

GW - 94

# MONITORING REPORTS

DATE:

1991 - 1997

District I - (505) 393-6161  
Q Box 1940 1980  
Hobbs, NM 88241-1980  
District II - (505) 748-1283  
311 South First  
Artesia, NM 88210  
District III - (505) 334-6178  
1000 Rio Brazos Road  
Aztec, NM 87410  
District IV - (505) 827-7131

State of New Mexico  
Energy Minerals and Natural Resources Department  
Oil Conservation Division  
2040 South Pacheco Street  
Santa Fe, New Mexico 87505  
(505) 827-7131

Form C-141  
Originated 2/13/97

Submit 2 copies to  
Appropriate District  
Office in accordance  
with Rule 116 on  
back side of form

cc: SPILL FILE  
cc: HOBBS UI FILE  
cc: ALL ROGER ANDERSON - SENT 2/21/98

CU  
Wayne

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name UNICHEM, A DIVISION OF BJ SERVICES COMPANY, U.S.A.		Contact JIM BRITTON
Address 707 N. LEECH HOBBS, NM 88240		Telephone No. 505/393-7751
Facility Name UNICHEM		Facility Type WAREHOUSE AND BLENDING PLANT
Surface Owner	Mineral Owner	Lease No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
								LEA

NATURE OF RELEASE

Type of Release FIRE	Volume of Release N/A	Volume Recovered N/A
Source of Release	Date and Hour of Occurrence 11-20-97 1:45 PM	Date and Hour of Discovery 11-20-97 1:45 PM
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? WAYNE PRICE	
By Whom? PAM MOOSE	Date and Hour 11-20-97 2:20 PM	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.\*

NA

Describe Cause of Problem and Remedial Action Taken.\*

SEE ATTACHMENT

Describe Area Affected and Cleanup Action Taken.\*

SEE ATTACHMENT

Describe General Conditions Prevailing (Temperature, Precipitation, etc.).\*

34°F PARTY CLOUDY

I hereby certify that the information given above is true and complete to the best of my knowledge and belief.

Signature:

Printed Name: PAMELA J. MOOSE

Title: ENVIRONMENTAL COMPLIANCE COORDINATOR

Date: 12-1-97

Phone: 505/391-2317

OIL CONSERVATION DIVISION

Approved by  
District Supervisor:

Approval Date:

Expiration Date:

Conditions of Approval:

Attached ☐

\* Attach Additional Sheets If Necessary

ATTACHMENT - FORM C-141  
December 2, 1997

**Describe Cause of Problem and Remedial Action Taken:**

A 5,200 gallon mild steel tank with insulated foam and an open 2" vent had approximately 4" (124 gallons) of chemical in the tank (IC-153). The tank has a resistance temperature device (RTD) and a heating coil unit to heat up the product. The controller was set to provide electricity to the coils when the RTD indicated less than 60° F. The controller was set to shut off the electricity to the coils when the RTD indicated 80° F. or more. The volume of air/fuel mixture inside the tank cooled the RTD to the point where the controller would not shut off the heating coils. The heating coil temperature exceeded the auto-ignition temperature of the IC-153. The open vent allowed the mixture of IC-153 and air in the tank to reach the lower explosive limit. The mixture exploded upward in the tank and parted the tank top of the weld and blew four holes in the top of the tank.

Plant personnel responded and used fire extinguishers and put out the residual fire. The fire department and police were notified and responded.

Employees will perform monthly inventories of each tank. The plant will acquire an new 8,000-gallon tank. Two liquid level controls will be installed in each of the tanks that have to be heated. These controls will be wired in series to the control panel. This will provide a redundant safety system. Pressure/vacuum relief vents with flash proof screens will be installed in all flammable liquid tanks.

**Describe Area Affected and Cleanup Action Taken\***

The tank was the only area affected. The tank will be removed and replaced with a new one (see above). The RTD and heating coils and manway on tank were removed.

The remainder of the chemical is in the tank and will be pumped into a tote tank.

# UNICHEM

A Division of BJ Services Company

July 26, 1996

New Mexico Oil Conservation Commission  
P.O. Box 1980  
Hobbs, NM 88241  
ATTN: Wayne Price

**SUBJECT: RELEASE REPORT - HOBBS, NM**

Dear Wayne:

This is a written notification of the release that occurred on 7-17-96.

<b>DATE OCCURRED/DISCOVERED:</b>	7-17-96
<b>TIME OCCURRED/DISCOVERED:</b>	12:00 noon
<b>VERBAL NOTIFICATION TO NMOCD:</b>	7-17-96 1:30 p.m.
<b>MATERIAL RELEASED:</b>	ALPHA 1018 (ALKYL PYRIDINE BENZYL QUATERNARY AMMONIUM CHLORIDE)
<b>DESCRIPTION OF RELEASE:</b>	Material was being pumped off a tanker into two tanks. One tank was full and the employee was going to shut the valve and the driver assisting employee, was going to open the other valve to the second tank. Both valves were shut down at the same time causing pressure and blew out the connection.
<b>QUANTITY RELEASED:</b>	100 gallons

AUG 05 1996  
OIL CONSERVATION  
COMMISSION

CC: MARTIN SHARP  
ROGER ANDERSON  
J SEXTON

**RECEIVED**

AUG 13 1996

Environmental  
Oil Conservation Division

Wayne Price - NMOCD  
July 26, 1996  
Page 2

**DESCRIPTION OF CLEAN UP:**

Sprayed water on the outside of tanks and containment area where the chemical was. Product and water was sucked up into a DOT 307 tank. Other contaminated areas were mopped with soap & water.

**QUANTITY COLLECTED:**

100 gallons of liquid (product & water).

Other materials used, mopheads, tyvek coveralls, gloves, and booties were placed in a satellite drum.

**STATUS OF PRODUCT RETRIEVED:** The liquid collected will be used as a raw material.

The solid waste is in a satellite drum. When the drum is full it will be moved to our non-hazardous waste storage area. This will be disposed of as non-hazardous solid waste. Disposal facility is American Ecology Corporation; Hwy 155, 1 mile north of I-20; Winona, TX.

**EMPLOYEES INVOLVED:**

Unichem Emergency Response Team

If you have any questions, please call.

Sincerely,

**UNICHEM**

*Charles N. Root/PM*

Charles N. Root  
Environmental Compliance Manager  
Environmental Department

*Pamela J. Moose*

Pamela J. Moose  
Environmental Compliance Coordinator  
Environmental Department

CNR:pm

QINGHAI  
11/1

# UNICHEM

A Division of BJ Services Company

OIL CONSERVATION DIVISION  
RECEIVED

SEP 26 1995

CC: CHRIS EUSTICE - PHOENIX ST  
KARL SHARP  
JERRY SEXTON

*Called Dan Moore 9/27/95  
He will return KMOO  
in 30 days on final  
disposition of material!*  
JP

September 26, 1995

New Mexico Oil Conservation Commission  
P.O. Box 1980  
Hobbs, NM 88241  
ATTN: Wayne Price

Hobbs, NM 88240

**SUBJECT: RELEASE REPORT - HOBBS WAREHOUSE**

Dear Mr. Price:

This is a written notification of the release that occurred on 8-8-95 at our Hobbs Warehouse.

<b>LOCATION:</b>	707 N. LEECH; HOBBS, NM
<b>DATE OCCURRED/DISCOVERED:</b>	8-8-95
<b>TIME OCCURRED/DISCOVERED:</b>	12:00 noon
<b>MATERIAL RELEASED:</b>	Ethylene Glycol
<b>DESCRIPTION OF RELEASE:</b>	Ethylene Glycol is in an enclosed heating system to heat blending vats. The #2 blending vat, on the oil side, leaked and material went into the sump.
<b>QUANTITY RELEASED:</b>	27 gallons
<b>DESCRIPTION OF CLEAN UP:</b>	The material was pumped from the sump into drums
<b>QUANTITY COLLECTED:</b>	9 - 55 gallon drums

Wayne Price  
September 26, 1995  
Page 2

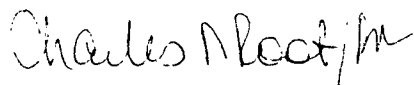
A verbal report was called into your office on August 8 at 1:30 pm and reported to Bonnie.

Material Safety Data Sheet is attached for your records.

If you have any questions, please call.

Sincerely,

**UNICHEM**



Charles N. Root  
Environmental Compliance Manager  
Environmental Department



Pamela J. Moose  
Administrative Assistant  
Environmental Department

:pm

cc: Bill Clements  
Jim Britton  
Environmental file



# UNICHEM

A Division of BJ Services Company

OIL CONSERVATION DIVISION  
RECEIVED

CC: JERRY SEXTON  
CHRIS FOSTER

1995 SEP 24 PM 8 52

September 21, 1995

**RECEIVED**

SEP 22 1995

UCC HOBBS  
OFFICE

Mr. Wayne Price  
New Mexico Oil Conservation Division  
P.O. Box 1980  
Hobbs, New Mexico 88241-1980

Dear Wayne:

As per our telephone conversation last Friday, September 15, 1995, Unichem pumped rainwater from its concrete containment areas directly onto the asphalt which resulted in run-off to the street and ultimately to the city stormwater system.

Our normal procedure is to pump this rainwater to the sanitary sewage system (POTW) as per an agreement with the City of Hobbs.

Because of the large amount of rainwater Thursday/Friday (7 inches +), emergency rainwater disposal was required.

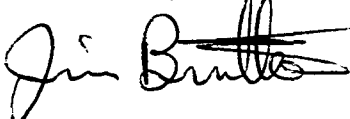
Our containment areas are normally clean and dry, and therefore the above disposal method resulted in only rainwater being discharged to the street.

Unless an emergency exists, future rainwater will be disposed to the POTW under our normal operating procedure.

If any further information is required, please let me know.

Sincerely,

UNICHEM, A DIVISION OF B.J. SERVICES CO. USA



Jim Britton  
Vice President--Operations

cc: Bill Clements  
Charlie Root  
Pam Moose

JB/eb



707 N. Leech, P.O. Box 1499 / Hobbs, NM 88240 / Ph. 505/393-7751, Fax 505/393-6754

OIL CONSERVATION DIVISION  
RECEIVED

'93 MAR 15 AM 9 26

March 9, 1993

Ms. Kathy Brown  
Environmental Geologist  
New Mexico Oil Conservation Division  
P.O. Box 2088  
Santa Fe, NM 87504-2088

Dear Ms. Brown:

Attached are the latest analytical results of the dirt located in our bio-remediation area at the Hobbs facility (GW-94).

It appears the bio-remediation project work very well, even though somewhat slower than our original plans.

We would like to have permission to place this soil back into the excavated area near the methanol-IPA tank farm. As you are aware this is where this dirt was originally removed. Also bottom hole samples previously submitted indicated we have a clean hole.

Please let us know as soon as possible on this matter.

Sincerely,

UNICHEM INTERNATIONAL INC.

A handwritten signature in cursive script that reads 'Wayne Price'.

Wayne Price  
Staff Engineer

LWP:jd

cc: B. Clements  
J. Britton  
L. Gardner

UNICHEM INTERNATIONAL INC.

6701 Aberdeen Avenue

Lubbock, Texas 79424

806•794•1296

FAX 806•794•1298

ANALYTICAL RESULTS FOR  
UNICHEM INTERNATIONAL  
Attention: Wayne Price  
707 N. Leech  
Hobbs, NM 88240

March 1, 1993

Receiving Date: 02/26/93

Sample Type: Soil

Project No: MI-91-92-Bio - DP #1 - DP #2

Project Location: Hobbs, NM

Analysis Date: 02/28/93

Sampling Date: 02/25/93

Sample Condition: Intact & Cool

Sample Received by: YL

Project Name: Bioremediation


TA#	FIELD CODE	TRPHC (ppb)
T06699	Soil DK. Brown	<20
QC	Quality Control	1,002

Detection Limit 20

% Precision	100
% Extraction Accuracy	80
% Instrument Accuracy	100

METHODS: EPA Modified 8015.

TRPHC SPIKE AND QC: Sample and Blank Spiked with 1,000 ppb.

  
\_\_\_\_\_  
Director, Dr. Blair Leftwich  
Director, Dr. Bruce McDonell  
Asst. Dir., Dr. Mohammad Haghighi-Podeh

3/1/93  
DATE

  
TRACE ANALYSIS, INC

An Institute for Advanced Environmental Research and Analysis

**6701 Aberdeen Avenue**      **Lubbock, Texas 79424**  
**Tel (806) 794 1296**      **Fax (806) 794 1298**

# CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

FAX #: 505-395-6754

Project Name: BIOREMEDIATION

**Sampler Signature:** *W. Johnston*

Signature: Wesley J. ...  
Ed. Nelson  
Spencer ...

	BTEX, MTBE
X	TPH - MOD 8015
	TCLP Metals Ag As Ba Cd Cr Pb Hg Se
	Total Metals Ag As Ba Cd Cr Pb Hg Se
	TCLP Volatiles
	TCLP Semi Volatiles
	TDS
	RCI
9	Turn around # of days
	Fax ASAP
	Report TWC direct
	Hold

REMARKS

1

2

MARKS  
Send Results To  
Wayden Price  
707 N. Leach  
~~707 N. Leach~~ Hobbs N.M. 882  
UNICHEM INT. 505-



OIL CONSERVATION DIVISION  
RECEIVED

'92 FEB 17 AM 9 30

Home Office 707 N. Leech, P.O. Box 1499 / Hobbs, NM 88240 / Ph. 505/393-7751, Fax 505/393-6754

February 13, 1992

Mr. Roger Anderson  
Acting Bureau Chief  
Environmental Bureau  
New Mexico Oil Conservation Division  
P.O. Box 2088  
Land Office Building  
Santa Fe, NM 87501

Dear Mr. Anderson:

We are requesting permission to bioremediate approximately 250 yards of soil located at our Hobbs facility, 707 N. Leech. This soil was removed during a recent construction project for the new methanol and IPA tank farm installation. A complete site investigation was completed at that time and a report was submitted to your office on May 2, 1991. To recap, there were two dirt piles generated at that time called DP#1 which contains concrete and dirt and DP#2 which contained excavated dirt. The concrete is being segregated for disposal at the Hobbs-Lea County Landfill and the remaining dirt is being placed in a plastic lined bermed area, next to a plastic lined bermed area where DP#2 has already been placed.

Please note the attached plot plan for location of these areas. Also enclosed is the summary of the TPH and BTEX levels found in these dirt piles. Also as indicated before all dirt excavated were non-hazardous and only total petroleum hydrocarbons showed any detectable levels. The BTEX levels all showed negative as well.

Our plans are to bioremediate these soils under the guidance of ERI Microbe Master Inc. Attached is the correspondence to Unichem from them along with a scope of work. After the levels of hydrocarbon are adjusted to levels below 100 ppm, we would like to use the dirt to fill back in the excavated hole and use the remaining dirt to fill in around our yard.

We also commit to taking soils samples below the treatment area to confirm integrity of the plastic liner at the end of the project.

UNICHEM INTERNATIONAL INC.

Mr. Roger Anderson  
Page 2  
February 13, 1992

We anxiously await your decision. If you have any further questions please do not hesitate to contact me.

Sincerely,

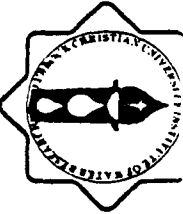
**UNICHEM INTERNATIONAL INC.**



Wayne Price  
Staff Engineer

LWP:jd

cc: J. Britton  
C. Root



# Lubbock Christian University Institute of Water Research

5601 West 19th Street • Lubbock, Texas 79407  
(806) 796-8900

## ANALYTICAL RESULTS FOR UNICHEM INTERNATIONAL

Attention: Wayne Price  
P. O. Box 1499  
Hobbs, NM 88240

April 02, 1991  
Receiving Date: 3/29/91  
Sample Type: Soil  
Project No: MI-91  
Project Location: Hobbs, NM

Sampling Date: NA  
Sample Condition: Intact & Cool  
Sample Received by: BL  
Project Name: Proposed Methanol/IPA

LCUIWR #	Field Code	TRPHC (ppb)	MTBE (ppb)	BENZENE (ppb)	TOLUENE (ppb)	ETHYL- BENZENE (ppb)	M,P,O XYLENE (ppb)	TOX (ppm)
Y21728	MI #1N	1,257,571	<1	<1	1	<1	<1	35
Y21729	MI #1S	12,402	<1	<1	<1	<1	<1	<18
Y21730	MI #3S	193,087	<1	<1	<1	<1	<1	<18
Y21731	MI #3M	4,046,336	<1	<1	<1	<1	<1	<18
Y21732	MI #3N	29,470,941	<1	1	<1	<1	<1	18
Y21733	MI #4	13,437	<1	<1	<1	<1	<1	<18
Y21734	MI #5S	8,091	<1	<1	<1	<1	<1	NR
Y21735	MI #5E 5F	121,335	<1	<1	<1	<1	<1	<18
Y21736	DP #15 1S	10,753,520	<1	<1	<1	<1	<1	<18
Y21737	DP #11M	14,274,825	<1	1	<1	<1	<1	<18
Y21738	DP #11N	25,393,383	<1	2	<1	<1	<1	35
Y21739	DP #25S	14,331,099	<1	<1	<1	<1	<1	18
Y21740	DP #2M	50,820,105	<1	2	<1	<1	<1	35
Y21741	DP #2N	44,227,682	<1	3	<1	<1	<1	35
QC	Quality Control	87,379	211	202	204	204	615	54
Air Blank		---	<1	<1	<1	<1	<1	---
% Precision		99	100	104	92	100	100	100
% Extraction Accuracy		97	95	98	92	85	82	88
% Instrument Accuracy		102	105	101	102	102	102	100

METHODS: EPA SW 846-3810 USING AUTOMATED HEAD SPACE; EPA SW 846-8020; EPA 418.1.  
BTEX SPIKE AND QC: Sample and Blank Spiked with 200 ppb EACH VOLATILE ORGANICS.  
TRPHC SPIKE AND QC: Sample spiked with 225,000 ppb TRPHC and Blank spiked with 85,280 ppb TRPHC.  
TOX SPIKE AND QC: Sample Spiked with 60 ppm TCP Cl- and Blank Spiked with 54 ppm TCP Cl-.

Director, Dr. Blair Leftwich

Asst. Dir., Dr. Bruce McDowell

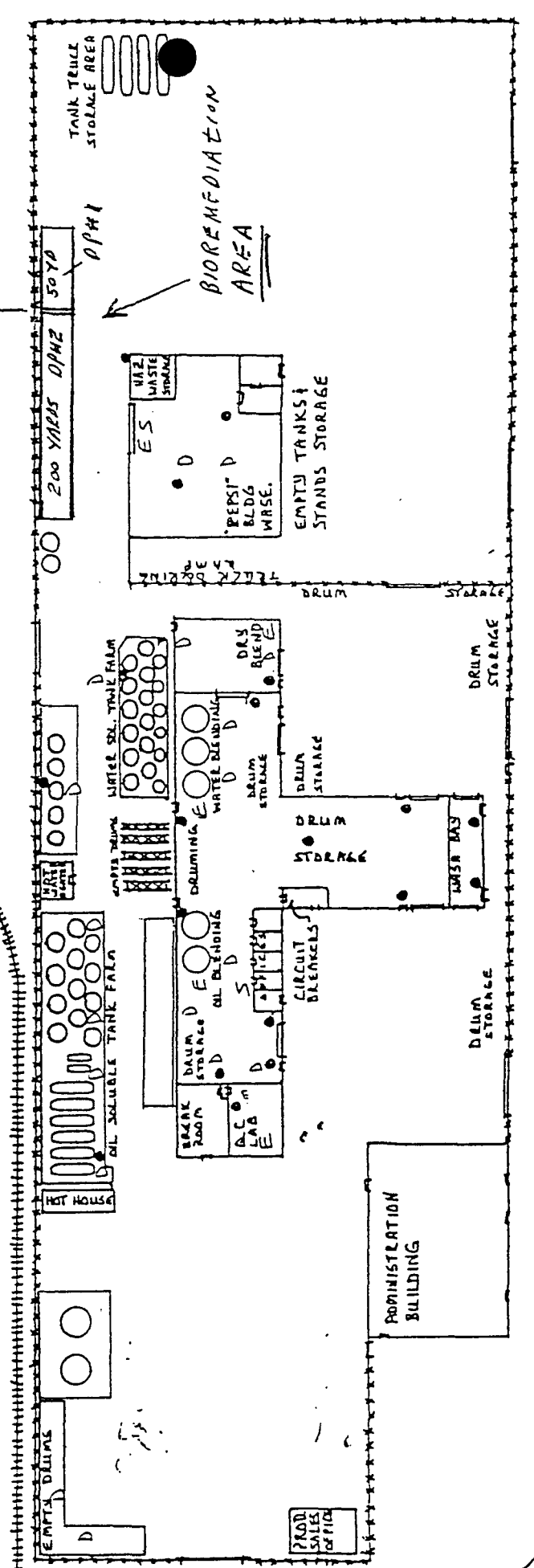
Date

183

4-2-91

LLNICHEM INTERNATIONAL INC.  
707 NORTH LEECH ST.  
HOBBS, NEW MEXICO  
PHONE 393-7751

SECONDARY  
EVACUATION SITE



PRIMARY EVACUATION SITE

LEECH STREET







MICROBE MASTERS, INC.

*an Environmental Remediation, Inc. company*

P.O. Box 45212 - 210  
Baton Rouge, LA 70895  
Phone (504) 293-2033 • FAX (504) 292-6665

December 5, 1991

Mr. Wayne Price  
**UNICHEM INTERNATIONAL**  
707 North Leech  
Hobbs, NM 88240

Dear Wayne:

In response to your letter dated November 27, 1991, I am addressing the concern for environmental safety of microbial additions. Micro Pro SSC "Super Cee Detoxifier" is a blend of bacterial cultures specially adapted to degrade constituents of TPH, BTEX, and creosoting wastes. All strains are naturally occurring and have not been genetically altered in any way. All strains undergo a periodic check for antibiotic resistance and are classified as Class I by the Public Health Service. This classification rates bacterial strains as having no recognized hazard under ordinary conditions.

A proposed Scope of Work is attached addressing use of your existing treatment unit and Microbe Masters, Inc. products. Microbe Masters will provide consulting services at the rate of \$80.00 per hour, not to exceed 4 hours. Expenses and consulting time for any required field trips will be covered by Unichem.

If you need more information or have any questions please feel free to call me at (504)293-2033. I look forward to working with you on your remediation projects.

Sincerely,

Susan Laborde *SL*  
Technical Service Representative

Enclosures

SL/ddb/1205SL04.LTR

## UNICHEM INTERNATIONAL

## SCOPE OF WORK

**1.0 BACKGROUND**

Unichem International, Hobbs, New Mexico, proposes to reduce TPH contaminants in surficial soils to background levels using commercially available microbial cultures. ERI examined the site chemical characterization data supplied by Unichem and found the contamination suitable for bioremediation. Unichem has requested technical assistance and remediation support from Environmental Remediation, Inc. (ERI), Baton Rouge, LA. This Scope of Work is in response to that request.

**2.0 SOIL PREPARATION**

Contaminated soils have been identified and removed to a lined treatment unit by Unichem. Soil should be well mixed and spread to a depth of 8 to 12 inches. The pH level must be adjusted within a range of 6.8 to 7.8. Soil moisture of 15% to 30% is required throughout the treatment zone.

Micro Pro SSC "Super Cee Detoxifier" is to be initially applied at a rate of 1 pound per 100 square feet surface area. Aerate soil once per week by tilling. A second application of 0.5 pound per 100 square feet is made after 30 days. A microbial count of  $10^7$  organisms per gram soil will be maintained.

Degradation rates are going to vary depending on initial concentration of contaminants and weather conditions. However, initial degradation rates will be more rapid than in later phases of treatment.

If subsequent lifts are required, it is recommended that a 2 to 4 inch layer of treated soil be left in place and new soil to be treated mixed in. This will leave a population of acclimated biomass that will enhance degradation rates. The application of each additional lift would be 0.5 pound per 100 square feet.

**3.0 PRICE**

ERI proposes a consulting fee of \$80.00 per hour, not to exceed 4 hours. Expenses and consulting time for any field trips by ERI personnel will be covered by Unichem. Micro Pro SSC "Super Cee Detoxifier" is \$16.00 per pound for 25 to 99 pounds or \$15.00 per pound for over 100 pounds.

## NEW MEXICO OIL CONSERVATION DIVISION

## NOTIFICATION OF FIRE, BREAKS, SPILLS, LEAKS, AND BLOWOUTS

RECEIVED  
JAN 17 1989  
SANTA FE

NAME OF OPERATOR Rowland Trucking					ADDRESS 418 S. Grimes, Hobbs, NM 88240		
REPORT OF	FIRE	BREAK	SPILL XXXX	LEAK	BLOWOUT	OTHER*	
TYPE OF FACILITY	ORLG WELL	PROD WELL	TANK BTTY	PIPE LINE	GASO PLNT	OIL RFY	OTHER* Tractor Trailer
NAME OF FACILITY Unit 777 1988 Trialmaster (trailer)							
LOCATION OF FACILITY (QUARTER/QUAR- WIPP road and					SEC.	TWP.	RGE.
TER SECTION OR FOOTAGE DESCRIPTION) Carlsbad Hwy., intersection							COUNTY Lea
DISTANCE AND DIRECTION FROM NEAREST TOWN OR PROMINENT LANDMARK 12 miles from WIPP site							
DATE AND HOUR OF OCCURENCE 12-24-88 6:15 a.m.				DATE AND HOUR OF DISCOVERY 12-24-88 6:15 a.m.			
WAS IMMEDIATE NOTICE GIVEN?		YES XX	NO	NOT RE- QUIRED		IF YES, TO WHOM Mike Williams, NM OCD	
BY WHOM unknown				DATE AND HOUR 12-24-88 6:15 a.m.			
TYPE OF FLUID LOST Drilling mud				QUANTITY OF LOSS 110 barrels		VOLUME RE- COVERED 60 yards	
DID ANY FLUIDS REACH A WATERCOURSE?		YES	NO X	QUANTITY n/a			
IF YES, DESCRIBE FULLY**  n/a							
DESCRIBE CAUSE OF PROBLEM AND REMEDIAL ACTION TAKEN** Employee was turning east off of WIPP road onto Carlsbad highway and overturned truck.							
DESCRIBE AREA AFFECTED AND CLEANUP ACTION TAKEN** Approximatley 60 yards of soil collect and taken to Parabo, Eunice, NM. The top portion of the affected asphalt area has been removed and will be replaced when weather permits.							
DESCRIPTION OF AREA	FARMING		GRAZING		URBAN		OTHER* Highway
SURFACE CONDITIONS	SANDY	SANDY LOAM	CLAY	ROCKY	WET	DRY XX	SNOW
DESCRIBE GENERAL CONDITIONS PREVAILING (TEMPERATURE, PRECIPITATION, ETC.)**  Fair weather, no precipitation							
I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF							

SIGNED

Wayne L. Price

TITLE Staff Engineer

DATE 1-9-89

\*SPECIFY

\*\*ATTACH ADDITIONAL SHEETS IF NECESSARY