



June 24, 1994

Ms. Barbara Pope
Southwest Refining Company, Inc.
P.O. Box 9217
Corpus Christi, Texas 78469

Dear Ms. Pope:

Sample Data:

Number of Samples:	3 Rush
Date Received:	June 24, 1994
Date Analyzed:	June 24, 1994
Envirotest Job #:	W4-523

Test Method: EPA/600/R-93/116
Asbestos in Bulk Building Materials

Enclosed is written confirmation of the analytical results for the above referenced sample(s).

All analyses were performed at our Houston laboratory using standard oil immersion and optical staining techniques. Envirotest, Inc. is a National Institute of Standards and Technology NVLAP-accredited laboratory (#1595) and is licensed by the Texas Department of Health (#30-0005) for asbestos laboratory analysis.

The following analytical results pertain only to the sample(s) analyzed. Envirotest, Inc. assumes no responsibility for whether the sample(s) accurately represent the material in question nor for any subsequent use or interpretations of these analytical results.

This report and the findings contained herein shall not, in whole or in part, be altered, dispersed, or disclosed to any other party. It is provided for your sole use and may not be used or relied upon by any other party, in whole or in part, without prior written consent from Envirotest, Inc.

If you have any questions regarding the sample analyses, please call. We appreciate the opportunity to be of service to you.

Sincerely,

Stuart C. Williams, Ph.D.
Chief Executive Officer
Envirotest, Inc.

SCW:III

SWRf/Asbestos 1196

1B 047686

NVLAP
1595

TDH LICENSE
30-0005

Envirotest, Inc. Bulk Sample Analysis Report

SAMPLE NUMBER	LAB #	SAMPLE DESCRIPTION	PERCENT ASBESTOS			PERCENT OTHER FIBERS
			CHRYSOITILE	AMOSITE	CROCIDOLITE	
ENVIROTEST JOB #	W4-523					
94171	E-54499	WH FIB PWDR	20-25			
94172	E-54500	WH FIB PWDR	15-20			
94173	E-54501	WH FIB PWDR	5-10			15-20%FG, MW
SWrf/Asbestos 1197						
Analyst's Signature: <i>Shirley J. Gault</i>			Date: 6-24-94			1B 047687

ABBREVIATIONS: ACT = actinolite; AL = aluminum; ANTH = anthophyllite; BACK = backing; BLK = black; BL = blue; BRN = brown; CALC = calcareous; CPT = carpet; CTL = ceiling tile; C = cellulose; CEM = cement; COV = cover; DEB = debris; FG = fiberglass; FIB = fibrous, fibers; FTL = floor tile; FO = foam; GRAN = granular; GR = grey; GRN = green; HD = hard; INS = insulation; LINO = linoleum; MAS = mastic; MAT = material; MIC = micaceous; MW = mineral wool; NFD = no fibers detected; ORG = orange; PAI = paint; PAP = paper; PL = plaster; PLAS = plastic; PWDR = powder; RCF = refractory ceramic fiber; RUB = rubber; SIL = silver; SR = sheet rock; SUB = substance; S = synthetic; TEXT = textured; TR = trace; TRAN = transit; TREM = tremolite; VERM = vermiculite; VYL = vinyl; W = wollastonite; WH = white; YEL = yellow.

Envirotest, Inc.'s facilities if new for the results indicated below. Analytical results pertain only to the sample(s) analyzed.

Client :

Corpus Christi, TX 78469

Rec. agent:

Investigation: _____

1B 047688

Dept Insulation Kerr McGee
 Site Corpus Christi
 Area Crude I INDUSTRIAL HYGIENE DATA FORM

Accession _____
 File No. 93-0441
 Site Use _____

ID	CAS Registry/Code No.	K	Yr.	Mo.	Day	Sheet No.
		0	94	06	23	
1 2 3	11 12 13 14 15 16 17 18 19	24				
Elapsed						
S	T	D	Time, Min	M/E	L/G	Concentration
0	0	0				
25	26	27	28	30	31	32
33	37	38	39	40	44	45
46	47	49				
Parameter						
Value						
Prot						
Equip.						
No						
Samp.						
Site Locator Codes						
SSN						
50	51	55	60	65	70	71
75	80					

CODES
 K—Monitoring Standard
 A—8 Hour TWA
 B—12 Hour TWA
 C—Short Term TWA
 D—Instantaneous Peak
 E—Duration of Task
 O—Other
 S—Sample
 A—General Area
 B—Breathing Zone
 C—Continuous
 H—Blood (Z2 only)
 O—Other
 P—Personal
 S—Source Sample
 U—Urinalysis
 (Z2 only)

T—Type
 F—Full Period Single
 G—Series Grab
 L—Full Period Continuous
 O—Other
 P—Partial Period
 S—Single Grab
 D—Device
 A—Aspiration Tube
 B—Passive Dosimeter
 C—Direct Instrument
 F—Filter
 G—Grab Sample
 I—Impinger/Bubbler
 O—Other
 R—Filter, Respirable Dust
 T—Detector Tube

U—Units
 B—Parts/Billion
 C—Fibers/cm
 D—Decibels
 J—µg/100 g (wood Z2 only)
 K—µg/mL (urine Z2 only)
 L—µg/mL (urine Z2 only)
 M—Parts/Million
 O—Other
 P—Percent
 U—µm³
 X—mg/m³

P—Statistical Parameter
 G—Geometric Mean and Geometric Std. Dev.
 L—50 Percentile and 95th Percentile
 O—Other
 A—Arithmetic Mean and Std. Deviation

Protective Equipment Form
 A—Air S supplied Respiator, Continuous Flow
 B—Air S supplied Respiator, Demand
 E—Cover All Goggles
 F—Face Shield
 G—Impervious Gloves
 H—Air S supplied Respiator, Pressure Demand
 I—Hearing Protection—Inserts
 J—Impervious Suit—Hot Air S supplied
 M—Hearing Protection—Muffs
 H—None Required
 O—Other
 P—Air Purifying Respiator, Full Face
 G—Air Purifying Respiator, Half Face
 R—Air Purifying Respiator, Quarter Face
 S—Self-Contained Respiator, Pressure Demand
 T—Self-Contained Respiator, Demand
 U—Impervious Suit—Air S supplied
 V—Power Air Purifying Respiator
 W—Disposable Respiator—Dust

FOR SITE USE

Monitoring For: Asbestos Bulk

(Common Chemical Name)

IN: _____ Person Sampled Area - Crude I south side
 (Site Designation) (Last Name First Initial)

Stm line

DATA/OBSERVATIONS

Protective Equipment Used _____

Sample No. 94171 Avg Temp. _____ Avg _____ Predominant Wind Direction _____ Avg Speed _____
 Sampler Pump Make _____ Model _____ Ser. No. _____ No. _____
 Calibration Method _____ Reference _____ By _____ Date _____

PUMP SETTING		ELAPSED		CALIBRATED FLOW RATE		VOLUME SAMPLED, LITERS	
Start	Stop	Min.	Strokes	Pre/Post	Average	Uncorrected	Corrected

Sampling Method _____ Reference _____ Precision _____ Accuracy _____
 Make _____ Model _____ Adsorbent _____ Lot No. _____
 Anal. Method _____ Reference _____ Precision _____ Accuracy _____
 Anal. Equip. _____ Manufacturer _____ Model _____ Ser. No. _____

Analytical				Results		
No	Reference	Analyst	Analyte	Mass/No Particles	Concentration	Units
			<u>Asbestos</u>			
			<u>Chrysotile</u>		<u>20-25%</u>	

Investigator (Signature) B. P. Mc Date 6-23-94
 Received by (Signature) _____ Date/Time _____
 Completed by (Signature) _____ Date/Time _____

M—Measured value
 E—Estimated value
 L—Less Than
 G—Greater Than

Dept Insulation Kerr McGee
 Site Corpus Christi
 Area Crude II INDUSTRIAL HYGIENE DATA FORM

Accession _____
 File No. 93-0441
 Site Use _____

ID	CAS	Registry	Code No.	K	Yr.	Mo.	Day	Sheet No.								
				0	94	06	23									
1	2	3		11	12	13	14	15	16	17	18	19	24			
Elapsed																
S	T	D	Time, Min	M/E	UG	Concentration	U	P	Parameter Value	Prot Equip.	No Samp.					
0	0	0					C									
25	26	27	28	30	31	32	33	37	38	39	40	44	45	46	47	49
Site Locator Codes																
X	SSN															
50	51	55	60	65	70	71	75	80								

CODES
 K-Monitoring Standard
 A-8 Hour TWA
 B-12 Hour TWA
 C-Short Term TWA
 D-Instantaneous Peak
 E-Duration of Task
 O-Other
 S-Sample
 X-General Area
 B-Breathing Zone
 C-Continuous
 H-Blood (Z2 only)
 O-Other
 P-Personal
 S-Source Sample
 U-Urinalysis
 (Z2 only)
 T-Type
 F-Full Period Single
 G-Series Grab
 L-Full Period Consecutive
 O-Other
 P-Partial Period
 S-Single Grab
 D-Device
 A-Aspiration Tube
 B-Passive Dosimeter
 D-Direct Instrument
 F-Filter
 G-Crds Sample
 I-Impinger/Bubbler
 O-Other
 R-Filter, Respirable Dust
 T-Detector Tube
 U-Units
 B-Parts/Billion
 C-Fiberion
 D-Decibel
 J-µg/100 g (blood Z2 only)
 K-µg/ml (urine Z2 only)
 L-µg/ml (urine Z2 only)
 M-Parts/Minion
 O-Other
 P-Percent
 U-gm3
 X-mgm3
 R-Statistical Parameter
 G-Geometric Mean and
 Geometric Std. Dev
 L-50 Percentile and
 95th Percentile
 O-Other
 X-Arithmetic Mean and
 Std. Deviation

FOR SITE USE

Monitoring For: Asbestos Bulk

(Common Chemical Name)

IN: _____ Person Sampled Area - Naphtha No 2 wpsL

(Site Designation)

(Last Name) side crude II to towers P103A (First) (Initial)

DATA/OBSERVATIONS

Protective Equipment Used _____

Sample No. 94172 Avg Temp. _____ Avg Air Press. _____ Predominant Wind Direction _____ Avg Speed _____
 Sampler _____ Model _____ Ser. No. _____ No. _____
 Calibration Method _____ Reference _____ By _____ Date _____

PUMP SETTING		ELAPSED		CALIBRATED FLOW RATE		VOLUME SAMPLED, LITERS	
Start	Stop	Min.	Strokes	Pre/Post	Average	Uncorrected	Corrected

Sampling Method _____ Reference _____ Precision _____ Accuracy _____
 Make _____ Model _____ Adsorbent _____ Lot No. _____
 Anal. Method _____ Reference _____ Precision _____ Accuracy _____
 Anal. Equip. _____ Manufacturer _____ Model _____ Ser. No. _____

Analytical				Results		
No	Reference	Analyst	Analyte	Mass/No Particles	Concentration	Units
			Asbestos			
			Chrysotile		15-20%	

Protective Equipment Worn
 A-Air Supplied Respirator,
 Continuous Flow
 B-Air Supplied Respirator,
 Demand
 E-Cover All Goggles
 F-Face Shield
 G-Impervious Gloves
 H-Air Supplied Respirator,
 Pressure Demand
 I-Hearing Protection-
 Inserts
 J-Impervious Suit-
 Not Air Supplied
 M-Hearing Protection-
 Muffs
 N-None Required
 O-Other
 P-Air Purifying Respirator,
 Full Face
 Q-Air Purifying Respirator,
 Half Face
 R-Air Purifying Respirator,
 Quarter Face
 S-Self-Contained Respirator,
 Pressure Demand
 T-Self-Contained Respirator,
 Demand
 U-Impervious Suit-
 Air Supplied
 V-Power Air Purifying
 Respirator
 W-Disposable Respirator-
 Dust
 M-Measured Value
 E-Estimated Value
 L-Less Than
 G-Greater Than

Investigator (Signature) B. Pope Date 6-23-94
 Received by (Signature) _____ Date/Time _____
 Completed by (Signature) _____ Date/Time _____

Dept Insulation Kerr McGee
Site Corpus Christi
Area Crude II INDUSTRIAL HYGIENE DATA FORM

Accession _____
File No. 93-0441
Site Use _____

ID	CAS Registry/Code No.	K	Yr.	Mo.	Day	Sheet No.
			<u>0</u>	<u>94</u>	<u>06</u>	<u>23</u>
1	2	3	11	12	13	14
15	16	17	18	19	24	
Elapsed						
S	T	D	Time, Min	M/E	L/G	Concentration
<u>0</u>	<u>0</u>	<u>0</u>				
25	26	27	28	30	31	32
33	37	38	39	40	44	45
46	47	49				
Parameter Value						
Prot Equip. Samp.						
No						
X						
Site Locator Codes						
SSN						
50	51	55	60	65	70	71
75	80					

CODES
K—Monitoring Standard
A—8 Hour TWA
B—12 Hour TWA
C—Short Term TWA
D—Instantaneous Peak
E—Duration of Task
O—Other
S—Sample
A—General Area
B—Breathing Zone
C—Continuous
H—Blood (Z2 only)
O—Other
P—Personal
S—Source Sample
U—Unanalyzed (Z2 only)

T—Type
F—Full Period Single
G—Series Grab
L—Full P1, Consecutive
O—Other
P—Partial Period
S—Single Grab

D—Device
A—Aspiration Tube
B—Passive Dosimeter
D—Direct Instrument
F—Filter
G—Grab Sample
I—Impinger/Bubbler
O—Other
R—Filter, Respirable Dust
T—Detector Tube

U—Units
B—Parts/Billion
C—Fiber/cm
D—Decibel
J—µg/100 g (blood Z2 only)
K—µg/mL (urine Z2 only)
L—µg/mL (urine Z2 only)
M—Parts/Million
O—Other
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X—mg/m3

P—Statistical Parameter
G—Geometric Mean and Geometric Std. Dev
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Protective Equipment Worn
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B—Air Supplied Respirator, Demand
E—Cover All Goggles
F—Face Shield
G—Impervious Gloves
H—Air Supplied Respirator, Pressure Demand
I—Hearing Protection—Inserts
J—Impervious Suit—Not Air Supplied
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O—Other
P—Air Purifying Respirator, Full Face
Q—Air Purifying Respirator, Half Face
R—Air Purifying Respirator, Quarter Face
S—Self-Contained Respirator, Pressure Demand
T—Self-Contained Respirator, Demand
U—Impervious Suit—Air Supplied
V—Power Air Purifying Respirator
W—Gasposable Respirator—Dust

M—Measured Value
E—Estimated Value
L—Less Than
G—Greater Than

FOR SITE USE

Monitoring For: Asbestos Bulk

(Common Chemical Name)

IN: _____ Person Sampled Area - Naphtha No 1 West
(Site Designation) side Crude II to tower P103A (Last Name First Initial)

DATA/OBSERVATIONS

Protective Equipment Used _____

Sample No. 94173 Avg Temp. _____ Avg Air Press. _____ Predominant Wind Direction _____ Avg Speed _____
Sampler _____ Model _____ Ser. No. _____ No. _____
Pump/Make _____ Calibration Method _____ Reference _____ By _____ Date _____

PUMP SETTING		ELAPSED		CALIBRATED FLOW RATE		VOLUME SAMPLED, LITERS	
Start	Stop	Min.	Strokes	Pre/Post	Average	Uncorrected	Corrected

Sampling Method _____ Reference _____ Precision _____ Accuracy _____
Make _____ Model _____ Adsorbent _____ Lot No. _____
Anal. Method _____ Reference _____ Precision _____ Accuracy _____
Anal. Equip. _____ Manufacturer _____ Model _____ Ser. No. _____

Analytical				Results		
No	Reference	Analyst	Analyte	Mass/No Particles	Concentration	Units
			<u>Asbestos</u>			
			<u>Chrysotile</u>		<u>5-10%</u>	
			<u>Fiberglass/min wool</u>		<u>15-20%</u>	

Investigator (Signature) B. Pope Date 6-23-94
Received by (Signature) _____ Date/Time _____
Completed by (Signature) _____ Date/Time _____