PLAINTIFF'S EXHIBIT

KRC-654

LABORATORY ANALYSIS REPORT

NATLSCO
National Loss Control Service Corporation
Long Grove, Illinois 60049 (312) 540-2488

ENVIRONMENTAL SCIENCES LABORATORY, K-2

REPORT DATE MAY. 21, 1986
SAMPLES REC'D MAY. 13, 1986
REQUEST NUMBER 44337
PAGE NUMBER 1 OF REQUEST.

TO: CAROLINE TUTTLE
SOUTHWESTERN REFINING CO.
P.O. BOX 9217
CORPUS CHRISTI TX 78469

SAMPLE NUMBER	ANALYSIS REQUESTED		RESULTS	
			Fibers/100 Flds	Fibers/cc
86-23	ASBESTOS		1	0.02
26	ASBESTOS		27.5	0.09
27	ASBESTOS		25	0.08
28	ASBESTOS		1	0.03
31	ASBESTOS		0	<0.01
32	ASBESTOS		3	0.03
BLANK	BLANK....	ASBESTOS		SUBTRACTED
BLANK	BLANK....	ASBESTOS		SUBTRACTED
BLANK	BLANK....	ASBESTOS		SUBTRACTED
BLANK	BLANK....	BLANK		NONE DETECTED
			PPM Front	PPM Back
86-24	BENZENE		0.05	<0.01
	XYLENE		<1.0	<1.0
	TOLUENE		<1.0	<1.0
25	BENZENE		0.24	<0.01
	XYLENE		<1.0	<1.0
	TOLUENE		<1.0	<1.0
29	BENZENE		0.58	<0.01
	XYLENE		<1.0	<1.0
	TOLUENE		<1.0	<1.0
30	BENZENE		0.50	<0.01

< MEANS LESS THAN
METHODS: PHASE CONTRAST MICROSCOPY
GAS CHROMATOGRAPHY (ROUTINE)
THE RESULTS WERE CORRECTED FOR THE FOLLOWING DESORPTION EFFICIENCY:
99% - BENZENE, 98% - XYLENE, 97% - TOLUENE.

Respectfully submitted,

Joan A. Wronski/D.C.

Joan A. Wronski, CIH, Manager
Environmental Sciences Laboratory

ACCREDITED BY THE AMERICAN INDUSTRIAL HYGIENE ASSOCIATION

SWRf/Asbestos 1354

1B 000488

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SAMPLE NUMBER	ANALYSIS REQUESTED	RESULTS	
		PPM Front	Back
30	XYLENE	<1.0	<1.0
	TOLUENE	<1.0	<1.0
BLANK	BLANK.... ASBESTOS	SUBTRACTED	

< MEANS LESS THAN
METHODS: GAS CHROMATOGRAPHY (ROUTINE)
PHASE CONTRAST MICROSCOPY
THE RESULTS WERE CORRECTED FOR THE FOLLOWING DESORPTION EFFICIENCY:
98% - XYLENE, 97% - TOLUENE.

Respectfully submitted,

Joan A. Wronski

Joan A. Wronski, CIH, Manager
Environmental Sciences Laboratory

ACCREDITED BY THE AMERICAN INDUSTRIAL HYGIENE ASSOCIATION

SWRf/Asbestos 1355

1B 000489

INDUSTRIAL HYGIENE SURVEY DATA - WORKPLACE AIR MONITORING KM-4293

DATE: 4-16-86

FACILITY: Southwestern Refinery

DEPARTMENT: Maint.

OPERATION/JOB TITLE: Insulator

NUMBER OF SHIFTS: 1

EMPLOYEE: Roy Wolford

EMPLOYEE NUMBER:

SURVEYOR: C Tuttle

SAMPLE NUMBER: 86-23

SAMPLE TYPE: ☒ Breathing Zone ☐ General Air

SPECIAL:

FILTER TYPE: 0.8 μ

☐ Resp. ☐ Total

TUBE: ☐ Detector ☐ Silgel ☐ Charcoal

IMPINGER: ☐ Midget ☐ Bubbler

SOLUTION:

CONTAMINANT: Asbestos

PUMP NUMBER: BDX # 4

CALIBRATION DATE: 4-10-86

TIME ON: 8:10

FLOWRATE: 2.0 lpm

TIME OFF: 8:40

FLOWRATE:

Minutes 30 X 2 lpm Flowrate = Sample Volume 60 l

SAMPLING CONDITIONS

TEMPERATURE	HUMIDITY	AIR VELOCITY	BAROMETRIC PRESSURE
69°	61%	NE 8 mph	30.14

CONTROL MEASURES: Disposable gloves, coveralls, respirator, handled wet

JOB DESCRIPTION: Removing insulation from a pipe in the scrap yard

Pipe already removed

ANALYTICAL TECHNIQUE:

EXPOSURE CONCENTRATION CALCULATION

Lab Result = .02 f/cc = $\frac{.02 \times 30}{480}$ = .001 f/cc T.W.A.

SWRf/Asbestos 1348

1B 000482

INDUSTRIAL HYGIENE SURVEY DATA - WORKPLACE AIR MONITORING KM-4293

DATE: 4-28-86

FACILITY: Southwestern Refinery

DEPARTMENT: Maint

OPERATION/JOB TITLE: Insulator

NUMBER OF SHIFTS: 1

EMPLOYEE: Roy Wolford

EMPLOYEE NUMBER:

SURVEYOR: Tuttle

SAMPLE NUMBER: 86-26

SAMPLE TYPE: ☒ Breathing Zone ☐ General Air

SPECIAL:

FILTER TYPE: 0.8 u

☐ Resp. ☐ Total

TUBE: ☐ Detector ☐ Silgel ☐ Charcoal

IMPINGER: ☐ Midget ☐ Bubbler

SOLUTION:

CONTAMINANT: Asbestos

PUMP NUMBER: BDX #3

CALIBRATION DATE: 4-10-86

TIME ON: 0737

FLOWRATE: 1.9

TIME OFF: 10:30

FLOWRATE:

Minutes 173 x 1.9 Flowrate = Sample Volume 328.7 l

SAMPLING CONDITIONS

TEMPERATURE	HUMIDITY	AIR VELOCITY	BAROMETRIC PRESSURE
75°	94%	SE 8 mph	29.95

CONTROL MEASURES: Handled wet. Disposable gloves, coveralls, respirator - half face, hard hat, safety glasses

JOB DESCRIPTION: Removing asbestos from exchangers in crude I unit

ANALYTICAL TECHNIQUE:

EXPOSURE CONCENTRATION CALCULATION

Lab Results = .09 f/cc $\frac{.09 \times 173}{480}$ = .03 f/cc T.W.A.

SWRf/Asbestos 1349

1B 000483

INDUSTRIAL HYGIENE SURVEY DATA - WORKPLACE AIR MONITORING KM-4293

DATE: 4-28-86

FACILITY: Southwestern Refinery

DEPARTMENT: Maint

OPERATION/JOB TITLE: Insulator

NUMBER OF SHIFTS: 1

EMPLOYEE: Karen Tidge

EMPLOYEE NUMBER:

SURVEYOR: C Tuttle

SAMPLE NUMBER: 86-27

SAMPLE TYPE: ☒ Breathing Zone ☐ General Air

SPECIAL:

FILTER TYPE: 0.8 μ

☐ Resp. ☐ Total

TUBE: ☐ Detector ☐ Silgel ☐ Charcoal

IMPINGER: ☐ Midget ☐ Bubbler

SOLUTION:

CONTAMINANT: Asbestos

PUMP NUMBER: BDX #4

CALIBRATION DATE: 4-10-86

TIME ON: 0735

FLOWRATE: 2.0 Lpm

TIME OFF: 10:30

FLOWRATE:

Minutes 175 X 2 Flowrate = Sample Volume 350 l

SAMPLING CONDITIONS

TEMPERATURE	HUMIDITY	AIR VELOCITY	BAROMETRIC PRESSURE
75°	94%	SE 8 mph	29.9

CONTROL MEASURES: Handled wet Disposable gloves, coveralls, half face Respirator, hard hat safety glasses

JOB DESCRIPTION: Removing asbestos from exchangers in Crude I unit

ANALYTICAL TECHNIQUE:

EXPOSURE CONCENTRATION CALCULATION

Lab Result = .08 f/cc $\frac{.08 \times 175}{480}$ = .03 f/cc T.W.A.

SWRf/Asbestos 1350

1B 000484

INDUSTRIAL HYGIENE SURVEY DATA - WORKPLACE AIR MONITORING KM-4293

DATE: 4-29-86

FACILITY: Southwestern Refinery
DEPARTMENT: Maint.
OPERATION/JOB TITLE: Insulator
NUMBER OF SHIFTS: 1
EMPLOYEE: Victor Vallejo
EMPLOYEE NUMBER:
SURVEYOR: CTuttle

SAMPLE NUMBER: 86-28
SAMPLE TYPE: [X] Breathing Zone [ ] General Air
SPECIAL:
FILTER TYPE: 0.8 u
TUBE: [ ] Resp. [ ] Total [ ] Detector [ ] Silgel [ ] Charcoal
IMPINGER: [ ] Midget [ ] Bubbler
SOLUTION:
CONTAMINANT: Asbestos
PUMP NUMBER: BDX #3
CALIBRATION DATE: 4-10-86
TIME ON: 0807
FLOWRATE: 1.9 lpm
TIME OFF: 0825
FLOWRATE:

Minutes 18 x 1.9 Flowrate = Sample Volume 34.2 l

SAMPLING CONDITIONS

TEMPERATURE	HUMIDITY	AIR VELOCITY	BAROMETRIC PRESSURE
74°	97%	SE 9 mph	30.00

CONTROL MEASURES: Handled wet, Disposable gloves, coveralls, half face respirator, Hard hat, safety glasses

JOB DESCRIPTION: Removing insulation from pipe ~6ft. in BTX unit

ANALYTICAL TECHNIQUE:

EXPOSURE CONCENTRATION CALCULATION:

Lab Result = .03 f/cc $\quad \frac{.03 \times 18}{480} =$ .001 f/cc TWA.

SWRf/Asbestos 1351

1B 000485

INDUSTRIAL HYGIENE SURVEY DATA - WORKPLACE AIR MONITORING KM-4293

DATE: 5-1-86

FACILITY: Southwestern Refinery

DEPARTMENT: Maint

OPERATION/JOB TITLE: Insulator

NUMBER OF SHIFTS: 1

EMPLOYEE: Victor Vallejo

EMPLOYEE NUMBER:

SURVEYOR: C Tuttle

SAMPLE NUMBER: 86-31

SAMPLE TYPE: [X] Breathing Zone [ ] General Air

SPECIAL:

FILTER TYPE: 0.8 μ

[ ] Resp. [ ] Total

TUBE: [ ] Detector [ ] Silgel [ ] Charcoal

IMPINGER: [ ] Midget [ ] Bubbler

SOLUTION:

CONTAMINANT: Asbestos

PUMP NUMBER: BDX #3

CALIBRATION DATE: 4-10-86

TIME ON: 8:00

FLOWRATE: 1.9

TIME OFF: 8:50

FLOWRATE:

Minutes 50 X 1.9 Flowrate = Sample Volume 95 l

SAMPLING CONDITIONS

TEMPERATURE	HUMIDITY	AIR VELOCITY	BAROMETRIC PRESSURE

CONTROL MEASURES: Handled wet, Disposable gloves coveralls, half face respirator, hard hat + safety glasses

JOB DESCRIPTION: Removing insulation east of control room in Crude I

ANALYTICAL TECHNIQUE:

EXPOSURE CONCENTRATION CALCULATION:

Lab Result = < .01 f/cc $\frac{.01 \times 50}{480} = .001$ f/cc T.W.A

SWRf/Asbestos 1352

1B 000486

INDUSTRIAL HYGIENE SURVEY DATA - WORKPLACE AIR MONITORING KM-4293

DATE: 5-1-86

FACILITY: Southwestern Refinery

DEPARTMENT: Maint

OPERATION/JOB TITLE: Insulator

NUMBER OF SHIFTS:

EMPLOYEE: Roy Wolford

EMPLOYEE NUMBER:

SURVEYOR: C Tuttle

SAMPLE NUMBER: 86-32

SAMPLE TYPE: [X] Breathing Zone [ ] General Air

SPECIAL:

FILTER TYPE: 0.8 u

[ ] Resp. [ ] Total

TUBE: [ ] Detector [ ] Silgel [ ] Charcoal

IMPINGER: [ ] Midget [ ] Bubbler

SOLUTION:

CONTAMINANT: Asbestos

PUMP NUMBER: BDX #4

CALIBRATION DATE: 4-10-86

TIME ON: 8:00

FLOWRATE: 2.0 lpm

TIME OFF: 8:50

FLOWRATE:

Minutes 50 x 1.9 Flowrate = Sample Volume 95 lpm

SAMPLING CONDITIONS

TEMPERATURE	HUMIDITY	AIR VELOCITY	BAROMETRIC PRESSURE

CONTROL MEASURES: Handled wet, Disposable gloves, coveralls, hard hat, safety glasses, half face respirator

JOB DESCRIPTION: Removing asbestos east of control room in crude I

ANALYTICAL TECHNIQUE:

EXPOSURE CONCENTRATION CALCULATION:

Lab Result = .03 f/cc = .003 f/cc TWA.