



## **CONTACT INFORMATION**

Mining Records Curator  
Arizona Geological Survey  
1520 West Adams St.  
Phoenix, AZ 85007  
602-771-1601  
<http://www.azgs.az.gov>  
[inquiries@azgs.az.gov](mailto:inquiries@azgs.az.gov)

The following file is part of the

Arizona Department of Mines and Mineral Resources Mining Collection

## **ACCESS STATEMENT**

These digitized collections are accessible for purposes of education and research. We have indicated what we know about copyright and rights of privacy, publicity, or trademark. Due to the nature of archival collections, we are not always able to identify this information. We are eager to hear from any rights owners, so that we may obtain accurate information. Upon request, we will remove material from public view while we address a rights issue.

## **CONSTRAINTS STATEMENT**

The Arizona Geological Survey does not claim to control all rights for all materials in its collection. These rights include, but are not limited to: copyright, privacy rights, and cultural protection rights. The User hereby assumes all responsibility for obtaining any rights to use the material in excess of "fair use."

The Survey makes no intellectual property claims to the products created by individual authors in the manuscript collections, except when the author deeded those rights to the Survey or when those authors were employed by the State of Arizona and created intellectual products as a function of their official duties. The Survey does maintain property rights to the physical and digital representations of the works.

## **QUALITY STATEMENT**

The Arizona Geological Survey is not responsible for the accuracy of the records, information, or opinions that may be contained in the files. The Survey collects, catalogs, and archives data on mineral properties regardless of its views of the veracity or accuracy of those data.

PRINTED: 03/05/2003

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: KLANER & DOOLIN

ALTERNATE NAMES:

FRANCONIA

VIVA LUZ (LIGHT OF LIFE)

MOHAVE COUNTY MILS NUMBER: 324A

LOCATION: TOWNSHIP 17 N RANGE 19 W SECTION 36 QUARTER --

LATITUDE: N 34DEG 48MIN 38SEC LONGITUDE: W 114DEG 15MIN 37SEC

TOPO MAP NAME: WARM SPRINGS SE - 7.5 MIN

CURRENT STATUS: PAST PRODUCER

COMMODITY:

SILICON CRISTOBOLITE

CLAY KAOLIN

SAND & GRAVEL

BIBLIOGRAPHY:

ADMMR KLANER AND DOOLIN FILE

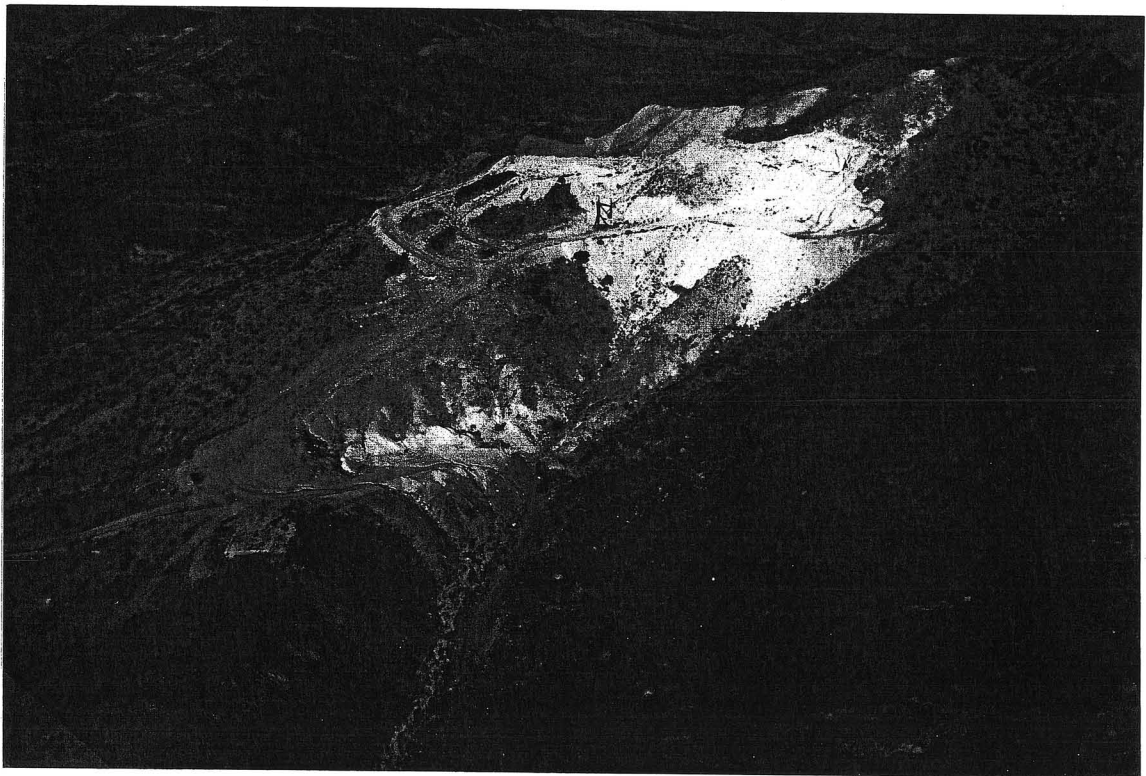
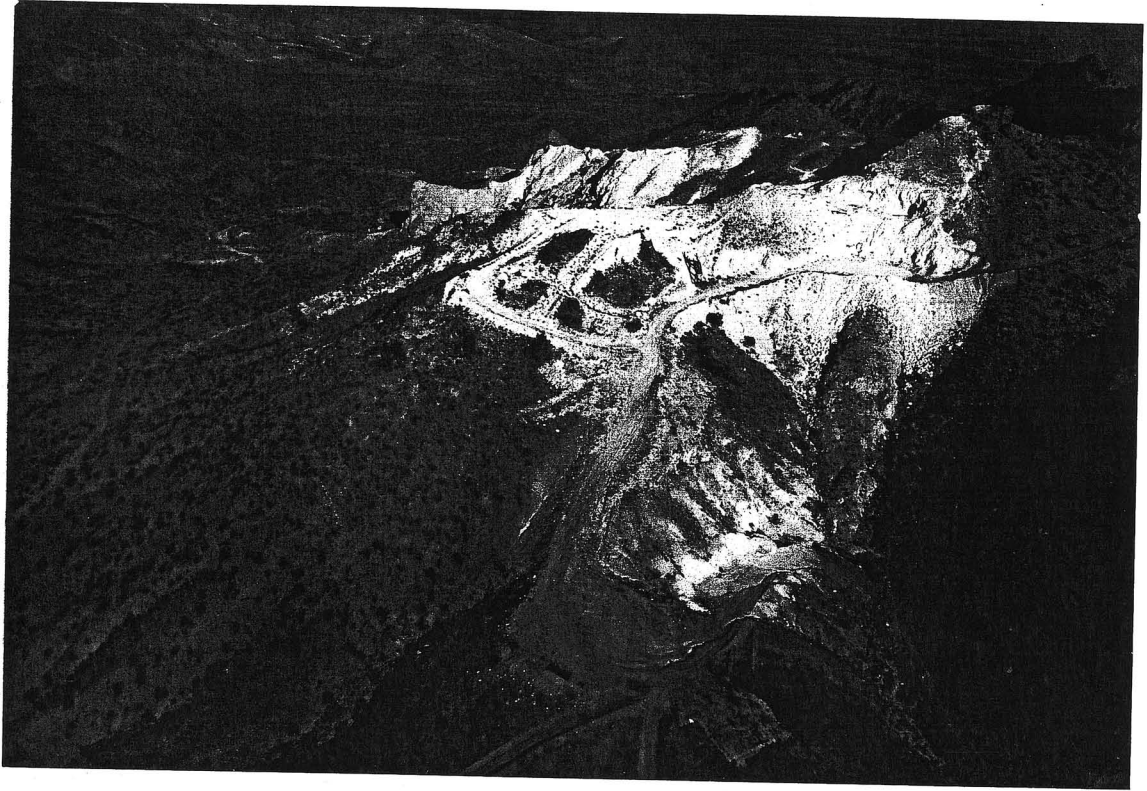
AZ. LAND DEPT. MASTER LEASE FILE LIST

NO. 1154



KLANER & DOOLIN

MOHAVE COUNTY  
FILE #2



Temporary Page — Photo's Removed for Scanning

## **Jobs**

### **Overview**

This section contains information regarding current and projected new jobs. We would like to state that HeatShield Technologies, Inc. is an equal opportunity employer and the managements guidelines and philisophy is to affirmative action hiring and opportunities for advancement from within.

### **Current and future Jobs**

HeatShield Technologies Inc. employs three employees. Once the processing plant is constructed and operating the following schedule outlines the minimum new jobs that would be created. Should heatShield sales, financing , and expected growth be obtained HeatShield would employ 52 employees and have a payroll of over 1.5 millon. HeatShield Technologies is an Affimative Action and an Equal Opportunity Employer and expects that most jobs would be filled by the local community. HeatShields management intends that the company and its employees be community supportive as well as active.

**PAUL R. ARENA**  
PRESIDENT

PHONE: (305)726-2774  
FAX: (305)726-6405

**HEATSHIELD**  
TECHNOLOGIES, INC.

8400 N.UNIVERSITY DR.SUITE 316 ,TAMARAC, FLORIDA 33321



# HertShield Technologies, INC.

## Current and Proposed Jobs

### Schedule

Prepared By	Initials	Date
Approved By		

		1	2	3	4
		FY 92	FY 93	FY 94	
1	<u>CURRENT</u>				1
2	President	84000	120000	180000	2
3	Executive Vice President	72000	102000	154000	3
4	Secretary	27000	30000	33000	4
5					5
6					6
7	<u>New Jobs</u>				7
8					8
9	<u>Administrative - Office</u>				9
10					10
11	1-Computer Operator	18000	20000	22000	11
12	1-General Office		16000	18000	12
13					13
14	<u>Sales</u>				14
15					15
16	1-Marketing Manager	50000	60000	75000	16
17	1-Sales position		40000	45000	17
18	1-Sales position			40000	18
19					19
20	<u>Research and Development</u>				20
21	1-Chemist	—	50000	60000	21
22	1-Lab Assistant	—	—	25000	22
23					23
24					24
25					25
26	<u>Processing Plant</u>				26
27					27
28	1- PLANT FOREMAN	35000	38000	41000	28
29	1- Shift Foreman	—	—	35000	29
30	3- MACHINE OPERATORS	68904	74416	80370	30
31	3- MACHINE OPERATORS -	—	68904	74416	31
32	6- MACHINE OPERATORS	—	—	137808	32
33	3- General Labor/Machine Helper	56376	60886	65756	33
34	3- General Labor/Machine Helper	—	56376	60886	34
35	8- General Labor/Machine Helper	—	—	150336	35
36	3- Packaging/Shipping Labor	46980	50738	54797	36
37	3- Packaging/Shipping Labor	—	46980	50738	37
38	8- Packaging/Shipping Labor	—	—	135280	38
39	CURRENT Jobs/WAGES	(3) 183000	(15) 556040	(27) 1014963	39
40	New Job / WAGES	(12) 275260	(12) 278260	(25) 513424	40
	Total Jobs / Total WAGES	(13) 458260	(27) 834300	(52) 1528387	

# **Pro-forma Financial Projections**

## **OVERVIEW**

This section contains three different financial projections based on the sales price of \$700.00, \$1000.00, and \$1300.00 per ton.

Each scenario uses the same basis for calculating the financial projections.

Details of the basis used for the calculations are contained in the "Notes to the Pro-forma Financial Projections" located in the back of this section.

# **Pro-forma Financial Projections**

**Scenario #1**

**BALANCE SHEET**

	<b>FY91</b>	<b>FY92</b>	<b>FY93</b>	<b>FY94</b>
<b>Assets</b>				
<b>Current Assets</b>				
Cash	\$300,000	\$778,657	\$2,027,656	\$5,009,275
Investments	\$0	\$0	\$0	\$0
Accounts Receivable	\$0	\$0	\$0	\$0
Notes Receivable	\$8,793	\$8,793	\$8,793	\$8,793
Inventory	\$0	\$45,000	\$0	\$0
<b>Total Current Assets</b>	<b>\$308,793</b>	<b>\$832,450</b>	<b>\$2,036,449</b>	<b>\$5,018,068</b>
<b>Plant &amp; Equipment</b>				
Land	\$0	\$100,000	\$100,000	\$100,000
Building	\$0	\$300,000	\$300,000	\$300,000
Plant Equipment	\$0	\$750,000	\$1,500,000	\$3,000,000
Mining Equipment	\$0	\$100,000	\$100,000	\$100,000
Office Equipment	\$11,000	\$15,000	\$18,000	\$24,000
Less Accumulated Depreciation	(\$1,850)	(\$184,323)	(\$516,846)	(\$1,149,369)
<b>Net Property &amp; Equipment</b>	<b>\$9,150</b>	<b>\$980,677</b>	<b>\$1,401,154</b>	<b>\$2,274,631</b>
Other Assets	\$14,000	\$4,000	\$4,000	\$4,000
<b>Total Assets</b>	<b>\$331,943</b>	<b>\$1,817,127</b>	<b>\$3,441,603</b>	<b>\$7,296,699</b>
<b>Liabilities &amp; Owner Equity</b>				
<b>Current Liabilities</b>				
Short Term Debt	\$0	\$218,325	\$264,040	\$415,984
Accounts Payable	\$0	\$4,000	\$100,000	\$150,000
Income Taxes Payable	\$2,000	\$0	\$4,000	\$5,000
Accrued Liabilities	\$0	\$40,000	\$80,000	\$120,000
<b>Total Current Liabilities</b>	<b>\$2,000</b>	<b>\$262,325</b>	<b>\$448,040</b>	<b>\$690,984</b>
Long Term Debt	\$0	\$928,725	\$1,201,010	\$1,688,040
<b>Owner/Stockholder Equity</b>				
Common Stock	\$591,090	\$591,090	\$591,090	\$591,090
Retained Earnings	(\$261,147)	\$34,987	\$1,201,463	\$4,326,585
<b>Total Liabilities &amp; Owner Equity</b>	<b>\$331,943</b>	<b>\$1,817,127</b>	<b>\$3,441,603</b>	<b>\$7,296,699</b>
<b>Ratios</b>				
<b>Current Ratio</b>	<b>15439.65%</b>	<b>317.34%</b>	<b>454.52%</b>	<b>726.22%</b>
<b>Quick Ratio</b>	<b>15439.65%</b>	<b>300.18%</b>	<b>454.52%</b>	<b>726.22%</b>

The projections shown here are based on the average sales price of \$700.00 per ton

## HeatShield Technologies Inc.

**Income Statement**

	<b>FY92</b>	<b>FY93</b>	<b>FY94</b>
<b>Sales</b>			
Klannerite	\$2,182,950	\$4,948,020	\$10,478,160
<i>% of Total Sales</i>	69%	63%	63%
Speciaty Coatings	\$980,000	\$2,870,000	\$6,090,000
<i>% of Total Sales</i>	31%	37%	37%
<b>Total Sales</b>	<b>\$3,162,950</b>	<b>\$7,818,020</b>	<b>\$16,568,160</b>
<b>Cost of Sales</b>			
Materials	\$235,068	\$634,768	\$1,346,168
<i>% of Total Sales</i>	7%	8%	8%
Labor	\$243,360	\$463,319	\$1,031,852
<i>% of Total Sales</i>	8%	6%	6%
Overhead	\$347,357	\$686,528	\$1,338,056
<i>% of Total Sales</i>	11%	9%	8%
<b>Total Cost of Sales</b>	<b>\$825,785</b>	<b>\$1,784,615</b>	<b>\$3,716,076</b>
<b>Gross Profit</b>	<b>\$2,337,165</b>	<b>\$6,033,405</b>	<b>\$12,852,084</b>
<i>Gross Margin</i>	74%	77%	78%
<b>Operating Expenses</b>			
Selling Costs	\$299,517	\$821,230	\$1,476,067
<i>% of Total Sales</i>	9%	11%	9%
General & Administrative	\$296,529	\$427,998	\$598,548
<i>% of Total Sales</i>	9%	5%	4%
PDC Joint Venture Paymnt	\$925,166	\$2,501,302	\$5,607,162
<i>% of Total Sales</i>	29%	32%	34%
<b>Total Operating Expenses</b>	<b>\$1,521,212</b>	<b>\$3,750,530</b>	<b>\$7,681,777</b>
<i>% of Total Sales</i>	48%	48%	46%
<b>Income from Operations</b>	<b>\$815,953</b>	<b>\$2,282,875</b>	<b>\$5,170,307</b>
<i>% of Total Sales</i>	26%	29%	31%
Interest Income (Expense)	\$65,000	\$150,000	\$250,000
<b>Income before Taxes</b>	<b>\$880,953</b>	<b>\$2,432,875</b>	<b>\$5,420,307</b>
Taxes on Income	\$289,833	\$800,415	\$1,783,281
<b>Net Income</b>	<b>\$591,120</b>	<b>\$1,632,460</b>	<b>\$3,637,026</b>
<i>% of Total Sales</i>	19%	21%	22%

The income projections shown here are based on the assumption of the average sales price of \$700.00 per ton



**Source & Use of Funds**

	FY91	FY92	FY93	FY94
<b>Source of Funds</b>				
Gross Profit before Expenses	\$0	\$2,180,230	\$5,855,578	\$12,536,225
Depreciation and Amortization	\$1,800	\$182,523	\$332,523	\$632,523
Interest Income	\$0	\$25,000	\$50,000	\$100,000
Operating Cash Flow	\$1,800	\$2,387,753	\$6,238,101	\$13,268,748
Increased Long Term Debt	\$0	\$1,250,000	\$500,000	\$1,000,000
Issuance of Stock	\$591,090	\$0	\$0	\$0
Total Source of Funds	\$592,890	\$3,637,753	\$6,738,101	\$14,268,748
<b>Use of Funds</b>				
Marketing and Advertising	\$36,000	\$249,517	\$596,230	\$1,176,067
Salaries	\$113,029	\$203,000	\$292,840	\$410,500
Investments	\$8,750	\$0	\$0	\$0
Land	\$0	\$100,000	\$0	\$0
Building	\$0	\$300,000	\$0	\$0
Plant Equipment	\$11,000	\$750,000	\$750,000	\$1,500,000
Mining Equipment	\$0	\$100,000	\$0	\$0
Research and Development	\$96,311	\$50,000	\$225,000	\$300,000
Operational Expenses	\$27,800	\$93,529	\$135,158	\$188,048
PODC Joint Venture Payments	\$0	\$897,853	\$2,507,936	\$5,635,566
Loan Repayment-Prin/Int.	\$0	\$270,000	\$410,000	\$680,000
Dividends on Preferred Shares	\$0	\$0	\$0	\$0
Provision for Income Taxes	\$0	\$145,197	\$571,938	\$1,396,948
Total Use of Funds	\$292,890	\$3,159,096	\$5,489,102	\$11,287,129
<b>Summary of Changes in Working Capital</b>				
Total Sources of Funds	\$592,890	\$3,637,753	\$6,738,101	\$14,268,748
Total Funds Used	(\$292,890)	(\$3,159,096)	(\$5,489,102)	(\$11,287,129)
Cash Flow From Previous Year	\$0	\$300,000	\$778,657	\$2,027,656
Cumulative Cash Flow	\$300,000	\$778,657	\$2,027,656	\$5,009,275

The income projections here are based on the assumption of the average sales price of \$700.00 per ton

# **Pro-forma Financial Projections**

**Scenario #2**

## HeatShield Technologies, Inc.

**BALANCE SHEET**

	FY91	FY92	FY93	FY94
<b>Assets</b>				
<b>Current Assets</b>				
Cash	\$300,000	\$1,084,223	\$3,022,524	\$7,468,972
Investments	\$0	\$0	\$0	\$0
Accounts Receivable	\$0	\$0	\$0	\$0
Notes Receivable	\$8,793	\$8,793	\$8,793	\$8,793
Inventory	\$0	\$45,000	\$0	\$0
<b>Total Current Assets</b>	<b>\$308,793</b>	<b>\$1,138,016</b>	<b>\$3,031,317</b>	<b>\$7,477,765</b>
<b>Plant &amp; Equipment</b>				
Land	\$0	\$100,000	\$100,000	\$100,000
Building	\$0	\$300,000	\$300,000	\$300,000
Plant Equipment	\$0	\$750,000	\$1,500,000	\$3,000,000
Mining Equipment	\$0	\$100,000	\$100,000	\$100,000
Office Equipment	\$11,000	\$15,000	\$18,000	\$24,000
Less Accumulated Depreciation	(\$1,850)	(\$184,323)	(\$516,846)	(\$1,149,369)
<b>Net Property &amp; Equipment</b>	<b>\$9,150</b>	<b>\$980,677</b>	<b>\$1,401,154</b>	<b>\$2,274,631</b>
Other Assets	\$14,000	\$4,000	\$4,000	\$4,000
<b>Total Assets</b>	<b>\$331,943</b>	<b>\$2,122,693</b>	<b>\$4,436,471</b>	<b>\$9,756,396</b>
<b>Liabilities &amp; Owner Equity</b>				
<b>Current Liabilities</b>				
Short Term Debt	\$0	\$218,325	\$264,040	\$415,984
Accounts Payable	\$0	\$4,000	\$100,000	\$150,000
Income Taxes Payable	\$2,000	\$0	\$4,000	\$5,000
Accrued Liabilities	\$0	\$40,000	\$80,000	\$120,000
<b>Total Current Liabilities</b>	<b>\$2,000</b>	<b>\$262,325</b>	<b>\$448,040</b>	<b>\$690,984</b>
Long Term Debt	\$0	\$928,725	\$1,201,010	\$1,688,040
<b>Owner/Stockholder Equity</b>				
Common Stock	\$591,090	\$591,090	\$591,090	\$591,090
Retained Earnings	(\$261,147)	\$340,553	\$2,196,331	\$6,786,282
<b>Total Liabilities &amp; Owner Equity</b>	<b>\$331,943</b>	<b>\$2,122,693</b>	<b>\$4,436,471</b>	<b>\$9,756,396</b>
<b>Ratios</b>				
<i>Current Ratio</i>	<i>15439.65%</i>	<i>433.82%</i>	<i>676.57%</i>	<i>1082.19%</i>
<i>Quick Ratio</i>	<i>15439.65%</i>	<i>416.66%</i>	<i>676.57%</i>	<i>1082.19%</i>

The projections shown here are based on the average sales price of \$1000.00 per ton

## HeatShield Technologies, Inc.

## Income Statement

	FY 92	FY 93	FY 94
<b>Sales</b>			
Klannerite	\$3,118,500	\$7,068,600	\$14,968,800
% of Total Sales	76%	71%	71%
Specialty Coatings	\$980,000	\$2,870,000	\$6,090,000
% of Total Sales	24%	29%	29%
<b>Total Sales</b>	<b>\$4,098,500</b>	<b>\$9,938,600</b>	<b>\$21,058,800</b>
<b>Cost of Sales</b>			
Materials	\$266,360	\$645,000	\$1,312,360
% of Total Sales	6%	6%	6%
Labor	\$243,360	\$463,319	\$1,031,852
% of Total Sales	6%	5%	5%
Overhead	\$473,000	\$854,123	\$1,687,723
% of Total Sales	12%	9%	8%
<b>Total Cost of Sales</b>	<b>\$982,720</b>	<b>\$1,962,442</b>	<b>\$4,031,935</b>
<b>Gross Profit</b>	<b>\$3,115,780</b>	<b>\$7,976,158</b>	<b>\$17,026,865</b>
Gross Margin	76%	80%	81%
<b>Operating Expenses</b>			
Selling Costs	\$346,289	\$927,259	\$1,700,599
% of Total Sales	8%	9%	8%
General & Administrative	\$296,529	\$427,998	\$598,548
% of Total Sales	7%	4%	3%
Loan Repayment-Prin/Int.	\$270,000	\$410,000	\$680,000
% of Total Sales	7%	4%	3%
PDC Joint Venture Paymnt	\$1,341,242	\$3,515,212	\$7,768,620
% of Total Sales	33%	35%	37%
<b>Total Operating Expenses</b>	<b>\$2,254,060</b>	<b>\$5,280,469</b>	<b>\$10,747,767</b>
% of Total Sales	55%	53%	51%
<b>Income from Operations</b>	<b>\$861,720</b>	<b>\$2,695,689</b>	<b>\$6,279,098</b>
% of Total Sales	21%	27%	30%
Interest Income (Expense)	\$35,000	\$70,000	\$150,000
<b>Income before Taxes</b>	<b>\$896,720</b>	<b>\$2,765,689</b>	<b>\$6,429,098</b>
<b>Taxes on Income</b>	<b>\$295,020</b>	<b>\$909,911</b>	<b>\$2,115,173</b>
<b>Net Income</b>	<b>\$601,700</b>	<b>\$1,855,778</b>	<b>\$4,313,925</b>
% of Total Sales	15%	19%	20%

The income projections shown here are based on the assumption of the average sales price of \$1000.00 per ton

## Source &amp; Use of Funds

	FY91	FY92	FY93	FY94
<b>Source of Funds</b>				
Gross Profit before Expenses	\$0	\$3,115,780	\$7,976,158	\$17,026,865
Depreciation and Amortization	\$1,800	\$182,523	\$332,523	\$632,523
Interest Income	\$0	\$35,000	\$70,000	\$150,000
Operating Cash Flow	\$1,800	\$3,333,303	\$8,378,681	\$17,809,388
Increased Long Term Debt	\$0	\$1,250,000	\$500,000	\$1,000,000
Issuance of Stock	\$591,090	\$0	\$0	\$0
<b>Total Source of Funds</b>	<b>\$592,890</b>	<b>\$4,583,303</b>	<b>\$8,878,681</b>	<b>\$18,809,388</b>
<b>Use of Funds</b>				
Marketing and Advertising	\$36,000	\$296,289	\$702,259	\$1,400,599
Salaries	\$113,029	\$203,000	\$292,840	\$410,500
Investments	\$8,750	\$0	\$0	\$0
Land	\$0	\$100,000	\$0	\$0
Building	\$0	\$300,000	\$0	\$0
Plant Equipment	\$11,000	\$750,000	\$750,000	\$1,500,000
Mining Equipment	\$0	\$100,000	\$0	\$0
Research and Development	\$96,311	\$50,000	\$225,000	\$300,000
Operational Expenses	\$27,800	\$93,529	\$135,158	\$188,048
PDC Joint Venture Payments	\$0	\$1,341,242	\$3,515,212	\$7,768,620
Loan Repayment-Priv/Int.	\$0	\$270,000	\$410,000	\$680,000
Dividends on Preferred Shares	\$0	\$0	\$0	\$0
Provision for Income Taxes	\$0	\$295,020	\$909,911	\$2,115,173
<b>Total Use of Funds</b>	<b>\$292,890</b>	<b>\$3,799,080</b>	<b>\$6,940,380</b>	<b>\$14,362,940</b>

Summary of Changes  
in Working Capital

Total Sources of Funds	\$592,890	\$4,583,303	\$8,878,681	\$18,809,388
Total Funds Used	(\$292,890)	(\$3,799,080)	(\$6,940,380)	(\$14,362,940)
Cash Flow From Previous Year	\$0	\$300,000	\$1,084,223	\$3,022,524
<b>Cumulative Cash Flow</b>	<b>\$300,000</b>	<b>\$1,084,223</b>	<b>\$3,022,524</b>	<b>\$7,468,972</b>

The income projections shown here are based on the assumption of the average sales price of \$1000.00 per ton

# **Pro-forma Financial Projections**

**Scenario #3**

**BALANCE SHEET**

	FY91	FY92	FY93	FY94
<b>Assets</b>				
<b>Current Assets</b>				
Cash	\$300,000	\$1,398,973	\$4,026,327	\$9,937,273
Investments	\$0	\$0	\$0	\$0
Accounts Receivable	\$0	\$0	\$0	\$0
Notes Receivable	\$8,793	\$8,793	\$8,793	\$8,793
Inventory	\$0	\$45,000	\$0	\$0
<b>Total Current Assets</b>	<b>\$308,793</b>	<b>\$1,452,766</b>	<b>\$4,035,120</b>	<b>\$9,946,066</b>
<b>Plant &amp; Equipment</b>				
Land	\$0	\$100,000	\$100,000	\$100,000
Building	\$0	\$300,000	\$300,000	\$300,000
Plant Equipment	\$0	\$750,000	\$1,500,000	\$3,000,000
Mining Equipment	\$0	\$100,000	\$100,000	\$100,000
Office Equipment	\$11,000	\$15,000	\$18,000	\$24,000
Less Accumulated Depreciation	(\$1,850)	(\$184,323)	(\$516,846)	(\$1,149,369)
<b>Net Property &amp; Equipment</b>	<b>\$9,150</b>	<b>\$980,677</b>	<b>\$1,401,154</b>	<b>\$2,274,631</b>
Other Assets	\$14,000	\$4,000	\$4,000	\$4,000
<b>Total Assets</b>	<b>\$331,943</b>	<b>\$2,437,443</b>	<b>\$5,440,274</b>	<b>\$12,224,697</b>
<b>Liabilities &amp; Owner Equity</b>				
<b>Current Liabilities</b>				
Short Term Debt	\$0	\$218,325	\$264,040	\$415,984
Accounts Payable	\$0	\$4,000	\$100,000	\$150,000
Income Taxes Payable	\$2,000	\$0	\$4,000	\$5,000
Accrued Liabilities	\$0	\$40,000	\$80,000	\$120,000
<b>Total Current Liabilities</b>	<b>\$2,000</b>	<b>\$262,325</b>	<b>\$448,040</b>	<b>\$690,984</b>
Long Term Debt	\$0	\$928,725	\$1,201,010	\$1,688,040
<b>Owner/Stockholder Equity</b>				
Common Stock	\$591,090	\$591,090	\$591,090	\$591,090
Retained Earnings	(\$261,147)	\$655,303	\$3,200,134	\$9,254,583
<b>Total Liabilities &amp; Owner Equity</b>	<b>\$331,943</b>	<b>\$2,437,443</b>	<b>\$5,440,274</b>	<b>\$12,224,697</b>
<b>Ratios</b>				
<i>Current Ratio</i>	<i>15439.65%</i>	<i>553.80%</i>	<i>900.62%</i>	<i>1439.41%</i>
<i>Quick Ratio</i>	<i>15439.65%</i>	<i>536.65%</i>	<i>900.62%</i>	<i>1439.41%</i>

The projections shown here are based on the average sales price of \$1300.00 per ton

## HeatShield Technologies Inc.

**Income Statement**

	<b>FY92</b>	<b>FY93</b>	<b>FY94</b>
<b>Sales</b>			
Klannerite	\$4,053,400	\$9,188,400	\$19,458,400
<i>% of Total Sales</i>	81%	76%	76%
Speciaty Coatings	\$980,000	\$2,870,000	\$6,090,000
<i>% of Total Sales</i>	19%	24%	24%
<b>Total Sales</b>	<b>\$5,033,400</b>	<b>\$12,058,400</b>	<b>\$25,548,400</b>
<b>Cost of Sales</b>			
Materials	\$235,068	\$634,768	\$1,346,168
<i>% of Total Sales</i>	5%	5%	5%
Labor	\$243,360	\$463,319	\$1,031,852
<i>% of Total Sales</i>	5%	4%	4%
Overhead	\$347,357	\$686,528	\$1,338,056
<i>% of Total Sales</i>	7%	6%	5%
<b>Total Cost of Sales</b>	<b>\$825,785</b>	<b>\$1,784,615</b>	<b>\$3,716,076</b>
<b>Gross Profit</b>	<b>\$4,207,615</b>	<b>\$10,273,785</b>	<b>\$21,832,324</b>
<i>Gross Margin</i>	84%	85%	85%
<b>Operating Expenses</b>			
Selling Costs	\$393,034	\$1,033,249	\$1,925,079
<i>% of Total Sales</i>	8%	9%	8%
General & Administrative	\$296,529	\$427,998	\$598,548
<i>% of Total Sales</i>	6%	4%	2%
PDC Joint Venture Paymnt	\$1,813,633	\$4,515,483	\$9,872,776
<i>% of Total Sales</i>	36%	37%	39%
<b>Total Operating Expenses</b>	<b>\$2,503,196</b>	<b>\$5,976,730</b>	<b>\$12,396,403</b>
<i>% of Total Sales</i>	50%	50%	49%
<b>Income from Operations</b>	<b>\$1,704,419</b>	<b>\$4,297,055</b>	<b>\$9,435,921</b>
<i>% of Total Sales</i>	34%	36%	37%
<b>Interest Income (Expense)</b>	<b>\$65,000</b>	<b>\$150,000</b>	<b>\$250,000</b>
<b>Income before Taxes</b>	<b>\$1,769,419</b>	<b>\$4,447,055</b>	<b>\$9,685,921</b>
<b>Taxes on Income</b>	<b>\$582,138</b>	<b>\$1,463,081</b>	<b>\$3,186,668</b>
<b>Net Income</b>	<b>\$1,187,281</b>	<b>\$2,983,974</b>	<b>\$6,499,253</b>
<i>% of Total Sales</i>	24%	25%	25%

Income projections shown are based on the assumption of the average sales price of \$1300.00 per ton



**Source & Use of Funds**

	FY91	FY92	FY93	FY94
<b>Source of Funds</b>				
Gross Profit before Expenses	\$0	\$4,050,680	\$10,095,958	\$21,516,465
Depreciation and Amortization	\$1,800	\$182,523	\$332,523	\$632,523
Interest Income	\$0	\$60,000	\$90,000	\$200,000
Operating Cash Flow	\$1,800	\$4,293,203	\$10,518,481	\$22,348,988
Increased Long Term Debt	\$0	\$1,250,000	\$500,000	\$1,000,000
Issuance of Stock	\$591,090	\$0	\$0	\$0
<b>Total Source of Funds</b>	<b>\$592,890</b>	<b>\$5,543,203</b>	<b>\$11,018,481</b>	<b>\$23,348,988</b>
<b>Use of Funds</b>				
Marketing and Advertising	\$36,000	\$343,034	\$808,249	\$1,625,079
Salaries	\$113,029	\$203,000	\$292,840	\$410,500
Investments	\$8,750	\$0	\$0	\$0
Land	\$0	\$100,000	\$0	\$0
Building	\$0	\$300,000	\$0	\$0
Plant Equipment	\$11,000	\$750,000	\$750,000	\$1,500,000
Mining Equipment	\$0	\$100,000	\$0	\$0
Research and Development	\$96,311	\$50,000	\$225,000	\$300,000
Operational Expenses	\$27,800	\$93,529	\$135,158	\$188,048
PDC Joint Venture Payments	\$0	\$1,785,320	\$4,522,117	\$9,901,180
Loan Repayment-Prin/Int.	\$0	\$270,000	\$410,000	\$680,000
Dividends on Preferred Shares	\$0	\$0	\$0	\$0
Provision for Income Taxes	\$0	\$449,347	\$1,247,763	\$2,833,235
<b>Total Use of Funds</b>	<b>\$292,890</b>	<b>\$4,444,230</b>	<b>\$8,391,127</b>	<b>\$17,438,042</b>

**Summary of Changes  
in Working Capital**

Total Sources of Funds	\$592,890	\$5,543,203	\$11,018,481	\$23,348,988
Total Funds Used	(\$292,890)	(\$4,444,230)	(\$8,391,127)	(\$17,438,042)
Cash Flow From Previous Year	\$0	\$300,000	\$1,398,973	\$4,026,327
<b>Cumulative Cash Flow</b>	<b>\$300,000</b>	<b>\$1,398,973</b>	<b>\$4,026,327</b>	<b>\$9,937,273</b>

The income projections shown here are based on the assumption of the average sales price of \$1300.00 per ton

# **Notes to the Pro-forma Financial Projections**

## **SALES**

The sales figures are shown separately for sales of Klannerite™ as an industrial mineral used as an extender or filler and sales of our proprietary specialty coatings used in many applications such as refractory coatings, corrosive resistance coatings, and fire inert paints.

### **Klannerite™ Sales Assumptions**

A schedule was prepared to calculate 100% capacity output of an ACM 200 particle size reduction machine (see schedule).

- FY92 Sales Volume used was 3118 tons.

(This assumed 75% of the ACM 200 capacity could be sold, this would be less than 1/100 of 1% of the market).

- FY93 Sales Volume used was 7068 tons.

(This assumed a second ACM would be purchased and in place and 85% of both machine's capacity would be sold).

- FY94 Sales Volume used was 14968 tons.

(This assumes 2 more ACM 200 would be purchased for a total of 4 machines now operating and sales would be a 90% of capacity).

These sales volumes by ton are conservative considering the total extender and filler market in North America alone is presently over 12 million tons.

## **SALES (CON'T)**

### **Specialty Coatings Sales Assumptions**

The sales price of our specialty coating at a minimum will be \$70.00 per gallon. This price is used in all three scenarios. See the volumes totals used listed on the next page.

### **Volume Used**

FY92-Sales based on 14,000 gallons

FY93-Sales based on 41,000 gallons

FY94-Sales based on 87,000 gallons

We feel these projections are quite conservative considering that our product offers a energy saving factor of 18-24 % for refractory situation. The sales volumes shown in FY94 would not even supply all of USX plants enough to coat their soaking pits and furnaces.

## **COST OF SALES**

The cost of Sales is made up of three parts, materials, labor and processing overhead costs. The following are the assumptions used for each area.

### **Materials**

These are the cost of surface mining and transportation to the processing facility. Estimates have been received for both and are as follows.

- Surface mining=\$20.00 per ton
- Transportation costs as follow:  
Equipment to be purchased:

2 Front-End Loaders	Cost:	\$50,000
1 Dump Truck	Cost:	<u>\$50,000</u>
Total		\$100,000
( To be amortized over 5 years)		

## **COST OF SALES (CON'T)**

5 year amortization \$100,000÷5=	\$20,000
1 Contract Truck Driver	<u>\$30,000</u>
Total costs per year	\$50,000

Other material cost shown here is the cost to manufacturer of specialty coating. The cost is \$11.00 per gallon.

### **Labor**

These are the labor costs to run the processing plant. The numbers have been increased with each year's addition of ACM machines. Labor rates, including benefits, are based as follows and increase each year by at least 5% for inflation.

	<u>Wages</u> <u>FY92</u>	<u>Wages with</u> <u>Benefits</u>	<u>Total Yearly</u> <u>Wages</u>
Foreman	12.50	15.00	\$37,440.00
Machine Operators	9.16	11.00	\$27,456.00
General Labor/Machine Helper	7.50	9.00	\$22,464.00
Packaging and Shipping Labor	6.25	7.50	\$18,720.00

**Note:** See Section on Job Creation

### **Processing Overhead Costs**

Plans are to lease a facility at first. We have held discussions with city officials for Kingman who have indicated a willingness to finance a plant through Industrial Revenue Bonds and possible tax incentive for locating in their industrial park. The electricity quote is high. The electric company official said they would most likely compromise to a workable rate once total KWH are known.

Equipment is estimated on the high side to include installation, set-up and initial training to operators. The machines are being depreciated over a five year period for the purposes of these projections.

(See attached appendix Breakdown of Cost of Goods Sold for each scenario).

## **SALES AND MARKETING EXPENSES**

The sales and marketing costs include salaries for full time sales manager and addition of salespeople each subsequent year. Also included is the lease royalties fees due to New Mexico and Arizona Land Company. The lease calls for payments of 5% of gross sales less certain costs. Each year has been calculated out based on sales scenarios used.

(See Schedule of Breakdown in appendix).

## **GENERAL AND ADMINISTRATIVE EXPENSES**

(See Schedule of Breakdown following).

## **OTHER NOTES OF INTEREST**

### **Accrued Liability**

An accrued liability is also set-up to cover the 8% cumulative interest due on the preferred shares.

### **Long and Short Term Debt**

This is the payments due on the financing we hope to obtain. These proformas were prepared considering a loan would be secured for \$1250,000 at 13% interest rate for the first year and 11% for the remaining six years. Additional financing is required to expand production to the level used in the projections. This second round of financing calls for loans to be secured for \$500,000 in the second year and \$1,000,000 in the third year. For the purpose of the projection a 11% rate was used. and . The short term debt is the portion of the principal due in the next 12 months the remainder is listed as long term debt balance owed is listed as long term debt.

# **Pro-forma Financial Projections**

## **Schedules and Worksheets**

## Production Capacity

Initials Date

Prepared By

Approved By

## Projections

		1	2	3	4
	Full Production Capacity	FY 92 1-ACM MACHINE	FY 93 2-ACM MACHINES	FY 94 4-ACM MACHINES	
1	Capacity - ACM 200				1
2	LBS per hour	1320	2640	5280	2
3	HOURS per DAY (3-8hr shifts - 1hr Breaks)	21	21	21	3
4	Capacity Per Day	27720	55440	110880	4
5	Production day each week	6	6	6	5
6	Capacity per week	166320	332640	665280	6
7	Weeks per year	50	50	50	7
8	Production Capacity per year	8316000	16632000	33264000	8
9					9
10					10
11	Prod Capacity per year	8316000	16632000	33264000	11
12	5yr - Machine Life Expectancy	5	5	5	12
13	5yr Production Capacity per MACHINE	41580000	83160000	166320000	13
14					14
15					15
16					16
17					17
18					18
19					19
20					20
21					21
22					22
23					23
24					24
25					25
26					26
27					27
28					28
29					29
30					30
31					31
32					32
33					33
34					34
35					35
36					36
37					37
38					38
39					39
40					40



Cost of Sales  
Projection

		1	2	3	4	
			FY 92	FY 93	FY 94	
	<u>MATERIALS COSTS</u>					
1	MINING Costs (\$20.00 per ton)		62360-	141860-	299360-	1
2						2
3	<u>TRANSPORTATION COSTS</u>					3
4	Equipment Amortization		20000	20000	20000.00	4
5	Operator		30000	33000	36000-	5
6	Raw Material Costs		112360-	194360-	355360-	6
7	Specialty Coating Manufacturing Costs		154000-	451000-	957000-	7
8	TOTAL MINING COSTS		266360-	645000-	1312360-	8
9						9
10						10
11						11
12	<u>PROCESSING COSTS</u>					12
13	<u>LABOR:</u>					13
14	PLANT FOREMAN		1- 37440	1- 41184	1- 44302	14
15	Shift Foreman		-	-	1- 36000	15
16	MACHINE OPERATORS (3 Shifts)		3- 82368	6- 168854	12- 346150	16
17	General Labor/Machine Helper		3- 67392	6- 138153	14- 324772	17
18	PACKAGING AND SHIPPING LABOR		3- 56160	6- 115128	14- 280628	18
19	TOTAL PROCESS LABOR COSTS		243360-	463319	1031852	19
20						20
21						21
22						22
23						23
24	<u>PROCESSING OVERHEAD COSTS</u>					24
25						25
26	PLANT AMORTIZATION					26
27	300,000 ÷ 31.5 =		9523-	9523-	9523-	27
28	ROAD IMPROVEMENTS		50000-			28
29	EQUIPMENT AMORTIZATION					29
30	*750,000/5yr Depr		150000-	300000-	600000-	30
31	UTILITIES		203143-	426600-	853200-	31
32	TELEPHONES		6000-	8000-	16000-	32
33	EQUIPMENT MAINTENANCE		50000-	100000-	200000-	33
34	MISCELLANEOUS		5000-	10000-	15000-	34
35	TOTAL OVERHEAD COSTS		473000-	854123-	1687723-	35
36						36
37	TOTAL COSTS OF SALES		982720-	1962442-	4631935-	37
38						38
39						39
40						40

Revised 1/5/92



Sales AND MARKETING  
Projections

Prepared By	Initials	Date
Approved By		

		1	2	3	4
			FY 92	FY 93	FY 94
1					
2	Salaries - Mktg Mgr		50000 -	60000 -	75000 -
3	- Sales Staff			(1) 45000	(2) 100000 -
4					
5	Research and Development				
6	Contract Testing		50000 -	150000 -	200000 -
7	Chemist/Scientist			75000 -	100000 -
8					
9	Advertizing		25000 -	50000 -	100000 -
10					
11	Travel		25000 -	75000 -	125000 -
12					
13			150000 -	455000 -	700000 -
14	Lease Royalty Fee				
15					
16					
17					
18	Note: FY 92 A sales manager will be added and the focus will be				
19	specialty coating sales mainly concentrating on the				
20	Steel Industry.				
21	R&D will be continued with Universities and				
22	certain test will be contracted through testing				
23	labs and facilities.				
24					
25					
26					
27	FY 93 An in house sales person will be added <sup>to work</sup> along with				
28	the sales mgr. - expanding markets for coating sales				
29	will be the emphasis				
30					
31	R&D - We feel by this time we will have worked				
32	with the Military and SDI to develop High tech				
33	coatings but, need for a Chemist/Scientist on staff				
34	to research manufacturing and application for the				
35	new material for customers is necessary and				
36	an integral part of the overall support customer				
37	expect.				
38					
39	FY 94 Increased budget to handle on site customer				
40	service and increased customer base -				
	also adding another Sales rep.				

		1	2	3	4
			FY 92	FY 93	FY 94
1					
2	Salaries - Mktg Mgr		50000-	60000-	75000-
3	- Sales Staff			(1) 45000	(2) 100000-
4					
5	Research and Development				
6	Contract Testing		50000-	150000-	200000-
7	Chemist/Scientist			75000-	100000-
8					
9	Advertising		25000-	50000-	100000-
10					
11	Travel		25000-	75000-	125000-
12					
13	Sub Total		150000-	455000-	700000-
14	Lease Royalty Fee		149517-	366230-	776067-
15	Total Sales AND Mktg Expenses		299517-	821230-	1476067-
16					
17					
18	Note: FY 92 A sales manager will be added and the focus will be				
19	Specialty coating sales mainly concentrating on the				
20	Steel Industry				
21	R&D will be continued with Universities and				
22	certain test will be contracted through testing				
23	labs and facilities.				
24					
25					
26					
27	FY 93 An in house sales person will be added <sup>to work</sup> along with				
28	the sales mgr. - Expanding markets for coating sales				
29	will be the emphasis				
30					
31	R&D - We feel by this time we will have worked				
32	with the Military and SDI to develop High tech				
33	coatings but, need for a Chemist/Scientist on staff				
34	to research manufacturing and application for the				
35	new mineral for customers to see necessary, and				
36	an integral part of the overall support customer				
37	expect.				
38					
39	FY 94 Increased Budget to handle on site customer				
40	service and increased customer base -				
	also adding another sales rep.				

Sales AND MARKETING  
Projections

Scenario #2

Prepared By  
Approved By

FUND# Date

		1	2	3	4
			FY 92	FY 93	FY 94
1					
2	Salaries - Mktg Mgr		50000-	60000-	75000-
3	- Sales Staff			(1) 45000	(2) 100000-
4					
5	Research and Development				
6	Contract Testing		50000-	150000-	200000-
7	Chemist/Scientist			75000-	100000-
8					
9	Advertising		25000-	50000-	100000-
10					
11	Travel		25000-	75000-	125000-
12					
13	Sub Total		150000-	455000-	700000-
14	Lease Royalty Fee		196289-	472259-	1000599-
15	Total Sales AND MARKETING EXPENSES		346289	927259-	1700599-
16					
17					
18	Note: FY 92 A sales manager will be added and the focus will be				
19	Specialty coating sales mainly concentrating on the				
20	Steel Industry				
21	R&D will be continued with Universities and				
22	certain test will be contracted through testing				
23	labs and facilities.				
24					
25					
26					
27	FY 93	An in house salesperson will be added <sup>to work</sup> along with			
28		the sales mgr. - expanding markets for coating sales			
29		will be the emphasis			
30					
31	R&D	We feel by this time we will have worked			
32		with the Military and SDI to develop High tech			
33		coatings but, need for a Chemist/Scientist on staff			
34		to research manufacturing and application for the			
35		new mineral for customers to necessary and			
36		an integral part of the overall support customer			
37		expect.			
38					
39	FY 94	Increased budget to handle on site customer			
40		service and increased customer base -			
		also adding another sales rep.			



		1	2	3	4
			FY 92	FY 93	FY 94
1					
2	Salaries - Mktg Mgr		50000-	60000-	75000-
3	- Sales Staff			(1) 45000	(2) 100000-
4					
5	Research and Development				
6	Contract Testing		50000-	150000-	200000-
7	Chemist/Scientist			75000-	100000-
8					
9	Advertising		25000-	50000-	100000-
10					
11	Travel		25000-	75000-	125000-
12					
13	SubTotal		150000-	455000-	700000-
14	Lease Royalty Fee		243034-	578249-	1225079-
15	Total Sales AND Marketing Expenses		393034-	1033249-	1925079-
16					
17					
18	Note: FY 92 A sales manager will be added and the focus will be				
19	specialty coating sales mainly concentrating on the				
20	Steel Industry.				
21	R&D will be continued with Universities and				
22	certain test will be contracted through testing				
23	labs and facilities.				
24					
25					
26					
27	FY 93 An in-house salesperson will be added <sup>to work</sup> along with				
28	the sales mgrs. - Expanding markets for coating sales				
29	will be the emphasis				
30					
31	R&D - We feel by this time we will have worked				
32	with the Military and SDI to develop High tech				
33	coatings but, need for a Chemist/Scientist on staff				
34	to research manufacturing and application for the				
35	new mineral for customers is necessary and				
36	an integral part of the overall support customer				
37	expect.				
38					
39	FY 94 Increased budget to handle on site customer				
40	service and increased customer base -				
	also adding another sales rep.				

General AND Administrative  
Projections

Prepared By	Initials	Date
Approved By		

		1	2	3	4
			FY 92	FY 93	FY 94
1					
2	SALARIES		203000-	29284000	410500-
3	Payroll Taxes		12429-	15158-	16048-
4	Health Insurance		6000-	9000-	15000-
5	General Insurance		25000-	40000-	65000-
6	Rent - Offices		9600-	12000-	20000-
7	Telephone		12000-	16000-	19000-
8	Postage		6000-	8000-	10000-
9	Attorney Fees		6000-	7000-	8000-
10	Accounting Fees		4000-	6000-	8000-
11	Office Expenses		6500-	10000-	15000-
12	Miscellaneous		6000-	12000-	12000-
13			296529-	427998-	598548-
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					
37					
38					
39					
40					

# GENERAL AND Administrative Breakdown/Notes

Prepared By	Initials	Date
Approved By		

	1	2	3	4
		FY 92	FY 93	FY 94
1	<u>Salaries</u>			
2	President	84000-	120000-	180000-
3	Exec. VP	72000-	102840-	154260-
4	Secretary	26000-	28000-	30000-
5	Computer Operator	21000-	24000-	26500-
6	General Office	—	18000-	20500-
7		<u>203000.00</u>	<u>292840-</u>	<u>410500-</u>
8				
9				
10				
11	<u>Payroll Taxes</u>			
12	Pres.	4504-	5026-	5098-
13	Exec. VP	4330-	4777-	5098-
14	Secretary	1989-	2142-	2295-
15	Computer Operator	1606-	1836-	2027-
16	General Office	—	1377-	1530-
17		<u>12429-</u>	<u>15158-</u>	<u>16048-</u>
18				
19				
20	<u>General Insurance</u>			
21				
22	This is for product Liability Insurance and Directors liability. This is based on quotations from an insurance company. A full quote is forthcoming			
23				
24				
25				
26				
27	<u>Postage</u>			
28				
29	This includes general postage and Product information mailing as well as small samples freight			
30				
31				
32				
33	<u>Attorney Fees</u>			
34				
35	This is an estimate for legal agreements / Mfg Rep Agreements as well as patent filing etc.			
36				
37				
38				
39				
40				

# OVERVIEW

An opportunity exists to acquire a minority stake of a privately held, high growth potential company with proven limited natural reserves of a mineral known as Klannerite™.

The company HeatShield Technologies, Inc. ("HeatShield") was formed in May 1991. Under a joint venture agreement with PDC Industrial Coatings, Inc. ("PDC"), HeatShield has acquired fifty percent of the lease and one-hundred percent of the rights to mine, refine, market and distribute the unique mineral deposit consisting of Klannertite™ from the "Viva Luz Mine" located in Mohave County, Arizona. The Klannerite™ silica crystals have unique prismatic and refractory characteristics not commonly found elsewhere. To date the primary focus of sales and marketing has been toward the development of major industry customers in the paint, plastic, and paper groups. The company anticipates to limit the quantity of its initial customer base until such time as a selected few major companies have given substantial levels of acceptance to Klannerite™ and its derivatives. Price ranges of bulk sales range from \$300 to over \$3000 per ton with over 500,000 tons held in reserve. <sup>154</sup>

Numerous opportunities exist to obtain significant growth of over one-hundred percent per year in revenues and earnings. Principal among these are:

- New product applications, especially in the coatings and industrial mineral markets.
- Increased potential of the company's high heat reflective ceramic coating formula.
- Enhanced relations with major Fortune 500 companies already interested in the company's products.
- Expansion of the company's marketing effort to include markets outside of the United States.



In order to manage these activities and accomplish the growth objectives set out in the financial plan, additional management skills and staff are needed. The basic experience and skill to manage the company is already available through the resources of its board of directors whom are all accomplished individuals in their perspective areas of expertise. Detailed planning and implementation will be required for the proposed plant facility and additional marketing efforts.

Briefly, it is believed that the company can reach through the implementation of the activities mentioned above, a level of \$21 million in sales and \$7.5 million in pre-tax profits within four years after inception.

During the first two or three years, the company will retain earnings to finance its growth. After that, investors can anticipate substantial returns on their investment, through dividends or a public offering, or a combination of the two.

## **RISK**

While risks always must be enunciated and considered, in this case they seem few and of relatively low probability.

As far as management and operation of the Company's future business is concerned, an addition of a production facility in Kingman,AZ is planned with the hiring of two management personnel plus seven to nine production employees.

Ongoing test data is proving a worst case scenario for selling Klannerite™ at \$320-360 per ton as a pigment additive. The cost of production of Klannerite™ is approximately \$220 per ton, therefore in the beginning profits may be slight in comparison to overall potential of the business. For instance, the ceramic coating could sell for \$70 per gallon when it only costs less than \$10 per gallon to produce.



The only major risk is in the company's ability to finance its future growth. However, as more positive data is now available, indications are strong to complete the present equity offering of \$500,000 for working capital, marketing, research and development, engineering of the mine, along with servicing a \$1,250,000 plant and equipment loan for particle size reduction equipment and plant set-up. The company is presently in discussion with the city of Kingman, AZ to arrange an Industrial Revenue Bond for the planned facility. Alternative methods for equipment financing include but are not limited to banks, private individuals, or lease financing.

Additionally, the possibility exists for government grant monies to be available for future research and development of the company's potential products derived from Klannerite™. At present, results from testing are pending from two separate sources which could provide the impetus to procure these funds.

The expenditure for capital equipment spending is forecast at ~~\$400,000~~. The management of the company anticipates breakeven of cash flow within six months of operation and significant profits thereafter would fund further expansion.

Certainly, the maximum and most likely plan projections embody some risk. However, since the most likely projections can be accomplished with far less than 100% accomplishment of the business plan objectives, it seems highly likely that the minimum projection truly defines the downside risk, and this plan achievement still would provide good growth and generate adequate funds to run the business activities, cover debt, and allow returns to investors of substantial magnitude.

## FINANCIALS

# **Pro-forma Financial Projections**

## **OVERVIEW**

This section contains three different financial projections based on the sales price of \$700.00, \$1000.00, and \$1300.00 per ton.

Each scenario uses the same basis for calculating the financial projections.

Details of the basis used for the calculations are contained in the "Notes to the Pro-forma Financial Projections" located in the back of this section.

# **Pro-forma Financial Projections**

## **Scenario #1**

## HeatShield Technologies, Inc.

## Income Statement

	FY 92	FY 93	FY 94
<b>Sales</b>			
Klannerite™	\$2,182,950	\$4,948,020	\$10,478,160
% of Total Sales	69%	63%	63%
Specialty Coatings	\$980,000	\$2,870,000	\$6,090,000
% of Total Sales	31%	37%	37%
<b>Total Sales</b>	<b>\$3,162,950</b>	<b>\$7,818,020</b>	<b>\$16,568,160</b>
<b>Cost of Sales</b>			
Materials	\$266,360	\$645,000	\$1,312,360
% of Total Sales	8%	8%	8%
Labor	\$243,360	\$463,319	\$1,031,852
% of Total Sales	8%	6%	6%
Overhead	\$473,000	\$854,123	\$1,687,723
% of Total Sales	15%	11%	10%
<b>Total Cost of Sales</b>	<b>\$982,720</b>	<b>\$1,962,442</b>	<b>\$4,031,935</b>
<b>Gross Profit</b>	<b>\$2,180,230</b>	<b>\$5,855,578</b>	<b>\$12,536,225</b>
Gross Margin	69%	75%	76%
<b>Operating Expenses</b>			
Selling Costs	\$299,517	\$821,230	\$1,476,067
% of Total Sales	9%	11%	9%
General & Administrative	\$296,529	\$427,998	\$598,548
% of Total Sales	9%	5%	4%
Loan Repayment-Prin/INT.	\$270,000	\$410,000	\$680,000
% of Total Sales	9%	5%	4%
PDC Joint Venture Paymnt	\$897,853	\$2,507,936	\$5,635,566
% of Total Sales	28%	32%	34%
<b>Total Operating Expenses</b>	<b>\$1,763,899</b>	<b>\$4,167,164</b>	<b>\$8,390,181</b>
% of Total Sales	56%	53%	51%
<b>Income from Operations</b>	<b>\$416,331</b>	<b>\$1,688,414</b>	<b>\$4,146,044</b>
% of Total Sales	13%	22%	25%
Interest Income (Expense)	\$25,000	\$50,000	\$100,000
Income before Taxes	\$441,331	\$1,738,414	\$4,246,044
Taxes on Income	\$145,197	\$571,938	\$1,396,948
<b>Net Income</b>	<b>\$296,134</b>	<b>\$1,166,476</b>	<b>\$2,849,096</b>
% of Total Sales	9%	15%	17%

The income projections shown here are based on the assumption of the average sales price of \$700.00 per ton

## HeatShield Technologies Inc.

**BALANCE SHEET**

	<b>FY91</b>	<b>FY92</b>	<b>FY93</b>	<b>FY94</b>
<b>Assets</b>				
<b>Current Assets</b>				
Cash	\$300,000	\$984,120	\$2,780,180	\$6,742,006
Investments	\$0	\$0	\$0	\$0
Accounts Receivable	\$0	\$0	\$0	\$0
Notes Receivable	\$8,793	\$8,793	\$8,793	\$8,793
Inventory	\$0	\$70,000	\$150,000	\$200,000
<b>Total Current Assets</b>	<b>\$308,793</b>	<b>\$1,062,913</b>	<b>\$2,938,973</b>	<b>\$6,950,799</b>
<b>Plant &amp; Equipment</b>				
Building	\$0	\$0	\$0	\$0
Office Equipment	\$11,000	\$15,000	\$18,000	\$24,000
Plant Equipment	\$0	\$400,000	\$800,000	\$1,600,000
Less Accumulated Depreciation	(\$1,850)	(\$83,000)	(\$163,600)	(\$324,800)
<b>Net Property &amp; Equipment</b>	<b>\$9,150</b>	<b>\$332,000</b>	<b>\$654,400</b>	<b>\$1,299,200</b>
Other Assets	\$14,000	\$4,000	\$4,000	\$4,000
<b>Total Assets</b>	<b>\$331,943</b>	<b>\$1,398,913</b>	<b>\$3,597,373</b>	<b>\$8,253,999</b>
<b>Liabilities &amp; Owner Equity</b>				
<b>Current Liabilities</b>				
Short Term Debt	\$0	\$70,000	\$148,000	\$307,000
Accounts Payable	\$0	\$0	\$0	\$0
Income Taxes Payable	\$2,000	\$3,000	\$4,000	\$5,000
Accrued Liabilities	\$0	\$40,000	\$80,000	\$120,000
<b>Total Current Liabilities</b>	<b>\$2,000</b>	<b>\$113,000</b>	<b>\$232,000</b>	<b>\$432,000</b>
Long Term Debt	\$0	\$265,000	\$452,000	\$815,000
<b>Owner/Stockholder Equity</b>				
Common Stock	\$591,090	\$591,090	\$591,090	\$591,090
Retained Earnings	(\$261,147)	\$429,823	\$2,322,283	\$6,415,909
<b>Total Liabilities &amp; Owner Equity</b>	<b>\$331,943</b>	<b>\$1,398,913</b>	<b>\$3,597,373</b>	<b>\$8,253,999</b>
<b>Ratios</b>				
<i>Current Ratio</i>	<i>15439.65%</i>	<i>940.63%</i>	<i>1266.80%</i>	<i>1608.98%</i>
<i>Quick Ratio</i>	<i>15439.65%</i>	<i>878.68%</i>	<i>1202.14%</i>	<i>1562.68%</i>

The projections shown here are based on the assumption of the average sales price of \$700.00 per ton

**Source & Use of Funds**

	FY91	FY92	FY93	FY94
<b>Source of Funds</b>				
Gross Profit before Expenses	\$0	\$2,337,165	\$6,033,405	\$12,852,084
Depreciation and Amortization	\$1,800	\$83,000	\$163,600	\$324,800
Interest Income	\$0	\$65,000	\$150,000	\$250,000
Operating Cash Flow	\$1,800	\$2,485,165	\$6,347,005	\$13,426,884
Increased Long Term Debt	\$0	\$400,000	\$400,000	\$800,000
Issuance of Stock	\$591,090	\$0	\$0	\$0
Total Source of Funds	\$592,890	\$2,885,165	\$6,747,005	\$14,226,884

**Use of Funds**

Marketing and Advertising	\$36,000	\$249,517	\$596,230	\$1,176,067
Salaries	\$113,029	\$203,000	\$292,840	\$410,500
Investments	\$8,750	\$0	\$0	\$0
Capital Equipment	\$11,000	\$400,000	\$400,000	\$800,000
Research and Development	\$96,311	\$50,000	\$225,000	\$300,000
Operational Expenses	\$27,800	\$93,529	\$135,158	\$188,048
PDC Joint Venture Payments	\$0	\$915,166	\$2,501,302	\$5,607,162
Dividends on Preferred Shares	\$0	\$0	\$0	\$0
Provision for Income Taxes	\$0	\$289,833	\$800,415	\$1,783,281
Total Use of Funds	\$292,890	\$2,201,045	\$4,950,945	\$10,265,058

**Summary of Changes  
in Working Capital**

Total Sources of Funds	\$592,890	\$2,885,165	\$6,747,005	\$14,226,884
Total Funds Used	(\$292,890)	(\$2,201,045)	(\$4,950,945)	(\$10,265,058)
Cash Flow From Previous Year	\$0	\$300,000	\$984,120	\$2,780,180
Cumulative Cash Flow	\$300,000	\$984,120	\$2,780,180	\$6,742,006

The projections shown here are based on the assumption of the average sales price of \$700.00



# **Pro-forma Financial Projections**

**Scenario #2**

## HeatShield Technologies Inc.

**Income Statement**

	<b>FY 92</b>	<b>FY 93</b>	<b>FY 94</b>
<b>Sales</b>			
Klannerite	\$3,118,500	\$7,068,600	\$14,968,800
<i>% of Total Sales</i>	76%	71%	71%
Specialty Coatings	\$980,000	\$2,870,000	\$6,090,000
<i>% of Total Sales</i>	24%	29%	29%
<b>Total Sales</b>	<b>\$4,098,500</b>	<b>\$9,938,600</b>	<b>\$21,058,800</b>
<b>Cost of Sales</b>			
Materials	\$235,068	\$634,768	\$1,346,168
<i>% of Total Sales</i>	6%	6%	6%
Labor	\$243,360	\$463,319	\$1,031,852
<i>% of Total Sales</i>	6%	5%	5%
Overhead	\$347,357	\$686,528	\$1,338,056
<i>% of Total Sales</i>	8%	7%	6%
<b>Total Cost of Sales</b>	<b>\$825,785</b>	<b>\$1,784,615</b>	<b>\$3,716,076</b>
<b>Gross Profit</b>	<b>\$3,272,715</b>	<b>\$8,153,985</b>	<b>\$17,342,724</b>
<i>Gross Margin</i>	80%	82%	82%
<b>Operating Expenses</b>			
Selling Costs	\$346,289	\$927,259	\$1,700,599
<i>% of Total Sales</i>	8%	9%	8%
General & Administrative	\$296,529	\$427,998	\$598,548
<i>% of Total Sales</i>	7%	4%	3%
PDC Joint Venture Paymnt	\$1,369,555	\$3,508,578	\$7,605,216
<i>% of Total Sales</i>	33%	35%	36%
<b>Total Operating Expenses</b>	<b>\$2,012,373</b>	<b>\$4,863,835</b>	<b>\$9,904,363</b>
<i>% of Total Sales</i>	49%	49%	47%
<b>Income from Operations</b>	<b>\$1,260,342</b>	<b>\$3,290,150</b>	<b>\$7,438,361</b>
<i>% of Total Sales</i>	31%	33%	35%
Interest Income (Expense)	\$65,000	\$150,000	\$250,000
<b>Income before Taxes</b>	<b>\$1,325,342</b>	<b>\$3,440,150</b>	<b>\$7,688,361</b>
Taxes on Income	\$436,037	\$1,131,809	\$2,529,470
<b>Net Income</b>	<b>\$889,305</b>	<b>\$2,308,341</b>	<b>\$5,158,891</b>
<i>% of Total Sales</i>	22%	23%	24%

The income projections shown here are based on the assumption of the average sales price of \$1000.00 per ton

**BALANCE SHEET**

	<b>FY91</b>	<b>FY92</b>	<b>FY93</b>	<b>FY94</b>
<b>Assets</b>				
<b>Current Assets</b>				
Cash	\$300,000	\$1,282,305	\$3,754,246	\$9,237,137
Investments	\$0	\$0	\$0	\$0
Accounts Receivable	\$0	\$0	\$0	\$0
Notes Receivable	\$8,793	\$8,793	\$8,793	\$8,793
Inventory	\$0	\$70,000	\$150,000	\$200,000
<b>Total Current Assets</b>	<b>\$308,793</b>	<b>\$1,361,098</b>	<b>\$3,913,039</b>	<b>\$9,445,930</b>
<b>Plant &amp; Equipment</b>				
Building	\$0	\$0	\$0	\$0
Office Equipment	\$11,000	\$15,000	\$18,000	\$24,000
Plant Equipment	\$0	\$400,000	\$800,000	\$1,600,000
Less Accumulated Depreciation	(\$1,850)	(\$83,000)	(\$163,600)	(\$324,800)
<b>Net Property &amp; Equipment</b>	<b>\$9,150</b>	<b>\$332,000</b>	<b>\$654,400</b>	<b>\$1,299,200</b>
Other Assets	\$14,000	\$4,000	\$4,000	\$4,000
<b>Total Assets</b>	<b>\$331,943</b>	<b>\$1,697,098</b>	<b>\$4,571,439</b>	<b>\$10,749,130</b>
<b>Liabilities &amp; Owner Equity</b>				
<b>Current Liabilities</b>				
Short Term Debt	\$0	\$70,000	\$148,000	\$307,000
Accounts Payable	\$0	\$0	\$0	\$0
Income Taxes Payable	\$2,000	\$3,000	\$4,000	\$5,000
Accrued Liabilities	\$0	\$40,000	\$80,000	\$120,000
<b>Total Current Liabilities</b>	<b>\$2,000</b>	<b>\$113,000</b>	<b>\$232,000</b>	<b>\$432,000</b>
Long Term Debt	\$0	\$265,000	\$452,000	\$815,000
<b>Owner/Stockholder Equity</b>				
Common Stock	\$591,090	\$591,090	\$591,090	\$591,090
Retained Earnings	(\$261,147)	\$728,008	\$3,296,349	\$8,911,040
<b>Total Liabilities &amp; Owner Equity</b>	<b>\$331,943</b>	<b>\$1,697,098</b>	<b>\$4,571,439</b>	<b>\$10,749,130</b>
<b>Ratios</b>				
<i>Current Ratio</i>	<i>15439.65%</i>	<i>1204.51%</i>	<i>1686.65%</i>	<i>2186.56%</i>
<i>Quick Ratio</i>	<i>15439.65%</i>	<i>1142.56%</i>	<i>1622.00%</i>	<i>2140.26%</i>

The projections shown here are based on the assumption of the average sales price of \$1000.00 per ton

## HeatShield Technologies Inc.

**Source & Use of Funds**

	<b>FY91</b>	<b>FY92</b>	<b>FY93</b>	<b>FY94</b>
<b>Source of Funds</b>				
Gross Profit before Expenses	\$0	\$3,272,715	\$8,153,985	\$17,342,724
Depreciation and Amortization	\$1,800	\$83,000	\$163,600	\$324,800
Interest Income	\$0	\$65,000	\$150,000	\$250,000
Operating Cash Flow	\$1,800	\$3,420,715	\$8,467,585	\$17,917,524
Increased Long Term Debt	\$0	\$400,000	\$400,000	\$800,000
Issuance of Stock	\$591,090	\$0	\$0	\$0
<b>Total Source of Funds</b>	<b>\$592,890</b>	<b>\$3,820,715</b>	<b>\$8,867,585</b>	<b>\$18,717,524</b>
<b>Use of Funds</b>				
Marketing and Advertising	\$36,000	\$296,289	\$702,259	\$1,400,599
Salaries	\$113,029	\$203,000	\$292,840	\$410,500
Investments	\$8,750	\$0	\$0	\$0
Capital Equipment	\$11,000	\$400,000	\$400,000	\$800,000
Research and Development	\$96,311	\$50,000	\$225,000	\$300,000
Operational Expenses	\$27,800	\$93,529	\$135,158	\$188,048
PDC Joint Venture Payments	\$0	\$1,359,555	\$3,508,578	\$7,605,216
Dividends on Preferred Shares	\$0	\$0	\$0	\$0
Provision for Income Taxes	\$0	\$436,037	\$1,131,809	\$2,529,470
<b>Total Use of Funds</b>	<b>\$292,890</b>	<b>\$2,838,410</b>	<b>\$6,395,644</b>	<b>\$13,233,833</b>
<b>Summary of Changes in Working Capital</b>				
Total Sources of Funds	\$592,890	\$3,820,715	\$8,867,585	\$18,717,524
Total Funds Used	(\$292,890)	(\$2,838,410)	(\$6,395,644)	(\$13,233,833)
Cash Flow From Previous Year	\$0	\$300,000	\$1,282,305	\$3,754,246
<b>Cumulative Cash Flow</b>	<b>\$300,000</b>	<b>\$1,282,305</b>	<b>\$3,754,246</b>	<b>\$9,237,937</b>

The projections here are based on the assumption of the average sales price of \$1000.00 per ton

# **Pro-forma Financial Projections**

**Scenario #3**

## HeatShield Technologies, Inc.

## Income Statement

	FY92	FY93	FY94
<b>Sales</b>			
Klannerite	\$4,053,400	\$9,188,400	\$19,458,400
% of Total Sales	81%	76%	76%
Speciaty Coatings	\$980,000	\$2,870,000	\$6,090,000
% of Total Sales	19%	24%	24%
<b>Total Sales</b>	<b>\$5,033,400</b>	<b>\$12,058,400</b>	<b>\$25,548,400</b>
<b>Cost of Sales</b>			
Materials	\$266,360	\$645,000	\$1,312,360
% of Total Sales	5%	5%	5%
Labor	\$243,360	\$463,319	\$1,031,852
% of Total Sales	5%	4%	4%
Overhead	\$473,000	\$854,123	\$1,687,723
% of Total Sales	9%	7%	7%
<b>Total Cost of Sales</b>	<b>\$982,720</b>	<b>\$1,962,442</b>	<b>\$4,031,935</b>
<b>Gross Profit</b>	<b>\$4,050,680</b>	<b>\$10,095,958</b>	<b>\$21,516,465</b>
Gross Margin	80%	84%	84%
<b>Operating Expenses</b>			
Selling Costs	\$393,034	\$1,033,249	\$1,925,079
% of Total Sales	8%	9%	8%
General & Administrative	\$296,529	\$427,998	\$598,548
% of Total Sales	6%	4%	2%
Loan Repayment-Prin/Int.	\$270,000	\$410,000	\$680,000
% of Total Sales	5%	3%	3%
PDC Joint Venture Paymnt	\$1,785,320	\$4,522,117	\$9,901,180
% of Total Sales	35%	38%	39%
<b>Total Operating Expenses</b>	<b>\$2,744,883</b>	<b>\$6,393,364</b>	<b>\$13,104,807</b>
% of Total Sales	55%	53%	51%
<b>Income from Operations</b>	<b>\$1,305,797</b>	<b>\$3,702,594</b>	<b>\$8,411,658</b>
% of Total Sales	26%	31%	33%
Interest Income (Expense)	\$60,000	\$90,000	\$200,000
<b>Income before Taxes</b>	<b>\$1,365,797</b>	<b>\$3,792,594</b>	<b>\$8,611,658</b>
Taxes on Income	\$449,347	\$1,247,763	\$2,833,235
<b>Net Income</b>	<b>\$916,450</b>	<b>\$2,544,831</b>	<b>\$5,778,423</b>
% of Total Sales	18%	21%	23%

The income projections shown here are based on the assumption of the average sales price of \$1300.00 per ton



## HeatShield Technologies Inc

**BALANCE SHEET**

	<b>FY91</b>	<b>FY92</b>	<b>FY93</b>	<b>FY94</b>
<b>Assets</b>				
<b>Current Assets</b>				
Cash	\$300,000	\$1,580,281	\$4,727,855	\$11,551,908
Investments	\$0	\$0	\$0	\$0
Accounts Receivable	\$0	\$0	\$0	\$0
Notes Receivable	\$8,793	\$8,793	\$8,793	\$8,793
Inventory	\$0	\$70,000	\$150,000	\$200,000
<b>Total Current Assets</b>	<b>\$308,793</b>	<b>\$1,659,074</b>	<b>\$4,886,648</b>	<b>\$11,760,701</b>
<b>Plant &amp; Equipment</b>				
Building	\$0	\$0	\$0	\$0
Office Equipment	\$11,000	\$15,000	\$18,000	\$24,000
Plant Equipment	\$0	\$400,000	\$800,000	\$1,600,000
Less Accumulated Depreciation	(\$1,850)	(\$83,000)	(\$163,600)	(\$324,800)
<b>Net Property &amp; Equipment</b>	<b>\$9,150</b>	<b>\$332,000</b>	<b>\$654,400</b>	<b>\$1,299,200</b>
Other Assets	\$14,000	\$4,000	\$4,000	\$4,000
<b>Total Assets</b>	<b>\$331,943</b>	<b>\$1,995,074</b>	<b>\$5,545,048</b>	<b>\$13,063,901</b>
<b>Liabilities &amp; Owner Equity</b>				
<b>Current Liabilities</b>				
Short Term Debt	\$0	\$70,000	\$148,000	\$307,000
Accounts Payable	\$0	\$0	\$0	\$0
Income Taxes Payable	\$2,000	\$3,000	\$4,000	\$5,000
Accrued Liabilities	\$0	\$40,000	\$80,000	\$120,000
<b>Total Current Liabilities</b>	<b>\$2,000</b>	<b>\$113,000</b>	<b>\$232,000</b>	<b>\$432,000</b>
Long Term Debt	\$0	\$265,000	\$452,000	\$815,000
<b>Owner/Stockholder Equity</b>				
Common Stock	\$591,090	\$591,090	\$591,090	\$591,090
Retained Earnings	(\$261,147)	\$1,025,984	\$4,269,958	\$11,225,811
<b>Total Liabilities &amp; Owner Equity</b>	<b>\$331,943</b>	<b>\$1,995,074</b>	<b>\$5,545,048</b>	<b>\$13,063,901</b>
<b>Ratios</b>				
<i>Current Ratio</i>	<i>15439.65%</i>	<i>1468.21%</i>	<i>2106.31%</i>	<i>2722.38%</i>
<i>Quick Ratio</i>	<i>15439.65%</i>	<i>1406.26%</i>	<i>2041.66%</i>	<i>2676.09%</i>

The projections shown here are based on the assumption of the average sales price of \$1300.00 per ton

## HeatShield Technologies Inc.

**Source & Use of Funds**

	<b>FY91</b>	<b>FY92</b>	<b>FY93</b>	<b>FY94</b>
<b>Source of Funds</b>				
Gross Profit before Expenses	\$0	\$4,207,615	\$10,273,785	\$21,832,324
Depreciation and Amortization	\$1,800	\$83,000	\$163,600	\$324,800
Interest Income	\$0	\$65,000	\$150,000	\$250,000
Operating Cash Flow	\$1,800	\$4,355,615	\$10,587,385	\$22,407,124
Increased Long Term Debt	\$0	\$400,000	\$400,000	\$800,000
Issuance of Stock	\$591,090	\$0	\$0	\$0
<b>Total Source of Funds</b>	<b>\$592,890</b>	<b>\$4,755,615</b>	<b>\$10,987,385</b>	<b>\$23,207,124</b>
<b>Use of Funds</b>				
Marketing and Advertising	\$36,000	\$343,034	\$808,249	\$1,625,079
Salaries	\$113,029	\$203,000	\$292,840	\$410,500
Investments	\$8,750	\$0	\$0	\$0
Capital Equipment	\$11,000	\$400,000	\$400,000	\$800,000
Research and Development	\$96,311	\$50,000	\$225,000	\$300,000
Operational Expenses	\$27,800	\$93,529	\$135,158	\$188,048
PDC Joint Venture Payments	\$0	\$1,803,633	\$4,515,483	\$9,872,776
Dividends on Preferred Shares	\$0	\$0	\$0	\$0
Provision for Income Taxes	\$0	\$582,138	\$1,463,081	\$3,186,668
<b>Total Use of Funds</b>	<b>\$292,890</b>	<b>\$3,475,334</b>	<b>\$7,839,811</b>	<b>\$16,383,071</b>
<b>Summary of Changes in Working Capital</b>				
Total Sources of Funds	\$592,890	\$4,755,615	\$10,987,385	\$23,207,124
Total Funds Used	(\$292,890)	(\$3,475,334)	(\$7,839,811)	(\$16,383,071)
Cash Flow From Previous Year	\$0	\$300,000	\$1,580,281	\$4,727,855
<b>Cumulative Cash Flow</b>	<b>\$300,000</b>	<b>\$1,580,281</b>	<b>\$4,727,855</b>	<b>\$11,551,908</b>

The projections here are based on the assumption of the average sales price of \$1300.00 per ton

# **Notes to the Pro-forma Financial Projections**

## **SALES**

The sales figures are shown separately for sales of Klannerite™ as an industrial mineral used as an extender or filler and sales of our proprietary specialty coatings used in many applications such as refractory coatings, corrosive resistance coatings, and fire inert paints.

### **Klannerite™ Sales Assumptions**

A schedule was prepared to calculate 100% capacity output of an ACM 200 particle size reduction machine (see schedule).

- FY92 Sales Volume used was 3118 tons.

(This assumed 75% of the ACM 200 capacity could be sold, this would be less than 1/100 of 1% of the market).

- FY93 Sales Volume used was 7068 tons.

(This assumed a second ACM would be purchased and in place and 85% of both machine's capacity would be sold).

- FY94 Sales Volume used was 14968 tons.

(This assumes 2 more ACM 200 would be purchased for a total of 4 machines now operating and sales would be a 90% of capacity.

These sales volumes by ton are conservative considering the total extender and filler market in North America alone is presently over 12 million tons.

## **SALES (CON'T)**

### **Specialty Coatings Sales Assumptions**

The sales price of our specialty coating at a minimum will be \$70.00 per gallon. This price is used in all three scenarios. See the volumes totals used listed on the next page.

### **Volume Used**

FY92-Sales based on 14,000 gallons

FY93-Sales based on 41,000 gallons

FY94-Sales based on 87,000 gallons

We feel these projections are quite conservative considering that our product offers a energy saving factor of 18-24 % for refractory situation. The sales volumes shown in FY94 would not even supply all of USX plants enough to coat their soaking pits and furnaces.

## **COST OF SALES**

The cost of Sales is made up of three parts,materials, labor and processing overhead costs. The following are the assumptions used for each area.

### **Materials**

These are the cost of surface mining and transportation to the processing facility. Estimates have been received for both and are as follows.

Surface mining=\$20.00 per ton

Transportation by truck=\$120.00 per 20 tons

Other material cost shown here is the cost to manufacturer of specialty coating. The cost is \$11.00 per gallon.

## **COST OF SALES (CON'T)**

### **Labor**

These are the labor costs to run the processing plant. The numbers have been increased with each year's addition of ACM machines. Labor rates, including benefits, are based as follows and increase each year by at least 5% for inflation.

	<u>Wages</u> <u>FY92</u>	<u>Wages with</u> <u>Benefits</u>	<u>Total Yearly</u> <u>Wages</u>
Foreman	12.50	15.00	\$37,440.00
Machine Operators	9.16	11.00	\$27,456.00
General Labor/Machine Helper	7.50	9.00	\$22464.00
Packaging and Shipping Labor	6.25	7.50	\$18,720.00

### **Processing Overhead Costs**

Plans are to lease a facility at first. We have held discussions with city officials for Kingman who have indicated a willingness to finance a plant through Industrial Revenue Bonds and possible tax incentive for locating in their industrial park. The electricity quote is high. The electric company official said they would most likely compromise to a workable rate once total KWH are known.

Equipment is estimated on the high side to include installation, set-up and initial training to operators. The machines are being depreciated over a five year period for the purposes of these projections.

(See attached appendix Breakdown of Cost of Goods Sold for each scenario).

## **SALES AND MARKETING EXPENSES**

The sales and marketing costs include salaries for full time sales manager and addition of salespeople each subsequent year. Also included is the lease royalties fees due to New Mexico and Arizona Land Company. The lease calls for payments of 5% of gross sales less certain costs. Each year has been calculated out based on sales scenarios used.

(See Schedule of Breakdown in appendix).

## **GENERAL AND ADMINISTRATIVE EXPENSES**

(See Schedule of Breakdown following).

## **OTHER NOTES OF INTEREST**

### **Accrued Liability**

An accrued liability is also set-up to cover the 8% cumulative interest due on the preferred shares.

### **Short Term Debt**

This is the portion of the equipment financing due in the next 12 months. The remainder of the equipment balance owed is listed as long term debt. Also, the loan shown is a 5 year loan @ 13%.



# **Pro-forma Financial Projections**

**Schedules and Worksheets**

# Production Capacity

## Projections

Prepared By	Initials	Date
Approved By		

		1	2	3	4
	Full Production Capacity	FY 92 1-ACM MACHINE	FY 93 2 ACM MACHINES	FY 94 4 ACM MACHINES	
1	Capacity - ACM 200				1
2	LBS per hour	1320	2640	5280	2
3	Hours per day (3-8hr shifts - 1 hr Breaks)	21	21	21	3
4	Capacity Per Day	27720	55440	110880	4
5	Production day each week	6	6	6	5
6	Capacity per week	166320	332640	665280	6
7	Weeks per year	50	50	50	7
8	Production Capacity per year	8316000	16632000	33264000	8
9					9
10					10
11	Prod Capacity per year	8316000	16632000	33264000	11
12	5 yr - Machine Life Expectancy	5	5	5	12
13	5yr Production Capacity per MACHINE	41580000	83160000	166320000	13
14					14
15					15
16					16
17					17
18					18
19					19
20					20
21					21
22					22
23					23
24					24
25					25
26					26
27					27
28					28
29					29
30					30
31					31
32					32
33					33
34					34
35					35
36					36
37					37
38					38
39					39
40					40

Cost of Sales  
ProjectionsPrepared By  
Approved By

Date

		1	2	3	4
			FY 92	FY 93	FY 94
1	MINING Costs = \$20 per Ton		62360-	141360-	299360-
2					
3	TRANSPORTATION Cost				
4	(\$120 for 20 TONS = \$6 per Ton)		18708-	42408-	89808-
5					
6	Raw Material Costs		81068-	183768-	389168-
7	Specialty Coating Cost of Mfg		15400.00	4510.00	7570.00-
8			235068-	634768-	1346168-
9					
10	Processing Costs				
11	Labor:				
12	PLANT FOREMAN	1-	37440-	41184-	80302-
13	MACHINE OPERATORS - (3 Shifts)	3-	82368-	168854-	346150-
14	General Machine helper's Labor	3-	67392-	138153-	324772-
15	Packaging AND SHIPPING Labor	3-	56160-	115128-	280628-
16	Total Labor Costs		243360	463319-	1031852-
17					
18	Processing Overhead Costs				
19					
20	PLANT LEASE 6,000 Sq ft @ 3.70		24000-	26000-	28000-
21	Utilities		203143-	426600-	853200-
22	Equipment AMORTIZATION				
23	\$400,000/5yr Dep = 80,000 each machine		80000-	160000-	320000-
24	Financing on Equipment		27214-	58428-	116856-
25	Telephone		6000-	8000-	10000-
26	Miscellaneous		5000-	7500-	10000-
27	Total Overhead Costs		347357.00	686528-	1338056-
28					
29					
30					
31	Total Cost of Sales		825785-	1784615-	3716076-
32					
33					
34					
35					
36					
37					
38					
39					
40					

		FY 92	FY 93	FY 94
1				
2	Salaries - Mktg Mgr	50000-	60000-	75000-
3	- Sales Staff		(1) 45000	(2) 100000-
4				
5	Research and Development			
6	Contract Testing	50000-	150000-	200000-
7	Chemist/Scientist		75000-	100000-
8				
9	Advertising	25000-	50000-	100000-
10				
11	Travel	25000-	75000-	125000-
12				
13	Sub Total	150000-	455000-	700000-
14	Lease Royalty Fee	149517-	366230-	776067-
15	Total Sales AND Mktg EXPENSES	299517-	821230-	1476067-
16				
17				

Note: FY 92 a sales manager will be added and the focus will be specialty coating sales mainly concentrating on the Steel Industry.  
R&D will be continued with Universities and certain test will be contracted through testing labs and facilities.

FY 93 An in house sales person will be added <sup>to work</sup> along with the sales mgr. - expanding markets for coating sales will be the emphasis.

R&D - We feel by this time we will have worked with the Military and SDI to develop High Tech coatings but, need a Chemist/Scientist on staff to research manufacturing and application for the new mineral for customers to research and an integral part of the overall support customer expect.

FY 94 Increased budget to handle on site customer service and increased customer base - also adding another sales rep.



		1	2	3	4
			FY 92	FY 93	FY 94
1					
2	Salaries - Mktg Mgrs		50000.00 -	60000.00 -	75000.00 -
3	- Sales Staff			(1) 45000.00	(2) 100000.00 -
4					
5	Research and Development				
6	Contract Testing		50000.00 -	150000.00 -	200000.00 -
7	Chemist / Scientist			75000.00 -	100000.00 -
8					
9	Advertising		25000.00 -	50000.00 -	100000.00 -
10					
11	Travel		25000.00 -	75000.00 -	125000.00 -
12					
13	Sub Total		150000.00 -	455000.00 -	700000.00 -
14	Lease Royalty Fee		196289.00 -	472259.00 -	1000599.00 -
15	Total Sales and Marketing Expenses		346289.00	927259.00	1700599.00
16					
17					
18	Note: FY 92 a sales manager will be added and the focus will be				
19	specialty coating sales mainly concentrating on the				
20	Steel Industry.				
21	R&D will be continued with Universities and				
22	certain test will be contracted through testing				
23	labs and facilities.				
24					
25					
26					
27	FY 93 An in house sales person will be added <sup>to work</sup> along with				
28	the sales mgrs - Expanding markets for coating sales				
29	will be the emphasis				
30					
31	R&D - We feel by this time we will have worked				
32	with the Military and SDI to develop High tech				
33	coatings but, need for a Chemist / Scientist on staff				
34	to research manufacturing and application for the				
35	new mineral for customers is necessary, and				
36	an integral part of the overall support customer				
37	expect.				
38					
39	FY 94 Increased budget to handle on site customer				
40	service and increased customer base -				
	also adding another sales rep.				

		FY 92	FY 93	FY 94
1				
2	Salaries - Mktg Mgr	50000-	60000-	75000-
3	- Sales Staff		(1) 45000	(2) 100000-
4				
5	Research and Development			
6	Contract Testing	50000-	150000-	200000-
7	Chemist/Scientist		75000-	100000-
8				
9	Advertising	25000-	50000-	100000-
10				
11	Travel	25000-	75000-	125000-
12				
13	SubTotal	150000-	455000-	700000-
14	Lease Royalty Fee	243034-	578249-	1225079-
15	Total Sales and Marketing Expenses	393034-	1033249-	1925079-
16				
17				
18	Note: FY 92 a sales manager will be added and the focus will be			
19	specialty costing sales mainly concentrating on the			
20	Steel Industry			
21	R&D will be continued with Universities and			
22	certain test will be contracted through testing			
23	labs and facilities.			
24				
25				
26				
27	FY 93 An in house sales person will be added <sup>to work</sup> along with			
28	the sales mgr. - Expanding markets for casting sales			
29	will be the emphasis			
30				
31	R&D - We feel by this time we will have worked			
32	with the Military and SDI to develop High tech			
33	costing but, need for a Chemist/Scientist on staff			
34	to research manufacturing and application for the			
35	new mineral for customers to research and			
36	an integral part of the overall support customer			
37	expect.			
38				
39	FY 94 Increased Budget to handle on site customer			
40	service and increased customer service -			
	also adding another sales rep.			



- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17
- 18
- 19
- 20
- 21
- 22
- 23
- 24
- 25
- 26
- 27
- 28
- 29
- 30
- 31
- 32
- 33
- 34
- 35
- 36
- 37
- 38
- 39
- 40

General and Administrative  
Breakdown/NotesPrepared By  
Approved By

			FY 92	FY 93	FY 94
1	<u>Salaries</u>				
2	President		84000-	120000-	180000-
3	Exec. VP		72000-	102840-	154260-
4	Secretary		26000-	28000-	30000-
5	Computer Operator		21000-	24000-	26500-
6	General Office		—	18000-	20000-
7			203000.00	292840-	410500-
8					
9					
10					
11	<u>Payroll Taxes</u>				
12	Pres.		4504-	5026-	5098-
13	Exec. VP	Employer Share FICA & Medicare	4330-	4777-	5098-
14	Secretary		1989-	2142-	2295-
15	Computer Operator		1606-	1836-	2027-
16	General Office		—	1377-	1530-
17			12429-	15158-	16048-
18					
19					
20	<u>General Insurance</u>				
21					
22	This is for product Liability Insurance and Directors				
23	liability. This is based on quotations from an				
24	insurer company. A full quote is forthcoming.				
25					
26					
27	<u>Postage</u>				
28					
29	This includes general postage and Product information				
30	mailing as well as small samples freight.				
31					
32					
33	<u>Attorney Fees</u>				
34					
35	This is an estimate for legal agreements / Mfg Rep Agreements,				
36	as well as patent filing etc.				
37					
38					
39					
40					

# SOULE & ASSOCIATES, P.A.

CERTIFIED PUBLIC ACCOUNTANTS

BRUCE D. SOULE, CPA

289 EAST OAKLAND PARK BLVD.  
FORT LAUDERDALE, FL 33334  
TELEPHONE: (305) 561-5801  
FAX: (305) 561-5877

## ACCOUNTANTS' COMPILATION REPORT

Officers and Stockholders  
Heatshield Technologies, Inc.  
(A Development Stage Enterprise)  
Fort Lauderdale, Florida

We have compiled the accompanying consolidated balance sheet of Heatshield Technologies, Inc. as of July 31, 1991, and the related statements of consolidated income (loss) and deficit accumulated during the development stage, and consolidated cash flows for the period from inception (May 13, 1991) to July 31, 1991, in accordance with standards established by the American Institute of Certified Public Accountants.

A compilation is limited to presenting in the form of consolidated financial statements information that is the representation of management. We have not audited or reviewed the accompanying consolidated financial statements and, accordingly, do not express such an opinion or any other form of assurance on them.

The Company is in the development stage since its only activity since inception has consisted primarily of financing arrangements and other various sale and joint venture agreements.

Your attention is invited to the fact that all disclosures by way of footnotes may not be contained in this report to enable the reader to gain a complete understanding of the business of the Company. This report should be read along with the Private Placement Memorandum dated August 19, 1991.

SOULE & ASSOCIATES, P.A.



Certified Public Accountants

September 24, 1991

HEATSHIELD TECHNOLOGIES, INC.  
(A DEVELOPMENT STAGE ENTERPRISE)

CONSOLIDATED BALANCE SHEET

JULY 31, 1991

(READ ACCOUNTANTS' COMPILATION REPORT)

ASSETS

CURRENT ASSETS:

Cash	\$ 33 098
Prepaid expenses	1 866
Note receivable	<u>8 793</u>
Total current assets	<u>43 757</u>

FURNITURE AND EQUIPMENT

Less accumulated depreciation	<u>177</u>
Net furniture and equipment	<u>4 886</u>

OTHER ASSETS:

Prepaid royalty	10 000
Deferred offering costs	4 000
Deposits	<u>1 270</u>
Total other assets	<u>15 270</u>

TOTAL ASSETS \$ 63 913

LIABILITIES AND STOCKHOLDERS' EQUITY

CURRENT LIABILITIES:

Payroll tax payable	<u>\$ 961</u>
---------------------	---------------

STOCKHOLDERS' EQUITY:

Common stock - \$.001 par value, 25,000,000 shares authorized, 750,000 shares issued and outstanding	750
Capital paid in excess of par value	90 340
Deficit accumulated during the development stage	<u>( 28 138)</u>
Total stockholders' equity	<u>62 952</u>

TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY \$ 63 913

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

HEATSHIELD TECHNOLOGIES, INC.  
(A DEVELOPMENT STAGE ENTERPRISE)

STATEMENT OF CONSOLIDATED INCOME (LOSS) AND DEFICIT  
ACCUMULATED DURING THE DEVELOPMENT STAGE

FOR THE PERIOD FROM INCEPTION (MAY 13, 1991) TO JULY 31, 1991

(READ ACCOUNTANTS' COMPILATION REPORT)

REVENUES	\$ 150
EXPENSES	<u>28 288</u>
INCOME (LOSS) BEFORE TAXES	(28 138)
PROVISION FOR INCOME TAXES	<u>-0-</u>
NET INCOME (LOSS)	(28 138)
DEFICIT - Beginning of period	<u>-0-</u>
DEFICIT ACCUMULATED DURING THE DEVELOPMENT STAGE End of period	<u>\$(28 138)</u>

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

HEATSHIELD TECHNOLOGIES, INC.  
(A DEVELOPMENT STAGE ENTERPRISE)

STATEMENT OF CONSOLIDATED CASH FLOWS

FOR THE PERIOD FROM INCEPTION (MAY 13, 1991) TO JULY 31, 1991

(READ ACCOUNTANTS' COMPILATION REPORT)

CASH FLOW FROM OPERATING ACTIVITIES:

Cash paid for royalty	\$ 10 000
Cash paid for operating expenses	<u>29 016</u>
Cash flow (used in) operating activities	<u>( 39 016)</u>

CASH FLOW FROM INVESTING ACTIVITIES:

Interest income	<u>150</u>
Increase in note receivable	8 793
Purchase of furniture and equipment	5 063
Payment of deposits	1 270
Payment of deferred offering expenses	<u>4 000</u>
Cash disbursed for investing activities	<u>19 126</u>
Net cash flow from (used in) investing activities	<u>( 18 976)</u>

CASH FLOW FROM FINANCING ACTIVITIES:

Proceeds from sale of stock	<u>91 090</u>
-----------------------------	---------------

NET INCREASE IN CASH FLOWS	<u>\$ 33 098</u>
----------------------------	------------------

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

HEATSHIELD TECHNOLOGIES, INC.  
(A DEVELOPMENT STAGE ENTERPRISE)

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

FOR THE PERIOD FROM INCEPTION (MAY 13, 1991) TO JULY 31, 1991

(READ ACCOUNTANTS' COMPILATION REPORT)

NOTE 1 - PRINCIPLES OF CONSOLIDATION

This report contains the accounts of Heatshield Technologies, Inc., the parent Company and HST Capital, a wholly-owned subsidiary.

NOTE 2 - JOINT VENTURE

In May of 1991, P.D.C. Industrial Coatings, Inc. entered into a joint venture with HeatShield Technologies, Inc. The agreement calls for HeatShield to fund the operation, in exchange P.D.C. assigned its rights to mine, market, and distribute the unique Klannerite® ore deposits for 50% of the profits after expenses of HeatShield. HeatShield has provided \$10,000 to P.D.C. Industrial Coatings, Inc. ("PDC") as an advance royalty with a guarantee of an additional \$100,000 minimum royalty payable November 30, 1992. Paul R. Arena, President of the Company is also Director of P.D.C. Industrial Coatings, Inc.

Both parties feel this agreement is equitable and in the best interest of their respective investors.

NOTE 3 - NATURE OF BUSINESS

The Company intends to mine, refine, market and distribute its Klannerite® ore deposit located in Northwestern Arizona. Management anticipates revenues to be derived from the sale of its proprietary fireproof coatings and energy diffusive product additives. The unique material, when used as an additive, has shown encouraging results that it extends product life, provides UV and IR ray reflection as well as providing an energy savings during the manufacturing process. As a fireproof coating, United States Testing Company, Inc. issued a Class A Fire Rating based on a scale of 0-200; the Company's fireproof paint formula was rated as a 5. Industries which performed testing and indicated a strong interest include: paints, plastics, glass, ceramics and paper.

The Company's goal is to seek positive results from the ongoing research which is currently being conducted. Several large companies have indicated a desire to purchase the products of HeatShield. If this occurs, the resulting revenue could amount to several million dollars for each industry.



HEATSHIELD TECHNOLOGIES, INC.  
(A DEVELOPMENT STAGE ENTERPRISE)

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

FOR THE PERIOD FROM INCEPTION (MAY 13, 1991) TO JULY 31, 1991

(READ ACCOUNTANTS' COMPILATION REPORT)

NOTE 3 - NATURE OF BUSINESS (CONTINUED)

A letter of intent to supply material has been presented with two companies in the field of distributing fire retardant paint and reflective coatings. HeatShield management expect that agreements will be finalized soon.

NOTE 4 - NOTE RECEIVABLE

HeatShield loaned \$10,000 Canadian on July 26, 1991 to P.D.C. Industrial Coatings, Inc. The note bears interest at 13% and is due on demand. HeatShield has the option to apply the amount due under this note for shares of P.D.C. to be offered in a private-placement prior to the end of 1991.

MARKETING



## **AKRO SHIELD INC. MOLTEN GUARD™ with KLANNERITE™**

A new ceramic paint that could save the U.S. Steel industry upwards of \$94 million a year on its energy bills, is now being introduced to the market. The key ingredient in this paint is a unique mineral called Klannerite™ which has prismatic and refractory characteristics not commonly found in other materials.

The mineral deposit, located in Northwestern Arizona, consists of high purity crystalline aluminum silicate, with the dominant chemical present being silicon dioxide. The mineral is identified as cristobalite, a member of the silica group. The crystals have an orthohombic form, (three 90 degree angles with two equal and one unequal side). This is characteristic of another mineral in the silica group, tridymite. Therefore the Klannerite™ mineral appears to be cristobalite, but with a crystal structure referred to as a pseudomorph of tridymite.

This unique mineral has now been formulated into a ceramic paint. This "Photon Diffusive Coating" (PDC) has shown an ability to reflect approximately 85% of energy in the band of 0.5 to 5 microns, as well as certain other forms of energy, such as infrared, ultraviolet, and even radar waves.

P.D.C. is converted into a ceramic at about 500° Celsius, which acts like a fireproof coating. It is completely noncombustible and provides excellent protection against corrosion and destructive chemicals.

Because PDC reflects the energy produced by common sources, such as natural gas, the product is effective as a protective shielding, as a fireproof coating or alternatively, as a means for reducing energy consumption.



In the steel industry, approximately \$550 million dollars is spent annually on the fuel for processing steel. If PDC was applied to reheat furnaces, so-called "soaking pits" and other hot metal applications, fuel consumption would translate into savings of 17%. This is according to tests conducted at USX Corporation's Gary, Indiana Steel Plant in connection with a doctoral candidate at M.I.T.

**Subject:** Self-Fusing Monolithic  
Refractory Coating (SF-MRC)  
P.O. No. 161-397223

Excerpts taken from Mr. Nagel's recommendations are as follows:

- Data which we obtained from our 46" Slab Mill, indicates the results are outstanding.
- I believe that in comparison to other "comparable" materials on the market, this particular product is unique in that it actually **reflects** 85% of the radiant energy exposed to it rather than **absorbing** the energy and re-radiating (as is common with high emissivity coatings).
- This phenomena is well documented in the data, which I have attached. It is this singular characteristic which I attribute to our unprecedented results.
- In summary, SF-MRC has afforded a fuel savings of 18% based on a six week test. During this period, we adjusted our firing practice accordingly. After 3½ months, the savings continued, as verified by combustion air temperatures (which were 200°F above the normal mean temperature).
- This indicates that ferrous oxide contamination to the refractory walls during normal operation does not have a deleterious effect on the coating's efficiency and, hence its useful lifecycle.

## ABSTRACT

Theoretical modeling and production tests of high emissivity coatings and dispersive coatings are included. Photon dispersive coatings are included. Photon dispersive coatings were found to limit the thermal gradient through the adjoining substrate by diffuse reflection ( $> 50\%$ ) of infrared energy with wavelengths between 0.5 and 5 microns. In contrast, high emissivity coatings increased the thermal gradient through the furnace wall as a function of emittance, thereby reducing the furnace load.

Experimental testing verified that the use of high emissivity coatings for improving the efficiency or production of a heating furnace was of no practical value. The use of photon dispersive coatings resulted in an average fuel savings of 17% when compared to an uncoated furnace. Both types of coatings are discussed in terms of their potential application as energy savers and their associated limitations. This is according to Chris Nagel's report at M.I.T.

9025 Rosehill Road  
Lenexa, Kansas 66215  
(913) 888-5248  
FAX (913) 888-8406

# **Marketing**

## **Overview**

This section contains marketing information and marketing plans from the firm with which we have signed representative agreements. (See Agreement Section for copies of signed agreements).

# **Akro Shield Inc.**

## **Proposed Marketing Summary**

### **Introduction**

Now that an agreement has been set forth in principal between HeatShield Technologies, Inc. and Akro Shield Inc., we should establish the respective and mutually agreeable goals for which Akro will pursue the marketing of HeatShield's ceramic coating to the metal smelting industry.

The following is a summary of a marketing plan outlining goals and phases of testing and sales over the next twelve months.

#### **Phase I (30 Days)**

**Product Development and Testing:** Within the first thirty days, Akro to accomplish the following:

1. Manufacture 200 gallons
2. Develop Industry brochures
3. Develop Product brochures including technical product descriptions and economic payback analysis
4. Case study Interview ( HeatShield will assist )
5. Beta test with 5-15 prospective test site mills

#### **Phase II (30-90 Days)**

**The Beta Testing Phase** To be accomplished in the next 60 days (plan of action for the first 90 days.)

1. Direct Mail to 90 steel mills
2. Akro will explore the possibility of Accelerated Testing
3. Obtain 5 Beta testing sites
4. Sales of minimum of 500 gallons
5. Customer's commitment to fund research testing
6. Contact 18 prospects: defined as:
  - a. R & D contact
  - b. Plant Management involvement
  - c. Executive management and/or purchasing agent involvement

### **Phase III (90-180 Days)**

**Prospect Development and Product Testing** should be the priority for the next 90 days (Phases I, II, III should be completed within the first 180 days.)

1. Commitments from at least 5 qualified prospects for the following:
  - a. R & D commitment
  - b. Management involvement-letter of intent
  - c. Executive management/ or purchasing agent involvement
2. Sales of 1000 gallons minimum
3. Minimum of two bonafide sales contracts

### **Dollar Sales Volume to be Achieved**

Level 1-\$1,000,000.00	( 6-12 months)
Level 2-\$3,000,000.00	(second 12 months)
Level 3-\$5,000,000.00	(third 12 months)

### **Exclusivity**

Exclusivity will be on a named account basis only. 240 days minimum vs. \$100,000 in sales at such time subject to review for continued protection.

### **Market Size and Scope**

U.S. Steel Industry Market size is defined as follows:

#### **Assumptions**

1. 25 pits x 90 mills= 2250 potential pits.
2. 1 pit = Approximately 7200 sq. ft. and each gallon covers 90 sq. ft., therefore 80 gallons would be necessary per one application.
3. 80 gallons per pit x 3 applications per annum = 240 gallons per pit.
4. Potential market is: 2250 pits x 240 gallons= 540,000 gallons per annum.
5. Potential sales of 540,000 gallons at \$70 per gallon would equal \$37,800,000.00



## Points of Discussion

Akro would be responsible to provide HeatShield the following information quarterly:

1. Who will be in charge of this program?
2. Customer Profile Data Sheet (lead sheet)
3. List of Direct Marketing Personnel and Responsibilities
4. Budget for Expenditures: \$2500 minimum marketing per month for the following:
  - a. Travel
  - b. Direct Marketing
  - c. Industry Shows
  - d. Phones
  - e. Trade Journal Advertising
  - f. Associations

(Budget vs. actual would be reviewed quarterly.)

## STATUS REPORTS

# **Status Reports**

## **Overview**

This section contains two types of information. First, a Progress Data Spread Sheet which shows potential customers, distributor and the current research and development facilities, industry areas and a time line for expected results or information. Secondly, there are individual status reports for each company listed on the Progress Data Spread Sheet.

HEATSHIELD TECHNOLOGIES INC. - PROGRESS DATA SHEET

Date	Company	Industry Appl.	May,1991	June, 1991	July, 1991	Aug., 1991	Sept., 1991	Oct., 1991	Nov., 1991	Dec., 1991	Jan., 1992
Potential Customer											
10/29/91	Alcoa Bldg. Products/Stolle	2									
6/28/91	BASF	3									
10/28/91	Day-Glo Color/Div. Nalco	3									
7/16/91	FMC	(3) (5)									
5/2/91	Ford Motor Co.	(3) (4)									
9/25/91	Mills Products	(3) (4)									
8/23/91	MODO	1									
8/8/91	MODOCCELL	1									
10/15/91	Nalco Chemical	(1) (3)									
8/23/91	P.H. Glatfelter	1									
10/14/91	Sauereisen	6									
8/23/91	UCI Paints/Div. Union	3									
8/5/91	Vista Chemical	2									
8/23/91	Westvaco	1									
Research and Development											
8/23/91	Chemtech of Calif.	(3) (5)									
5/21/91	DL Labs	3									
10/30/91	Eriez Magnetics	R&D, Iron Ext.									
9/10/91	Michigan Tech. University	R&D, Mining									
4/30/91	Micron Powder	R&D, Equipment									
5/20/91	Rutgers University	R&D,Chem.&Phy.									
Potential Mfg. Rep or Distributor											
6/27/91	AKRO	(3) (5) (6)									
8/23/91	Chemtech of Calif.	(3) (5)									
5/21/91	D.H. Litter	3									
10/31/91	Hukill Chemical	(1) (2) (3)									
Marketing											
7/25/91	Kayler Geoscience	Mining, Mktg.									

INITIAL TESTING-----REPORT/CONTRACT EXPECTED

- LEGEND
- 1-PAPER/PAPER COATINGS
  - 2-PLASTIC
  - 3-PAINTS/COATINGS
  - 4-GLASS/GLASS COATINGS
  - 5-REFRACTORIES/CERAMICS
  - 6-CEMENT

# Client Status Report

**Name of Company:** Akro Fireguard Products, Inc.  
**Division:** Sales and Research Division  
**Address:** 10633 Widmer

**City, State, Zip:** Lenexa, Kansas 66215

**Industry:** Fire Retardant Coatings

**Date of First Contact:** July 17, 1991

**Account History:** Manufacturer's distribution agreement signed as of 10-2-91 calling for sales of Klannerite at \$1.00 per pound less manufacturing discount of 15%. In addition, HeatShield to receive 5% royalty on coating sales. Agreement represents sales potential in excess of \$1,000,000.00 over the next twelve months with net proceeds to HeatShield Technologies, Inc. anticipated to be approximately \$250,000.00.

Akro Shield, Inc. now formed to represent Molten Guard <sup>TM</sup> with Klannerite <sup>TM</sup>.

**Current Status:** Production of ceramic refractory coating containing Klannerite commenced on 10/28/91. Three steel producers have tentatively agreed to become a beta test site for our coatings. They are as follows: Bethlehem Steel, Shapiro Steel, and Valley Steel. Initial installation is anticipated to be completed within the next thirty days. Additionally, a marketing strategy has been established to penetrate the smelting industry for foundry and refractory coatings use of our product. Revenue is expected in early 1992.

**NOTE:** Ashgrove Cement has agreed to begin research efforts of incorporating Klannerite into their cement products.

**Potential Applications:** Heat reflective and fire resistant coatings for various uses by aircraft manufacturers, commercial airlines, and the Steel Industry .

# Client Status Report

**Name of Company:** Alcoa Building Products  
The Stolle Corp.

**Division:** Products Formulation

**Address:** 2600 Campbell Road

**City, State, Zip:** Sidney, OH 45365

**Industry:** Vinyl Siding Manufacturer

**Date of First Contact:** 10/24/91

**Account History:** Second largest manufacturer of vinyl siding in the country. We were recommended by a large plastic manufacturer to speak with the company regarding capstock for the co-extruded layer over PVC vinyl siding. It is believed that Klannerite™ may have excellent thermal diffusive properties to the plastic that would act as an insulator as well as prevent color distortion. As of today, a testing program is scheduled to commence over the next ten days.

**Current Status:** Pending test results.

**Potential Applications:** Pigment additive for use in plastic PVC compounds.

# Client Status Report

**Name of Company:** BASF Inmont  
**Division:** Research  
**Address:** 26701 Telegraph Road  
  
**City, State, Zip:** Southfield, MI 48086-5009  
  
**Industry:** Coatings - Automotive  
  
**Date of First Contact:** July 28, 1991

**Account History:** BASF needed an internal control number before they could work with our product. The internal control number issuance depended upon whether or not Klannerite <sup>TM</sup> was considered toxic. Since Klannerite is a natural mineral that is not considered environmentally toxic we were required to send a statement to BASF verifying the fact. BASF received the Statement and issued a internal control number and requested ten pounds of each T-5 and T-6 for testing. their testing should commence around the middle of September and should take about 4 to 6 weeks

**Current Status:** Visited facility on 10/18/91 and met with the two project managers that have been assigned to the development of Klannerite. We discussed the project objectives of possibly incorporating Klannerite into their powdered and liquid coatings. Research is being conducted in both of these areas to determine durability, corrosion and chemical resistance, rheology, and thermal reflective capabilities of Klannerite in BASF coatings. Load factors would be approximately 2-6% of total content.

**NOTE:** Approximately 1 out of every 3 automobiles produced in Detroit has a BASF coating.

**Potential Applications:** Automotive and electrical coatings



# Client Status Report

**Name of Company:** Chemtech of California, Inc.  
**Division:** Research Division  
**Address:** 2211 Navy Drive

**City, State, Zip:** Stockton, CA 95206

**Industry:** Coatings Development

**Date of First Contact:** August 23, 1991

**Account History:** A royalty agreement has been signed as of 10-9-91 calling for 5% royalty or commission in 11 western states. The agreement calls for Dr. Dickman to formulate, patent, seek approvals, and locate distribution on hi-tech specialty design high heat ceramic coatings. Dr. Dickman is a German Chemist with over 40 years experience in coatings development. He has worked with the Department of Defense and other governmental agencies concerning coatings development and applications. Dr. Dickman has previously developed several ceramic coating patents.

**Current Status:** Work has begun to develop initial formulas to meet the requirements of the following applications: roof coatings, pool deck coatings, and high heat ceramic coatings. Contact will be made shortly with several west coast manufacturers and distributors of such coatings. Mr. Dickman has been successful in the past in achieving market penetration with his patented formulas. It is anticipated that he again will be successful, this time with formulas incorporating Klannerite within them.

**NOTE:** Mr. Dickman has indicated from his preliminary research, "Klannerite may prove to be a modern day replacement for certain asbestos applications."

**Potential Applications:** Various Industry Coatings to be developed per specifications.

# Client Status Report

**Name of Company:** Day-Glo Color Corp.  
Division of Nalco Chemical Corp.  
**Division:** Analytical Chemicals Division  
**Address:** 4515 St. Clair Ave.  
**City, State, Zip:** Cleveland, OH 44103

**Industry:** Specialty Paints and Coatings

**Date of First Contact:** 10/24/91

**Account History:** Nalco Chemical is about to sell Day-Glo to RPM Corp. Which owns Testers and Rustoleum paints amongst other entities. Primarily the company specializes in synthetic organic pigments. The interest in Klannerite™ lies in the possibility of incorporation for its water and chemical resistant properties as well as corrosion resistance. Their research department only received samples of Klannerite last week. Results from testing are expected in 60-90 days.

**Current Status:** Pending test results.

**Potential Applications:** Pigment additive and rheology agent.

# Client Status Report

**Name of Company:** DL Labs  
**Division:** Testing Division  
**Address:** 116 E. 16th Street  
  
**City, State, Zip:** New York, NY 10003-2174  
  
**Industry:** Lab Testing Facility for Paints and Coatings

**Date of First Contact:** May 21, 1991

**Account History:** Findings concerning approximately 35 different tests on latex and solvent based paints has been completed. The report gives specific information regarding pricing and competitive products and outlines the results from testing. Conclusion illustrates a use in the paint industry as a pigment additive to compete with precipitated calcium carbonate and calcined clay which sells for about \$320-360 per ton. Note: DL Labs is a subsidiary of DH Litter, an 80 year old company who is widely recognized in the paint and coatings industries as a leading test facility for new product development.

**Current Status:** A completed report was delivered on October 3, 1991. The findings proved Klannerite to be superior against precipitated calcium carbonate and calcined clay in the following areas: water, corrosion, scrub, acid, and humidity resistance, opacity, gloss, sheen and rheology. Further testing will be required before attempting to bring Klannerite to the market. However, discussions have begun with the parent company of DL Labs to distribute Klannerite to paint manufacturers across the northeast region of the U.S..

**NOTE:** Rheology agents such as cellulosic thickeners sell for \$5000-5500 per ton.

**Potential Applications:** The Report will provide basis for Klannerite <sup>TM</sup> to be used as a pigment additive in the paints and coatings industry.

# Client Status Report

**Name of Company:** FMC Corporation  
**Division:** Composites Division  
**Address:** 4800 East River Road  
  
**City, State, Zip:** Minneapolis, Minnesota 55421  
  
**Industry:** Defense  
  
**Date of First Contact:** July 16, 1991

**Account History:** Met with FMC for the second time. Discussed FMC's willingness to test our coatings for use on exhausts systems and missile launchers. Initially, three different tests would have to be passed in order for FMC to warrant further research. FMC also thought we could get a research grant to further research for military applications. The manager in charge of R&D spending also referred us to someone connected with SDI and suggested that we apply for classified security clearance regarding Stealth Technology.

**Current Status:** A sample of our photon diffusive coating is being sent to the company for testing which is scheduled to begin on 11/11/91. A positive report would generate a proprietary agreement for defense and military applications. Results are expected by mid-December.

**Potential Applications:** Heat reflective coatings to be used in a variety of military machinery and vehicles.

# Client Status Report

**Name of Company:** Ford Motor Company  
**Division:** Products Research & Glass Divisions  
**Address:** 15000 Commerce Drive N.

**City, State, Zip:** Dearborn, MI 48120

**Industry:** Automotive

**Date of First Contact:** May 2, 1991

**Account History:** Samples have been sent for testing. However, Ford Motor Co. is in a transition to a hot glass powder process for automotive glass manufacturing. Ford is experiencing delays with this new technology. Therefore, initial testing of Klannerite <sup>TM</sup> has been postponed. It is anticipated that testing will take place over the next 60-90 days.

**Current Status:** The week of 10/28/91 Ford has begun testing of Klannerite into glass coating compounds which they have previously developed for commercial and automotive applications. They are optimistic Klannerite will resolve some problems with the reflectivity aspects of their glass products. After visiting with Ford in Detroit on 10/18/91, and apprising them of our proprietary photon diffusive coating for use in refractory applications, a call was received today from Ford's Glass Division in charge of the refractory glass furnaces. They indicated an interest to trial test our coating as soon as we could show them the findings of prior results. A package of information is on its way and a tentative meeting is scheduled in Detroit the week of 11/11/91.

**NOTE:** Past performance in a refractory application at U.S. Steel's soaking pits indicated an average energy savings of 18 percent.

**Potential Applications:** Automotive coatings and reflective tints and coatings for glass. Photon diffusive ceramic coating for use in glass furnaces.

# Client Status Report

**Name of Company:** Kayler Geoscience  
**Division:** Research Division  
**Address:** 60 Gleneida Avenue  
  
**City, State, Zip:** Carmel, NY 10512  
  
**Industry:** Mineral Marketing and Development  
  
**Date of First Contact:** July 25, 1991

**Account History:** An initial contact was made to determine the viability of having an outside consultant who has expertise in the mining and marketing area of industrial minerals.

**Current Status:** A meeting has been set in New York for 11/5/91 in Mr. Kayler's office. The purpose is to discuss the current plan of action for the mining effort as well as to determine some additional marketing ideas.

**Potential Applications:** Marketing of bulk Klannerite and possible development of products derived therefrom.

# Client Status Report

**Name of Company:** Mills Products Inc.  
**Division:** Technical Research Division  
**Address:** 33106 west 8 mile Road

**City, State, Zip:** Farmington, MI 48336

**Industry:** Glass

**Date of First Contact:** September 25, 1991

**Account History:** Company is interested in researching the aspects of incorporating Klannerite™ into heat tempered glass. They currently sell to all major appliance companies. Sent background information and samples. Met with principals of the company on 10/14/91 at corporate office in Michigan.

**Current Status:** We are presently awaiting results from recently initiated testing program which is on going at the company's glass facility in Tennessee and the metals group in Michigan. The management is optimistic toward using Klannerite as an additiive in their powdered coatings for metals application and ceramic coatings for high heat glass application.

**NOTE:** BASF is working on the powdered coatings application and is beginning to have positive results.

**Potential Applications:** Incorporate Klannerite into heat tempered glass or develop a coating application to accomplish the following:

- Reflectant / Heat reducer
- Thermal Expansion
- Reduce thermal breakage
- Coating liner of oven doors
- Optical strength
- Transmission
- Reflectance



# Client Status Report

**Name of Company:** MoDoCell Inc.  
**Division:** Research  
**Address:** One Sellek Street  
Suite 460  
**City, State, Zip:** Norwalk, Connecticut 06855  
**Industry:** Paper

**Date of First Contact:** August 8, 1991

**Account History:** Contacted Mr. Austin and discussed the progress HeatShield Technologies, Inc. has made with Klannerite TM. Sent Mr. Austin background information and a small sample. After receiving the documents and sample Mr. Austin requested three samples of five pounds each be sent to him to distribute to three different paper companies. One week later Mr. Austin called and said he had sent one sample to MoDo Lab in Sweden, one to Westvaco Corp. the leading manufacturer in North America of high quality board and paper, and the third to a plastic manufacturer for testing. He said testing should take four to five weeks. He also said he was discussing this with a Wisconsin paper manufacturer and they were very interested because of the environmental impact of TIO<sub>2</sub>. They expect that dumping of the by-products of TIO<sub>2</sub> to become more expensive, and also the cost of TIO<sub>2</sub> is expected to double by 1995. Therefore they would like to test our product as a replacement or extender. He also felt it was worth his time to make a trip down to see us, to discuss availability and price. On 9/19/91 we met Mr. Austin and discussed his future involvement with HeatShield. Some questions came up regarding lease rights, availability, pricing, lead time we needed to supply the volume that a company like MoDo would order. From all indications our answers assured him that HeatShield could deliver the product to MoDo expectations and standards. Mr. Austin will be contacting us in the next week to ten days to update us on lab progress.

**Current Status:** Three more paper related companies have recently been added to the list of on going research and marketing efforts led by Mr. Austin. They are as follows: P.H. Glatfelter, Alco Paper, and Nalco Chemical. Results from labs at Modoc and Westvaco are expected the first week of November. A meeting has been tentatively scheduled in New York on 11/7/91 with Jim Austin and a high ranking official of Modocell's parent, (Modoc Corporation of Sweden).

**Potential Applications:** Extender or filler in paper products and plastics

# Client Status Report

**Name of Company:** Rutgers University  
**Division:** College of Engineering  
Ceramics Research Division  
**Address:** Brett and Bowser Roads  
**City, State, Zip:** Piscataway, NJ 08855-0909  
**Industry:** Industrial Minerals  
**Date of First Contact:** May 20, 1991

**Account History:** Rutgers is a leading research foundation for ceramics in the country. Dr. Ruh and Dr. Neisz are professors of ceramic research. The aerospace industry, NASA in particular, uses Rutgers' facilities for some of the testing capabilities which the college has to offer. We discussed the possibility of separating out the quartz and the clay for other applications. Also, how this material geologically is unique due to its high cristobalite content. They had done an x-ray diffraction analysis giving the chemical composition breakdown as mainly Kaolinite, Quartz, and Cristobalite. In addition, they are going ahead to complete the x-ray diffraction to determine the balance of material in the composition. Also noted is that the mineral is of a porous friable nature containing thinly crystallized rock formations which means that it will be easy to grind. Dr. Neisz commented that the mineral could be used as a filler for paints, plastics, paper, etc. and because of its ability to diffuse ultraviolet rays, it becomes a reflector and there is no absorption. We concluded that certain physical characteristics such as structure and grain size would need to be obtained. Dr. Ruh agreed to join our board of directors and is a welcome addition with over thirty years of experience as a doctor in mineralogy and working in the ceramics industry. In summary, Rutgers will be performing several tests which will help us determine the chemical and physical properties of Klannerite TM.

**Current Status:** A full report detailing the results of their research is due to be delivered from Rutgers the week of 11/4/91.

**NOTE:** Dr Ruh is also President of Ruh International, a world wide consultant firm to the ceramic and refractory industries.

**Potential Applications:** Testing for physical and chemical properties of Klannerite as well as potential ceramics industry applications.

# Client Status Report

**Name of Company:** Sauereisen Cements  
**Division:** Products Formulation  
**Address:** 160 Gamma Dr.  
**City, State, Zip:** Pittsburg, PA 15238

**Industry:** Specialty Cements

**Date of First Contact:** October 14, 1991

**Account History:** Recently began looking at Klannerite™ for the possibility of incorporation into cement. Main interest is whether or not Klannerite would be an organic additive and how it would act as a rheology agent. Prior results from tests in other product areas indicate that there would be favorable results to the company's concerns.

**Current Status:** Testing commenced the week of 10/28/91 and preliminary results are expected over the next 30-60 days.

**Potential Applications:** High heat and specialty cements and by products.

# Client Status Report

**Name of Company:** UCI Paints  
**Division:** Research Division  
**Address:** 1320 N.W. 23rd Avenue  
  
**City, State, Zip:** Ft. Lauderdale, FL 33311  
  
**Industry:** Paints and Coatings  
  
**Date of First Contact:** August 23, 1991

**Account History:** A meeting was held with the Executive Vice President and a research chemist for the company. The purpose of the meeting was to determine if UCI Paints was willing and able to produce a sample batch of 250 gallons of our proprietary high heat reflective ceramic coating. In addition, we discussed the possibility of UCI manufacturing and distributing for private label sale of our coating formula. They also want to explore the possibility of using KLannerite TM as a pigment additive for their other formulas.

**Current Status:** After a brief delay in obtaining the necessary ingredients for the fabrication of our photon diffusive coating, a sample was produced the week of 10/28/91. Presently, this sample will be forwarded to DL Labs for evaluation to determine if the formula will perform as did the coating produced by the predecessor management. Upon verification of positive results, we will then proceed to commit UCI to running a production batch .

**NOTE:** Upon having had the opportunity to work with the Klannerite Tm material, the chemist for UCI has indicated an interest to purchase quantities for use as a replacement for another substance they are using as a heat reflective additive in their other paint formulas.

**Potential Applications:** Residential, commercial, and industrial coatings.

# Client Status Report

**Name of Company:** Vista Chemical Company  
**Division:** Technical Service Division  
**Address:** New Highway 25

**City, State, Zip:** Aberdeen, MS 39730

**Industry:** Plastics Manufacturing

**Date of First Contact:** August 5, 1991

**Account History:** Samples have been sent to test for possible incorporation into PVC plastic compounds. Initial testing proved positive results in the area of titanium dioxide replacement, however problems exist with bubbling in the plastic due to the moisture content of the Klannerite™. Therefore, the Klannerite powder will be dried and submitted for retesting. Moisture content needs to be less than .05%. Additionally, the iron content of Klannerite is .03 percent. This may or may not present a problem, however, the company has requested that we research the necessary procedure for iron extraction.

**Current Status:** Contact has been made with Eriez Magnetics of Erie, PA and samples of Klannerite have been forwarded for testing of iron extraction on their electro magnetic separation equipment. Results are due to be available the week of 11/4/91. Additionally, Eriez will advise us as to their recommended process for drying the material.

**NOTE:** Given their specifications of moisture and iron content along with particle size requirements, Vista has agreed to produce a trial run of their PVC compound consisting of 20,000 pounds of which Klannerite™ would have approximately a 5 percent load factor.



**Potential Applications:** UV and IR reflector in plastics manufacturing and the following:

- Pacifier for PVC medium
- TINT for coloring
- Replacement for titanium dioxide
- Opacifier
- Optical strength
- Transmission
- Reflectance

## AGREEMENTS

# Agreements

## Overview

This section contains copies of signed agreements.

- AKRO SHIELD Agreement  
This is the signed Manufacturer's and Commissioned Sales Agent agreement.
- Chemtech of California Agreement  
This is the signed R & D/Distributor agreement.
- Joint Venture Agreement  
This is a copy of the Joint Venture agreement between HeatShield Technologies, Inc. and PDC. This agreement gives HeatShield 100% of the rights to mine, refine, and market Klannerite™

# HEATSHIELD

TECHNOLOGIES, INC.

*Jean  
CC: this*

October 3, 1991

Tim Roudebush on behalf of  
AKRO Shield, Inc. and all other  
affiliated entities  
9025 Rosehill Road  
Lenexa, KS 66215

Re: Sale of Klannerite TM

Dear Tim:

Unfortunately our efforts to put together definitive terms of mutually acceptable joint venture agreement, license and purchase agreement or manufacturer's representative agreement has become increasingly complicated and frustrating to both of us.

We now propose to sell to you standard grade Klannerite TM , initially at a price of \$1.00 per pound FOB Kingman, Arizona, less our manufacturer's discount of 15%. You may incorporate the product into ceramic paint using our formula, previously delivered to you or such other manufactured product as approved by us. We shall be entitled to a 5% royalty on all ceramic paint products that you manufacture and sell using our formula or any derivation, re-formulation or enhancement of our formula.

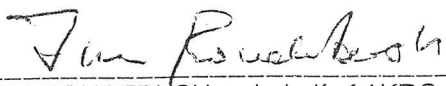
You shall also be designated as one of our commissioned sales agents for Klannerite TM entitled to a 15% commission on sales orders approved by us. We will agree to offer appropriate protection as to "your customers" under separate agreement.

If these terms are acceptable kindly countersign and return one copy.

Sincerely,

  
Paul R. Arena

AGREED TO:

  
TIM ROUDEBUSH on behalf of AKRO  
SHIELD, INC. and all other affiliated entities

# HEATSHIELD

TECHNOLOGIES, INC.

October 9, 1991

Mr. John Dickman  
Chemtech of California Inc.  
P.O. Box 326  
Ripon, CA 95366

Dear Mr. Dickman:

We wish to retain you to conduct studies, undertake research, develop and invent a new energy diffusive coating ("coating") which incorporates and exploits the heat reflective characteristics of Klannerite TM, a processed mineral ore. We will provide you with ample quantities of the mineral for this purpose and you will be fully reimbursed your approved out of pocket costs and disbursements. You will energetically and diligently pursue this project in order to create and invent one or more new and novel patentable coatings. All patent applications will be filed by you as the inventor; but be assigned to us immediately after filing same with the U.S. Patent Office.

You will be entitled to a 5% royalty payment or commission on both (i) net sales of the coating that you shall create in the eleven western states and (ii) on other net sales of Klannerite TM products solicited by you and approved by us for a period of 5 years and renewable thereafter upon the agreement of both parties. There will be monthly accountings of net sales together with your payments. You understand that we reserve the right to market and sell other Klannerite TM products, including products which may be competitive to the coating that you invent.

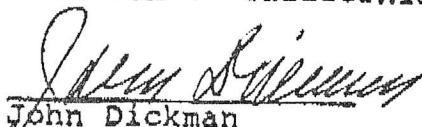
You will provide reasonable assistance in marketing the coating, including the solicitation of prospective customers as well as the creation of a market place and distribution for the coating.

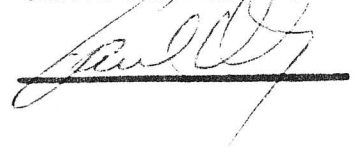
If you agree to the above, kindly countersign and return a copy of this letter.

Sincerely,

  
Paul R. Arena, President

Agreed to:  
Chemtech of California, Inc.

  
John Dickman



# JOINT VENTURE AGREEMENT

THIS AGREEMENT dated for reference the 31st day of May, 1991,

**BETWEEN:**

**PDC INDUSTRIAL COATINGS, INC.**, a Delaware Corporation having an office at 1708 - 1060 Alberni Street, Vancouver, British Columbia V7X 1A1

("PDC").

**AND:**

**HEATSHIELD TECHNOLOGIES, INC.**, a Florida Corporation having its registered office at Suite 401 - 3511 West Commercial Blvd., Fort Lauderdale, Florida 33309

("HeatShield")

**WHEREAS:**

A. PDC is the lessee under a mining lease dated March 4, 1984 (the "Lease") in respect of certain lands in Arizona (the "Property") on which quantities of Kaolinite ore (the "Ore") capable of being refined and used for heat reflective coatings can be found;

B. HeatShield wishes to produce and sell products derived from processed Ore; and

C. The parties have agreed to enter into this Agreement in order to set out the terms under which they will jointly exploit the processed Ore products;

**NOW THEREFORE THIS AGREEMENT WITNESSES THAT** in consideration of the mutual covenants and other good and valuable consideration (the receipt and sufficiency of which is hereby acknowledged), the parties hereto agree as follows:

**1. FORMATION OF JOINT VENTURE**

**1.1 JOINT VENTURE.** The parties hereby agree to form a joint venture for the purpose of developing and marketing the products that can be derived from:

- (a) the Ore and other ore deposits found on the Property; and
- (b) the Ore found on lands held under the terms of any other mineral leases or interests obtained by either of the parties during the term of this Agreement;

provided, however, that the obligations of PDC under this Agreement are subject to the acceptance of this Agreement ("Acceptance") for filing by the Vancouver Stock Exchange ("Exchange").

1.2 **BEST EFFORTS.** During the term of this Agreement, the parties covenant and agree to use their best efforts to further the goals of the joint venture.

1.3 **NO COMPETITION.** Neither party, without the consent of the other party, shall engage in any business or activity that is, directly or indirectly, competitive with the goals of the joint venture, including, without limiting the generality of the foregoing, any activity involving the sale, marketing or exploitation of Ore or any other kaolinite ore derivatives outside of this joint venture.

1.4 **DISCLOSURE OBLIGATIONS.** HeatShield acknowledges that PDC is a reporting issuer under the Securities Act (British Columbia) and, as such, is subject to the continuous disclosure requirements of that Act as well as the disclosure requirements of the Exchange. Accordingly, HeatShield agrees to:

- (a) keep PDC fully and completely advised of the activities of HeatShield relating to the business of the joint venture so that PDC is able to determine, within the time limits prescribed by the Securities Act and the policies of the Exchange, whether a material change (as that term is defined in the Securities Act) has occurred;
- (b) submit a report at the end of each calendar quarter following the date of this Agreement which summarizes the activities of the joint venture during the respective period; and
- (c) maintain proper books and records of the joint venture, which shall be open to inspection to PDC and its auditors at all reasonable times at the address first above written.

## 2. **MINING OPERATIONS**

2.1 **MAINTAIN LEASE IN GOOD STANDING.** During the term of this Agreement, PDC shall, at its expense, promptly and punctually make all lease payments, except for royalty payments, and do all acts reasonably necessary to maintain the Lease in good standing.

2.2 **ACCESS TO THE ORE.** PDC shall permit HeatShield to have access to the Property for the purpose of mining sufficient quantities of the Ore to satisfy the needs of the joint venture.

2.3 **MINING AND PROCESSING OF ORE.** HeatShield shall be responsible for:

- (a) supervising all mining operations on the Property;
- (b) the transportation of the Ore to the processing plant and refinery; and
- (c) arranging for milling, crushing and refining of the Ore.



2.4 **SUPPLY OF DOCUMENTATION AND MARK.** PDC shall provide to HeatShield all documentation, reports, studies and materials that it has in its possession or has access to relating to the physical properties of the Ore, its refining and processing, and the products that can be derived from the Ore. PDC shall permit the joint venture to have the benefit of all beneficial contracts, if any relating to the Ore or any products derived therefrom. PDC will also permit the joint venture to use the mark "Klanerite" and any other name or tradename heretofore used in connection with the Ore so long as this agreement is in full force and effect.

2.5 **INDEMNITY.** Heatshield shall comply in all respects with the terms of the Lease governing activities on the Property and agrees to indemnify and save harmless PDC from any actions or damages that may result from the activities of Heatshield on the Property that are in breach of the provisions of the Lease.

### 3. **PRODUCT DEVELOPMENT AND MARKETING**

3.1 **DEVELOPMENT OF PRODUCTS.** HeatShield shall arrange for the fabrication and manufacture of heat shielding materials using the processed Ore.

3.2 **MARKETING PLAN.** HeatShield shall create a marketing plan for the processed Ore and shall use its best efforts to solicit purchasers for the products of the joint venture.

3.3 **PROCEEDS OF SALES.** HeatShield shall hold all net proceeds derived by it from sales of the processed Ore in trust for the joint venture.

### 4. **JOINT VENTURE FINANCES**

4.1. **SUBMISSION OF BUDGET.** Within 30 days of the date of this Agreement ("Initial Budget") and annually thereafter, HeatShield shall prepare a budget of proposed expenditures and required financing in respect of the following year. The Initial Budget and all annual budgets thereafter shall be promptly reviewed and be subject to approval by PDC which approval shall not be arbitrarily withheld. During any period of non approval by PDC Heatshield may continue operations based upon the previous years budget.

4.2 **PAYMENT OF EXPENSES.** Heatshield shall pay and satisfy all of the following obligations of the joint venture in a timely manner:

- (a) the costs of carrying out its obligations under sections 2.3, 3.1. and 3.2 hereunder in accordance with the budget;
- (b) royalty payments under the Lease;
- (c) reasonable overhead in accordance with the budget; and
- (d) all other reasonable and necessary costs and expenses of the venture agreed upon by PDC and HeatShield.

provided that Heatshield shall be reimbursed for such expenditures out of the sales revenues derived from the sale of the Ore or the processed Ore products in accordance with section 4.3.

**4.3 DISTRIBUTION OF PROFITS.** Subject to section 4.4, each of HeatShield and PDC shall share equally in the net revenues from sales of the products of the joint venture, after deducting:

- (a) the amounts reimbursed to Heatshield on account of expenses incurred by it on behalf of the joint venture; and
- (b) funds required for reasonable working capital needs, in accordance with the budget.

Distributions shall be made at the end of each calendar quarter following the date of this Agreement.

**4.4 MINIMUM DISTRIBUTION PAYABLE TO PDC.** PDC shall be entitled to a minimum distribution of \$110,000 during the first 18 months of the term of this Agreement, as follows:

- (a) \$10,000 is herewith paid to PDC by HeatShield, the receipt of which is acknowledged by PDC; and
- (b) to the extent that the amount paid to PDC under section 4.3 during the first 18 months of the term of this agreement is less than \$100,000, HeatShield shall pay such difference to PDC on the last day of the 18 month period; provided however, that HeatShield shall be entitled to reimbursement of such amount out of the amounts otherwise payable to PDC under section 4.3 in respect of subsequent distributions of profits.

**4.5 FINANCING.** HeatShield may obtain financing for the joint venture to the extent deemed necessary and approved in the budget; provided that any such financing may not charge any of the assets of PDC, including the Lease and the Property.

**5 ARBITRATION.** Any controversy or claim arising out of or relating to this Agreement, or the breach thereof, shall be settled by arbitration in accordance with the rules of the American Arbitration Association by three arbitrators. Judgment upon the award rendered by the arbitrators may be entered in any court having jurisdiction thereof. The exclusive place of arbitration shall be Phoenix, Arizona.

## **6. TERM AND TERMINATION OF JOINT VENTURE**

**6.1 TERM.** Unless terminated earlier in accordance with this part, the term of the joint venture shall be 10 years from the Exchange Acceptance, automatically renewable from year to year thereafter unless terminated by either party on 60 days prior written notice.

**6.2 TERMINATION ON DEFAULT.** This Agreement may be terminated by either party if, at any time, the other party fails to perform any obligation required to be performed by it under this Agreement or is in breach of a warranty given by it under this Agreement, provided that:

- (a) the party shall have given a notice of default to the defaulting party containing particulars of the obligation which has not been performed or the warranty breached; and
- (b) the defaulting party has not, within 30 days following delivery of such notice of default, cured such default or commenced proceedings to cure such default by appropriate payment or performance.

**6.3 EVENTS ON TERMINATION.** In the event of the termination of this Agreement:

- (a) all accrued but unpaid profits shall be allocated to the parties on the effective date of the termination;
- (b) HeatShield shall deliver to PDC within 30 days of such termination, copies of all documentation, reports, studies and materials that it has in its possession or has access to relating to the Property and the physical properties of the Ore, its refining and processing, and the products that can be derived from the Ore; and
- (c) HeatShield shall have the right, within a period of 60 days following the termination, to remove from the Property all buildings, plant equipment, machinery, tools, appliances and supplies which have been brought upon the Property by or on behalf of HeatShield, and any such property not removed within such 60 day period shall thereafter become the property of PDC.

## **7. GENERAL.**

**7.1 NOTICES.** Each notice, demand or other communication required or permitted to be given under this Agreement shall be sufficiently given if in writing and sent by prepaid registered mail addressed to the party entitled to receive the same or telecopied to such party at the addresses first above written.

The date of receipt of such notice, demand or other communication shall be the date of delivery thereof if delivered or telecopies, or, if given by registered mail as aforesaid, shall be deemed conclusively to be the fifth business day after the same shall have been so mailed except in the case of interruption of postal services for any reason whatever, in which case the date of receipt shall be the date on which the notice, demand or other communication is actually received by the addressee. Any party may at any time and from

time to time change its address for service by notice given to the other parties in the manner aforesaid.

7.2 **PRIOR AGREEMENTS.** This Agreement shall supersede and replace any other agreement or arrangement, whether oral or written, heretofore existing between the parties in respect of the subject matter of this Agreement.

7.3 **SEVERANCE.** If any provision of this Agreement is determined to be illegal or unenforceable, such provision shall be ineffective to the extent of such illegality or unenforceability, but shall not invalidate or affect the validity or enforceability of the remaining provisions of this Agreement.

7.4 **GOVERNING LAWS.** This Agreement shall be governed by and construed in accordance with the laws of the State of Arizona and the parties agree to submit to the jurisdiction of the courts of the State of Arizona with respect to any legal proceedings arising herefrom.

7.5 **ENUREMENT.** This Agreement shall be binding upon each of the parties and their successors and assigns.

7.6 **CURRENCY.** All references to dollar amounts in this Agreement are references to legal tender of the United States of America.

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

7.8 **DISCLOSURE OF AGREEMENT.** Except for disclosure required to be made by PDC under the Securities Act (British Columbia) or by the policies of the Exchange or appropriate under the Securities Act of 1933 the Securities Exchange Act of 1934 (Federal Securities Laws) the regulations promulgated thereunder or the Securities Acts of the States of the U.S. the parties hereto agree that any announcement or publicity with respect to this Agreement shall be jointly planned and coordinated by and between the parties hereto and no information furnished by any party to the other hereunder in respect of the activities of the joint venture shall be published by the other party without the prior written consent of the other party, provided that consent in respect of the reporting of factual data shall not be unreasonably withheld.

7.9 **ENTIRE AGREEMENT.** This Agreement contains the entire agreement amount the parties pertaining to the subject matter hereof, and supersedes and replaces all previous written and oral agreements among the parties with respect to the subject matter hereof.

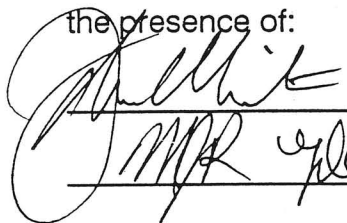
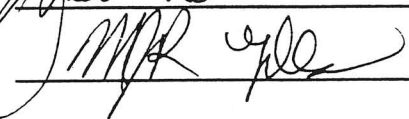
7.10 **WAIVER AND AMENDMENT.** This Agreement may only be amended by further written agreement executed and delivered by all of the parties. No waiver or consent by

a party of or to any breach or default by any other party shall be effective unless evidenced in writing, executed and delivered by the party so waiving or consenting and no waiver or consent effectively given as aforesaid shall operate as a waiver of or consent to any further or other breach or default in relation to the same or any other provision of this Agreement.


7.11 **ASSIGNMENT.** Neither party may assign its rights under this Agreement without the prior written consent of the other party.

**IN WITNESS WHEREOF** the parties hereto have affixed their common seal in the presence of their officers duly authorized in that behalf to have effect as of the day above written.

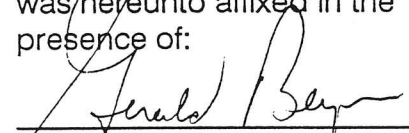

The COMMON SEAL of PDC  
Industrial Coatings, Inc.  
was hereunto affixed in  
the presence of:

  
\_\_\_\_\_  
  
\_\_\_\_\_

PDC INDUSTRIAL COATINGS, INC.

by:   
\_\_\_\_\_

The COMMON SEAL of  
HeatShield Technologies, Inc.  
was hereunto affixed in the  
presence of:

  
\_\_\_\_\_  
  
\_\_\_\_\_

HEATSHIELD TECHNOLOGIES, INC.

by:   
\_\_\_\_\_

## CORRESPONDENCE

# Correspondence

## Overview

This section contains the following correspondence.

- **BASF Letter**  
Outlines BASF interest in and testing of Klannerite™.
- **Chemtech of California Letter**  
Outlines Chemtech interest in Klannerite™ as a fire retardant pigment in coating and indication of possible value.
- **Michigan Technological University Letter**  
This is a proposal to conduct R & D of Klannerite™.
- **Project Proposal-Robert Needham**  
This is a proposal by an independent consultant outlining the necessary phases he feels should be completed to mine and market Klannerite™ and the fees he would charge for these services.



**BASF Corporation**  
Coatings & Inks Division

**BASF**

Automotive OEM Coatings

Heatshield Technologies, Inc.  
8400 N. University Dr., Suite 316  
Tamarac, Florida 33321  
Attn: Mr. Paul Arena

10-28-91

Mr. Arena:

Mike Gessner and I enjoyed meeting you on 10-18-91. As discussed at the meeting, we are looking at Klannerite in the future technologies development group. Based on the product data, Klannerite may be useful as an additive to improve durability and/or rheology of our topcoat systems. Initial results indicate that Klannerite should disperse into our systems, but may be usable at small levels only in clearcoats due to color restrictions. Further work will involve determining usable levels of Klannerite in our topcoat systems, plus investigations into the specific properties obtained by the use of Klannerite in these systems. I will keep you updated as work continues on this project.

Regards,

*John E. Boisseau*

John E. Boisseau

c.c. M. Gessner

**Chemtech of California Inc.**

P.O. Box 326, Ripon, CA 95366-0326  
[209]599-4560 Fax: [209]599-2545

---

High-Performance Specialty Chemical Products

Oct. 23, 1991

Mr. Paul Arena, President  
HEATSHIELD TECHNOLOGIES, INC.  
8400 N. University Drive, Suite 316  
TAMARAC, FLORIDA 33321  
Phone: (305)345-7784  
FAX: 305-726-2774

Re: Klannerite pigments;  
Our earlier telecon;  
Pricing material, etc.

Dear Paul;

We are interested in your Klannerite Pigments in the use of paint coatings, both for industrial use and the residential market place.

Our main interest lies in the fact of the fire retardant qualities of the pigment, which we believe it has and which we need to substantiate through thorough testing.

If indeed it has the fire retardant qualities we think it has, it will find a ready market place as a substitute for asbestos which is being banned as a hazardous pigment. The Klannerite material is an inert and will be easily accepted in environmentally friendly applications. It will also, then, warrant a higher cost price.

With what we know at the moment, we feel that there would be a distinct market place for your Klannerite material on the Westcoast, even at a cost of approx. \$1.75/lb.

Sincerely,

JOHN DICKMAN (J.D.)



October 24, 1991

Mr. Paul Arena, President  
Heatshield Technologies, Inc.  
8400 N. University Drive  
Suite 316  
Tamarac, Florida 33321

**Subject: Preliminary proposal for mineral characterization and mineral beneficiation testing leading to developing the "klannerite" deposit in NW Arizona.**

Dear Paul:

Based on our recent telephone discussions, I have put together a preliminary proposal for you leading up to developing your "klannerite" mineral reserve in Arizona.

Some work has already been done on characterizing the mineralogy of the deposit for Dolphin Control Systems, Inc. the former owners. However, due to the change in ownership and loss of interest by Dolphin, this work was not completed. Consequently, I am proposing that this basic mineral characterization work be continued and in addition to perform the beneficiation tests we discussed to determine the best processing steps to produce a uniformly high quality product (low iron and low moisture) from your mine.

Keeping the above objectives in mind I propose the following work plan for the laboratory portion of the work to be performed by our Mineral Technology Research Group here at Michigan Tech.

1. Review the mineralogical characterization research done in the earlier studies. This would entail reexamining the thin section, x-ray and chemical analysis data performed to date. Special attention would be directed to information leading to identifying the nature of the iron-bearing minerals and those that are responsible for the elevated moisture contents.

2. Undertake additional mineralogical characterization, as necessary, to determine the beneficiation steps that would be most beneficial in removing iron and reducing the moisture content of a processed product.

3. Design and perform a series of bench scale processing steps to evaluate the best method(s) for treating the run-of-mine rock to produce a desirable product. This work will be guided by the findings of the mineralogical work and will include:

- a. crushing and grinding tests to determine the optimum

methods and particle size for liberation of the silica.

- b. assessment of methods to free and separate the iron minerals from the product. This could include attrition scrubbing, magnetic separation, high-intensity magnetic separation, flotation, acid treatment and possibly other processing steps.
- c. Chemical analysis of the products obtained by the various test methods for iron and for purity (silica, alumina and perhaps others). Determination of the moisture content of the end products and evaluation of any drying steps needed.

4. Analysis of the above data to determine the optimum processing flowsheet. An assessment of the need for further work will also be made concerning the design of a pilot scale test using a larger sample leading to a full-sized plant.

5. A report will be prepared containing the findings of the research and test work along with specific recommendations toward developing your mine and processing plant.

I will be assisted in the mineral beneficiation part of this work by David Carlson, a Senior Research Engineer in the Mineral Technology Research Group. Dave has extensive experience in this area.

For this work we will need representative samples of the area that you will be mining. If you wish, I can help you in obtaining these samples (this would be outside of the scope of work in this preproposal). Please keep in mind that it is very important that the test samples be truly representative of the run-of-mine material you will be producing, because our recommendations for your processing flowsheet will be made on the results obtained with this sample.

As you indicated, the budget for this phase of the work is \$7000. We will make every effort to provide the needed information leading to our report for this amount. Should the costs be higher, we would not proceed without your approval. In the event that the costs are less than this amount, we only bill for actual costs.

The work can begin with your purchase order and an approved contract between the University and HeatShield, Inc. (this preproposal does not constitute a contract without approval of both parties). I recommend that you also provide a \$1000 retainer with your purchase order or letter of authorization. Because the work will be done partly off campus, I will request that an average overhead rate between the on-campus rate (40.5%) and the off-campus rate (25%) be applied to this project (i.e., 32.75%). This means that \$5237 will be available for the direct costs associated with the research; wages, supplies, analyses,

etc.

As we discussed, I will be willing to assist you in obtaining a representative sample for the testing work and to make recommendations on a drilling program to define the mineable reserves in the deposit. This would be done separately from this work.

If you have any questions or comments on this preproposal, please feel free to call me. Dave and I are both looking forward to this interesting and challenging project.

Sincerely,



Allan Johnson  
Director, Mineral Technology  
Research Group

cc David Carlson

FOR: MR. PAUL ARENA

9 PAGES INCLUDING THIS ONE

HEATSHIELD KLANNERITE PROJECT

Robert E Needham

4 November 1991

## HEATSHIELD KLANNERITE PROJECT

### Project Strategy

HeatShield has a small, high grade silica deposit in Arizona. Funds are limited, and it is desired to bring the deposit into commercial production quickly and at low cost.

Geologic ore reserves consist of 175,000 tons of high grade silica ore and 280,000 tons of lower grade silica ore. Both are semi-consolidated, fine grained, and are composed mineralogically of cristobalite (90%) and kaolinite (10%). The corresponding run of mine (ROM) ore reserves and process recovery are to be determined.

Due to the small size of the ore reserves, it is necessary to consider only high unit value markets. There appear to be at least two possibilities. The first is high grade fillers. This type of product sells for about \$150 - \$400 per ton, and the USA market is about 600,000 tons per year. The second is specialty applications such as  $\text{TiO}_2$  pigment partial substitute, and heat reflective specialty coatings for the ferrous metals industry. Product value in this case is expected to be in the range \$1000 per ton or more and the USA market is less than 100,000 tpy.

The first market, high grade fillers, is fairly straightforward and can be evaluated quickly and at relatively low cost. The specialty market implies extensive testing, first in the academic environment, and then in the industrial environment. This will take time, it will be expensive, and will require consumer participation.

It can be concluded that major effort should be devoted to developing a market and building a plant to sell fillers, while research goes on in the more complex specialty market, as time and resources permit. Chasing too many goals will mean that no goal is achieved.

The consumer, in evaluating a new industrial mineral, puts great emphasis on product uniformity and long term assured supply. No matter how good the product, he will reject it if he believes these two requisites will not be met. Therefore it is necessary to carefully and professionally measure the ore reserves (to assure long life) and to collect selected composite samples to be processed in a bench scale optimized mill (to assure consistent quality). Both the high grade and the low grade portion of the deposit must be included in



this plan. The next step will be to test the market with the assured, uniform product.

### Marketing

There are reported to be two existing producers of cristobalite: CE Minerals and Harbison Walker Refractories. The best market niche may be to compete with filler applications of diatomite (fine grained, opaline silica). This implies a market size of about 150,000 tpy (tons per year) at a price of about \$200 per ton.

Once armed with processed, uniform samples, specifications, and a sales brochure (showing ore reserves, beneficiation process, company background, test results), the next step is to get on the phone and set up meetings with the technical and purchasing departments of potential consumers. All efforts should be made to meet people on the factory floor, because it is here that many purchasing decisions are really made. In making visits, you must be prepared to discuss both the commercial and technical aspects of your product: this may require a team effort.

### Geology & Mining

The deposit must be carefully measured and sampled in all three dimensions. Topography and other factors will determine the best techniques (pitting, auger sampling, core drilling, reverse circulation drilling). It is necessary to generate a sample population large enough to apply statistical analysis, and sample intervals must be chosen. A difficulty with many industrial minerals is that the raw ore analysis is of less use than the processed analysis. In this case a correlation must be sought, indirect methods must be discovered, or samples must be processed prior to analysis. It is suggested that geostatistical methods be used to generate a block model of ore reserves.

Once the ore reserve is well understood, it is easy to make up composite samples for marketing needs.

Determining the ROM ore reserve depends on a simple analysis of the mining method and bench heights. To achieve uniformity, it may be necessary to blend ore from several working faces.

## Beneficiation

The beneficiation plant will consist of grinding equipment, classification equipment, possibly a dryer, bagging equipment, covered product storage, and a quality control laboratory.

In estimating the cost of this facility, it should be remembered that the Installed Equipment Cost, including infrastructure, civils, and services, is usually about 2.5 times the FOB equipment cost. Working capital is about 3 months of cash operating cost.

Mass balance flow sheets, process flow sheets, equipment flow sheets, and plant layout should be available as soon as possible.

## Environmental Aspects

Silica, including cristobalite, is considered to be a legal health hazard. The plant will be producing silica in the size range of Respirable Dust and will thus come under the applicable EPA guidelines. Implications are increased capital and operating costs for scrubbers or bag filters, and the effort and expense to obtain environmental permitting. The health hazard nature of the product will need to be printed on the bags. It is expected that BAT (Best Available Technology) standards will be applied to the project.

Besides air emissions, there are EPA guidelines for effluents from the plant site, in terms of suspended solids and pH. Meeting these standards should present no great problem.

Both time and money must be budgeted to address the environmental aspects of the project.

## Feasibility Study

It would be wise to produce a written Feasibility Study as soon as possible. Although built from incomplete information, the document can be revised periodically as new information becomes available. The Feasibility Study can be used as a background document at periodic meetings in which critical factors are discussed, and go-no go decisions are made.

The Feasibility Study guarantees that one has complete understanding of the project and its implications.

## Project Management

Although this project is small in money terms, it is necessary to go through most of the steps of a major project and to face many of the same problems, but with less available manpower. In other words, small projects can be difficult to implant.

It is suggested the CPM (critical path method) software be used to structure and control all aspects of the project. Tasks should be small and numerous (perhaps a hundred) and each should be assigned to a responsible party. This will allow personalized "punch lists" to be produced on a periodic basis.

Figure 1 is an example of a Gantt chart produced by the CPM software (other charts and reports would be produced as well). The project's critical path is shown (C) as well as who is responsible for each task; when a person is overloaded with duties, an (R) appears. Slack time is shown as a thin line.

Schedul Name : KLANNERITE PROJECT

Responsible :

As-of Date : 13-Jan-92 Schedule File : C:\DAT\TIMEL\HEAT1B

Task Name	Resrc	Stat	91		92		Mar	Apr	May	Jun	Jul	Aug	Sep
			Nov	Dec	Jan	Feb							
			1	2	2	3	2	1	1	1	1	3	1
GEOLOGY													
Drilling Program	Joe	CR p	=====										
Sample Analysis	Joe	CR s	.	.	.	.	.	.	.	.	.	.	.
Calc Ore Res.	Joe		.	.	.	.	.	.	.	.	.	.	.
MARKETING													
Produce Cust. Sample	Harry	C	.	.	.	.	.	.	.	.	.	.	.
Finalize Specs	Harry	C p	.	.	.	.	.	.	.	.	.	.	.
Customer Contacts	Fred	s	.	.	.	.	.	.	.	.	.	.	.
Produce Pamphlet	Joe	R	.	.	.	.	.	.	.	.	.	.	.
Marketing Trips	Fred		.	.	.	.	.	.	.	.	.	.	.
Sales Contracts	Fred		.	.	.	.	.	.	.	.	.	.	.
BUILD PLANT													
Finalize Circuit	Joe	CR	.	.	.	.	.	.	.	.	.	.	.
Plant Layout	Joe	C	.	.	.	.	.	.	.	.	.	.	.
Order Equip.	Joe		.	.	.	.	.	.	.	.	.	.	.
Civil Construction	Harry	CR p	.	.	.	.	.	.	.	.	.	.	.
Install Equip.	Harry	CR s	.	.	.	.	.	.	.	.	.	.	.
Startup	Harry	C	.	.	.	.	.	.	.	.	.	.	.
PROJECT ON STREAM		C	.	.	.	.	.	.	.	.	.	.	M

-----  
Detail Task     f     ===== Summary Task     M     Milestone  
.. (Started)     ===== (Started)     >>> Conflict  
 (Slack)     ===== (Slack)     .. Resource delay  
-----  
Scale: 1 week per character

TIME LINE Gantt Chart Report, Strip 1

## THE ROLE OF ROBERT E NEEDHAM

### Form of Association

Because HeatShield has limited funds and considerable project risk is involved, it would be less expensive, more efficient, and more flexible to employ me as a consultant rather than an employee. A working association can be established, as discussed below, that will be mutually beneficial and flexible to both parties.

### Areas of Consultancy

Because I have broad training and background, I believe I can make a positive impact on many phases of the project. It is evident, from the small size of your organization, that you need a "hands on" worker, and this is what I propose to be. My contributions in each phase of the project might be:

Marketing: I think I can be the bridge between the technical research and the commercial aspects of marketing. I propose to study work done to date and to meet with the involved parties. Next I will synthesize the information into commercial marketing format, establish contacts with consumers, and do followup marketing trips. Should special expertise be required, I have good contacts with marketing specialists. By doing much of the background work, I can hold down the cost of additional consulting. Marketing is probably the most critical part of your project.

Geology: I am a geologist with industrial minerals background, so geology should present no problem. I need to review all work done to date and to visit the site. I have the required software to undertake a geostatistical ore reserve estimation. I can set up an exploration program and then train and supervise local laborers to help with surveying and sample collection.

Mining: Mining should be mechanically simple and contractors can be employed. However, there may be problems with blending or dilution on the ore-

gangue contact. To maintain product quality, I would work out a blending mining schedule.

Beneficiation Plant: I can undertake most of the civil and mechanical design of the project and help with plant flowsheets and layout. Once construction starts, I can supervise plant construction, as I have already built 2 mine-mill plants in the past.

Environmental Aspects: In this important area I have experience in the permitting of a gold plant using highly toxic cyanide, and experience in silicosis problems in underground mines. Being a professional geologist and engineer, I can talk with environmental authorities on their level. Due to the specialized nature of the field, it will probably be necessary to consult with specialists in Arizona.

Feasibility Study: I think a preliminary feasibility study should be quickly produced. I have a very good background in this area, and would start producing capital and operating cost estimates, manpower requirements, project schedule, and marketing status reports.

Project Management: As mentioned above, a project schedule could be produced to serve as a management guide to project control. I have experience in this area and possess the necessary software.

Meetings with Investors/Banks: I have a good background in project development and Mergers & Acquisitions at the management level. I think my presence at these meetings could give credence and weight to your enterprise.

### R e m u n e r a t i o n

In order to hold down Heatshield costs I propose the following. I will bill no time for reasonable travel, general meetings, discussions, and familiarizing myself with the project. Marketing travel time and meetings with investors/banks can be billed at a low rate.

We can work out a prior estimated time to complete any assignment and, if there are reasonable overruns, these will not be billed.

I will lower my normal consulting fee of \$400 per day plus expenses to \$300 per day plus expenses. In exchange I would like a stock purchase option on terms to be discussed.

Current industry salaries for geoscience professionals are about \$35,000 per year for junior level, and \$48,000 per year for senior level, non-management professionals. Engineering service companies are billing at about \$700-\$1000 per day for their services. Thus I think the billing structure outlined above will give HeatShield a year of fast track, multidisipline and hands on help for the price of one junior technical employee.

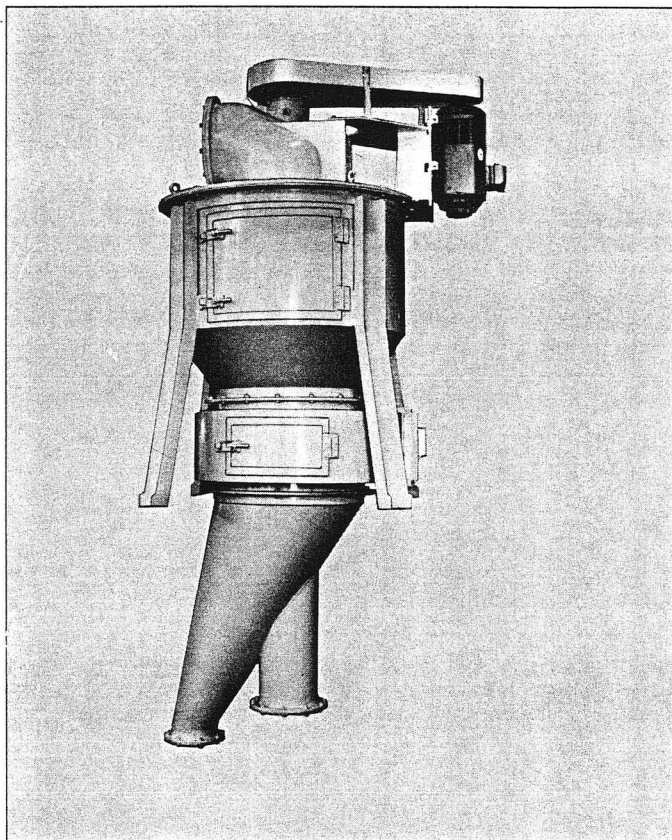


EQUIPMENT

# **Equipment**

## **Overview**

This section outlines the equipment that will be needed to process Klannerite™. The estimated cost of this equipment is \$400,000.00 and is shown in the Pro-form Financial Projection.



The Micron Separator is unique in the field of fine powder classification. Conventional air classifiers are not suitable where a broad range of particle cut sizes are required, from 3-to-150 $\mu$ m.

Some classifiers have high capacities for coarse-range particles but cannot efficiently classify fines below 50 $\mu$ m. Others can classify the fine-range particles but not the larger particles. Still others have low efficiency regardless of cut point. The Micron Separator, however, has a high capacity, high efficiency, and cut points ranging from 3 to 150 $\mu$ m.

The Micron Separator has the widest application range, highest capacity and highest overall efficiency of any commercial classifier. The cosmetic, chemical, food, pharmaceutical and other industries have made the Micron Separator their choice for the classifying process. These separators are now operating at high capacities, with Newton efficiencies from 60% to 90%.

### Wide classification range

Select any particle size between 3 and 150 $\mu$ m. Classify spherical, flaky, and fibrous particles; separate fiber from recycled rubber powder or classify sawdust. The Micron Separator can classify any material, organic or inorganic.

### High-precision classification

The classifying rotor uses principles of fluid dynamics to create a stable centrifugal force field. This prevents the remixing of coarse particles (grit) and ensures precise classification.

### High recovery rate of fine particles

Unique rotor and secondary air sieve combine to recover 60% to 90% of the fine particles.

### Simple operation and particle size adjustment

Simple operation and design eliminate the need for a skilled operator. Particle size is easily adjusted by changing the rotor speed.

### Compatible with various powder processing machines for closed-circuit operation

The capacity of a pulverizing machine and mill doubles when installed side by side with a Micron Separator. Closed-circuit operation permits the pulverizing of heat-sensitive materials or products with low fusing points.

# Omniplex® Hammer Mill Type 40/32

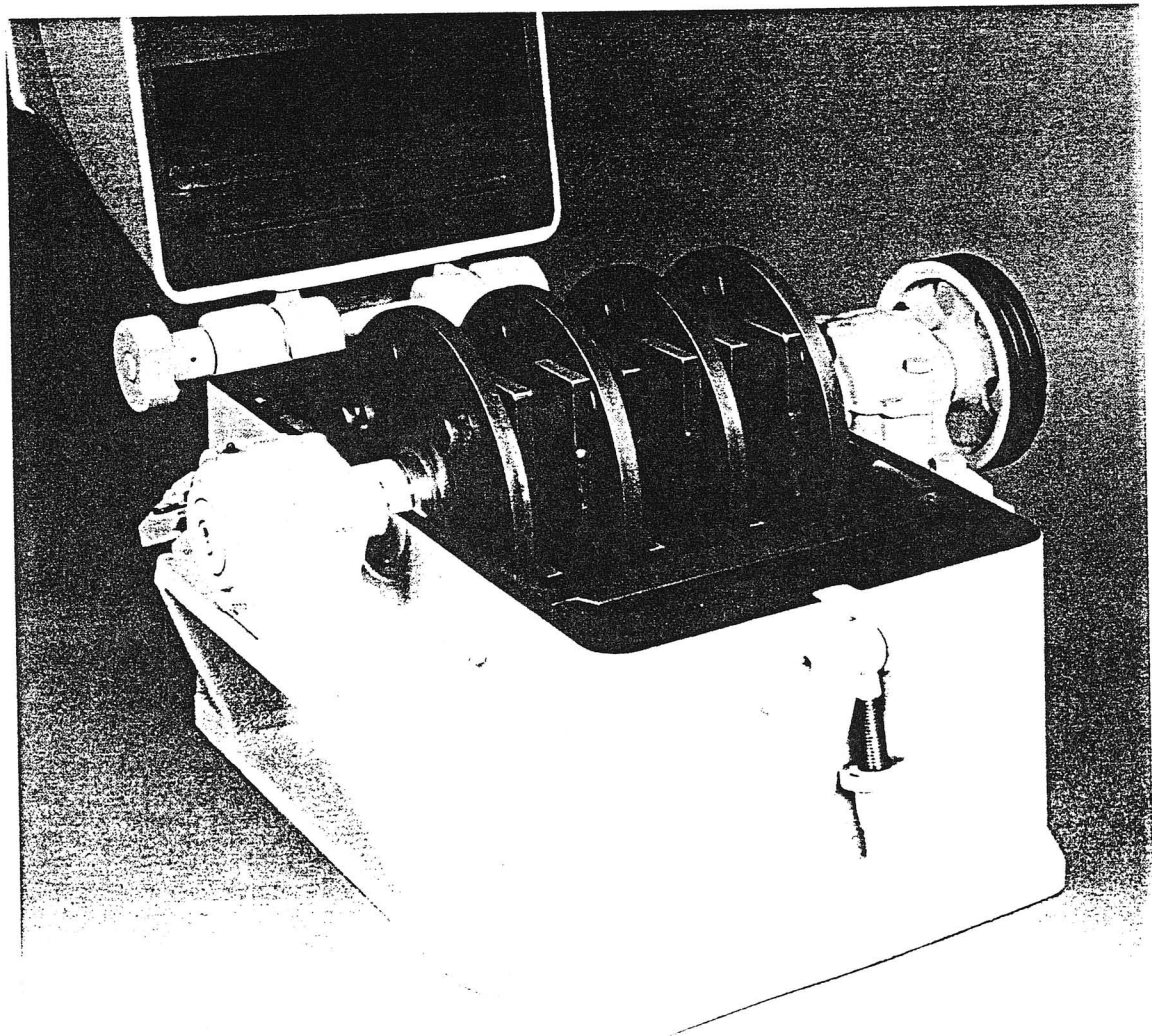
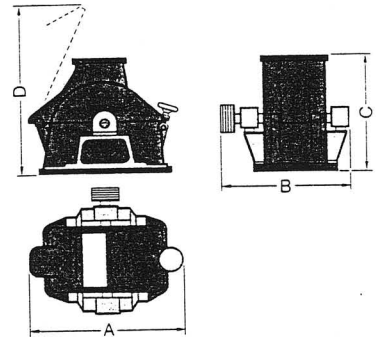
High Efficiency – Profitable Investment

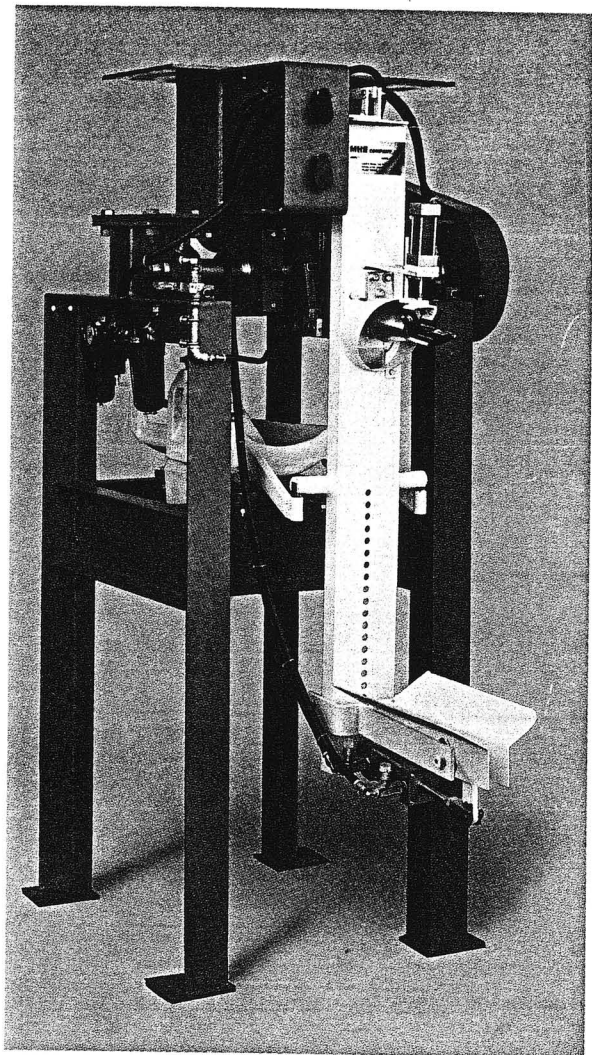
Medium-sized hammer mill with remarkable efficiency. Even at low drive power, this machine achieves values of throughput rate, max. weight of the feed pieces and feed capacity flexibility which normally require considerably larger and more expensive machines.

**Design:** Solid cast iron housing; the top section is hinged and can be opened for easy cleaning. However, a safety device is fitted to prevent opening during operation. With exchangeable wear protection plates in both top and bottom sections.

## Technical data

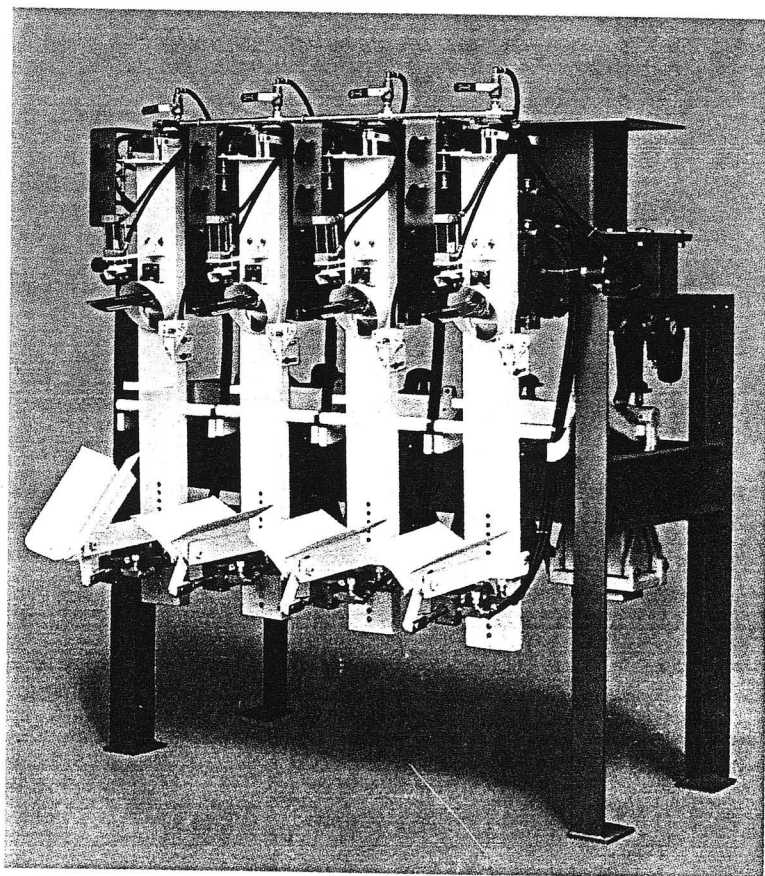
Scale-up factor		1
(based on type 40/32)		
Drive power	kW	5.5–22
Feed opening of housing	mm	150 x 340
Beater speed:		
Flat steel beaters	r.p.m.	2000
Beam-type beaters	r.p.m.	2000
Steel-strip beaters	r.p.m.	2800
Weight	approx. kg	450
Dimensions	A approx. mm	790
	B approx. mm	700
	C approx. mm	635
	D approx. mm	1030





*The Series 1070 Impeller Packers are available in one, two, three and four spout units with a common frame, motor and drive. They are extremely rugged in construction and specifically designed for users who require multiple filling spouts yet want an economical machine to purchase and maintain.*

*These packers are ideal for cement, limestone, gypsum, stucco, fly ash and many other products. Fill rates range from 5 to 9 bags per minute on the model 1071 to over 20 bags per minute on the model 1074, depending on product and bag weights. Fill weight range is 25 lbs. to 110 lbs. Weight accuracy is  $\pm$  4 oz. to 6 oz. depending on product characteristics.*



<u>Item</u>	<u>Qty.</u>	<u>Description</u>
1	1	Accurate 900 series feeder with helix screw 3/4 HP DC motor, SCR control, 50:1 speed range, 0.9 cu.ft. vinyl hopper with 5 cu.ft. hopper extension in carbon steel construction.
2	1	Micron Separator Model: MS-4H Material Contact: Carbon Steel Maximum Rotor Speed: 2,200 R/M Reference Drawing No.: 691133-1 Overall Dimension: 61"D x 126"H Weight: 2,650 lbs.

The unit include the following components:

1. Header assembly with pillow block assembly outlet for the fines and motor base.
2. Upper housing with inspection door and stand legs.
3. Middle housing with inspection door.
4. Lower housing with feed material inlet and coarse powder discharge nozzle.
5. Shaft rotor assembly.
6. 18 pcs. of rotor blades in Aluminum Alloy
7. Set of V-pulley, belts and belt guard.
8. Elutriation ring.
9. Air control valve with mesh screen for secondary air inlet.
10. Match flanges for inlet and outlet.
11. Safety switch mounted on separator door (upper only.)
12. One coat shop primer.
13. 30 HP, 1,800 R.P.M. TEFC 230V/460V, 3 Phase, 60 HZ Motor

3	1	Rotary Airlock Valve Model: 6022
		Material of Contact : Cast Iron
		Rotor Speed : 29 r.p.m.
		Discharge Capacity : 435 cu.ft./hr.
		Overall Dimension : 31-1/4"L x 12"H x 18-1/2"W
		Approximate Weight : 180 lbs.

The unit includes the following components:

1. Cast iron housing.
2. Rotor blades and shaft assembly.
3. Motor base, taper lock V-pulley, V-belt, and belt guard.
4. 1/2 HP, 1,800 r.p.m. TEFC 230V/460V, 3 Phase, 60 Cycle gearhead motor.



<u>Item</u>	<u>Qty.</u>	<u>Description</u>
4	1	<p><b>Mikro Pulsaire Collector Model: 109-8-100</b></p> <p><b>Material Contact: Carbon Steel</b></p> <p><b>Total Filter Area: 1,026 Sq.Ft.</b></p> <p><b>Number of Filter Bags: 109 pcs.</b></p> <p><b>Type of Filter: 16 OZ Polyester Felt with HCE</b></p> <p><b>Pressure Rate: 100 inches at Water Gauge</b></p> <p><b>Reference Drawing Number: 664904</b></p> <p><b>Approximate Weight: 3,375 lbs.</b></p> <p><b>The unit includes the following components:</b></p> <ol style="list-style-type: none"> <li>1. Welding housing designed for temperature up to 200 Degree F.</li> <li>2. Aluminum venturies.</li> <li>3. Stainless steel bag clamps and carbon steel retainers.</li> <li>4. Complete set of valves with wired common junction box.</li> <li>5. One (1) hinged access door in the housing.</li> <li>6. One (1) 10" manometer complete with 20' nylon tubing for installation by others</li> <li>7. One (1) each of flanged inlet and outlet.</li> <li>8. One (1) pneumatic vibrator on the hopper.</li> <li>9. One (1) 72 solid state 10 position timer in NEMA 4 enclosure.</li> <li>10. One (1) bolted access door in plenum.</li> <li>11. One (1) inlet permeable diffuser.</li> </ol>
5	1	<p><b>Rotary Airlock Valve Model: 6022</b></p> <p><b>Material of Contact : Cast Iron</b></p> <p><b>Rotor Speed : 29 r.p.m.</b></p> <p><b>Discharge Capacity : 435 cu.ft./hr.</b></p> <p><b>Overall Dimension : 31-1/4"L x 12"H x 18-1/2"W</b></p> <p><b>Approximate Weight : 180 lbs.</b></p> <p><b>The unit includes the following components:</b></p> <ol style="list-style-type: none"> <li>1. Cast iron housing.</li> <li>2. Rotor blades and shaft assembly.</li> <li>3. Motor base, taper lock V-pulley, V-belt, and belt guard.</li> <li>4. 1/2 HP, 1,800 r.p.m. TEFC 230V/460V, 3 Phase, 60 Cycle gearhead motor.</li> </ol>
6	1	<p><b>Exhaust Blower</b></p> <p><b>Material : Carbon Steel</b></p> <p><b>Air Volume : 4,200 ACFM at 70 Degree F.</b></p> <p><b>Static Pressure : 40" W.G. Negative</b></p> <p><b>Arrangement : 8</b></p>

Item   Qty.

Description

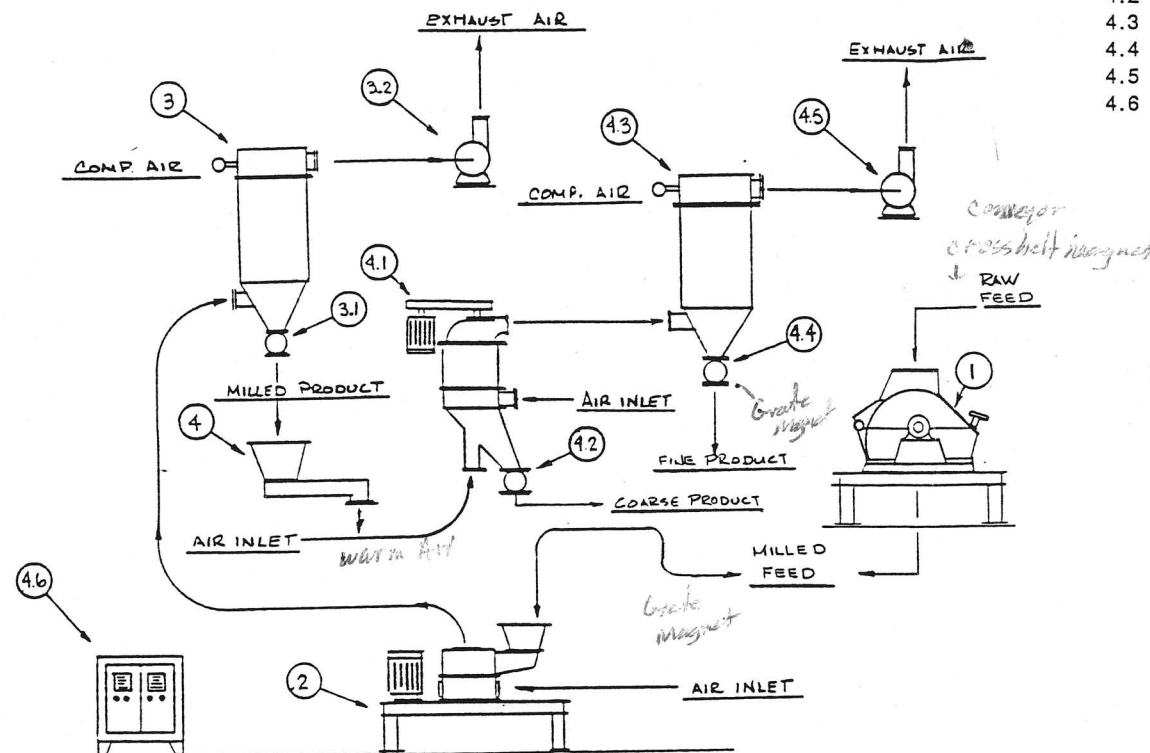
The unit completes with main housing, impeller, shaft seals, control valve, silencer, coupling, coupling guard, 40 HP, TEFC 230V/460V, 3 Phase, 60 cycle      motor.

7      1


Control Panel For Micron Separator

Type:	Indoor, self-standing type, NEMA 4
Starting Method:	Direct starting
No-fuse Breakers:	One each for main power supply and every motors
Volt Meter:	One for main power supply
Ampere Meter:	Every motor larger than 1 HP
Speed Indicator:	One for Micron Separator
Indicating Lamp:	Lamp for main power supply, instrumentation and control power supply. Operation and stop.
Control:	Auto/Manual
Safety Operation:	Interlocking system
A.C. Frequency	
Controller:	Included for separator's motor

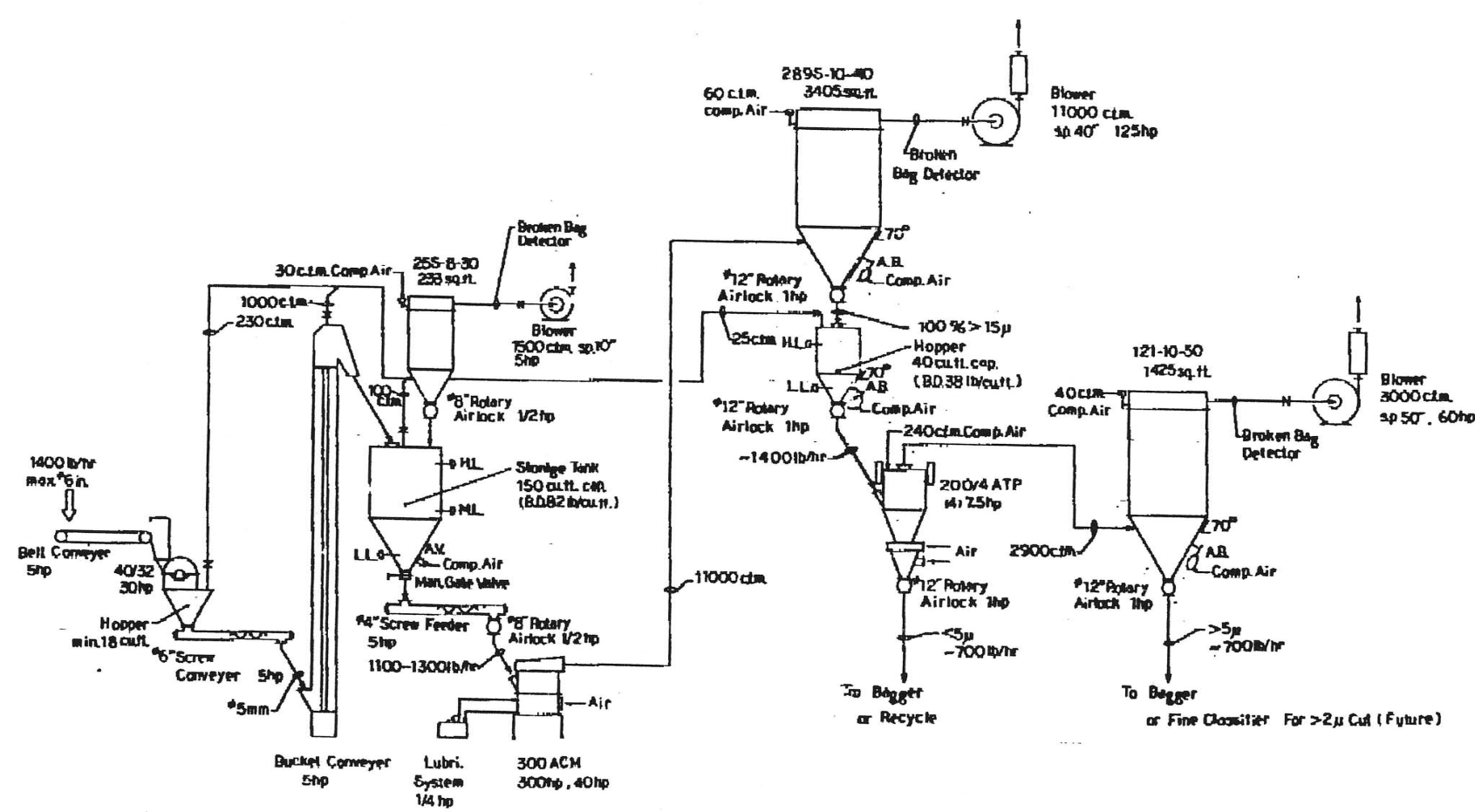




- 1.0 Model 40/32 Omniplex Hammer Mill
- 2.0 Model 300 ACM Air Classifying Mill with Integral Feed Screw and Hopper
- 3.0 Model 289-10-40C Mikro-Pulsaire Filter Receiver
- 3.1 Rotary Discharge Valve for Item 3
- 3.2 Exhaust Blower to Induce the Required Air Flow through the Pulverizer (Item 2.0)
- 4.0 Screw Feeder with Integral 5 cu. ft. Hopper for Classification System
- 4.1 Model MS-4H Micron Separator
- 4.2 Rotary Discharge Valve for Item 4.1
- 4.3 Model 109-8-100 Mikro-Pulsaire Filter Receiver
- 4.4 Rotary Discharge Valve for Item 4.3
- 4.5 Exhaust Blower to Induce the Required Air Flow through Micron Separator
- 4.6 Control Panel and Instrumentation

INVENTORY NO	DET	QTY REQ'D	PART NO	DESCRIPTION	WT LBS	
BILL OF MATERIAL						
DRAWN	DATE		 <b>MICRON POWDER SYSTEMS</b> 10 Chatham Rd., Summit, N.J. 07901			
CHECKED	DATE					
APPROVED	DATE					
TOLERANCES: UNLESS OTHERWISE SPECIFIED						
DECIMALS:		FRACTIONS: ± 1/16		TITLE FLOW DIAGRAM FOR GRINDING AND CLASSIFICATION SYSTEM FOR HEATHFIELD TECH INC TAMARAC, FL		
.X	± .030	ANGLES: ± 30°				
.XX	± .010	MACHINING:				
.XXX	± .005					
.XXXX	± .0005	✓ - 125 RMS				
SCALE:			DWG NO SK-110-PM-91-935-05		SIZE B	REV

NO	DATE	BY	DESCRIPTION
REVISION			



REVISION NO.	REV.	DATE	PAGE NO.	DESCRIPTION
1	Y5	12/13/91	1	HEATSHIELD TECH
2	Y5	12/13/91	1	TAMARAC FL.
3	Y5	12/13/91	1	KINGMAN AZ.
4	Y5	12/13/91	1	HEATSHIELD TECH
5	Y5	12/13/91	1	TAMARAC FL.
6	Y5	12/13/91	1	KINGMAN AZ.
7	Y5	12/13/91	1	HEATSHIELD TECH
8	Y5	12/13/91	1	TAMARAC FL.
9	Y5	12/13/91	1	KINGMAN AZ.
10	Y5	12/13/91	1	HEATSHIELD TECH