THE "SUBCONTRACTOR"). THE PARTIES HEREBY AGREE AS FOLLOWS: THE SUBCONTRACTOR SHALL FURNISH ALL LABOR, EQUIPMENT AND MATERIAL AND PERFORM ALL SERVICES SET FORTH IN THE STATEMENT OF WORK AND ALL OTHER SECTIONS DESIGNATED IN THE TABLE OF CONTENTS BELOW. TABLE OF CONTENTS THIS SUBCONTRACT CONTAINS THE FOLLOWING SECTIONS SECTION SECTION DESCRIPTION OF SECTION DESCRIPTION OF SECTION NO. REV. Statement of Work Ω Ω VT 0 General Provisions Т 0 Deliverable Items List III 0 Subcontractor Data Requirements IV Compensation and Payment Special Provisions REFER ALL OUESTIONS AND CORRESPONDENCE TO: INVOICING INSTRUCTIONS: MAIL INVOICES TO : (IN OUADRUPLICATE) PARSONS INFRASTRUCTURE & TECHNOLOGY GROUP PROJECT NO. 742168 LOCATION Newport, IN Highway 63 South ATTENTION OF: Melvyn Mitchell Post Office Box 519 Newport, IN 47966 SUBCONTRACT ADMINISTRATOR TELEPHONE: (765) 245-5984 FAX: (765) 245-5833 ATTN: Melvyn Mitchell, Subcontracts Depart CHECK APPROPRIATE BOX: NOTE: IF, SUBCONTRATOR IS A CORPORAION, THE FOLLOWING CERTIFICATION MUST BE COMPLETED IN FULL. [] INDIVIDUAL _____, CERTIFY THAT I AM SECRETARY OF THE [_] PARTNERSHIP CORPORATION NAMED AS THE SUBCONTRACTOR HEREIN, THAT _ _ WHO SIGNED THIS SUBCONTRACT ON BEHALF OF THE SUBCONTRACTOR WAS THEN _ [_] INCORPORATED IN THE SAID CORPORATION, THAT SAID SUBCONTRACT WAS DULY SIGNED FOR AND ON BEHALF OF SAID CORPORATION BY STATE OF: AUTHORITY OF ITS GOVERNING BODY, AND IS WITHIN THE SCOPE OF ITS CORPORATE POWERS. IN WITNESS WHEREOF, THE PARTIES HAVE EXECUTED THIS SUBCONTRACT AS OF THE DATE SHOWN BELOW: THE EFFECTIVE DATE OF THIS SUBCONTRACT REMAINS AS ENTERED ABOVE. Parsons Infrastructure & Technology Group Inc. SUBCONTRACTOR John A. Scott Bv Larry McNamara PLEASE PRINT PLEASE PRINT SIGNATURE /s/ John A. Scott SIGNATURE /s/ Larry McNamara TITLE President TITLE President, Nuclear Services, Div DATE 4/25/2003 DATE 2/24/03 </TABLE> Section 0 Statement of Work [GRAPHIC] U.S. Army Corps Product Manager for Alternative

Technologies and Approaches

Aberdeen Proving Ground, MD

Newport Chemical Agent Disposal Facility

of Engineers

Engineering and Support Center, Huntsville

Section 0 Statement of Work

for

Treatment Storage Disposal Facility (TSDF) Subcontract # 742168-40069

> prepared under Contract DAAA 09-99-C-0016

> > [LOGO]

July 26, 2002

Section 0

Statement of Work

1.0 PROJECT DESCRIPTION

Parsons Infrastructure and Technology Group Inc (CONTRACTOR) is acting under Prime Contract (DAAA09-C-0016) to the US Army Operations Support Command as the Systems Contractor responsible for design, construction and operation of the Newport Chemical Agent Disposal Facility (NECDF) located at the Newport Chemical Depot (NECD) in Newport, IN. The NECDF is being developed for destruction/demilitarization of chemical nerve agent (VX) stored at the NECD as required to satisfy the provisions of the Chemical Weapons Convention (CWC) Treaty, Article IV and Part IV(A) of the Verification Annex. Project plans call for destruction of the agent by caustic neutralization at the NECDF, followed by transport and disposal of the resulting, hazardous, hydrolysate waste by an appropriately licensed and capable Transporter and Treatment, Storage and Disposal Facility (TSDF).

2.0 SUBCONTRACT DESCRIPTION

This subcontract defines the terms and conditions for Transporter/TSDF (SUBCONTRACTOR) support to the Contractor associated with transport and disposal of NECDF hydrolysate wastes. The Subcontractor shall comply with all sections of the subcontract. Technical requirements for Subcontractor work are defined in this Section 0, Statement of Work (SOW). The SOW not only defines technical requirements for Subcontractor work but also requirements for technical content of the Subcontractor's Proposal. The Subcontractor's Proposal will further detail Subcontractor work plans and work requirements, and will be incorporated into the subcontract upon award.

3.0 WORK DESCRIPTION

In performing work, the Subcontractor shall satisfy all requirements of the subcontract including the specific work descriptions of this subcontract section. In providing requested plans and information, the Subcontractor is to demonstrate an understanding of the risks involved and the procedures necessary to place the highest priority on the protection of human health and the environment.

3.1 Waste Transport

Details of Subcontractor requirements related to waste transport are as provided in the Subcontractor's Proposal. The Subcontractor's Proposal shall satisfy, and provide documentation of satisfaction of, minimum content and transport requirements as follow:

- a. Hydrolysate waste to be transported is as defined in the Attachment 0.1 Material Safety Data Sheet (MSDS) and Attachment 0.2 Supplemental Property Data
- b. The Subcontractor shall provide transport services for, nominally, 7000 gal/day of hydrolysate waste throughout the NECDF period of operation as defined in SOW Section 6.0, Period of Performance.
- c. Transport services shall be available seven (7) days/week as necessary to support NECDF operating schedules.
- d. The Subcontractor's Proposal shall provide plans for transport logistics and details including considerations such as vehicle and driver, pickup and delivery, security, travel and layover, flushing and decontamination requirements and definitions. The Subcontractor shall provide plan updates to, and plan implementation and transport performance shall be subject to audit by, the Contractor throughout the subcontract period of performance. Contractor audits may be performed on-site at the Subcontractor's facilities.
- e. Transport services may be either Subcontractor-owned or Subcontractor subcontracted as specifically defined in Subcontractor's Proposal.
- f. Transport shall be by dedicated tankers used exclusively for ${\tt NECDF-hydrolysate\ transport\ throughout\ the\ period\ of\ program\ work.}$
- g. Transport services shall be performed in compliance with all applicable regulations, and vehicles and drivers appropriately licensed and permitted for hydrolysate waste transport. The Subcontractor's Proposal shall identify all applicable regulations and certifications and include evidence of Subcontractor compliance. Such evidence shall include licensing and other documentation applicable to all states through which hydrolysate is to be transported.
- h. The Subcontractor shall be solely responsible for cleanup and reporting of any spills occurring during provisions of transport services whether such

incidents occur at the NECD site, in transport, or at the receiving TSDF site. The Subcontractor's Proposal shall include plan details for spill response, remediation and reporting.

3.2 Waste Treatment/Disposal

Details of Subcontractor requirements related to waste treatment/disposal are as provided in the Subcontractor's Proposal. The Subcontractor's Proposal shall satisfy, and provide documentation of satisfaction of, minimum treatment/disposal and content requirements as follow:

- a. Hydrolysate waste to be treated/disposed is as defined in the Attachment 0.1 Material Safety Data Sheet (MSDS) and Attachment 0.2 Supplemental Property Data.
- b. The Subcontractor shall provide necessary pretreatment and primary treatment services for, nominally, 7000 gal/day of hydrolysate waste throughout the NECDF period of operation as defined in SOW Section 6.0, Period of Performance.
- c. All necessary pretreatment and primary treatment operations shall be performed at the Subcontractor's TSDF site.
- d. Any required operations associated with hydrolysate waste treatment/disposal to be performed off-site from the Subcontractor's facilities shall be specifically defined in the Subcontractor's Proposal.
- e. The Subcontractor's Proposal shall define all proposed activities and operations associated with pretreatment of waste necessary prior to primary treatment, including process

development activities. SOW Attachment 0.3 Hydrolysate Pretreatment Studies and Experience summarizes Contractor experience relating to hydrolysate pretreatment. The Subcontractor's pretreatment plan shall include specific pretreatment assumptions, including definition of chemical additives and quantities, made in preparation of the Proposal.

- f. The Subcontractor shall have suitable bulk-storage capacity available on-site at the TSDF to allow continued receipt of NECDF hydrolysate waste in the event of any disruption of Subcontractor pre- or primary treatment operations.
- g. The Subcontractor's Proposal shall include an operations plan describing equipment and operations involved in storage and processing of hydrolysate waste. The plan shall address both normal and abnormal operating scenarios. The plan shall include equipment capacities, processing flow rates, processing additions, processing conditions, etc. The plan shall define anticipated outages and operations during such outages. The plan shall define days of storage available and include any contingency plans for outages exceeding available storage capabilities. The plan shall include definition of secondary wastes resulting from hydrolysate processing and the further handling/treatment of such wastes. The plan shall estimate the impact on effluents and emissions from the TSDF resulting from hydrolysate processing and relate those impacts to permitted conditions. The Subcontractor shall provide plan updates to, and plan implementation and treatment/disposal performance shall be subject to audit by, the Contractor throughout the subcontract period of performance. Contractor audits may be performed on-site at the Subcontractor's facilities.
- h. The Subcontractor shall submit with or prior to invoices for treatment/disposal services a copy of the NECDF-originated manifests and appropriate certifications of disposal/destruction (CODs) associated with the manifested and invoiced material.
- i. All tankage used for pretreatment and/or staging prior to primary treatment to support normal operations shall be dedicated to NECDF-hydrolysate service throughout the period of program work. Also preferable that tankage used to provide additional capacity during periods of abnormal operations be dedicated to NECDF hydrolysate service. Even during periods of abnormal operations, NECDF hydrolysate shall not be mixed with other Subcontractor-stored wastes.
- j. All treatment, storage and disposal facilities utilized for hydrolysate processing shall be appropriately licensed and permitted and all work performed in full compliance with applicable permits and regulations. The Subcontractor's Proposal shall identify all applicable regulations and certifications and include evidence of Subcontractor compliance.
- k. The Subcontractor shall be solely responsible for cleanup and reporting of any spills occurring during treatment, storage and disposal operations. The Subcontractor's Proposal shall include plan details for spill response, remediation and reporting.

3.3 Public Outreach Support

Detailed Subcontractor requirements for public outreach shall be indicated in an outreach plan submitted with the Subcontractor's Proposal. Minimum outreach and related requirements to be addressed in the plan are as follow:

a. Subcontractor outreach plans shall indicate that outreach responsibility is principally that of the Subcontractor, with support from the Contractor and Government, for outreach activities

in the transport-route and TSDF areas. The Subcontractor shall act as the primary spokesman for subcontract work at public sessions or in response to written or media inquiries. The outreach plan shall indicate a specific

point of contact for Subcontractor outreach activities.

- b. The Contractor and Government shall retain primary responsibility for outreach in the Newport community. The Subcontractor shall support, as requested, Contractor and Government personnel in their Newport-area outreach activities.
- c. Subcontractor outreach plans shall acknowledge Contractor and Government outreach involvement and include descriptions of interfaces, roles and responsibilities.
- d. Subcontractor outreach plans shall include monitoring, and reviewing with Contractor and Government personnel, transport-route and TSDF-community media and information sources for local sentiments and concerns.
- e Subcontractor outreach plans shall include an early/initial subcontract activity involving public and government notifications and public sessions intended to establish a measure of public acceptance for planned hydrolysate transport and disposal work.

Completion of subcontract work may be contingent upon the establishment and maintenance of public acceptance throughout the subcontract period of performance.

3.4 Treaty/Inspection Support

The Subcontractor's Proposal shall indicate intent to support CWC Treaty-verification inspectors from the Organization for the Prohibition of Chemical Weapons (OPCW) on-site at the Subcontractor's facilities as determined necessary and appropriate by the Government. The extent of OPCW-inspector presence at the Subcontractor's site could range from periodic one-day inspections to full-time inspector coverage throughout the Subcontractor's hydrolysate-processing period of performance. OPCW-inspection requirements are not expected to be established until Nov 02. Once established, related and appropriate modifications to the subcontract may be requested by the Subcontractor in accordance with the Changes clause of the subcontract General Conditions.

3.5 Management Support

The Subcontractor's Proposal shall include specific definition of the Subcontractor's team proposed for performance of program work Particular related requirements are as follow:

- a. The Subcontractor's team shall include, at a minimum, a Program Manager, having overall program responsibility and authority, and defined representatives for transportation, processing, safety, quality, outreach, and contract administration. Approximate level-of-effort (ie, percent full-time equivalent) assumed in the Proposal shall be indicated and, depending on level-of-effort, a single representative may serve in multiple positions. The Proposal shall include a definition of roles and responsibilities for each defined position.
- b. The Subcontractor's team shall include a Waste Coordinator, knowledgeable in both waste transport and processing activities, to be located on-site at NECDF 30 days prior to and throughout the duration of hydrolysate transport and processing activities. The Waste

Coordinator shall support waste transport and processing logistics, assurance of satisfaction of transport-related requirements and certifications, preparation and maintenance of waste-related documentation, NECDF-site contact with the Subcontractor's team, et al considerations as defined in the Subcontractor's Proposal. Facilities to support the Waste Coordinator shall be provided by the Subcontractor.

- c. The Subcontractor's Program Manager shall immediately notify the Contractor's Subcontract Administrator of any conditions potentially detrimental to subcontract work (eg, public outreach/acceptance issues, safety incidents, operational problems, regulatory issues, etc).
- d. The Subcontractor's Program Manager shall submit, no later than the final workday of each month, a monthly report to the Contractor's Subcontract Administrator. The report shall summarize activities (transport and processing details and accounting, outreach, et al), plans and status for the past month and include plans for the upcoming month.
- e. The Subcontractor's Proposal shall include resume-type, experience and qualification information of all identified team participants.
- f. The Proposal shall include an organization chart depicting the program-team organization as well as its interrelationship with the Subcontractor's facility organization.
- 4.0 REQUIRED SUPPORTING CERTIFICATIONS AND PROGRAMS

4.1 Permits and Certifications

The Subcontractor shall identify all required permits and certifications necessary for performance of program work in the Proposal and provide evidence as appropriate of possession of those necessary permits and certifications. The Subcontractor shall provide updates to permits and certifications, as well as notifications of violations to permits and certifications, as program work proceeds. Permit and certification status and compliance shall be subject to audit by the Contractor throughout the subcontract period of performance. Contractor audits may be performed on-site at the Subcontractor's facilities.

The Subcontractor shall have a commitment to the health and safety of it's employees and an established Health and Safety Program consistent, at least, with hazardous waste industry standards and appropriate for addressing both program waste transport and waste processing health and safety concerns. The Subcontractor shall submit for review with the Proposal the Health and Safety Program description. The Subcontractor shall provide program updates to, and program implementation shall be subject to audit by, the Contractor throughout the subcontract period of performance. Contractor audits may be performed on-site at the Subcontractor's facilities.

The Subcontractor's Proposal shall provide information pertinent to the Subcontractor's safety commitment and history. More specifically, if the Subcontractor has been in existence for more than three years, the Subcontractor shall submit their worker compensation Experience Modification Rating (EMR), Recordable Incident Rate (RIR) and Lost Workday Incident Rate

(LWDIR) for each of the last three years (1999, 2000 and 2001) for both hazardous-waste transport and waste processing work, providing explanation of any anomalies. Safety performance shall be cited and compared against these recognized, relevant industry standards for comparable hazardous-waste work.

The Subcontractor shall prepare a NECDF-Site Safety Plan and submit for Contractor approval prior to commencing any NECDF-site work. The Plan shall address Subcontractor activities and safety plans and requirements for Subcontractor work to be performed, specifically, at the NECDF site. The Plan shall include applicable NECDF-site safety requirements. Plan revisions and updates shall be provided to, and plan implementation shall be subject to audit by, the Contractor throughout the subcontract period of performance.

4.3 Quality.

The Subcontractor shall have a commitment to quality and an established Quality Assurance Program consistent, at least, with hazardous waste industry standards and appropriate for addressing program quality concerns. The Subcontractor shall submit for review with the Proposal the quality-program description. The Subcontractor shall provide program updates to, and program implementation shall be subject to audit by, the Contractor throughout the subcontract period of performance. Contractor audits may be performed on-site at the Subcontractor's facilities

5.0 CONTRACTOR RESPONSIBILITIES.

Particular Contractor responsibilities pertinent to Subcontractor work are as follow:

- a. The Contractor, working with Government counterparts, will maintain primary responsibility for public outreach efforts in the Newport area. On occasions, the Contractor may request outreach support from the Subcontractor to help address program work activities.
- b. The Contractor will provide hydrolysate samples sufficient for TSDF acceptance testing and any required process development and demonstration testing.
- c. The Contractor will provide details of pretreatment studies (see Attachment 0.3) data to Subcontractor requiring hydrolysate pretreatment prior to TSDF primary treatment.
- d. The Contractor will provide NECDF-site safety training, plans and requirements pertinent to preparation of the Subcontractor's NECDF-Site Safety Plan (see Section 4.2) and performance of work at the NECDF site.
- e. The Contractor will provide waste property certification prior to transfer of hydrolysate to Subcontractor's transport vehicles. In particular, Contractor will confirm that hydrolysate VX concentration is non-detect at the method detection limit (MDL).
- f. The Contractor will provide waste manifests prior to transfer of hydrolysate to Subcontractor's transport vehicles, including, in particular, waste quantity (ie, volume).
- g. The Contractor will provide a complete transfer station appropriate for transfer of hydrolysate waste from the NECDF waste holding tanks to the Subcontractor's transport

tankers. The transfer station will have the capability of transferring hydrolysate to the Subcontractor's transport tankers at a rate of up to 70 gallons/minute.

6.0 PERIOD OF PERFORMANCE

The term of this subcontract shall commence with contract award and a notice to proceed and extend through completion of hydrolysate processing. Initial public outreach activities to confirm public acceptance will commence immediately with notice to proceed. Actual hydrolysate transport and disposal operations are scheduled to begin as early as July 2003 and extend into early 2004, depending on NECDF agent-processing and hydrolysate-production performance.

ATTACHMENT 0.1 - Material Safety Data Sheet (MSDS)

Note: Provided below is the latest available VX/NaOH Hydrolysate MSDS. Information provided remains generally appropriate for currently planned NECDF hydrolysate waste. Updates, however, are anticipated and will be provided as they become available

REVISED: 25 February 1999 ORIGINAL DATE: 21 March 1996

In the Event of an Emergency Telephone the SBCCOM Operations Center's 24-hour Emergency Number: 410-436-2148

Number: 410 450 2140

SECTION I - GENERAL INFORMATION

_ _____

MANUFACTURER'S ADDRESS: U.S. ARMY SOLDIER AND BIOLOGICAL CHEMICAL COMMAND

EDGEWOOD CHEMICAL BIOLOGICAL CENTER (ECBC)

ABERDEEN PROVING GROUND, MD 21010-5424

 $\hbox{Chemical Name: Ethylmethylphosphonic acid and $2-$ (diisopropylamino) ethanethiol}$

sodium salts

Trade name and synonyms: VX/NaOH Hydrolysate

Chemical Family: Not known

Formula/Chemical Structure: Not Available

NFPA 704 Signal Health

Flammability - 0 3

Reactivity - 1

- ------

SECTION II - HAZARDOUS INGREDIENTS

<TABLE>

Weight Threshold by Volume (mg/mL) Limit Value (TLV) Ingredients 200 <S> <C> <C> Not Applicable Unknown Unknown Water 54 - 60 wt% 2-(diisopropylamino) ethyl mercaptan (thiol) 15 - 25 wt% Ethylmethyl phosphoric acid (EMPA) 14 - 22 wt% 2 mg/m(3) CL Unknown Sodium Hydroxide 0 - 5 wt% Methyl phosphoric aid (MPA) 1 - 3 w+% 2-(diisopropylamino) ethyl disulfide 0 - 5 wt% 2 - 6 wt% Unknown Unknown Other Compounds EA 2192 < 0.002 wt% Unknown </TABLE>

- -----

SECTION III - PHYSICAL DATA

Density: 17g/ml at 25 DEG. C

Appearance: Liquid

- ------

SECTION IV - FIRE AND EXPLOSION DATA

Flash Point: Upper Layer (1 - 5 % of total) - 127 DEG. F (53 DEG. C) c.c.

Lower Layer - No flash point up to 96 DEG. C

Flammability Limits: Not known

Special Fire Fighting Procedures: Incipient fires may be fought with a type BC fire extinguisher. If the fire cannot be controlled, contact the fire department. Firefighters are to use self-contained breathing apparatus.

Unusual Fire and Explosion Hazards: None known

SECTION V - HEALTH HAZARD DATA.

SECTION V - HEALTH HAZARD DATA.

Threshold Limit Value (TLV): A TLV has not been promulgated for this material. There is no Airborne Exposure Limit (AEL) for the mixture.

Health Hazards: May be harmful if swallowed, inhaled, or, absorbed through the skin. Material may be destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Material is considered hazardous because of its content of caustic and toxic compounds. This material should be handled with caution and appropriate protective clothing should be worn when handling.

Effects Of Overexposure: May include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea vomiting. Exposure to large quantities could cause ataxia, tearing, tremors, and salivation.

Material presently is not listed by the International Agency for Research on Cancer (IARC), National Toxicology Program (NTP), Occupational Safety and Health Administration (OSHA), or American Conference of Governmental Industrial

Hygienists (ACGIH) as a carcinogen.

Emergency and First Aid Procedures:

Inhalation: If inhaled, remove victim from source/area to fresh air; seek medical attention immediately. If victim stops breathing, administer CPR. If breathing is difficult, give oxygen. Seek medical attention immediately.

Eye contact: If material comes in contact with the eyes, flush with water immediately for at least 15 minutes. Assure adequate flushing by pulling eyelids apart with fingers. Seek medical attention immediately.

Skin contact: Remove victim from the source immediately and decon affected area by flushing with copious amounts of soap and water for at least 15 minutes or with household bleach while removing contaminated clothing and shoes. Seek medical attention immediately.

Ingestion: If ingested, wash out mouth with water. Seek medical attention $\ensuremath{\mathsf{Immediately}}\xspace.$

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SECTION VI - REACTIVITY DATA

Stability: Unknown

Hazardous polymerization: Unknown

SECTION VII - SPILL, LEAK AND DISPOSAL PROCEDURES

Steps To Be Taken In Case Material is Released or Spilled: If leak or spills occur, evacuate area. Spill response personnel should wear self-contained breathing apparatus, butyl rubber boots and heavy chemical resistant butyl rubber gloves. Absorb all spilled materials with vermiculite, dry lime, or soda ash; scoop up all material and place in a closed container and hold for waste

disposal Ventilate area and wash spill site after material pickup is complete

Waste Disposal Method: Dispose IAW local laws and regulations. A determination should be made whether the waste displays any characteristics of hazardous waste prior to disposal. Open pit burning or burying of this material or items containing or contaminated with this material in any quantity is prohibited. Consult local regulations before disposal action is taken as some states regulate products resulting from the decontamination of chemical warfare agent as hazardous waste.

- -----

SECTION VIII - SPECIAL PROTECTION INFORMATION

Respiratory Protection: For escape purposes operations should have available a $15\ \text{minute NIOSH/MSHA}$ approved escape bottle apparatus with hood.

Local Exhaust: Material should be used in a chemical fume hood. Air emissions shall meet local, state, and federal regulations.

Protective Gloves: Norton, chemical protective glove set (butyl rubber) $$\operatorname{M3}$$ butyl rubber glove

Eye Protection: Safety glasses as a minimum. Protective splash goggles and face shield will be worn if splash hazard is present.

CECTION IV _ CDECIAL DESCRIPTIONS

SECTION IX - SPECIAL PRECAUTIONS

Precautions To Be Taken In Handling and Storing: Emergency showers, eyewash stations, and personal cleanliness facilities must be provided. Wash hands after handling and before meals. The carrying, storage, usage and/or consumption of food, beverages, cosmetics, smoking materials, tobacco products, or other products for chewing; or the chewing of such products in all laboratory and/or chemical storage areas is prohibited. Exits must be designed to permit rapid evacuation. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure. Keep containers tightly closed. Store in a cool, dry place.

Solution Analysis: This material was analyzed for VX using ECBC-TR-010, "Quantitative Analysis of Residual VX in Caustic Neutralization Solutions by Solid Phase Extraction and GC/MSD: Analysis of Hydrolysate as Unseparated Phases" and was found to contain no VX above 20 ppb.

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SECTION X - TRANSPORTATION DATA

Proper Shipping Name: Poisonous Liquids, corrosive, n.o.s.

Dot Hazard Classification: 6:1

 $\hbox{\tt Dot Label: POISON and CORROSIVE}\\$

Dot Marking: Poisonous Liquids, corrosive; n.o.s. (Ethylmethylphosphonic acid and 2-(diisopropylamino) ethanethiol sodium salts), UN 2927, PG 1,

Dot Placard: POISON

Emergency Accident Precautions and Procedures: See Sections IV, VII, and VIII.

Precautions To Be Taken In Transportation: Motor vehicles will be placarded regardless of quantity. Driver shall be given full and complete information regarding shipment and conditions in case of emergency.

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While the Edgewood Chemical Biological Center, Department of the Army believes that the data contained herein are factual and the opinions expressed are those of qualified experts regarding the results of the tests conducted, the data are not to be taken as a warranty or representation for which the Department of the Army of Edgewood Chemical Biological Center assumes legal responsibility. They are offered solely for your consideration, investigation, and verification. Any use of these data and information must be determined by the user to be in accordance with applicable Federal, State, and local laws and regulations.

ATTACHMENT 0.2 - Supplemental Property Data

Table 0.2-1. Chemical Constituents of VX Hydrolysate (Source: NRC, 1998)

Component	Concentration	(mg/L)
Ethyl methylphosphonic acid (EMPA)	152,673	
Methylphosphonic acid (MPA)	13,348	
Diisopropylaminoethanethiol (RSH or VX thiol)	160,000	
Bis (diisopropylaminoethyl) disulfide (RSSR)	13,000	
Bis (diisopropylaminoethyl) sulfide (RSR)	970	
1,9-bis (diisopropylamino)-3,4,7-trithianonane	1,700	
Total organic carbon (TOC)	140,000	
Sulfate	96.9	
Phosphate (as phosphorus)	2.19	
Total sulfur (S)	38,400	
Total phosphorus (P)	37,700	
Arsenic (As)	0.125	
Barium (Ba)	0.236	
Calcium (Ca)	121	
Chromium (Cr)	1.38	
Copper (Cu)	1.53	
Iron (Fe)	2.97	
Lead (Pb)	0.50	
Magnesium (Mg)	2.79	
Mercury (Hg)	0.004	
Selenium (Se)	2.0	
Sodium (Na)	87,900	
Titanium (Ti)	0.25	
Zinc (Zn)	0.25	

Table 0.2-2. Hydrolysate Density, Viscosity and Surface Tension Summary Data

Parameter	Value
Density, upper layer, 1b/ft(3)	55.16
Density bottom layer, 1b/ft(3)	67.44
Viscosity upper layer, cP	3.31
Viscosity bottom layer, cP	5.13
Surface tension, upper layer, dynes/cm	18.53
Surface tension, bottom layer, dynes/cm	30.02
Interfacial tension, dynes/cm	5.83

Temperature (DEG. F)	77	95	122	167
		Density	(lb/ft(3))
ECDF ADP Design Data (measured by ECBC)				
Upper Layer	59.35	59.05	58.22	
Lower Layer	72.57	72.15	71.49	
ld Hydrolysate (measured by SWRI)				
Upper Layer	58.47		57.23	54.49
Lower Layer	72.76		71.91	70.93
resh Hydrolysate (measured by SWRI)				
Upper Layer	58.68		58.05	55.5
Lower Layer	72.35		69.91	68.6
		Viscos	 ity (cP)	
ECDF ADP Design Data (measured by ECBC)				
Upper Layer	71.7	35.9	16.2	
Lower Layer	21.9	13.6	7.8	
ld Hydrolysate (measured by SWRI)				
Upper Layer	44.52		15.13	7.4
Lower Layer	30.94		12.25	6.5
resh Hydrolysate (measured by SWRI)				
Upper Layer	40.4		12.8	5.5
Lower Layer	27.24		11.78	7.4
	Surfa	ace Tens	ion (dyne	s/cm)
ECDF ADP Design Data (measured by ECBC)				
Upper Layer		23.0		
Lower Layer	32.9	32.6	31.8	
ECDF ADP Design Data (measured by ECBC(b))	8.6	9.6	9.7	
ing Method Data (measured by ECBC(c))	1.27			
ld Hydrolysate (measured by SWRI)	5.9			6.
resh Hydrolysate (measured by SWRI)	6.42			5.9

- (a) Data obtained form report "Summary of VX/NaOH Hydrolysate Physical Properties Testing," Attachment E Stone and Webster, R12V-16-0, Rev. 0, May 1999.
- (b) Determined by differences between the surface tensions of the upper and lower layer.
- (c) Measured by Du Nouy ring method; the results could not be verified by repeat analyses.

- -------

Hydrolysate Phase and Flash Point Notes:

The hydrolysate consists of approximately 5% organics and 95% aqueous solution by volume. The aqueous phase of the hydrolysate has no flash point up to 200DEG. F; however, the organic phase has a flash point at 127DEG. F (based on VX hydrolysate MSDS).

 ${\tt Hydrolysate\ VX\ Concentration\ Notes:}$

The hydrolysate will not be released from the NECDF site until a sample analysis has verified that the agent VX concentration is non-detect at the method detection limit (MDL).

${\tt ATTACHMENT~0.3~-~Hydrolysate~Pretreatment~Studies~and~Experience}$

Hydrolysate pretreatment studies have been performed with the intent of determining simple pretreatments that would make the NECDF hydrolysate more amenable to off-site treatment and/or disposal by an increased variety of commercial TSDFs. Although it is known that hydrolysate may be readily incinerated, properties such as odor, low flash point, low biodegradability, and separate organic phase make it more problematic for other TSDF technologies such as deep-well injection and biotreatment.

Pretreatments studied included simple, industry-standard processes that could be relatively easily and cheaply employed. Testing was performed at HoneywellPAI's laboratories in Des Plaines, IL, in laboratory glassware on approximate half-liter hydrolysate sample quantities. Test results judged to be of greatest potential for TSDF application are summarized in the subsections of this attachment.

It is important to note that testing was performed using diluted hydrolysate consistent with that expected to result from NECDF's initial baseline design. The hydrolysate currently expected from NECDF operations is approximately twice as concentrated as the baseline hydrolysate. Additive requirements to achieve comparable treatment, however, are believed to be linear to hydrolysate component concentrations. Additive quantities indicated in the treatment descriptions of this attachment are extrapolated from studies results, assuming linear requirements, for treatment of the currently defined NECDF hydrolysate as described in SOW Attachments 0.1 and 0.2. Additional testing would be considered necessary to, at least, confirm additive requirements and process performance.

Phase Separation

Studies included confirmation of the ability to separate physically the organic and aqueous phases of the hydrolysate. Previous studies had indicated that the organic phase required approximately 12 hours for complete formation/separation from "fresh/neat" hydrolysate, but also indicated a tendency for a small fraction of the organic layer to reappear, after initial layer removal, over time as a result of air exposure, agitation, or some surface phenomenon not well understood or defined. No such reformation of the organic layer was observed in samples drawn during the study and specifically observed for greater than 50 hours for organic layer reformation. The hydrolysate used in the studies was

"old" and tests and observations would need to be repeated on "fresh" hydrolysate to confirm the ability to separate physically the hydrolysate phases without organic-phase reformation.

Nitric Acid Acidification

Acidification of the alkaline hydrolysate to a pH value of 6.5, or lower, resulted in solubilization of the organic phase into the aqueous phase. The elimination of the free-phase organic layer drives the flash point up to approximately 100DEG. C. The calculated heat of reaction for this pH adjustment is 165 cal/g reactant, with reactant being 70% (by weight) nitric acid solution, closely approximating the theoretical (Lange's) acid heat of neutralization. The analysis of titration curves indicates that acidification of the samples does not appreciably change the chemical

composition of the hydrolysate, but rather just alters the solubility of the organic phase in the aqueous phase. Without changing the hydrolysate composition, there is no increase in biodegradability or decrease in the odor associated with acid adjustment. Acidification of hydrolysate to pH 6.5 will require approximately 13 gal of 70% (by weight) nitric acid solution per 100 gal of hydrolysate.

Hydrogen Peroxide Oxidation

Following acidification, oxidation of the hydrolysate by hydrogen peroxide addition resulted in generating a clear, odorless (relative), single-phase sample with no solids generation upon sample cooling. Resulting flash points were approximately 100DEG. C. Multiple oxidant-addition quantities were tested based on percent of stoichiometric equivalent to oxidize VX thiol present in the hydrolysate to the corresponding sulfonic acid (see below). 30% (by weight) hydrogen peroxide solution was metered into the acidified hydrolysate sample. 100%-equivalent oxidant addition resulted in an approximate additional 1-2 point drop in solution pH and 15DEG. C increase in temperature. Heat of reaction was determined at 511 cal/g reactant, with reactant being 30% peroxide solution. Observed TOC and COD reductions were approximately 10 and 20%, respectively. Oxidation of hydrolysate at this 100%-equivalent dosage, preceded by acidification, will require approximately 13 gal of 70% (by weight) nitric acid solution and 37 gal of 30% (by weight) hydrogen peroxide solution per 100 gal of hydrolysate.

Hydrogen peroxide is a powerful oxidant with the standard electrode potential (E(o)) as shown below:

$$H(2)O(2) + 2H(+) + 2e(-) --> 2H(2)O ---- (E(0) = 1.78 V)$$

Hydrogen peroxide is known to react with and oxidize sulfides, mercaptans, amines and aldehydes and is well known to reduce odors caused by these compounds. Hydrogen peroxide activity is dependent upon the temperature and pH of the reaction conditions and better oxidizing activity is favored under conditions of acidic pH. Reactivity with hydrogen peroxide increases with temperature; however, at temperatures above 50DEG. C, hydrogen peroxide decomposes rapidly. Hydrogen peroxide oxidation of VX thiol to its corresponding sulfonic acid is illustrated as follows:

CH(2) - (CH(3))(2) 3H(2) O(2) HS-CH(2)-CH(2)-N CH(2) - (CH(3))(2) $40DEG. C \mid pH 6.0$ CH(2) - (CH(3))(2)

3H(2)O + HSO(3)-CH(2)-CH(2)-N

CH(2)-(CH(3))(2)

Di-isopropylaminoethanesulfonic acid

Oxone (TM) Oxidation

Following acidification, oxidation of the hydrolysate by Oxone(TM) addition, at 50% equivalent dosage (see below), resulted in generating a clear, odorless (relative), single-phase sample with no solids generation upon sample cooling. Resulting sample flash point was approximately 100DEG. C. Multiple oxidant-addition quantities were tested based on percent of stoichiometric equivalent to oxidize VX thiol present in the hydrolysate to the corresponding sulfonic acid (see below). Greater than 50%-equivalent Oxone(TM) addition resulted in precipitate formation upon cooling. Oxone was pre-dissolved and metered into the acidified hydrolysate sample as a solution. 50%-equivalent oxidant addition resulted in additional pH suppression to a pH of approximately 1.0 and an approximate 20DEG. C increase in temperature. Heat of reaction was determined at 180 cal/g reactant, with reactant being Oxone(TM). Oxidation of hydrolysate at this 50% equivalent dosage, preceded by acidification, will require approximately 13 gal of 70% (by weight) nitric acid solution and 469 lbs Oxone(TM), pre-dissolved in 160 gal of water, per 100 gal of hydrolysate.

The active ingredient of Oxone(TM) is potassium peroxymonosulfate, KHSO(5) [CAS-RN 10058-23-8], commonly known as potassium monopersulfate, which is present as a component of a triple salt with the formula 2KHSO(5)-KHSO(4)-K2SO(4) [potassium hydrogen peroxymonosulfate sulfate (5:3:2:2), [CAS-RN 70693-62-8]. The oxidation potential of Oxone(TM) is derived from its peracid chemistry; it is the first neutralization salt of peroxymonosulfuric acid H(2)SO(5) (also known as Caro's acid). K+ $-0-S(=0)\,2(-OOH)$ Potassium Monopersulfate. The standard electrode potential (E(0)) of Oxone(TM) is shown in the following reaction:

HSO(5)(-) + 2H+ + 2e(-) --> HSO(4)(-) + H(2)O ---- (E(0) = 1.44 V)

Peroxyacids are known to be strong nucleophiles and have been demonstrated to oxidize sulfur groups. Solutions of Oxone(TM) are relatively stable when made up at the unmodified pH of the product (pH 2.0). The stability is adversely affected by higher pH, especially above pH 7. A point of minimum stability exists at pH 9, at which the concentration of the mono-anion HSO5- is equal to that of the di-anion SO5(-). Oxone(TM) oxidation of VX thiol to its corresponding sulfonic acid is illustrated as follows:

CH(2)-(CH(3))(2)

3KHSO(5) + HS-CH(2)-CH(2)-N

CH(2) - (CH(3))(2)

pH 2.0 | 70DEG. C

CH(2)-(CH(3))(2)

3KHSO(4) + HSO(3)-CH(2)-CH(2)-N

CH(2) = (CH(3))(2)

- See Section 0 Attachment #1 "Measurement of Success for Treatability Studies".
- 2) See Section 0 Attachment #2 for "Protocol for Treatability Studies".

Note: (See Request for Proposal Addendums #1 and #2 for clarifications and changes).

Section 0

Statement of Work Attachment # 1
Measurement of Success for
Treatability Studies

Measurement of Success for Treatability Study Original Baseline agreement effective 21 December 2002

Introduction

After the Limited Notice to Proceed (LNTP) is issued to Perma-Fix, a treatability study will be conducted utilizing physical, chemical, and biological treatment technologies to demonstrate an effective treatment protocol for fresh VX Hydolysate. Award of a contract for the treatment and disposal of VX Hydrolysate from the Newport Chemical Agent Disposal Facility (NECDF) is dependent upon certification of a successful treatability study to establish design criteria and an operating strategy for the full-scale treatment of 7,000 gallons per day of fresh VX hydrolysate. A successful treatability study is needed to verify that the discharge from Perma-Fix of Dayton, Inc. will meet its permit requirements. The treatment study may employ a combination of physical separation, acidification, chemical oxidation with catalysts, and co-mingling with other facility wastewater prior to biological treatment

Determination of Success

Success of the treatability studies will be determined in a treatment system that employs a combination of unit operations and processes that includes acidification, chemical oxidation, waste co-mingling, sorption, and biological oxidation.

Certification testing will take place over a minimum of 10 days (i.e., the certification period) or for one (1) Hydraulic Residence Time (HRT) of the biological reactor system used whichever is longer. The certification testing must be completed no later than 60 days after the "initiation date" [The "initiation date" is defined as 17 days after Perma-Fix receives the old VX hydrolysate]. Analysis for the parameters listed in Table 1 must be satisfied throughout the certification period at the frequency defined therein. Successful treatability by Perma-Fix of Dayton, Inc. will be demonstrated by meeting the discharge and treaty parameters listed in Table 1.

Basic protocol, reporting, schedule for completion and certification requirements for conducting the treatability study will be developed jointly by Parsons and Perma-Fix

(1) Criteria for certification of successful treatability studies based on analyses performed in accordance with the Laboratory Quality Assurance Plan (being developed).

Table 1. Certification parameters based on discharge permit limits and reactor operation. Requirements must be met daily.

Permit Based Limits				
Discharge Parameter	Frequency	Concentration Limit		
Cd, U/L	Daily	40		
Cr (total), U/L	Daily	2000		
Cu, U/L	Daily	500		
Cvanide, U/L	Twice during	500		

Pb, U/L	Daily	400
Hg, U/L	Twice during performance period	0.12
Ni, U/L	Daily	1300
Ag, U/L	Daily	600
Zn, U/L	Daily	2250
PH	Daily	6 - 11.5
BOD(5), mg/L	Daily	250
Suspended Solids, mg/L	Daily	300
Ammonia (as N), mg/L	Daily	50
Oil + Grease, mg/L	Twice during performance period	300
As, U/L	Twice during performance period	400
Mo, U/L	Daily	4000
Se, U/L	Twice during performance period	100
Total Toxic Organics, U/L	Once during performance period	See 2001 edition of Standard Methods, Method 8260 (volatiles) Method 8270 (semi volatiles)
Biomass Acclimation Reactor	Limits	
Reactor Parameter	Frequency	Range
BOD Removal (%)	Daily	> 85%
Mixed Liquor Suspended Solids, mg/L		3500-7000
Sludge Volume Index, mL/g	Daily	<350
Specific Oxygen Consumption Rate (end of react), mg/g-h	Daily	1-10
Specific Spiked Oxygen Consumption Rate (end of react), mg/g-h	Daily	No range provided - for comparison with Control

Section 0

Statement of Work - Attachment #2 Protocol for Treatability Studies

1

Protocol for Treatability Studies Prepared November 20, 2002 Latest Revision December 18, 2002

Introduction

After the Limited Notice to Proceed (LNTP) is issued to Perma-Fix, a Pretreatment treatability study and a biotreatment treatability study will be conducted. The studies will be conducted at Perma-Fix's analytical laboratory in Dayton, Ohio using a combination of unit operations and processes that includes acidification, chemical oxidation, waste co-mingling, sorption, and biological oxidation. Parsons will supply the VX hydrolysate. Initially, "old" VX hydrolysate (see the TSDF RFP) will be used. "Fresh" VX hydrolysate will be supplied as soon as possible as required by Perma-Fix and within sufficient time to be used in the Treatability Study.

Procedures

The treatability studies will include systems for:

- a. acidification and chemical oxidation
- b. biomass acclimation (for certification of success)
- c. biological treatment

The biomass acclimation and treatability study will be used to certify success of the chemical oxidation / biological treatment system proposed by Perma-Fix. The biological treatment portion of the study will employ bench-scale Sequencing Batch Reactors (SBRs) seeded with biomass from Perma-Fix's full-scale biological reactors and fed either the waste discharged from the chemical precipitation system (the Control) or the co-mingled waste (the Hydrolysate

Reactor). The feed will be prepared daily using pretreated VX hydrolysate and discharge from the chemical precipitation system. The discharge from the chemical precipitation system will be collected weekly from the equalization tank and refrigerated. Nutrients will be added to the feed as necessary. The SBRs will be operated at any temperature between 20DEG. C and 40DEG. C. The hydraulic residence time (HRT) and organic loading will be consistent with that expected for the full-scale biological reactors.

The biomass in the bench-scale SBRs will be acclimated to the co-mingled feed for a minimum of 21 days or for 3 HRTs before performance data are collected for certification. Certification testing will take place over a minimum of 10 days (i.e., the certification period) or for 1 HRT of the SBR whichever is longer. The certification testing must be completed no later than 60 days after the "initiation date." The "initiation date" is defined as 17 days after receiving the old VX hydrolysate. Figure 1 presents the Timeline for Treatability Studies as it relates to the certification period. It is expected, however, that Perma-Fix will continue the Treatability Studies, as needed, to finalize the design criteria and an operating strategies for the full-scale treatment of 7000 gallons per day of VX hydrolysate.

Analysis for the parameters listed in Table 1 must be satisfied throughout the certification period at the frequency defined therein. The concentration limits for each discharge parameter are defined in the Measurement of Success for Treatability Studies document prepared November 7, 2002 (as revised on December 18, 2002) and were obtained from Perma-Fix's POTW – issued permit or from the Chemical Weapons Convention (CWC) Treaty Requirements for Schedule 2 Compounds.

Verification

One or more Parsons' representatives will be present at the Perma-Fix site during the treatability studies to provide technical assistance (as needed), review data, establish an electronic data base, witness progress first hand, and verify that established conditions are met. Parsons and Perma-Fix will review and discuss any proposed modifications to the Treatability Studies and will agree in writing to the modifications prior to their implementation.

Reporting

All reports must be submitted to Parsons electronically. Brief letter reports will be submitted weekly. More extensive progress reports will be submitted every third week until the study is completed. A certification report that summarizes all of the data required during the certification period must be submitted 5 days after the last sample is collected. A draft final report will be due two weeks after the study is completed. The final report will be issued within two weeks of receiving comments from Parsons.

Certification

Parsons will review the certification report with Perma-Fix to determine the acceptability of the results. Special attention will be paid to the results from the reactor parameters and their ability to demonstrate the destruction efficiency of the process.

Coordination with State Environmental Regulators

It is, of course, understood that the TSDF will be operated in accordance with the facility's permits, however, it is also requested that Perma-Fix personnel contact state regulators concerning acceptance of the NECDF wastes. The objective of the contact(s) would be to alleviate any concerns that the regulators might have concerning acceptance of NECDF wastes. The coordination with state regulators should be documented (with results) in a letter provided to the Parsons Contract Group. Telephone numbers for the regulatory personnel contacted should be provided in this letter—in the event Parsons environmental personnel might wish to follow-up on this coordination.

Compliance with CWC Treaty

The TSDFs will accept Government oversight for the sampling and analysis of Schedule 2 Compounds.

2

[FLOWCHART]

<table> <s></s></table>	<c></c>	<c></c>		<c></c>
1. TSDF receives Hydrolysa 2. Co-mingled waste begin be fed to the SBR			Reports to be very third week	Certification Report to be submitted 5 days after last sample is taken
INITIATION DATE: Defined as 17 days after the receipt of the Hydrolysate	End of Acclimation Period (Minimum of 21 days or 3 HRT)	Certification Testing will take place for a minimum of 10 days or 1 HRT	a [Testing m	IFICATION TESTING DEADLINE ust be completed no later after the Initiation Date.

Figure. 1: Timeline for Treatability Studies.

Table 1. Sample Frequency and Biomass Acclimation Reactor Limits

	Treatability Study									
	Discharge Parameter		requency							
d, U/L		Daily								
r (total)	, U/L	Daily								
Cu, U/L		Daily								
Cyanide, U	/L 		ng performance pe							
b, U/L		Daily								
Hg, U/L			ng performance pe							
Ni, U/L		Daily								
Ag, U/L		Daily								
Zn, U/L		Daily								
PH		Daily								
BOD(5), mg		Daily								
Suspended	Solids, mg/L	Daily								
Ammonia (a	s N), mg/L	Daily								
Dil & Grea		Twice duri	ng performance pe							
As, U/L		Twice duri	ng performance pe							
Mo, U/L		Daily								
Se, U/L		Twice duri	ng performance pe							
See 200 Met Met	c Organics, U/L 1 edition of Standard Methods, hod 8260 (volatiles) hod 8270 (semi-volatiles)	Once durin	g performance per	iod						
CWC Treaty										
Schedule 2 EMPA, M		Daily								
Biomass, A	cclimation Reactor Limits									
Reacto	r Parameter	Frequency	Range							
BOD Remova		Daily	>85%							
	or Suspended Solids, mg/L	Daily	3500-7000							
	ume Index, mL/g	Daily	<350							
Specific Oneact), mg	xygen Consumption Rate (end of	Daily	1-10							
Specific Spe		Daily	No range provid comparison with	ed - f Contr	or					
					4					
	Sectio	n I								
	Sectio Deliverable I									
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<table> <s> PUR10045.0</s></table>	Deliverable I	tems List	<c> SECTION I</c>							<c> DATE: 01-28-0</c>
<s> PUR10045.0</s>	Deliverable I	tems List	<c> SECTION I DELIVERABLE ITEMS</c>	LIST						<c> DATE: 01-28-0</c>
<pre><s> PUR10045.0 JOB NO: 73</s></pre>	Deliverable I	tems List	SECTION I DELIVERABLE ITEMS		0069	Rev:)			DATE: 01-28-0
Commodity:	Deliverable I 1 5284 - US Army Industrial Operat	tems List io Issue E	SECTION I DELIVERABLE ITEMS ate: 01-28-03		0069	Rev:)			DATE: 01-28-0 TIME: 06:28
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TRANSPORT AND DISPOSAL OF NECDF HYDROLYSATE WASTE

REMARK: NOTE: ALSO INCLUDED WILL BE TREATABILITY STUDIES.

All amounts are in U.S. Dollars

Items preceded by an asterisk have been revised

Previous Total Amount: 0.00

New Total Amount: 10,106,335.00

Change for this Revision: 10,106,335.00

Latest Promised Ship Date: 10-01-03

Subcontract Notes (NONE) </TABLE>

Section III

Supplier Data Requirements

SECTION III REQUISITION SUPPLIER DATA REQUIREMENTS

<TABLE>

<C> <C> <C> <C> <C> <S> PROJECT # 735361-10101 REQ # 40069 REV # 0 ISSUE DATE: NOT ISSUED RUN DATE: 01-24-03 PAGE 1 </TABLE>

SDR # 220 GENERAL

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QUANTITY REQUIRED

		,	PRINTS	COPIES		APPLIES TO ITEMS
<s> GENERA</s>		<c></c>			<c></c>	
01	TRANSPORT PLAN - SOW REFERENCE 3.1d WITH PROPOSAL	5			A/C	1.01
02	TRANSPORT REGULATIONS AND CERTIFICATIONS - SOW REFERENCE 3.1g (AND 4.1) WITH PROPOSAL	5			A/C	1.01
03	TRANSPORT SPILL RESPONSE & REMEDIATION PLAN - SOW REFERENCE 3.1h WITH PROPOSAL	5			A/C	1.01
0 4	PRETREATMENT PLAN - SOW REFERENCE 3.2e WITH PROPOSAL	5			A/C	1.01
05	TREATMENT/ DISPOSAL OPERATIONS PLAN - SOW REFERENCE 3.2g WITH PROPOSAL	5			A/C	1.01
06	TREATMENT/ DISPOSAL REGULATIONS AND CERTIFICATIONS - SOW REFERENCE 3.2J (AND 4.1) WITH PROPOSAL	5			A/C	1.01
07	TREATMENT/ DISPOSAL SPILL RESPONSE & REMEDIATION PLAN - SOW REFERENCE 3.2k WITH PROPOSAL	5			A/C	1.01
08	PUBLIC OUTREACH PLAN - SOW REFERENCE 3.3 WITH PROPOSAL >	5			A/C	1.01

LEGEND: (*) Items preceded with an asterisk are new or have been revised.

(\sharp) Items preceded with a \sharp must be submitted and reviewed prior to fabrication.

(+) Provide one copy with shipment, (A/C) = As completed.
(XX-WPTF) = XX Weeks Prior To Fabrication (XX-WAPO) = XX Wks After Issue

Equip PO

(XX-WARC) = XX Weeks after receipt of commitment.

(XX-WARO) = XX Weeks after receipt of orientation.

(XX-WARO) - AX Weeks after receipt of Offentation.

(XX-WPTS) = XX Weeks prior to shipment.

(XX-WPTC) = XX Weeks prior to construction

NOTE: Drawings shall be high quality reproducible suitable for microfilm; text data must be high quality bond:

> SECTION III REQUISITION SUPPLIER DATA REQUIREMENTS

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,			PRINTS	COPIES		APPLIES TO ITEMS
<s></s>	<pre><c> MANAGEMENT TEAM DESCRIPTION - SOW REFERENCE 3.5 WITH</c></pre>	<c></c>	 			<c></c>
	PROPOSAL	5			A/C	1.01
10	HEALTH AND SAFETY PROGRAM DESCRIPTION - SOW REFERENCE 4.2 WITH PROPOSAL	2			A/C	1.01
11	HEALTH AND SAFETY PERFORMANCE DATA - SOW REFERENCE 4.2 WITH PROPOSAL	5			A/C	1.01
12	QUALITY ASSURANCE PROGRAM DESCRIPTION - SOW REFERENCE 4.3 WITH PROPOSAL	2			A/C	1.01
13	NECDF SITE SAFETY PLAN - SOW REFERENCE 4.2 PRIOR TO INITIATIONS OF NECDF - SITE OPERATIONS	2		5	02-15-03	1.01
14	MONTHLY REPORTS - SOW REFERENCE 3.5d MONTHLY (LAST WORKDAY OF EACH MONTH)	2		5	A/C	1.01
15	WASTE MANIFESTS AND CERTIFICATIONS OF DISPOSAL/DESTRUCTION - SOW REFERENCE 3.2h WITH INVOICES					
<td>(SUBCONTRACT SECTION IV)</td> <td>2</td> <td></td> <td>5</td> <td>A/C</td> <td>1.01</td>	(SUBCONTRACT SECTION IV)	2		5	A/C	1.01

- LEGEND: (*) Items preceded with an asterisk are new or have been revised.
 - (#) Items preceded with a # must be submitted and reviewed prior to fabrication.
 - (+) Provide one copy with shipment, (A/C) = As completed.
 - (XX-WPTF) = XX Weeks Prior To Fabrication (XX-WAPO) = XX Wks After Issue

Equip PO

(XX-WARC) = XX Weeks after receipt of commitment.

(XX-WARO) = XX Weeks after receipt of orientation.

(XX-WPTS) = XX Weeks prior to shipment.

(XX-WPTC) = XX Weeks prior to construction

NOTE: Drawings shall be high quality reproducible suitable for microfilm; text data must be high quality bond:

Section IV

Compensation and Payment

SECTION IV

COMPENSATION AND PAYMENT

COMPENSATION

As full and complete payment to Subcontractor for all of Subcontractor's Services and the full performance and observance by Subcontractor of all its duties, obligations, liabilities, and responsibilities hereunder, Contractor shall pay Subcontractor a sum not to exceed Ten Million One Hundred Six Thousand Three Hundred Thirty Five Dollars (\$10,106,335.00).

Compensation and payment shall be in accordance with the following Firm Fixed Price and Fixed Unit Price Agreements and Rate Schedules:

Treatability Studies

Contractor/Subcontractor agrees to a Firm Fixed Price (FFP) of One Million Eight Hundred Twenty Two Thousand Dollars, (\$1,822,000.00) as an initial component of the Subcontract for treatability studies by Subcontractor. This FFP will be paid to Subcontractor regardless of the success or failure of the completed treatability studies. Payment will be made as progress payments with the total amount due upon completion of the treatability studies, on a net 15-day payment cycle.

The FFP of One Million Eight Hundred Twenty Two Thousand Dollars, (\$1,822,000.00) for treatability studies will be allowed to Contractor, as a full credit against the proposed unit prices for subsequent treatment of the first 30,000 gallons of Hydrolysate. The credit is based on the assumption that the treatability studies are successful and Subcontractor has been issued a Notice to Proceed for either the 30%, 70% or 100% participation options.

Public Outreach

Contractor/Subcontractor agrees to a Fixed Unit Rate total amount of One Million Two Hundred Sixty Thousand Seven Hundred Seventy Dollars (\$1,260,770.00) for

Public Outreach activities with the baseline total of 3,000 man-hours. (Ref: Section IV Attachment #1).

Two Hundred Sixty Thousand Dollars, (\$260,000.00) is to be invoiced by Subcontractor for deposit in an ESCROW account for the exclusive use in the local community of Dayton, Ohio for Public Outreach activities, regardless of the success or failure of the completed treatability studies. Contractor may process the invoice for payment as soon as the Subcontract has been executed.

All other outreach activities remaining, in the subcontract amount of One Million Seven Hundred Seventy Dollars, (\$1,000,770.00) will be invoiced as they are incurred on a 15-day payment cycle.

Page 1 of 6

FIXED PRICE UNIT RATE SCHEDULE FOR PUBLIC OUTREACH

1. FIXED PRICE:	Total Hours	Hourly Rate	Extended Total Price
Public Outreach Support			
a) Program Manager	1092	\$125.00	\$ 136,500.00
b) Adm. Assistant	853	\$ 45.00	\$ 38,385.00
c) Sr. Env. Scientist	480	\$ 95.00	\$ 45,600.00
d) Clerical	575	\$ 35.00	\$ 20,125.00
		SUB-TOTAL	\$ 240,610.00
1-A PUBLIC OUTREACH SUPPORT			
a) Travel			\$ 40,610.00
b) Related Expense			\$ 979,550.00
		SUB-TOTAL	\$1,020,160.00
	PUBLIC OU	JTREACH TOTAL	\$1,260,770.00

The duration of the public outreach effort will commence December 21, 2002 and continue effectively through the end of the NECDF scheduled process, anticipated to be July 1, 2004. The initial subcontract baseline total of 3,000 man-hours was chosen for the purpose of establishing pricing for this Section IV, 1 and 1-A public outreach efforts.

Should the actual hours be more or less than stated above, an equitable adjustment to the Scope of Work and Subcontract Price may be determined.

Travel and other related expenses incurred, shall not exceed the Joint Federal Travel Regulation (JFTR), Volume 1, Government Approved Rate(s) for those expenses. Supporting Documentation will be required with Invoices for all cost and labor hour charges associated with Public Outreach and Support. The allocation of public outreach cost and labor hours shown as Section IV Attachment Number 1, is included as support documentation for the proposed public outreach baseline price of One Million Two Hundred Sixty Thousand Seven Hundred Seventy Dollars, (\$1,260,770.00).

Section IV - Compensation and Payment Page 2 of 6

1-B HANDLING AND TRANSPORTATION UNIT PRICES

Item	Quantity	Unit Price	Extended
1. Hydrolysate	30,000 gal.	\$20.11	\$ 603,300.00
2. Hydrolysate (Additional)	90,000 gal.	\$ 1.91	\$ 171,900.00
Hydrolysate (Additional)	138,300 gal.	\$ 1.91	\$ 264,153.00
TOTAL	258,300 gal.		
		SUB-TOTAL	\$1,039,353.00

1-C TREATMENT AND DISPOSAL UNIT PRICES

Item	Quantity	Unit Cost	Extended
1. Hydrolysate 2. Hydrolysate (Additional) 3. Hydrolysate (Additional) TOTAL	30,000 gal. 90,000 gal. 138,300 gal. 258,300 gal.	\$116.69 \$ 18.64 \$ 18.64	\$ 3,500,700.00 \$ 1,677,600.00 \$ 2,577,912.00
(From Sub-Totals 1, 1-P	A, 1-B and 1-C)	SUB-TOTAL TOTAL	\$ 7,756,212.00 \$10,056,335.00
(Insurance Proposal Opt	ion 4-A)		\$ 50,000.00
	Total Subcontra	act Amount:	\$10,106,335.00

NOTE: Items Number 1-B and 1-C, are subdivided into two or more estimated quantities and are separately priced. The Contractor will evaluate each of

these items on the basis of total price of its sub-items. Where the actual quantity of work performed for items Number 1-B and 1-C is less than 85% of the quantity of the first sub-item listed under such item, the Subcontractor will be paid at the Subcontract unit price for that sub-item for the actual quantity of work performed and, in addition, an equitable adjustment to the Subcontract may be determined upon the request of either party. Any such adjustment shall be based solely on the increase in costs associated with the variation of the quantity below the 85% limit. Variation from the estimated quantity in the actual work performed under any second or subsequent sub-item will not be the basis for an adjustment in the Subcontract unit price.

The 1-C Unit Prices were developed using Hydrolysate descriptive information from the MSDS contained in the original Request for Proposal (RFP). Significant variations in Hydrolysate, as produced at NECDF, may be subject to equitable price adjustment.

Section IV - Compensation and Payment Page 3 of 6

INSURANCE

Proposal Option 4-A:

Fifty Thousand Dollars (\$50,000.00)

Subcontractor and/or its Subcontractors shall provide an additional layer of Insurance so as to increase the aggregate amount of insurance available for Comprehensive General Liability and Pollution Liability (both sudden and non-sudden inclusive of environmental impairment) to a level of Twenty Five Million Dollars (\$25,000,000.00) per occurrence.

Proposal Option 4-B:

To Be Determined (TBD)

Subcontractor and /or its Subcontractors to exercise any transportation insurance policy buy back options, related to policy exclusions for Terrorist Acts.

The additional insurance requirements identified in options 4-A and 4-B will be arranged and provided by Subcontractor, upon a Notice to Proceed for the transport, treatment and disposal of Thirty Percent (30%) or more of operational Hydrolysate. The cost for option 4-B must be submitted and approved by Contractor when identified/available from Subcontractor's Insurance Carrier.

(Ref: Insurance Requirements Section V Special Provisions and Section VI General Provisions Article 6).

2. INVOICES

- A. Subcontractor shall submit an Invoice to Contractor for services rendered. Contractor shall pay Subcontractor within fifteen (15) days after receipt of Subcontractors Invoice for services rendered hereunder; such invoices shall be approved by Contractor before payment. Subcontractor shall submit itemized invoices showing gallons of Hydrolysate waste handled/transported and gallons of Hydrolysate waste treated/disposed, hours and dates worked and task performed by Subcontractor, in Public Outreach Support and related travel expenses. Supporting documentation including copies of NECDF originated waste manifests and certifications of disposal/destruction (COD's) associated with invoiced materials, and documentation substantiating expenses incurred, shall accompany, invoices rendered. Payments made on such Invoices shall relieve Contractor of all further obligations for such payments.
- B. Subcontractor shall mail invoices in duplicate to:

Parsons NEDCF Attn: Mel Mitchell Hwy 63 South - For Fedex shipments

Post Office Box 519 For US Mail Newport, Indiana 47966-0519

Reference: Subcontract Number 40069

Section IV - Compensation and Payment Page 4 of 6 $\,$

In addition to the foregoing, Invoices shall:

Be determined in strict accordance with this Subcontract and Prime Contract Clauses, Federal Government Regulations and standards that are incorporated into and made a part of this Subcontract.

- (2) Include an Invoice Number, invoice date, the Subcontract number.
- (3) Include a certification that the amounts being invoiced are accurate and that satisfactory services were provided in the quantities or percentage set out in the Invoice; and

Be signed by a responsible representative of the Subcontractor.

3. ADDITIONAL SERVICES / PRICING OF CHANGES

Subcontractor shall be compensated for approved additional services not included in this Subcontract, on an hourly basis, or a negotiated mutually agreeable basis as determined in accordance with the rate schedules as shown above or on a

Firm Fixed Price. All additional services shall be determined in accordance with the Changes clause of the General Provisions of this Subcontract.

4. LIMITATION OF FUNDS

If at any time Subcontractor has reason to believe that the total cost that it expects to incur in the performance of the public outreach/support work will exceed seventy-five percent (75%) of the total amount set forth in Item Number 1 and 1-A, Compensation, above, Subcontractor shall provide a thirty (30) day advance notification to the Contractor's Subcontract Administrator in writing to that effect, giving its revised estimate to complete the work under this subcontract

Contractor shall not be obligated to pay costs in excess of the total amount specified; and the Subcontractor shall not be obligated to perform the work, unless the Subcontractor is notified in writing, that such amount has been increased.

5. FINAL PAYMENT

The acceptance by Subcontractor of final payment under this subcontract shall operate as a full release of Contractor from any and all claims of Subcontractor and its agents for all services performed hereunder. The attached Subcontractor's Final Release and Indemnity Certificate and Indemnity Form SU-5 (1/91), (Section IV Attachment #2) must be completed, signed, notarized, and accompany the Subcontractor's request for final payment. (Reference Section VI, General Provisions Article 16).

Section IV - Compensation and Payment
Page 5 of 6

6. AUDIT

Contractor's duly authorized representatives shall have access at all reasonable times to all records, documents, files, and personnel necessary to audit and verify Subcontractor's charges to Contractor for work performed. Subcontractor shall retain records, documents and files related to such charges for a period of three (3) years following the date of final payment to Subcontractor for all work performed. Contractor's representatives shall have the right to reproduce any of the aforesaid documents.

If, as the result of an audit hereunder, Subcontractor is determined to have charged Contractor for amounts that are not allocable or non-verifiable, Subcontractor shall promptly reimburse Contractor for said amounts.

Section IV - Compensation and Payment Page 6 of 6

Section IV

Compensation and Payment - Attachment #1

1

ATTACHMENT 1 TO SECTION IV

<TABLE>

Public Outreach			Tra	vel		
	Total				Per Diem	Per Diem
	Hours	Rate	Extended Price	Travel Days	Rate	Total
<\$>	<c></c>	<c></c>	<c></c>	<c></c>	<c></c>	<c></c>
Job Classification						
Program Manager	1092	\$125.00	\$136,500.00	108	\$85.00	\$ 9,180.00
Admin Assit	853	\$ 45.00	\$ 38,385.00	36	\$85.00	\$ 3,060.00
Clerical (3)	575	\$ 35.00	\$ 20,125.00	108	\$85.00	\$ 9,180.00
Senior Ent/Scientist (2)	480	\$ 95.00	\$ 45,600.00	72	\$85.00	\$ 6,120.00
			\$240,610.00			\$27,540.00

<CAPTION>

- -----

Public Outreach

	Rental Car Days	Rate	
<s></s>	<c></c>	<c></c>	<c></c>
Job Classification			
Program Manager	108	\$65.00	\$ 7,020.00
Admin Assit	10	\$65.00	\$ 650.00
Clerical (3)	36	\$65.00	\$ 2,340.00
Senior Ent/Scientist (2)	36	\$85.00	\$ 3,060.00
			\$13,070.00
			\$40,610.00

</TABLE>

Related Expense				
Public Meetings				
Meeting Rooms	davs	24	\$ 500.00	\$ 12,000.00
Equipment Rental	days	24	\$ 800.00	
Advertisement	days	120	\$ 200.00	
Graphics	each	25	\$ 750.00	\$ 18,750.00
Supplies		1	\$ 4,150.00	\$ 4,150.00
Telephones	monthly	9	\$ 500.00	
Equipment Purchase		1	\$ 3,000.00	\$ 3,000.00
Total				\$ 85,600.00
Other Outreach				
Newspaper Subscriptions	monthly	180	\$ 40.00	\$ 7,200.00
Clipping Service	monthly			\$ 5,500.00
Printing			\$15,000.00	
Purchase TV / Radio Tapes	each	50	\$ 125.00	,
PR Consultants				\$100,000.00
Total				\$133,950.00
Community Development				
Training First Responders	each	10	\$ 5,000.00	
Equipment First Responders		18	\$20,000.00	
Outreach Grants	each	10		\$200,000.00
Community Education	each	10	\$ 5,000.00	\$ 50,000.00
Dayton Community				
Involvement Grants	each	2	\$50,000.00	
Total				\$760,000.00
Related				
Expense Total				Extended Total
Public Outreach				\$ 281,220.00
Public Meetings				\$ 85,600.00
Other Outreach				\$ 133,950.00
Community Development				\$ 760,000.00

Section IV

Compensation and Payment - Attachment #2

1

ATTACHMENT 2 TO SECTION IV

SUBCONTRACTOR'S FINAL RELEASE CERTIFICATE AND INDEMNITY

Project No. DAAA09-99-C-0016	Subcontract No. 742168-40069
This Release and Certificate is made in a Subcontract No include executed by the to as the "SUBCONTRACTOR" and PARSONS her "CONTRACTOR." The "OWNER," hereinafter re-	ding any and all Amendments thereto, hereinafter referred to as the
In consideration of payments made hereto: to the SUBCONTRACTOR for labor, material: SUBCONTRACTOR in the performance of said unconditionally releases the CONTRACTOR a Employees, Assigns, or Heirs from any and arising out of or during the performance claims, if any, that may with the consent specifically excepted from the terms of the Sheet 1, attached hereto (or, if none, so	s, and services furnished by the Subcontract, the SUBCONTRACTOR hereby and OWNER, their Officers, Agents, d all liens and claims whatsoever of said Subcontract other than such to of the CONTRACTOR and the OWNER, be this Release and Certificate, stated on
and in further consideration of the afore first duly sworn, further affirms and cerall labor, materials, and services of everonment of the afore federal payroll taxes and payroll insurar hereby agrees to indemnify CONTRACTOR and hold them harmless of and from, all liens costs, damages, and liability in any manuarising out of or in respect of any clair for payment for work, labor, services, or performed, furnished, or rendered under operformance of said SUBCONTRACTOR or the insurances.	retifies under penalty of perjury that ery nature by whomsoever furnished in Subcontract and all applicable state and nees have been paid and SUBCONTRACTOR of OWNER, respectively, against, and s, claims, demands, penalties, losses, ner whatsoever heretofore or hereafter m by any person or governmental agency materials heretofore or hereafter or pursuant to or in respect of the
Executed this day of	200
(Corporate Seal)	

Бу
OFFICIAL TITLE
(If the SUBCONTRACTOR is a corporation, the following Certificate will be executed.)
I,, certify that I am the
of the Corporation executing this
Release and Certificate; that who signed
this Release and Certificate on behalf of the SUBCONTRACTOR was then
of said Corporation; that said Release and
Certificate was duly signed for and on behalf of said Corporation authority of its governing body, and is within the scope of its corporate powers.
STATE OF
SS
COUNTY OF)
Subscribed and sworn to before me this day of 200_
NOTARY PUBLIC IN AND FOR SAID STATE
Section V

Special Provisions

SECTION V Rev. 0 SPECIAL PROVISIONS SUBCONTRACT 742168-40069

1. FEDERAL ACQUISITION REGULATION (FAR) FLOWDOWN CLAUSES:

Exhibit 1 to this Section identifies all FAR clauses incorporated by reference and/or in full text.

RECUESTS FOR INFORMATION (RFI) and DEVIATION (RFD)

Requests for Information/Deviation (RFI/D) Process:

All Subcontractor requests for technical information or technical clarification shall be forwarded to Contractor on Contractor's approved "Request for Information/Deviation" form, attached as Exhibit 2. Subcontractor shall control and maintain a log of all RFI/D's it submits to Contractor (reference Parsons Project Procedure 7.1.5). RFI/D's shall be controlled by using the last 3 digits of this Subcontract number followed by a 3 digit sequential number, i.e. 001. To assist in expediting the Work, Subcontractor shall discuss the RFI/D with Contractor's responsible Cost Account Manager (CAM) or his designee and obtain the CAM's initials on the RFI/D prior to officially submitting to Contractor's Document Control Department. RFI/D's submitted without the CAM's initials will be returned to the Subcontractor unanswered and not logged into Contractor' document control system. Contractor will endeavor to return all accepted RFI/D's to Subcontractor within 7 working days, or less.

SMALL BUSINESS SUBCONTRACTING PLAN

Federal Acquisition Regulation 52.219-9, identified in this Section V, Exhibit 1, establishes the requirement to submit such a plan with your proposal. The Plan must be approved prior to any subsequent Notice to Proceed. Failure to establish, and maintain the approved Plan may be grounds for Termination of the Subcont ract

NOTE: This requirement is applicable only if the awarded SUBCONTRACTOR(s) is a large business. If the awarded SUBCONTRACTOR(s) is a small business, the Small Business Subcontracting Plan IS NOT REQUIRED.

4. SALES/USE TAXES

The Newport Chemical Agent Disposal Facility (NECDF) Project is exempt from sales/use taxes for all materials, equipment, and other tangible personal property that is incorporated into the NECDF government facility. The exemption covers property for which the government will be the ultimate user. Contractor will issue the appropriate exemption certificate for Subcontractor use.

1 of 4

5 SITE ACCESS

The NECD and NECDF are "closed" facilities requiring appropriate badging et al considerations for entry. Separate entry considerations will be required for the NECD and limited area of the NECDF. Transport vehicles will be subject to search at both entry facilities and inspection time is estimated at approximately 15 minutes each. Badging et al access details will be provided and reviewed prior to initiation of NECDF-site work, but particular personnel requirements are

Subcontractor Waste Coordinator.

The Subcontractor's Waste Coordinator (see Statement of Work item 3.5b) will require unescorted entry to the NECDF limited area. The Waste Coordinator must be a U.S. citizen, have the ability to wear PPE as necessary, and be enrolled in the NECD Commander's Unescorted Access Program. A National Agency check is required for Unescorted Access Program entry and the Subcontractor will need to request, complete and return to the Contractor no later than four (4) months prior to the start of NECDF-site work the following related information:

- (1) Application for Civilian ID Card/Security Badge,(2) FD Form 258, Applicant Fingerprint Card, and
- (3) DD Form 398-2, Department of Defense National Agency Questionnaire.

Subcontractor Waste-Transport Personnel.

The Subcontractor's waste-transport personnel (ie, drivers) will need to be U.S. citizens and capable of wearing necessary PPE.

INSURANCE

Modifications to Section VI General Provisions - Standard Subcontract Article 6:

Substitute "6.A" with the following:

Workers' Compensation Insurance and Employer's Liability Insurance including occupational disease in accordance with the laws of States or Provinces where the Services are to be performed. Employer's Liability Insurance will have a limit of \$1,000,000 per person per accident.

If the performance of this Subcontract requires the use of watercraft or is performed over water, Subcontractor shall also provide coverage for liability under U.S. Longshoremen's and Harbor Workers' Compensation Act and liability for admiralty benefits and damages under the Jones Act and further provide that a claim "in rem" shall be treated as a claim against the employer.

Substitute "6.B" with the following:

Comprehensive General Liability Insurance, including contractual liability and Products Completed Operations coverage with limits of not less than \$5,000,000 combined single limit per occurrence.

2 of 4

Substitute "6.C" with the following:

Automobile Liability Insurance covering owned, non-owned and hired vehicles used by Subcontractor with limits of not less than \$5,000,000combined single limit per occurrence.

If Subcontractor's Comprehensive General Liability Insurance and Auto Liability Insurance are combined forming one policy and one limit of liability, the limits shall not be less than \$5,000,000 combined single limit per occurrence.

With respect to transportation responsibilities under this Subcontract, Subcontractor shall maintain or, if responsibility is subcontracted, require the transportation Subcontractor to maintain any other insurance or surety bonding in amounts that may be required under the laws, ordinances and regulations of any governmental authority, including the Federal Motor Carrier Act of 1980 and all rules and regulations of the Department of Transportation.

Substitute "6.D" with the following:

1. Professional Liability Insurance with a limit of at least \$1,000,000 each occurrence with annual aggregate for all claims of \$1,000,000 subject to a deductible each occurrence of not more than \$50,000.

2. Pollution Liability Insurance for sudden pollution, incidents, covering bodily injury and property damage, including cost of cleanup for pollution conditions arising from transportation, treatment and disposal operations performed under this Subcontract. The limit of liability for such insurance shall not be less than \$5,000,000 combined single limit per occurrence.

E. Insert and incorporate the following as "6.E.3":

Pollution Liability Insurance for non-sudden pollution incidents, covering bodily injury and property damage, including cost of cleanup for pollution conditions arising from transportation, treatment and disposal operations performed under this Subcontract. The limits of liability for such insurance shall not be less than \$5,000,000combined single limit per occurrence.

Substitute Paragraph "6.G.1" with the following:

Additional Insured; As to insurance set out in Paragraphs 6.B, 6.C, 6.D.2, 6.E.1, 6.E.2, 6.E.3, 6.F.1, and 6.F.2, hereof shall name the indemnities as additional insured in matters covered by this

Subcontract. "Indemnities" shall be defined as the Contractor or Owner or any of their respective parents, subsidiaries, agents, employees, invitees, servants, subcontractors, insurers, underwriters, and such other parties as they may designate.

Insert and incorporate the following as "6.G.3.1":

The insurance as specified in Paragraph 6.D.2 and 6.E.3 shall be issued on a claims made basis.

3 of 4

7. INDEMNIFICATION

Modifications to Section VI General Provisions - Standard Subcontract Article 15:

Substitute Article 15 with the Following:

To the fullest extent permitted by law, Subcontractor shall defend, indemnify and hold harmless Contractor, its parent and affiliates (and the officers, directors, employees, agents, and invitees of any of them), its subcontractors and suppliers of any tier (subcontractors), and Client from and against any and all liabilities, claims, demands, damages, or costs, including, without limitation, settlement sums, attorney fees, consultant and expert fees (liabilities), alleged or incurred in connection with (1) personal injury and/or property damage, (2) workers' compensation assessments or claims involving employees of Subcontractor and/or its subcontractors, (3) environmental and/or natural resource damages, (4) breach by Subcontractor of this Subcontract, (5) violation by Subcontractor of any applicable law pursuant to clause 7, (6) fines/penalties/assessments levied by any regulatory body or governmental entity, and/or (7) any other liabilities arising from Subcontractor's and/or its subcontractors performance of the Services, and including liability caused by the concurrent negligence of Contractor and/or Client, unless caused by the sole negligence of Contractor.

See Special Provisions Incorporated by Attachments:

Special Provisions - Attachment #1 Parent Company Guarantee (Tab m)
Special Provisions - Attachment #2 Documents Incorporated by Reference and
Termination Clause for Treatability Studies (Tab n)
Special Provisions - Attachment #3 Cell Phone use on NECDF Depot (Tab o)
Special Provisions - Attachment #4 Patents and Intellectual Property
Ownership identification (Tab p)

4 of 4

Section V

Special Provisions - Attachment #1

1

[LOGO]

Attachment #1 to Section V

PARENT COMPANY GUARANTEE

This Guarantee Agreement (hereinafter referred to as "Guarantee") is given by PERMA-FIX ENVIRONMENTAL SERVICES, INC. (hereinafter referred to as "Guarantor"), a corporation duly organized and existing under the laws of the State of Delaware, the United States of America to PARSONS INFRASTRUCTURE AND TECHNOLOGY GROUP, INC. (hereinafter referred to as "PARSONS"), a corporation duly organized and existing under the laws of the State of Nevada, the United States of America

RECITALS

- (1) PARSONS wishes to utilize the services, know-how, technology, engineering, and expertise of companies related to Guarantor for Treatability Studies, Public Outreach, Transport, Treatment and Disposal of Hydrolysate Waste, relative to the Newport Chemical Disposal Facility ("TSDF Project") at Newport, Indiana.
- (2) As an inducement to PARSONS for awarding a subcontract for the above services to Perma-Fix of Dayton, Inc. (hereinafter, "Subcontractor"), the Guarantor is willing to guarantee the performance, duties and obligations of Subcontractor on the TSDF Project, under Parsons Subcontract #742168-40069 effective December 21, 2002.

In consideration of the award by PARSONS of the TSDF Project, Subcontract #742168-40069, for Treatability Studies, Public Outreach, Transport, Treatment and Disposal of Hydrolysate Waste Services, to Subcontractor, the Guarantor hereby agrees as follows:

(1) Guarantor hereby guarantees the complete performance and fulfillment of contractual obligations by Subcontractor as set forth in the fully executed Subcontract #742168-40069 (hereinafter, "Subcontract") between PARSONS and Subcontractor:

- (2) If Subcontractor fails to perform according to the terms and conditions of the Subcontract or fails to fulfill contractual obligations under the Subcontract, then Guarantor shall perform or cause to be performed such obligations, and/or fulfill such contractual obligations, promptly upon the demand of PARSONS, to the same extent and in the same manner as if Guarantor were the Subcontractor;
- (3) This Guarantee shall be subject to and enforceable under the laws, of the

IN WITNESS WHEREOF, the Guarantor has executed this Guarantee effective the 21st day of December 2002.

/s/ Louis Centofanti

Name: Louis Centofanti

Title: Chairman Permafix Env. Services Inc.

1940 N.W. 67th Place, Suite A Gainesville, Florida 32563

Telephone (352) 373-4200 / Fax (352) 373-0040

Section V

Special Provisions - Attachment #2

1

Attachment #2 to Section V special Provisions

The documents listed below are incorporated herein, by reference, in full force and effect as if they were presented in full text:

- 1) Request for Proposal (RFP) dated July 26, 2002.
- 2) Request for Proposal (RFP) Amendment #1 dated August 13, 2002.
- 3) Request for Proposal (RFP) Amendment #2 dated August 26, 2002.
- 4) Perma-Fix Proposal for TSDF dated August 26, 2002.
- 5) Parsons letter to Perma-Fix dated September 16, 2002 identifying Proposal deficiencies.
- 6) Parsons letter to Perma-Fix dated September 18, 2002 identifying Proposal omissions and math errors.
- 7) Perma-Fix letter to Parsons dated September 19, 2002 with response and clarification for item #5: and #6 above.
- 8) Parsons letter to Perma-Fix for site survey visit and questions/answers.
- 9) Minutes for TSDF negotiations on November 6, 2002.
- 10) Memoranda of Agreements for TSDF negotiations on November 6, 2002.
- 11) Minutes for TSDF negotiations on November 7, 2002.
- 12) Memoranda of Agreements for TSDF negotiations on November 7, 2002.
- 13) Minutes for conference call November 12, 2002 with Parsons/Perma-Fix regarding TSDF Negotiations on November 6, 2002 and November 7, 2002.
- 14) Perma-Fix letter to Parsons dated November 15, 2002 providing Parent Company guarantee and D&B, Report clarifications.
- 15) Perma-Fix letter to Parsons dated November 18, 2002 providing clarification and supplemental information.
- 16) Parsons letter dated December 21, 2002 Notice of Award and Limited Notice to Proceed.

Insert the following Special Provisions Clauses into Section V $\ensuremath{\operatorname{Rev}}$ 0 Special Provisions.

TERMINATION TREATABILITY STUDIES:

"Subcontractor agrees that should Subcontractor fail to provide satisfactory assurance to Contractor or its customer, in accordance with the established criteria for satisfactory completion of the Phase I treatability study, Contractor will suspend all follow on work for transport, treatment and disposal of Hydrolysate without further obligation beyond Phase I activities. It is the understanding of both parties that all cost associated with the treatability and required actions related to Subcontractor's preparation for performance of follow on phase II activities related to the established scope for Phase II and to meet established program schedules are included in the fixed price Phase I activities and are severable from Phase II transport, treatment and disposal activities. Further, that both parties agree that should subcontractor fail to meet the established criteria for successful completion of the Phase I treatability study, Contractor may based on its sole opinion terminate all work related to Phase II transport, treatment and disposal, in accordance

with the provision established within the contract without obligation for any or all cost incurred by Subcontractor in preparation for Phase II work beyond those accomplished in accordance with the firm fixed priced activities under Phase I".

"Subcontractor agrees that due to the nature and sensitivity of this project conditions may arise that are beyond the control or independent of the actions of either party. Should in its sole opinion the Contractor determine that the project can not proceed due to a material impairment beyond the control of either party; both parties agree that the Contractor may suspend work in accordance with the established provisions of the Contract. Further that during the period of such suspension the Subcontractor shall fully support the Contractor actions to recommence subcontractor performance and or actions necessary to obtain and initiate an alternate source(s) for performance of work. It is the intent of both parties that should a condition exists after the successful completion of the Phase I treatability study (and beyond the control of either party) that in the sole opinion of the Contractor can not be resolved after due effort by both parties; the Contractor may terminate or cancel for convenience without prejudice, all remaining work in accordance with the provisions established within the Contract. Further, that during the period of notification to terminate, the Contractor may immediately proceed to and the Subcontractor shall support actions required to obtain alternate performance of the established scope of work".

Section V

Special Provisions - Attachment #3

[GRAPHIC] Attachment #3 to Section V Special Provisions

DEPARTMENT OF THE ARMY
NEWPORT CHEMICAL DEPOT
P.O.BOX 160
NEWPORT, INDIANA 47966-0160

REPLY TO ATTENTION OF

AMSSB-ONC-SF 12 December 2002

MEMORANDUM FOR All Depot Employees

SUBJECT: Use of Cell Phones in Vehicles on the Depot

- 1. Effective immediately the use of cell phones while driving vehicles on the depot is prohibited. When using a cell phone in a vehicle, the vehicle must be stopped out of the flow of traffic. This requirement will be added to the Depot safety rules.
- 2. The, National Safety Council, the National Transportation Safety Board, and the Department of Defense recommend not using communications devices while operating vehicles. Statistically, the probability of accidents increases when using communications devices while operating vehicles.

/s/ JOSEPH F. MARQUART

JOSEPH F. MARQUART

LTC, CM

Commanding

Section ${\tt V}$

Special Provisions - Attachment #4

[LETTERHEAD OF [Perma-Fix Environmental Services, Inc]]

February 24, 2003

Government Office Complex Parsons Highway 63 South Newport, IN 47966

Attn: Melvyn Mitchell

Subcontract Administrator

Subject: Subcontract No. 742168 40069, Amendment 0

Dear Melvyn:

Please find attached the applications for patents and intellectual properties that we previously discussed. $\,$

It is my understanding that this letter will be incorporated into the contract.

The described patents and intellectual properties activities were clearly started prior to Perma-Fix's involvement in the Newport Hydrolysate Project.

If you have any questions or need additional information, please feel free to contact me at 865-376-0084.

Sincerely,

/s/ Larry W. McNamara

- -----

Larry W. McNamara President

Nuclear Services Division

Attachments: As noted above.

APPLICABLE PATENT & INTELLECTIAL PROPERTIES

Patent Application

1. Separation and destruction of organic materials.

Description:

Use of separation and persulfate oxidation in water from solids (soils & sludges) to remove and destroy organic materials.

Status:

Patents filed on 7/21/98, Serial Number 09/120,351

Patent Application

 Destruction of Tributyl phosphates, organo-phosphates and organo-phosphonates.

Description:

Use of persulfate in water to destroy the above class of compounds.

Status:

Perma-Fix Patent disclosures sent to attorneys - May 2002. (Perma-Fix Control Number 0205-3) Filing in process.

Patent Application

 Catalyzed destruction of Tributyl-phosphates, organo-phosphates and organo-phosphonates.

Description:

The use of metal salts and hydrogen peroxides at highly specific conditions to destroy the above class of compounds.

Status:

Perma-Fix Patent disclosure sent to attorneys in May 2002 (Perma-Fix Control Number 0205-4) Filing in process.

Patent Application

4. Separation and destruction of mixed organic compounds using solvent extraction and oxidants in water.

Description:

Using solvent extraction then oxidants (persulfate & peroxide) to destroy organic compounds in water.

Status:

Discussion on considering whether to amend Number 1 with data or new patent.

Patent Application

5. Use of activated charcoal as an extractant in solvent extraction.

Description:

Activated charcoal is used to extract large volumes of organic materials from aqueous phase with and without an organic solvent.

Status:

Perma-Fix Patent Disclosure sent to file Oct. 2000. Not sent to attorneys; considering filing.

Section V

Special Provisions Exhibit 1 to Section V, Rev 0

1

PRIME CONTRACT FLOW-DOWN CLAUSES APPLICABLE TO THIS SUBCONTRACT

- 1. The following clauses from the Federal Acquisition Regulation (FAR) and the Defense Federal Acquisition Regulation Supplement (DFARS) are cited by reference and by this reference are incorporated, as applicable, herein to the same extent as though set forth in full text. A copy of the clauses will be made available upon request. Additionally, the Federal Acquisition Regulation (FAR), are available on the World Wide Website (WWW): http://www.arnet.gov/far/., and the Defense Federal Acquisition Regulation Supplements, are available on: http://farsite.hill.af.mil/VFFARA.HTM.
- 2. In the following clauses, the term "CONTRACTOR" shall be substituted for the terms "GOVERNMENT" and "CONTRACTING OFFICER" wherever they occur. The term "SUBCONTRACTOR" shall be substituted for the term "CONTRACTOR".
- 3. The substitutions shall be made wherever they occur except in the "Examination of Records by Comptroller General" and "Government Property" clauses where the terms "GOVERNMENT" and "CONTRACTING OFFICER" remain unchanged and "SUBCONTRACTOR" is substituted for "CONTRACTOR".

4. FAR CLAUSES

CLAUSE	
NUMBER	TITLE OF CLAUSE
52.202-1	Definitions (10/95)
52.203-3	Gratuities (4/84)
52.203-5	Covenant Against Contingent Fees (4/84)
52.203-6	Restrictions on Subcontractor Sales to the Government (7/95)
52.203-7	Anti-Kickback Procedures (7/95)
52.203-8	Cancellation, Rescission, and Recovery of Funds for Illegal or Improper Activity (1/97)
52.203-10	Price or Fee Adjustment for Illegal or Improper Activity (1/97)
52.203-12	Limitation on Payments to Influence Certain Federal Transactions (6/97)
52.204-2	Security Requirements (8/96)
52.204-4	Printing/Copying Double-sided on recycled paper (6/96)
52.209-6	Protecting the Government's Interest When Subcontracting With Subcontractors Debarred, Suspended or Proposed for Debarment (7/95)
52.215-2	Audit and Records - Negotiation (6/99)
52.215-13	Subcontractor Cost or Pricing Data - Modifications (10/97)
52.215-15	Pension Adjustments and Asset Reversions (12/98)
52.215-18	Revision or Adjustment of Plans for Postretirement Benefits (PRB) Other Than Pensions (10/97)
52.217-8	Option to extend services (11/97)
52.219-8	Utilization of Small Business Concerns (10/99)
52.219-9	Small, Small Disadvantaged and Women-Owned Small Business Subcontracting Plan (AUG 1996) - Alternate II (MAR 1996)
52.219-16	Liquidated Damages - Subcontracting Plan (1/99)

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52.222-3	Convict Labor (8/96)
52.222-4	Contract Work Hours and Safety Standards Act - Overtime
	Compensation (7/95)
52.222-22	Previous Contracts and Compliance Reports (2/99)
52.222-21	Prohibition of Segregated Facilities (2/99)
52.222-26	Equal Opportunity (2/99)
52.222-35	Affirmative Action for disabled Veterans and Veterans of the Vietnam Era (4/98)
52.222-36	Affirmative Action for Workers with Disabilities (6/98)
52.222-37	Employment reports on disabled veterans and veterans of the
	Vietnam Era
52.222-41	Service Contract Act of 1965, as Amended (5/89)
52.222-43	Fair Labor Standards Act and Service Contract Act - Price
	Adjustment (Multiple Year and Option Contracts) (5/89)
52.223-1	Clean Air and Water Certification (2/99)
52.223-2	Clean Air and Water
52.223-3	Hazardous Material Identification and Material Safety Data (1/97)
52.223-6	Drug-Free Workplace (1/97)
52.223-10	Waste Reduction Program (10/97)
52.223-14	Toxic Chemical Release Reporting (10/96)
52.224-1	Privacy Act Notification (4/84)
52.224-2	Privacy Act (4/84)
52.227-1	Authorizations and Consent (7/95)
52.227-2	Notice and Assistance Regarding Patent and Copyright Infringement (8/96)
52.227-10	Filing of Patent Applications - Classified Subject Matter (4/84)
52.228-5	Insurance - Work on a Government Installation (1/97)
52.229-5	Taxes - Contracts performed in U.S. Possessions or Puerto Rico $(4/84)$
52.232-17	Interest (6/96)
52.237-2	Protection of Government Buildings, Equipment, and Vegetation $(4/84)$
52.242-13	Bankruptcy (7/95)
52.244-5	Competition in Subcontracting (12/96)
52.244-6	Subcontracts for Commercial Items and Commercial Components (5/2001)
52.246-25	Limitation of Liability - Services (2/97)
52.247-63	Preference for U.S. Flag Air Carriers (1/97)
52.248-1	Value Engineering (2/2000)
52.249-2	Termination for Convenience of the Government (Fixed Price)

(9/96)

52.252-6 Authorized Deviations in Clauses (4/84) 52.253-1 Computer Generated Forms (1/91)

5. DEARS CLAUSES

DFARS CLAUSE

NUMBER TITLE OF CLAUSE

252.201-7000 Contracting Officer's Representative 252.203-7001 Special Prohibition on Employment 252.203-7002 Display of DOD Hotline Poster

252.204-7000 Disclosure of Information

252.204-7003 Control of Government Personnel Work Product
252.205-7000 Provision of Information to Cooperative Agreement Holders

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252.209-7000 Acquisition from Subcontractors subject to on-site inspection under the Intermediate-Range Nuclear Forces (INF) Treaty. 252.211-7000 Acquisition Streamlining 252.215-7000 Pricing Adjustments 252.215-7002 Cost Estimating System Requirements 252.219-7003 Small, Small Disadvantaged and Women-Owned Small Business Subcontracting Plan (DOD Contracts) 252.223-7004 Drug-Free Work Force Preference for Certain Domestic Commodities 252.225-7012 252.225-7026 Reporting of Contract Performance Outside the United States 252.225-7031 Secondary Arab Boycott of Israel 252.227-7013 Rights in Technical Data - Noncommercial items 252.227-7020 Rights in Special Works 252.227-7030 Technical Data Withholding of Payment 252.227-7037 Validation of Restrictive Markings on Technical Data 252.231-7000 Supplemental Cost Principles 252.243-7001 Pricing of Contract Modifications 252.245-7001 Reports of Government Property 252.249-7002 Notification of Anticipated Contract Termination or Reduction 252.232-7007 Limitation of Government's Obligation 252.236-7000 Modification Proposals - Price Breakdown 252.243-7000 Engineering Change Proposals 252.243-7002 Certification of Requests for Equitable Adjustments

See Special Provisions Exhibit 1 to Section V, Rev O Attachment 1 Incorporating additional FAR Clause

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SECTION V

SPECIAL PROVISIONS EXHIBIT 1 TO SECTION V, REV 0 ATTACHMENT #1

SECTION V ATTACHMENT #1

SPECIAL PROVISIONS EXHIBIT 1 TO SECTION V, REV 0

PRIME CONTRACT FLOW-DOWN CLAUSES APPLICABLE TO THIS SUBCONTRACT

Insert the following Federal Acquisition (FAR) Clause into Exhibit 1 to Section V. Rev O Special Provisions:

52.223-13 Certification of Toxic Chemical Release Reporting (10/96).

Section V

Special Provisions Exhibit 2 to Section V, Rev 0

Exhibit 2

<table></table>			
<\$>	<0	'>	<c></c>
[_] REQUEST FOR DEVIATION	No	.:	Date:
[_] REQUEST FOR INFORMATION		Job No.: CLIN No.:	
Subject:			Discipline:
RFD/For Deviation: Eng	. Drawings: [_] Speci	fication: [_] Standa	rd: [_] Other: [_]
RFI/Reason: [_] Inf	ormation: [_] Clarific		-
Reference:			

[_] CIS ATTACHED	CAM Review:		
Originator:		Date:	
Reply: Response to a RFD/RFI is a technical additional cost. If Subcontractor febe submitted by the Subcontractor and being performed in the feild.	solution only to t els additional cost d approved by Parso	he above query and does s is justified, a "Chang ns Program Management pr	not authorize ge Request" must rior to the work
[_] CIS ATTACHED			
Discipline Engineer:		Date:	
Engineer:		Date:	
:	AS-BUILT REQ	'D: Date:	
Manager:		Date:	
Operations Manager:		'D: Date:	

</TABLE>

Section VI

General Provisions Standard Subcontract

SECTION VI

GENERAL PROVISIONS STANDARD SUBCONTRACT

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1 DEFINITIONS

As used throughout this Subcontract, the following terms and expressions have the meanings and interpretation set forth below: $\frac{1}{2} \left(\frac{1}{2} \right) \left(\frac$

- A. "Subcontract" means this written contract executed between Contractor and Subcontractor.
- B. "Services" and/or "Work" mean all services, labor, material and actions necessary for the performance of this Subcontract.
- C. "Prime Contract" means the contract between Contractor and Contractor's Client in support of which this Subcontract is issued, including any amendments thereto.
- D. "Contractor" means the entity identified as such on the face page of this Subcontract.
- E. "Subcontractor" means the entity, and all of its lower tier subcontractors, identified as such on the face page of this Subcontract.
- F. "Client" and/or "Owner" refers to the entity identified as Client on the face page of this Subcontract.

- G. "Subcontract Administrator" refers to Contractor's Procurement Department representative assigned to administer this Subcontract.
- H. "Subcontract Price" refers to the total price as set forth in Paragraph 1, Compensation and Payment section of this Subcontract.
- I "Site", "Worksite" and/or "Jobsite" refer to Client's premises associated with the Prime Contract.
- 2 GOVERNING LAW

This Subcontract shall be interpreted and enforced in accordance with the laws of the State of California.

3 INDEPENDENT CONTRACTOR

Subcontractor shall be an independent contractor in all its operations and activities hereunder, and all employees furnished by Subcontractor to perform the Services shall be deemed to be Subcontractor's employees exclusively; and shall be paid by Subcontractor for all services in this connection. Subcontractor is not authorized to represent Contractor or otherwise bind Contractor in any dealings between Subcontractor and any third parties.

4 TAXES, DUTIES, PERMITS, AND FEES

Subcontractor shall be responsible for all taxes, duties, permits, or fees necessary for the performance of the Services.

5 UNEMPLOYMENT INSURANCE AND TAXES

Subcontractor shall have full and exclusive liability for the reporting and payment of any and all taxes and contributions for unemployment insurance, old age retirement benefits and similar pensions, and annuities that may now or hereafter be imposed by the United States, any state, or any local governmental authority, whether measured by the wages, salaries, or remuneration paid to persons employed by Subcontractor or otherwise, for the Services. Subcontractor shall comply with all federal and state laws on such subjects, including all rules and

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Section VI GENERAL PROVISIONS - STANDARD SUBCONTRACT

regulations and shall maintain suitable forms, books, and records.

6 INSURANCE

Subcontractor, from the time of start of the Services hereunder until completion of the Services, shall provide at its own expense and maintain in effect the following types and amounts of insurance with terms and with insurance companies satisfactory to the Contractor:

- A. Workers' Compensation Insurance and Employer's Liability Insurance including occupational disease in accordance with the laws of States or Provinces where the Services are to be performed Employer's Liability Insurance will have a limit of \$250,000 per person per accident.
 - If the performance of this Subcontract requires the use of watercraft or is performed over water, Subcontractor shall also provide coverage for liability under U.S. Longshoremen's and Harbor Workers' Compensation Act and liability for admiralty benefits and damages under the Jones Act and further provide that a claim "in rem" shall be treated as a claim against the employer.
- B. Comprehensive General Liability Insurance, including contractual liability and Products Completed Operations coverage with limits of not less than \$1,000,000 combined single limits.
- C. Automobile Liability Insurance coveringg owned, non-owned and hired vehicles used by Subcontractor with limits of not less than \$1,000,000 combined single limit.
 - If Subcontractor's Comprehensive General Liability Insurance and Auto Liability Insurance are combined forming one policy and one limit of liability, the limits shall not be less than \$1,000,000 combined single limit.
- D. Professional Liability Insurance with a limit of at least \$1,000,000 each occurrence with annual aggregate for all claims of \$1,000,000 subject to a deductible each occurrence of not more than \$50,000.
- E. If the performance of this Subcontract requires the use of watercraft, Subcontractor shall carry, or require the owners of such watercraft to carry:
 - Hull and Machinery (including Collision Liability) Insurance in an amount not less than the market value of the watercraft (Charterer's and/or Owner's Limitation Clause to be deleted) and,
 - Protection Indenmity Insurance in an amount not less than the market value of the watercraft or \$1,000,000, whichever is greater (Charterer's and/or Owner's Limitation Clause to be deleted).
- F. If the performance of this Subcontract requires the use of aircraft, Subcontractor shall carry, or require the owners of such aircraft to carry:

- All Risks Hull Insurance in an amount equal to the replacement value of the aircraft; and
- Bodily Injury Liability, including Passenger Liability of not less than \$1,000,000 applicable to any one person and \$1,000,000 for more than one person in any occurrence and \$1,000,000 for loss of or damage to property in any one occurrence.

G. Other Requirements

- Additional Insured: As to insurance set out in Paragraphs B, C, E.1, E.2, F.1, and F.2, Contractor and Owner shall be included as an additional insured.
- 2. Waiver of Subrogation: All policies shall be endorsed to provide that underwriters and insurance companies of Subcontractor shall not have any right of subrogation against Contractor or Owner or any of its parents, subsidiaries, agents, employees, invitees, servants, subcontractors, insurers, underwriters, and such other parties as they may designate.
- 3. Primary Insurance: All policies shall be endorsed to provide that, with respect to Subcontractor's Services, Subcontractor's insurance shall always be primary coverage with respect to any insurance that may be maintained by Contractor or Owner.
- 4. Notice of Cancellation: All policies shall be endorsed to provide that thirty (30) days prior written notice shall be given to Contractor in the event of cancellation or material change in the policies.
- 5. Subcontractor and its subcontractors at all times shall waive any right of recovery against Contractor or Owner or any of their parents, subsidiaries, affiliates, agents, employees, invitees, servants, subcontractors, insurers, underwriters, and such other parties as they may designate for loss or damage covered by insurance of the types specified in paragraphs B, C, D, E, and F above and the Excess Employers Liability Insurance.
- Certificates: Subcontractor shall furnish Certificates of Insurance evidencing insurance required hereunder before the start of any Services and upon request, shall furnish copies of the actual policies.

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SECTION VI GENERAL PROVISIONS - STANDARD SUBCONTRACT

Certificates of Insurance shall include specific reference to compliance with Paragraphs G.1, G.2, G.3, and G.4.

Subcontractor shall require its lower tier subcontractors to provide the same insurance coverages and requirements as described herein, unless otherwise agreed in writing between the parties.

7 LAWS AND REGULATIONS

- A. Subcontractor, its employees, and representatives, shall at all times comply with any and all applicable laws, ordinances, statutes, rules, and regulations, of the federal, state, or local government, including but expressly not limited to those relating to wages, hours, and working conditions. Subcontractor shall procure and pay for all permits and inspections required by any governmental authority for any part of the Services and shall furnish any bonds, security, or deposits required for performance of the Services.
- B. Subcontractor shall comply with all applicable laws, executive orders, and regulations concerning nondiscrimination in employment (including the Equal Opportunity Clause of Section 202, Executive Order 11246, dated September 24, 1965) 38 USC 2012, as amended by Section 402 of the Vietnam Veterans Readjustment Assistance Act of 1974 and Section 503 of the Rehabilitation Act of 1973, where are hereby incorporated herein by reference.

8 TIME OF PERFORMANCE

Time is of the essence in the performance of Subcontractor's obligations under this Subcontract. Subcontractor shall reimburse Contractor for the amount of any liability incurred by Contractor or Owner and the amount of any increase in the cost or expense to Contractor in performing Contractor's Services under the Prime Contract as a result of Subcontractor's failure to perform the Services within the time specified in this Subcontract.

9 PERFORMANCE REQUIREMENTS

Anything that may be called for in the specifications and not shown on the drawings, or shown on the drawings and not called for by the specifications, shall be of like effect as if called for and shown in both. In the event of a conflict between the drawings and the specifications, the specifications shall govern. If Subcontractor discovers any ambiguities or discrepancies, Subcontractor shall immediately submit the matter to Contractor for determination.

10 WARRANTIES

Subcontractor warrants that the Services to be performed pursuant to this Subcontract shall be performed in accordance with the standards customarily

provided by an experienced and competent organization rendering the same or similar services. Subcontractor shall reperform any of said services that were not performed in accordance with this standard at no cost to Contractor.

11 CHANGES AND EXTRA WORK

- A. Contractor may at any time, by written order to Subcontractor, and without notice to or consent of any sureties, make changes in or additions to the specifications or drawings, require additional work or services, or delete Services covered by this Subcontract (collectively "Change"). If any such Change causes any increase or decrease in the cost of, or the time required for performance of this Subcontract, an equitable adjustment shall be made in the Subcontract Price or performance schedule, or both, and this Subcontract shall be modified in writing accordingly. Any claim by Subcontractor for adjustment under this clause must be asserted within thirty (30) days from the date of receipt by Subcontractor of a written order from Contractor, provided, however, that Contractor may, in its discretion, receive and act upon any such claim at any time before final payment under this Subcontract. The claim shall be submitted to Contractor's designated Subcontract Administrator. Subcontractor shall make no additions, changes, alterations, or omissions except upon the prior written order of Contractor.
- B. No change shall be binding on either Subcontractor or Contractor unless issued in writing and signed by Contractor.

12 OVERTIME

Subcontractor shall operate on a straight time forty (40) hour work week. Overtime incurred by Subcontractor to maintain the Subcontract delivery or completion schedule shall not be reimbursed by Contractor.

13 LIENS, ENCUMBRANCES, AND CLAIMS

With respect to all Services provided by Subcontractor pursuant to this Subcontract: (1) no liens or other encumbrances shall be filed by Subcontractor; (2) Subcontractor expressly waives and relinquishes any and all rigs to such liens or encumbrances; (3) the waiver stated in (2) is an independent covenant supported by separate consideration included within the Subcontract Price; and (4) Subcontractor shall ensure that a clause

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substantially similar to this clause 13 is included in all lower tier subcontracts issued hereunder.

Contractor may, as a condition precedent to any payment, require Subcontractor to furnish complete waivers or releases of any and all such liens, charges, encumbrances, and claims. Waivers or releases must be furnished by Subcontractor covering all liens, charges, encumbrances, and claims as a condition to final payment.

14 PATENTS AND ROYALTIES

Subcontractor shall defend all suits and claims against Owner or Contractor, and shall hold each of them free and harmless, and hereby indemnifies Owner and Contractor from all liability, damages, costs, and royalties, including without limitation reasonable attorney fees, from: (a) any infringement or alleged infringement of any patent, or for the misuse of any patented article, by Subcontractor in the performance of the Services, or (b) the infringement or alleged infringement of any patent by Owner's use or operation of the Services following the completion thereof by Subcontractor, or (c) the use or misuse, by Subcontractor during the performance of the Services, of any confidential information or secret processes, or (d) any use or misuse of confidential information or secret processes by Owner in the use or operation of the Services following acceptance.

15 INDEMNIFICATION

To the fullest extent permitted by law, Subcontractor shall defend, indemnify and hold harmless Contractor, its parent and affiliates (and the officers, directors, employees, agents, and invitees of any of them), its subcontractors and suppliers of any tier (subcontractors), and Client from and against any and all liabilities, claims, demands, damages, or costs, including, without limitation, settlement sums, attorney fees, consultant and expert fees (liabilities), alleged or incurred in connection with (1) personal injury and/or property damage, (2) workers' compensation assessments or claims involving employees of Subcontractor and/or its subcontractors, (3) environmental and/or natural resource damages, (4) breach by Subcontractor of this Subcontract, (5) violation by Subcontractor of any applicable law pursuant to clause 7, and/or (6) any other liabilities arising from Subcontractor's and/or its subcontractors performance of the Services, unless caused by the sole negligence of Contractor.

16 SUBCONTRACTOR'S FINAL RELEASE CERTIFICATE AND INDEMNIFICATION

After completion and acceptance of all Services, Subcontractor shall complete the "Subcontractor's Final Release Certificate or Indemnity" attached hereto and incorporated into this Subcontract by reference. This Certificate shall be submitted to the Subcontract Administrator along with Subcontractor's final invoice as prescribed in the Compensation and Payment section of this Subcontract.

- A. Default: Should Subcontractor at any time refuse or neglect to supply sufficient and properly skilled workers, or fail in any respect to prosecute the Services or any separable portion, with promptness and diligence, or fail in the performance of any portion of this Subcontract required for the satisfactory completion of the Services, or become insolvent, Contractor may terminate this Subcontract for default, after fortyeight (48) hours written notice to Subcontractor to correct the deficiency. Contractor may also terminate Subcontractor's right to proceed with the Services or such part of the Services where defaults have occurred.
- B. Convenience: Should the Prime Contract be terminated or canceled pursuant to the terms thereof, or upon ten (10) days advance notice, Contractor may terminate this Subcontract by written notice to Subcontractor. Such termination shall be effective in the manner specified in the notice and shall be without prejudice to any claims that Contractor or Owner may have against Subcontractor.
- C. Upon receipt of a termination notice pursuant to paragraphs A or B, above, Subcontractor shall, unless the notice directs otherwise, immediately discontinue the Services.
- D. In the event of a termination for default, Subcontractor shall not be entitled to receive any further payment, if any may then be due, until the Service is completed. Contractor may acquire, in the manner Contractor considers appropriate, services similar to the Services terminated for default. Subcontractor shall be liable for, and pay to, Contractor any reasonable cost, including the cost for additional managerial and administrative services, in excess of the Subcontract Price for the Services.
- E. In the event this Subcontract is terminated for convenience, the obligations of this Subcontract shall continue as to Services already performed, as to obligations entered into by Subcontractor, before the date of termination and as to obligations not reasonably terminable thereafter. Subcontractor shall be entitled to relative proportions of the agreed Subcontract Price for the portions of the Services done before the effective date of termination. Subcontractor shall not be entitled to any profit or fee on unperformed Services.

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SECTION VI GENERAL PROVISIONS - STANDARD SUBCONTRACT

- F. Subcontractor shall incorporate a termination clause substantially the same as set forth in this clause, in all purchase orders and subtier subcontracts.
- 18 SUSPENSION OF WORK
- A. Contractor may at any time suspend performance of all or any part of the Services by giving not less than five (5) working days written notice to Subcontractor. The suspension may be continued by Contractor for up to sixty (60) days during which period Contractor may at any time, by written notice, require Subcontractor to resume performance of the Services. If at the end of the sixty (60) day period of suspension, Contractor has not required a resumption of the Service, that portion of the Service that has been suspended may be terminated by either party pursuant of the provisions of this paragraph. Subcontractor shall be compensated in accordance with, and shall follow the procedures specified in Clause 17, paragraphs C and E above.
- B. Contractor, shall not be liable for any damages, anticipated profits, or costs incurred with respect to suspended Services during any period of suspension.
- 19 NOTICE OF THIRD PARTY CLAIMS AGAINST THE SUBCONTRACTOR

Subcontractor shall give Contractor immediate notice of any suit or action filed, or any claims made, against Subcontractor arising out of the performance of this Subcontract or any lower-tier subcontracts. Subcontractor shall furnish immediately to Contractor copies of all documents received by Subcontractor pertinent to such actions, suits, or claims.

20 NOTICES AND CORRESPONDENCE

Unless otherwise indicated in the Special Provisions of this Subcontract, any notice or communication shall be considered as having been given to Subcontractor or Contractor, if mailed by registered mail, postage prepaid, to Subcontractor Name and Address or the Contractor "Refer All Questions and Correspondence To" blocks on the face page of this Subcontract.

21 DISPUTES

The parties shall use the following procedures as a condition precedent to either party pursing other available remedies:

- A. The parties agree to make a good faith effort to mutually resolve any dispute as quickly as practicable.
- B. If, however, the parties have not so resolved the dispute, the parties' representatives shall submit the dispute to one of their senior-level executives (including Presidents, Executive Vice Presidents, Senior Vice Presidents, and Chief Financial Officers) for review and simultaneously notify the other party in writing thereof. A meeting shall be held within

ten (10) business days after such notice of submission attended by such senior-level executives of the parties and any necessary representatives to attempt in good faith to negotiate a resolution of the dispute.

- C. If, within ten (10) business days after such meeting, the parties have not succeeded in negotiating a resolution of the dispute, either party may institute suit in the Superior Court of the State of California for the County of Los Angeles, or, if mutually agreed to by the parties, the dispute shall be settled by arbitration in Pasadena, California, in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association and shall be conducted by a single arbitrator, licensed to practice law within the State of California and established to be a member of the American Bar Association's Forum Committee on the Construction Industry.
 - 1. If the dispute is arbitrated, the award of the sole arbitrator shall be conclusive and binding upon the parties, subject to the provisions of the California Code of Civil Procedure relating to arbitration, as the code now exists, or may be amended during the term of this Subcontract. The arbitrator may fix and assess expenses of the arbitration against either or both parties.
 - Judgment upon the arbitration award rendered by the arbitrator, may be entered in a court of competent jurisdiction.
 - 3. The final judgment of the Court (after all appeals have been finally determined or the time for appeal has expired, without an appeal having been made) or in absence thereof the decision of the arbitrator with respect to any dispute shall be binding on Contractor and Subcontractor.
 - 4. During the pendency and conduct of any litigation or arbitration, or litigation to enforce the award of an arbitrator, at Contractor's direction, Subcontractor shall continue to perform the Services. However, nothing in this paragraph shall limit the right of Contractor to complete the Services.
- D. The rights and obligations of the parties under this provision shall survive completion or termination of this Subcontract.

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SECTION VI GENERAL PROVISIONS - STANDARD SUBCONTRACT

22 ASSIGNMENT

Subcontractor shall not subcontract, _____, or assign the Services, or any part thereof, and shall not assign any monies to become due, without first obtaining the written consent of Contractor in each and every instance.

23 CONFIDENTIALITY OF ALL DRAWINGS, SPECIFICATIONS, AND PLANS

All drawings, specifications, plans, and all other information furnished to Subcontractor by Contractor or obtained by Subcontractor pursuant to its performance of the Services under this Subcontract shall be held in confidence by Subcontractor and shall not be used by Subcontractor for any purpose other than for the performance of the Services or as authorized in writing by Contractor or Owner. Subcontractor acknowledges that all such plans, drawings, specifications, and all information gathered by Subcontractor in the performance of the Services under this Subcontract is the property of Contractor or Owner and shall be returned to Contractor with any copies made at the completion of the Services, save one confidential record copy.

24 RELEASE OF NEWS INFORMATION

No news release, including photographs and films, public announcement, denial, or confirmation shall be made by Subcontractor concerning the subject matter of this Subcontract without the prior written approval of Contractor.

25 GRATUITIES

Subcontractor warrants that neither it nor any of its agents or representatives has offered or given any gratuities to Contractor's or Owner's employees, agents or representatives to secure this Subcontract or to secure favorable treatment with respect thereto.

26 RIGHTS, REMEDIES AND WAIVER

The rights and remedies provided in this Subcontract to Contractor shall be cumulative with and in addition to the rights and remedies otherwise available at law or elsewhere provided for herein. No failure to exercise or delay in exercising on the part of Contractor of any right provided by this Subcontract or at law shall operate as a waiver thereof.

27 ORDER OF PRECEDENCE

In the event of an inconsistency between provisions of this Subcontract, the inconsistency shall be resolved in the following order:

- (1) Special Provisions
- (2) General Provisions
- (3) Statement of Work
- (4) Compensation and Payment

28 OFFSET

Contractor may deduct from any payments due to the Subcontractor under this Subcontract any amounts due, or claimed to be due, to Contractor or Owner from Subcontractor.

29 SEVERABILITY

If any provision in this Subcontract is determined to be void or unenforceable, such determination shall not affect the validity of any other provision.

30 ENTIRE AGREEMENT

This Subcontract, together with all documents, specifications, and drawings incorporated herein by reference, constitutes the entire agreement between Contractor and Subcontractor, and there are no terms, conditions, or provisions, either oral or written, between the parties other than those herein contained, and this Subcontract supersedes any and all oral or written representations, inducements, or understandings of any kind or nature between the parties relating to the Services.

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