GW - 95

GENERAL CORRESPONDENCE

YEAR(S):

2002-1992

District I - (505) 393-6161
P. O. Box 1940
Hobbs, NM 88241-1980
District II - (505) 748-1283
811 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

GW-95

Form C-141
Originated 2/13/97

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

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☑ Final Report

Name	Contact
Transwestern Pipeline Co.	Steve Richard
Address 1 mi S under I-40, Laguna, NM	Telephone No. 505-552-6058
Facility Name Station 6	Facility Type Compressor Station

Surface Owner	Mineral Owner	Lease No.
Lagunas		

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
	13	6N	2W	3960		4060		Valencia

NATURE OF RELEASE

Type of Release	Volume of Release	Volume Recovered
Natural Gas	5684 mcf	NA
Source of Release Blowdown for maintenance	Date and Hour of Occurrence 4-30-02 0700	Date and Hour of Discovery NA
Was Immediate Notice Given? ☐ Yes ☑ No ☐ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☑ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.* Pipeline maintenance, corrosion repair by sleeving pipe

Describe Area Affected and Cleanup Action Taken.* N/A

Describe General Conditions Prevailing (Temperature, Precipitation, etc.).* 50°F, 10 mph wind S/SW, dry

I hereby certify that the information given above is true and complete to the best of my knowledge and belief.
Signature: Steve Richard
Printed Name: Steve Richard
Title: Sr. Env Tech
Date: 5-06-02 Phone: 505-552-6058

OIL CONSERVATION DIVISION

Approved by District Supervisor:
Approval Date: Expiration Date:
Conditions of Approval: Attached ☐

* Attach Additional Sheets If Necessary

Martin, Ed

From: Martin, Ed
Sent: Wednesday, April 10, 2002 7:42 AM
To: 'Campbell, Larry'
Subject: RE: Drain lIne Testing

This plan is approved as stated. Please let me have a summary of the results of the tests when complete. Take care.
Ed

-----Original Message-----
From: Campbell, Larry [mailto:Larry.Campbell@ENRON.com]
Sent: Tuesday, April 09, 2002 11:48 AM
To: EMARTIN@state.nm.us
Subject: Drain lIne Testing

Ed, when you were in the Hobbs area last month inspecting a couple of compressor stations operated by Transwestern Pipeline Company, I requested that Transwestern be given approval to conduct the 5 year drain line testing requirements at its 13 compressor stations which are currently under OCD discharge plans, prior to the five renewal date on the permit. The reason for this request is to reduce the price of sending a contractor out multiple times to do drain line testing when it would benefit Transwestern if the contractor could start at one end of our pipeline system and move concurrently from station to station and complete the testing for the al the compressor station along the entire pipeline in New Mexico. I am proposing to use the same methodology as was previously approved by your agency for the last drain line testing and propose to conduct the testing during the month of July. The list of facilities which are covered under this request are as follows:

Transwestern Pipeline Company

Wt-1 Compressor Station	GW-109
Mountainair Compressor Station	GW-110
Laguna Compressor Station	GW- 95
Thoreau Compressor Station	GW- 80
Bloomfield Comrpessor Station	GW- 84
Portales Compressor Station	GW- 90
Bisti Compressor Station	GW-285
Roswell Compressor Station	GW- 52
Gallup Compressor Station	GW-325
Monument Compressor Station	GW-197
Corona Compressor Station	GW- 89

Northern Natural Gas Company

Eunice Compressor Station	GW-113
Jal Compressor Station	GW-283

Ed, give me your thoughts on this.

Thanks

THE SANTA FE
NEW MEXICAN
Founded 1849

OIL CONSERVATION DIV.
02 FEB 19 PM 2:45

NM OIL CONSERVATION DIVISION
ENVIRONMENTAL BUREAU
1220 S. ST. FRANCIS
SANTA FE, NM 87505
ATTN ED MARTIN

AD NUMBER: 247468 ACCOUNT: 56689
LEGAL NO: 70605 P.O.#: 02199000249
174 LINES 1 time(s) at $ 76.71
AFFIDAVITS: 5.25
TAX: 5.12
TOTAL: 87.08

AFFIDAVIT OF PUBLICATION

STATE OF NEW MEXICO
COUNTY OF SANTA FE
I, K. Voorhees being first duly sworn declare and say that I am Legal Advertising Representative of THE SANTA FE NEW MEXICAN, a daily newspaper published in the English language, and having a general circulation in the Counties of Santa Fe and Los Alamos, State of New Mexico and being a Newspaper duly qualified to publish legal notices and advertisements under the provisions of Chapter 167 on Session Laws of 1937; that the publication #70605 a copy of which is hereto attached was published in said newspaper 1 day(s) between 02/18/2002 and 02/18/2002 and that the notice was published in the newspaper proper and not in any supplement; the first publication being on the 18 day of February, 2002 and that the undersigned has personal knowledge of the matter and things set forth in this affidavit.

/s/ K. Voorhees
LEGAL ADVERTISEMENT REPRESENTATIVE

Subscribed and sworn to before me on this
18 day of February A.D., 2002

Notary Laura E. Harding

Commission Expires 11/23/03

NOTICE OF PUBLICATION
STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

Notice is hereby given that pursuant to New Mexico Water Quality Control Commission Regulations, the following discharge plan application has been submitted to the Director of the Oil Conservation Division, 1220 S. St. Francis, Santa Fe, New Mexico 87505, Telephone (505) 476-3440:

(GW-095) Transwestern Pipeline Company, Larry Campbell, P.O. Box 1717, Roswell, NM 88202, has submitted an application for renewal of its previously approved discharge plan for the Laguna Compressor Station located in the SE/4 of Section 36, and the NE/4 of Section 18, Township 9 North, Range 5 West, NMPM, Cibola County, New Mexico. Any potential discharge at the facility will be stored in a closed top receptacle. Groundwater most likely to be affected by a spill, leak, or accidental discharge to the surface is at a depth of approximately 25 feet with a total dissolved solids concentration of approximately 335 mg/L. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.

Any interested person may obtain further information from the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division at the address given above. The discharge plan application may be viewed at the above address between 8:00 a.m. and 4:00 p.m., Monday through Friday. Prior to ruling on any proposed discharge plan or its modification, the Director of the Oil Conservation Division shall allow at least thirty (30) days after the date of publication of this notice during which comments may be submitted to him and a public hearing may be requested by any interested person. Requests for a public hearing shall set forth the reasons why a hearing should be held. A hearing will be held if the Director determines there is significant public interest.

If no public hearing is held, the Director will approve or disapprove the proposed plan based on information available. If a public hearing is held, the director will approve or disapprove the proposed plan based on information in the plan and information submitted at the hearing.

GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 11th day of February 2002.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION
S E A L
LORI WROTENBERY, Director

Legal #70605
Pub. February 18, 2002

NOTICE OF PUBLICATION

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

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If no public hearing is held, the Director will approve or disapprove the proposed plan based on information available. If a public hearing is held, the director will approve or disapprove the proposed plan based on information in the plan and information submitted at the hearing.

GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 11th day of February 2002.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

S E A L

LORI WROTENBERY, Director

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Revised January 24, 2001

Submit Original
Plus 1 Copy
to Santa Fe
1 Copy to Appropriate
District Office

DISCHARGE PLAN APPLICATION FOR SERVICE COMPANIES,GAS PLANTS, REFINERIES, COMPRESSOR, GEOTHERMAL FACILITES AND CRUDE OIL PUMP STATIONS

(Refer to the OCD Guidelines for assistance in completing the application)

☐ New X☐ Renewal ☐ Modification

1. Type: _Natural Gas Pipeline Compressor Station

2. Operator: Transwestern Pipeline Company, Laguna (station 6) Compressor Station (GW-95)

Address: 6381 North Main Street, Roswell New Mexico 88201

Contact Person: Larry Campbell Phone: (505) 625-8022

3. Location: SE /4 /4 Section 7 Township 9N Range 5 W
Submit large scale topographic map showing exact location.

4. Attach the name, telephone number and address of the landowner of the facility site. Same as original application.

5. Attach the description of the facility with a diagram indicating location of fences, pits, dikes and tanks on the facility. Same as original application.

6. Attach a description of all materials stored or used at the facility. Same as original application.

7. Attach a description of present sources of effluent and waste solids. Average quality and daily volume of waste water must be included. Same as original application.

8. Attach a description of current liquid and solid waste collection/treatment/disposal procedures. Same as original application.

9. Attach a description of proposed modifications to existing collection/treatment/disposal systems. Same as original application.

10. Attach a routine inspection and maintenance plan to ensure permit compliance. Same as original application.

11. Attach a contingency plan for reporting and clean-up of spills or releases. Same as original application.

12. Attach geological/hydrological information for the facility. Depth to and quality of ground water must be included. Same as original application.

13. Attach a facility closure plan, and other information as is necessary to demonstrate compliance with any other OCD rules, regulations and/or orders. Same as original application.

14. CERTIFICATIONI hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

Name: Larry Campbell [redacted] Title: Divisi[redacted]nvironmental Specialist

Signature: _____ Date: _12/02/01_____

Larry Campbell
Division Env. Specialist

Transwestern Pipeline Company
6381 North Main Street
Roswell, NM 88201

505-625-8022
Fax 505-627-8172
Pager 800-632-9229
Cellular 505-626-6211
lcampbe@enron.com

December 2, 2001

Mr. Ed Martin
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, New Mexico 87504

Re: Renewal of Groundwater Discharge Plans for (6) Transwestern Pipeline Company facilities

Dear Mr. Martin:

By this letter, Transwestern Pipeline Company, requests renewal by the Oil Conservation Division (OCD) for the eight (8) discharge plans referenced below:

Portales Compressor Station	GW- 90
Corona Compressor Station	GW- 89
Laguna Compressor Station	GW- 95
Carlsbad Compressor Station	GW-109
Mountainair Compressor Station	GW-110
Bisti Compressor Station	GW-285

Under the conditions of this renewal request, be advised that there have been no modifications or alterations performed or constructed at any of the above referenced facilities which would differ from the facility conditions originally presented to the OCD in Transwestern's last discharge plan renewal application. Additionally, there have been no changes in operating ting practises currently performed at each facility which would differ from those practices which were presented in the last renewal application for each facility.

On December 2, 2001, Transwestern submitted via e-mail to the OCD, renewal applications for each facility listed above. Each form required signature. My signature on this letter constitutes the required signature for each application.

Should you require any additional information concerning this renewal request, contact the undersigned at our Roswell Technical Operations at (505) 625-8022.

Sincerely,

Larry Campbell

Larry Campbell
Division Environmental Specialist

xc: file

Martin, Ed

To: Larry Campbell (E-mail)
Subject: Discharge Plans

Here's a listing of the permits expiring over the next year or so:

GW-90	Portales C.S.	Expires 2/27/02
GW-89	Corona C.S.	Exprers 3/9/02
GW-95	Laguna C.S.	Expires 3/9/02
GW-109	Carlsbad C.S.	Expires 5/18/02
GW-110	Mountainair C.S.	Expires 5/18/02
GW-113	Eunice C.S.	Expires 6/19/02
GW-283	Jal C.S.	Expires 6/24/02
GW-285	Bisti C.S.	Expires 9/24/02

As you know, if you get your renewal applications in 120 prior to the expiration date, the permit will not expire on the dates above, but will extend until all paperwork is done on my end.

We need to go out and look at all of these at some point in time, but I will get back with you to set up a schedule.

Take care and have a good Thanksgiving.

Ed

Sent 11/16/01

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

May 14, 1999

CERTIFIED MAIL
RETURN RECEIPT NO. Z 559 573 596

Mr. Norm A. Gonzales
Transwestern Pipeline Company
Laguna Team/Sta-6
P.O. Box -61
LaGuna, New Mexico 87206

Re: Disposal of approximately 60 Used Oil Filters
LaGuna Compressor St. (GW-95)

Dear Mr. Gonzales:

The New Mexico Oil Conservation Division (NMOCD) is in receipt of Transwestern Pipeline Company's (TWPL) letter dated April 19, 1999 and fax on May 14, 1999 amending the April 19, 1999 letter to only include used oil filters. TWPL's request to dispose of the above referenced material into the Rio Rancho Landfill is hereby approved subject to the following conditions:

1. The waste must be Non-hazardous pursuant to EPA CFR 40 part 261.

2. Waste disposal shall be pursuant to all New Mexico Environment Department (NMED) Solid Waste Management Regulations per 20 NMAC 9.1 and the NMED site specific permit conditions for the Rio Rancho Landfill.

Please be advised that NMOCD approval of this request does not relieve TWPL of liability should their operations pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD approval does not relieve TWPL of responsibility for compliance with any other federal, state, or local laws and/or regulations.

If you require any further information or assistance please do not hesitate to write or call me at (505-827-7155).

Sincerely Yours,

Wayne Price-Pet. Engr. Spec.
Environmental Bureau

cc: OCD Aztec office

10:50AM
5-14-99

To: WAYNE PRICE
Fr: NORM A. GONZALES
Sub: UPDATED LETTER

Norm

MAY 14, 1999

WAYNE PRICE
OIL CONSERVATION DIVISION
2040 SOUTH PACHECO STREET
SANTA FE, NEW MEXICO, 87506

DEAR MR. PRICE

TRANSWESTERN PIPELINE COMPANY COMPRESSOR STATION #6 WITH THE LAGUNA TEAM LOCATED IN LAGUNA NEW MEXICO WOULD LIKE YOUR PERMISSION GRANTED TO HAUL THE BELOW MENTIONED ITEM TO THE RIO RANCHO LANDFILL.

(1) 60 USED OIL FILTERS THAT CAME OFF OUR MAINLINE UNITS, TOTALING APPROXIMATELY 2 BULK YARDS.

IF YOU REQUIRE FURTHER INFORMATION OR ASSISTANCE DO NOT HESITATE TO CALL, OR WRITE US AT THE BELOW PHONE NUMBER OR ADDRESS.

TRANSWESTERN PIPELINE COMPANY
LAGUNA TEAM / STA-6
P.O. BOX-61
LAGUNA, NEW MEXICO
PH.# (505) 552-6058
FAX # (505) 552-6351

SINCERELY YOURS,

NORM A. GONZALES / SR. O&M TECH.

TO: WAYNE PRICE

DATE: 5-14-99
10:15AM

FR: NORM A. GONZALES

SUB: UPDATED LETTER ON REQUEST FOR RIO RANCHO LANDFILL USE.

TOTAL PAGES INCLUDING FAX COVER 5

NOTE: OIL FILTER ANALYTICAL IS ENCLOSED!

Norm

MAY 14, 1999

WAYNE PRICE
OIL CONSERVATION DIVISION
2040 SOUTH PACHECO STREET
SANTA FE, NEW MEXICO, 87506

DEAR MR. PRICE

TRANSWESTERN PIPELINE COMPANY COMPRESSOR STATION #6 WITH THE LAGUNA TEAM LOCATED IN LAGUNA NEW MEXICO WOULD LIKE YOUR PERMISSION GRANTED TO HAUL THE BELOW MENTIONED ITEM TO THE RIO PUERCO LANDFILL.

(1) 60 USED OIL FILTERS THAT CAME OFF OUR MAINLINE UNITS, TOTALING APPROXIMATELY 2 BULK YARDS.

IF YOU REQUIRE FURTHER INFORMATION OR ASSISTANCE DO NOT HESITATE TO CALL OR WRITE US AT THE BELOW PHONE NUMBER OR ADDRESS.

TRANSWESTERN PIPELINE COMPANY
LAGUNA TEAM / STA-6
P.O. BOX-61
LAGUNA, NEW MEXICO
PH.# (505) 552-6058
FAX # (505) 552-6351

SINCERELY YOURS,

NORM A. GONZALES / SR. O&M TECH.

WRONG!

PER NORM GONZALES WILL BE RIO RANCHO LANDFILL!

5/14/99

NET NATIONAL ENVIRONMENTAL TESTING, INC.

CHAIN OF CUSTODY RECORD

COMPANY: TRANSWESTERN STA-6
ADDRESS: P.O. Box-61
PHONE: (505) 552-6058 FAX: (505) 552-6351
PROJECT NAME/LOCATION: STA-6 UNIT OIL FILTERS
PROJECT NUMBER:
PROJECT MANAGER:

REPORT TO:
INVOICE TO:
P.O. NO.:
NET QUOTE NO.:

SAMPLED BY (PRINT NAME): NORM A. GONZALES
SIGNATURE: Norm A. Gonzales

DATE	TIME	SAMPLE ID/DESCRIPTION	MATRIX	GRAB	COMP	# and Type of Containers: HCl	NaOH	HNO_3	H_2SO_4	OTHER	ANALYSES: TCLP-M
6/15/96	8:00AM	#601-96-OF									XXX
6/15/96	8:00AM	#602-96-OF									
6/15/96	8:00AM	#603-96-OF									

To assist us in selecting the proper method:
Is this work being conducted for regulatory compliance monitoring? Yes ___ No ___
Is this work being conducted for regulatory enforcement action? Yes ___ No ___
Which regulations apply: RCRA ___ NPDES Wastewater ___ UST ___ Drinking Water ___ Other ___ None ___

COMMENTS:
SEND RESULTS TO STA-6
ATTN: NORM A. GONZALES

SEND RESULTS TO ALBUQ. OFFICE
ATTN: BOBBY RUSSELL

CONDITION OF SAMPLE: BOTTLES INTACT? YES / NO
FIELD FILTERED? YES / NO NA
COC SEALS PRESENT AND INTACT? YES / NO NA
VOLATILES FREE OF HEADSPACE? YES / NO NA
TEMPERATURE UPON RECEIPT:
Bottles supplied by NET? YES / NO Corp

SAMPLE REMAINDER DISPOSAL: RETURN SAMPLE REMAINDER TO CLIENT VIA ___
I REQUEST NET TO DISPOSE OF ALL SAMPLE REMAINDERS ___ DATE ___

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	RELINQUISHED BY:	DATE	TIME	RECEIVED FOR NETBY:
					6/19/96	1200	Lisa A. Landers

METHOD OF SHIPMENT:
REMARKS:

NATIONAL ENVIRONMENTAL TESTING, INC.

Dallas Division
1848 Valwood Parkway
Suite 118
Carrollton, TX 75006
Tel: (214) 406-8100
Fax: (214) 484-2969

ANALYTICAL AND QUALITY CONTROL REPORT

Larry Campbell
TRANSWESTERN PIPELINE
6381 N. Main St.
Roswell, NM 88202

07/24/1996

NET Job Number: 96.05801

Enclosed is the Analytical and Quality Control report for the following samples submitted to the Dallas Division of NET, Inc. for analysis. Reproduction of this analytical report is permitted only in its entirety.

Sample Number	Sample Description	Date Taken	Date Received
314268	601-96-OF	06/15/1996	07/19/1996
314269	602-96-OF	06/15/1996	07/19/1996
314270	603-96-OF	06/15/1996	07/19/1996

National Environmental Testing, Inc. certifies that the analytical results contained herein apply only to the specific samples analyzed.

Holding Times: All holding times were within method criteria.

Method Blanks: All method blanks were within quality control criteria.

Instrument Calibration: All calibrations were within method quality control criteria.

Analysis Comments: No Unusual Comments

Lisa A. Sanders

Lisa A. Sanders
Project Coordinator

NET

ANALYTICAL REPORT

Larry Campbell
TRANSWESTERN PIPELINE
6381 N. Main St.
Roswell, NM 88202

07/24/1996
Job No.: 96.05801

Project Name:

Date Received: 07/19/1996

314268	601-96-OF		
	Taken:	06/15/1996 08:00	
TCLP-Arsenic, ICP		0.10	mg/L
TCLP-Barium, ICP		17.7	mg/L
TCLP-Cadmium, ICP		<0.01	mg/L
TCLP-Chromium, ICP		0.04	mg/L
TCLP-Lead, ICP		0.04	mg/L
TCLP-Mercury, CVAA		0.006	mg/L
TCLP-Selenium, ICP		<0.04	mg/L
TCLP-Silver, ICP		<0.01	mg/L
314269	602-96-OF		
	Taken:	06/15/1996 08:00	
TCLP-Arsenic, ICP		<0.03	mg/L
TCLP-Barium, ICP		1.69	mg/L
TCLP-Cadmium, ICP		<0.01	mg/L
TCLP-Chromium, ICP		<0.01	mg/L
TCLP-Lead, ICP		<0.03	mg/L
TCLP-Mercury, CVAA		0.005	mg/L
TCLP-Selenium, ICP		<0.04	mg/L
TCLP-Silver, ICP		<0.01	mg/L
314270	603-96-OF		
	Taken:	06/15/1996 08:00	
TCLP-Arsenic, ICP		0.05	mg/L
TCLP-Barium, ICP		3.11	mg/L
TCLP-Cadmium, ICP		<0.01	mg/L
TCLP-Chromium, ICP		<0.01	mg/L
TCLP-Lead, ICP		<0.03	mg/L
TCLP-Mercury, CVAA		0.004	mg/L
TCLP-Selenium, ICP		<0.04	mg/L
TCLP-Silver, ICP		<0.01	mg/L

20

ARPIL 19, 1999

ROGER ANDERSON
OIL CONSERVATION DIVISION
2040 SOUTH PACHECO STREET
SANTA FE, NEW MEXICO 87506
(505) 827-7131

DEAR MR. ANDERSON

TRANSWESTERN PIPELINE COMPANY COMPRESSOR STATION #6 WITH THE LAGUNA TEAM LOCATED IN LAGUNA NEW MEXICO WOULD LIKE YOUR PERMISSION GRANTED TO HAUL THE BELOW MENTIONED ITEMS TO THE RIO RANCHO LANDFILL.

(1) APPROXIMATELY 6 YARDS OF OIL STAINED GRAVEL.
(2) APPROXIMATELY 8 YARDS OF PARTIAL OIL STAINED CONCRETE WITH SOME REBAR.
(3) 60 USED OIL FILTERS THAT CAME OFF OUR MAINLINE UNITS, TOTALING APPROXIMATELY 2 BULK YARDS.

IF YOU REQUIRE FURTHER INFORMATION OR ASSISTANCE DO NOT HESITATE TO CALL OR WRITE US AT THE BELOW PHONE NUMBER OR ADDRESS.

TRANSWESTERN PIPELINE COMPANY
LAGUNA TEAM / STA-6
P.O. BOX-61
LAGUNA, NEW MEXICO
PH. # (505) 552-6058
FAX # (505) 552-6351

SINCERELY YOURS,

NORM A. GONZALES / SR. O&M TECH.

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

November 23, 1998

James R. Russell
Enron Transportation & Storage (ETS)
Summit Office Building
4001 Indian School Road, NE, Suite 250
Albuquerque, NM 87110

Re: Disposal of unsaturated contaminated cement at Transwestern's Laguna Compressor Station GW-095.

Dear Mr. Russell:

New Mexico Oil Conservation Division (NMOCD) is in receipt of your letter dated November 9, 1998 concerning disposing of approximately 10 yards of unsaturated contaminated cement to be disposed of off-site at the Rio Rancho Landfill. Pursuant to our telephone conversation on November 23, 1998 ETS informed NMOCD this waste is composed of two different waste streams: **One;** being uncontaminated concrete from four houses located on site. **Two;** being some contaminated concrete from around the compressor buildings, which is part of a housekeeping and clean-up project.

Item One: NMOCD hereby approves of your request to dispose of the uncontaminated cement (concrete) at the Rio Rancho Landfill.

Please be advised that NMOCD approval does not relieve ETS of responsibility for any future liability if this disposal practice poses a threat to ground water, surface water, human health or the environment, and does not relieve ETS of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Item Two: It is NMOCD's understanding that ETS is performing a clean-up project which will include some contaminated cement and some contaminated soils. Pursuant to our telephone conversation ETS is now planning to commingle the contaminated cement and soils into one waste stream for off-site disposal at the Rio Rancho Landfill.

In order for NMOCD to approve of this clean-up project and the disposal of resultant waste streams, ETS shall perform the following conditions:

1. ETS shall provide the appropriate documentation regarding the regulatory status of the waste pursuant to EPA 40 CFR part 261-Identification and Listing of Hazardous Waste. ETS shall sample and test the waste per EPA SW-846 and provide NMOCD the analytical results for approval before disposal.

2. ETS shall provide the appropriate documentation regarding the regulatory status of the waste pursuant to 20 NMAC 3.1 Subpart 14 Naturally Occurring Radioactive Materials (NORM) and provide NMOCD the results for approval before disposal.

3. ETS shall submit a closure plan describing the clean-up activities at the site for NMOCD approval. ETS shall notify this office and the OCD Aztec office 48 hours in advance to witness significant sampling events.

If you require any further information or assistance please do not hesitate to call (505-827-7155) or write this office.

Sincerely Yours,

Wayne Price

Wayne Price-Environmental Bureau

Donna Cromwell
505-552 6351

file: etsgw95

cc: Aztec District Office

Enron Transportation & Storage
Services Provided by Northern Natural Gas Company and Transwestern Pipeline Company
Summit Office Building
4001 Indian School Road, NE, Suite 250
Albuquerque, NM 87110
(505) 260-4000
Fax (505) 254-1437

11/23/98 TKR
PER TELEPHONE WITH J RUSSELL CONTAMINATED CONCRETE WILL BE SEPARATED FROM FOUNDATION. ENRON TO SUBMIT RESULTS OF CLEAN-UP!

November 9, 1998

Mr. Roger Anderson
Oil Conservation Division
2040 South Pacheco
Santa Fe, New Mexico 87505

Re: Disposal of unsaturated contaminated cement at Transwestern's Laguna Compressor Station GW 95.

Dear Mr. Anderson

Transwestern pipeline Company, owner and operator of the Laguna Compressor Station located in Cibola County, New Mexico. We request approval from your agency to dispose of unsaturated contaminated cement generated at this location. This request addresses the disposal of approximately 10 yards of unsaturated contaminated cement to be disposed of at the Rio Rancho Landfill located 3 miles west of hwy.528 on Northern & 33rd Albuquerque, New Mexico. A copy of the analytical is attached to this request. Approval of this request will allow Transwestern Pipeline Company to clean up this location. This will not create any adverse impact to the facility.
If you should need any further information please give me a call at (505) 260-4011.

Sincerely:

James R. Russell
Environmental Specialist

Xc: Rich Jolly
Roswell Team
Rick Smith
File

OAL

L8549

October 30, 1998

Butch Russell
Enron Transportation & Storage
4001 Indian Schl. Rd. NE, #250
Albuquerque, NM 87110

Phone: (505) 260-4011
FAX: (505) 254-1437

Re: Laboratory Sample Analysis

Project Manager: Norman Gonzales

Dear Butch Russell:

On Thursday, October 15, 1998, OAL received one (1) rocks sample for analysis. The sample was analyzed utilizing EPA, ASTM, or equivalent methodology.

Should you have any questions concerning the results in this report, please contact us at (503) 590-5300. Refer to OAL login number L8549.

Sincerely,

Deborah Duffike for
Kami Morrow
Project Manager

Suzanne LeMay
Suzanne LeMay
QA/QC Officer

cc: Norman Gonzales, Butch Russell, Larry Campbell

OAL

L8549

Sample Summary

Sample ID	Lab #	Description	Sampled	Received
ERC10998	L8549-1	rocks	10/09/98 08:30	10/15/98

Definition of Terms

D Reported value is based on a dilution.

Analysts

Initials	Analyst	Title
JJR	Joseph Race	Analyst

Method Summary

Analysis	Method
Total Petroleum Hydrocarbons	OR TPH 418.1 MOD

OREGON ANALYTICAL LABORATORY
A Division of Portland General Electric
14855 S.W. Scholls Ferry Road, Beaverton, OR 97007
Phone 503 590 5500 • Fax 503 590 1404
www.oalab.com/oal • Toll Free 1 800 644-0967

OAL

L8549

Client: ***Enron Transwestern Pipeline***
Contact: ***Norman Gonzales***

Total Petroleum Hydrocarbons
by OR TPH 418.1 MOD

Sample ID / Analyte	*Matrix*	Result	Reporting Limit	Units (ppm)	Comment	*Lab Number*
					Sampled: *10/09/98*	
					Extracted: *10/25/98*	
ERC10998	*Rocks*				Analyzed: *10/26/98 by JJR*	*L8549-1*
TPH		390	200	mg/kg	D	

OREGON ANALYTICAL LABORATORY
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14855 S.W. Scholls Ferry Road, Beaverton, OR 97007
Phone 503 590 5300 • Fax 503 590 1404
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OAL

L8549

Client: *Enron Transwestern Pipeline*
Contact: *Norman Gonzales*

Project: *Main*

Batch Q.C.

Duplicate

TPH by EPA 418.1 Mod./Soil (mg/kg)

Analyte	Sample Result	Duplicate Result	RPD	Q	Date Analyzed
TPH by EPA 418.1 Mod.	698	876	23		10/21/98

Comments:

OREGON ANALYTICAL LABORATORY
A Division of Portland General Electric
14855 S.W. Scholls Ferry Road, Beaverton, OR 97007
Phone 503 590 5300 • Fax 503 590 1404
www.oslab.com/oal • Toll-Free 1-800-644-0967

OAL

L8549

Client: ***Enron Transwestern Pipeline***
Contact: ***Norman Gonzales***

Project: ***Main***

Batch Q.C.

Method Blank

TPH by EPA 418.1 Mod./Soil (mg/kg)

Analyte	Result	Reporting Limit	Q	Date Analyzed
TPH by EPA 418.1 Mod.	ND	20		10/26/98

Comments:

OREGON ANALYTICAL LABORATORY
A Division of Portland General Electric
14855 S.W. Scholls Ferry Road, Beaverton, OR 97007
Phone 503 590 5300 • Fax 503 590 1404
www.oalab.com/oal • Toll-Free 1 800 644 0967

OAL Oregon Analytical Laboratory
14655 S.W. Scholls Ferry Rd.
Beaverton, Oregon 97007
(503) 590-5300
FAX (503) 590-1404

CHAIN OF CUSTODY RECORD
LABORATORY ANALYSIS REQUEST

Sampling: ☒ Grab ☐ Comp
OAL hrs. ____
ISCO ____
Page 1 of 1
Site Visit ☐

Client Information	Billing Information	Project Information
Company TRANSWESTERN	Company	Project Name
Contact NORM A. GONZALES	Contact	Project #
Address P.O. BOX - 61	Address	P.O. #
LAGUNA, NM, 87026		Comments
Phone# (505) 552-6038 Fax# (505) 552-6351	Phone # Fax#	

Sampler's Name NORM A. GONZALES
Signature [signature]
Quote #
NOTE: If quote number is not referenced, standard pricing will be applied.
Provide Fax Results ☐ Yes ☐ No

Remarks
(*) Per L. Campbell at Roswell, NM
Analyze sample for 418.1 mod.
Did not Receive info. until 10/22/98

[N] Normal – 10 working days
[S] Special – 5 working days
[R] Rush – 24-72 hrs.
[O] Other –

	Sample Identification	Date	Time	FOR LAB USE ONLY OAL Login #	# of Containers	Soil	Water	Other (Note in Remarks)	Volatiles 624/8260/8240 8010/8020	Semivolatiles 625/8270 PAH(SIM) PAH 8310	Organochlorine 608/8080/8081 PCB Pesticides	NW TPH-HCID Quantify? ☐Yes ☐No	NW TPH Quantification 418.1M G D	BTEX 602/8020 ☐MTBE ☐Naphthalene	Oil & Grease ☐Total 413.1/1664 ☐HP TPH 418.1	Metals ☐Total ☐TCLP ☐Dissolved As Ba Cd Cr Pb Hg Se Ag Other	(*) TOTAL PETROLEUM HYDRO CARBONS			Turnaround	Remarks
1	ERC10998	10/9/98	8:30 AM	18549-1	1			X									X			N	
2								R													
3																					
4																					
5																					
6																					
7																					
8																					
9																					

Relinquished		Relinquished		Relinquished	
Signature [signature]	Date 10-9-98	Signature	Date	Signature	Date
Print Name NORM A. GONZALES	Time 8:30 AM	Print Name	Time	Print Name	Time
Company TRANSWESTERN / LAGUNA TEAM		Company		Company	
Received		**Received**		**Received**	
Signature [signature]	Date 10/15/98	Signature	Date	Signature	Date
Print Name [illegible]	Time 1430	Print Name	Time	Print Name	Time
Company OAL		Company		Company	

☐ Courier ☒ UPS ☐ FedEx ☐ Other
Received @ 16 °C
Appropriate Containers ☒ Yes ☐ No
1 4oz/8oz Jars 32 oz.
____ VOA Vials
____ Plastic Bottles
____ Glass Bottles
____ Other

NOTICE OF PUBLICATION

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

Notice is hereby given that pursuant to New Mexico Water Quality Control Commission Regulations, the following discharge plan renewal applications have been submitted to the Director of the Oil Conservation Division, 2040 South Pacheco, Santa Fe, New Mexico 87505, Telephone (505) 827-7131:

(GW-095) - Transwestern Pipeline Company, Mr. James R. Russell, (505)-260-4011, Summit Office Bld. Ste 250, 4001 Indian School Rd. NE, Albuquerque, NM, 87110, has submitted a Discharge Plan Renewal Application for their Laguna Compressor Station located in the SE/4 of Section 7, and the NE/4 of Section 18, Township 9 North, Range 5 West, NMPM, Cibola County, New Mexico. Any potential discharge at the facility will be stored in a closed top receptacle. Groundwater most likely to be affected by a spill, leak, or accidental discharge to the surface is at a depth of approximately 25 feet with a total dissolved solids concentration of approximately 335 mg/L. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.

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Any interested person may obtain further information from the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division at the address given above. The discharge plan application may be viewed at the above address between 8:00 a.m. and 4:00 p.m., Monday through Friday. Prior to ruling on any proposed discharge plan or its modification, the Director of the Oil Conservation Division shall allow at least thirty (30) days after the date of publication of this notice during which comments may be submitted to him and a public hearing may be requested by any interested person. Requests for a public hearing shall set forth the reasons why a hearing should be held. A hearing will be held if the Director determines there is significant public interest.

If no public hearing is held, the Director will approve or disapprove the proposed plan based on information available. If a public hearing is held, the director will approve or disapprove the proposed plan based on information in the discharge plan application and information submitted at the hearing.

GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 11th day of July, 1997.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

WILLIAM J. LEMAY, Director

WJL/pws

NO EFFECT FINDING

The described action will have no effect on listed species, wetlands, or other important wildlife resources.

Date SEAL 8/4/97

Consultation # GWOCD-97-1

Approved by [signature], acting

U.S. FISH and WILDLIFE SERVICE
NEW MEXICO ECOLOGICAL SERVICES FIELD OFFICE
ALBUQUERQUE, NEW MEXICO

PROOF OF PUBLICATION

STATE OF NEW MEXICO }
COUNTY OF CIBOLA } §

Jon Fishman, being duly sworn deposes and says that he is the publisher of THE CIBOLA COUNTY BEACON, a newspaper published in Grants, Cibola County, New Mexico, that the notice of

Legal

a copy of which is hereto attached was first published in said newspaper in its issue dated 7/23 and was published in an issue of said newspaper, once each week, and not in any supplement, thereafter for the full period of one (1) consecutive weeks, the last publication thereof being an issue dated

Jon Fishman

Subscribed and sworn to before me on July 31, 97

Debi Gonzales
Notary Public

OFFICIAL SEAL
DEBI GONZALES
NOTARY PUBLIC
STATE OF NEW MEXICO
My Commission Expires

My Commission Expires Sept 20, 98

Publisher's Fees $ 103.74

RECEIVED
AUG - 6 1997
Environmental Bureau
Oil Conservation Division

Okay
8-6-97

Okay PWL
8-6-97

LEGAL NOTICE

NOTICE OF PUBLICATION
THE STATE OF NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT OIL CONSERVATION DIVISION

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GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 11th day of July, 1997.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION
WILLIAM J. LEMAY,
Director

Published in the Cibola County Beacon July 23, 1997.
Invoice #1211.

LEGAL NOTICE

NOTICE OF PUBLICATION
THE STATE OF NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT OIL CONSERVATION DIVISION

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GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 11th day of July, 1997.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION
WILLIAM J. LEMAY,
Director

Published in the Cibola County Beacon July 23, 1997.
Invoice #1211.

ACKNOWLEDGEMENT OF RECEIPT OF CHECK/CASH

I hereby acknowledge receipt of check No. [redacted] dated 7/7/97,

or cash received on _____ in the amount of $ 690.00

from Enron

for Laguna C.S. GW-95
(Facility Name) (OP No.)

Submitted by: _____ Date: _____

Submitted to ASD by: _____ Date: _____

Received in ASD by: _____ Date: _____

Filing Fee ____ New Facility ____ Renewal ____

Modification ____ Other _____
(specify)

Organization Code 521.07 Applicable FY 98

To be deposited in the Water Quality Management Fund.

Full Payment ____ or Annual Increment ____

ENRON CORP

P. O. Box 1188
Houston, TX 77251-1188

62-20
311

CHECK NO [redacted]

CHECK DATE 07/07/97

PAY EXACTLY Six hundred ninety dollars and no/100 DOLLARS

THIS CHECK IS VOID UNLESS PRINTED ON BLUE BACKGROUND

$ 690.00

NOT VALID AFTER 90 DAYS

PAY TO THE ORDER OF
New Mexico Oil Conservation Division
2040 South Pacheco
Santa Fe, New Mexico 87505

NOT VALID OVER $5000.00 UNLESS COUNTERSIGNED

FIELD DISBURSEMENT ACCOUNT

CITIBANK DELAWARE

[redacted]

Enron Corp.
P. O. Box 1188
Houston, TX 77251-1188

ENRON CORP

CHECK NO. [redacted]

CHECK DATE 07/07/97

PAGE OF

VENDOR NO:
REMITTANCE STATEMENT

VOUCHER NO.	INVOICE DATE	INVOICE NO.	PURCHASE ORDER	AMOUNT		
				GROSS	DISCOUNT	NET
Laguna Compressor Station - Ground Water Discharge Renewal Fee						690.00
					TOTAL	$690.00

SPECIAL INSTRUCTIONS:

DETACH AND RETAIN THIS STUB FOR YOUR RECORDS.

ACKNOWLEDGEMENT OF RECEIPT OF CHECK/CASH

I hereby acknowledge receipt of check No. [redacted] dated 6/25/97,

or cash received on _____ in the amount of $ 50.00

from ENRON

for Laguna C.S GW-95

(Facility Name) (DP No.)

Submitted by: _____ Date: _____

Submitted to ASD by: R. Chadwick Date: 7/31/97

Received in ASD by: _____ Date: _____

Filing Fee X New Facility ___ Renewal ___

Modification ___ Other _____

(specify)

Organization Code 521.07 Applicable FY 98

To be deposited in the Water Quality Management Fund.

Full Payment ___ or Annual Increment ___

ENRON CORP

P. O. Box 1188
Houston, TX 77251-1188

62-20
311

CHECK NO. [redacted]

CHECK DATE 06/25/97

PAY EXACTLY Fifty Dollars and no/100 DOLLARS

THIS CHECK IS VOID UNLESS PRINTED ON BLUE BACKGROUND

$ 50.00

NOT VALID AFTER 90 DAYS

Anne E Bailey

NOT VALID OVER $5000.00 UNLESS COUNTERSIGNED

FIELD DISBURSEMENT ACCOUNT

PAY TO THE ORDER OF New Mexico Oil Conservation Division
2040 South Pacheco
Santa Fe, New Mexico 87505

CITIBANK DELAWARE

[redacted]

Enron Corp.
P. O. Box 1188
Houston, TX 77251-1188

ENRON CORP

CHECK NO. [redacted]

CHECK DATE 06/25/97

PAGE OF

VENDOR NO:
REMITTANCE STATEMENT

VOUCHER NO.	INVOICE DATE	INVOICE NO.	PURCHASE ORDER	AMOUNT		
				GROSS	DISCOUNT	NET
Laguna	Compressor Station -	Ground Water	Discharge Renewal Fee			50.00
					TOTAL	50.00

SPECIAL INSTRUCTIONS:

DETACH AND RETAIN THIS STUB FOR YOUR RECORDS.

Affidavit of Publication

STATE OF NEW MEXICO)
) ss.
COUNTY OF LEA)

Joyce Clemens being first duly sworn on oath deposes and says that he is Adv. Director of THE LOVINGTON DAILY LEADER, a daily newspaper of general paid circulation published in the English language at Lovington, Lea County, New Mexico; that said newspaper has been so published in such county continuously and uninterruptedly for a period in excess of Twenty-six (26) consecutive weeks next prior to the first publication of the notice hereto attached as hereinafter shown; and that said newspaper is in all things duly qualified to publish legal notices within the meaning of Chapter 167 of the 1937 Session Laws of the State of New Mexico.

That the notice which is hereto attached, entitled

Legal Notice

Notice Of Publication

and ~~numbered~~ .....

.....

~~was published~~ was published in a regular and entire issue of THE LOVINGTON DAILY LEADER and not in any supplement thereof, ~~once each day for the first~~ for one (1) day ~~consecutive week~~, beginning with the issue of

July 23, 1997

and ending with the issue of

July 23, 1997

And that the cost of publishing said notice is the sum of $ 63.20

which sum has been (Paid) (Assessed) as Court Costs

Joyce Clemens

Subscribed and sworn to before me this 23rd day of July, 1997

Jean Henries

Notary Public, Lea County, New Mexico

My Commission Expires Sept. 28, 1998

LEGAL NOTICE
NOTICE OF PUBLICATION
STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

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GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 11th day of July, 1997.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION
WILLIAM J. LEMAY,
Director

SEAL

Published in the Lovington Daily Leader July 22, 1997.

The Santa Fe New Mexican

Since 1849. We Read You.

NM OIL DIVISION

AD NUMBER: 668190 ACCOUNT: 56689

LEGAL NO: 62063 P.O. #: 96-199-002997

215 LINES ONCE at $ 86.00

Affidavits: 5.25

Tax: 5.70

Total: $ 96.95

Okay Bill
7-28-97

RECEIVED
JUL 28 1997
Environmental Bureau
Oil Conservation Division

AFFIDAVIT OF PUBLICATION

STATE OF NEW MEXICO
COUNTY OF SANTA FE

I, BETSY PERNER being first duly sworn declare and say that I am Legal Advertising Representative of THE SANTA FE NEW MEXICAN, a daily news paper published in the English language, and having a general circulation in the Counties of Santa Fe and Los Alamos, State of New Mexico and being a Newspaper duly qualified to publish legal notices and advertisements under the provisions of Chapter 167 on Session Laws of 1937; that the publication # 62063 a copy of which is hereto attached was published in said newspaper once each WEEK for ONE consecutive week(s) and that the notice was published in the newspaper proper and not in any supplement; the first publication being on the 21 day of JULY 1997 and that the undersigned has personal knowledge of the matter and things set forth in this affidavit.

/S/ Betsy Perner
LEGAL ADVERTISEMENT REPRESENTATIVE

Subscribed and sworn to before me on this 21 day of JULY A.D., 1997

Notary Laura R. Harding
Commission Expires 11/23/99

202 East Marcy Street • P.O. Box 2048 • Santa Fe, New Mexico 87501

505~983~3303

NOTICE OF PUBLICATION

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

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Any interested person may obtain further information from the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division at the address given above. The discharge plan application may be viewed at the above address between 8:00 a.m. and 4:00 p.m., Monday through Friday. Prior to ruling on any proposed discharge plan application or its modification, the Director of the Oil Conservation Division shall allow at least thirty (30) days after the date of publication of this notice during which comments may be submitted to him and a public hearing may be requested by any interested person. Requests for a public hearing shall set forth the reasons why a hearing should be held. A hearing will be held if the Director determines there is significant public interest.

If no public hearing is held, the Director will approve or disapprove the proposed plan based on information available. If a public hearing is held, the Director will approve or disapprove the proposed plan based on the information in the discharge plan application and information submitted at the hearing.

GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 11th day of July 1997.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION
WILLIAM J. LEMAY,
Director
Legal #62063
Pub. July 21, 1997

NOTICE OF PUBLICATION

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

Notice is hereby given that pursuant to New Mexico Water Quality Control Commission Regulations, the following discharge plan renewal applications have been submitted to the Director of the Oil Conservation Division, 2040 South Pacheco, Santa Fe, New Mexico 87505, Telephone (505) 827-7131:

(GW-095) - Transwestern Pipeline Company, Mr. James R. Russell, (505)-260-4011, Summit Office Bld. Ste 250, 4001 Indian School Rd. NE, Albuquerque, NM, 87110, has submitted a Discharge Plan Renewal Application for their Laguna Compressor Station located in the SE/4 of Section 7, and the NE/4 of Section 18, Township 9 North, Range 5 West, NMPM, Cibola County, New Mexico. Any potential discharge at the facility will be stored in a closed top receptacle. Groundwater most likely to be affected by a spill, leak, or accidental discharge to the surface is at a depth of approximately 25 feet with a total dissolved solids concentration of approximately 335 mg/L. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.

(GW-113) - Transwestern Pipeline Company, Mr. James R. Russell, (505)-260-4011, Summit Office Bld. Ste 250, 4001 Indian School Rd. NE, Albuquerque, NM, 87110, has submitted a Discharge Plan Renewal Application for their Eunice Compressor Station located in the NW/4 of Section 27, Township 22 South, Range 37 East, NMPM, Lea County, New Mexico. Any potential discharge at the facility will be stored in a closed top receptacle. Groundwater most likely to be affected by a spill, leak, or accidental discharge to the surface is at a depth of approximately 50 feet with a total dissolved solids concentration of approximately 1500 mg/L. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.

Any interested person may obtain further information from the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division at the address given above. The discharge plan application may be viewed at the above address between 8:00 a.m. and 4:00 p.m., Monday through Friday. Prior to ruling on any proposed discharge plan or its modification, the Director of the Oil Conservation Division shall allow at least thirty (30) days after the date of publication of this notice during which comments may be submitted to him and a public hearing may be requested by any interested person. Requests for a public hearing shall set forth the reasons why a hearing should be held. A hearing will be held if the Director determines there is significant public interest.

If no public hearing is held, the Director will approve or disapprove the proposed plan based on information available. If a public hearing is held, the director will approve or disapprove the proposed plan based on information in the discharge plan application and information submitted at the hearing.

GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 11th day of July, 1997.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

S E A L

WILLIAM J. LEMAY, Director

WJL/pws

ENRON

Services provided by Northern Natural Gas Company and Transwestern Pipeline Company

SOUTHWEST REGION
Summit Office Building, Suite 250
4001 Indian School Road, N.E.
Albuquerque, New Mexico 87110

Phone: (505) 260-4000
Fax: (505) 254-1437

To: PAT

Fax Number: _____

Date: _____

From:

___ Arnie Bailey
___ Bob Bandel
___ Tom Carlson
___ Terry Ervin
___ Jon Hendricks
___ Carmelita Holland
___ Trevor Davidson
___ Todd Ingalls
___ Rich Jolly
___ Tim Jones
___ Joe Lueras
___ Ronnie Morse
✓ James (Butch) Russell
___ Kathy Santerre
___ Rick Smith

Comments:

_____

_____

_____

_____

Number of pages including this cover sheet: 2

Please call (505) 260- 4011 if you do not receive the following transmission in its entirety.

Mr. Pat Sanchez

The address for Quell is as following

Quell Petroleum
2503 South Stockton Street
Monahans Texas 79756
Phone 915 943-8400

Contact Person is Gladys Thomas

Address for Sta 6 is
S E QUARTER OF SEC. 7
N E QUARTER OF SEC 18
T 9N
R 5W
CIBOLA COUNTY NEW MEXICO

ADDRESS FOR EUNICE COMPRESSOR STATION
N W QUARTER OF SEC. 27
T 22 S
R 37 E
LEA COUNTY

Transwestern Pipeline Company

4001 Indian School Road, Northeast, Suite 250 Albuquerque, New Mexico 87110 (505) 260-4000 Fax (505) 254-1437

June 23,1997

Mr. Pat Sanchez
New Mexico Oil Conservation Division
2040 South Pacheco
Santa Fe, New Mexico 87505

James R. Russell
Enron Transportation & Storage
Summit Office Bld. Ste. 250
4001 Indian School Rd. NE
Albuquerque, New Mexico 87110

Re: Renewal of Discharge Plan GW-95, Laguna Compressor Station

Dear Mr. Pat Sanchez:

Enron Transportation & Storage, operator of the Laguna Compressor Station, in reply to your phone conversation, requesting renewal of the above reference discharge plan. By this letter and the attached application, Enron Transportation and Storage request renewal of the discharge plan for the Laguna Compressor Station. Under the original application submitted on Dec. 18,1991,Enron provided all necessary and accurate information and was issued GW-95 by the Oil Conservation Division.

1. Type: Compressor Station

2. Operator of facility is Enron Transportation and Storage
P.O.Box 61 Laguna, New Mexico 87026
Contact Person is Norman Gonzales
Phone # (505) 552-6058

3. Location is North East Quarter of Sec 7 & South East Quarter of Sec 18 Township 225 Range 37E

During the five (5) years operating period of this approved plan, the activities at the facility which are covered under this plan have remained consistent.

As required under 3-114 of the Water Quality Control Regulation, enclosed find two checks in the amount of $50.00 (0602520766) and $690.00 (06025520769) for the nonrefundable filing fee and flat fee, respectively, for this renewal application.

If you should require any additional information concerning this application, contact our Albuquerque Technical Operations at (505) 260-4011.

Sincerely,

James R. Russell

James R. Russell
Environmental Specialist

xc: Rich Jolly
Larry Campbell
Belen Team
file

District I - (505) 393-6161
P.O. Box 1980
Hobbs, NM 88241-1980
District II - (505) 748-1283
811 S. First
Artesia, NM 88210
District III - (505) 334-6178
1000 Rio Brazos Road
Aztec, NM 87410
District IV - (505) 827-7131

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

Revised 12/1/9

Submit Origin
Plus 1 Copi
to Santa F
1 Copy to appropria
District Offi

DISCHARGE PLAN APPLICATION FOR SERVICE COMPANIES, GAS PLANTS, REFINERIES, COMPRESSOR, AND CRUDE OIL PUMP STATIONS

(Refer to the OCD Guidelines for assistance in completing the application)

☐ New ☒ Renewal ☐ Modification

1. Type: COMPRESSOR STATION
2. Operator: ENRON TRANSPORTATION & STORAGE

   Address: P.O.BOX LAGUNA, NEW MEXICO 87026

   Contact Person: NORMAN GONZALES Phone: (505) 552-6058
3. Location: NEqt.of se/4 18E SE qt SEC 7 Section 7 & 18 Township 9N Range 5W
   Submit large scale topographic map showing exact location.
4. Attach the name, telephone number and address of the landowner of the facility site.
5. Attach the description of the facility with a diagram indicating location of fences, pits, dikes and tanks on the facility.
6. Attach a description of all materials stored or used at the facility.
7. Attach a description of present sources of effluent and waste solids. Average quality and daily volume of waste water must be included.
8. Attach a description of current liquid and solid waste collection/treatment/disposal procedures.
9. Attach a description of proposed modifications to existing collection/treatment/disposal systems.
10. Attach a routine inspection and maintenance plan to ensure permit compliance.
11. Attach a contingency plan for reporting and clean-up of spills or releases.
12. Attach geological/hydrological information for the facility. Depth to and quality of ground water must be included.
13. Attach a facility closure plan, and other information as is necessary to demonstrate compliance with any other OCD rules, regulations and/or orders.
14. CERTIFICATION

    I herby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

    NAME: JAMES R. RUSSELL Title: ENVIRONMENTAL SPEC.

    Signature: James R. Russell Date: 6-24-97

Enron Corp.
P. O. Box 1188
Houston, TX 77251-1188

ENRON CORP

CHECK NO. [redacted]

CHECK DATE 06/25/97

PAGE OF

VENDOR NO:
REMITTANCE STATEMENT

VOUCHER NO.	INVOICE DATE	INVOICE NO.	PURCHASE ORDER	AMOUNT		
				GROSS	DISCOUNT	NET
Laguna Compressor Station - Ground Water Discharge Renewal Fee						50.00
					TOTAL	50.00

SPECIAL INSTRUCTIONS:

DETACH AND RETAIN THIS STUB FOR YOUR RECORDS.

ENRON CORP

P. O. Box 1188
Houston, TX 77251-1188

62-20
311

CHECK NO. [redacted]

CHECK DATE 06/25/97

PAY EXACTLY Fifty Dollars and no/100 DOLLARS

THIS CHECK IS VOID UNLESS PRINTED ON BLUE BACKGROUND

$ 50.00

NOT VALID AFTER 90 DAYS

PAY TO THE ORDER OF
New Mexico Oil Conservation Division
2040 South Pacheco
Santa Fe, New Mexico 87505

NOT VALID OVER $5000.00 UNLESS COUNTERSIGNED

FIELD DISBURSEMENT ACCOUNT

CITIBANK DELAWARE

[redacted]

Enron Corp.
P. O. Box 1188
Houston, TX 77251-1188

ENRON CORP

CHECK NO. [redacted]

CHECK DATE 07/07/97

PAGE OF

VENDOR NO:
REMITTANCE STATEMENT

VOUCHER NO.	INVOICE DATE	INVOICE NO.	PURCHASE ORDER	AMOUNT		
				GROSS	DISCOUNT	NET
Laguna Compressor Station - Ground Water Discharge Renewal Fee						690.00
					TOTAL	$690.00

SPECIAL INSTRUCTIONS:

DETACH AND RETAIN THIS STUB FOR YOUR RECORDS.

ENRON CORP

P. O. Box 1188
Houston, TX 77251-1188

62-20
311

CHECK NO. [redacted]

CHECK DATE 07/07/97

PAY EXACTLY Six hundred ninety dollars and no/100 DOLLARS

THIS CHECK IS VOID UNLESS PRINTED ON BLUE BACKGROUND

$ 690.00

NOT VALID AFTER 90 DAYS

PAY TO THE ORDER OF
New Mexico Oil Conservation Division
2040 South Pacheco
Santa Fe, New Mexico 87505

NOT VALID OVER $5000.00 UNLESS COUNTERSIGNED

FIELD DISBURSEMENT ACCOUNT

CITIBANK DELAWARE

[redacted]

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

CERT. MAIL NO. P-326-936-630

☒ Telephone ☐ Personal	Time 3:30 PM	Date 7/1/97

Originating Party	Other Parties
Pat Sanchez - OCD	Butch Russell - TWPC

Subject GW-113 (Eunice Compressor) and GW-95 (Laguna) Discharge Plan Renewal applications.

Discussion Called Mr. Russell and let him know that his flat fee checks should have been: GW-113 = $690 (six-hundred And Ninety Dollars) GW-095 = $690 (six-hundred And Ninety Dollars) instead of the $1,380 that TWPC sent for each facility.

Conclusions or Agreements OCD will return applications And Checks to TWPC (Mr. Russell). TWPC will resubmit the correct fees and New permit application letters showing the corrections.

Distribution File (GW-113, GW-095)
Mr. Butch Russell - TWPC

Signed Patricia W. Sanchez

P 326 936 630

US Postal Service
Receipt for Certified Mail
No Insurance Coverage Provided.
Do not use for International Mail *(See reverse)*

Sent to	
Street & Number TWPC. FLAT. FEES.	
Post Office, State, & ZIP Code 6W-113, 6W095 .PWS	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date	

PS Form **3800**, April 1995

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

April 3, 1997

CERTIFIED MAIL
RETURN RECEIPT NO. P-288-258-796

Mr. James R. Russell
Transwestern Pipeline Company (TWPC)
4001 Indian School Road, NE, Suite 250
Albuquerque, NM 87110

Re: Disposal Request
Mountainair, Laguna, and Thoreau Compressor Stations
Non-Friable Asbestos Containing Material (NFACM)

Dear Mr. Russell:

The Oil Conservation Division (OCD) has received your request letter dated March 24, 1997, for approval to remove and dispose of approximately 21 cubic yards of NFACM at the Keer's Asbestos landfarm generated from company cottages at the three above mentioned facilities. **Based on the information provided, your disposal request is approved.**

Please be advised that this approval does not relieve TWPC of liability should your operation result in pollution of surface or groundwater or the environment. Further, OCD approval does not relieve TWPC from responsibility to comply with other federal, state, and local rules/regulations that may apply.

If there are any questions on this matter, please contact me at (505) 827-7152.

Sincerely,

Roger C. Anderson
Bureau Chief
Environmental Bureau-OCD

RCA/_

c: Mr. Denny Foust - Environmental Geologist, Aztec OCD District Office.
Artesia OCD District Office.

Enron
Transportation
& Storage

Services provided by Northern Natural Gas Company
and Transwestern Pipeline Company

MAR 25 1997

RECEIVED

APR 03 1997

Environmental Bureau
Oil Conservation Division

March 24, 1997

Mr. Roger Anderson
Oil Conservation Division
2040 South Pacheco
Santa Fe, New Mexico 87505

James R. Russell
Transwestern Pipeline Company
Summit Office Bld. Ste. 250
4001 Indian School Rd. NE
Albuquerque, New Mexico 87110

Re: Removal of non friable asbestos siding from Company Cottages.

Dear Mr. Roger Anderson

Transwestern Pipeline Company, owner and operator of the facilities located at Thoreau, Laguna, and Mountainair, New Mexico. Request approval from your agency to remove and dispose of non friable asbestos siding from one (1) company cottage at each location. There is approximate seven (7) cubic yards of material at each location. Spray System Environmental, New Mexico license #029781 will perform this work. The disposal of the material from each location will be at the Keer's Asbestos land farm located at Mountainair, New Mexico. Approval of this request will allow Transwestern expedited completion of this project.

Should you have any question, please call me at (505) 260-4011.

Sincerely,

James R. Russell

James R. Russell
Environmental Specialist

xc: Rich Jolly
Larry Campbell
Laurel Kunkel
File

FAX (505) 625-8060

Phone (505) 623-2761

Transwestern Pipeline Company
TECHNICAL OPERATIONS
6381 North Main • Roswell, New Mexico 88201

January 17,1997

Mr. Pat Sanchez
Oil Conservation Division
2048 Pacheco St.
Santa Fe, New Mexico 87502

Re: Land Ownership Status, Transwestern Pipeline Company Facilities

Dear Mr. Sanchez:

As per your request in January of this year, presented below are the land ownership designations for those Transwestern facilities which are covered under the Oil Conservation Division's (OCD) groundwater discharge plans:

Facility	Discharge Plan No.	Ownership
C/S No. 5, Thoreau	GW- 80	Transwestern
Bloomfield C/S	GW- 84	Transwestern
C/S No. 6, Laguna	GW- 95	Luguna Reservation
C/S No. 7, Mountainair	GW-110	Transwestern
C/S No. 8, Corona	GW- 89	Transwestern
C/S No. 9, Roswell	GW- 52	Transwestern
Portales (P-1) C/S	GW- 90	Transwestern
Carlsbad (Wt-1) C/S	GW-109	Transwestern
Monument Turbine C/S	GW-197	Transwestern
Eunice C/S	GW-113	Transwestern

Should you require additional information concerning the above listed facilities, contact the undersigned at our Roswell Technical Operations office at (505) 625-8022.

Sincerely,

Larry Campbell
Division Environmental Specialist

file

State of New Mexico
ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT
Santa Fe, New Mexico 87505

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☑ Telephone ☐ Personal	Time 1000	Date 11/5/96

Originating Party	Other Parties
Chris Wolfe - OBS & A 822-0412 ext 186	Bill Olson - Envir. Bureau

Subject

Chris Wolfe - OBS & A Sampling Ground Water

Discussion

Sampling at - ENRON Laguna next week
- ENRON Thoreau following week

Conclusions or Agreements

Distribution

ENRON Laguna File
ENRON Thoreau File
Denny Foust - OCD Aztec

Signed Bill Olson

GW-95

Transwestern Pipeline Company

4001 Indian School Road, Northeast, Suite 250 Albuquerque, New Mexico 87110 (515) 260-4000 Fax (505) 254-1437

7-17-96

Ms. Carol D. Peters
United States Environmental Protection Agency
Region 6
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Re: TPL Examine All Compressor Station West of Corona, New Mexico

Dear Ms. Peters:

Transwestern Pipeline has examined all Compressor Stations west of Corona, New Mexico to see if any liquid in our work operation is being removed from fuel filters into a bottomless cistern. In our investigation we have found no operating practices where liquid is being removed from the fuel filters and drained into a bottomless cistern.

If you have any questions concerning this response, please give me a call at (505) 260-4011.

Sincerely,

James R. Russell

James R. Russell
Environmental Specialist

cc: Roger Anderson, NMOCD
Joe Hulscher
Rich Jolly
Larry Campbell

ENRON OPERATIONS CORP.

P. O. Box 1188 Houston, Texas 77251-1188 (713) 853-6161

August 1, 1994

Mr. Allyn M. Davis, Director
Hazardous Waste Management Division
USEPA Region VI
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

RE: Petition for a "Contained-In" determination at the Transwestern Pipeline Company Compressor Station No. 6 located near Laguna, New Mexico

Dear Mr. Davis,

Transwestern Pipeline Company (TPC) is submitting the enclosed petition for a relatively small volume of soil and ground water at the subject facility which contains low concentrations of certain RCRA F-listed compounds. The objective of this petition is to obtain a contained-in determination that soil and ground water at the subject site no longer "contain" hazardous waste and therefore are no longer subject to regulation under RCRA Subtitle C.

The primary motivation of this petition is to enable TPC to conduct a voluntary remedial action in a responsible and cost effective manner. The risk evaluation presented in this petition is based on high quality data obtained by extensive investigation and characterization of the Laguna Station site and follows risk assessment guidance documents and methods prepared by the USEPA. The results of this evaluation indicate that impacted soil and ground water at the Laguna Station site pose no identifiable risk to human health or the environment and implementation of the contained-in policy is both an appropriate and responsible action. This is particularly true when considering that not implementing the contained-in policy would result in a potentially greater risk to human health and the environment due to the inherent risk associated with off-site transportation of contaminated media. Not implementing the contained-in policy would also result in the unnecessary use of RCRA permitted hazardous waste treatment capacity and landfill space.

George Robinson, an internal consultant for ENRON Operations Corporation, prepared the enclosed petition and has discussed the application of the contained-in policy with Mr. Mark Potts, Section Chief, RCRA Enforcement Branch, USEPA Region VI.

If you have any questions regarding this petition, please contact myself at (713) 646-7318 or George Robinson at (713) 646-7327.

Sincerely,

Fenley "Ted" Ryther, Jr., P.E.
Manager, Permits Group
EOC Environmental Affairs

gcr/TR

cp w/ enclosures:	Harry D. Early	Governor, Pueblo of Laguna
	Mark Potts	USEPA Region VI
cp w/o enclosures:	Roger Anderson	New Mexico Oil Conservation Division

DANIEL B. STEPHENS & ASSOCIATES, INC.
ENVIRONMENTAL SCIENTISTS AND ENGINEERS

July 21, 1994

0792-2100-94

Mr. Bill Olson
NM Oil Conservation Division
P.O. Box 2088
Land Office Building
Santa Fe, NM 87504-2088

Dear Bill:

Attached are the analytical results for the purge water from the Laguna Compressor Station. The sample designated 6-PCAT1 contained unfiltered purge water from wells 6-11, 6-28, and 6-33. The analytical results for the unfiltered purge water, as well as filtered purge water from the remainder of the wells, indicate that no VOCs or PCBs were detected. Consequently, we would like to discharge the purge water on-site as described in the discharge plan.

Please let me know if you can authorize this discharge.

Sincerely,

DANIEL B. STEPHENS & ASSOCIATES, INC.

Joanne Hilton

Joanne Hilton
Project Manager

Attachments

Verbally approved
7/27/94

Results for sample: 6-PCAT1

Date collected: 6/14/94	Date received: 6/15/94
Date extracted: NA	Date analyzed: 6/18/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: Enron-Laguna	HEAL #: 9406055-3
Project Manager: J. Hilton/B. Marley	Sampled by: JRL
Matrix: Aqueous	

Test: EPA 8010/8020

Analyte:	Units: PPB (UG/L)	Detection Limit
Acetone	nd	20
Benzene	nd	0.5
Bromodichloromethane	nd	0.2
Bromoform	nd	1.0
Bromomethane	nd	1.0
Carbon Tetrachloride	nd	0.2
Chlorobenzene	nd	0.2
Chloroethane	nd	0.2
Chloroform	nd	0.2
Chloromethane	nd	0.2
2-Chloroethylvinyl Ether	nd	1.0
Dibromochloromethane	nd	0.2
1,3-Dichlorobenzene	nd	0.2
1,2-Dichlorobenzene	nd	0.2
1,4-Dichlorobenzene	nd	0.2
Dichlorodifluoromethane	nd	0.2
1,1-Dichloroethane	nd	0.2
1,2-Dichloroethane	nd	0.2
1,1-Dichloroethene	nd	0.2
cis-1,2-Dichloroethene	nd	0.2
trans-1,2-Dichloroethene	nd	0.2
1,2-Dichloropropane	nd	0.2
cis-1,3-Dichloropropene	nd	0.2
trans-1,3-Dichloropropene	nd	0.2
Ethylbenzene	nd	0.5
Dichloromethane	nd	1.0
1,1,2,2-Tetrachloroethane	nd	0.2
Tetrachloroethene (PCE)	nd	0.2
Toluene	nd	0.5
1,1,1-Trichloroethane	nd	0.2
1,1,2-Trichloroethane	nd	0.2
Trichloroethene (TCE)	nd	0.2
Vinyl Chloride	nd	0.2
Xylenes (Total)	nd	0.5
Trichlorofluoromethane	nd	0.2

BFB (Surrogate) Recovery = 87 %
BCM (Surrogate) Recovery = 86 %
Dilution Factor = 1

Results for sample: 6-FPCAT2

Date collected: 6/14/94	Date received: 6/15/94
Date extracted: NA	Date analyzed: 6/18/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: Enron-Laguna	HEAL #: 9406055-4
Project Manager: J. Hilton/B. Marley	Sampled by: JRL
Matrix: Aqueous	

Test: EPA 8010/8020

Analyte:	Units: PPB (UG/L)	Detection Limit
Acetone	nd	20
Benzene	nd	0.5
Bromodichloromethane	nd	0.2
Bromoform	nd	1.0
Bromomethane	nd	1.0
Carbon Tetrachloride	nd	0.2
Chlorobenzene	nd	0.2
Chloroethane	nd	0.2
Chloroform	nd	0.2
Chloromethane	nd	0.2
2-Chloroethylvinyl Ether	nd	1.0
Dibromochloromethane	nd	0.2
1,3-Dichlorobenzene	nd	0.2
1,2-Dichlorobenzene	nd	0.2
1,4-Dichlorobenzene	nd	0.2
Dichlorodifluoromethane	nd	0.2
1,1-Dichloroethane	nd	0.2
1,2-Dichloroethane	nd	0.2
1,1-Dichloroethene	nd	0.2
cis-1,2-Dichloroethene	nd	0.2
trans-1,2-Dichloroethene	nd	0.2
1,2-Dichloropropane	nd	0.2
cis-1,3-Dichloropropene	nd	0.2
trans-1,3-Dichloropropene	nd	0.2
Ethylbenzene	nd	0.5
Dichloromethane	nd	1.0
1,1,2,2-Tetrachloroethane	nd	0.2
Tetrachloroethene (PCE)	nd	0.2
Toluene	nd	0.5
1,1,1-Trichloroethane	nd	0.2
1,1,2-Trichloroethane	nd	0.2
Trichloroethene (TCE)	nd	0.2
Vinyl Chloride	nd	0.2
Xylenes (Total)	nd	0.5
Trichlorofluoromethane	nd	0.2

BFB (Surrogate) Recovery = 81 %
BCM (Surrogate) Recovery = 91 %
Dilution Factor = 1

Results for sample: 6-FPCAT3-DR1

Date collected: 6/14/94	Date received: 6/15/94
Date extracted: NA	Date analyzed: 6/18/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: Enron-Laguna	HEAL #: 9406055-5
Project Manager: J. Hilton/B. Marley	Sampled by: JRL
Matrix: Aqueous	

Test: EPA 8010/8020

Analyte:	Units: PPB (UG/L)	Detection Limit
Acetone	nd	20
Benzene	nd	0.5
Bromodichloromethane	nd	0.2
Bromoform	nd	1.0
Bromomethane	nd	1.0
Carbon Tetrachloride	nd	0.2
Chlorobenzene	nd	0.2
Chloroethane	nd	0.2
Chloroform	nd	0.2
Chloromethane	nd	0.2
2-Chloroethylvinyl Ether	nd	1.0
Dibromochloromethane	nd	0.2
1,3-Dichlorobenzene	nd	0.2
1,2-Dichlorobenzene	nd	0.2
1,4-Dichlorobenzene	nd	0.2
Dichlorodifluoromethane	nd	0.2
1,1-Dichloroethane	nd	0.2
1,2-Dichloroethane	nd	0.2
1,1-Dichloroethene	nd	0.2
cis-1,2-Dichloroethene	nd	0.2
trans-1,2-Dichloroethene	nd	0.2
1,2-Dichloropropane	nd	0.2
cis-1,3-Dichloropropene	nd	0.2
trans-1,3-Dichloropropene	nd	0.2
Ethylbenzene	nd	0.5
Dichloromethane	nd	1.0
1,1,2,2-Tetrachloroethane	nd	0.2
Tetrachloroethene (PCE)	nd	0.2
Toluene	nd	0.5
1,1,1-Trichloroethane	nd	0.2
1,1,2-Trichloroethane	nd	0.2
Trichloroethene (TCE)	nd	0.2
Vinyl Chloride	nd	0.2
Xylenes (Total)	nd	0.5
Trichlorofluoromethane	nd	0.2

BFB (Surrogate) Recovery = 91 %
BCM (Surrogate) Recovery = 103 %
Dilution Factor = 1

Results for sample: 6-FPCAT3-DR2

Date collected: 6/14/94	Date received: 6/15/94
Date extracted: NA	Date analyzed: 6/18/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: Enron-Laguna	HEAL #: 9406055-6
Project Manager: J. Hilton/B. Marley	Sampled by: JRL
Matrix: Aqueous	

Test: EPA 8010/8020

Analyte:	Units: PPB (UG/L)	Detection Limit
Acetone	nd	20
Benzene	nd	0.5
Bromodichloromethane	nd	0.2
Bromoform	nd	1.0
Bromomethane	nd	1.0
Carbon Tetrachloride	nd	0.2
Chlorobenzene	nd	0.2
Chloroethane	nd	0.2
Chloroform	nd	0.2
Chloromethane	nd	0.2
2-Chloroethylvinyl Ether	nd	1.0
Dibromochloromethane	nd	0.2
1,3-Dichlorobenzene	nd	0.2
1,2-Dichlorobenzene	nd	0.2
1,4-Dichlorobenzene	nd	0.2
Dichlorodifluoromethane	nd	0.2
1,1-Dichloroethane	nd	0.2
1,2-Dichloroethane	nd	0.2
1,1-Dichloroethene	nd	0.2
cis-1,2-Dichloroethene	nd	0.2
trans-1,2-Dichloroethene	nd	0.2
1,2-Dichloropropane	nd	0.2
cis-1,3-Dichloropropene	nd	0.2
trans-1,3-Dichloropropene	nd	0.2
Ethylbenzene	nd	0.5
Dichloromethane	nd	1.0
1,1,2,2-Tetrachloroethane	nd	0.2
Tetrachloroethene (PCE)	nd	0.2
Toluene	nd	0.5
1,1,1-Trichloroethane	nd	0.2
1,1,2-Trichloroethane	nd	0.2
Trichloroethene (TCE)	nd	0.2
Vinyl Chloride	nd	0.2
Xylenes (Total)	nd	0.5
Trichlorofluoromethane	nd	0.2

BFB (Surrogate) Recovery = 92 %
BCM (Surrogate) Recovery = 100 %
Dilution Factor = 1

Results for sample: 6-FPCAT4

Date collected: 6/14/94	Date received: 6/15/94
Date extracted: NA	Date analyzed: 6/18/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: Enron-Laguna	HEAL #: 9406055-7
Project Manager: J. Hilton/B. Marley	Sampled by: JRL
Matrix: Aqueous	

Test: EPA 8010/8020

Analyte:	Units: PPB (UG/L)	Detection Limit
Acetone	nd	20
Benzene	nd	0.5
Bromodichloromethane	nd	0.2
Bromoform	nd	1.0
Bromomethane	nd	1.0
Carbon Tetrachloride	nd	0.2
Chlorobenzene	nd	0.2
Chloroethane	nd	0.2
Chloroform	nd	0.2
Chloromethane	nd	0.2
2-Chloroethylvinyl Ether	nd	1.0
Dibromochloromethane	nd	0.2
1,3-Dichlorobenzene	nd	0.2
1,2-Dichlorobenzene	nd	0.2
1,4-Dichlorobenzene	nd	0.2
Dichlorodifluoromethane	nd	0.2
1,1-Dichloroethane	nd	0.2
1,2-Dichloroethane	nd	0.2
1,1-Dichloroethene	nd	0.2
cis-1,2-Dichloroethene	nd	0.2
trans-1,2-Dichloroethene	nd	0.2
1,2-Dichloropropane	nd	0.2
cis-1,3-Dichloropropene	nd	0.2
trans-1,3-Dichloropropene	nd	0.2
Ethylbenzene	nd	0.5
Dichloromethane	nd	1.0
1,1,2,2-Tetrachloroethane	nd	0.2
Tetrachloroethene (PCE)	nd	0.2
Toluene	nd	0.5
1,1,1-Trichloroethane	nd	0.2
1,1,2-Trichloroethane	nd	0.2
Trichloroethene (TCE)	nd	0.2
Vinyl Chloride	nd	0.2
Xylenes (Total)	nd	0.5
Trichlorofluoromethane	nd	0.2

BFB (Surrogate) Recovery = 92 %
BCM (Surrogate) Recovery = 105 %
Dilution Factor = 1

AROCLORS
Method 8080

Analytical Technologies, Inc.

Lab Name: Analytical Technologies Inc.
Client Name: ATI-NM
Client Project ID: DBS -- 406354
Lab Sample ID: 94-06-177-03

Sample Matrix: Water
Cleanup: N/A

Sample ID

6-FPCAT4

Date Collected: 06/14/94
Date Extracted: 06/20/94
Date Analyzed: 06/27/94

Sample Volume: 990 mL
Final Volume: 10 mL

Analyte	Conc (ug/L)	Detection Limit (ug/L)
Aroclor 1016	ND	1.0
Aroclor 1221	ND	2.5
Aroclor 1232	ND	1.0
Aroclor 1242	ND	0.66
Aroclor 1248	ND	0.66
Aroclor 1254	ND	0.66
Aroclor 1260	ND	0.66

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,4,5,6-Tetrachloro-m-xylene	102	43 - 124

ND = Not Detected

Results for sample: 6-FP601/603

Date collected: 6/14/94	Date received: 6/15/94
Date extracted: NA	Date analyzed: 6/18/94
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: Enron-Laguna	HEAL #: 9406055-8
Project Manager: J. Hilton/B. Marley	Sampled by: JRL
Matrix: Aqueous	

Test: EPA 8010/8020

Analyte:	Units: PPB (UG/L)	Detection Limit
Acetone	nd	20
Benzene	nd	0.5
Bromodichloromethane	nd	0.2
Bromoform	nd	1.0
Bromomethane	nd	1.0
Carbon Tetrachloride	nd	0.2
Chlorobenzene	nd	0.2
Chloroethane	nd	0.2
Chloroform	nd	0.2
Chloromethane	nd	0.2
2-Chloroethylvinyl Ether	nd	1.0
Dibromochloromethane	nd	0.2
1,3-Dichlorobenzene	nd	0.2
1,2-Dichlorobenzene	nd	0.2
1,4-Dichlorobenzene	nd	0.2
Dichlorodifluoromethane	nd	0.2
1,1-Dichloroethane	nd	0.2
1,2-Dichloroethane	nd	0.2
1,1-Dichloroethene	nd	0.2
cis-1,2-Dichloroethene	nd	0.2
trans-1,2-Dichloroethene	nd	0.2
1,2-Dichloropropane	nd	0.2
cis-1,3-Dichloropropene	nd	0.2
trans-1,3-Dichloropropene	nd	0.2
Ethylbenzene	nd	0.5
Dichloromethane	nd	1.0
1,1,2,2-Tetrachloroethane	nd	0.2
Tetrachloroethene (PCE)	nd	0.2
Toluene	nd	0.5
1,1,1-Trichloroethane	nd	0.2
1,1,2-Trichloroethane	nd	0.2
Trichloroethene (TCE)	nd	0.2
Vinyl Chloride	nd	0.2
Xylenes (Total)	nd	0.5
Trichlorofluoromethane	nd	

BFB (Surrogate) Recovery = 93 %
BCM (Surrogate) Recovery = 103 %
Dilution Factor = 1

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

May 17, 1994

CERTIFIED MAIL
RETURN RECEIPT NO. P-176-012-212

Mr. Larry Campbell
Transwestern Pipeline Company
P.O. Box 1717
Roswell, New Mexico 88202-1717

Re: Disposal Request
Laguna Compressor Station (GW-95)
Torrence County, New Mexico

Dear Mr. Campbell:

The Oil Conservation Division (OCD) has received your request, dated May 9, 1994, for approval to dispose of approximately 1 yard of non contaminated concrete generated from the removal of a pump island for two regulated underground storage tanks. Based upon the information provided, your disposal request is approved with the following conditions.

1. Onsite burial will be into a dedicated excavation area within the confines of the facility.

2. The excavation area, and soils used to cover the area, will be free of contaminants relative to the "Guidelines For Surface Impoundment Closure".

3. The concrete to be buried will be non contaminated as stated in your request.

Mr. Larry Campbell
May 17, 1994

Please be advised that this approval does not relieve you of liability should your operation result in actual pollution of surface or groundwater or the environment actionable under other laws and/or regulations.

If you have any questions, please do not hesitate to call me at (505) 827-5824.

Sincerely,

Chris E. Eustice
Environmental Geologist

Phone (505) 623-2761
FAX (505) 625-8060

Transwestern Pipeline Company
TECHNICAL OPERATIONS
P. O. Box 1717 • Roswell, New Mexico 88202-1717

2/3

May 9, 1994

Mr. Roger Anderson
Oil Conservation Division
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

RE: Disposal of Concrete Housing Foundations at Compressor Station No. 6, Laguna

Dear Mr. Anderson:

Transwestern Pipeline Company, owner and operator of the Laguna Compressor Station, requests approval from the Oil Conservation Division (OCD) to dispose of approximately 100 cubic yards of non contaminated concrete generated from the removal of two (2) onsite company houses. This facility is currently operating under Discharge Permit No. GW-95.

This request specifically addresses burial onsite of the concrete into a dedicated excavation area within the confines of the property. Approval of this request will allow Transwestern expedited completion of this construction project and will not create any adverse impacts to the facility environment.

Sincerely,

Larry Campbell

Larry Campbell
Division Environmental Specialist

xc: Greg McIlwain
Bob Anderson
Butch Bentley
Butch Russell
file

Phone (505) 623-2761
FAX (505) 625-8060

Transwestern Pipeline Company
TECHNICAL OPERATIONS
P. O. Box 1717 • Roswell, New Mexico 88202-1717

212

May 9, 1994

Mr. Roger Anderson
Oil Conservation Division
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Re: Disposal of Concrete at Compressor Station No. 6, Laguna

Dear Mr. Anderson:

Transwestern Pipeline Company, owner and operator of the Laguna Compressor Station (GW-95), requests approval from the Oil Conservation Division (OCD) to dispose of approximately 1 cubic yard of non contaminated concrete consisting of the pump island for two (2) regulated underground storage tanks. This material was generated from the removal of these tanks at the above referenced facility.

This request specifically addresses burial onsite of the concrete into the excavation site of the removed tanks. The site is open and is approximately eight (8) feet deep to the sandstone bedrock. Approval of this request will allow Transwestern expedited completion of the tank remediation and closure, and will not create any adverse impacts to the facility environment.

Sincerely,

Larry Campbell

Larry Campbell
Division Environmental Specialist

xc: Greg McIlwain
Bob Anderson
Butch Russell
George Robinson GTS 3AC 3142
file

Daniel B. Stephens & Associates, Inc.
Environmental Scientists and Engineers
6020 Academy NE, #100
Albuquerque, NM 87109
(505) 822-9400
FAX: (505) 822-8877

Date 11-29-93 Project No. 2100.2

Sent to Bill Olson Sent from Joanne Hillard

Total Pages Including Cover Page 5

Fax No. 1-827 5741

DBS&A Form No 005a Rev 2/92

Remarks

Bill- here is some additional data on 2 more cuttings that we would like to dispose. Please call me when you receive this so that we can discuss this. Thanks

Joanne

Verbal OK for all cuttings except UST's and purge water from 6-28.
UST product tanks not under OCD authority
Aqueous samples 6-34, 6-37, decon pad denied for disposal due to potential listed haz-waste

Bill Olson 12/7/93

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

TEST : PURGEABLE HALOCARBONS/AROMATICS (EPA 8010/8020)
CLIENT : DANIEL B. STEPHENS & ASSOC. ATI I.D.: 310415
PROJECT # : 2100
PROJECT NAME: ENRON-LAGUNA

SAMPLE I.D. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
07	LF1-CUT1	NON-AQ	10/28/93	11/05/93	11/09/93	1
08	LF1-CUT2	NON-AQ	10/28/93	11/05/93	11/09/93	1
09	LF2-CUTTINGS	NON-AQ	10/28/93	11/05/93	11/09/93	1

PARAMETER	UNITS	07	08	09
BENZENE	MG/KG	<0.025	<0.025	<0.025
BROMODICHLOROMETHANE	MG/KG	<0.010	<0.010	<0.010
BROMOFORM	MG/KG	<0.025	<0.025	<0.025
BROMOMETHANE	MG/KG	<0.025	<0.025	<0.025
CARBON TETRACHLORIDE	MG/KG	<0.010	<0.010	<0.010
CHLOROBENZENE	MG/KG	<0.025	<0.025	<0.025
CHLOROETHANE	MG/KG	<0.010	<0.010	<0.010
CHLOROFORM	MG/KG	<0.010	<0.010	<0.010
CHLOROMETHANE	MG/KG	<0.025	<0.025	<0.025
DIBROMOCHLOROMETHANE	MG/KG	<0.010	<0.010	<0.010
1,2-DIBROMOETHANE (EDB)	MG/KG	<0.025	<0.025	<0.025
1,2-DICHLOROBENZENE	MG/KG	<0.025	<0.025	<0.025
1,3-DICHLOROBENZENE	MG/KG	<0.025	<0.025	<0.025
1,4-DICHLOROBENZENE	MG/KG	<0.025	<0.025	<0.025
1,1-DICHLOROETHANE	MG/KG	<0.010	<0.010	<0.010
1,2-DICHLOROETHANE (EDC)	MG/KG	<0.010	<0.010	<0.010
1,1-DICHLOROETHENE	MG/KG	<0.010	<0.010	<0.010
CIS-1,2-DICHLOROETHENE	MG/KG	<0.010	<0.010	<0.010
TRANS-1,2-DICHLOROETHENE	MG/KG	<0.010	<0.010	<0.010
1,2-DICHLOROPROPANE	MG/KG	<0.010	<0.010	<0.010
CIS-1,3-DICHLOROPROPENE	MG/KG	<0.025	<0.025	<0.025
TRANS-1,3-DICHLOROPROPENE	MG/KG	<0.010	<0.010	<0.010
ETHYLBENZENE	MG/KG	<0.025	<0.025	<0.025
METHYL-t-BUTYL ETHER	MG/KG	<0.12	<0.12	<0.12
METHYLENE CHLORIDE	MG/KG	<0.50	<0.50	<0.50
1,1,2,2-TETRACHLOROETHANE	MG/KG	<0.010	<0.010	<0.010
TETRACHLOROETHENE	MG/KG	<0.010	<0.010	<0.010
TOLUENE	MG/KG	<0.025	<0.025	<0.025
1,1,1-TRICHLOROETHANE	MG/KG	<0.010	<0.010	<0.010
1,1,2-TRICHLOROETHANE	MG/KG	<0.010	<0.010	<0.010
TRICHLOROETHENE	MG/KG	<0.010	<0.010	<0.010
TRICHLOROFLUOROMETHANE	MG/KG	<0.010	<0.010	<0.010
VINYL CHLORIDE	MG/KG	<0.025	<0.025	<0.025
TOTAL XYLENES	MG/KG	<0.025	<0.025	<0.025
SURROGATES:				
BROMOCHLOROMETHANE (%)		65	72	62
BROMOFLUOROBENZENE (%)		102	91	94

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

TEST : PURGEABLE HALOCARBONS/AROMATICS (EPA 8010/8020)
CLIENT : DANIEL B. STEPHENS & ASSOCIATES ATI I.D.: AM31001
PROJECT # : 2100-2.2
PROJECT NAME: ENRON-LAGUNA

SAMPLE I.D. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
56	LF2-15@8.2'	NON-AQ	10/25/93	10/25/93	10/26/93	1
58	6-SB36@10.0'	NON-AQ	10/26/93	10/26/93	10/26/93	1
60	LF2-17@6.8'	NON-AQ	10/26/93	10/26/93	10/26/93	1
65	6-SB37@11'	NON-AQ	10/26/93	10/26/93	10/26/93	1

PARAMETER	UNITS	56	58	60	65
BENZENE	MG/KG	<0.025	<0.025	<0.025	<0.025
BROMOMETHANE	MG/KG	<0.010	<0.010	<0.010	<0.010
BROMOFORM	MG/KG	<0.010	<0.010	<0.010	<0.010
CARBON TETRACHLORIDE	MG/KG	<0.010	<0.010	<0.010	<0.010
CHLOROBENZENE	MG/KG	<0.025	<0.025	<0.025	<0.025
CHLOROETHANE	MG/KG	<0.010	<0.010	<0.010	<0.010
CHLOROMETHANE	MG/KG	<0.010	<0.010	<0.010	<0.010
CHLOROFORM	MG/KG	<0.010	<0.010	<0.010	<0.010
DIBROMOCHLOROMETHANE	MG/KG	<0.010	<0.010	<0.010	<0.010
1,2-DICHLOROBENZENE	MG/KG	<0.025	<0.025	<0.025	<0.025
1,3-DICHLOROBENZENE	MG/KG	<0.025	<0.025	<0.025	<0.025
1,4-DICHLOROBENZENE	MG/KG	<0.025	<0.025	<0.025	<0.025
DICHLOROBROMOMETHANE	MG/KG	<0.010	<0.010	<0.010	<0.010
DICHLORODIFLUOROMETHANE	MG/KG	<0.010	<0.010	<0.010	<0.010
1,1-DICHLOROETHANE	MG/KG	<0.010	<0.010	<0.010	<0.010
1,2-DICHLOROETHANE (EDC)	MG/KG	<0.010	<0.010	<0.010	<0.010
1,1-DICHLOROETHENE	MG/KG	<0.010	<0.010	<0.010	<0.010
CIS-1,2-DICHLOROETHENE	MG/KG	<0.010	<0.010	<0.010	<0.010
TRANS-1,2-DICHLOROETHENE	MG/KG	<0.010	<0.010	<0.010	<0.010
DICHLOROMETHANE	MG/KG	<0.2	<0.2	<0.2	<0.2
1,2-DICHLOROPROPANE	MG/KG	<0.010	<0.010	<0.010	<0.010
CIS-1,3-DICHLOROPROPENE	MG/KG	<0.010	<0.010	<0.010	<0.010
TRANS-1,3-DICHLOROPROPENE	MG/KG	<0.010	<0.010	<0.010	<0.010
ETHYLBENZENE	MG/KG	<0.025	<0.025	<0.025	<0.025
1,1,2,2-TETRACHLOROETHANE	MG/KG	<0.010	<0.010	<0.010	<0.010
TETRACHLOROETHENE (PCE)	MG/KG	<0.010	<0.010	<0.010	<0.010
TOLUENE	MG/KG	<0.025	<0.025	<0.025	<0.025
1,1,1-TRICHLOROETHANE	MG/KG	[redacted]	<0.010	<0.010	<0.010
1,1,2-TRICHLOROETHANE	MG/KG	<0.010	<0.010	<0.010	<0.010
TRICHLOROETHENE (TCE)	MG/KG	<0.010	<0.010	<0.010	<0.010
TRICHLOROFLUOROMETHANE	MG/KG	<0.010	<0.010	<0.010	<0.010
VINYL CHLORIDE	MG/KG	<0.010	<0.010	<0.010	<0.010
TOTAL XYLENES	MG/KG	<0.025	<0.025	<0.025	<0.025
SURROGATES:					
BROMOCHLOROMETHANE (%)		107	101	102	103
BROMOFLUOROBENZENE (%)		87	86	84	91

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

TEST : BTEX, MTBE (EPA 8020)/EDB, EDC (EPA 8010)
CLIENT : D.B. STEPHENS & ASSOCIATES ATI I.D.: 310408
PROJECT # : 2100 2.4
PROJECT NAME: ENRON-LAGUNA

SAMPLE I.D. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
08	UST1@7.5'	NON-AQ	10/27/93	10/29/93	11/04/93	1
09	UST1@9.0'	NON-AQ	10/27/93	10/29/93	11/04/93	1
10	UST1@11.0	NON-AQ	10/27/93	10/29/93	11/05/93	1
11	UST1@14'	NON-AQ	10/27/93	10/29/93	11/04/93	1

PARAMETER	UNITS	08	09	10	11
BENZENE	MG/KG	0.036	<0.025	<0.025	<0.025
1,2-DIBROMOETHANE (EDB)	MG/KG	<0.025	<0.025	<0.025	<0.025
1,2-DICHLOROETHANE (EDC)	MG/KG	<0.010	<0.010	<0.010	<0.010
ETHYLBENZENE	MG/KG	<0.025	0.042	<0.025	<0.025
TOLUENE	MG/KG	0.037	<0.025	<0.025	<0.025
TOTAL XYLENES	MG/KG	<0.025	0.32	<0.025	<0.025
METHYL-t-BUTYL ETHER	MG/KG	<0.12	<0.12	<0.12	<0.12
SURROGATES:					
BROMOCHLOROMETHANE (%)		88	84	94	75
BROMOFLUOROBENZENE (%)		89	103	96	93

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

TEST : BTEX, MTBE (EPA 8020)/EDB, EDC (EPA 8010)
CLIENT : D.B. STEPHENS & ASSOCIATES ATI I.D.: 310408
PROJECT # : 2100 2.4
PROJECT NAME: ENRON-LAGUNA

SAMPLE I.D. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
12	UST2@7.5'	NON-AQ	10/27/93	10/29/93	11/04/93	1
13	UST2@10.5'	NON-AQ	10/27/93	10/29/93	11/05/93	1
14	UST2@14.2'	NON-AQ	10/27/93	10/29/93	11/05/93	1
15	UST3@8.0'	NON-AQ	10/27/93	10/29/93	11/05/93	1

PARAMETER	UNITS	12	13	14	1
BENZENE	MG/KG	<0.025	<0.025	<0.025	<0.025
1,2-DIBROMOETHANE (EDB)	MG/KG	<0.025	<0.025	<0.025	<0.025
1,2-DICHLOROETHANE (EDC)	MG/KG	<0.010	<0.010	<0.010	<0.010
ETHYLBENZENE	MG/KG	<0.025	<0.025	<0.025	<0.025
TOLUENE	MG/KG	<0.025	<0.025	<0.025	<0.025
TOTAL XYLENES	MG/KG	<0.025	<0.025	<0.025	<0.025
METHYL-t-BUTYL ETHER	MG/KG	<0.12	<0.12	<0.12	<0.12
SURROGATES:					
BROMOCHLOROMETHANE (%)		78	73	77	62
BROMOFLUOROBENZENE (%)		91	97	96	89

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

EST : PURGEABLE HALOCARBONS/AROMATICS (EPA 601/602)
CLIENT : D.B. STEPHENS & ASSOCIATES ATI I.D.: 310408
PROJECT # : 2100 2.2
PROJECT NAME: ENRON-LAGUNA

SAMPLE I.D. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	6-34	AQUEOUS	10/27/93	NA	10/30/93	1
02	6-28	AQUEOUS	10/27/93	NA	10/30/93	1
03	6-37	AQUEOUS	10/27/93	NA	11/01/93	10
04	DECON PAD	AQUEOUS	10/27/93	NA	11/01/93	5

PARAMETER	UNITS	01	02	03	04
BENZENE	UG/L	<0.5	[illegible]	<5.0	<2.5
BROMODICHLOROMETHANE	UG/L	<0.2	<0.2	<2.0	<1.0
BROMOFORM	UG/L	<0.5	<0.5	<5.0	<2.5
BROMOMETHANE	UG/L	<0.5	<0.5	<5.0	<2.5
CARBON TETRACHLORIDE	UG/L	<0.2	<0.2	<2.0	<1.0
CHLOROBENZENE	UG/L	<0.5	<0.5	<5.0	<2.5
CHLOROETHANE	UG/L	[illegible]	<0.2	[illegible]	<1.0
CHLOROFORM	UG/L	<0.2	<0.2	<2.0	<1.0
CHLOROMETHANE	UG/L	<0.5	<0.5	<5.0	<2.5
DIBROMOCHLOROMETHANE	UG/L	<0.2	<0.2	<2.0	<1.0
1,2-DIBROMOETHANE (EDB)	UG/L	<0.5	<0.5	<5.0	<2.5
1,2-DICHLOROBENZENE	UG/L	<0.5	<0.5	<5.0	<2.5
1,3-DICHLOROBENZENE	UG/L	<0.5	<0.5	<5.0	<2.5
1,4-DICHLOROBENZENE	UG/L	<0.5	<0.5	<5.0	<2.5
1,1-DICHLOROETHANE	UG/L	[illegible]	<0.2	[illegible]	<1.0
1,2-DICHLOROETHANE (EDC)	UG/L	<0.2	<0.2	<2.0	<1.0
1,1-DICHLOROETHENE	UG/L	[illegible]	<0.2	[illegible]	<1.0
CIS-1,2-DICHLOROETHENE	UG/L	[illegible]	<0.2	[illegible]	<1.0
TRANS-1,2-DICHLOROETHENE	UG/L	<0.2	<0.2	<2.0	<1.0
1,2-DICHLOROPROPANE	UG/L	<0.2	<0.2	<2.0	<1.0
CIS-1,3-DICHLOROPROPENE	UG/L	<0.5	<0.5	<5.0	<2.5
TRANS-1,3-DICHLOROPROPENE	UG/L	<0.2	<0.2	<2.0	<1.0
ETHYLBENZENE	UG/L	<0.5	<0.5	<5.0	<2.5
METHYLENE CHLORIDE	UG/L	<2.0	<2.0	<20	<10
1,1,2,2-TETRACHLOROETHANE	UG/L	<0.2	<0.2	<2.0	<1.0
TETRACHLOROETHENE	UG/L	[illegible]	<0.2	<2.0	<1.0
TOLUENE	UG/L	<0.5	<0.5	<5.0	<2.5
1,1,1-TRICHLOROETHANE	UG/L	[illegible]	<0.2	[illegible]	[illegible]
1,1,2-TRICHLOROETHANE	UG/L	<0.2	<0.2	<2.0	<1.0
TRICHLOROETHENE	UG/L	0.5	<0.2	<2.0	<1.0
TRICHLOROFLUOROMETHANE	UG/L	<0.2	<0.2	<2.0	<1.0
VINYL CHLORIDE	UG/L	<0.5	<0.5	<5.0	<2.5
TOTAL XYLENES	UG/L	<0.5	<0.5	<5.0	<2.5
SURROGATES:					
BROMOCHLOROMETHANE (%)		104	110	96	108
BROMOFLUOROBENZENE (%)		87	90	102	102

D=DILUTED 10X, ANALYZED 11/01/93

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Date 10/27/93 Project No. 2100.2

Sent to Kathy Brown Sent from Joanne Hilton

Total Pages Including Cover Page 3

Fax No. 827-5741

DBS&A Form No 005a Rev 2/92

Remarks

Kathy-

We would like to dispose of the cuttings from 6-SB-35 and 6-SB-34. We analyzed one sample, (core) collected below the water table, at each boring. The results are attached.

Thanks

Joanne

Verbal Approval to spread onsite
10/27/93 Kathy M. Brown-OCD

ANALYTICAL TECHNOLOGIES

DB STEPHENS
ENRON LAGUNA
2100-2.2

OCTOBER 20- , 1993

MOBILE LABORATORY RESULTS

Prelim

8010/8020 RESULTS

ATI ID AM	7	8	9	10	12	13
CLIENT ID	602-2@2.8'	602-3@3.1'	602-3@1.8'	603-1@4.2'	603-2@3.5'	6-SB-35@14'
	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
	1	1		1	1	1
BENZENE	<0.025	<0.025	HOLD	<0.025	<0.025	<0.025
BROMOMETHANE	<0.010	<0.010	HOLD	<0.010	<0.010	<0.010
BROMOFORM	<0.010	<0.010	HOLD	<0.010	<0.010	<0.010
CARBON TETRACHLORIDE	<0.010	<0.010	HOLD	<0.010	<0.010	<0.010
CHLOROBENZENE	<0.025	<0.025	HOLD	<0.025	<0.025	<0.025
CHLOROETHANE	<0.010	<0.010	HOLD	<0.010	<0.010	<0.010
CHLOROMETHANE	<0.010	<0.010	HOLD	<0.010	<0.010	<0.010
CHLOROFORM	<0.010	<0.010	HOLD	<0.010	<0.010	<0.010
2-CHLORO-VINYL ETHER	NA	NA	HOLD	NA	NA	NA
DIBROMOCHLOROMETHANE	<0.010	<0.010	HOLD	<0.010	<0.010	<0.010
1,2-DICHLOROBENZENE	<0.025	<0.025	HOLD	<0.025	<0.025	<0.025
1,3-DICHLOROBENZENE	<0.025	<0.025	HOLD	<0.025	<0.025	<0.025
1,4-DICHLOROBENZENE	<0.025	<0.025	HOLD	<0.025	<0.025	<0.025
DICHLOROBROMOMETHANE	<0.010	<0.010	HOLD	<0.010	<0.010	<0.010
DICHLORODIFLUOROMETHANE	<0.010	<0.010	HOLD	<0.010	<0.010	<0.010
1,1-DICHLOROETHANE	0.20	0.13	HOLD	<0.010	0.13	<0.010
1,2-DICHLOROETHANE	<0.010	<0.010	HOLD	0.007J	0.006J	<0.010
1,1-DICHLOROETHENE	<0.010	<0.010	HOLD	<0.010	<0.010	<0.010
cis 1,2-DICHLOROETHENE	0.025	0.011	HOLD	<0.010	0.51	<0.010
trans 1,2-DICHLOROETHENE	<0.010	<0.010	HOLD	<0.010	<0.010	<0.010
DICHLOROMETHANE	<0.2	<0.2	HOLD	<0.2	<0.2	<0.2
1,2-DICHLOROPROPANE	<0.010	<0.010	HOLD	<0.010	<0.010	<0.010
cis 1,3-DICHLOROPROPENE	<0.010	<0.010	HOLD	<0.010	<0.010	<0.010
trans 1,3-DICHLOROPROPENE	<0.010	<0.010	HOLD	<0.010	<0.010	<0.010
ETHYLBENZENE	0.075	<0.025	HOLD	<0.025	0.095	<0.025
1,1,2,2-TETRACHLOROETHANE	<0.010	<0.010	HOLD	<0.010	<0.010	<0.010
TETRACHLOROETHENE (PCE)	0.49	0.25	HOLD	0.003J	0.48	<0.010
TOLUENE	0.024J	0.042	HOLD	<0.025	0.11	<0.025
1,1,1-TRICHLOROETHANE	1.3	1.2	HOLD	0.058	2.5	<0.010
1,1,2-TRICHLOROETHANE	<0.010	<0.010	HOLD	<0.010	<0.010	<0.010
TRICHLOROETHENE (TCE)	0.011	0.009J	HOLD	<0.010	0.12	<0.010
TRICHLOROFLUOROMETHANE	<0.010	<0.010	HOLD	<0.010	<0.010	<0.010
TRICHLOROTRIFLUOROMETHANE F	NA	NA	HOLD	NA	NA	NA
VINYL CHLORIDE	<0.010	<0.010	HOLD	<0.010	<0.010	<0.010
XYLENES	0.17	<0.025	HOLD	<0.025	0.16	<0.025
BROMOCHLOROMETHANE (SUR%)	105	104		106	101	91
BROMOFLUOROBENZENE (SUR%)	110	96		95	116	80
DATE EXTRACTED	10/20/93	10/21/93		10/21/93	10/21/93	10/21/93
DATE ANALYZED	10/20/93	10/21/93		10/21/93	10/21/93	10/21/93

ANALYTICAL TECHNOLOGIES

DB STEPHENS
ENRON LAGUNA
2100-2.2

OCTOBER 20- , 1993

MOBILE LABORATORY RESULTS

Prelim

8010/8020 RESULTS

ATI ID AM3	1	2	3	4	5	6
CLIENT ID	602-1@1.8'	602-1@4.2'	601-1@1.8'	601-2@1.7'	601-3@2.3	6-SB-34@12.5'
	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
	1	1	1	1	1	1
BENZENE	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
BROMOMETHANE	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
BROMOFORM	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
CARBON TETRACHLORIDE	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
CHLOROBENZENE	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
CHLOROETHANE	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
CHLOROMETHANE	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
CHLOROFORM	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
2-CHLORO-VINYL ETHER	NA	NA	NA	NA	NA	NA
DIBROMOCHLOROMETHANE	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
1,2-DICHLOROBENZENE	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,3-DICHLOROBENZENE	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,4-DICHLOROBENZENE	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
DICHLOROBROMOMETHANE	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
DICHLORODIFLUOROMETHANE	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
1,1-DICHLOROETHANE	<0.010	<0.010	0.54	0.10	<0.010	<0.010
1,2-DICHLOROETHANE	<0.010	<0.010	0.009J	<0.010	<0.010	<0.010
1,1-DICHLOROETHENE	<0.010	<0.010	0.015	<0.010	<0.010	<0.010
cis 1,2-DICHLOROETHENE	<0.010	<0.010	0.040	0.022	<0.010	<0.010
trans 1,2-DICHLOROETHENE	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
DICHLOROMETHANE	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-DICHLOROPROPANE	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
cis 1,3-DICHLOROPROPENE	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
trans 1,3-DICHLOROPROPENE	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
ETHYLBENZENE	<0.025	<0.025	0.062	0.85	<0.025	<0.025
1,1,2,2-TETRACHLOROETHANE	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
TETRACHLOROETHENE (PCE)	0.009J	<0.010	0.55	1.9	<0.010	<0.010
TOLUENE	<0.025	<0.025	0.072	0.13	<0.025	<0.025
1,1,1-TRICHLOROETHANE	0.059	<0.010	2.6	2.0	<0.010	<0.010
1,1,2-TRICHLOROETHANE	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
TRICHLOROETHENE (TCE)	<0.010	<0.010	0.084	0.018	<0.010	<0.010
TRICHLOROFLUOROMETHANE	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
TRICHLOROTRIFLUOROMETHANE f	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
XYLENES	<0.025	<0.025	0.18	1.4	<0.025	<0.025
BROMOCHLOROMETHANE (SUR%)	100	110	103	103	107	117
BROMOFLUOROBENZENE (SUR%)	90	94	117	106	96	92
DATE EXTRACTED	10/20/93	10/20/93	10/20/93	10/20/93	10/20/93	10/20/93
DATE ANALYZED	10/20/93	10/20/93	10/20/93	10/20/93	10/20/93	10/20/93

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Date 10-28-93 Project No. 2100.2

Sent to Kathy Brown Sent from Joanne Hilton

Total Pages Including Cover Page 3

Fax No. 827-5741

DBS&A Form No. 005a Rev. 3/92

Remarks

Kathy -

Here are some of the results from Leach Field 2. We didn't find much in that leach field and would like to spread the cuttings on site. Results from most of the borings in the area are attached. We didn't run 8010/8020 analyses on the remainder of the bor[illegible] but based on HNu readings, visual observations, and PH measurements; the concentrations should not be any higher than these.

Thanks

Joanne

ENVIRONMENTAL TECHNOLOGIES DB STEPHENS OCTOBER 20, 1993
ENRON LAGUNA
MOBILE LABORATORY RESULTS 2100-2.2

8010 8020 RESULTS

LAB ID	AM31001	50	52	54	56	60	58
CLIENT ID		LF2-9@8.5'	LF2-11@7.5'	LF2-13@8.5'	LF2-15@8.2'	LF2-17@6.8'	6-SB36@10.0'
		MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
DILUTION		1	1	1	1	1	1
BENZENE		<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
BROMOMETHANE		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
BROMOFORM		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
CARBON TETRACHLORIDE		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
CHLOROBENZENE		<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
CHLOROETHANE		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
CHLOROMETHANE		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
CHLOROFORM		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
2-CHLORO-VINYL ETHER		NA	NA	NA	NA	NA	NA
DIBROMOCHLOROMETHANE		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
1,2-DICHLOROBENZENE		<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,3-DICHLOROBENZENE		<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,4-DICHLOROBENZENE		<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
DICHLOROBROMOMETHANE		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
DICHLORODIFLUOROMETHANE		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
1,1-DICHLOROETHANE		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
1,2-DICHLOROETHANE		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
1,1-DICHLOROETHENE		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
cis 1,2-DICHLOROETHENE		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
trans 1,2-DICHLOROETHENE		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
DICHLOROMETHANE		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-DICHLOROPROPANE		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
cis 1,3-DICHLOROPROPENE		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
trans 1,3-DICHLOROPROPENE		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
ETHYLBENZENE		<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2,2-TETRACHLOROETHANE		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
TETRACHLOROETHENE (PCE)		0.018	<0.010	<0.010	0.003J	<0.010	<0.010
TOLUENE		<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,1-TRICHLOROETHANE		0.69	<0.010	<0.010	0.025	<0.010	<0.010
1,1,2-TRICHLOROETHANE		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
TRICHLOROETHENE (TCE)		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
TRICHLOROFLUOROMETHANE		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
TRICHLOROTRIFLUOROMETHANE FR		NA	NA	NA	NA	NA	NA
VINYL CHLORIDE		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
XYLENES		<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
BROMOCHLOROMETHANE (SUR%)		103	88	94	107	102	101
BROMOFLUOROBENZENE (SUR%)		91	100	89	87	84	86
DATE EXTRACTED		10/25/93	10/25/93	10/25/93	10/25/93	10/25/93	10/25/93
DATE ANALYZED		10/26/93	10/26/93	10/26/93	10/26/93	10/26/93	10/26/93

TECHNOLOGIES DB STEPHENS OCTOBER 20 - 27, 1993
ENRON LAGUNA
LABORATORY RESULTS 2160-2.2

8010/8020 RESULTS

LAB ID	AM31001	40	42	43	44	45	47
CLIENT ID		LF1-9@5/6'	LF2-1@9'	LF2-2@8'	LF2-3@7'	LF2-4@6.5'	LF2-6@8.5'
		MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
DILUTION		1	1	1	1	1	1
BENZENE		<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
BROMOMETHANE		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
BROMOFORM		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
CARBON TETRACHLORIDE		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
CHLOROBENZENE		<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
CHLOROETHANE		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
CHLOROMETHANE		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
CHLOROFORM		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
2-CHLORO-VINYL ETHER		NA	NA	NA	NA	NA	NA
DIBROMOCHLOROMETHANE		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
1,2-DICHLOROBENZENE		<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,3-DICHLOROBENZENE		<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,4-DICHLOROBENZENE		<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
DICHLOROBROMOMETHANE		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
DICHLORODIFLUOROMETHANE		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
1,1-DICHLOROETHANE		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
1,2-DICHLOROETHANE		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
1,1-DICHLOROETHENE		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
cis 1,2-DICHLOROETHENE		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
trans 1,2-DICHLOROETHENE		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
DICHLOROMETHANE		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-DICHLOROPROPANE		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
cis 1,3-DICHLOROPROPENE		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
trans 1,3-DICHLOROPROPENE		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
ETHYLBENZENE		<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2,2-TETRACHLOROETHANE		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
TETRACHLOROETHENE (PCE)		<0.010	0.049	<0.010	<0.010	<0.010	<0.010
TOLUENE		<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,1-TRICHLOROETHANE		0.21	6.1DX10	<0.010	<0.010	<0.010	<0.010
1,1,2-TRICHLOROETHANE		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
TRICHLOROETHENE (TCE)		<0.010	0.016	<0.010	<0.010	<0.010	<0.010
TRICHLOROFLUOROMETHANE		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
TRICHLOROTRIFLUOROMETHANE FR		NA	NA	NA	NA	NA	NA
VINYL CHLORIDE		<0.010	<0.010	<0.010	<0.010	010	<0.010
XYLENES		<0.025	<0.025	0.16	<0.025	025	<0.025
BROMOCHLOROMETHANE (SUR%)		86	89	92	87	90	90
BROMOFLUOROBENZENE (SUR%)		86	98	85	91	89	86
DATE EXTRACTED		10/22/93	10/25/93	10/25/93	10/25/93	10/25/93	10/25/93
DATE ANALYZED		10/22/93	10/25/93	10/25/93	10/25/93	10/25/93	10/25/93

Daniel B. Stephens & Associates, Inc.
Environmental Scientists and Engineers
6020 Academy NE, #100
Albuquerque, NM 87109
(505) 822-9400
FAX: (505) 822-8877

Date 11/1/93 Project No. 2100 2.2

Sent to Bill Olson Sent from Bob Marley

Total Pages Including Cover Page 3

Fax No. 505 827 5741

DBS&A Form No. 005a Rev 2/92

Remarks

Bill, Please find attached 8010/ec20 analysis of drill cuttings from monitor wells 6-36 and 6-37, samples are referred to as 6-SB36@10.0' and 6-SB37@11' respectively. Please advise us on cutting disposal, ASAP, for the Transwestern No 6 Station.

Thank You,

Bob Marley

Verbal OK for 6-SB36@10' but denied for 6-SB37@11'
11/2/93

[illegible] TECHNOLOGIES DB STEPHENS OCTOBER 20 [illegible]
ENRON LAGUNA
MOBILE LABORATORY RESULTS 2100-2 2

8010/8020 RESULTS

AT ID AM31001	50	52	54	56	60	58
CLIENT ID	LF2-9@8.5'	LF2-11@7 5'	LF2-13@8 5'	LF2 15@8.2'	LF2-17@6.8'	6-SB36@10.0'
	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
DILUTION	1	1	1	1	1	1
BENZENE	<0 025	<0.025	<0.025	<0.025	<0 025	<0 025
BROMOMETHANE	<0 010	<0.010	<0.010	<0.010	<0.010	<0 010
BROMOFORM	<0.010	<0.010	<0.010	<0.010	<0 010	<0 010
CARBON TETRACHLORIDE	<0 010	<0.010	<0.010	<0.010	<0.010	<0.010
CHLOROBENZENE	<0 025	<0.025	<0.025	<0.025	<0.025	<0.025
CHLOROETHANE	<0.010	<0.010	<0.010	<0 010	<0 010	<0.010
CHLOROMETHANE	<0.010	<0.010	<0.010	<0.010	<0 010	<0 010
CHLOROFORM	<0.010	<0.010	<0.010	<0.010	<0 010	<0 010
2-CHLORO-VINYL ETHER	NA	NA	NA	NA	NA	NA
DIBROMOCHLOROMETHANE	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
1,2-DICHLOROBENZENE	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,3-DICHLOROBENZENE	<0.025	<0.025	<0.025	<0.025	<0 025	<0.025
1,4-DICHLOROBENZENE	<0 025	<0.025	<0.025	<0.025	<0.025	<0 025
DICHLOROBROMOMETHANE	<0 010	<0.010	<0 010	<0.010	<0.010	<0.010
DICHLORODIFLUOROMETHANE	<0.010	<0.010	<0 010	<0.010	<0.010	<0 010
1,1-DICHLOROETHANE	<0.010	<0.010	<0 010	<0.010	<0.010	<0 010
1,2-DICHLOROETHANE	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
1,1-DICHLOROETHENE	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
cis 1,2-DICHLOROETHENE	<0.010	<0.010	<0 010	<0.010	<0.010	<0.010
trans 1,2-DICHLOROETHENE	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
DICHLOROMETHANE	<0.2	<0 2	<0.2	<0 2	<0.2	<0 2
1,2-DICHLOROPROPANE	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
cis 1,3-DICHLOROPROPENE	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
trans 1,3-DICHLOROPROPENE	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
ETHYLBENZENE	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,2,2-TETRACHLOROETHANE	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
TETRACHLOROETHENE (PCE)	0.018	<0 010	<0.010	0.003J	<0.010	<0.010
TOLUENE	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1,1,1-TRICHLOROETHANE	0.69	<0.010	<0.010	0.025	<0.010	<0.010
1,1,2-TRICHLOROETHANE	<0.010	<0.010	<0.010	<0.010	<0 010	<0.010
TRICHLOROETHENE (TCE)	<0.010	<0.010	<0.010	<0.010	<0 010	<0.010
TRICHLOROFLUOROMETHANE	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
TRICHLOROTRIFLUOROMETHANE FR	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	<0 010	<0.010	<0.010	<0.010	<0.010	<0.010
XYLENES	<0 025	<0.025	<0.025	<0 025	<0 025	<0.025
BROMOCHLOROMETHANE (SUR%)	103	88	94	107	102	101
BROMOFLUOROBENZENE (SUR%)	91	100	89	87	84	86
DATE EXTRACTED	10/25/93	10/25/93	10/25/93	10/25/93	10/26/93	10/26/93
DATE ANALYZED	10/25/93	10/25/93	10/25/93	10/26/93	10/26/93	10/26/93

8010/8020 RESULTS

ANALYTICAL TECHNOLOGIES | DB STEPHENS ENRON LAGUNA 2100-2 2 | OCTOBER 20 - 27, 1993

MONTHLY LABORATORY RESULTS

8010/8020 RESULTS

ATI ID AM31001	65	66	67
CLIENT ID	6-SB37@11'	CBS-1@5.1'	CBS-1@5.7'
	MG/KG	MG/KG	MG/KG
DILUTION	1	1	1
BENZENE	<0.025	<0.025	<0.025
BROMOMETHANE	<0.010	<0.010	<0.010
BROMOFORM	<0.010	<0.010	<0.010
CARBON TETRACHLORIDE	<0.010	<0.010	<0.010
CHLOROBENZENE	<0.025	<0.025	<0.025
CHLOROETHANE	<0.010	<0.010	<0.010
CHLOROMETHANE	<0.010	<0.010	<0.010
CHLOROFORM	<0.010	<0.010	<0.010
2-CHLORO-VINYL ETHER	NA	NA	NA
DIBROMOCHLOROMETHANE	<0.010	<0.010	<0.010
1,2-DICHLOROBENZENE	<0.025	<0.025	<0.025
1,3-DICHLOROBENZENE	<0.025	<0.025	<0.025
1,4-DICHLOROBENZENE	<0.025	<0.025	<0.025
DICHLOROBROMOMETHANE	<0.010	<0.010	<0.010
DICHLORODIFLUOROMETHANE	<0.010	<0.010	<0.010
1,1-DICHLOROETHANE	<0.010	<0.010	<0.010
1,2-DICHLOROETHANE	<0.010	<0.010	<0.010
1,1-DICHLOROETHENE	<0.010	<0.010	<0.010
cis 1,2-DICHLOROETHENE	<0.010	<0.010	<0.010
trans 1,2-DICHLOROETHENE	<0.010	<0.010	<0.010
DICHLOROMETHANE	<0.2	<0.2	<0.2
1,2-DICHLOROPROPANE	<0.010	<0.010	<0.010
cis 1,3-DICHLOROPROPENE	<0.010	<0.010	<0.010
trans 1,3-DICHLOROPROPENE	<0.010	<0.010	<0.010
ETHYLBENZENE	<0.025	<0.025	<0.025
1,1,2,2-TETRACHLOROETHANE	<0.010	<0.010	<0.010
TETRACHLOROETHENE (PCE)	0.018	<0.010	<0.010
TOLUENE	<0.025	<0.025	<0.025
1,1,1-TRICHLOROETHANE	0.69	<0.010	<0.010
1,1,2-TRICHLOROETHANE	<0.010	<0.010	<0.010
TRICHLOROETHENE (TCE)	<0.010	<0.010	<0.010
TRICHLOROFLUOROMETHANE	<0.010	<0.010	<0.010
TRICHLOROTRIFLUOROMETHANE FR	NA	NA	NA
VINYL CHLORIDE	<0.010	<0.010	<0.010
XYLENES	<0.025	<0.025	<0.025
BROMOCHLOROMETHANE (SUR%)	103	105	102
BROMOFLUOROBENZENE (SUR%)	91	84	85
DATE EXTRACTED	10/26/93	10/26/93	10/26/93
DATE ANALYZED	10/26/93	10/26/93	10/26/93

OCD/ENRON Meeting on Laguna/Thoreau Compressors
10/7/93 8:30 am

Attendees - Bill Olson - OCD Envir. Bureau
Roger Anderson - "
Chris Eustice - "
Ted Blythe - ENRON
George Robinson - "
Joanne Hilton - Dan Stephens & Assoc.

Thoreau Compressor Station

TR Handout of Thoreau Comp. invest. work
Working with Navajo's for lease on offsite land

J.H. Handout of Bioremedy Pilot test

Plots of Benzene vs time

G.R. Want to - install Air sparge / Vapor Extraction system at fence line
- former offsite cont. area
- monitor offsite cont.
- expand to offsite if increase in offsite cont.

T.R. Presented this to Navajo EPA last week
offsite land for landfill rd. & plant farm ?
Navajo land obtained in trade from BLM
offsite land South of landfill rd. is original Tribal Navajo lands

R.A. State has authority over G.W. on all lands in state except original tribal reservation boundaries

T.R. - Navajo tribe doesn't have prob. with proposal but want more detailed proposal
- Monitoring permit with Navajo's for offsite has expired. Are in process of reapplying for continuation of monitoring

- Expect to meet with EPA Region 9 soon (by end of month)
- Expect to make formal remediation proposal by Jan 1994

Lagunna Compressor Station

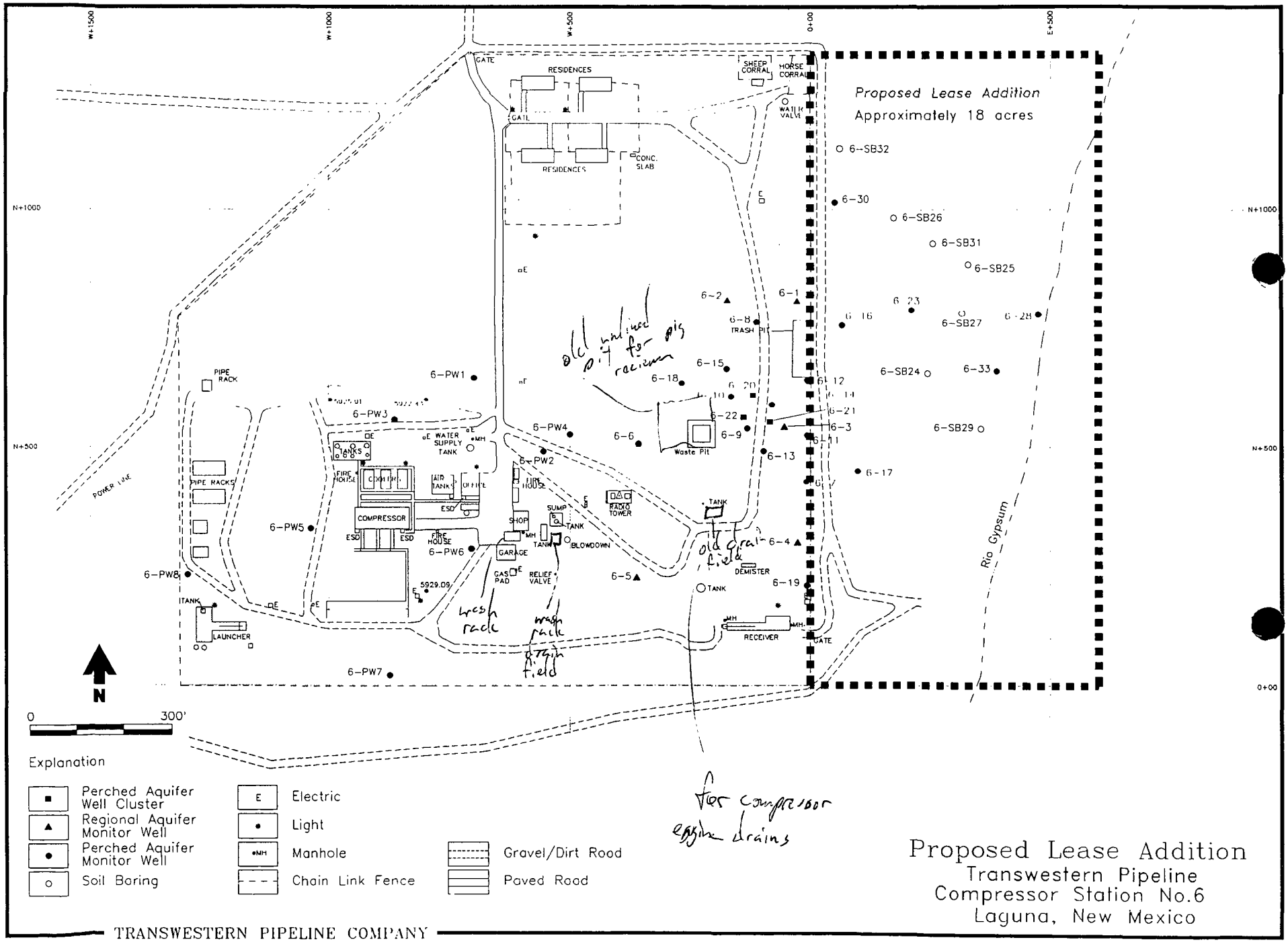
T.R. Handed off Lagunna insect, work
Unit to perform same action as at Thoreau
- monitor
- allow for natural biodegradation

Solvents in G.W.

R.A. Most likely under EPA authority for solvents as a RCRA cleanup

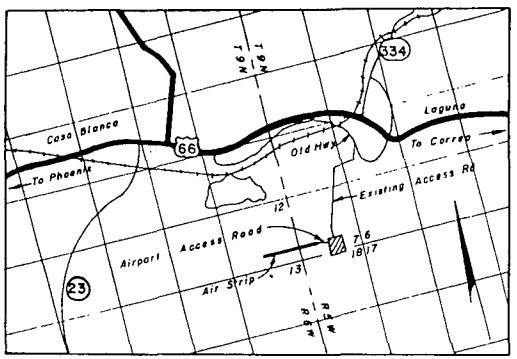
T.R. - OCD will get copies of all correspondence
- ENRON will meet with EPA Region 6 soon to discuss

10/7/93
OCD/ENRON meeting



Proposed Lease Addition
Transwestern Pipeline
Compressor Station No.6
Laguna, New Mexico

TRANSWESTERN PIPELINE COMPANY
8-93



VICINITY MAP
Scale: 1" = 2 Mi.

LAGUNA INDIAN RESERVATION · · · PUEBLO GRANT

N

7

Existing Station 6 Access Rd

Airport Access Rd (20' Wide)

S 89° 30' E

℄ Air Strip

3°03'

10+28 End Survey

℄ S 86° 27' E

℄ 4+52

4' Wire Fence 8+04

℄ Wash 7+22

96'

0+00 Begin Survey

℄ Wash 1+46

℄ Wash 0+49

Laguna Tribal Rd.

El Paso Natural Gas Pipeline

TRANSWESTERN PIPELINE CO.
Compressor Sta. 6

1155'

7 | 8
18 | 17

165'

1320'

600'

Proposed Lease Addition

TRANSWESTERN 30" PIPELINES

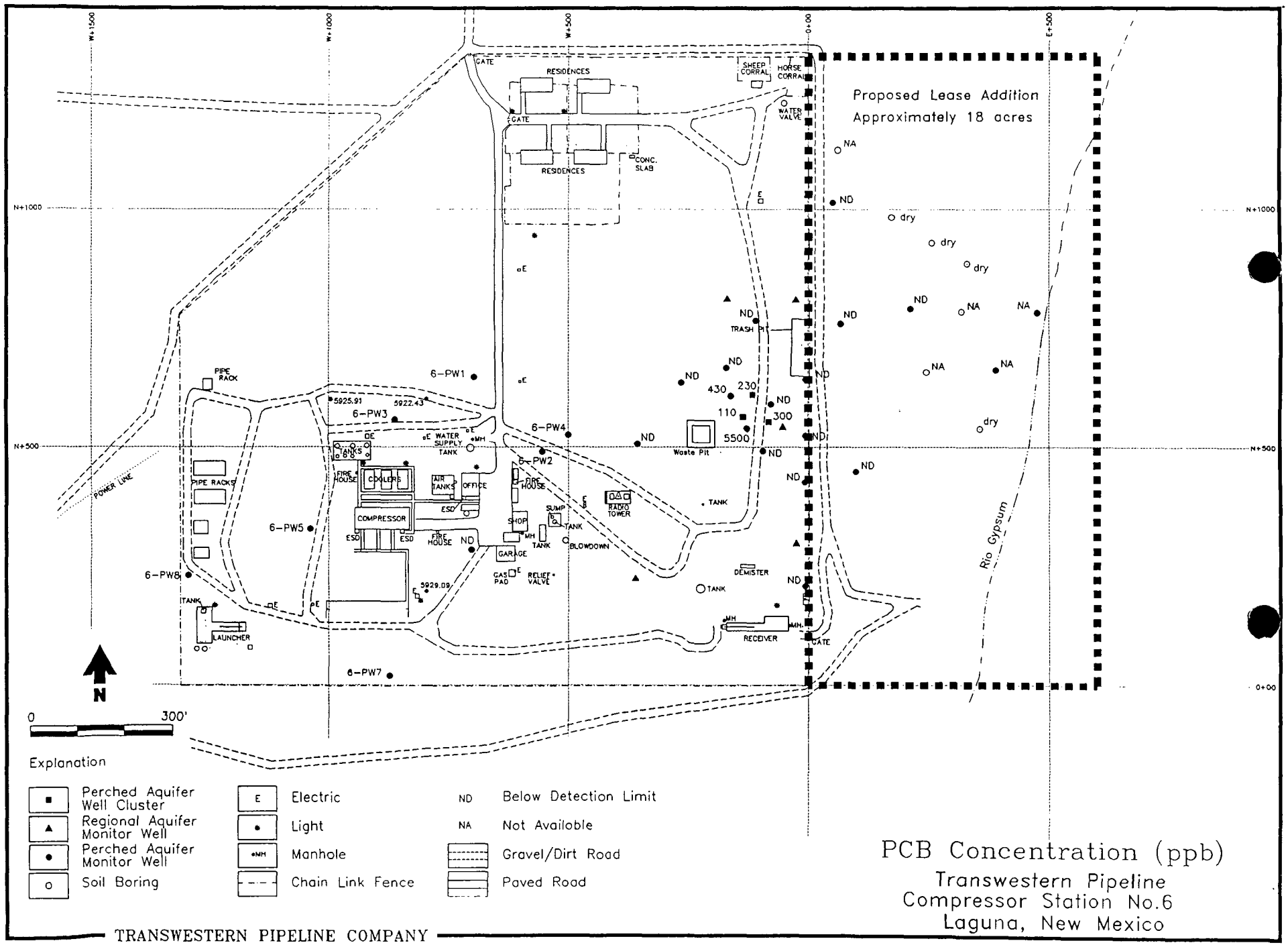
R6W R5W
T9N T9N

VALENCIA COUNTY, NEW MEXICO

TRANSWESTERN PIPELINE COMPANY

ACCESS ROAD FROM
COMP. STATION NO 6 TO AIR STRIP
VALENCIA CO., NEW MEXICO

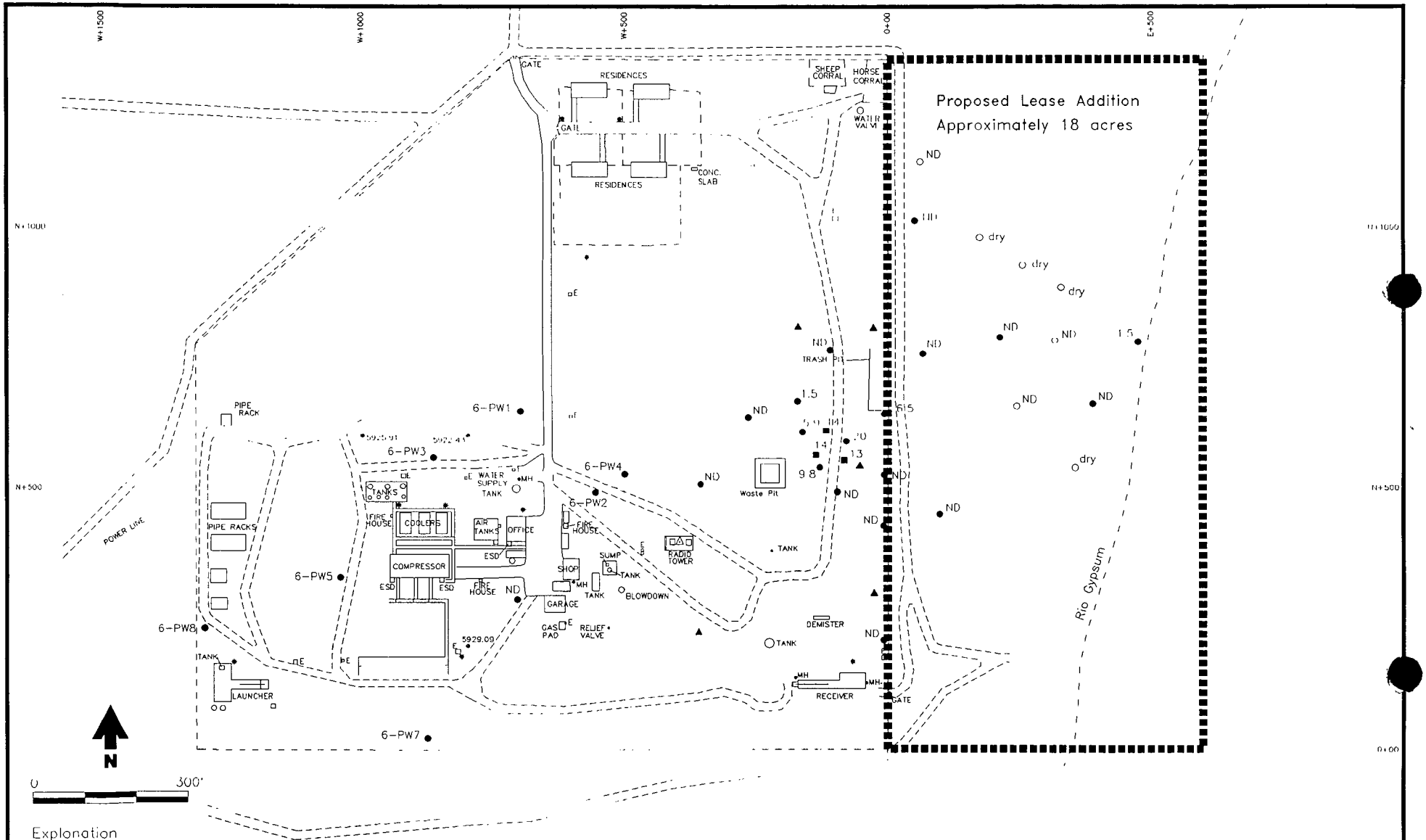
DATE: 7-23-80	SCALE: 1" = 500'
DRAWN BY H.T	APPROVED
CHECKED BY B.J.B.	BOOK NO. 00384
APPROVED	DRAWING NO. T-12409



PCB Concentration (ppb)

Transwestern Pipeline
Compressor Station No.6
Laguna, New Mexico

TRANSWESTERN PIPELINE COMPANY
8-93

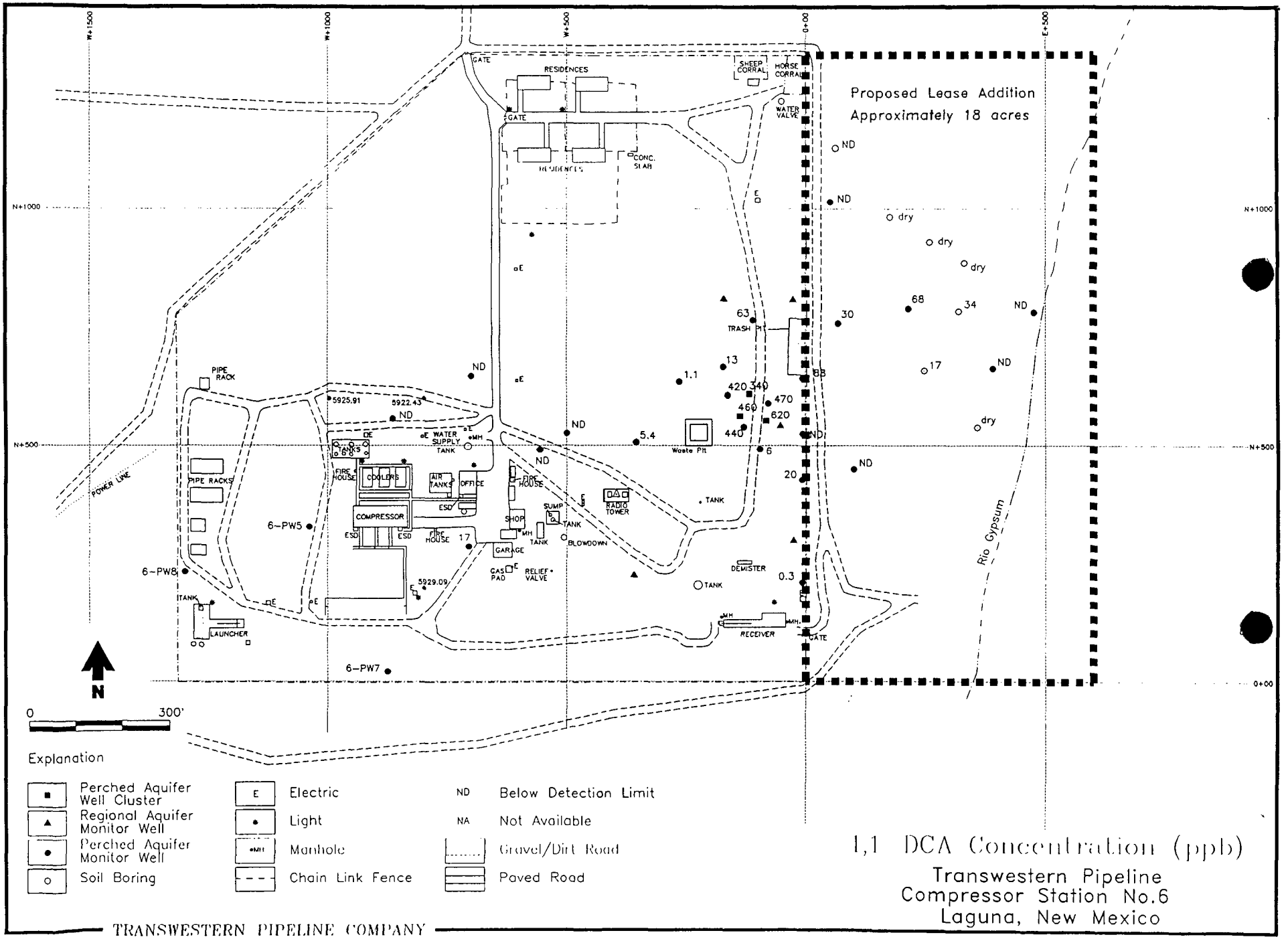


Benzene Concentration (ppb)

Transwestern Pipeline
Compressor Station No.6
Laguna, New Mexico

TRANSWESTERN PIPELINE COMPANY

8 93



1,1 DCA Concentration (ppb)

Transwestern Pipeline
Compressor Station No.6
Laguna, New Mexico

TRANSWESTERN PIPELINE COMPANY
8-93

SUMMARY OF 1992 AND 1993 ANALYTICAL RESULTS FOR VOLATILE ORGANIC COMPOUNDS (non-BTEX) LAGUNA MONITOR WELLS

Well No.	Date M/D/Y	Lab	Concentration (µg/l)											
			PCE	RL	1,1,1-TCA	RL	1,1-DCA	RL	1,2-DCA	RL	1,1-DCE	RL	1,2-DCE	RL
6-01S	02/25/92	ER	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0
6-02S	02/25/92	ER	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0
6-03S	02/26/92	ER	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0
6-04S	02/26/92	ER	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0
6-05S	02/27/92	ER	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0
6-06	02/27/92	ER	ND	5.0	47	5.0	9.6	5.0	ND	5.0	6.6	5.0	ND	5.0
	06/03/92	ATI-P	2	1	33	1	7	1	ND	1	5	1	3	1
	12/10/92	ATI-A	0.3	0.2	17	0.2	4.9	0.2	ND	0.2	1.3	0.2	1.3	0.2
	06/16/93	ATI-A	0.3	0.2	18	0.2	5.4	0.2	ND	0.2	1.7	0.2	1.7	0.2
6-07	01/15/92	ER	ND	5.0	54	5.0	20	5.0	ND	5.0	8.5	5.0	ND	5.0
	01/30/92	ER	ND	5.0	68	5.0	28	5.0	ND	5.0	13	5.0	ND	5.0
	02/27/92	ER	ND	5.0	68	5.0	28	5.0	ND	5.0	14	5.0	ND	5.0
	06/04/92	ATI-P	ND	1	60	1	24	1	4	1	11	1	ND	1
	12/11/92	ATI-A	ND	0.2	45	0.2	25	0.2	2.1	0.2	8.4	0.2	ND	0.2
	06/17/93	ATI-A	ND	0.2	31	0.2	20	0.2	4.1	0.2	5.0	0.2	ND	0.2
6-08	02/27/92	ER	ND	8.5	140	8.5	90	8.5	ND	8.5	42	8.5	ND	8.5
	06/05/92	ATI-P	ND	5	89	5	71	5	ND	5	25	5	5	5

ATI-A = Analytical Technologies, Inc. - Albuquerque
ATI-P = Analytical Technologies, Inc. - Phoenix
ER = Enseco's Rocky Mountain Analytical Laboratory

RL = Reporting limit
ND = Not detected

Note: All December 1992 samples analyzed by EPA method 8010/8020. All others analyzed by EPA method 8240.

CHEMTBLS-LAGUNA(2)\8240-RES\8240-RES.CMB

DANIEL B. STEPHENS & ASSOCIATES, INC.
ENVIRONMENTAL SCIENTISTS AND ENGINEERS

SUMMARY OF 1992 AND 1993 ANALYTICAL RESULTS FOR VOLATILE ORGANIC COMPOUNDS (non-BTEX) LAGUNA MONITOR WELLS

Well No.	Date M/D/Y	Lab	Concentration (µg/l)											
			PCE	RL	1,1,1-TCA	RL	1,1-DCA	RL	1,2-DCA	RL	1,1-DCE	RL	1,2-DCE	RL
6-08	12/14/92	ATI-A	0.9	0.2	81	1.0	79	1.0	2.5	1.0	22	0.2	4.4	0.2
	06/18/93	ATI-A	0.4	0.2	51	0.2	63	0.2	1.8	0.2	14	0.2	3.9	0.2
6-09	01/16/92	ER	ND	100	1300	100	370	100	ND	100	330	100	ND	100
	02/28/92	ER	ND	120	3000	120	640	120	ND	120	1100	120	ND	120
	06/09/92	ATI-P	ND	25	2000	25	370	25	ND	25	560	25	ND	25
	12/17/92	ATI-A	0.9	0.2	1400	20	500	4	33	0.2	560	4	16.8	0.2
	06/23/93	ATI-A	ND	1.0	1300	10.0	440	4.0	4.9	1.0	570	10.0	4.5	1.0
6-10	02/28/92	ER	ND	25	450	25	370	25	ND	25	140	25	ND	25
	06/09/92	ATI-P	ND	5	230	5	280	5	ND	5	83	5	11	5
	12/17/92	ATI-A	0.9	0.2	230	2	540	20	3.4	0.2	110	2	13	0.2
	06/23/93	ATI-A	ND	1.0	79	1.0	420	2.0	ND	1.0	61	1.0	3.6	1.0
6-11	01/30/92	ER	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0
	02/28/92	ER	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0
	06/04/92	ATI-P	ND	1	ND	1	ND	1	ND	1	ND	1	ND	1
	12/09/92	ATI-A	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2
	06/14/93	ATI-A	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2
6-12	01/31/92	ER	ND	10	110	10	210	10	ND	10	81	10	ND	10

ATI-A = Analytical Technologies, Inc. - Albuquerque
ATI-P = Analytical Technologies, Inc. - Phoenix
ER = Enseco's Rocky Mountain Analytical Laboratory

RL = Reporting limit
ND = Not detected

Note: All December 1992 samples analyzed by EPA method 8010/8020. All others analyzed by EPA method 8240.

CHEMTBLS-LAGUNA(2)\8240-RES\8240-RES.CMB

SUMMARY OF 1992 AND 1993 ANALYTICAL RESULTS FOR VOLATILE ORGANIC COMPOUNDS (non-BTEX) LAGUNA MONITOR WELLS

Well No.	Date M/D/Y	Lab	Concentration (µg/l)											
			PCE	RL	1,1,1-TCA	RL	1,1-DCA	RL	1,2-DCA	RL	1,1-DCE	RL	1,2-DCE	RL
6-12	02/28/92	ER	ND	12	90	12	220	12	ND	12	110	12	ND	12
	06/08/92	ATI-P	ND	5	74	5	130	5	ND	5	140	5	ND	5
	12/14/92	ATI-A	ND	0.2	130	1.0	91	1.0	2.7	1.0	230	1.0	1.3	0.2
	06/18/93	ATI-A	0.4	0.2	50	0.2	88	1.0	1.9	0.2	210	1.0	2.0	0.2
6-13	02/28/92	ER	ND	6.2	120	6.2	13	6.2	7.7	6.2	29	6.2	ND	6.2
	06/04/92	ATI-P	ND	10	220	10	20	10	10	10	50	10	ND	10
	12/16/92	ATI-A	ND	0.2	130	2	11	0.2	4.2	0.2	48	0.2	ND	0.2
	06/22/93	ATI-A	ND	1.0	95	1.0	6	1.0	3	1.0	23	1.0	ND	1.0
6-14	01/16/92	ER	ND	25	ND	25	390	25	ND	25	120	25	ND	25
	02/28/92	ER	ND	25	ND	25	400	25	ND	25	150	25	ND	25
	06/09/92	ATI-P	ND	5	ND	5	330	5	ND	5	100	5	14	5
	12/15/92	ATI-A	0.8	0.2	ND	0.2	340	2.0	9.1	0.2	98	2.0	12	0.2
	06/21/93	ATI-A	ND	1.0	2	1.0	470	2.0	8	1.0	96	1.0	10	0.2
6-15	02/28/92	ER	ND	5.0	6.0	5.0	43	5.0	ND	5.0	6.7	5.0	ND	5.0
	06/08/92	ATI-P	ND	5	ND	5	23	5	ND	5	ND	5	ND	5
	12/08/92	ATI-A	ND	0.2	ND	0.2	6.6	0.2	ND	0.2	0.4	0.2	ND	0.2
	06/16/93	ATI-A	ND	0.2	ND	0.2	13	0.2	ND	0.2	ND	0.2	0.5	0.2

ATI-A = Analytical Technologies, Inc. - Albuquerque
ATI-P = Analytical Technologies, Inc. - Phoenix
ER = Enseco's Rocky Mountain Analytical Laboratory

RL = Reporting limit
ND = Not detected

Note: All December 1992 samples analyzed by EPA method 8010/8020. All others analyzed by EPA method 8240.

CHEMTBLS-LAGUNA(2)\8240-RES\8240-RES.CMB

SUMMARY OF 1992 AND 1993 ANALYTICAL RESULTS FOR VOLATILE ORGANIC COMPOUNDS (non-BTEX) LAGUNA MONITOR WELLS

Well No.	Date M/D/Y	Lab	Concentration (µg/l)											
			PCE	RL	1,1,1-TCA	RL	1,1-DCA	RL	1,2-DCA	RL	1,1-DCE	RL	1,2-DCE	RL
6-16	06/09/92	ATI-P	ND	5	67	5	44	5	ND	5	9	5	ND	5
	12/11/92	ATI-A	ND	0.2	40	0.2	32	0.2	0.3	0.2	3.8	0.2	0.6	0.2
	06/17/93	ATI-A	0.3	0.2	26	0.2	30	0.2	1.6	0.2	3.4	0.2	1.4	0.2
6-17	06/09/92	ATI-P	ND	1	ND	1	ND	1	ND	1	ND	1	ND	1
	12/09/92	ATI-A	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2
	06/16/93	ATI-A	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2
6-18	06/08/92	ATI-P	3	1	4	1	2	1	ND	1	ND	1	ND	1
	12/08/92	ATI-A	1.5	0.2	6.5	0.2	1.6	0.2	ND	0.2	0.6	0.2	ND	0.2
	06/15/93	ATI-A	0.8	0.2	8.3	0.2	1.1	0.2	ND	0.2	0.9	0.2	0.3	0.2
6-19	06/09/92	ATI-P	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
	12/09/92	ATI-A	ND	0.2	ND	0.2	0.3	0.2	0.9	0.2	ND	0.2	ND	0.2
	06/15/93	ATI-A	ND	0.2	0.8	0.2	0.3	0.2	0.4	0.2	ND	0.2	ND	0.2
6-20B	07/28/92	ATI-P	ND	1	32	1	36	1	ND	1	54	1	1	1
	12/15/92	ATI-A	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2
	06/18/93	ATI-A	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2
6-20C	07/27/92	ATI-P	ND	5	9	5	250	5	ND	5	64	5	7	5
	12/16/92	ATI-A	0.8	0.2	1.7	2	420	20	4.9	0.2	180	2	13	0.2

ATI-A = Analytical Technologies, Inc. - Albuquerque
ATI-P = Analytical Technologies, Inc. - Phoenix
ER = Enseco's Rocky Mountain Analytical Laboratory

RL = Reporting limit
ND = Not detected

Note: All December 1992 samples analyzed by EPA method 8010/8020. All others analyzed by EPA method 8240.

CHEMTBLS-LAGUNA(2)\8240-RES\8240-RES.CMB

DANIEL B. STEPHENS & ASSOCIATES, INC.
ENVIRONMENTAL SCIENTISTS AND ENGINEERS

SUMMARY OF 1992 AND 1993 ANALYTICAL RESULTS FOR VOLATILE ORGANIC COMPOUNDS (non-BTEX) LAGUNA MONITOR WELLS

Well No.	Date M/D/Y	Lab	Concentration (µg/l)											
			PCE	RL	1,1,1-TCA	RL	1,1-DCA	RL	1,2-DCA	RL	1,1-DCE	RL	1,2-DCE	RL
6-20C	06/22/93	ATI-A	ND	1.0	4	1.0	340	2.0	2	1.0	100	1.0	7	1.0
6-21A	07/28/92	ATI-P	ND	1	ND	1	ND	1	ND	1	ND	1	ND	1
	12/09/92	ATI-A	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2
6-21B	07/28/92	ATI-P	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
	12/11/92	ATI-A	ND	0.2	ND	0.2	1.1	0.2	ND	0.2	ND	0.2	ND	0.2
	06/16/93	ATI-A	ND	0.2	ND	0.2	1.4	0.2	ND	0.2	ND	0.2	ND	0.2
6-21C	07/28/92	ATI-P	ND	5	420	5	550	5	30	5	550	5	20	5
	12/16/92	ATI-A	0.8	0.2	410	2	510	20	29	0.2	460	2	17	0.2
	06/22/93	ATI-A	ND	2.0	710	4.0	620	2.0	16	2.0	560	2.0	13	2.0
6-22B	07/28/92	ATI-P	ND	1	1	1	ND	1	ND	1	ND	1	ND	1
	12/11/92	ATI-A	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2
	06/17/93	ATI-A	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2
6-22C	07/28/92	ATI-P	ND	5	380	5	360	5	17	5	220	5	20	5
	12/17/92	ATI-A	ND	0.2	32	0.2	39	0.2	ND	0.2	33	0.2	1.3	0.2
	06/22/93	ATI-A	ND	2.0	490	2.0	460	2.0	9	2.0	270	2.0	10	2.0
6-23	07/28/92	ATI-P	4	1	61	1	79	1	ND	1	16	1	2	1
	12/10/92	ATI-A	1.8	0.2	60	2.0	88	2.0	0.4	0.2	10	0.2	0.7	0.2

ATI-A = Analytical Technologies, Inc. - Albuquerque
ATI-P = Analytical Technologies, Inc. - Phoenix
ER = Enseco's Rocky Mountain Analytical Laboratory

RL = Reporting limit
ND = Not detected

Note: All December 1992 samples analyzed by EPA method 8010/8020. All others analyzed by EPA method 8240.

CHEMTBLS-LAGUNA(2)\8240-RES\8240-RES.CMB

DANIEL B. STEPHENS & ASSOCIATES, INC.
ENVIRONMENTAL SCIENTISTS AND ENGINEERS

SUMMARY OF 1992 AND 1993 ANALYTICAL RESULTS FOR VOLATILE ORGANIC COMPOUNDS (non-BTEX) LAGUNA MONITOR WELLS

Well No.	Date M/D/Y	Lab	Concentration (µg/l)											
			PCE	RL	1,1,1-TCA	RL	1,1-DCA	RL	1,2-DCA	RL	1,1-DCE	RL	1,2-DCE	RL
6-23	06/17/93	ATI-A	2.1	0.2	46	0.2	68	0.2	1.4	0.2	8.1	0.2	1.4	0.2
6-28	06/18/93	ATI-A	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2
6-30	06/23/93	ATI-A	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2
6-33	06/18/93	ATI-A	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2
6-PW1	03/20/92	ATI-P	ND	1	ND	1	ND	1	ND	1	ND	1	ND	1
6-PW2	03/20/92	ATI-P	ND	1	ND	1	ND	1	ND	1	ND	1	ND	1
6-PW3	04/27/92	ATI-P	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
6-PW4	03/20/92	ATI-P	ND	1	ND	1	ND	1	ND	1	ND	1	ND	1
6-PW6	04/27/92	ATI-P	ND	5	ND	5	ND	5	ND	5	15	5	8	5
	06/05/92	ATI-P	ND	10	ND	10	20	10	ND	10	ND	10	ND	10
	12/09/92	ATI-A	ND	0.2	ND	0.2	19	0.2	ND	0.2	ND	0.2	14	0.2
	06/15/93	ATI-A	ND	0.2	ND	0.2	17	0.2	ND	0.2	ND	0.2	12	0.2
6-CH3	06/05/92	ATI-P	2	1	ND	1	ND	1	ND	1	ND	1	ND	1
6-CH4	06/05/92	ATI-P	ND	1	ND	1	ND	1	ND	1	ND	1	ND	1

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ND = Not detected

Note: All December 1992 samples analyzed by EPA method 8010/8020. All others analyzed by EPA method 8240.

CHEMTBLS-LAGUNA(2)\8240-RES\8240-RES.CMB

DANIEL B. STEPHENS & ASSOCIATES, INC.
ENVIRONMENTAL SCIENTISTS AND ENGINEERS

SUMMARY OF 1992 AND 1993 ANALYTICAL RESULTS FOR VOLATILE ORGANIC COMPOUNDS (non-BTEX) LAGUNA MONITOR WELLS

Well	Date	Compound	Concentration (µg/l)	Reporting Limit (µg/l)
6-08	12/14/92	Trichloroethene	0.9	0.2
	06/18/93	Trichloroethene	0.4	0.2
6-09	02/28/92	Acetone	330	250
	12/17/92	Carbon tetrachloride	3.1	0.2
	12/17/92	Chloroethane	3.8	0.2
	12/17/92	Methylene chloride	14	2.0
	12/17/92	1,1,2,2 - PCA	1.0	0.2
	12/17/92	Trichloroethene	5.7	0.2
	12/17/92	Vinyl chloride	0.9	0.2
6-10	12/17/92	Chloroethane	1.9	0.2
	12/17/92	Methylene chloride	9.1	2.0
	12/17/92	Trichloroethene	2.0	0.2
	12/17/92	Vinyl chloride	0.8	0.2
6-12	02/28/92	Acetone	30	25
	06/18/93	Trichloroethene	0.6	0.2
6-13	12/16/92	Trichloroethene	0.7	0.2
	06/22/93	Trichloroethene	2	1.0
6-14	12/15/92	Chloroethane	1.5	0.2
	12/15/92	Trichloroethene	0.9	0.2
	12/15/92	Vinyl chloride	0.9	0.2

SUMMARY OF 1992 AND 1993 ANALYTICAL RESULTS FOR VOLATILE ORGANIC COMPOUNDS (non-BTEX) LAGUNA MONITOR WELLS

Well	Date	Compound	Concentration (µg/l)	Reporting Limit (µg/l)
6-19	06/09/92	Chloroform	23	1
	12/09/92	Bromodichloromethane	6.8	0.2
	12/09/92	Bromoform	2.9	0.5
	12/09/92	Carbon tetrachloride	1.1	0.2
	12/09/92	Chloroethane	1.4	0.2
	12/09/92	Chloroform	91	1.0
	12/09/92	Dibromochloromethane	2.3	0.2
	12/09/92	1,1,2 - TCA	0.4	0.2
	06/15/93	Bromodichloromethane	3.1	0.2
	06/15/93	Carbon tetrachloride	0.7	0.2
	06/15/93	Chloroethane	1.2	0.2
	06/15/93	Chloroform	43	0.2
6-20C	07/27/92	Acetone	200	50
	12/16/92	Chloroethane	5.0	0.2
	12/16/92	Trichloroethene	1.7	0.2
	12/16/92	Vinyl chloride	1.0	0.2
	06/22/93	Chloroethane	2	1.0
6-21C	07/28/92	Chloroethane	10	5
	07/28/92	Methyl ethyl disulfide	30	25
	07/28/92	Diethyl disulfide	40	25
	12/16/92	Chloroethane	6.4	0.2
	12/16/92	Trichloroethene	3.5	0.2
	12/16/92	Vinyl chloride	1.0	0.2
(6-99)	12/16/92	Chloroethane	7.1	0.2
	12/16/92	Trichloroethene	5.0	0.2
	12/16/92	Vinyl chloride	1.1	0.2
	06/22/93	Trichloroethene	2	2.0

DANIEL B. STEPHENS & ASSOCIATES, INC.
ENVIRONMENTAL SCIENTISTS AND ENGINEERS

SUMMARY OF 1992 AND 1993 ANALYTICAL RESULTS FOR VOLATILE ORGANIC COMPOUNDS (non-BTEX) LAGUNA MONITOR WELLS

Well	Date	Compound	Concentration (µg/l)	Reporting Limit (µg/l)
6-22B	07/28/92	Acetone	1800	100
	07/28/92	MEK	400	100
	07/28/92	MIBK	46	10
6-22C	12/17/92	Methylene chloride	10	2.0
	06/22/93	Chloroethane	3	2.0
6-23	07/28/92	Trichloroethene	2	1
	06/17/93	Trichloroethene	1.0	0.2
6-CH4	06/05/92	Acetone	21	10

		NMWQCC Ground-Water Standard (µg/l)	U.S. EPA MCL (µg/l)	
PCE	- Tetrachloroethene	20	5	
1,1,1 TCA	- 1,1,1 Trichloroethane	60	200	
1,1 DCA	- 1,1 Dichloroethane	--	--	
1,2 DCA	- 1,2 Dichloroethane	--	5	
1,1 DCE	- 1,1 Dichloroethene	5	7	
1,2 DCE	- 1,2 Dichloroethene	--	70	(cis-1,2 Dichloroethene)
			100	(trans-1,2 Dichloroethene)

DANIEL B. STEPHENS & ASSOCIATES, INC.
ENVIRONMENTAL SCIENTISTS AND ENGINEERS

SUMMARY OF 1992 AND 1993 BTEX ANALYTICAL RESULTS
LAGUNA MONITOR WELLS

Well No.	Date M/D/Y	Lab	Concentration (µg/l)							
			Benzene	Reporting Limit	Toluene	Reporting Limit	Ethyl-benzene	Reporting Limit	Total Xylene	Reporting Limit
6-06	01/14/92	ER	ND	0.50	ND	0.50	ND	0.50	ND	0.50
	01/29/92	ER	ND	0.50	ND	0.50	ND	0.50	ND	0.50
	02/27/92	ER	ND	0.50	ND	0.50	ND	0.50	ND	0.50
	03/23/92	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5
	04/22/92	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5
	06/03/92	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5
	12/10/92	ATI-A	ND	0.5	ND	0.5	ND	0.5	ND	0.5
	06/16/93	ATI-A	ND	0.5	ND	0.5	ND	0.5	ND	0.5
6-07	01/15/92	ER	ND	0.50	ND	0.50	ND	0.50	ND	0.50
	01/30/92	ER	ND	0.50	ND	0.50	ND	0.50	ND	0.50
	02/27/92	ER	ND	0.50	ND	0.50	ND	0.50	ND	0.50
	03/24/92	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5
	04/23/92	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5
	06/04/92	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5
	12/11/92	ATI-A	ND	0.5	ND	0.5	ND	0.5	ND	0.5
	06/17/93	ATI-A	ND	0.5	ND	0.5	ND	0.5	ND	0.5
6-08	01/14/92	ER	ND	0.50	ND	0.50	ND	0.50	ND	0.50
	01/29/92	ER	ND	0.50	ND	0.50	ND	0.50	ND	0.50

ATI-A = Analytical Technologies, Inc. - Albuquerque
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SUMMARY OF 1992 AND 1993 BTEX ANALYTICAL RESULTS
LAGUNA MONITOR WELLS

Well No.	Date M/D/Y	Lab	Concentration (µg/l)							
			Benzene	Reporting Limit	Toluene	Reporting Limit	Ethyl-benzene	Reporting Limit	Total Xylene	Reporting Limit
6-08	02/27/92	ER	ND	0.50	ND	0.50	ND	0.50	ND	0.50
	03/23/92	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5
	04/22/92	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5
	06/05/92	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5
	12/14/92	ATI-A	ND	0.5	ND	0.5	ND	0.5	ND	0.5
	06/18/93	ATI-A	ND	0.5	ND	0.5	ND	0.5	ND	0.5
6-09	01/16/92	ER	7.7	0.50	13	0.50	3.6	0.50	31	0.50
	01/31/92	ER	5.9	0.50	13	0.50	3.6	0.50	32	0.50
	02/28/92	ER	12	1.2	34	1.2	7.8	1.2	72	1.2
	03/25/92	ATI-P	12	0.5	29	0.5	6.2	0.5	52	0.5
	04/24/92	ATI-P	10	0.5	34	0.5	5.5	0.5	54	0.5
	06/09/92	ATI-P	10	0.5	31	0.5	7.4	0.5	65	0.5
	12/17/92	ATI-A	12	0.5	27	0.5	7.9	0.5	65	0.5
	06/23/93	ATI-A	9.8	2.5	33	2.5	9.8	2.5	68	2.5
6-10	01/16/92	ER	5.7	0.50	6.0	0.50	4.3	0.50	31	0.50
	01/31/92	ER	4.0	0.50	4.4	0.50	3.9	0.50	32	0.50
	02/28/92	ER	4.1	0.50	3.0	0.50	1.7	0.50	13	0.50
	03/25/92	ATI-P	5.8	0.5	5.5	0.5	4.7	0.5	38	0.5

ATI-A = Analytical Technologies, Inc. - Albuquerque
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SUMMARY OF 1992 AND 1993 BTEX ANALYTICAL RESULTS
LAGUNA MONITOR WELLS

Well No.	Date M/D/Y	Lab	Concentration (µg/l)							
			Benzene	Reporting Limit	Toluene	Reporting Limit	Ethyl-benzene	Reporting Limit	Total Xylene	Reporting Limit
6-10	04/24/92	ATI-P	4.3	0.5	4.5	0.5	3.6	0.5	34	0.5
	06/09/92	ATI-P	7.2	0.5	7.1	0.5	5.0	0.5	42	0.5
	12/17/92	ATI-A	7.3	0.5	7.8	0.5	7.8	0.5	66	0.5
	06/23/93	ATI-A	5.9	2.5	8.1	2.5	7.5	2.5	44	2.5
6-11	01/15/92	ER	ND	0.50	ND	0.50	ND	0.50	ND	0.50
	01/30/92	ER	ND	0.50	ND	0.50	ND	0.50	ND	0.50
	02/28/92	ER	ND	0.50	ND	0.50	ND	0.50	ND	0.50
	03/24/92	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5
	04/23/92	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5
	06/04/92	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5
	12/09/92	ATI-A	ND	0.5	ND	0.5	ND	0.5	ND	0.5
	06/14/93	ATI-A	ND	0.5	ND	0.5	ND	0.5	ND	0.5
6-12	01/15/92	ER	4.8	0.50	ND	0.50	ND	0.50	ND	0.50
	01/31/92	ER	3.7	0.50	ND	0.50	ND	0.50	ND	0.50
	02/28/92	ER	4.2	0.50	ND	0.50	ND	0.50	0.62	0.50
	03/24/92	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5
	04/23/92	ATI-P	4.6	0.5	ND	0.5	ND	0.5	ND	0.5
	06/08/92	ATI-P	6.8	0.5	1.1	0.5	0.7	0.5	3.4	0.5

ATI-A = Analytical Technologies, Inc. - Albuquerque
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ER = Enseco's Rocky Mountain Analytical Laboratory

ND = Not detected

SUMMARY OF 1992 AND 1993 BTEX ANALYTICAL RESULTS
LAGUNA MONITOR WELLS

Well No.	Date M/D/Y	Lab	Concentration (µg/l)							
			Benzene	Reporting Limit	Toluene	Reporting Limit	Ethyl-benzene	Reporting Limit	Total Xylene	Reporting Limit
6-12	12/14/92	ATI-A	7.4	0.5	ND	0.5	ND	0.5	ND	0.5
	06/18/93	ATI-A	6.5	0.5	0.8	0.5	ND	0.5	2.6	0.5
6-13	01/15/92	ER	1.8	0.50	ND	0.50	ND	0.50	ND	0.50
	01/30/92	ER	1.4	0.50	ND	0.50	ND	0.50	ND	0.50
	02/28/92	ER	1.5	0.50	ND	0.50	ND	0.50	ND	0.50
	03/24/92	ATI-P	0.8	0.5	ND	0.5	ND	0.5	ND	0.5
	04/23/92	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5
	06/04/92	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5
	12/16/92	ATI-A	0.7	0.5	ND	0.5	ND	0.5	ND	0.5
	06/22/93	ATI-A	ND	2.5	ND	2.5	ND	2.5	ND	2.5
6-14	01/16/92	ER	38	1.0	ND	1.0	7.4	1.0	21	1.0
	01/31/92	ER	27	0.50	3.8	0.50	5.2	0.50	12	0.50
	02/28/92	ER	35	1.2	3.8	1.2	4.9	1.2	13	1.2
	03/25/92	ATI-P	23	0.5	1.8	0.5	ND	0.5	1.4	0.5
	04/23/92	ATI-P	45	0.5	4.5	0.5	15	0.5	38	0.5
	06/09/92	ATI-P	32	0.5	5.8	0.5	15	0.5	43	0.5
	12/15/92	ATI-A	26	0.5	2.5	0.5	3.9	0.5	11	0.5
	06/21/93	ATI-A	20	2.5	8	2.5	ND	2.5	20	2.5

ATI-A = Analytical Technologies, Inc. - Albuquerque
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ND = Not detected

CHEMTBLS-LAGUNA(2)\BTEX-RES\BTEX-RES.CMB

SUMMARY OF 1992 AND 1993 BTEX ANALYTICAL RESULTS
LAGUNA MONITOR WELLS

5 of 8

Well No.	Date M/D/Y	Lab	Concentration (µg/l)							
			Benzene	Reporting Limit	Toluene	Reporting Limit	Ethyl-benzene	Reporting Limit	Total Xylene	Reporting Limit
6-15	01/15/92	ER	1.4	0.50	ND	0.50	ND	0.50	ND	0.50
	01/31/92	ER	1.0	0.50	ND	0.50	ND	0.50	ND	0.50
	02/28/92	ER	ND	0.50	ND	0.50	ND	0.50	ND	0.50
	03/24/92	ATI-P	1.0	0.5	ND	0.5	ND	0.5	ND	0.5
	04/23/92	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5
	06/08/92	ATI-P	2.5	0.5	ND	0.5	ND	0.5	ND	0.5
	12/08/92	ATI-A	ND	0.5	ND	0.5	ND	0.5	ND	0.5
	06/16/93	ATI-A	1.5	0.5	ND	0.5	ND	0.5	ND	0.5
6-16	06/09/92	ATI-P	0.5	0.5	ND	0.5	ND	0.5	ND	0.5
	12/11/92	ATI-A	0.6	0.5	ND	0.5	ND	0.5	ND	0.5
	06/17/93	ATI-A	ND	0.5	ND	0.5	ND	0.5	ND	0.5
6-17	06/09/92	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5
	12/09/92	ATI-A	ND	0.5	ND	0.5	ND	0.5	ND	0.5
	06/16/93	ATI-A	ND	0.5	ND	0.5	ND	0.5	ND	0.5
6-18	06/08/92	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5
	12/08/92	ATI-A	ND	0.5	ND	0.5	ND	0.5	ND	0.5
	06/15/93	ATI-A	ND	0.5	ND	0.5	ND	0.5	0.5	0.5

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CHEMTBLS-LAGUNA(2)\BTEX-RES\BTEX-RES.CMB

DANIEL B. STEPHENS & ASSOCIATES, INC.
ENVIRONMENTAL SCIENTISTS AND ENGINEERS

SUMMARY OF 1992 AND 1993 BTEX ANALYTICAL RESULTS
LAGUNA MONITOR WELLS

Well No.	Date M/D/Y	Lab	Concentration (µg/l)							
			Benzene	Reporting Limit	Toluene	Reporting Limit	Ethyl-benzene	Reporting Limit	Total Xylene	Reporting Limit
6-19	06/09/92	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5
	12/09/92	ATI-A	ND	0.5	ND	0.5	ND	0.5	ND	0.5
	06/15/93	ATI-A	ND	0.5	ND	0.5	ND	0.5	ND	0.5
6-20B	07/28/92	ATI-P	ND	1	2	1	ND	1	8	1
	12/15/92	ATI-A	ND	0.5	ND	0.5	ND	0.5	ND	0.5
	06/18/93	ATI-A	ND	0.5	ND	0.5	ND	0.5	ND	0.5
6-20C	07/27/92	ATI-P	50	5	ND	5	ND	5	30	5
	12/16/92	ATI-A	18	0.5	3.2	0.5	15	0.5	42	0.5
	06/22/93	ATI-A	14	2.5	5	2.5	15	2.5	30	2.5
6-21A	07/28/92	ATI-P	ND	1	ND	1	ND	1	ND	1
	12/09/92	ATI-A	ND	0.5	ND	0.5	ND	0.5	ND	0.5
6-21B	07/28/92	ATI-P	ND	5	ND	5	ND	5	ND	5
	12/11/92	ATI-A	2.5	0.5	ND	0.5	ND	0.5	ND	0.5
	06/16/93	ATI-A	2.9	0.5	ND	0.5	ND	0.5	ND	0.5
6-21C	07/28/92	ATI-P	22	5	30	5	10	5	120	5
	12/16/92	ATI-A	21	0.5	31	0.5	13	0.5	100	0.5
	06/22/93	ATI-A	13	5.0	35	5.0	15	5.0	79	5.0

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SUMMARY OF 1992 AND 1993 BTEX ANALYTICAL RESULTS
LAGUNA MONITOR WELLS

Well No.	Date M/D/Y	Lab	Concentration (µg/l)							
			Benzene	Reporting Limit	Toluene	Reporting Limit	Ethyl-benzene	Reporting Limit	Total Xylene	Reporting Limit
6-22B	07/28/92	ATI-P	27	1	ND	1	ND	1	ND	1
	12/11/92	ATI-A	7.0	0.5	0.7	0.5	ND	0.5	0.6	0.5
	06/17/93	ATI-A	2.4	0.5	ND	0.5	ND	0.5	0.9	0.5
6-22C	07/28/92	ATI-P	17	5	18	5	14	5	170	5
	12/17/92	ATI-A	6.9	0.5	12	0.5	4.7	0.5	32	0.5
	06/22/93	ATI-A	14	5.0	25	5.0	16	5.0	150	5.0
6-23	07/28/92	ATI-P	ND	1	ND	1	ND	1	ND	1
	12/10/92	ATI-A	ND	0.5	ND	0.5	ND	0.5	ND	0.5
6-28	06/18/93	ATI-A	3.5	0.5	ND	0.5	ND	0.5	ND	0.5
6-30	06/23/93	ATI-A	ND	0.5	ND	0.5	ND	0.5	ND	0.5
6-33	06/18/93	ATI-A	ND	0.5	ND	0.5	ND	0.5	ND	0.5
6-PW6	06/05/92	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5
	12/09/92	ATI-A	ND	0.5	ND	0.5	ND	0.5	ND	0.5
	06/15/93	ATI-A	ND	0.5	ND	0.5	ND	0.5	ND	0.5
6-CH3	06/05/92	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5
6-CH4	06/05/92	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5

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SUMMARY OF 1992 AND 1993 BTEX ANALYTICAL RESULTS
LAGUNA MONITOR WELLS

	NMWQCC Ground-Water Standard (µg/l)	U.S. EPA MCL (µg/l)	
Benzene	10	5	
Toluene	750	2000[g]	
Ethylbenzene	750	680[g]	(g = goal)
Xylene	620	440[g]	

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CHEMTBLS-LAGUNA(2)\BTEX-RES\BTEX-RES.CMB

DANIEL B. STEPHENS & ASSOCIATES, INC.
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SUMMARY OF 1992 AND 1993 PCB ANALYTICAL RESULTS
LAGUNA MONITOR WELLS

Well No.	Date M/D/Y	Lab	Concentration (µg/l)													
			Aroclor 1016	RL	Aroclor 1221	RL	Aroclor 1232	RL	Aroclor 1242	RL	Aroclor 1248	RL	Aroclor 1254	RL	Aroclor 1260	RL
6-06	01/14/92	ER	ND	0.50	ND	0.50	ND	0.50	1.5	1.0	ND	0.50	ND	1.0	ND	1.0
	01/29/92	ER	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	1.0	ND	1.0
	02/27/92	ER	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	1.0	ND	1.0
	03/23/92	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5
	04/22/92	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5
	06/03/92	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5
6-07	01/15/92	ER	ND	1.5	ND	1.5	ND	1.5	ND	1.5	ND	1.5	ND	1.5	ND	1.5
	01/30/92	ER	ND	1.6	ND	1.6	ND	1.6	ND	1.6	ND	1.6	ND	3.3	ND	3.3
	02/27/92	ER	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	1.0	ND	1.0
	03/24/92	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5
	04/23/92	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5
	06/05/92	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5
6-08	01/14/92	ER	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0
	01/29/92	ER	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	1.0	ND	1.0
	02/27/92	ER	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	1.0	ND	1.0
	03/23/92	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5
	04/22/92	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5
	06/05/92	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5

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CHEMTBLS-LAGUNA(2)\PCB-RES\PCB-RES.CMB

SUMMARY OF 1992 AND 1993 PCB ANALYTICAL RESULTS
LAGUNA MONITOR WELLS

Well No.	Date M/D/Y	Lab	Concentration (µg/l)													
			Aroclor 1016	RL	Aroclor 1221	RL	Aroclor 1232	RL	Aroclor 1242	RL	Aroclor 1248	RL	Aroclor 1254	RL	Aroclor 1260	RL
6-09	01/16/92	ER	ND	0.50	ND	0.50	ND	0.50	23000	10000	ND	0.50	ND	1.0	ND	1.0
	01/31/92	ER	ND	0.50	ND	0.50	ND	0.50	31000	5000	ND	0.50	ND	1.0	ND	1.0
	02/28/92	ER	ND	0.50	ND	0.50	ND	0.50	1700	500	ND	0.50	ND	1.0	ND	1.0
	03/25/92	ATI-P	ND	50	ND	50	ND	50	930	50	ND	50	ND	50	ND	50
	04/24/92	ATI-P	ND	25.0	510	25.0	ND	25.0	1100	50	ND	25.0	ND	25.0	ND	25.0
	06/09/92	ATI-P	ND	2500	ND	2500	ND	2500	23000	2500	ND	2500	ND	2500	ND	2500
	12/17/92	ATI-P	ND	50	ND	50	ND	50	530	50	ND	50	ND	50	ND	50
	06/23/93	ATI-P	ND	25.0	ND	250	ND	250	5500	250	ND	250	ND	250	ND	250
6-10	01/16/92	ER	ND	0.50	ND	0.50	ND	0.50	94	20	ND	0.50	ND	1.0	ND	1.0
	01/31/92	ER	ND	0.50	ND	0.50	ND	0.50	140	50	ND	0.50	ND	1.0	ND	1.0
	02/28/92	ER	ND	0.50	ND	0.50	ND	0.50	170	50	ND	0.50	ND	1.0	ND	1.0
	03/25/92	ATI-P	ND	2.5	150	2.5	ND	2.5	180	2.5	ND	2.5	ND	2.5	ND	2.5
	04/24/92	ATI-P	ND	5.0	190	5.0	ND	5.0	45	5.0	ND	5.0	ND	5.0	ND	5.0
	06/09/92	ATI-P	ND	10.0	410	10.0	ND	10.0	ND	10.0	ND	10.0	ND	10.0	ND	10.0
	12/17/92	ATI-P	ND	50	ND	50	ND	50	400	50	ND	50	ND	50	ND	50
	06/23/93	ATI-P	ND	25.0	ND	25.0	ND	25.0	430	25.0	ND	25.0	ND	25.0	ND	25.0
6-11	01/15/92	ER	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0
	01/30/92	ER	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	1.0	ND	1.0

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SUMMARY OF 1992 AND 1993 PCB ANALYTICAL RESULTS
LAGUNA MONITOR WELLS

Well No.	Date M/D/Y	Lab	Concentration (µg/l)													
			Aroclor 1016	RL	Aroclor 1221	RL	Aroclor 1232	RL	Aroclor 1242	RL	Aroclor 1248	RL	Aroclor 1254	RL	Aroclor 1260	RL
6-11	02/28/92	ER	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	1.0	ND	1.0
	03/24/92	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5
	04/23/92	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5
	06/04/92	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5
6-12	01/15/92	ER	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0
	01/31/92	ER	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	1.0	ND	1.0
	02/28/92	ER	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	1.0	ND	1.0
	03/24/92	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5
	04/23/92	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5
	06/08/92	ATI-P	ND	10.0	ND	10.0	ND	10.0	ND	10.0	ND	10.0	ND	10.0	ND	10.0
6-13	01/15/92	ER	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0
	01/30/92	ER	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	1.0	ND	1.0
	02/28/92	ER	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	1.0	ND	1.0
	03/24/92	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5
	04/23/92	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5
	06/04/92	ATI-P	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5
	12/16/92	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5
	06/22/93	ATI-P	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0

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SUMMARY OF 1992 AND 1993 PCB ANALYTICAL RESULTS
LAGUNA MONITOR WELLS

4 of 6

Well No.	Date M/D/Y	Lab	Concentration (µg/l)													
			Aroclor 1016	RL	Aroclor 1221	RL	Aroclor 1232	RL	Aroclor 1242	RL	Aroclor 1248	RL	Aroclor 1254	RL	Aroclor 1260	RL
6-14	01/16/92	ER	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0
	01/31/92	ER	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	2.0	ND	2.0
	02/28/92	ER	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	1.0	ND	1.0
	03/25/92	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5
	04/23/92	ATI-P	ND	10.0	ND	10.0	ND	10.0	ND	10.0	ND	10.0	ND	10.0	ND	10.0
	06/09/92	ATI-P	ND	10.0	ND	10.0	ND	10.0	ND	10.0	ND	10.0	ND	10.0	ND	10.0
	12/15/92	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5
	06/21/93	ATI-P	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0
6-15	01/15/92	ER	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0
	01/31/92	ER	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	1.0	ND	1.0
	02/28/92	ER	ND	0.50	9.0	0.50	ND	0.50	ND	0.50	ND	0.50	ND	1.0	ND	1.0
	03/24/92	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5
	04/23/92	ATI-P	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0
	06/08/92	ATI-P	ND	10.0	ND	10.0	ND	10.0	ND	10.0	ND	10.0	ND	10.0	ND	10.0
	12/08/92	ATI-P	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5
	06/16/93	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5
6-16	06/09/92	ATI-P	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0
6-17	06/16/93	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5

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SUMMARY OF 1992 AND 1993 PCB ANALYTICAL RESULTS
LAGUNA MONITOR WELLS

Well No.	Date M/D/Y	Lab	Concentration (µg/l)													
			Aroclor 1016	RL	Aroclor 1221	RL	Aroclor 1232	RL	Aroclor 1242	RL	Aroclor 1248	RL	Aroclor 1254	RL	Aroclor 1260	RL
6-18	06/08/92	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5
	12/08/92	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5
6-19	06/09/92	ATI-P	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0
6-20B	07/28/92	ATI-P	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5
	12/15/92	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5
	06/18/93	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5
6-20C	07/27/92	ATI-P	ND	10.0	ND	10.0	170	10.0	ND	10.0	ND	10.0	ND	10.0	ND	10.0
	12/16/92	ATI-P	ND	2.5	ND	2.5	35	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5
	06/22/93	ATI-P	ND	5.0	230	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0
6-21A	12/09/92	ATI-P	ND	2.0	ND	2.0	ND	2.0	ND	2.0	ND	2.0	ND	2.0	ND	2.0
6-21B	07/28/92	ATI-P	ND	10.0	ND	10.0	ND	10.0	ND	10.0	ND	10.0	ND	10.0	ND	10.0
	12/11/92	ATI-P	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5
6-21C	07/28/92	ATI-P	ND	10.0	ND	10.0	ND	10.0	ND	10.0	ND	10.0	ND	10.0	ND	10.0
	12/16/92	ATI-P	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0
	06/22/93	ATI-P	ND	10.0	300	10.0	ND	10.0	ND	10.0	ND	10.0	ND	10.0	ND	10.0
6-22B	07/28/92	ATI-P	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0
	12/11/92	ATI-P	ND	10.0	ND	10.0	ND	10.0	ND	10.0	ND	10.0	ND	10.0	ND	10.0

ATI-A = Analytical Technologies, Inc. - Albuquerque
ATI-P = Analytical Technologies, Inc. - Phoenix
ER = Enseco's Rocky Mountain Analytical Laboratory

RL = Reporting limit
ND = Not detected

SUMMARY OF 1992 AND 1993 PCB ANALYTICAL RESULTS
LAGUNA MONITOR WELLS

6 of 6

Well No.	Date M/D/Y	Lab	Concentration (µg/l)													
			Aroclor 1016	RL	Aroclor 1221	RL	Aroclor 1232	RL	Aroclor 1242	RL	Aroclor 1248	RL	Aroclor 1254	RL	Aroclor 1260	RL
6-22B	06/17/93	ATI-P	ND	10.0	ND	10.0	ND	10.0	ND	10.0	ND	10.0	ND	10.0	ND	10.0
6-22C	07/28/92	ATI-P	ND	25.0	ND	25.0	310	25.0	ND	25.0	ND	25.0	ND	25.0	ND	25.0
	12/17/92	ATI-P	ND	10.0	ND	10.0	63	10.0	ND	10.0	ND	10.0	ND	10.0	ND	10.0
	06/22/93	ATI-P	ND	25.0	ND	25.0	ND	25.0	110	25.0	ND	25.0	ND	25.0	ND	25.0
6-23	07/28/92	ATI-P	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5	ND	2.5
6-30	06/23/93	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5
6-PW6	06/05/92	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5
6-CH3	06/05/92	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5
6-CH4	06/05/92	ATI-P	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5

NMWQCC ground-water standard: 1 µg/l PCB.
U.S. EPA MCL: 0.5 µg/l PCB as decachlorobiphenyl.

ATI-A = Analytical Technologies, Inc. - Albuquerque
ATI-P = Analytical Technologies, Inc. - Phoenix
ER = Enseco's Rocky Mountain Analytical Laboratory

RL = Reporting limit
ND = Not detected

CHEMTBLS-LAGUNA(2)\PCB-RES\PCB-RES.CMB

DANIEL B. STEPHENS & ASSOCIATES, INC.
ENVIRONMENTAL SCIENTISTS AND ENGINEERS

ENRON
Transwestern Pipeline Company
P. O. Box 1188 Houston, Texas 77251-1188 (713) 853-6161

August 20, 1993

Mr. Bill Olson
New Mexico Oil Conservation Division
State Land Office Building
P.O. Box 2088
Santa Fe, New Mexico 87504

RE: Discharge Plan
Compressor Station No. 6
Transwestern Pipeline Company
Laguna, New Mexico

Dear Bill:

We wish to amend the current Discharge Plan for the subject facility with the attached procedures for the storage and filtering of purge water from monitor wells located at the site. Please call George Robinson at 713-646-7327 if you have questions regarding the attached procedures.

Sincerely,

Larry Campbell

Larry Campbell
Division Environmental Specialist

xc:	George Robinson	Contract Environmental Engineer	ENRON Operations Corp., Houston, TX
	Ted Ryther	Permits Group Manager	ENRON Operations Corp., Houston, TX
	Bill Kendrick	Projects Group Manager	ENRON Operations Corp., Houston, TX

Storage and Filtering of Sample Purge Water
Laguna Compressor Station No. 6

The Laguna ground-water monitoring program has changed substantially in the past year. Consequently, we recommend altering the purge water filtering procedure to improve storage and handling efficiency.

The current filtering procedure uses two drums at each well, one drum containing unfiltered purge water and one containing filtered purge water. When full, the filtered drums are sampled to verify the effectiveness of the filtration process prior to discharging the contents on the ground within the Transwestern property boundaries. This procedure was implemented when the monitoring program entailed monthly sampling of seven shallow wells.

The monitoring network has now grown to approximately 28 wells, which are sampled semiannually. Continuation of our current storage and filtering procedure will require 56 steel drums, and at the average purge rate of 5 gallons per sampling event, it will take five years to fill a 50-gallon drum. This situation presents several problems, including (1) the relatively short life of steel drums, (2) the greater amount of time required to open, close, and label each drum, and (3) the poor aesthetic value of having 56 steel drums spread across the site.

To avoid the above problems, we recommend establishment of a central storage area of approximately seven 55-gallon plastic drums for purge water storage and filtering. The number of drums can be minimized by combining purge water for storage based on the following categories: (1) wells which are consistently clean, (2) wells containing no PCBs nor organic compound concentrations above MCLs, (3) wells with organic compounds above MCLs but no PCBs, and (4) wells with organic compounds and PCBs. The remaining three drums would be used to contain filtered purge water from categories 2, 3, and 4. The category 1 drum would be discharged on-site, without filtering, following laboratory confirmation of the absence of organic compounds in the water.

Purge water will be grouped as listed below.

Category 1	Category 2	Category 3		Category 4
6-11	6-06	6-07	6-17	6-09
6-21A	6-18	6-08	6-20B	6-10
6-28	6-19	6-12	6-21B	6-20C
6-33	6-20A	6-13	6-21C	6-22C
	6-22A	6-14	6-22B	
	6-30	6-15	6-23	
	6-PW6	6-16		

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

DRUG FREE

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

May 10, 1993

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

CERTIFIED MAIL
RETURN RECEIPT NO. P-111-334-199

Mr. Larry Campbell
Transwestern Pipeline Company
P.O. Box 1717
Roswell, New Mexico 88202-1717

Re: Concrete Disposal
Laguna Compressor Station
Torrance County, New Mexico

Dear Mr. Campbell:

The Oil Conservation Division (OCD) has received your request, dated May 3, 1993, for approval to dispose of approximately 15 cubic yards of waste concrete generated from the engine and compressor foundation at the Laguna Compressor Station. Based on the information contained in your request, disposal of the waste concrete is approved.

If you have any questions, please call me at (505) 827-5812.

Sincerely,

Roger C. Anderson
Bureau Chief

xc: Roy Johnson

Phone (505) 623-2761
FAX (505) 625-8060

Transwestern Pipeline Company
TECHNICAL OPERATIONS
P. O. Box 1717 • Roswell, New Mexico 88202-1717

May 3, 1993

Mr. Roger Anderson
Oil Conservation Division
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Dear Mr. Anderson:

Transwestern Pipeline Company requests approval from your agency to remove oil and gas wastes generated from the processing of natural gas at Compressor Station No. 6, Laguna.

Specifically, this request addresses disposal of approximately 15 cubic yards of nonhazardous oil contaminated concrete removed from an engine and compressor foundation at the above referenced facility. Transwestern proposes to bury this waste at our Compressor Station No. 7, Mountainair facility.

To minimize potential groundwater impacts, the excavation area will be lined with a 6 mil layer of polyethylene plastic. Six inches of clean fill soil material will be layed over the plastic prior to placement of the concrete to eliminate rupture or tearing. Upon completion of placing the concrete over the buffer soil material, a sheet of polyethylene will be placed over the concrete and the excavation area will be backfilled with the native soil.

If you should require any additional information, contact me at 625-8022.

Sincerely,

Larry Campbell

Larry Campbell
Division Environmental Specialist

xc: Roger LaLonde
Butch Russell
Scott Stone
William Caster
file

Call

ENCOTEC

3985 RESEARCH PARK DRIVE

ANN ARBOR, MI 48108

(313) 761-1389

Project Name: RESS

Project Number: 89025

Report Date: January 5, 1993

Sample Type: Solid

STA 6 Concrete from Foundation Removal

DATA SUMMARY SHEET

All results reported on a X WET DRY weight basis

Sample Name		92-5113-C-602-2
Sample Date		12/11/92
		Encotec Sample I.D. Number
Parameter	Units	21241
Total Petroleum Hydrocarbons	mg/Kg	690

Post-it™ brand fax transmittal memo 7671 | # of pages ▸ 1

To Roger Anderson	From Lacey Campbell
Co.	Co.
Dept.	Phone # 625-8022
Fax # 1-827-5741	Fax #

Daniel B. Stephens & Associates, Inc.
Environmental Scientists and Engineers
6020 Academy NE, #100
Albuquerque, NM 87109
(505) 822-9400
FAX: (505) 822-8877

Date 3-23-93 Project No. 2100.2.2

Sent to Bill Olson Sent from Joanne Hilton

Total Pages Including Cover Page 4

Fax No. 1-827-5741

DBS&A Form No. 005a Rev 2/92

Remarks

Bill,

Here are the cuttings/core results for the borings at Laguna. As we discussed, we have temporarily drummed all cuttings from below the capillary fringe. We would like to discharge them on site this week (Thurs or Friday) while the drillers are still on site. Please let me know if that is ok with you.

Thanks

Joanne

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

TEST	: EPA 8010/8020	ATI I.D.	: AM30301
CLIENT	: DB STEPHENS & ASSOC.	DATE SAMPLED	: 03-15-93
PROJECT #	: 2100	DATE EXTRACTED	: 03-17-93
PROJECT NAME	: ENRON	DATE ANALYZED	: 03-17-93
MATRIX	: SOIL	UNITS	: MG/KG

PARAMETER	RESULTS	ATI ID / CLIENT ID / DILUTION	02 / 6-SB24 / 1	04* / 6-SB27 / 1	05* / 6-SB26 / 1
BENZENE			<0.025	<0.025	<0.025
BROMODICHLOROMETHANE			<0.010	<0.010	<0.010
BROMOFORM			<0.010	<0.010	<0.010
BROMOMETHANE			<0.025	<0.025	<0.025
CARBON TETRACHLORIDE			<0.010	<0.010	<0.010
CHLOROBENZENE			<0.025	<0.025	<0.025
CHLOROETHANE			<0.025	<0.025	<0.025
CHLOROFORM			<0.010	<0.010	<0.010
CHLOROMETHANE			<0.025	<0.025	<0.025
DIBROMOCHLOROMETHANE			<0.010	<0.010	<0.010
1,2-DIBROMOETHANE (EDB)			<0.025	<0.025	<0.025
1,2-DICHLOROBENZENE			<0.025	<0.025	<0.025
1,3-DICHLOROBENZENE			<0.025	<0.025	<0.025
1,4-DICHLOROBENZENE			<0.025	<0.025	<0.025
1,1-DICHLOROETHANE			<0.010	<0.010	<0.010
1,2-DICHLOROETHANE (EDC)			<0.010	<0.010	<0.010
1,1-DICHLOROETHENE			0.054	<0.010	<0.010 ~~478~~ no U pieces For4
CIS 1,2-DICHLOROETHENE			<0.010	<0.010	<0.010
TRANS 1,2-DICHLOROETHENE			<0.010	<0.010	<0.010
1,2-DICHLOROPROPANE			<0.010	<0.010	<0.010
CIS-1,3-DICHLOROPROPENE			<0.010	<0.010	<0.010
TRANS-1,3-DICHLOROPROPENE			<0.010	<0.010	<0.010
ETHYLBENZENE			<0.025	<0.025	<0.025
METHYLENE CHLORIDE			<0.500	<0.500	<0.500
1,1,2,2-TETRACHLOROETHANE			<0.010	<0.010	<0.010
TETRACHLOROETHENE			<0.010	<0.010	<0.010
TOLUENE			<0.025	<0.025	<0.025
1,1,1-TRICHLOROETHANE			<0.025	<0.025	<0.025
1,1,2-TRICHLOROETHANE			<0.010	<0.010	<0.010
TRICHLOROETHENE			<0.010	<0.010	<0.010
TRICHLOROFLUOROMETHANE			<0.025	<0.025	<0.025
VINYL CHLORIDE			<0.025	<0.025	<0.025
TOTAL XYLENES			<0.025	<0.025	<0.025
SURROGATE RECOVERIES					
BROMOCHLOROMETHANE (%)			100	100	101
BROMOFLUOROBENZENE (%)			89	90	92

* AM30301-4 (6-SB27) SAMPLED ON 03-16-93

* AM30301-5 (6-SB26) SAMPLED ON 03-16-93; ANALYZED ON 03-18-93

Analytical Technologies, Inc. **GAS CHROMATOGRAPHY - RESULTS**

TEST : PURGEABLE HALOCARBONS/AROMATICS (EPA 8010/8020)
CLIENT : DANIEL B. STEPHENS & ASSOC. ATI I.D.: 303398
PROJECT # : 2100 2.2
PROJECT NAME: ENRON LAGUNA

SAMPLE I.D. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
06	6-SB28 @ 14.1	NON-AQ	03/18/93	03/23/93	03/24/93	1
07	6-SB29 AT 15.5'	NON-AQ	03/18/93	03/23/93	03/24/93	1
08	6-SB30 AT 17'	NON-AQ	03/19/93	03/23/93	03/24/93	1
09	6-SB31 AT 13.5	NON-AQ	03/19/93	03/23/93	03/24/93	1

PARAMETER	UNITS	06	07	08	09
BENZENE	MG/KG	<0.025	<0.025	<0.025	<0.025
BROMODICHLOROMETHANE	MG/KG	<0.010	<0.010	<0.010	<0.010
BROMOFORM	MG/KG	<0.010	<0.010	<0.010	<0.010
BROMOMETHANE	MG/KG	<0.025	<0.025	<0.025	<0.025
CARBON TETRACHLORIDE	MG/KG	<0.010	<0.010	<0.010	<0.010
CHLOROBENZENE	MG/KG	<0.025	<0.025	<0.025	<0.025
CHLOROETHANE	MG/KG	<0.025	<0.025	<0.025	<0.025
CHLOROFORM	MG/KG	<0.010	<0.010	<0.010	<0.010
CHLOROMET[illegible]E	MG/KG	<0.025	<0.025	<0.025	<0.025
DIBROMOCH[illegible]OMETHANE	MG/KG	<0.010	<0.010	<0.010	<0.010
1,2-DIBROMOETHANE (EDB)	MG/KG	<0.025	<0.025	<0.025	<0.025
1,2-DICHLOROBENZENE	MG/KG	<0.025	<0.025	<0.025	<0.025
1,3-DICHLOROBENZENE	MG/KG	<0.025	<0.025	<0.025	<0.025
1,4-DICHLOROBENZENE	MG/KG	<0.025	<0.025	<0.025	<0.025
1,1-DICHLOROETHANE	MG/KG	<0.010	<0.010	<0.010	<0.010
1,2-DICHLOROETHANE (EDC)	MG/KG	<0.010	<0.010	<0.010	<0.010
1,1-DICHLOROETHENE	MG/KG	<0.010	<0.010	<0.010	<0.010
CIS-1,2-DICHLOROETHENE	MG/KG	<0.010	<0.010	<0.010	<0.010
TRANS-1,2-DICHLOROETHENE	MG/KG	<0.010	<0.010	<0.010	<0.010
1,2-DICHLOROPROPANE	MG/KG	<0.010	<0.010	<0.010	<0.010
CIS-1,3-DICHLOROPROPENE	MG/KG	<0.010	<0.010	<0.010	<0.010
TRANS-1,3-DICHLOROPROPENE	MG/KG	<0.010	<0.010	<0.010	<0.010
ETHYLBENZENE	MG/KG	<0.025	<0.025	<0.025	<0.025
METHYLENE CHLORIDE	MG/KG	<0.500	<0.500	<0.500	<0.500
1,1,2,2-TETRACHLOROETHANE	MG/KG	<0.010	<0.010	<0.010	<0.010
TETRACHLOROETHENE	MG/KG	<0.010	<0.010	<0.010	<0.010
TOLUENE	MG/KG	<0.025	<0.025	<0.025	<0.025
1,1,1-TRICHLOROETHANE	MG/KG	<0.025	<0.025	<0.025	<0.025
1,1,2-TRICHLOROETHANE	MG/KG	<0.010	<0.010	<0.010	<0.010
TRICHLOROETHENE	MG/KG	<0.010	<0.010	<0.010	<0.010
TRICHLOROFLUOROMETHANE	MG/KG	<0.010	<0.010	<0.010	<0.010
VINYL CHLORIDE	MG/KG	<0.025	<0.025	<0.025	<0.025
TOTAL XYLENES	MG/KG	<0.025	<0.025	<0.025	<0.025
SURROGATES:					
BROMOCHLOROMETHANE (%)		83	86	80	86
BROMOFLUOROBENZENE (%)		91	91	89	92

GAS CHROMATOGRAPHY RESULTS

TEST	: EPA 8010/8020	ATI I.D.	: AM30301
CLIENT	: DB STEPHENS & ASSOC.	DATE SAMPLED	: 03-15-93
PROJECT #	: 2100	DATE EXTRACTED	: 03-17-93
PROJECT NAME	: ENRON	DATE ANALYZED	: 03-17-93
MATRIX	: SOIL	UNITS	: MG/KG

PARAMETER	RESULTS	ATI ID	06
		CLIENT ID	6-SB25
		DILUTION	1
BENZENE			<0.025
BROMODICHLOROMETHANE			<0.010
BROMOFORM			<0.010
BROMOMETHANE			<0.025
CARBON TETRACHLORIDE			<0.010
CHLOROBENZENE			<0.025
CHLOROETHANE			<0.025
CHLOROFORM			<0.010
CHLOROMETHANE			<0.025
DIBROMOCHLOROMETHANE			<0.010
1,2-DIBROMOETHANE (EDB)			<0.025
1,2-DICHLOROBENZENE			<0.025
1,3-DICHLOROBENZENE			<0.025
1,4-DICHLOROBENZENE			<0.025
1,1-DICHLOROETHANE			<0.010
1,2-DICHLOROETHANE (EDC)			<0.010
1,1-DICHLOROETHENE			<0.010
CIS 1,2-DICHLOROETHENE			<0.010
TRANS 1,2-DICHLOROETHENE			<0.010
1,2-DICHLOROPROPANE			<0.010
CIS-1,3-DICHLOROPROPENE			<0.010
TRANS-1,3-DICHLOROPROPENE			<0.010
ETHYLBENZENE			<0.025
METHYLENE CHLORIDE			<0.500
1,1,2,2-TETRACHLOROETHANE			<0.010
TETRACHLOROETHENE			<0.010
TOLUENE			<0.025
1,1,1-TRICHLOROETHANE			<0.025
1,1,2-TRICHLOROETHANE			<0.010
TRICHLOROETHENE			<0.010
TRICHLOROFLUOROMETHANE			<0.025
VINYL CHLORIDE			<0.025
TOTAL XYLENES			<0.025
SURROGATE RECOVERIES			
BROMOCHLOROMETHANE (%)			94
BROMOFLUOROBENZENE (%)			89

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
Ecological Services
Suite D, 3530 Pan American Highway, NE
Albuquerque, New Mexico 87107

January 22, 1993

Ms. Donna Mullins
U.S. Environmental Protection Agency
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Dear Ms. Mullins:

This responds to your letter dated December 19, 1992, requesting the U.S. Fish and Wildlife Service (Service) comments on the U.S. Environmental Protection Agency's (EPA) intent to terminate the Consent Decree between the Transwestern Pipeline Company (TPC) and EPA for PCB contamination at four TPC compressor stations and ancillary sites in New Mexico. The Consent Decree will be terminated because the company has met the terms and conditions of the document. The company has cleaned up PCB soil contamination at their Mountainair, Corona, Thoreau, and Laguna stations. Groundwater monitoring has also been conducted at these four compressor stations in accordance with the Consent Decree.

PCB's and BTEX were found in the groundwater at the Thoreau and Laguna stations. New Mexico Oil Conservation Division (OCD) has agreed to oversee TPC's groundwater remedial efforts at these two stations to ensure that groundwaters are remediated to State standards. OCD is in the process of working with TPC to define the extent of petroleum contaminants at these sites and to determine options for remediation of contaminated groundwater.

The Service has no comment on the termination of the Consent Decree for PCB remedial activities at the TPC sites. In a conversation with Mr. William Olsen of OCD, groundwater remediation plans at the Thoreau and Laguna stations at this time are based on a closed loop plan. However, if at anytime these plans change and involve open ponding, which may create a potential risk to the Department of Interior Trust Resources, the Service recommends steps be taken to ensure migratory birds cannot gain access to the ponds.

If you have any questions please call Mary Orms at (505) 883-7877.

Sincerely,

for Michael J. Spear

Jennifer Fowler-Propst
Field Supervisor

cc:
Director, New Mexico Energy, Minerals and Natural Resources Department, New Mexico Oil Conservation Division, Santa Fe, New Mexico

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

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ANITA LOCKWOOD
CABINET SECRETARY

December 17, 1992

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SANTA FE, NEW MEXICO 87504
(505) 827-5800

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Payment Approval

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060	8500	999	161	5113

SUBLEDGER/WAREHOUSE # | VEHICLE #/STOCK SYMBOL

WORK ORDER | PROPERTY UNIT | COST CATEGORY

DESCRIPTION: Sta 6 discharge plan fees

SIGNATURE: M.B. Olguin DATE: 12-29-92

Mr. Larry T. Campbell
Transwestern Pipeline Company
P.O. Box 1717
Roswell, New Mexico 88202-1717

RE: Fees for Discharge Plans
GW-90, GW-95, GW-109, GW-113, GW-89

Dear Mr. Campbell:

Pursuant to the New Mexico Water Quality Control Commission (WQCC) Regulation 3-114 "every billable facility submitting a discharge plan for approval, modification or renewal shall pay the fees specified in this section to the Water Quality Management Fund". Every billable facility submitting a new discharge plan will be assessed a filing fee plus either a flat fee or discharge fee. Every billable facility submitting a discharge plan modification will be assessed a filing fee and the flat fee/discharge fee may be waived at the Director's discretion.

The discharge plans listed below were previously approved by the OCD Director. Our records show that the $50 filing fee has been paid, but the flat fee has not been paid. The flat fee for compressor stations with a maximum horsepower greater than 3000 is $1380. Please submit the flat fees for the following compressor stations or records showing that these fees have been paid.

Portales P-1 Compressor Station (GW-90)
Laguna Compressor Station (GW-95)
Carlsbad Compressor Station (GW-109)
Eunice Compressor Station (GW-113)

The flat fee for an approved discharge plan may be paid in a single payment due at the time of approval, or in equal annual installments over the duration of the discharge plan, with the first payment due at the time of approval.

In addition, the discharge plan modification for the Corona Compressor Station (GW-89) was approved by the Director on August 17, 1992. Our records show that a filing fee was not submitted with the application for modification. Please submit the $50 filing fee or records showing that the fee has been paid. The flat fee for the Corona Compressor Station discharge plan modification has been waived.

Please make all checks payable to: **NMED - Water Quality Management** and addressed to the OCD Santa Fe Office. If you have any questions, please do not hesitate to contact me at (505) 827-5884.

Sincerely,

Kathy M. Brown
Geologist

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

December 29, 1992

Donna S. Mullins
U.S. Environmental Protection Agency
Region 6
1445 Ross Ave, Suite 1200
Dallas, Texas 75202-2733

RE: TRANSWESTERN PIPELINE COMPANY PCB CONTAMINANT CLEANUP

Dear Ms. Mullins:

The New Mexico Oil Conservation Division (OCD) is in receipt of your December 17, 1992 correspondence requesting comment on the U.S. Environmental Protection Agency's (EPA) intent to terminate the Consent Decree between the Transwestern Pipeline Company (TPC) and EPA for PCB contamination at various TPC compressor stations and ancillary sites in New Mexico. Your correspondence states that the required cleanup of PCB's at these sites has been completed to the satisfaction of EPA and that petroleum related contaminants identified during ground water monitoring at the Thoreau and Laguna compressor stations are being addressed by the appropriate state and tribal regulatory agencies.

The OCD has no comment on the termination of the Consent Decree for PCB remedial activities at the TPC sites. However, according to New Mexico Water Quality Control Commission (WQCC) Regulations, remaining petroleum contaminated ground water at the Thoreau and Laguna compressor stations is required to be remediated to ground water standards promulgated by the WQCC. The OCD is the constituent agency responsible for enforcement of WQCC regulations at these stations. As you know, the OCD and has been working with TPC to define the extent of petroleum contaminants at these sites and to determine options for remediation of contaminated ground water. The OCD will continue to oversee TPC's ground water remedial efforts to ensure that ground waters are remediated to state standards.

The OCD thanks EPA for keeping us apprised of the results of EPA's PCB contaminant investigations and remedial efforts at TPC's New Mexico sites.

In the future, if you have any questions regarding OCD required remedial actions at TPC's Thoreau and Laguna compressor stations, please contact William C. Olson of my staff at (505) 827-5885.

Sincerely,

Roger C. Anderson
Environmental Bureau Chief

xc: William J. LeMay, OCD Director
Frank Chavez, OCD Aztec District Supervisor

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

DEC 17 1992

William J. LeMay
Director
Oil Conservation Division
State of New Mexico
Energy, Minerals and Natural Resources Department
P.O. Box 2088
Santa Fe, New Mexico 87504

Dear Mr. LeMay:

As you are aware, the EPA PCB Program has been working with Transwestern Pipeline, under the auspices of a Consent Decree, for the cleanup of PCB contamination at four compressor stations and ancillary sites in New Mexico. As of this date, cleanup has been completed at the four compressor stations and ancillary sites according to the terms of the Consent Decree. Groundwater monitoring has also been conducted at the four compressor stations in accordance with the Consent Decree. PCB, in addition to Benzene, Toluene and Xylene (BTEX), contamination has been identified at the Thoreau and Laguna Compressor Stations. According to the terms of the Consent Decree, the company has submitted Groundwater Assessment Reports for both sites that have been approved by the EPA PCB Program. The Company has proposed and is conducting on-going groundwater monitoring at both of these sites.

The company has also conducted groundwater monitoring at the Belen Rio Grande River Crossing for a one year period. No PCBs or BTEX were detected at this site.

The purpose of this letter is two-fold. First, current on-going groundwater monitoring and/or remediation is not covered under the Consent Decree. Currently, the company is working with your Agency and the Navajo Tribe on on-going groundwater monitoring at the Thoreau Compressor Station. They are also conducting a pilot bioremediation program for hydrocarbon contamination, that has been approved by your Agency, at the site. The company is working with your Agency and the Laguna Tribe concerning on-going groundwater monitoring at the Laguna Compressor Station. Therefore, based on the lack of resources and the priority of other projects, the EPA PCB Program will no longer formally conduct oversight of on-going groundwater monitoring, as it pertains to PCB contamination. The EPA PCB Program reserves the right to enter into a formal oversight role, but this would have to be through the civil referral process or civil administrative complaint process.

Second, the EPA PCB Program will soon terminate the Consent Decree because the Company has met the terms and conditions of the Consent Decree. Before we terminate the Consent Decree, we want to give

interested parties a period of 30 days in which to comment or ask questions about the outcome of the cleanup. Please send in writing or call about any questions or comments that you might have by January 25, 1993.

Finally, we want to thank you for your assistance in this project. Your interest and assistance contributed to a project which resulted in the overall cleanup of the environment.

If you have any questions or comments concerning this letter or the Consent Decree, please call me at (214) 655-7576.

Sincerely,

Donna S. Mullins
EPA Project Contact

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

December 17, 1992

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

CERTIFIED MAIL
RETURN RECEIPT NO. P-667-241-927

Mr. Larry T. Campbell
Transwestern Pipeline Company
P.O. Box 1717
Roswell, New Mexico 88202-1717

RE: Fees for Discharge Plans
GW-90, GW-95, GW-109, GW-113, GW-89

Dear Mr. Campbell:

Pursuant to the New Mexico Water Quality Control Commission (WQCC) Regulation 3-114 "every billable facility submitting a discharge plan for approval, modification or renewal shall pay the fees specified in this section to the Water Quality Management Fund". Every billable facility submitting a new discharge plan will be assessed a filing fee plus either a flat fee or discharge fee. Every billable facility submitting a discharge plan modification will be assessed a filing fee and the flat fee/discharge fee may be waived at the Director's discretion.

The discharge plans listed below were previously approved by the OCD Director. Our records show that the $50 filing fee has been paid, but the flat fee has not been paid. The flat fee for compressor stations with a maximum horsepower greater than 3000 is $1380. Please submit the flat fees for the following compressor stations or records showing that these fees have been paid.

Portales P-1 Compressor Station (GW-90)
Laguna Compressor Station (GW-95)
Carlsbad Compressor Station (GW-109)
Eunice Compressor Station (GW-113)

The flat fee for an approved discharge plan may be paid in a single payment due at the time of approval, or in equal annual installments over the duration of the discharge plan, with the first payment due at the time of approval.

In addition, the discharge plan modification for the Corona Compressor Station (GW-89) was approved by the Director on August 17, 1992. Our records show that a filing fee was not submitted with the application for modification. Please submit the $50 filing fee or records showing that the fee has been paid. The flat fee for the Corona Compressor Station discharge plan modification has been waived.

Please make all checks payable to: **NMED - Water Quality Management** and addressed to the OCD Santa Fe Office. If you have any questions, please do not hesitate to contact me at (505) 827-5884.

Sincerely,

Kathy Brown

Kathy M. Brown
Geologist

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

July 27,1992

BRUCE KING
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

CERTIFIED MAIL
RETURN RECEIPT NO P-667-242-122

Mr. Larry T. Campbell
Transwestern Pipeline Company
P.O. Box 1717
Roswell, New Mexico 88202-1717

Re: Discharge Plan GW-89
Laguna Compressor Station
Cibola County, New Mexico

Dear Mr. Campbell:

The Oil Conservation Division (OCD) has received the discharge plan modification request, dated April 20, 1992, for the above referenced facility. The modification consists of the addition of purge water from the monitor wells to the discharge stream.

Based on the information provided in your request and WQCC Regulations 3-109.A, the requested discharge plan modification is hereby approved.

Please be advised approval of this modification does not relieve you of liability should your operation result in actual pollution of surface or ground waters actionable under other laws and/or regulations.

If you have any questions, please call Roger Anderson at (505) 827-5812.

Sincerely:

William J. LeMay
Director

xc: OCD Aztec Office

DANIEL B. STEPHENS & ASSOCIATES, INC.
ENVIRONMENTAL SCIENTISTS AND ENGINEERS

OIL CONSERVATION DIVISION
RECEIVED
'92 JUL 14 AM 8 46

July 13, 1992

0566-2100-92

Mr. Bill Olson
Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87504-2088

Re: Laguna cuttings disposal

Dear Bill:

Laguna monitor wells 6-1 through 6-5 were recently abandoned. Air rotary drilling was used to remove PVC casing, screen, sand pack and bentonite from the wells prior to sealing them with grout. Drill cuttings were temporarily stored in pits lined with plastic sheeting adjacent to each well. One cuttings sample was collected from each well and was analyzed for TCLP 8240 and TCLP 8080 (PCB only) constituents. The samples were collected from just below the surface casing (23 to 25 feet below ground surface) in each well. This sampling depth was selected because the highest potential for contamination is in the shallow portion of the aquifer, but no contamination was suspected within the upper surface cased portion of the wells.

Results of the TCLP analyses are attached. The TCLP concentration limits for determining whether the cuttings would be considered as RCRA hazardous waste based on the toxicity characteristic are shown in Table 1. Chloroform (0.002 mg/l) was detected in the sample from 6-1 (23.3'); the limit for classification as a RCRA hazardous waste is 6 mg/l chloroform. Methyl ethyl ketone (0.13 mg/l) was detected in the cuttings sample for 6-2 (25.5'). Methyl ethyl ketone was also detected in the TCLP blank and in the reagent blank at 0.014 and 0.017 mg/l, respectively. The RCRA classification limit for methyl ethyl ketone is 200 mg/l. No other TCLP 8240 constituents were detected in 6-1 and 6-2, and none were detected in 6-3 through 6-5. No PCBs were detected in any of the cuttings samples.

Based on the TCLP results, the cuttings are not TCLP toxic and can be left on-site. Any free water will be suctioned off the top of the pits, the plastic sheeting will be removed, and the pits will then be covered with clean soil (soil that was excavated to create the pits).

If you require any additional information prior to making a decision about cuttings disposal, please contact me at 822-9400. Thank you for your assistance.

Sincerely,

DANIEL B. STEPHENS & ASSOCIATES

Joanne Hilton

Joanne Hilton
Senior Hydrologist

Verbal Approval
7/14/92
Kathy M Brown

2100(2)\RYTHER.630

TABLE 1. TCLP Limits*

Contaminant	Concentration Limit (mg/L)
Arsenic	5.0
Barium	100.0
Benzene	0.5
Cadmium	1.0
Carbon tetrachloride	0.5
Chlordane	0.03
Chlorobenzene	100.0
Chloroform	6.0
Chromium	5.0
o-Cresol	200.0
m-Cresol	200.0
p-Cresol	200.0
Cresol	200.0
2,4-D	10.0
1,4-Dichlorobenzene	7.5
1,2-Dichloroethane	0.5
1,1-Dichloroethylene	0.7
2,4-Dinitrotoluene	0.13
Endrin	0.02
Heptachlor (and its epoxide)	0.008
Hexachlorobenzene	0.13
Hexachlorobutadiene	0.5
Hexachloroethane	3.0
Lead	5.0
Lindane	0.4
Mercury	0.2
Methoxychlor	10.0
Methyl ethyl ketone	200.0
Nitrobenzene	2.0
Pentachlorophenol	100.0
Pyridine	5.0
Selenium	1.0
Silver	5.0
Tetrachloroethylene	0.7
Toxaphene	0.5
Trichloroethylene	0.5
2,4,5-Trichlorophenol	400.0
2,4,6-Trichlorophenol	2.0
2,4,5-TP Silvex	1.0
Vinyl chloride	0.2

*Maximum concentrations of contaminants for Toxicity Characteristic from 40 CFR §261.24.

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY - RESULTS

ATI I.D. : 20670502

TEST : POLYCHLORINATED BIPHENYLS (TCLP 1311)

CLIENT	: D.B. STEPHENS & ASSOCIATES	DATE SAMPLED	: 06/09/92
PROJECT #	: 2100 1.2	DATE RECEIVED	: 06/11/92
PROJECT NAME	: CONSENT	DATE EXTRACTED	: 06/12/92
CLIENT I.D.	: 6-1 23.3'	DATE ANALYZED	: 06/16/92
SAMPLE MATRIX	: NON-AQUEOUS	UNITS	: UG/L
		DILUTION FACTOR	: 1

COMPOUNDS	RESULTS
AROCLOR 1016	<0.5
AROCLOR 1221	<0.5
AROCLOR 1232	<0.5
AROCLOR 1242	<0.5
AROCLOR 1248	<0.5
AROCLOR 1254	<0.5
AROCLOR 1260	<0.5
SURROGATE PERCENT RECOVERIES	
TCMX (%)	86

Analytical Technologies, Inc.

GCMS - RESULTS

ATI I.D. : 20670501

TEST : EPA METHOD 8240 (TCLP 1311)

CLIENT	: D.B. STEPHENS & ASSOCIATES	DATE SAMPLED	: 06/09/92
PROJECT #	: 2100 1.2	DATE RECEIVED	: 06/11/92
PROJECT NAME	: CONSENT	DATE EXTRACTED	: 06/12/92
CLIENT I.D.	: 6-1 23.3'	DATE ANALYZED	: 06/16/92
SAMPLE MATRIX	: SOIL	UNITS	: UG/L
		DILUTION FACTOR	: 1

COMPOUNDS	RESULTS
BENZENE	<1
CARBON TETRACHLORIDE	<1
CHLOROBENZENE	<1
CHLOROFORM	2
1,2-DICHLOROETHANE	<1
1,1-DICHLOROETHENE	<1
METHYL ETHYL KETONE	<10
TETRACHLOROETHENE	<1
TRICHLOROETHENE	<1
VINYL CHLORIDE	<1
SURROGATE PERCENT RECOVERIES	
1,2-DICHLOROETHANE-D4 (%)	103
BROMOFLUOROBENZENE (%)	102
TOLUENE-D8 (%)	104

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY - RESULTS

ATI I.D. : 20662802

TEST : POLYCHLORINATED BIPHENYLS (EPA METHOD 608)

CLIENT	: D.B. STEPHENS & ASSOCIATES	DATE SAMPLED	: 06/05/92
PROJECT #	: 2100	DATE RECEIVED	: 06/06/92
PROJECT NAME	: NON-CONSENT	DATE EXTRACTED	: 06/08/92
CLIENT I.D.	: 6-2 25.5'	DATE ANALYZED	: 06/11/92
SAMPLE MATRIX	: AQUEOUS	UNITS	: UG/L
		DILUTION FACTOR	: 1

COMPOUNDS	RESULTS
AROCLOR 1016	<0.5
AROCLOR 1221	<0.5
AROCLOR 1232	<0.5
AROCLOR 1242	<0.5
AROCLOR 1248	<0.5
AROCLOR 1254	<0.5
AROCLOR 1260	<0.5
SURROGATE PERCENT RECOVERIES	
TCMX (%)	85

Analytical Technologies, Inc.

GCMS - RESULTS

ATI I.D. : 20662801

TEST : EPA METHOD 8240 (TCLP 1311)

CLIENT	: D.B. STEPHENS & ASSOCIATES	DATE SAMPLED	: 06/05/92
PROJECT #	: 2100	DATE RECEIVED	: 06/06/92
PROJECT NAME	: NON-CONSENT	DATE EXTRACTED	: 06/09/92
CLIENT I.D.	: 6-2 25.5'	DATE ANALYZED	: 06/13/92
SAMPLE MATRIX	: SOIL	UNITS	: UG/L
		DILUTION FACTOR	: 1

COMPOUNDS	RESULTS
BENZENE	<1
CARBON TETRACHLORIDE	<1
CHLOROBENZENE	<1
CHLOROFORM	<1
1,2-DICHLOROETHANE	<1
1,1-DICHLOROETHENE	<1
METHYL ETHYL KETONE	130 B
TETRACHLOROETHENE	<1
TRICHLOROETHENE	<1
VINYL CHLORIDE	<1
SURROGATE PERCENT RECOVERIES	
1,2-DICHLOROETHANE-D4 (%)	102
BROMOFLUOROBENZENE (%)	109
TOLUENE-D8 (%)	104

Analytical Technologies, Inc.

GCMS - RESULTS

ATI I.D. : 20662803

TEST : EPA METHOD 8240 (TCLP 1311)

CLIENT	: D.B. STEPHENS & ASSOCIATES	DATE SAMPLED	: 06/05/92
PROJECT #	: 2100	DATE RECEIVED	: 06/06/92
PROJECT NAME	: NON-CONSENT	DATE EXTRACTED	: 06/09/92
CLIENT I.D.	: TCLP BLANK	DATE ANALYZED	: 06/13/92
SAMPLE MATRIX	: NON-AQUEOUS	UNITS	: UG/L
		DILUTION FACTOR	: 1

COMPOUNDS	RESULTS
BENZENE	<1
CARBON TETRACHLORIDE	<1
CHLOROBENZENE	<1
CHLOROFORM	<1
1,2-DICHLOROETHANE	<1
1,1-DICHLOROETHENE	<1
METHYL ETHYL KETONE	14 B
TETRACHLOROETHENE	<1
TRICHLOROETHENE	<1
VINYL CHLORIDE	<1
SURROGATE PERCENT RECOVERIES	
1,2-DICHLOROETHANE-D4 (%)	101
BROMOFLUOROBENZENE (%)	99
TOLUENE-D8 (%)	106

Analytical Technologies, Inc.

GCMS - RESULTS

REAGENT BLANK

TEST : EPA METHOD 8240 (TCLP 1311)

CLIENT	: D.B. STEPHENS & ASSOCIATES	ATI I.D.	: 206628
PROJECT #	: 2100	DATE EXTRACTED	: 06/13/
PROJECT NAME	: NON-CONSENT	DATE ANALYZED	: 06/13/
CLIENT I.D.	: REAGENT BLANK	UNITS	: UG/L
		DILUTION FACTOR	: N/A

COMPOUNDS	RESULTS
BENZENE	<1
CARBON TETRACHLORIDE	<1
CHLOROBENZENE	<1
CHLOROFORM	<1
1,2-DICHLOROETHANE	<1
1,1-DICHLOROETHENE	<1
METHYL ETHYL KETONE	17
TETRACHLOROETHENE	<1
TRICHLOROETHENE	<1
VINYL CHLORIDE	<1

SURROGATE PERCENT RECOVERIES

1,2-DICHLOROETHANE-D4 (%)	105
BROMOFLUOROBENZENE (%)	97
TOLUENE-D8 (%)	109

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY - RESULTS

ATI I.D. : 20675902

TEST : POLYCHLORINATED BIPHENYLS (TCLP 1311)

CLIENT	: D.B. STEPHENS & ASSOCIATES	DATE SAMPLED	: 06/11/92
PROJECT #	: 2100-1.2	DATE RECEIVED	: 06/15/92
PROJECT NAME	: CONSENT	DATE EXTRACTED	: 06/15/92
CLIENT I.D.	: 6-3 25.3'	DATE ANALYZED	: 06/19/92
SAMPLE MATRIX	: AQUEOUS	UNITS	: UG/L
		DILUTION FACTOR	: 1

COMPOUNDS	RESULTS
AROCLOR 1016	<0.5
AROCLOR 1221	<0.5
AROCLOR 1232	<0.5
AROCLOR 1242	<0.5
AROCLOR 1248	<0.5
AROCLOR 1254	<0.5
AROCLOR 1260	<0.5
SURROGATE PERCENT RECOVERIES	
TCMX (%)	97

Analytical Technologies, Inc.

GCMS - RESULTS

ATI I.D. : 20675901

TEST : EPA METHOD 8240 (TCLP 1311)

CLIENT	: D.B. STEPHENS & ASSOCIATES	DATE SAMPLED	: 06/11/92
PROJECT #	: 2100-1.2	DATE RECEIVED	: 06/15/92
PROJECT NAME	: CONSENT	DATE EXTRACTED	: 06/16/92
CLIENT I.D.	: 6-3 25.3'	DATE ANALYZED	: 06/18/92
SAMPLE MATRIX	: SOIL	UNITS	: UG/L
		DILUTION FACTOR	: 1

COMPOUNDS	RESULTS
BENZENE	<1
CARBON TETRACHLORIDE	<1
CHLOROBENZENE	<1
CHLOROFORM	<1
1,2-DICHLOROETHANE	<1
1,1-DICHLOROETHENE	<1
METHYL ETHYL KETONE	<10
TETRACHLOROETHENE	<1
TRICHLOROETHENE	<1
VINYL CHLORIDE	<1
SURROGATE PERCENT RECOVERIES	
1,2-DICHLOROETHANE-D4 (%)	90
BROMOFLUOROBENZENE (%)	99
TOLUENE-D8 (%)	108

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY - RESULTS

ATI I.D. : 20660202

TEST : POLYCHLORINATED BIPHENYLS (EPA METHOD 608)

CLIENT	: D.B. STEPHENS & ASSOCIATES	DATE SAMPLED	: 06/03/92
PROJECT #	: 2100 1.2	DATE RECEIVED	: 06/05/92
PROJECT NAME	: ENRON LAGUNA	DATE EXTRACTED	: 06/05/92
CLIENT I.D.	: 6-4 24.5' (TCLP)	DATE ANALYZED	: 06/10/92
SAMPLE MATRIX	: AQUEOUS	UNITS	: UG/L
		DILUTION FACTOR	: 1

COMPOUNDS	RESULTS
AROCLOR 1016	<0.5
AROCLOR 1221	<0.5
AROCLOR 1232	<0.5
AROCLOR 1242	<0.5
AROCLOR 1248	<0.5
AROCLOR 1254	<0.5
AROCLOR 1260	<0.5
SURROGATE PERCENT RECOVERIES	
TCMX (%)	72

Analytical Technologies, Inc.

GCMS - RESULTS

ATI I.D. : 20660201

TEST : EPA METHOD 8240 (TCLP 1311)

CLIENT	: D.B. STEPHENS & ASSOCIATES	DATE SAMPLED	: 06/03/92
PROJECT #	: 2100 1.2	DATE RECEIVED	: 06/05/92
PROJECT NAME	: ENRON LAGUNA	DATE EXTRACTED	: 06/08/92
CLIENT I.D.	: 6-4 24.5'	DATE ANALYZED	: 06/09/92
SAMPLE MATRIX	: SOIL	UNITS	: UG/L
		DILUTION FACTOR	: 1

COMPOUNDS	RESULTS
BENZENE	<1
CARBON TETRACHLORIDE	<1
CHLOROBENZENE	<1
CHLOROFORM	<1
1,2-DICHLOROETHANE	<1
1,1-DICHLOROETHENE	<1
METHYL ETHYL KETONE	<10
TETRACHLOROETHENE	<1
TRICHLOROETHENE	<1
VINYL CHLORIDE	<1
SURROGATE PERCENT RECOVERIES	
1,2-DICHLOROETHANE-D4 (%)	104
BROMOFLUOROBENZENE (%)	114
TOLUENE-D8 (%)	94

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY - RESULTS

ATI I.D. : 20660302

TEST : POLYCHLORINATED BIPHENYLS (EPA METHOD 608)

CLIENT	: D.B. STEPHENS & ASSOCIATES	DATE SAMPLED	: 06/01/92
PROJECT #	: 2100 1.2	DATE RECEIVED	: 06/05/92
PROJECT NAME	: ENRON LAGUNA	DATE EXTRACTED	: N/A
CLIENT I.D.	: 6-5 23.5' (TCLP)	DATE ANALYZED	: 06/10/92
SAMPLE MATRIX	: AQUEOUS	UNITS	: UG/L
		DILUTION FACTOR	: 1

COMPOUNDS	RESULTS
AROCLOR 1016	<0.5
AROCLOR 1221	<0.5
AROCLOR 1232	<0.5
AROCLOR 1242	<0.5
AROCLOR 1248	<0.5
AROCLOR 1254	<0.5
AROCLOR 1260	<0.5
SURROGATE PERCENT RECOVERIES	
TCMX (%)	80

Analytical Technologies, Inc.

GCMS - RESULTS

ATI I.D. : 20660301

TEST : EPA METHOD 8240 (TCLP 1311)

CLIENT	: D.B. STEPHENS & ASSOCIATES	DATE SAMPLED	: 06/01/92
PROJECT #	: 2100 1.2	DATE RECEIVED	: 06/05/92
PROJECT NAME	: ENRON LAGUNA	DATE EXTRACTED	: 06/08/92
CLIENT I.D.	: 6-5 23.5'	DATE ANALYZED	: 06/09/92
SAMPLE MATRIX	: SOIL	UNITS	: UG/L
		DILUTION FACTOR	: 1

COMPOUNDS	RESULTS
BENZENE	<1
CARBON TETRACHLORIDE	<1
CHLOROBENZENE	<1
CHLOROFORM	<1
1,2-DICHLOROETHANE	<1
1,1-DICHLOROETHENE	<1
METHYL ETHYL KETONE	<10
TETRACHLOROETHENE	<1
TRICHLOROETHENE	<1
VINYL CHLORIDE	<1
SURROGATE PERCENT RECOVERIES	
1,2-DICHLOROETHANE-D4 (%)	96
BROMOFLUOROBENZENE (%)	112
TOLUENE-D8 (%)	108

FAX TRANSMITTAL SHEET

OIL CONSERVATION DIVISION - FAX NO. (505) 827-5741

TO: Joanne Hilton	FR: Kathy Brown - OCD
PAGES w/cover: 2	DATE: 7/14/92

If there are any problems with this transmission, please call (505) 827-5806.

DANIEL B. STEPHENS & ASSOCIATES, INC.
ENVIRONMENTAL SCIENTISTS AND ENGINEERS

July 13, 1992

0566-2100-92

Mr. Bill Olson
Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87504-2088

Re: Laguna cuttings disposal

Dear Bill:

Laguna monitor wells 6-1 through 6-5 were recently abandoned. Air rotary drilling was used to remove PVC casing, screen, sand pack and bentonite from the wells prior to sealing them with grout. Drill cuttings were temporarily stored in pits lined with plastic sheeting adjacent to each well. One cuttings sample was collected from each well and was analyzed for TCLP 8240 and TCLP 8080 (PCB only) constituents. The samples were collected from just below the surface casing (23 to 25 feet below ground surface) in each well. This sampling depth was selected because the highest potential for contamination is in the shallow portion of the aquifer, but no contamination was suspected within the upper surface cased portion of the wells.

Results of the TCLP analyses are attached. The TCLP concentration limits for determining whether the cuttings would be considered as RCRA hazardous waste based on the toxicity characteristic are shown in Table 1. Chloroform (0.002 mg/l) was detected in the sample from 6-1 (23.3'); the limit for classification as a RCRA hazardous waste is 6 mg/l chloroform. Methyl ethyl ketone (0.13 mg/l) was detected in the cuttings sample for 6-2 (25.5'). Methyl ethyl ketone was also detected in the TCLP blank and in the reagent blank at 0.014 and 0.017 mg/l, respectively. The RCRA classification limit for methyl ethyl ketone is 200 mg/l. No other TCLP 8240 constituents were detected in 6-1 and 6-2, and none were detected in 6-3 through 6-5. No PCBs were detected in any of the cuttings samples.

Based on the TCLP results, the cuttings are not TCLP toxic and can be left on-site. Any free water will be suctioned off the top of the pits, the plastic sheeting will be removed, and the pits will then be covered with clean soil (soil that was excavated to create the pits).

If you require any additional information prior to making a decision about cuttings disposal, please contact me at 822-9400. Thank you for your assistance.

Sincerely,

DANIEL B. STEPHENS & ASSOCIATES

Joanne Hilton

Joanne Hilton
Senior Hydrologist

Verbal Approval
7/14/92
Kathy M Brown

2100(2)\RYTHER.630

Affidavit of Publication

STATE OF NEW MEXICO)
) ss.
COUNTY OF LEA)

Joyce Clemens being first duly sworn on oath deposes and says that he is Adv. Director of THE LOVINGTON DAILY LEADER, a daily newspaper of general paid circulation published in the English language at Lovington, Lea County, New Mexico; that said newspaper has been so published in such county continuously and uninterruptedly for a period in excess of Twenty-six (26) consecutive weeks next prior to the first publication of the notice hereto attached as hereinafter shown; and that said newspaper is in all things duly qualified to publish legal notices within the meaning of Chapter 167 of the 1937 Session Laws of the State of New Mexico.

That the notice which is hereto attached, entitled Notice Of Publication

and numbered ..... in the ..... Courts of Lea County, New Mexico, was published in a regular and entire issue of THE LOVINGTON DAILY LEADER and not in any supplement thereof, once each week on the same day of each week for one (1) day consecutive weeks, beginning with the issue of June 24, 19 92 and ending with the issue of June 24, 19 92

And that the cost of publishing said notice is the sum of $ 50.76 which sum has been (Paid) (Assessed) as Court Costs

Joyce Clemens

Subscribed and sworn to before me this 25th day of June, 19 92

Mrs. Jean Henson

Notary Public, Lea County, New Mexico

My Commission Expires Sept. 28, 19 94

LEGAL NOTICE
NOTICE OF PUBLICATION
STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

Notice is hereby given that pursuant to New Mexico Water Quality Control Commission Regulations, the following discharge plan applications and modifications have been submitted to the Director of the Oil Conservation Division, State Land Office Building, P.O. Box 2088, Santa Fe, New Mexico 87504-2088, Telephone (505) 827-5800:

(GW-119) - Phillips Petroleum Company, Jeffrey Carlson, Safety and Environmental Analyst, 4001 Penbrook, Odessa, Texas 79762, has submitted a discharge plan application for their East Vacuum Liquids Recovery Plant (EVLRP) which is located in Section 33, Township 17 South, Range 35 East, NMPM, Lea County, New Mexico. Approximately 2100 gallons per day of waste water with a total dissolved solids concentration of approximately 3715 mg/l is discharged into a Class II well for beneficial reuse into a waterflood. Groundwater most likely to be affected by an accidental discharge is at a depth ranging from 220 to 280 feet with a total dissolved solids concentration ranging from 300 mg/l to 500 mg/l. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.

(GW-123) - Yates Petroleum Corporation, Chuck Morgan, 105 South Fourth Street, Artesia, New Mexico, 88210, has submitted a discharge plan application for their 7-Rivers Compressor Station located in the NW/4 NW/4, Section 25, Township 19 South, Range 24 East, NMPM, Eddy County, New Mexico. Approximately 260 gallons per day of wash down water with a total dissolved solids concentration of approximately 58,800 mg/l is stored in two 300 barrel above ground fiberglass tanks and then transferred via pipeline and injected into an OCD approved Class II injection well. Ground water most likely to be affected by an accidental discharge is at a depth of approximately 250 feet with a total dissolved solids concentration of approximately 1650 mg/l. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.

(GW-89) - Transwestern Pipeline Company, Larry Campbell, Compliance Environmentalist, P.O. Box 1717, Roswell, New Mexico, 88202-1717, has submitted a discharge plan modification application for the previously approved discharge plan for their Corona Compressor Station located in the NW/4 Section 36, Township 4 South, Range 15 East, NMPM, Lincoln County, New Mexico. The modification proposes the addition of a landfarm which will accept non-hazardous hydrocarbon contaminated soil generated at field operations owned by Transwestern. No liquids or hazardous waste will be accepted at the site. Groundwater most likely to be affected by an accidental discharge is at a depth of approximately 552 feet with a total dissolved solids concentration of approximately 1500 mg/l. The discharge plan addresses how spills, leaks and other accidental discharges to the surface will be managed.

(GW-110) - Transwestern Pipeline Company, Larry Campbell, Compliance Environmentalist, P.O. Box 1717, Roswell, New Mexico, 88202-1717, has submitted a discharge plan modification application for the previously approved discharge plan for their Mountainair Compressor Station located in the NE/4, Section 3, Township 1 South, Range 6 East, NMPM, Torrance County, New Mexico. The modification proposes the addition of a landfarm which will accept non-hazardous hydrocarbon contaminated soil generated at field operations owned by Transwestern. No liquids or hazardous waste will be accepted at the site. Groundwater most likely to be affected by an accidental discharge is at a depth of approximately 350 feet with a total dissolved solids concentration of approximately 2800 mg/l. The discharge plan addresses how spills, leaks and other accidental discharges to the surface will be managed.

Any interested person may obtain further information from the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division at the address given above. The discharge plan application may be viewed at the above address between 8:00 a.m. and 5:00 p.m., Monday through Friday. Prior to ruling on any proposed discharge plan or its modification, the Director of the Oil Conservation Division shall allow at least thirty (30) days after the date of publication of this notice during which comments may be submitted to him and public hearing may be requested by any interested person. Requests for public hearing shall set forth the reasons why a hearing should be held. A hearing will be held if the Director determines there is significant public interest.

If no public hearing is held, the Director will approve or disapprove the proposed plan based on information available. If public hearing is held, the director will approve or disapprove the proposed plan based on information in the plan and information submitted at the hearing.

GIVEN under the Seal New Mexico Oil Conservati Commission at Santa Fe, N Mexico, on this 16th day June, 1992.
STATE OF NEW MEXIC OIL CONSERVATION DIVISIC
WILLIAM J. LEMAY, Direc
SEAL
Published in the Lovington Da Leader June 24, 1992.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☑ Telephone ☐ Personal	Time 0915	Date 5/19/92

Originating Party	Other Parties
Joanne Hilton Stevens & Assoc.	Bill Olson - OCD

Subject

Enron Laguna Compressor

Discussion

MW closure activities to begin this week possibly by Thurs.

Also will be installing additional MW's for investigation

Conclusions or Agreements

I will notify Aztec Office and requested that OCD be kept informed of investigation results

Distribution

Enron Laguna File

Signed Bill Olson

Phone (505) 623-2761
FAX (505) 625-8060

Transwestern Pipeline Company
TECHNICAL OPERATIONS
P. O. Box 1717 • Roswell, New Mexico 88202-1717

April 20, 1992

RECEIVED
APR 20 1992
OIL CONSERVATION DIV.
SANTA FE

Mr. Roger Anderson
Oil Conservation Division
P.O. Box 2088
State Land Office Building
Santa Fe, New Mexico 87504-2088

Dear Mr. Anderson:

Transwestern Pipeline Company is requesting modification to Discharge Plan GW-89 for the Laguna Compressor Station to purge water filtering and discharge of monitor and sampling wells. The attached discussion presented by Daniel B. Stephens & Associates, Inc. provides a description and methodology for this requested discharge operation.

Transwestern anticipates that the monthly sampling and resultant purge volumes will decrease in the future, therefore, the purge volumes discussed in the attached procedures are intended to represent maximum amounts.

If you should require any additional information, contact this office at 625-8022.

Sincerely,

Larry Campbell

Larry Campbell
Compliance Environmentalist

xc: Roger LaLonde
Scott Stone

PURGE WATER FILTERING AND DISCHARGE PROCEDURES
LAGUNA COMPRESSOR STATION
APRIL 1992

Daniel B. Stephens & Associates is currently under contract with Enron Corporation to conduct water sampling at the Laguna Compressor Station No. 6. Approximately 23 wells are present on the site.

Approximately 10 wells are sampled monthly, and other wells are sampled occasionally. Water samples from the wells are analyzed by U.S. Environmental Protection Agency (EPA) method 8080 for polychlorinated biphenyls (PCBs) and by EPA method 8020 for benzene, toluene, ethyl benzene and xylene (BTEX). Select water samples are also analyzed by EPA method 8240. Three casing volumes of water are purged from each well prior to sampling. The purge volumes generated during monthly sampling of the 10 monitor wells are (1) approximately 15 gallons of water containing PCBs, chlorinated volatile organics (VOAs) and BTEX, (2) approximately 35 gallons of water containing chlorinated VOAs and/or BTEX, and (3) approximately 15 gallons of water that historically has not shown detectable levels of PCBs, BTEX, or chlorinated VOAs.

We anticipate that additional drilling and monitoring activities at the site may generate up to 200 gallons of purge water per month in excess of the above quantities. The maximum total amount of purge water that we anticipate generating is approximately 300 gallons in a month.

We are currently placing purge water into 55-gallon drums next to each well. The drums are marked "unfiltered purge water" and are labeled with the well number and the date. After analytical chemistry results are received, purge water from any wells that contain PCBs or other organic constituents at concentrations above EPA or New Mexico Water Quality Control Commission (NMWQCC) standards is filtered using a portable carbon filtration system. The filtered water is placed into a second 55-gallon drum, marked "filtered purge water," next to each well.

We intend to filter purge water into one drum at each well that contains PCBs, BTEX, and/or chlorinated VOAs until the drum is full. We will then collect one sample from each full drum and analyze it for any constituents that were detected in the unfiltered water samples. If the filtered water sample comes up clean, we would then like to discharge the filtered water onto the ground surface, pending an amended discharge plan. We would also like to discharge unfiltered purge water from wells that met EPA and NMWQCC standards for PCBs, BTEX, and chlorinated VOAs.

ACKNOWLEDGEMENT OF RECEIPT
OF CHECK/CASH

I hereby acknowledge receipt of check No. [redacted] dated 3/9/92,

or cash received on 3/11/92 in the amount of $ 50.00

from Transwestern Pipeline Co

for Laguna Compressor Sta (Facility Name) GW-95 (DP No.)

Submitted by: Roger C Anderson Date: 3/11/92

Submitted to ASD by: _____ Date: _____

Received in ASD by: Dorothy C. Montoya Date: 3/11/92

Filing Fee X New Facility ____ Renewal ____

Modification ____ Other _____ (specify)

Organization Code 521.07 Applicable FY 80

To be deposited in the Water Quality Management Fund.

Full Payment ____ or Annual Increment ____

CHECK NO. [redacted]

ENRON CORP

TRANSWESTERN PIPELINE COMPANY
P.O. BOX 1188
HOUSTON, TEXAS 77251-1188

DATE OF CHECK
MARCH 9, 1992

PAY EXACTLY FIFTY DOLLARS AND NO/100 - - - - DOLLARS $50.00

This check is VOID unless printed on BLUE background

PAY TO THE ORDER OF
MR. ROGER ANDERSON
NEW MEXICO OIL CONSERVATION DIVISION
P.O. BOX 2088
SANTA FE, NEW MEXICO

M.J. Alpeh

NOT VALID OVER $5,000 UNLESS COUNTERSIGNED

UNITED BANK OF GRAND JUNCTION

[redacted]

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

March 11, 1992

CERTIFIED MAIL
RETURN RECEIPT NUMBER P-690-154-689

James C. Alexander
ENRON Gas Pipeline Group
P.O. Box 1188
Houston, TX 77251-1188

RE: CLOSURE OF MONITOR WELLS
ENRON LAGUNA COMPRESSOR STATION
VALENCIA COUNTY, NEW MEXICO

Dear Mr. Alexander:

The New Mexico Oil Conservation Division (OCD) has completed a review of ENRON's December 10, 1991 correspondence and accompanying enclosures requesting OCD permission for closure of select monitor wells which were installed under the terms of a United States Environmental Protection Agency Consent Decree.

The OCD approves of the request to close monitor wells 6-1, 6-2, 6-3, 6-4 and 6-5 at the ENRON Laguna Compressor Station using the well decommissioning procedures proposed by Daniel B. Stephens and Associates, Inc. with the following conditions:

1. An expanding type cement will be used for all cement grouting during monitor well abandonment.

2. A final plugging report containing the actual procedures used during monitor well abandonment will be supplied to OCD within 30 days of completion of plugging activities.

3. The OCD will be contacted at least 48 hours prior to initiation of the monitor well abandonment so that the OCD may be given the opportunity to witness the well abandonment activities.

If you have any questions, please contact me at (505) 827-5885.

Sincerely,

William C. Olson
Hydrogeologist
Environmental Bureau

xc: OCD Santa Fe District Office
Joanne Hilton, Daniel B. Stephens & Associates

Phone (505) 623-2761
FAX (505) 625-8060

Transwestern Pipeline Company
TECHNICAL OPERATIONS
P. O. Box 1717 • Roswell, New Mexico 88202-1717

March 9, 1992

Mr. Roger Anderson
New Mexico Oil Conservation Division
P.O. Box 1188
Santa Fe, New Mexico

Re: Filing Fee

The filing fee of fifty (50) dollars is inclosed for the listed Discharge Plan Application that has previously been submitted to the Oil Conservation Division.

Discharge Plan Application
Transwestern Pipeline Company
Laguna Compressor Station No. 6
Valencia County, New Mexico

If you have questions or if additional information is needed, let us know.

Sincerely

Larry Campbell/cc

Larry T. Campbell
Compliance Environmentalist

LTC/EEC

cc: file

CHECK NO.

REMITTANCE STATEMENT

VOUCHER NO.	INVOICE DATE	INVOICE NUMBER	PURCHASE ORDER	AMOUNT		
				GROSS	DISCOUNT	NET
	3/9/92	02				

Special Instructions

DISCHARGE PLANT APPLICATION - STATION 6

P. O. BOX 1188, HOUSTON, TEXAS 77251-1188

DETACH STATEMENT BEFORE DEPOSITING ENDORESMENT OF CHECK ATTACHED ACKNOWLEDGES PAYMENT IN FULL OF ALL ITEMS SHOWN ABOVE IN CASE OF ERROR OR OMISSION RETURN BOTH CHECK AND STATEMENT

011-E1151 12/88

ENRON
Transwestern Pipeline Company

P. O. Box 1188 Houston, Texas 77251-1188 (713) 853-6161

February 11, 1992

Ms. Donna Mullins
USEPA Region VI
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202

Reference: Submittal of Final Groundwater Assessment Report, Laguna Station

Dear Donna:

This submittal constitutes the final report of groundwater assessment in accordance with Section IV.D.3. of the Consent Decree. Included with this letter are reduced copies of the Site Maps, full size copies of which were provided to you previously.

Copies of this report have been forwarded directly to Mr. Thomas McGraw at the New Mexico EID and to Mr. Ed Wise of ENTRIX. In addition, the attached report has been sent to Mr. Roger Anderson of the New Mexico OCD.

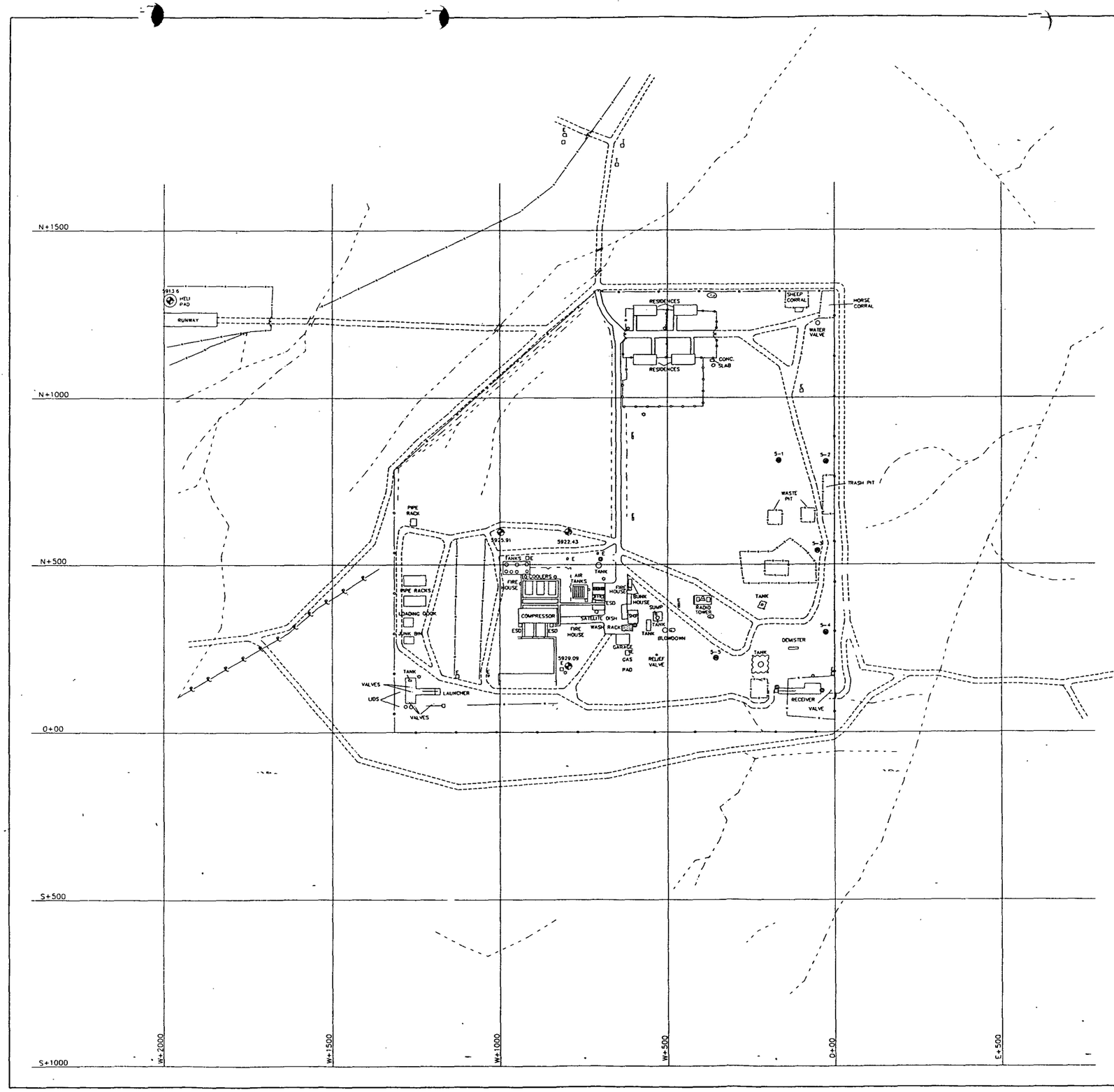
Should you have any questions please call me at (713) 853-3219 or Ted Ryther at (713) 853-5634.

Yours very truly

James C. Alexander
Manager of Projects
Environmental Affairs

Attachments

cc: Mr. Thomas H. McGraw, New Mexico EID
Mr. Ed Wise, ENTRIX
Mr. Roger Anderson, New Mexico OCD



LEGEND

- PAVED ROAD
- GRAVEL ROAD
- DRAINAGE
- CULVERT
- CHAIN LINK FENCE
- WOODEN FENCE
- BARBED WIRE FENCE
- GATE
- MONITOR WELL
- WELL
- COREHOLE
- POWER LINE
- ESD EMERGENCY SHUTDOWN
- LIGHT
- E ELECTRIC
- T TELEPHONE
- BERM
- FIRE HYDRANT
- MANHOLE
- DIRT PILE
- BENCHMARK

N

100' 50' 0 100' 200'
SCALE IN FEET

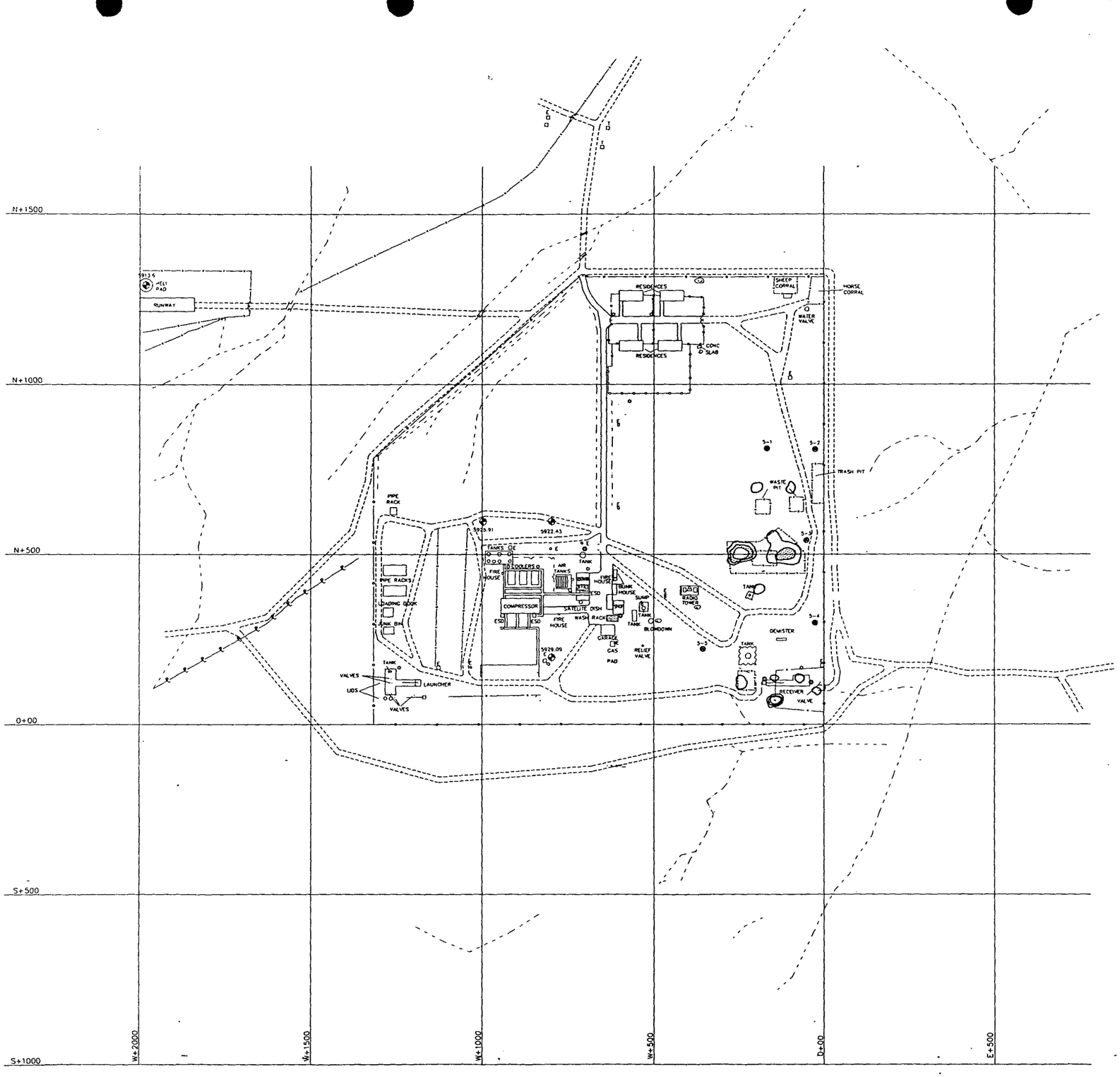
CONDOR GEOTECHNICAL SERVICES, INC.

TRANSWESTERN PIPELINE
Compressor Stotion No. 6

Laguna, New Mexico

BASE MAP

Date: 03/06/90



LEGEND

- PAVED ROAD
- GRAVEL ROAD
- DRAINAGE
- CULVERT
- CHAIN LINK FENCE
- WOODEN FENCE
- BARBED WIRE FENCE
- GATE
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- WELL
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- LIGHT
- E ELECTRIC
- T TELEPHONE
- BERM
- FIRE HYDRANT
- MANHOLE
- DIRT PILE
- BENCHMARK

- >25 mg/kg PCB
- >50 mg/kg PCB
- >200 mg/kb PCB

N

100' 50' 0 100' 200'
SCALE IN FEET

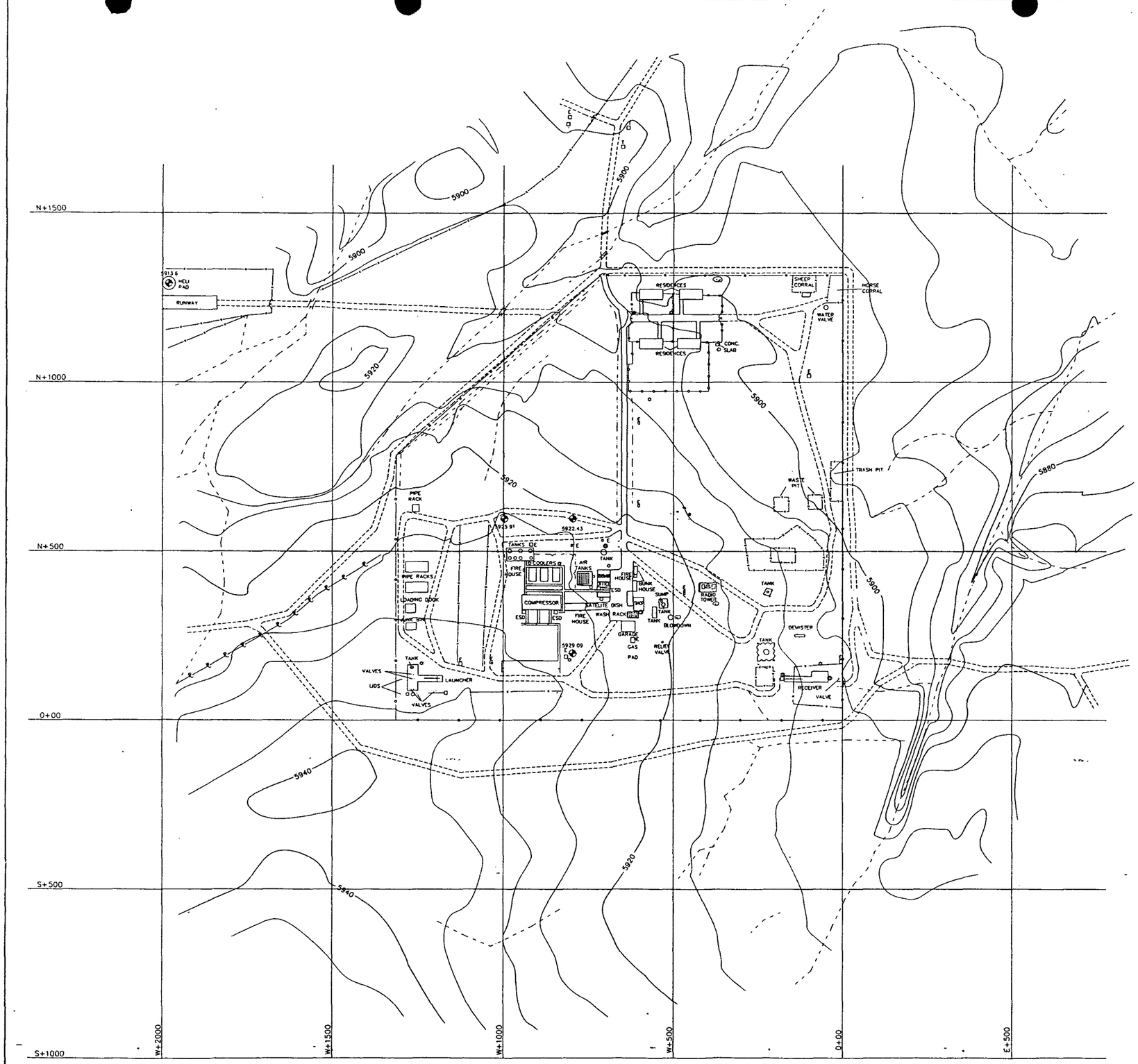
CONDOR GEOTECHNICAL SERVICES, INC.

TRANSWESTERN PIPELINE
Compressor Station No. 6

Laguna, New Mexico

PCB CONTAMINATION

Date: 03/06/90



LEGEND

- PAVED ROAD
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- CULVERT
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- WOODEN FENCE
- BARBED WIRE FENCE
- GATE
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- ESD EMERGENCY SHUTDOWN
- LIGHT
- E ELECTRIC
- T TELEPHONE
- BERM
- FIRE HYDRANT
- MANHOLE
- DIRT PILE
- BENCHMARK

N

100' 50' 0 100' 200'
SCALE IN FEET

CONTOUR INTERVAL = 5 FEET

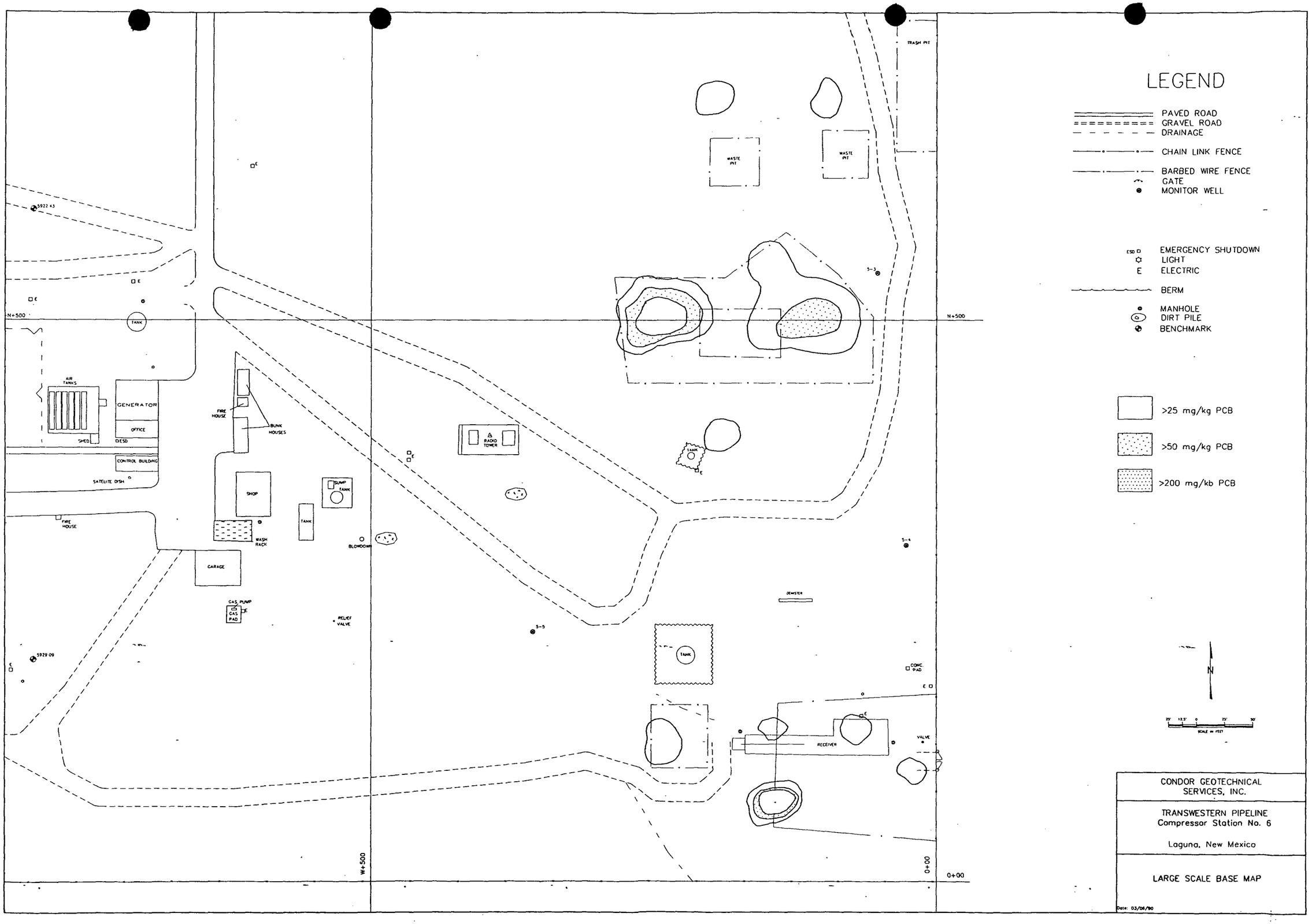
CONDOR GEOTECHNICAL SERVICES, INC.

TRANSWESTERN PIPELINE
Compressor Station No. 6

Laguna, New Mexico

TOPOGRAPHIC MAP

Date: 03/08/90



LEGEND

- PAVED ROAD
- GRAVEL ROAD
- DRAINAGE
- CHAIN LINK FENCE
- BARBED WIRE FENCE
- GATE
- MONITOR WELL

- ESD — EMERGENCY SHUTDOWN
- LIGHT
- E — ELECTRIC
- BERM
- MANHOLE
- DIRT PILE
- BENCHMARK

- >25 mg/kg PCB
- >50 mg/kg PCB
- >200 mg/kb PCB

N

25' 12.5' 0 25' 50'
SCALE IN FEET

CONDOR GEOTECHNICAL SERVICES, INC.

TRANSWESTERN PIPELINE
Compressor Station No. 6

Laguna, New Mexico

LARGE SCALE BASE MAP

Date: 03/08/90

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
Ecological Services
Suite D, 3530 Pan American Highway, NE
Albuquerque, New Mexico 87107

February 5, 1992

Mr. William J. Lemay
Director, State of New Mexico
Oil Conservation Division
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Dear Mr. Lemay:

This responds to the notice of publication received by the U.S. Fish and Wildlife Service (Service) on January 21, 1992, regarding the Oil Conservation Division (OCD) discharge plan applications submitted by Transwestern Pipeline Company on fish, shellfish, and wildlife resources in New Mexico.

GW-89 - Corona Compressor Station located in the NW/4, Section 36, T4S, R15E, Lincoln County.

GW-90 - Portales Compressor Station located in the NW/4, Section 16, T1S, R34E, Roosevelt County

GW-95 - Laguna Compressor Station located in the NE/4, Section 18, and SE/4, Section 7, T9N, R5W, Cibola County.

The Service has the following comments on the issuance of the above listed discharge permits which would allow approximately 25 gallons per day of washdown water to be stored in an on-site above ground steel storage tank prior to transport to an OCD approved off-site disposal facility.

Natural gas pipeline condensates contain many organic constituents including benzene, C1 to C5 alkylated benzenes, toluene, and/or polychlorinated bi-phenyls (PCBs) which may also be incorporated into the condensate through some compressor lubricants. The U.S. Environmental Protection Agency has documented PCB levels of 50 parts per million in the Corona and Laguna sites which are currently under remediation. The Service is concerned that washdown water at all compressor sites may contain any or all of these organic constituents and that accidental spills could result in potential toxicity to Department of the Interior Trust Resources over time. The Service suggests a surface soil monitoring program be implemented to ensure the compressor sites will not present a potential threat to endangered species or to migratory birds that may be found in the area.

If you have any questions concerning our comments, please contact Mary Orms at (505) 883-7877.

Sincerely,

for Jennifer Fowler-Propst
Field Supervisor

cc:

Director, New Mexico Department of Game and Fish, Santa Fe, New Mexico
Regional Administrator, U.S. Environmental Protection Agency, Dallas, Texas
Regional Director, U.S. Fish and Wildlife Service, Fish and Wildlife Enhancement, Albuquerque, New Mexico

OIL CONSERVATION DIVISION
RECEIVED
'92 JAN 30 AM 9 16

STATE OF NEW MEXICO
County of Bernalillo ss

Thomas J. Smithson being duly sworn declares and says that he is National Advertising *manager* of the **Albuquerque Journal** , and that this newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Session Laws of 1937, and that payment therefore has been made or assessed as court costs; that the notice, a copy of which is hereto attached, was published in said paper in the regular daily edition,

for 1 times, the first publication being on the 27 day

of Jan, 1992, and the subsequent consecutive

publications on ....., 1992.

Thomas J Smithson

Sworn and subscribed to before me, a Notary Public in and for the County of Bernalillo and State of New Mexico, this 27 day of Jan, 1992.

Bernadette Ortiz

PRICE $ 38.83

Statement to come at end of month.

12-18-93

CLA-22-A (R-12/92) ACCOUNT NUMBER C 81184

NOTICE OF PUBLICATION
STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DISTRICT

Notice is hereby given that pursuant to New Mexico Water Quality Control Commission Regulations, the following discharge plan applications have been submitted to the Director of the Oil Conservation Division, State Land Office Building, PO Box 2088, Santa Fe, New Mexico 87504-2088, Telephone (505) 827-5800:

(GW-89) - Transwestern Pipeline Company, Larry Campbell, Compliance Environmentalist, PO Box 1717, Roswell, New Mexico, 88202-1717, has submitted a discharge plan application for their Corona Compressor Station located in the NW/4, Section 36, Township 4 South, Range 15 East, NMPM, Lincoln County, New Mexico. Approximately 25 gallons per day of washdown water with a total dissolved solids concentration of approximately 2100 mg/l is stored in an above ground steel tank prior to transport to an OCD approved off-site disposal facility. Groundwater most likely to be affected by an accidental discharge is at a depth of approximately 225 feet with a total dissolved solids concentration of approximately 1500 mg/l. The discharge plan addresses how spills, leaks, and other accidental discharge to the surface will be managed

(GW-90) - Transwestern Pipeline Company Larry Campbell, Compliance Environmentalist, PO Box 1717, Roswell, New Mexico, 88202-1717, has submitted a discharge plan application for their Portales Compressor Station located in the NW/4 NW/4, Section 16, Township 1 South, Range 34 East, NMPM, Roosevelt County, New Mexico. Approximately 25 gallons per day of washdown water with a total dissolved solids concentration of approximately 2100 mg/l is stored in an above ground steel tank prior to transport to an OCD approved off-site disposal facility. Groundwater most likely to be affected by an accidental discharge is at a depth of approximately 64 feet with a total dissolved solids concentration of approximately 1500 mg/l. The discharge plan addresses how spills, leaks and other accidental discharges to the surface will be managed

(GW-95) - Transwestern Pipeline Company, Larry Campbell, Compliance Environmentalist, PO Box 1717, Roswell, New Mexico, 88202-1717, has submitted a discharge plan application for their Laguna Compressor Station located in the NE/4, Section 18, and the SE/4, Section 7, Township 9 South, Range 5 West, NMPM, Valencia County, New Mexico. Approximately 25 gallons per day of washdown water with a total dissolved solids concentration of approximately 2100 mg/l is stored in an above ground steel tank prior to transport to an OCD approved off-site disposal facility. Groundwater most likely to be affected by an accidental discharge is at a depth of approximately 25 feet with a total dissolved solids concentration of approximately 335 mg/l. The discharge plan addresses how spills, leaks and other accidental discharges to the surface will be managed

Any interested person may obtain further information from the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division at the address given above. The discharge plan application may be viewed at the above address between 8:00 am and 5:00 pm, Monday through Friday. Prior to ruling on any proposed discharge plan or its modification, the Director of the Oil Conservation Division shall allow at least thirty (30) days after the date of publication of this notice during which comments may be submitted to him and public hearing may be requested by any interested person. Requests for public hearing shall set forth the reasons why a hearing should be held. A hearing will be held if the Director determines there is significant public interest

If no public hearing is held, the Director will approve or disapprove the proposed plan based on information available. If a public hearing is held, the director will approve or disapprove the proposal plan based on information in the plan and information submitted at the hearing

GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 17th day of January, 1992

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION
s/William J. Lemay, Director

Journal: January 27, 1992

STATE OF NEW MEXICO
ENERGY, MINERALS AND
NATURAL RESOURCES
DEPARTMENT
OIL CONSERVATION DIVISION

CORRECTION

Notice is hereby given that pursuant to New Mexico Water Quality Control Commission Regulations, the following discharge plan applications have been submitted to the Director of the Oil Conservation Division, State Land Office Building, P.O. Box 2088, Santa Fe, New Mexico 87504-2088, Telephone (505) 827-5800:

(GW-95) - Transwestern Pipeline Company, Larry Campbell, Compliance Environmentalist, P.O. Box 1717, Roswell, New Mexico, 88202-1717, has submitted a discharge plan application for their Laguna Compressor Station located in the NE/4, Section 18, and the SE/4, Section 7, Township 9 North, Range 5 West, NMPM, Cibola County, New Mexico. Approximately 25 gallons per day of washdown water with a total dissolved solids concentration of approximately 2100 mg/l is stored in an above ground steel tank prior to transport to an OCD to be affected by an accidental discharge is at a depth of approximately 25 feet with a total dissolved solids concentration of approximately 335 mg/l. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.

Any interested person may obtain further information from the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division at the address given above. The discharge plan application may be viewed at the above address between 8:00 a.m. and 5:00 p.m., Monday through Friday. Prior to ruling on any proposed discharge plan or its modification, the Director of the Oil Conservation Division shall allow at least thirty (30) days after the date of publication of this notice during which comments may be submitted to him and public hearing may be requested by any interested person. Requests for public hearing shall set forth the reasons why a hearing should be held. A hearing will be held if the Director determines there is significant public interest.

If no public hearing is held, the Director will approve or disapprove the proposed plan based on information available. If a public hearing is held, the Director will approve or disapprove the proposed plan based on information in the plan and information submitted at the hearing.

GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 17th day of January, 1992.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION
WILLIAM J. LEMAY, DIRECTOR

Journal: February 1, 1992

STATE OF NEW MEXICO
County of Bernalillo ss

Thomas J. Smithson being duly sworn declares and says that he is National Advertising manager of the **Albuquerque Journal**, and that this newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Session Laws of 1937, and that payment therefore has been made or assessed as court costs; that the notice, a copy of which is hereto attached, was published in said paper in the regular daily edition,

for 1 times, the first publication being on the 1 day of Feb., 1992, and the subsequent consecutive publications on ....., 1992.

Thomas J. Smithson

OFFICIAL SEAL
Bernadette Ortiz
BERNADETTE ORTIZ
NOTARY PUBLIC-NEW MEXICO
NOTARY BOND FILED WITH SECRETARY OF STATE
My Commission Expires 12-18-93

Sworn and subscribed to before me, a Notary Public in and for the County of Bernalillo and State of New Mexico, this 3 day of Feb., 1992.

PRICE $ 22.84

Statement to come at end of month.

CLA-22-A (R-12/92) ACCOUNT NUMBER C 81184

OIL CONSERVATION DIVISION
RECEIVED

'92 JAN 30 AM 9 16

STATE OF NEW MEXICO
County of Bernalillo ss

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for 1 times, the first publication being on the 27 day of Jan, 1992, and the subsequent consecutive publications on ....., 1992.

Thomas J. Smithson

Sworn and subscribed to before me, a Notary Public in and for the County of Bernalillo and State of New Mexico, this 27 day of Jan, 1992.

Bernadette Ortiz

PRICE $ 38.83

Statement to come at end of month.

CLA-22-A (R-12/92) ACCOUNT NUMBER C81184

12-18-93

NOTICE OF PUBLICATION
STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DISTRICT

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(GW-89) - Transwestern Pipeline Company, Larry Campbell, Compliance Environmentalist, PO Box 1717, Roswell, New Mexico, 88202-1717, has submitted a discharge plan application for their Corona Compressor Station located in the NW/4, Section 36, Township 4 South, Range 15 East, NMPM, Lincoln County, New Mexico. Approximately 25 gallons per day of washdown water with a total dissolved solids concentration of approximately 2100 mg/l is stored in an above ground steel tank prior to transport to an OCD approved off-site disposal facility. Groundwater most likely to be affected by an accidental discharge is at a depth of approximately 482 feet with a total dissolved solids concentration of approximately 1500 mg/l. The discharge plan addresses how spills, leaks, and other accidental discharge to the surface will be managed

(GW-90) - Transwestern Pipeline Company Larry Campbell, Compliance Environmentalist, PO Box 1717, Roswell, New Mexico, 88202-1717, has submitted a discharge plan application for their Portales Compressor Station located in the NW/4 NW/4, Section 16, Township 1 South, Range 34 East, NMPM, Roosevelt County, New Mexico. Approximately 25 gallons per day of washdown water with a total dissolved solids concentration of approximately 2100 mg/l is stored in an above ground steel tank prior to transport to an OCD approved off-site disposal facility. Groundwater most likely to be affected by an accidental discharge is at a depth of approximately 64 feet with a total dissolved solids concentration of approximately 1500 mg/l. The discharge plan addresses how spills, leaks and other accidental discharges to the surface will be managed

(GW-95) - Transwestern Pipeline Company, Larry Campbell, Compliance Environmentalist, PO Box 1717, Roswell, New Mexico, 88202-1717, has submitted a discharge plan application for their Laguna Compressor Station located in the NE/4, Section 18, and the SE/4, Section 7, Township 9 South, Range 5 West, NMPM, Valencia County, New Mexico. Approximately 25 gallons per day of washdown water with a total dissolved solids concentration of approximately 2100 mg/l is stored in an above ground steel tank prior to transport to an OCD approved off-site disposal facility. Groundwater most likely to be affected by an accidental discharge is at a depth of approximately 25 feet with a total dissolved solids concentration of approximately 335 mg/l. The discharge plan addresses how spills, leaks and other accidental discharges to the surface will be managed

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GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 17th day of January, 1992

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION
s/William J. Lemay, Director

Journal: January 27, 1992

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GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 17th day of January, 1992.

STATE OF
NEW MEXICO
OIL CONSERVATION
DIVISION
William J. LeMay,
Director

Published in the Lincoln County News on Thursday, January 23, 1992.

NOTICE OF PUBLICATION
STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

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GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 17th day of January, 1992.

(SEAL)

STATE OF NEW MEXICO
OIL CONSERVATION DISTRICT
s/ William J. Lemay
WILLIAM J. LEMAY,
Director

Published in Valencia County News-Bulletin Jan. 25, 1992.

AFFIDAVIT OF PUBLICATION

STATE OF NEW MEXICO

COUNTY OF Valencia

Dana Bowley being first duly sworn, upon his oath, deposes and says:

1. That he is the Editor of the News Bulletin of Valencia County, a weekly newspaper published in the English language and having been regularly published, issued and in general circulation in the County of Valencia and State of New Mexico, for a period of more than six months next preceeding the first publication of the legal notice herein referred to, a printed copy of which is hereto attached, and is a newspaper duly qualified for that purpose within the meaning of Section 10-2-4 of the New Mexico Statutes Annotated (1953). That the publication, a printed copy of which is hereto attached and made a part hereof, was published in said newspaper in the regular and entire issue of every number of the newspaper during the period of time of publication, and in the newspaper proper and not in a supplement thereof, for 1 consecutive issues; the first publication being in the issue of the 25 day of JAN., 19 92, and the last publication being in the issue of the 25 day of JAN., 19 92. And deponent further says that the said notice published has been paid for or has been assessed as court costs in the case numbered.

Acct. #4539

Dana Bowley

Subscribed and sworn to before me the 27 day of JAN., 19 92.

Sandy Boyd
Notary Public

My commission expires: 7-2, 19 93.

PROOF OF PUBLICATION

STATE OF NEW MEXICO
COUNTY OF CIBOLA } ss

Ken Wingate, being duly sworn deposes and says that he is the publisher of **THE CIBOLA COUNTY BEACON**, a newspaper published in Grants, Cibola County, New Mexico, that the notice of

N.M. Water Quality
Control Comm. Reg.

a copy of which is hereto attached was first published in said newspaper in its issue dated 1/28/94 and was published in an issue of said newspaper, once each week, and not in any supplement, thereafter for the full period of 1wk consecutive weeks, the last publication thereof being an issue dated

Ken Wingate

Subscribed and sworn to before me on Jan 30, 1994

Debi Gaglio
Notary Public

My Commission Expires

Sept. 20, 1994

Publisher's Fees $ 45.29

LEGAL NOTICE
NOTICE OF PUBLICATION
STATE OF NEW MEXICO
ENERGY, MINERALS
AND NATURAL
RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
CORRECTION

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GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 17th day of January, 1992.

STATE OF NEW MEXICO

NOTICE OF PUBLICATION

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

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submitted at the hearing.

GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 17th day of January, 1992.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

S E A L

WILLIAM J. LEMAY, Director

NOTICE OF PUBLICATION

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

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GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 17th day of January, 1992.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

S E A L

WILLIAM J. LEMAY, Director

LEGAL NOTICE
NOTICE OF PUBLICATION
STATE OF NEW MEXICO
ENERGY, MINERALS AND
NATURAL RESOURCES
DEPARTMENT
OIL CONSERVATION DIVISION

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GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 17th day of January, 1992.

(SEAL)

STATE OF NEW MEXICO
OIL CONSERVATION
DIVISION

/s/William J. Lemay, Director

Published in the Portales News-Tribune January 22, 1992.
Legal #0579.

Affidavit of Publication

I, Marshall Stinnett

Business Manager of

THE PORTALES NEWS-TRIBUNE

a newspaper of general paid circulation and entered under second class postage privilege in Roosevelt County, published daily, (except Saturday and Monday) at Portales, New Mexico, for fifty-two (52) consecutive weeks preceding this date, do solemnly swear that a copy of the above notice, as per clipping attached, was published weekly in the regular and entire issue of said newspaper, and not in any supplement thereof for 1 consecutive weeks commencing with the issue dated January 22 19 92

and ending with the issue dated January 22 19 92

All publication costs having been paid.

Marshall Stinnett

Subscrib this 22 day of January 19 92

Joyce Bickford
Notary Public

My comr /93 19

PUBLISHER'S AFFIDAVIT

STATE OF NEW MEXICO

- SS

COUNTY OF LINCOLN

Before me, the undersigned, personally appeared Marvin C. Powell, who being sworn states:

That he is the publisher of the Lincoln County News, a weekly newspaper of general paid circulation, which is entered under the second class privilege in Lincoln County, New Mexico; that said newspaper has been so published in Lincoln County, New Mexico, continuously and uninterruptedly during the period of more than twenty-six consecutive weeks next prior to the first issue containing the attached legal notice; that the notice is cause in the Court in and for Lincoln County, New Mexico, was published in said newspaper for one successive issues, the first publication being dated January 23, 1992, and the last publication being dated January 23, 1992, that such legal notice was published in a newspaper duly qualified for that purpose within the meaning of Chapter 167, New Mexico Session Laws of 1937; and the payment therefor in the sum of $63.43 is to be assessed as court costs in said cause.

Marvin C. Powell

PUBLISHER

Subscribed and sworn to before me this 28th day of January, 1992.

Glenna V. Robbins

NOTARY PUBLIC

My commission Expires March 5, 1994

NOTICE PUBLICATION

STATE OF NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT OIL CONSERVATION DIVISION

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GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 17th day of January, 1992.

STATE OF
NEW MEXICO
OIL CONSERVATION
DIVISION
William J. LeMay,
Director

Published in the Lincoln County News on Thursday, January 23, 1992.

DANIEL B. STEPHENS & ASSOCIATES, INC.
ENVIRONMENTAL SCIENTISTS AND ENGINEERS

July 20, 1992

RECEIVED
JUL 23 1992
OIL CONSERVATION DIV.
SANTA FE

0558-2100-92

Mr. Roger Anderson
Oil Conservation Division
P. O. Box 2088
Santa Fe, New Mexico 87504-2088

Re: Closure of Deep Monitor Wells 6-1, 6-2, 6-3, 6-4, and 6-5
Transwestern Pipeline Company, Compressor Station No. 6, Laguna, New Mexico

Dear Mr. Anderson:

The purpose of this letter is to describe closure (abandonment) details for the subject monitor wells as required by OCD correspondence dated March 11, 1992. The wells were abandoned during the period of June 1 to June 15, 1992, and cuttings from the abandoned wells were disposed of on July 16 and 17, 1992.

WELL CLOSURE PROCEDURES

For all well closure procedures described below, depth measurements were referenced from the surface and measured with a tremie pipe/drill stem or an electronic sounding device. All volume calculations were based on the assumption that 20 sacks of hydrated cement are equal to one cubic yard.

All neat cement grout mixtures consisted of 7 gallons of water and 4 pounds of bentonite per 94-pound sack of type 1 and 2 cement. This mixture yielded approximately 15 pounds per gallon of cement.

MONITOR WELLS 6-1, 6-2, 6-4, AND 6-5

These monitor wells were originally completed using 20 feet of 10¾-inch OD by 10½-inch ID steel surface casing to 20 feet below ground surface. An air rotary rig with a 9⅞-inch mill tooth tri-cone rock bit was used to remove the existing cement, PVC, bentonite grout, and filter pack to approximately 30 feet. The remainder of the material to total depth in the borehole was removed using an 8¾-inch mill tooth tri-cone rock bit and minor amounts (1 cup per 100 gallons of water) of a surfactant foam to facilitate cuttings removal. All material removed from the borehole was discharged into a plastic-lined mud pit. The mud pit was secured using "T" posts, wire fencing, and yellow caution tape. The borehole was then grouted from total depth to the surface through a 2⅞-inch tremie pipe. The steel surface casing was cut off at ground level, and a steel cap containing the well number and abandonment date was welded to the top of the surface casing. Photographs of the identification plates are included in Attachment I, and well construction diagrams are included in Attachment II.

SOIL AND GROUND-WATER INVESTIGATIONS • REMEDIAL ACTION • LITIGATION SUPPORT • VADOSE ZONE HYDROLOGY
6020 ACADEMY NE • SUITE 100 • ALBUQUERQUE, NM 87109 • (505) 822-9400 • FAX (505) 822-8877
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MONITOR WELL 6-3

Monitor well 6-3 was originally completed using 20 feet of 10¾-inch OD by 10½-inch ID steel surface casing to 20 feet below ground surface. Since monitor well 6-3 is located in close proximity to and downgradient of wells that had detectable levels of PCBs and chlorinated solvents, the decision was made to install 9⅞-inch secondary steel surface casing inside the existing casing below the present casing. This was done to minimize the possibility of down-hole contamination during abandonment procedures. The original 10½-inch ID surface casing, after being drilled with a 9⅞-inch bit, was reamed to 10½ inches to accommodate the 9⅞-inch OD secondary casing. Due to manufacturing tolerances, possible welds on the original surface casing down-hole, and the possibility that cement was still adhering to the casing, the secondary casing could not be advanced below 26 feet. The material remaining in the borehole was removed using an 8¾-inch bit with water and surfactant foam (to 214 feet). All cuttings were contained in a mud pit secured by "T" posts, wire fencing, and yellow caution tape. The borehole was then grouted from total depth to the surface through a 2⅞-inch tremie pipe. Both the original surface casing and the secondary casing were cut off at ground level, and a steel cap containing the well number and abandonment date was welded to the top of the surface casing. A photograph of the identification plate is included in Attachment I, and a well construction diagram is included in Attachment II.

In summary, monitor wells 6-1 and 6-2 required 6 cubic yards of neat cement grout to properly abandon. Monitor wells 6-3 and 6-4 required 3.5 cubic yards and monitor well 6-5 required slightly over 4 cubic yards of neat cement grout for abandonment.

As stated above, drill cuttings were temporarily stored in pits lined with plastic sheeting adjacent to each well. One cuttings sample was collected from each well and was analyzed for TCLP 8240 and TCLP 8080 (PCB only) constituents. The samples were collected from just below the surface casing (23 to 25 feet below ground surface) in each well. This sampling depth was selected because the highest potential for contamination is in the shallow portion of the aquifer, but no contamination was suspected within the upper surface cased portion of the wells.

The only constituents detected in the TCLP analyses were chloroform (0.002 mg/l) in the sample from 6-1 (23.3') and methyl ethyl ketone (0.13 mg/l) in the cuttings sample for 6-2 (25.5'). Methyl ethyl ketone was also detected in the TCLP blank and in the reagent blank at 0.014 and 0.017 mg/l, respectively. The limit for classification of chloroform as a RCRA hazardous waste is 6 mg/l and the RCRA classification limit for methyl ethyl ketone is 200 mg/l. No other TCLP 8240 constituents were detected in 6-1 and 6-2, and none were detected in 6-3 through 6-5. No PCBs were detected in any of the cuttings samples.

Based on the TCLP results, the cuttings were not TCLP toxic. Consequently, at the approval of OCD, free water was suctioned off the top of the pits, the plastic sheeting was removed, and the pits were covered with clean soil (soil that was excavated to create the pits).

If you have any questions concerning these procedures or need more information, please call one of us.

Sincerely,

DANIEL B. STEPHENS & ASSOCIATES, INC.

BM for KCT

K.C. Thompson
Geologist

Joanne Hilton
Project Manager

KCT/et

cc: Bill Olson, Oil Conservation Division
Ted Ryther, Enron Corporation

ATTACHMENT I

PHOTOGRAPHS

STEAM CLEANING

Steam Cleaning Pipe Truck Tools and
Bits Prior to Each Abandonment

Steam Cleaning Rig Prior to Each Abandonment

STEAM CLEANING

Steam Cleaning Pipe Truck Tools and
Bits Prior to Each Abandonment

Steam Cleaning Pipe Truck Tools and
Bits Prior to Each Abandonment

CEMENTING

Typical Cementing Operation

Mixing and Pumping Cement

CEMENTING

Typical Cementing Operation

MONITOR WELL 6-1

Monitor Well Abandonment

Monitor Well Abandonment

MONITOR WELL 6-1

Monitor Well Abandonment

Monitor Well Abandonment

MONITOR WELL 6-1

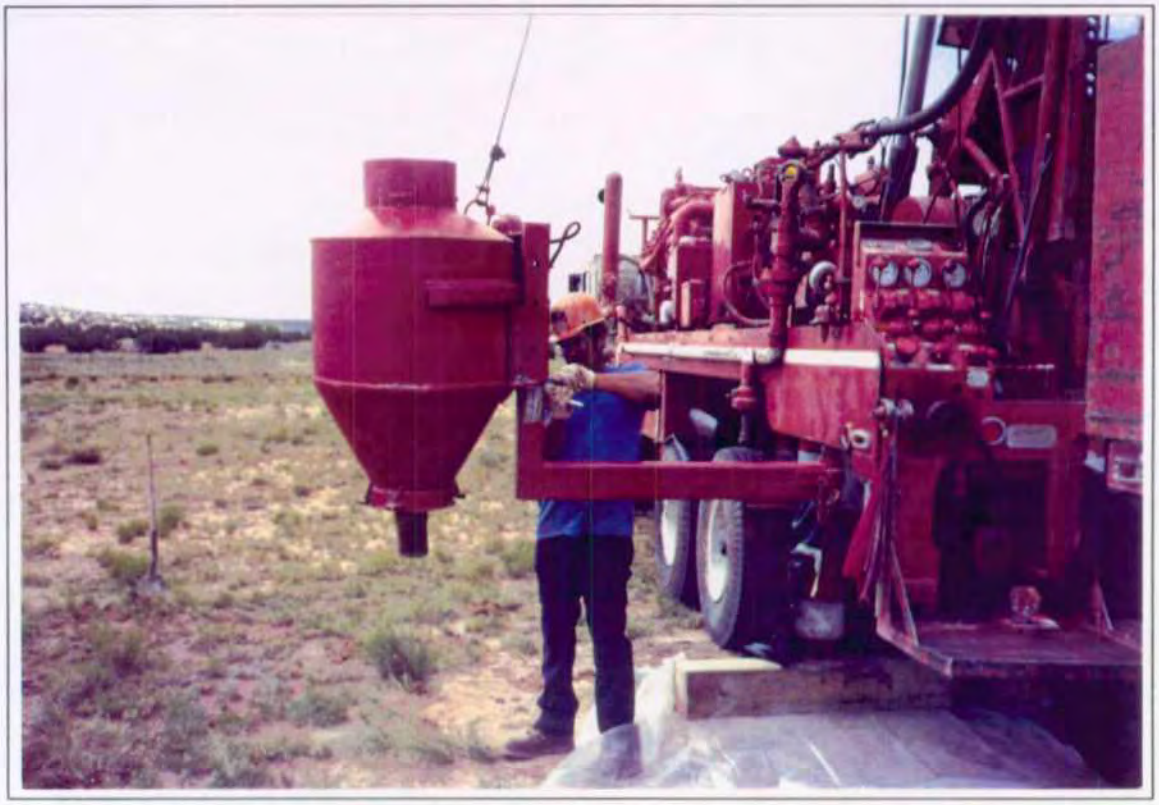
Monitor Well 6-1 Abandoned

MONITOR WELL 6-2

Digging and Lining Mud Pit on Monitor Well 6-2

Preparing to Cement Monitor Well 6-2

MONITOR WELL 6-2

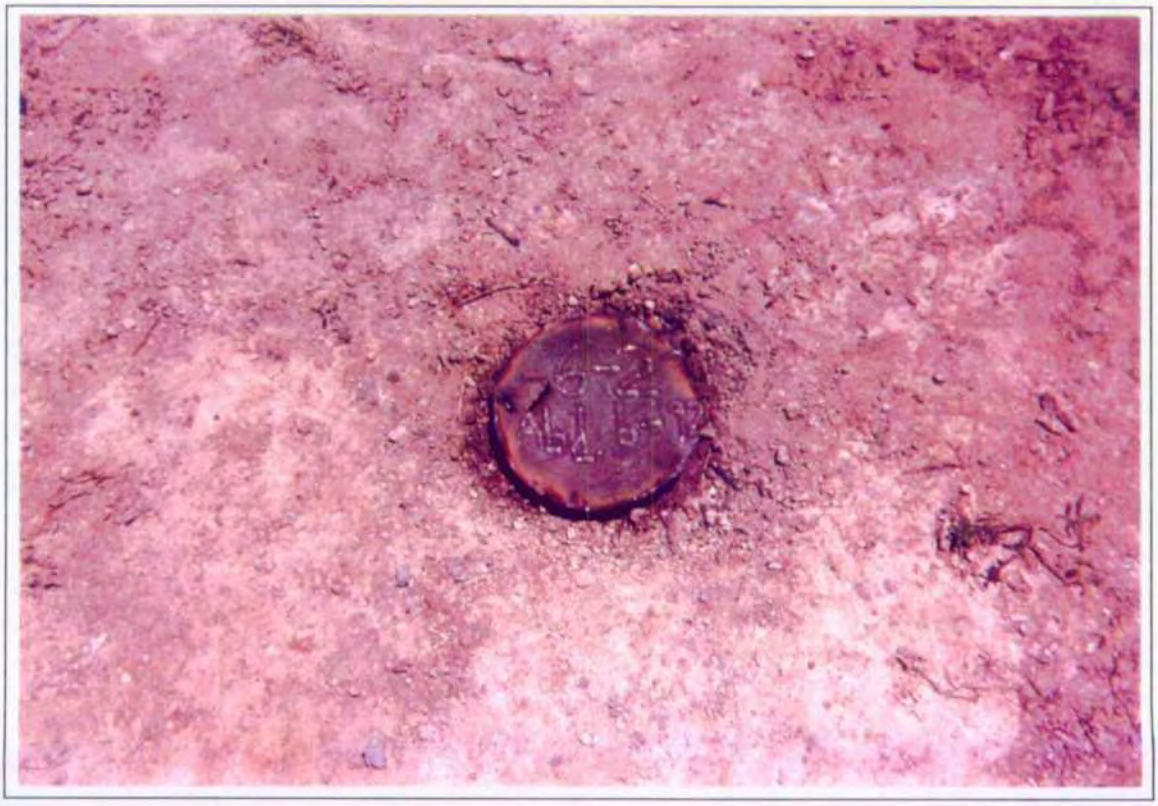


Rigging Up on Monitor Well 6-2

Diverter Welded to Monitor Well 6-2 Surface Casing

MONITOR WELL 6-2

Cementing Monitor Well 6-2



Monitor Well 6-2 Abandoned

MONITOR WELL 6-3

Rigging Up on Monitor Well 6-3

Cement Shoe; 9-3/4" Casing in Monitor Well 6-3 10-3/4" Casing

MONITOR WELL 6-3

Welding Cement Shoe to 9-3/4" Casing

Cement Shoe; 9-3/4" Casing in
Monitor Well 6-3 10-3/4" Casing

MONITOR WELL 6-3

Re-Drilling Monitor Well 6-3

MONITOR WELL 6-3

Cement Shoe

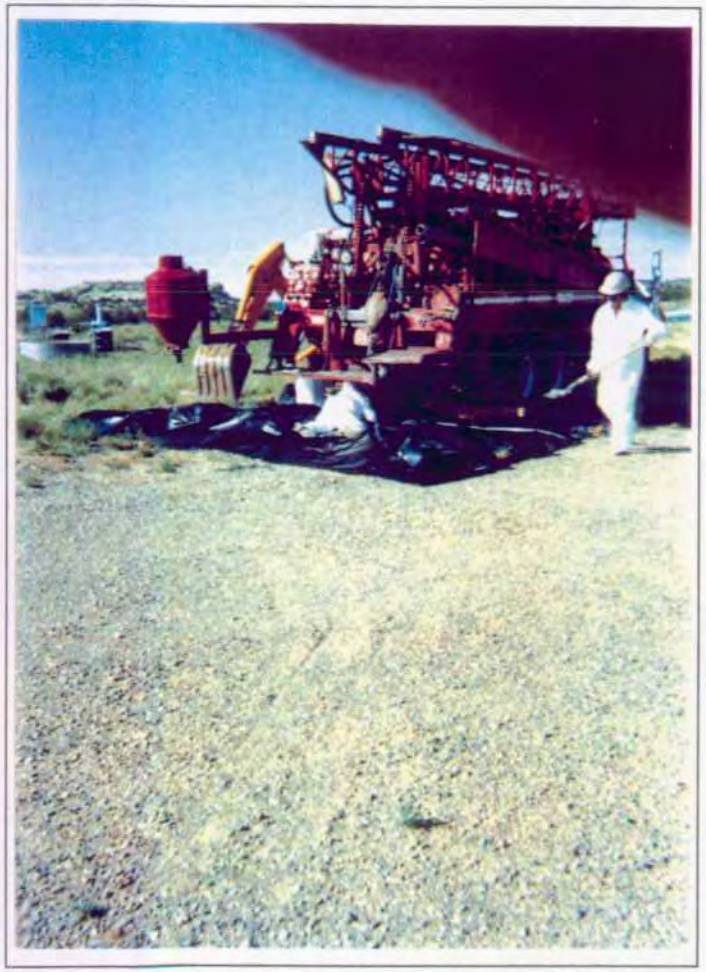
Monitor Well 6-3 Abandoned

MONITOR WELL 6-4

Monitor Well Abandonment

Monitor Well Abandonment

MONITOR WELL 6-4



Rigging Up on Monitor Well 6-4

Monitor Well 6-4 Abandoned

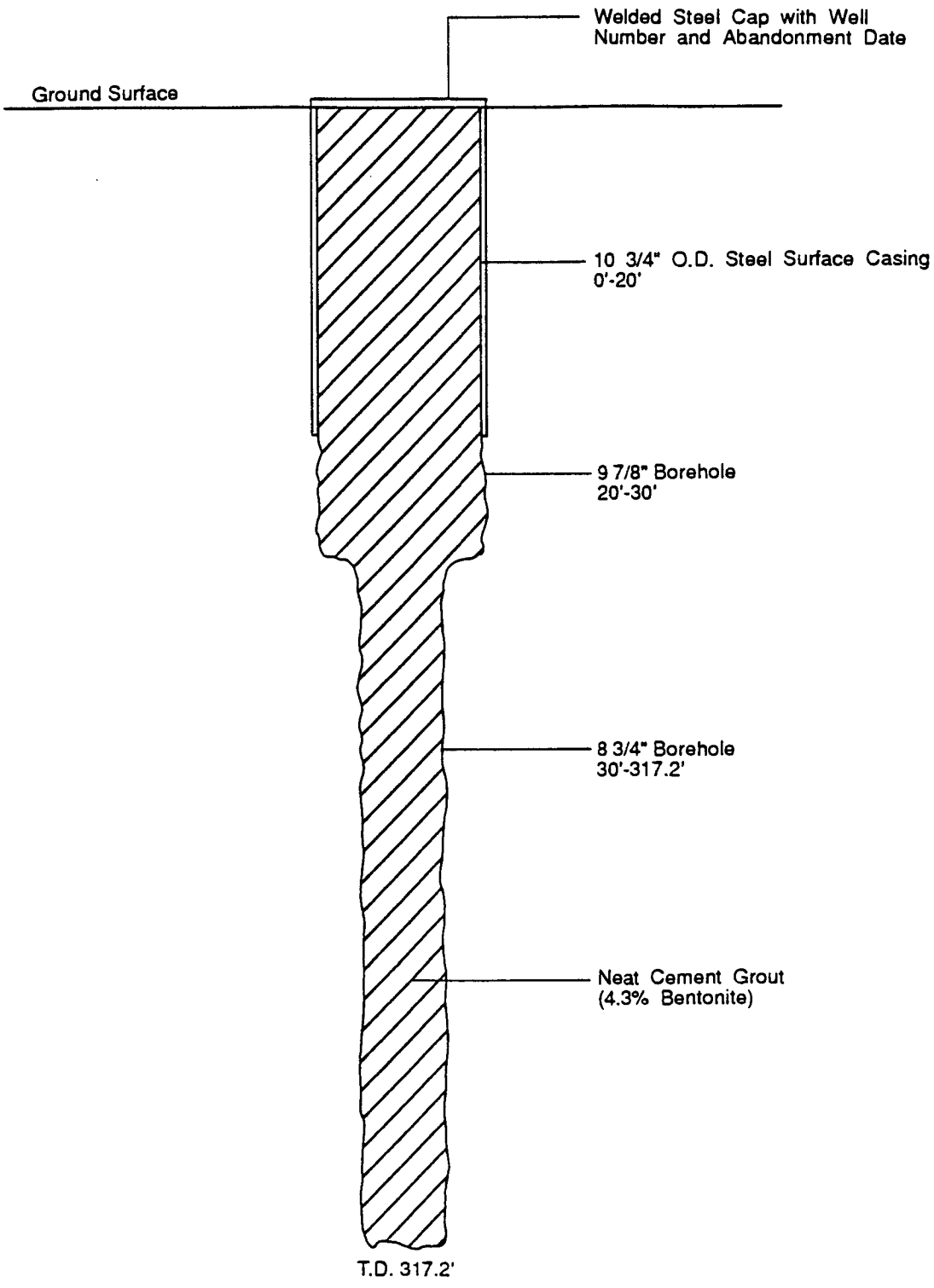
MONITOR WELL 6-5

Rigging Up on Monitor Well 6-5
Preparing to Dig Mud Pit

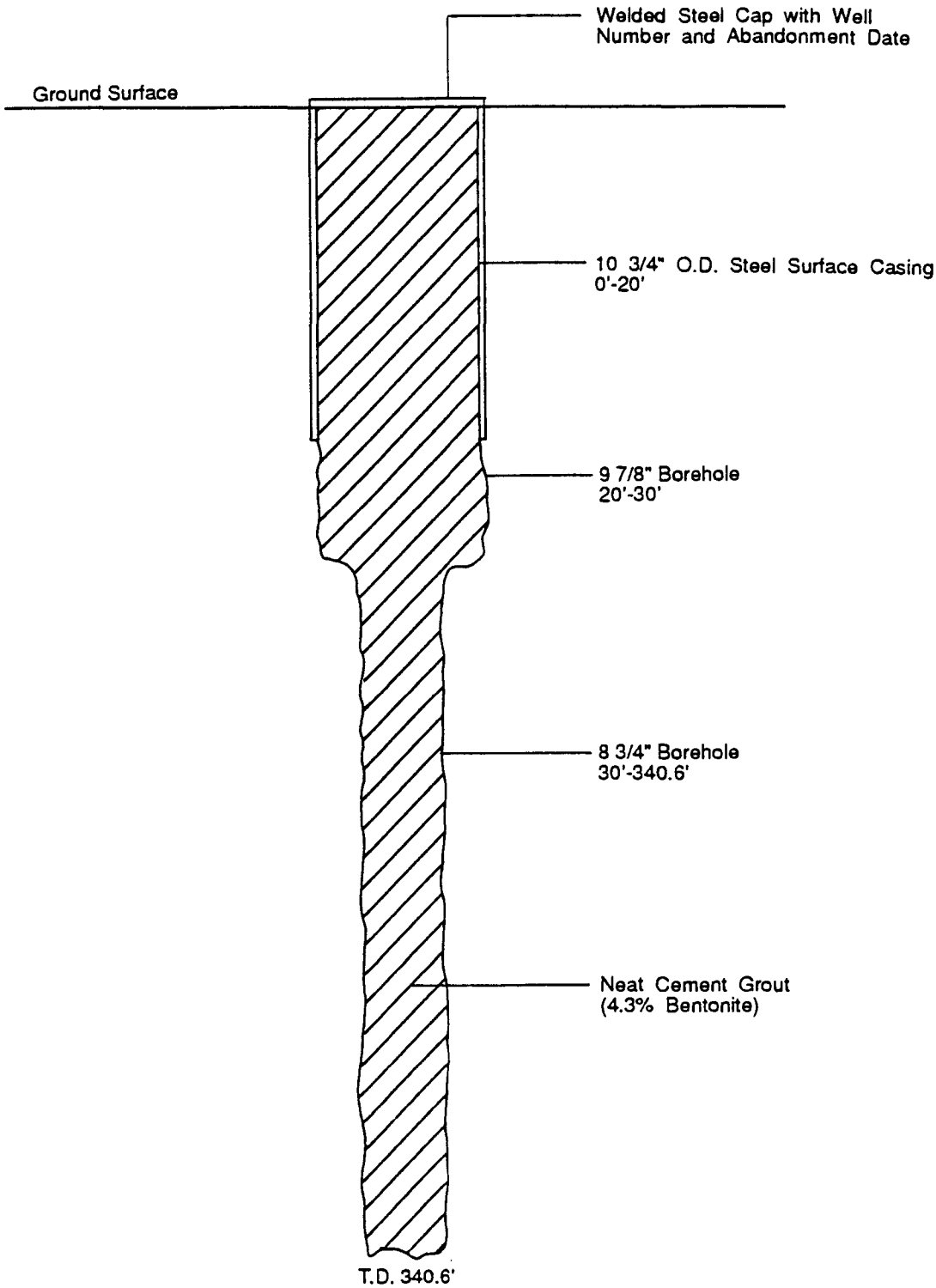
Monitor Well 6-5 Abandoned

ATTACHMENT II

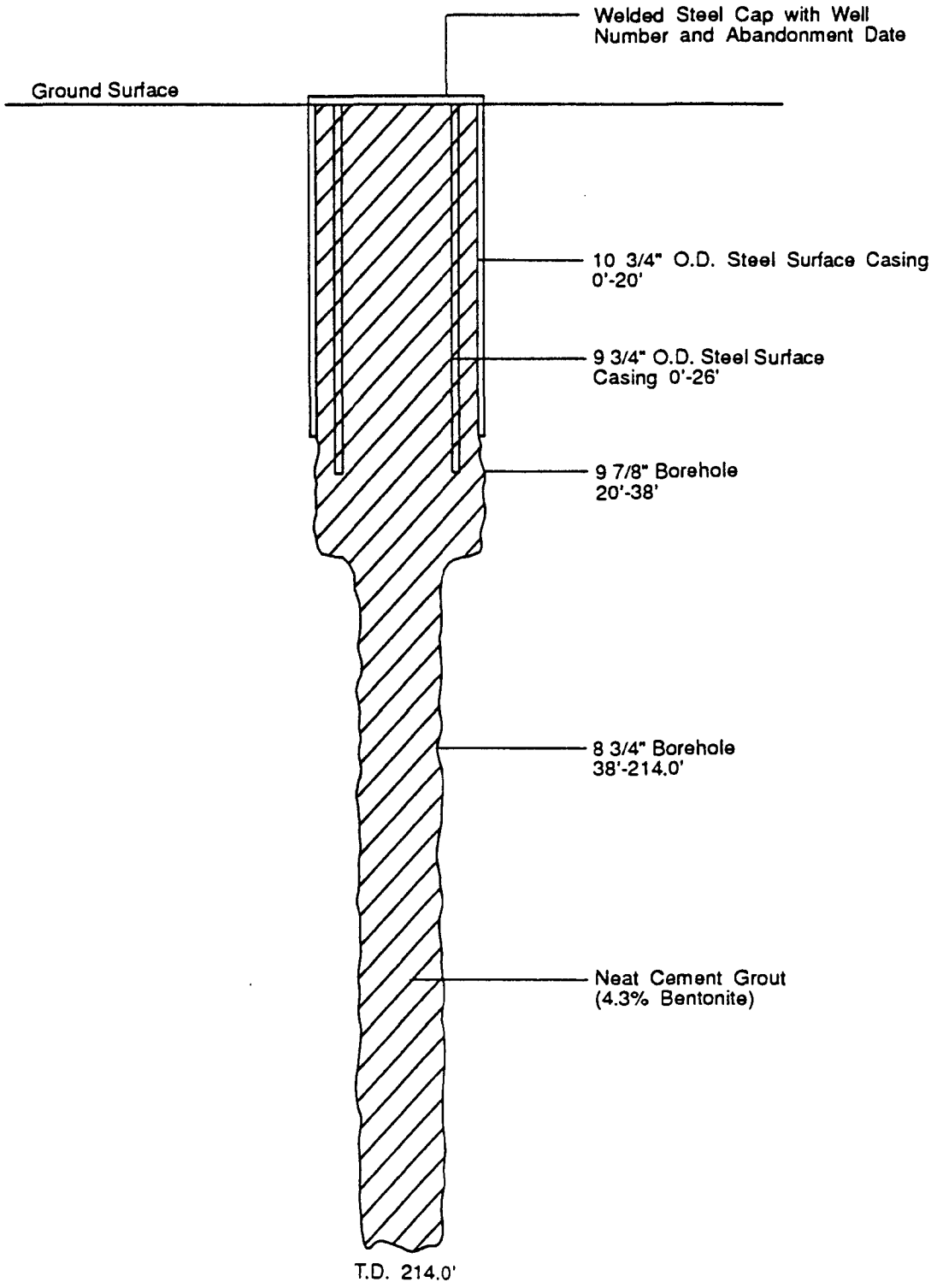
WELL CONSTRUCTION DIAGRAMS



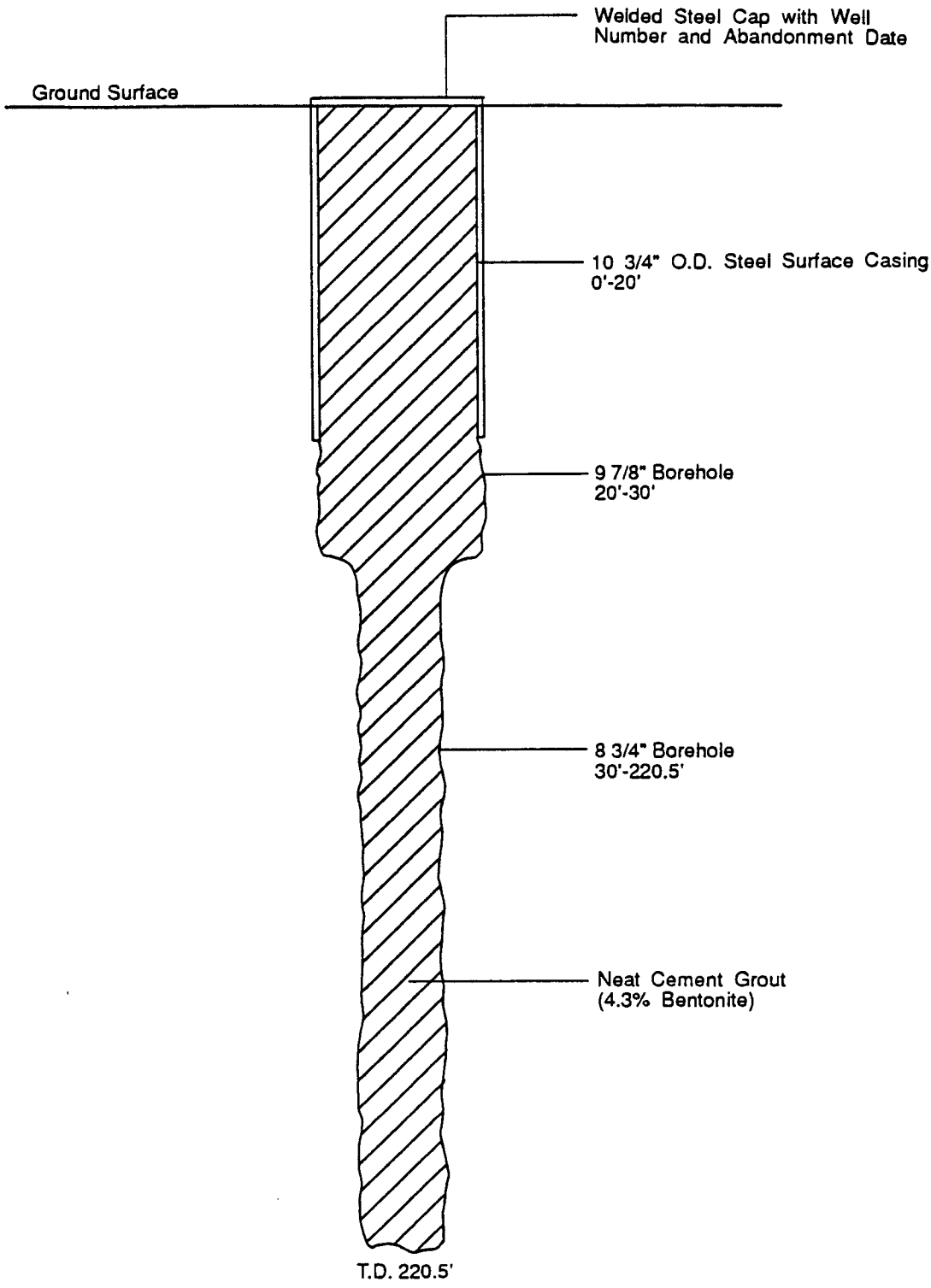
Abandoned Well Schematic 6-1



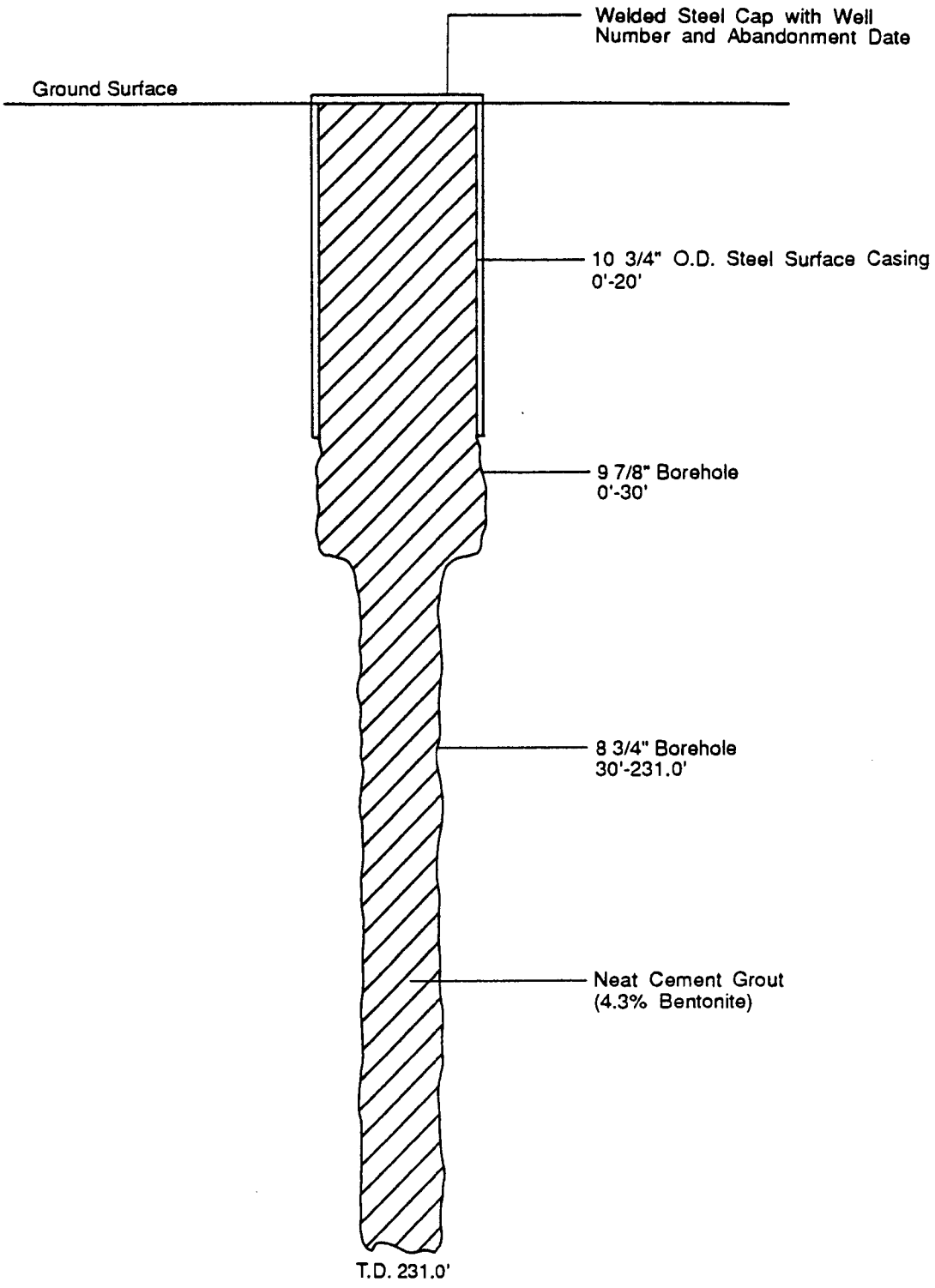
Abandoned Well Schematic 6-2



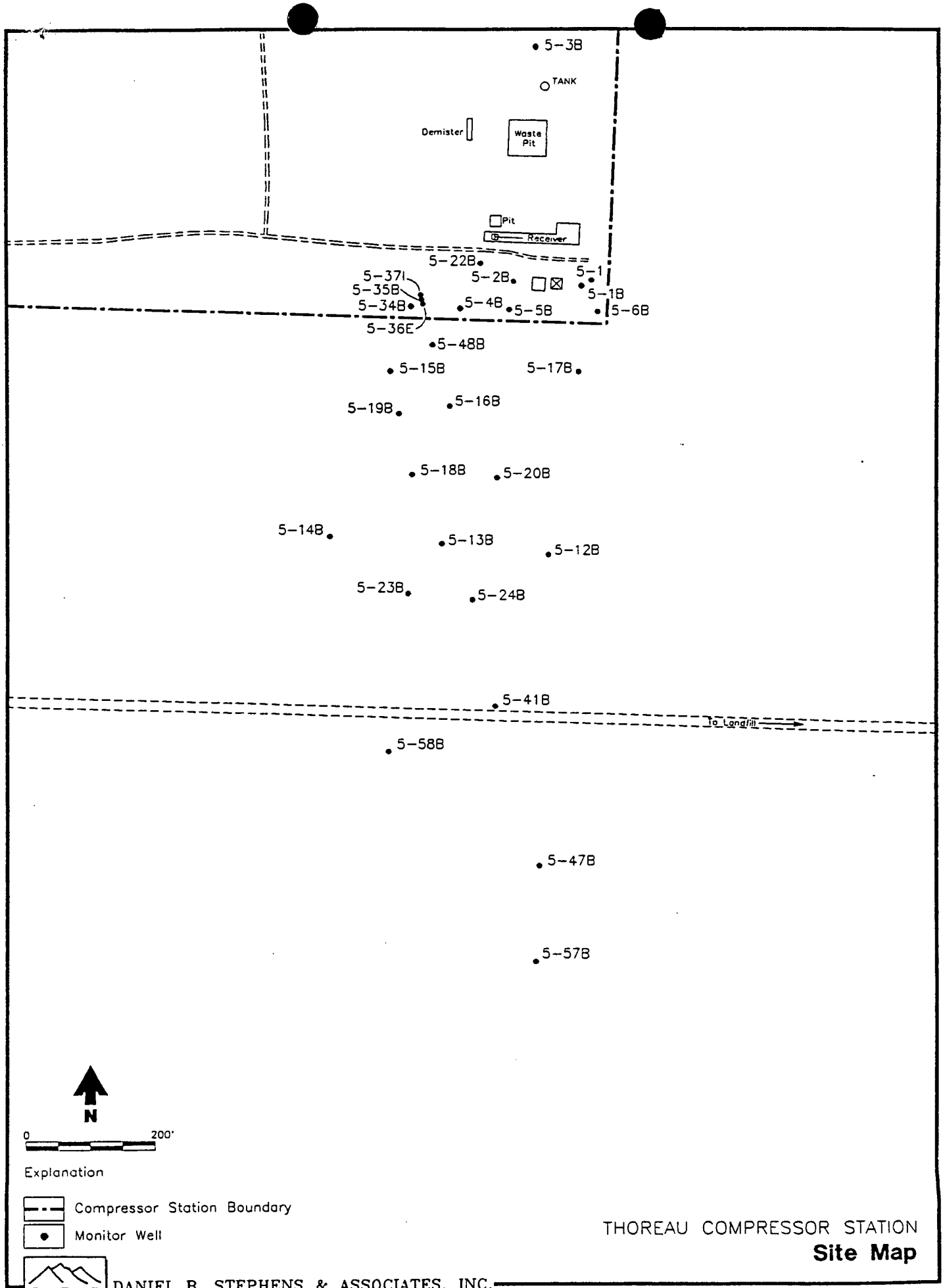
Abandoned Well Schematic 6-3



Abandoned Well Schematic 6-4



Abandoned Well Schematic 6-5



THOREAU COMPRESSOR STATION

Site Map

DANIEL B. STEPHENS & ASSOCIATES, INC.

9-93

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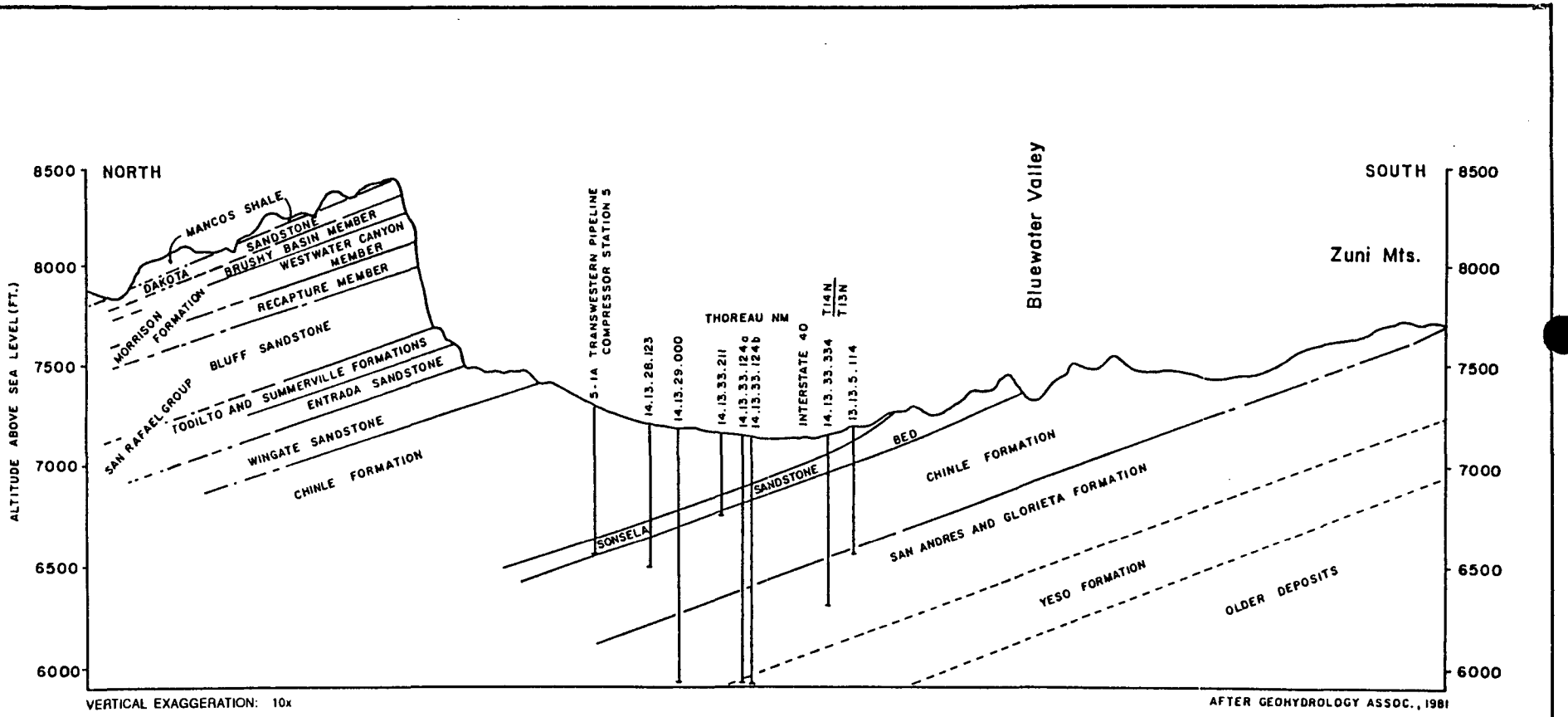


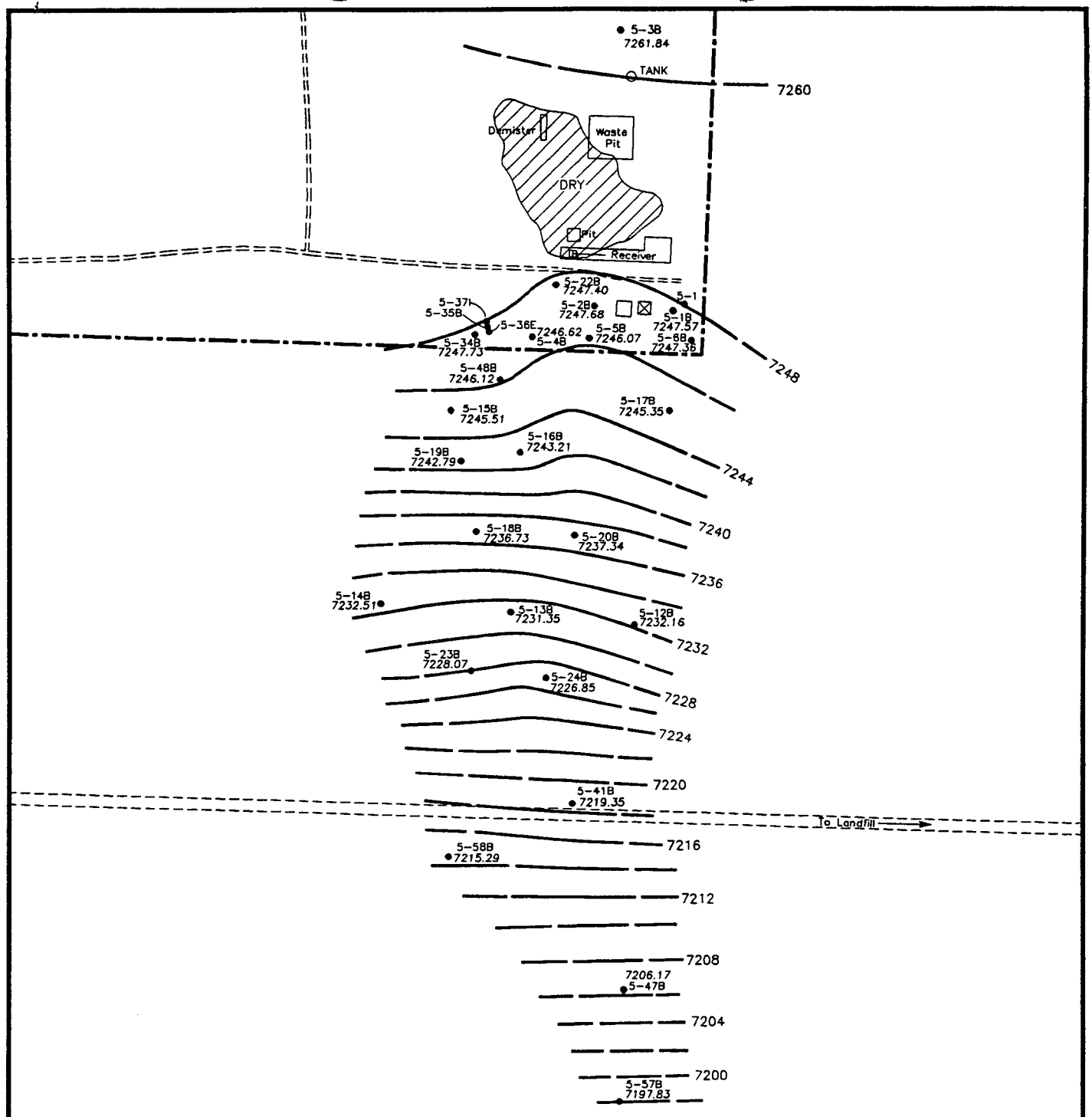
DANIEL B. STEPHENS & ASSOCIATES, INC.

ENVIRONMENTAL SCIENTISTS AND ENGINEERS
ALBUQUERQUE, NEW MEXICO

FIGURE 3.3

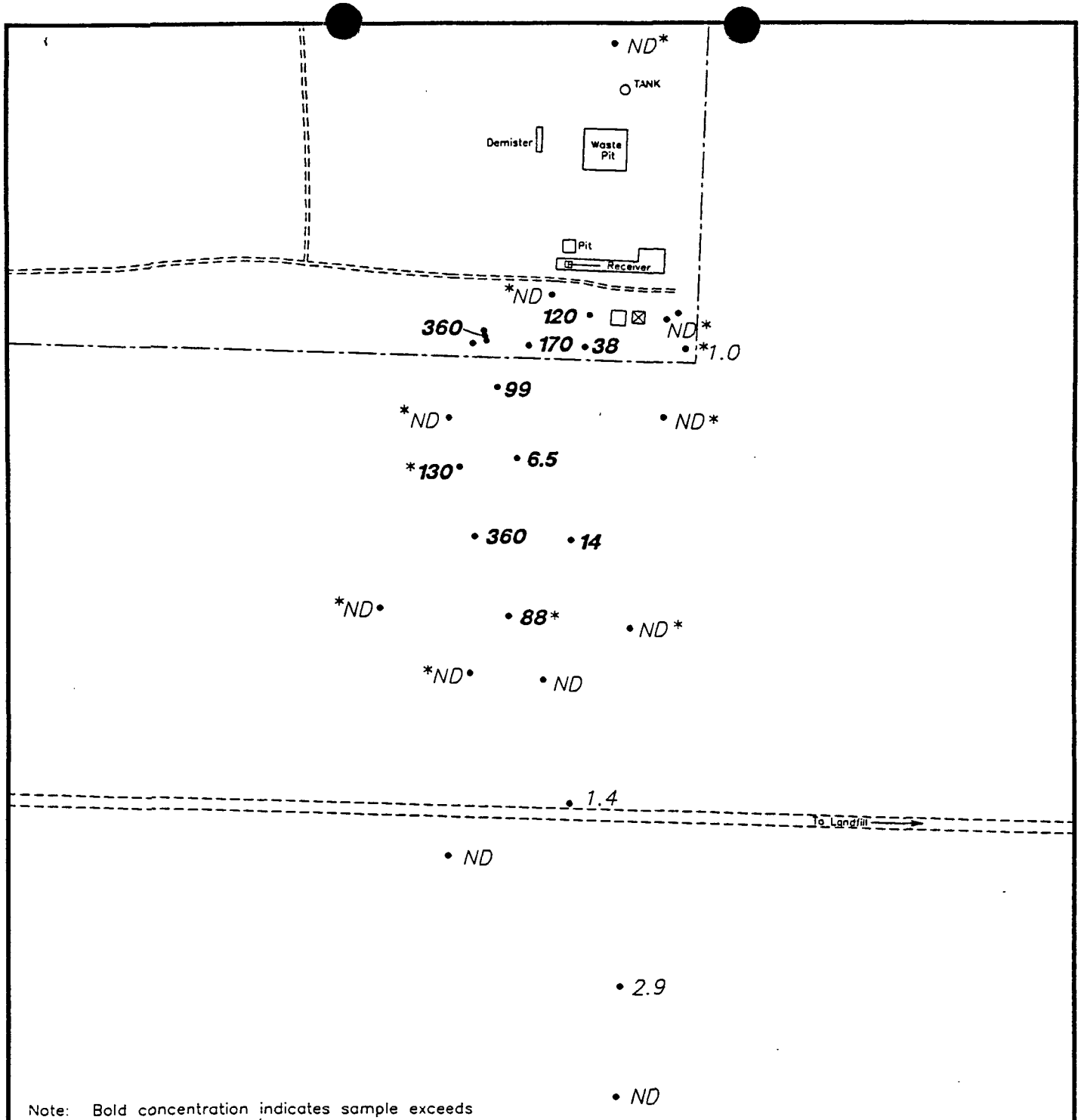
GEOLOGIC CROSS-SECTION
NEAR THOREAU, NEW MEXICO

DATE	PROJECT NO	DESIGNED BY	DRAWN BY	CHECKED BY
2/19/90	89-030T	BM	EE	JH



Water Table Elevation for the Perched Alluvial Aquifer, April 19, 1993 Thoreau Compressor Station

DANIEL B. STEPHENS & ASSOCIATES, INC.
4-93
JN 2105



Note: Bold concentration indicates sample exceeds EPA MCL of 5.0μg/l benzene.

N

0 200'

Explanation

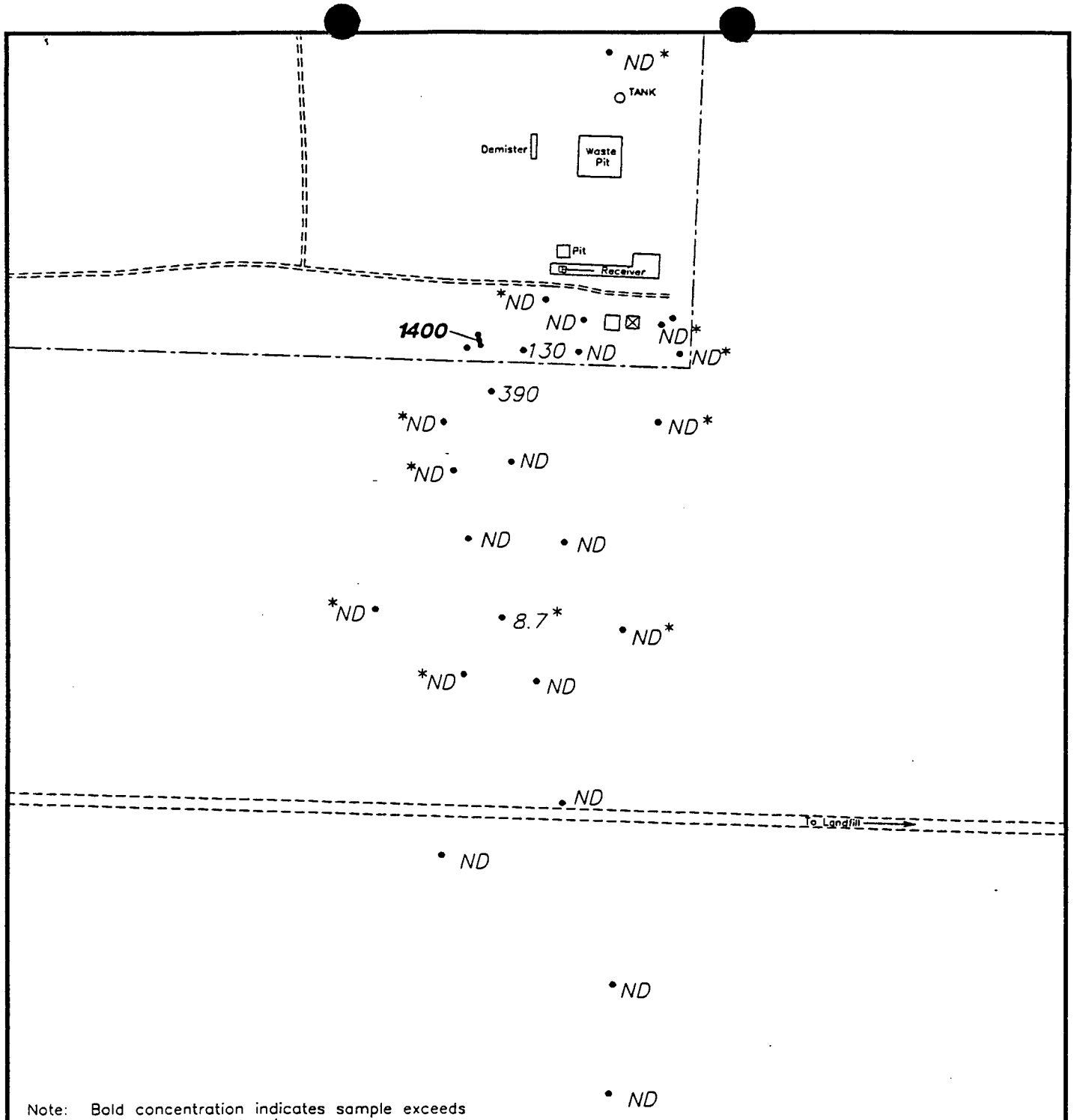
- • 82 — Monitor Well Showing Benzene Concentration (μg/l) Sampled 4/93
- * — Sampled 10/92
- ND — Not Detected
- Compressor Station Boundary

THOREAU COMPRESSOR STATION

Benzene Concentration In Ground Water April 1993

DANIEL B. STEPHENS & ASSOCIATES, INC.

9-93 JN 2105



Note: Bold concentration indicates sample exceeds EPA MCL of 1,000μg/l toluene.

N

0 200'

Explanation

- 82 — Monitor Well Showing Toluene Concentration (μg/l) Sampled 4/93
- * — Sampled 10/92
- ND — Not Detected
- Compressor Station Boundary

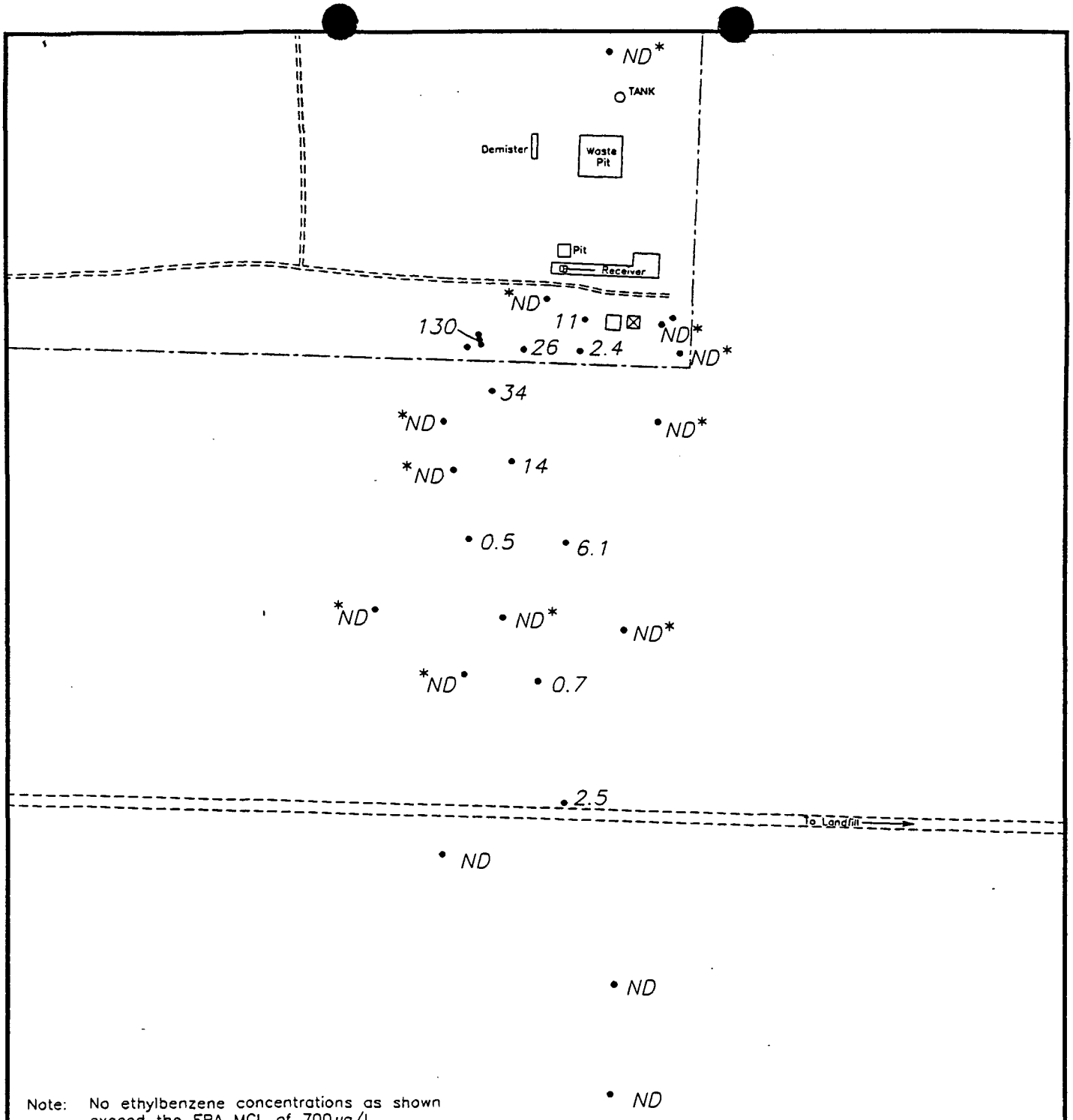
THOREAU COMPRESSOR STATION

Toluene Concentration in Ground Water April 1993

DANIEL B. STEPHENS & ASSOCIATES, INC.

9-93

JN 2105



Note: No ethylbenzene concentrations as shown exceed the EPA MCL of 700 µg/l.

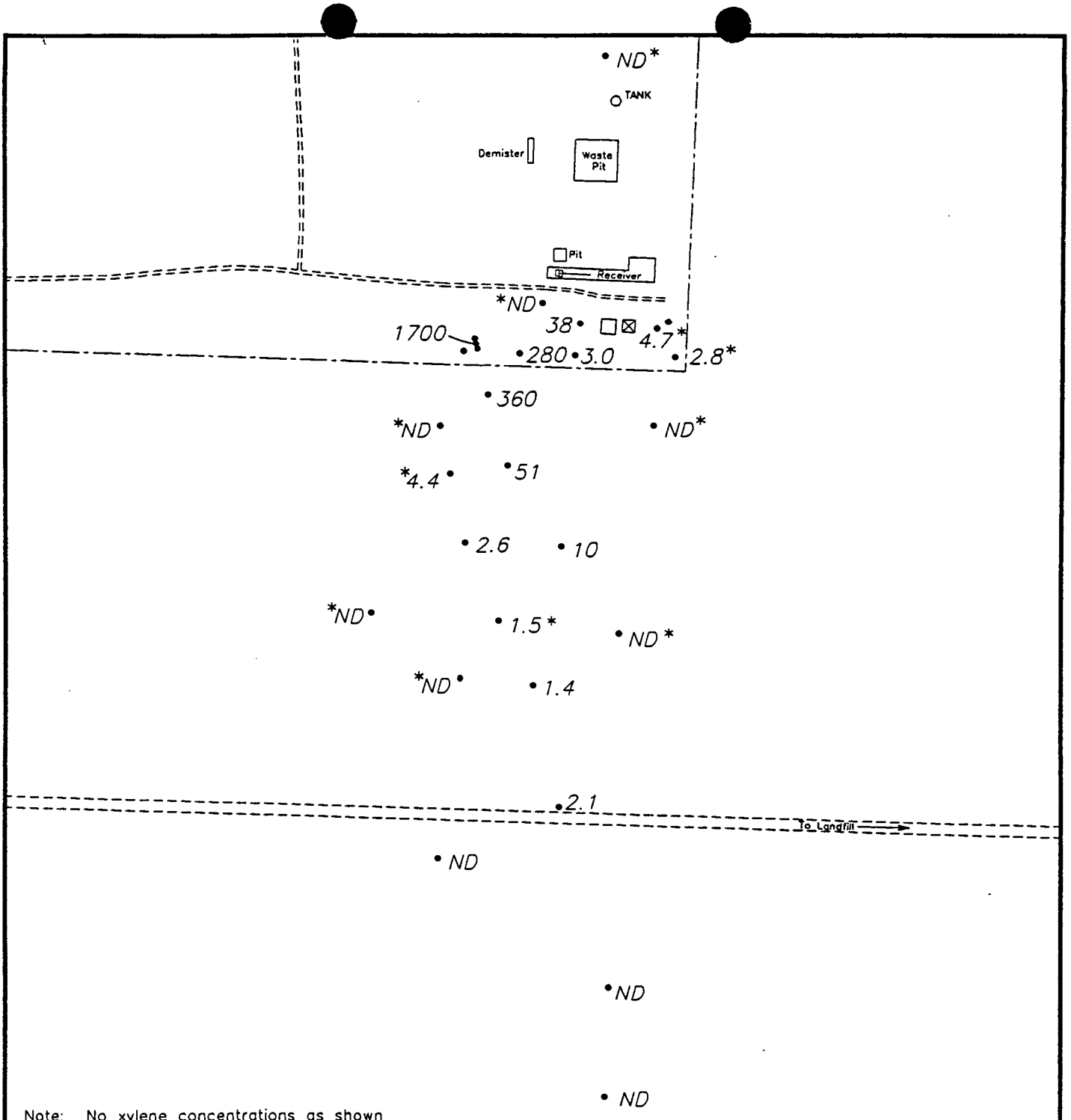
Explanation

- 82 — Monitor Well Showing Ethylbenzene Concentration (µg/l) Sampled 4/93
- * — Sampled 10/92
- ND — Not Detected
- Compressor Station Boundary

THOREAU COMPRESSOR STATION

Ethylbenzene Concentration in Ground Water April 1993

DANIEL B. STEPHENS & ASSOCIATES, INC.
9-93
JN 2105



Note: No xylene concentrations as shown exceed the EPA MCL of 10,000 µg/l.

N

0 200'

Explanation

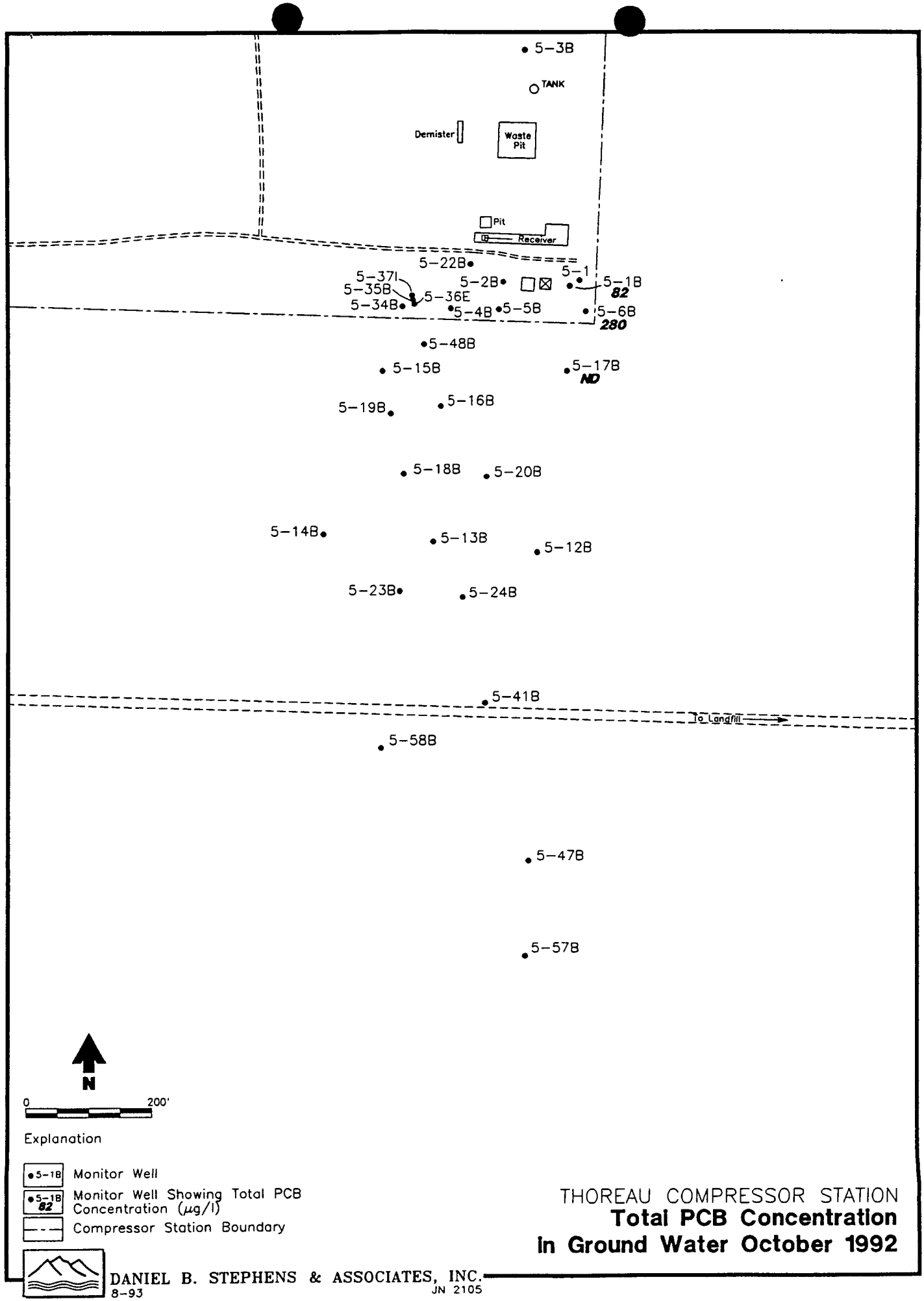
- • 82 — Monitor Well Showing Xylene Concentration (µg/l) Sampled 4/93
- * — Sampled 10/92
- ND — Not Detected
- ---- — Compressor Station Boundary

THOREAU COMPRESSOR STATION

Xylene Concentration In Ground Water April 1993

DANIEL B. STEPHENS & ASSOCIATES, INC.

9-93 JN 2105



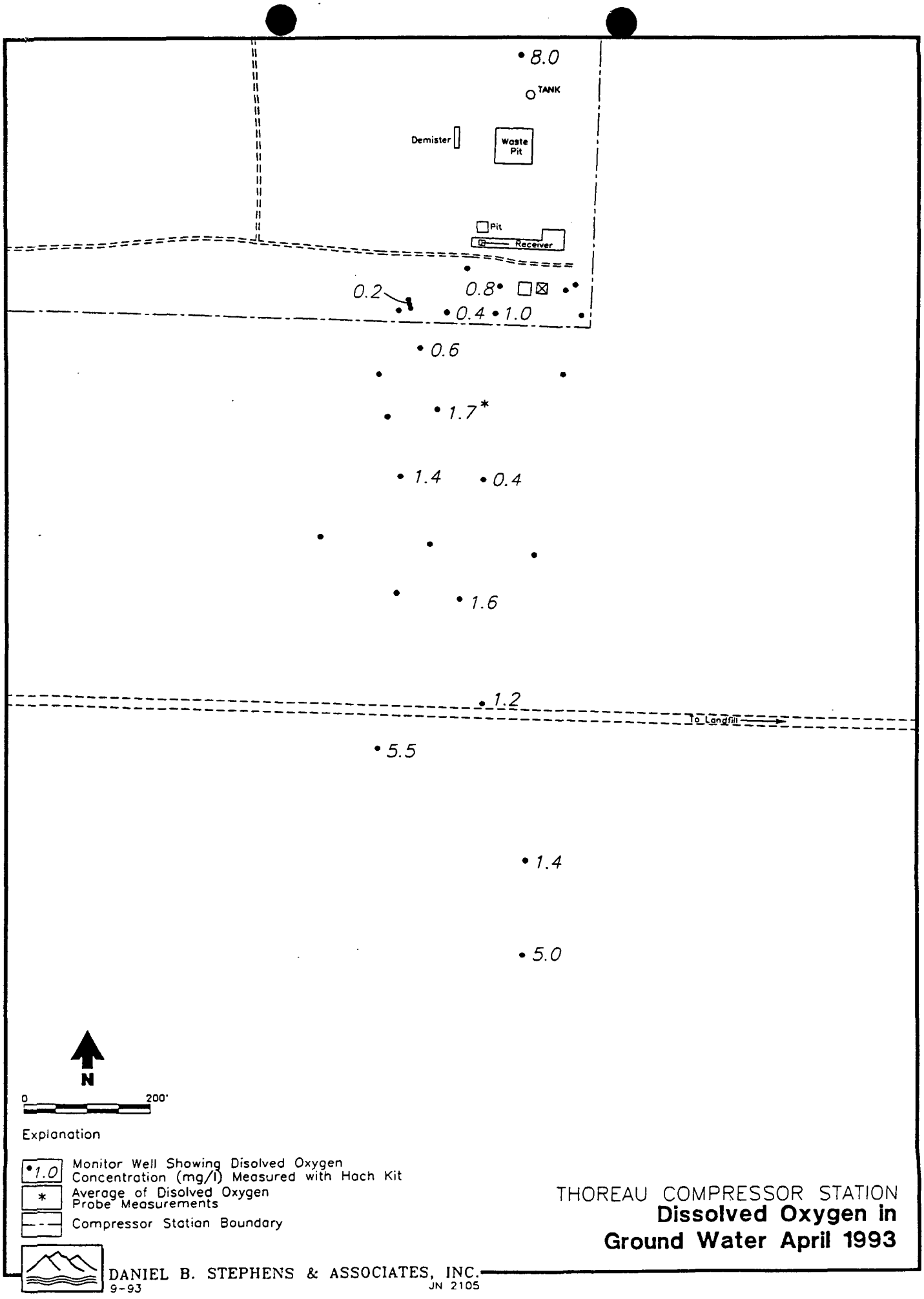
THOREAU COMPRESSOR STATION

Total PCB Concentration in Ground Water October 1992

DANIEL B. STEPHENS & ASSOCIATES, INC.

8-93

JN 2105



Explanation

- •1.0 Monitor Well Showing Disolved Oxygen Concentration (mg/l) Measured with Hach Kit
- * Average of Disolved Oxygen Probe Measurements
- Compressor Station Boundary

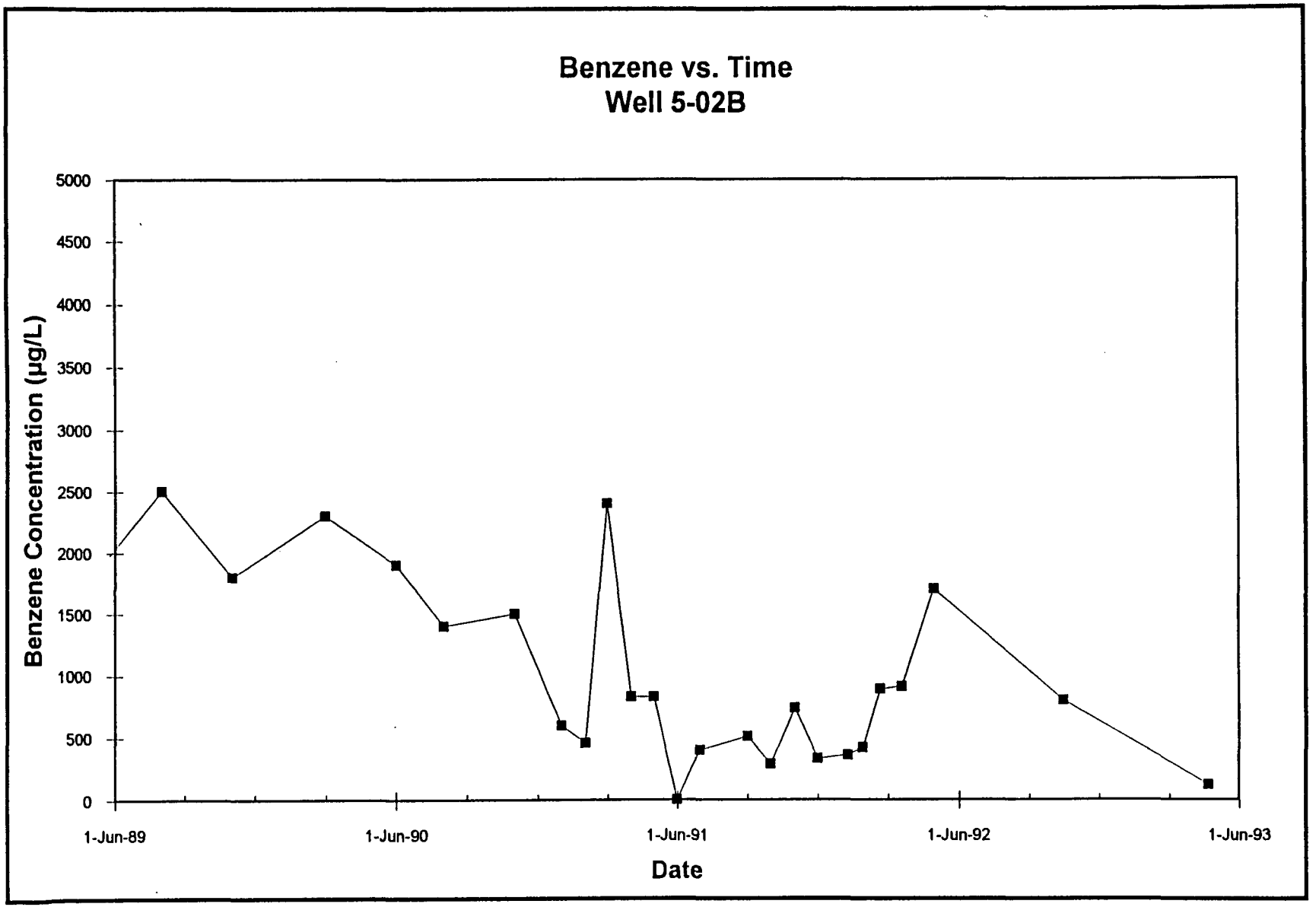
THOREAU COMPRESSOR STATION

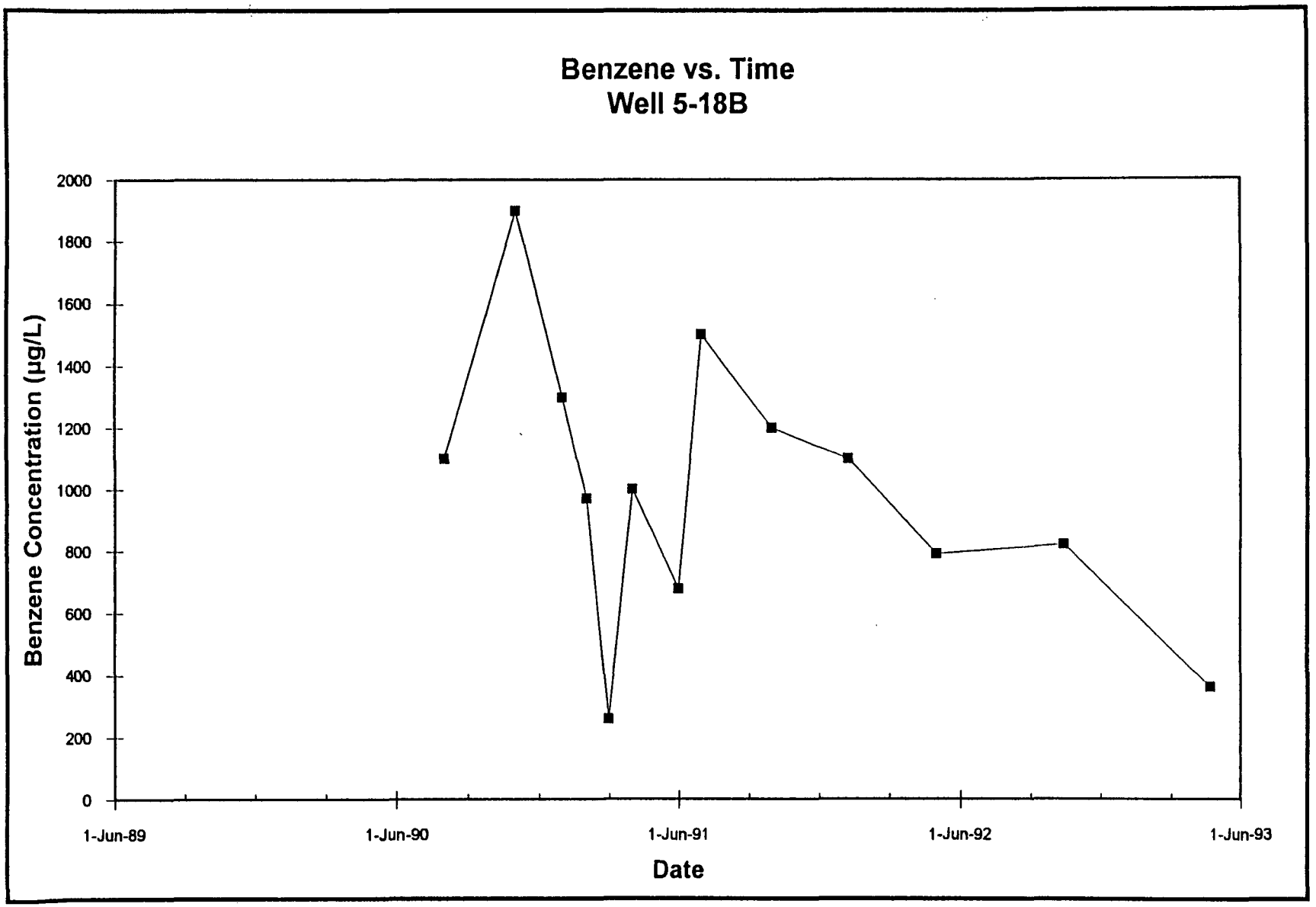
Dissolved Oxygen in Ground Water April 1993

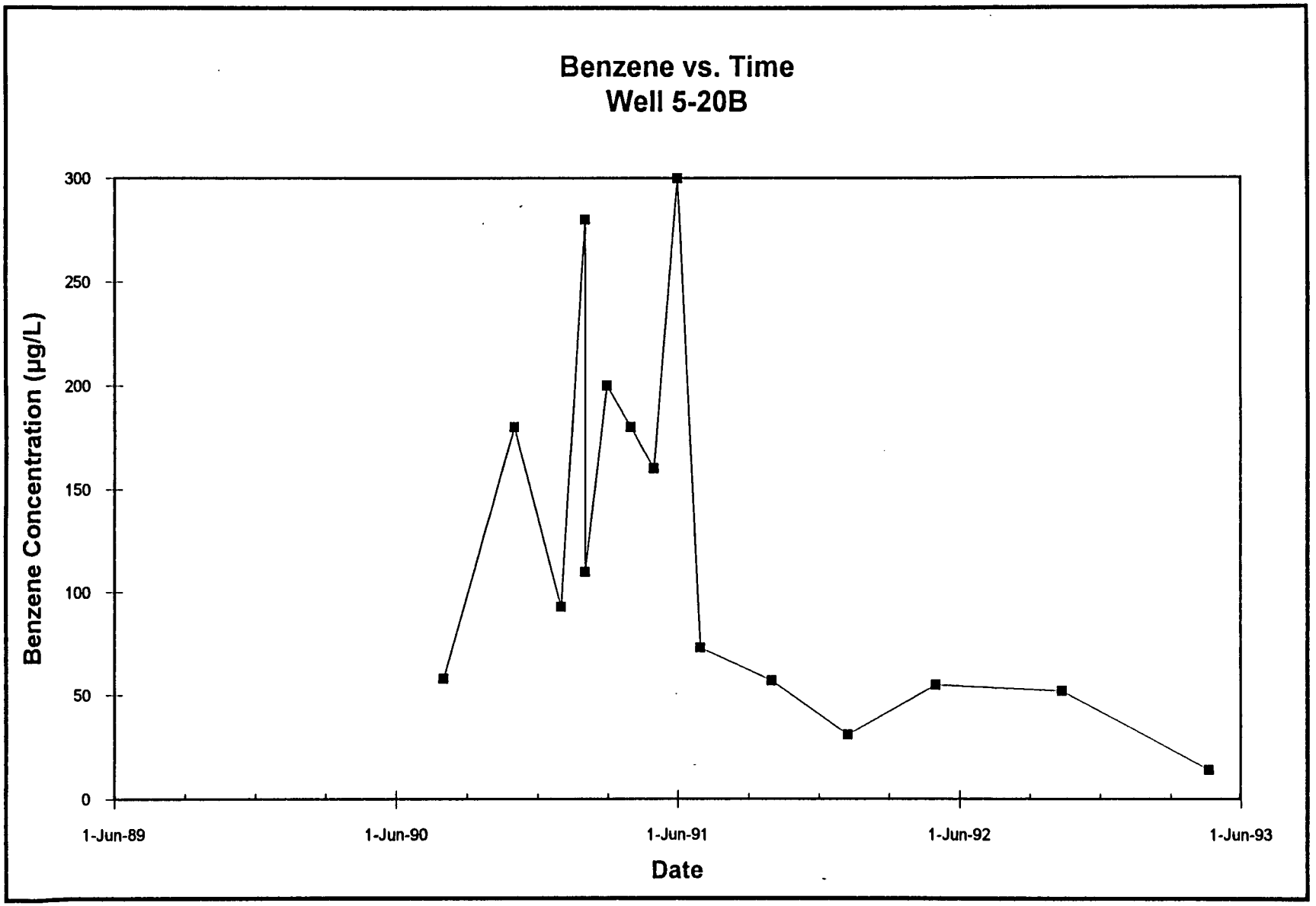
DANIEL B. STEPHENS & ASSOCIATES, INC.

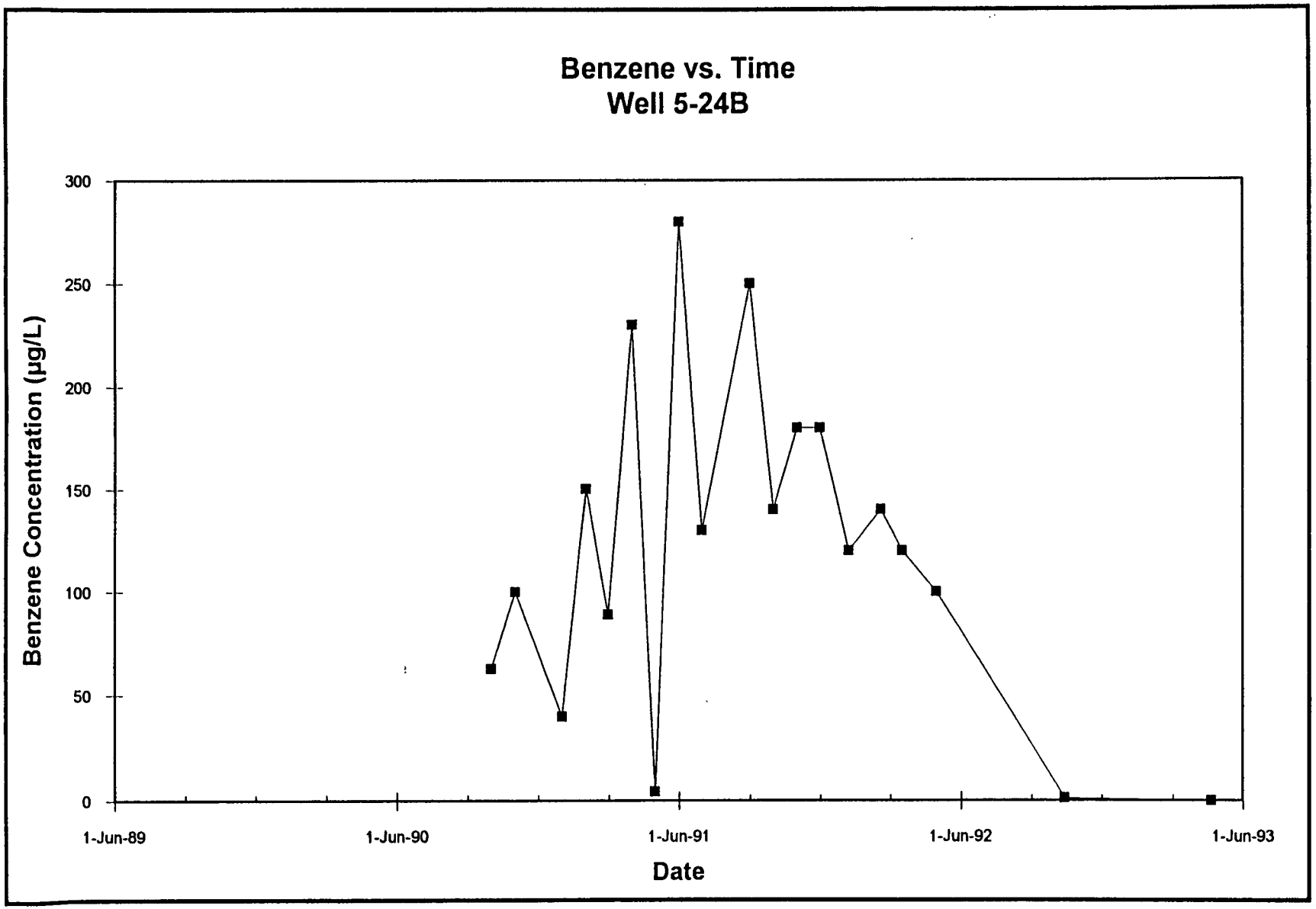
9-93

JN 2105


Benzene vs. Time
Well 5-02B
Benzene Concentration (µg/L)
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
1-Jun-89
1-Jun-90
1-Jun-91
1-Jun-92
1-Jun-93
Date


Benzene vs. Time
Well 5-18B
Benzene Concentration (µg/L)
2000
1800
1600
1400
1200
1000
800
600
400
200
0
1-Jun-89
1-Jun-90
1-Jun-91
1-Jun-92
1-Jun-93
Date


Benzene vs. Time
Well 5-20B
Benzene Concentration (µg/L)
300
250
200
150
100
50
0
1-Jun-89
1-Jun-90
1-Jun-91
1-Jun-92
1-Jun-93
Date


Benzene vs. Time
Well 5-24B
Benzene Concentration (µg/L)
300
250
200
150
100
50
0
1-Jun-89
1-Jun-90
1-Jun-91
1-Jun-92
1-Jun-93
Date

BIOLOGICALLY MEDIATED REACTIONS RESULTING IN OXIDATION OF HYDROCARBONS

(In Order of Decreasing Redox Potential)

Aerobic Respiration:

$$2\ \text{-CH}_2\text{-} + 3\ O_2 \longrightarrow 2\ CO_2 + 2\ H_2O$$

0.29 g $\text{-CH}_2\text{-}$ per g O_2

Denitrification:

$$5\ \text{-CH}_2\text{-} + 6\ NO_3^- + 6\ H^+ \longrightarrow 5\ CO_2 + 3\ N_2 + 8\ H_2O$$

0.19 g $\text{-CH}_2\text{-}$ per g NO_3^-

Iron (III) Reduction:

$$\text{-CH}_2\text{-} + 6\ Fe^{3+} + 2\ H_2O \longrightarrow CO_2 + 6\ Fe^{2+} + 6\ H^+$$

0.04 g $\text{-CH}_2\text{-}$ per g Fe^{3+}

Sulfate Reduction:

$$4\ \text{-CH}_2\text{-} + 3\ SO_4^{2-} + 3\ H^+ \longrightarrow 4\ CO_2 + 3\ HS^- + 4\ H_2O$$

0.19 g $\text{-CH}_2\text{-}$ per g SO_4^{2-}

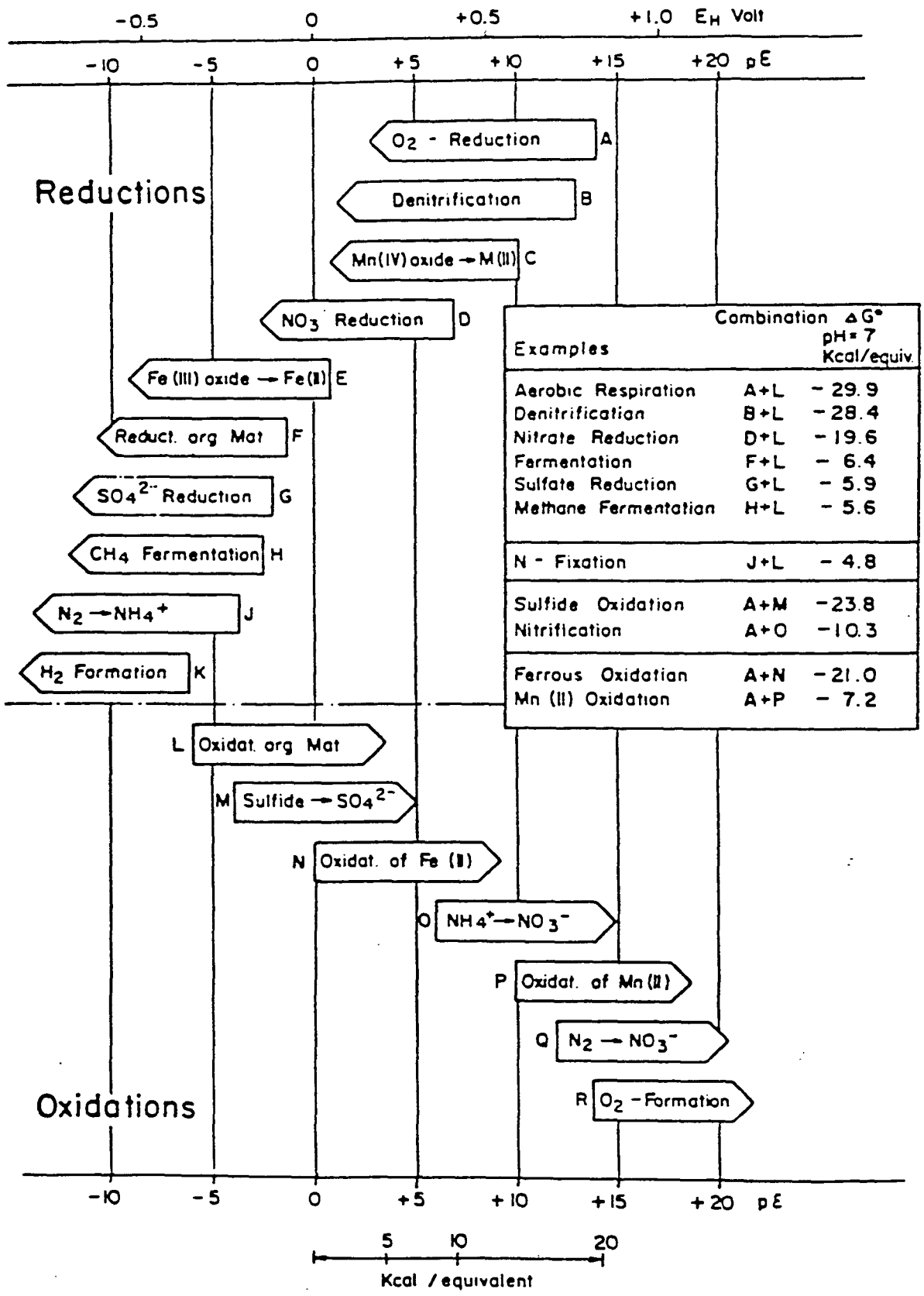


Figure 7.11 Sequence of microbially mediated redox processes.

Table 2. Relative Stoichiometric Efficiency of Common Bioremediation Reactions

Reaction	Eh[1] (volts)	ΔG_f° [2] (kJ/mole)	Application Concentration[3] (mg/l)	Hydrocarbon Oxidizing Capacity Per Liter[4] (mg CH_2/l)
O_2 Respiration	+0.8	–2,870	–8 (as O_2)	**2.3**
Denitrification	+0.7	–2,900	45 (as NO_3^-)	**8.5**
Iron (III) Reduction	0.0		1.0 (as Fe)	**0.04**
Sulfate Reduction	–0.2	–790		
1. NM ground water standard			600 (as $SO_4^=$)	**118**
2. Solubility limit			1400	**275**
3. Colloidal transport			1400+	**275+**

[1] Approximate redox potential below which reaction can proceed at pH=7.
[2] Standard free energy change for reaction. More negative values indicate increasing tendency for reaction to proceed.
[3] Maximum application concentration equal to maximum water solubility (O_2) or New Mexico Ground Water Standards (NO_3, $Fe_{(d)}$, $SO_4^=$).
[4] Mass of hydrocarbon potentially oxidized by one liter of ground water containing the maximum application concentration of the oxidant.

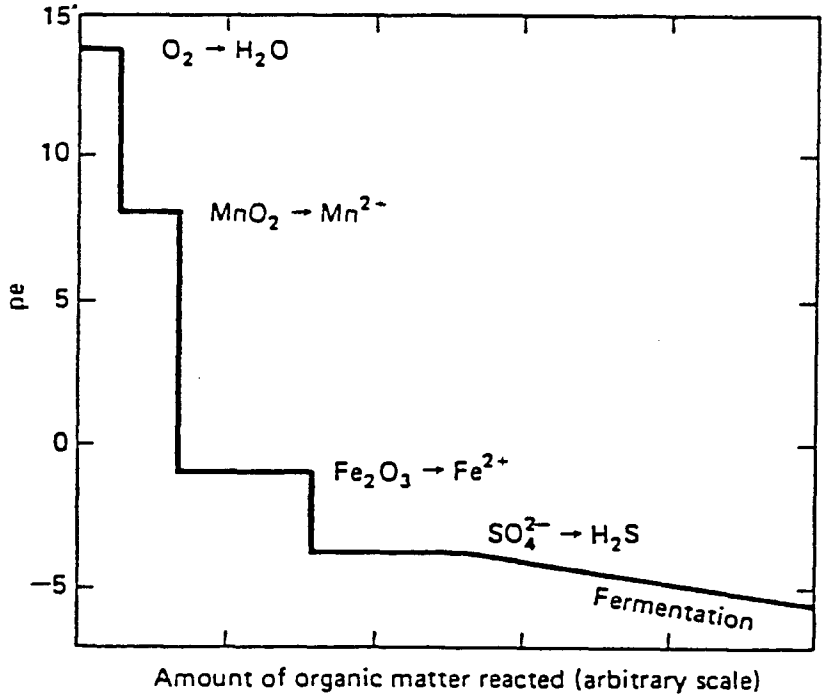


Figure 12-3 Change in pe of a fresh water in contact with sediment as a function of the amount of organic matter decomposed. The lengths of the various horizontal segments are arbitrary, depending on the amounts of specific solid phases available for reaction. pH is assumed constant at 7.0.

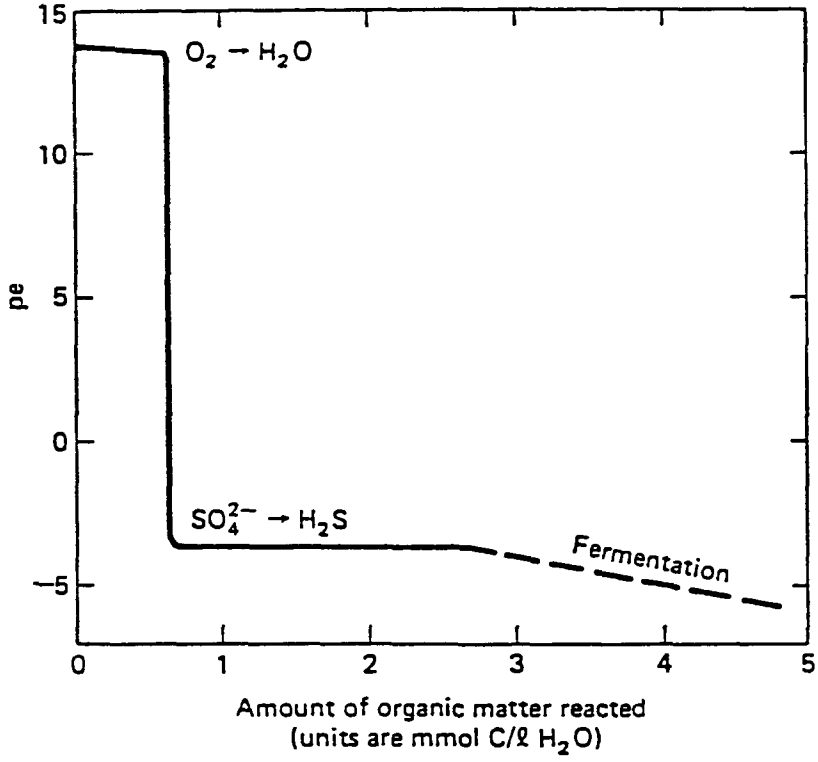
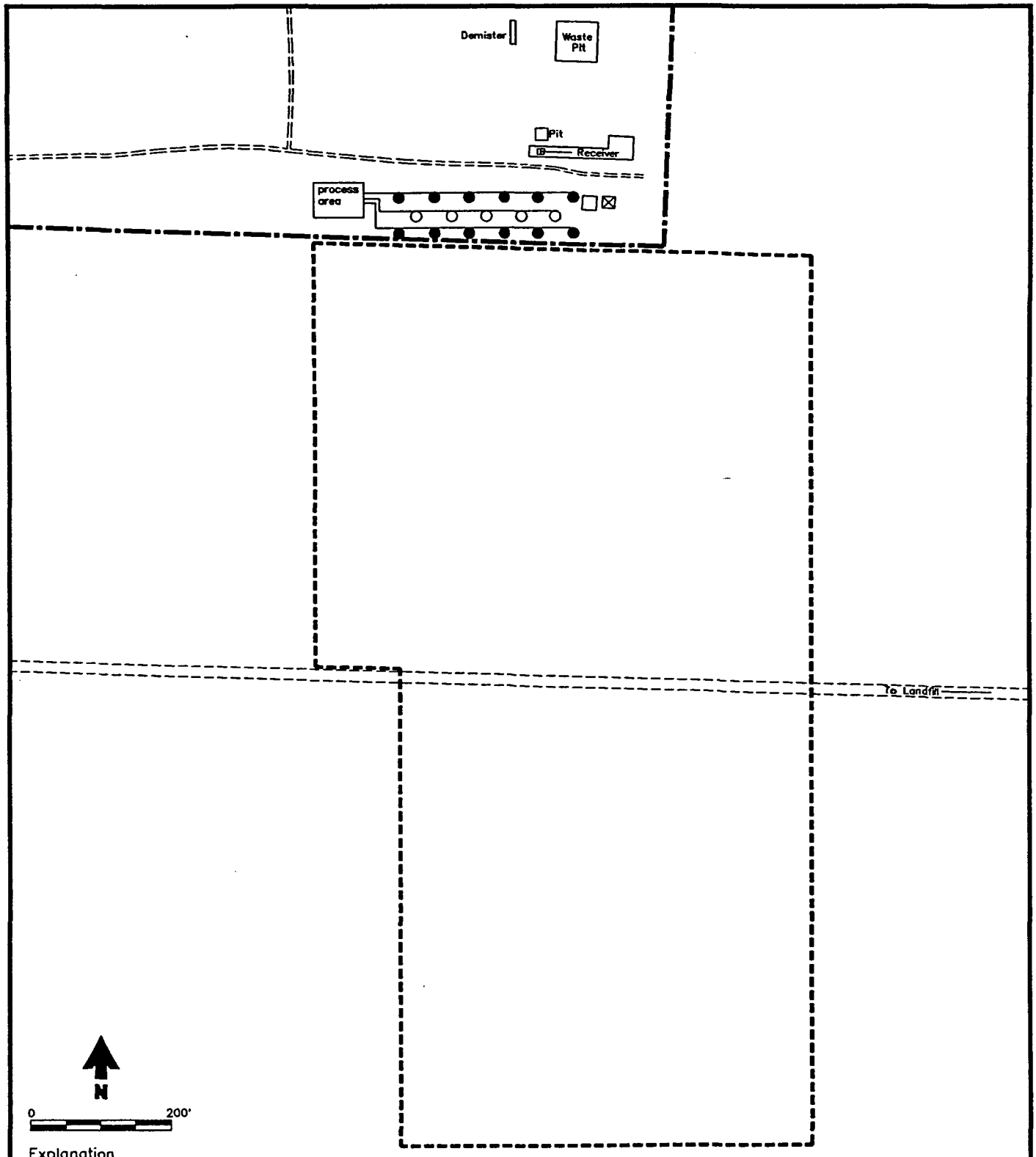


Figure 12-2 Change in pe of a fresh water (dissolved $O_2 = 10$ mg/l, dissolved $SO_4^{2-} = 96$ mg/l) as a function of the amount of organic matter decomposed. Reactions involving nitrogen compounds may provide a small amount of buffering between the O_2/H_2O and the SO_4^{2-}/H_2S levels. pH is assumed constant at 7.0.



Proposed Sparge/VES Locations for Source Area

DANIEL B. STEPHENS & ASSOCIATES, INC.
6-93
JN 2105

PILOT TEST OF NITRATE-ENHANCED HYDROCARBON BIOREMEDIATION IN A MODERATE- TO LOW-PERMEABILITY AQUIFER

Joanne Hilton[1], Bob Marley[1], Ted Ryther, P.E.[2], Jeffrey Forbes[1]

[1]Daniel B. Stephens & Associates, Inc.
Albuquerque, New Mexico

[2]Consulting Engineering Services
Houston, Texas

Abstract

A pilot test was conducted to determine the feasibility of using nitrate as an oxidant to enhance hydrocarbon bioremediation in a moderate- to low-permeability aquifer. The aquifer consists of approximately 15 feet of saturated silty sand, with an average hydraulic conductivity of approximately 0.28 ft/day and an average depth to water of 48 feet below land surface. A recirculating injection/extraction system was used to introduce potassium nitrate into the aquifer. The injection well was installed 15 feet upgradient of the extraction well, with a monitoring well placed halfway between the two. Soil samples collected during drilling were analyzed for denitrifying bacterial population, nutrients, and hydrocarbons. Potassium nitrate, sodium bromide, and monosodium phosphate were injected into the recirculating ground water via an automatic metering pump. Field measurements of nitrate and bromide in the monitoring and extraction wells were made with ion selective electrodes, and water samples were sent to an analytical laboratory to verify the field measurements. The nitrate-to-bromide ratios were evaluated to determine nitrate consumption rates. Total petroleum hydrocarbons, benzene, toluene, ethylbenzene and total xylene were also monitored. Toluene, ethylbenzene and total xylene concentrations decreased during the pilot test period, but no reduction in benzene was observed. The presence of nitrite, along with the observed reduction in dissolved hydrocarbon concentrations, indicated that denitrification was occurring.

Introduction and Site Description

A pilot test of nitrate-enhanced hydrocarbon bioremediation was conducted at a natural gas compressor station in western New Mexico. The site is situated on the southern end of the San Juan Structural Basin within the Colorado Plateau physiographic province. The pilot test area consists of approximately 60 feet of alluvium comprised mostly of reddish-brown, silty, fine sand having moderate to low permeability. Perched ground water is encountered at approximately 48

Hilton, J.A., R. Marley, T. Ryther, and J. Forbes. 1992. Pilot test of nitrate-enhanced bioremediation in a moderate-to-low permeability aquifer. NGWA Petroleum Hydrocarbons and Organic Chemicals in Ground Water. Houston, Texas.

feet below land surface. The average natural hydraulic gradient in the perched alluvial aquifer is approximately 0.03 ft/ft, the average hydraulic conductivity is about 0.28 ft/day (10^{-4} cm/sec), and the site average ground-water flow velocity in the alluvium is approximately 30 ft/year. The alluvium is underlain by the Triassic Chinle Formation which is comprised mostly of red claystones and mudstones and is roughly 1000 to 1300 feet thick. The regional water table lies about 400 feet beneath the site, within the upper Chinle Formation.

Dissolved hydrocarbons, including benzene, toluene, ethylbenzene and xylene (BTEX) have been detected in perched ground water at the site. The source of the hydrocarbons in ground water is believed to be primarily natural gas condensate. Natural gas is composed mostly of alkane compounds, with methane being the most abundant (Eiceman, 1986). In addition, natural gas contains variable concentrations of heavier molecular weight hydrocarbons (C_{4+}) which may condense due to changes in temperature and pressure within the distribution pipelines. The condensate is removed from the pipeline through "pigging" operations, which make use of a cylindrical piston-like device known as a "pig". The pig cleans the condensate from the interior pipeline wall by scraping and brushing as it is carried through the pipeline by the pressurized gas stream. Two major classes of organic chemicals are contained in the condensate: (1) alkanes/ alkenes and (2) benzene/alkylated benzenes. While currently all condensate from pigging operations is contained, past practices resulted in release of hydrocarbons to the perched ground water beneath the site.

Nitrate-enhanced hydrocarbon bioremediation was selected for consideration at the site because moderate to low permeabilities limited the feasibility of using either pump-and-treat remediation or in-situ techniques requiring flushing of large volumes of water or air. The objective of the pilot test was to evaluate the feasibility of using nitrate to stimulate bioremediation of the dissolved hydrocarbons and to apply information from the pilot test to a site wide design.

Theory of Nitrate-Enhanced Bioremediation

Most biodegradation reactions result from oxidation of hydrocarbons to carbon dioxide (CO_2) and water (H_2O). For example, the oxidation of benzene (C_6H_6) may occur according to the following reaction:

$$\underset{2C_6H_6}{\overset{-1+1}{}} + \underset{15O_2}{\overset{0}{}} \longrightarrow \underset{12CO_2}{\overset{+4-2}{}} + \underset{6H_2O}{\overset{+1-2}{}} \qquad \text{Rxn. 1}$$

Thus oxidation of one mole of benzene requires 7½ moles of molecular oxygen. As shown by the above reaction, oxidative biodegradation usually involves molecular oxygen (O_2) as the oxidizing agent (oxidant), but this need not always be the case. In the more general sense, oxidation of an organic compound, or any other substance, simply requires transfer of electrons from the substance being oxidized to the oxidizing agent, which is thereby reduced to a lower oxidation state. The numbers above the reactants and products in Rxn. 1 give the oxidation states of the elements that make up the compounds. In this case, carbon has been oxidized through the removal of electrons, raising its oxidation state from -1 to +4. Molecular oxygen (O_2) serves as the electron acceptor and is thereby reduced from an oxidation state of 0 to -2.

Oxidants other than molecular oxygen are also possible. The nitrate ion (NO_3^-) may serve as an oxidant (electron acceptor), as shown in the following oxidation reaction:

$$\text{-CH-} + NO_3^- + H^+ \longrightarrow CO_2 + \tfrac{1}{2}N_2 + H_2O \qquad \text{Rxn. 2}$$

In this reaction, the hydrocarbon (symbolized -CH-) is oxidized to carbon dioxide and water, while nitrate is simultaneously reduced to N_2 gas, a process known as denitrification[1]. In Rxn. 2, 1 mole of nitrate is capable of oxidizing 1 mole of carbon atoms. Note also that Rxn. 2 is pH-dependent. Although thermodynamics indicate that the reaction should proceed to the right at near-neutral pH conditions, the very high activation energy causes the rate to be very slow. Therefore, denitrification would proceed exceedingly slowly were it not for denitrifying bacteria, which manufacture enzymes to facilitate the reaction. Genera of bacteria which are known to perform denitrification include Pseudomonas, Escherichia, Bacillus, and Proteus, though not all of these are capable of complete reduction of nitrate to nitrogen gas (Fenchel and Blackburn, 1979). Thus, Rxn. 2 is a simplification of a complex set of reaction steps through several transient intermediate nitrogen species, including the nitrite ion (NO_2^-), nitric oxide (NO), and nitrous oxide (N_2O). The nitrate-nitrite reduction reaction is generally the rate-limiting step in the overall reaction (Postma et al., 1991). Indeed, some laboratory experiments performed with an excess of available nitrate have been shown to proceed only as far as nitrite (NO_2^-), instead of going all the way to di-nitrogen gas (Hutchins, 1991).

Oxidation-reduction reactions that occur naturally in ground water generally follow in strict succession, with those reactions that yield the most energy occurring first at the highest redox potential, and those yielding the least energy occurring last at the lowest redox potential (Drever, 1982). Providing there is an excess of organic matter to act as a reducing agent, aerobic oxidation of the organic matter by O_2 will generally proceed until all molecular oxygen is consumed. Only then will denitrification commence. Following consumption of all of the nitrate, subsequent redox reactions may occur at successively lower redox potentials (e.g., $Fe^{3+} \rightarrow Fe^{2+}$, $SO_4^{2-} \rightarrow H_2S$). Each of these successive reactions causes a phenomenon known as "redox buffering," which causes the redox potential of the ground water to be fixed at a value close to that of the redox pair in question (Drever, 1982).

Although the ability of denitrifying bacteria to fully degrade or "mineralize" certain petroleum hydrocarbons to CO_2 and H_2O under both laboratory and field conditions is now undisputed (Kuhn et al., 1988; Hutchins et al., 1991), the full-scale application of nitrate-enhanced hydrocarbon biodegradation remains experimental. Previous laboratory "microcosm studies" conducted under controlled denitrifying conditions (anaerobic) have revealed the following phenomena (Hutchins, 1991):

1. Dissolved toluene, ethylbenzene, meta-xylene and para-xylene (TEX) initially present as sole-source substrates at mg/l levels can be successfully degraded by denitrifying bacteria to <0.5 µg/l, with toluene generally being degraded most rapidly.

2. Ortho-xylene is not degraded when present as a sole-source substrate, but is slowly degraded in the presence of other hydrocarbons.

3. Benzene is not generally degraded under strictly denitrifying (anaerobic) conditions, regardless of the presence of other hydrocarbons, but degradation of benzene has been observed in several field studies, presumably due to the presence of low concentrations of dissolved oxygen.

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[1] "Denitrification" refers to the reduction of nitrate-nitrogen to di-nitrogen gas. The term refers to the conversion of NO_3^- to N_2, the dominant natural process by which nitrogen is removed from soils. The reverse reaction is termed "nitrification".

4. Rates of biodegradation under denitrifying conditions for those compounds which are degraded are typically slower than equivalent rates under aerobic conditions.

5. Although the stoichiometry suggests that approximately 1 kg of nitrate-nitrogen is required to oxidize 1 kg of BTEX (Rxn. 2), nearly ten times as much nitrogen is actually consumed in field applications of nitrate-enhanced bioremediation, possibly due to the oxidation of other non-BTEX hydrocarbons (e.g., alkanes).

6. Denitrification rates are pH dependent, with optimum conditions being in the range pH 6 to 8.

The principal advantage of in-situ nitrate-based bioremediation of hydrocarbons in ground water, as opposed to oxygen-based aerobic biodegradation, is that it is possible to introduce more oxidizing power into the subsurface using nitrate than would be possible using oxygen, due to the low aqueous solubility of the latter (≈9 mg/l @ 20°C with air @ 1 atm., ≈44 mg/l with oxygen). Nitrate salts, on the other hand, are extremely soluble in water (>100 g/l), and the nitrate ion is generally considered to be a conservative solute in the ground-water environment, and therefore highly mobile. Given that 1 mole of nitrate-nitrogen has the same oxidizing power as 5/4 mole of O_2, nitrate at the concentration of the drinking water standard (10 mg/l NO_3-N) has approximately three times the oxidizing capacity as dissolved oxygen at saturation (9 mg/l). If nitrate is injected at concentrations higher than 10 mg/l NO_3-N, hydrocarbons can be degraded at a more rapid rate.

Pilot System Installation and Operation

Figure 1 shows a schematic of the pilot system, which was designed to operate unattended for up to 5 days at a time. The pilot system consists of a single injection well located 15 feet upgradient of an extraction well, with a monitoring well located halfway between the injection and extraction wells (Figure 1). While this type of spacing would not be considered to be economically feasible for a full-scale remedial design, it was chosen for the pilot test so that results could be observed within a relatively short time period.

Drilling and Soil Sample Collection

The pilot test location was chosen based on the delineation of the hydrocarbon plume and proximity to the original release. Previous installation of 2-inch monitoring wells at that location, using hollow stem-auger techniques, proved difficult within the saturated, heaving sands encountered at the site. Consequently, a cable tool rig, capable of advancing casing with the bit, was chosen in hopes of minimizing flowing sands entering the boring during drilling, thereby simplifying installation of the 4-inch pilot test wells.

Pilot system wells were drilled to approximately 65 feet. Prior to each drilling operation, all drilling equipment, soil samplers, and well materials were thoroughly decontaminated by steam cleaning. In addition, down-hole sampling devices were decontaminated prior to collection of all samples by scrubbing them in a solution of deionized water and liquinox, followed by a deionized water rinse.

Soil samples were collected with a 2.5-inch ID split spoon sampler lined with brass rings. Soil samples were collected within the vadose zone immediately above the water table, the middle of the saturated alluvium, and at the bottom of the aquifer. Samples were analyzed for total and

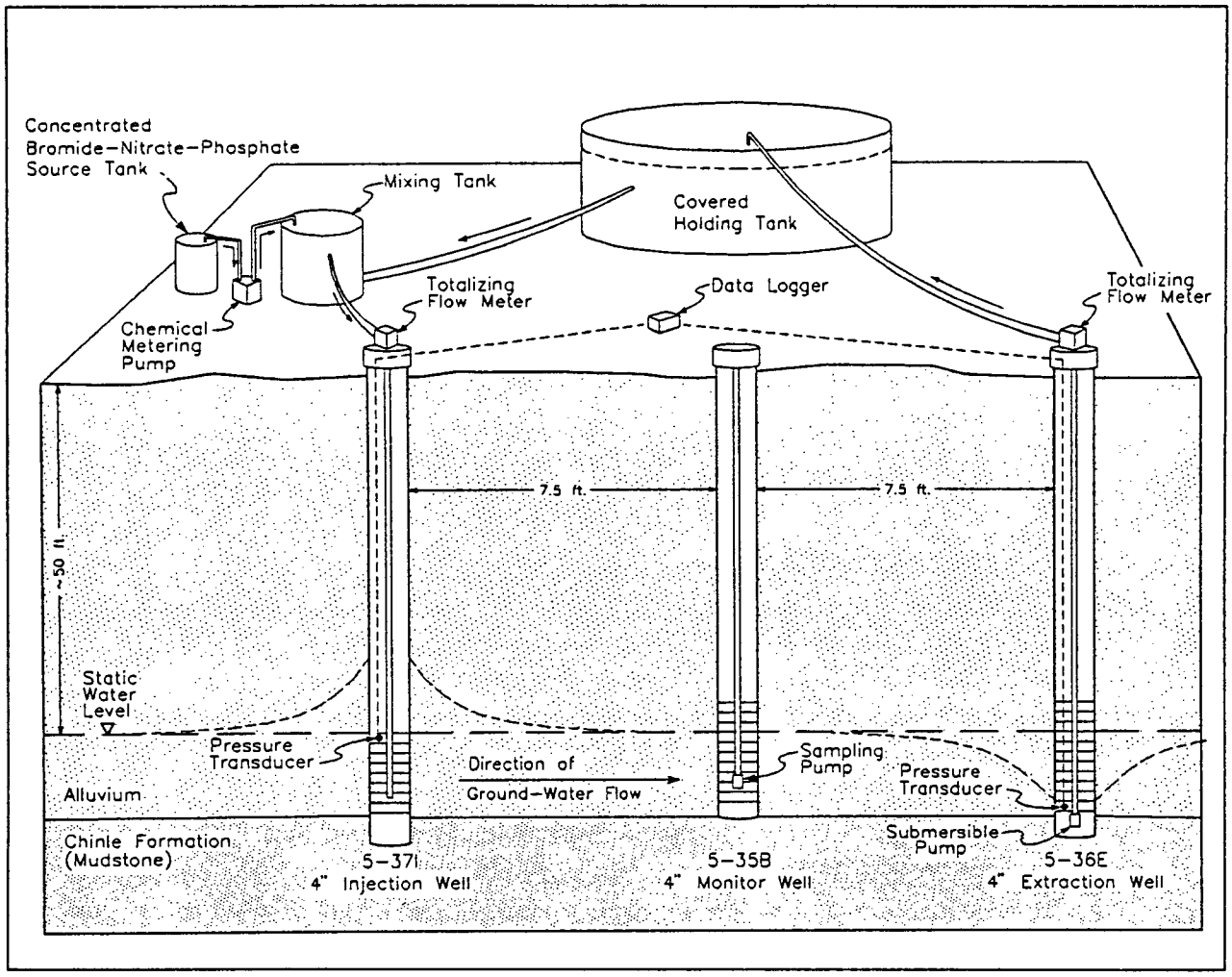

Figure 1. Pilot System Schematic

denitrifying bacteria counts, total organic carbon (TOC), total petroleum hydrocarbons (TPH), and BTEX. Plate counts revealed viable denitrifying and total bacterial populations of up to 10^4/gram and 10^6/gram, respectively. The existing denitrifying bacterial soil populations, though not extremely large, were thought to be adequate for the purpose of the pilot test.

Well Construction

The injection well was constructed with 4-inch diameter, low carbon steel casing and 0.040-inch wire-wound stainless steel screen to maximize screen open area and minimize potential screen clogging. Additionally, steel construction facilitates vigorous mechanical redevelopment should clogging become a problem. The annulus around the screen was filled with 8-12 mesh silica sand filter pack which extends to 6 inches above the well screen. A 24-inch bentonite seal was emplaced on top of the filter pack followed by a cement grout to surface. The grout sealed the well screen below the water table, and injection water was delivered via a drop pipe below the water table to further avoid potential aeration of ground water and possible iron precipitation.

Downgradient of the injection well, a 4-inch diameter PVC monitoring well with 0.010-inch PVC screen was installed to monitor nitrate and bromide breakthrough and BTEX concentrations. The

well was screened from the bottom of the aquifer to several feet above the water table. The annulus around the screen was filled with 10-20 mesh silica sand filter pack followed by a 16-40 mesh silica sand, a 24-inch bentonite seal, and cement grout to the surface.

The extraction well was constructed of 4-inch diameter low carbon steel casing and 0.025-inch wire-wound screen, with a filter pack of 10-20 mesh silica sand. The well was screened from the bottom of the aquifer to approximately 2 feet above the static water table, and was completed to the surface as described for the first two wells.

System Operation

The Figure 1 schematic outlines the operation of the pilot system. Ground water is pumped from the extraction well to a holding tank, where sediments that could potentially clog the injection well settle out. The holding tank and other system components are covered to minimize hydrocarbon volatilization, so that the effectiveness of denitrification can be evaluated with minimal interferences from dilution effects. From the holding tank, the ground water flows by gravity feed to the chemical mixing tank. Chemical source solutions of potassium nitrate, sodium bromide, and monosodium phosphate are metered from the source tank to the mixing tank via a piston type metering pump. A mechanical stirrer is used to keep the chemicals in solution. In-line flow meters measure and record the total volume of water recirculating through the system at the pumping and injection wells, and water levels in the injection and extraction wells are monitored continuously with transducers linked to a data logger. The system is equipped to automatically shut itself off in case of well clogging, overflowing tanks, and/or lack of water in the pumped well.

The extraction well is equipped with a Grunfos Redi-Flo2 pump. As shown on the summary of average pumping rates (Figure 2), the extraction well was initially pumped at a rate of approximately 0.18 to 0.22 gallons per minute (gpm). This pumping rate was the highest sustainable rate based on measured water level response in the pumped well. During the first two weeks of system operation, frequent measurements of flow rates and water levels were made to maximize the injection rate and radius of influence. The pumping rate was steadily increased until mid-July when the system hydraulics equilibrated at an average flow rate of 0.36 gpm.

Chemical Injection and Monitoring

Chemical injection began on May 15, 1992. The permit for the pilot test allowed for up to 100 mg/l of potassium nitrate (as N) to be injected under controlled conditions. However, nitrate was initially injected at 10 mg/l (as N) so that denitrification could be evaluated prior to injecting at higher levels. Sodium bromide (25 mg/l as Br^-) was also injected to serve as a conservative tracer that would allow for comparison of nitrate losses due to dilution and dispersion with those due to denitrification. Source solution was metered into the mixing tank at an average rate of 25 ml per minute.

The monitoring and extraction wells and the chemical mixing tank immediately upstream of the injection well were sampled approximately every two weeks. The samples were analyzed by Analytical Technologies, Inc. for nitrate and bromide to confirm field results, and for nitrite, phosphate, BTEX and TPH.

Field measurements of nitrate, bromide, dissolved oxygen, pH, and conductivity were made approximately three times per week at the monitoring and extraction wells and at the chemical mixing tank. The dissolved oxygen concentrations measured from the pilot test monitoring wells

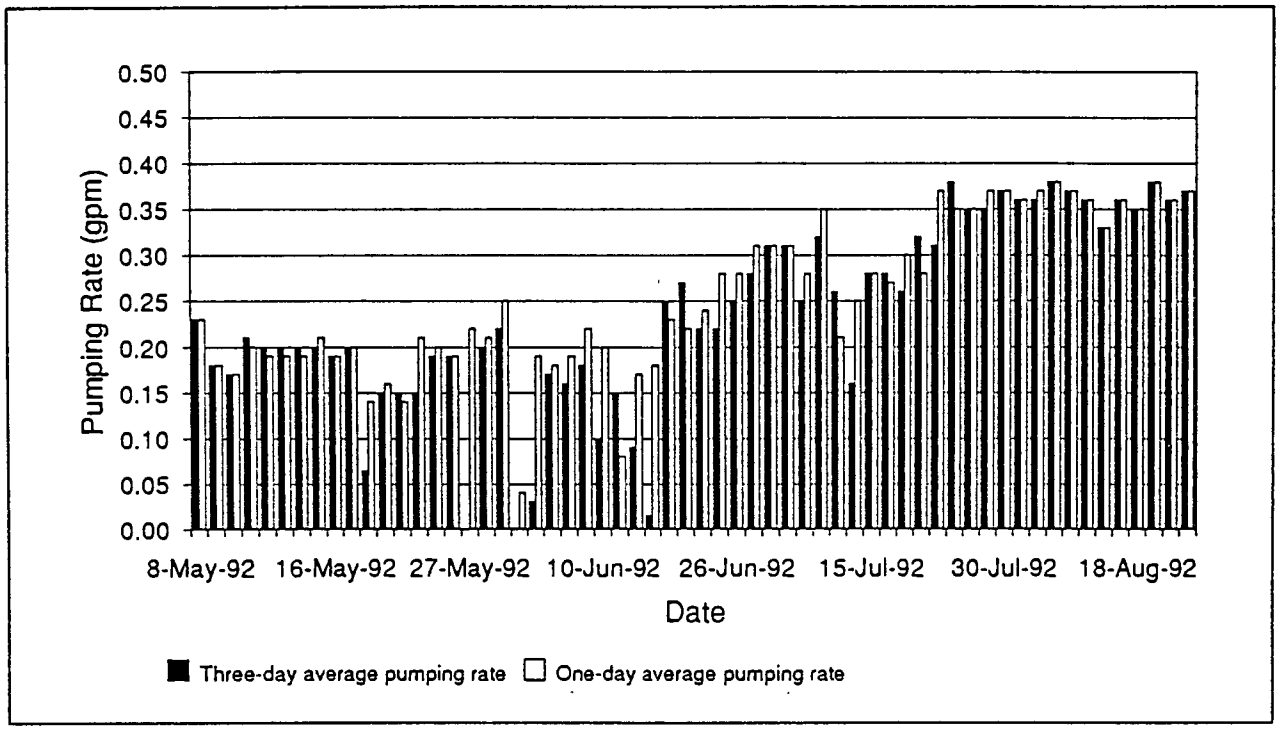

Figure 2. Pilot Test Pumping History

were less than 1 mg/l, as compared to background dissolved oxygen concentrations at the site of approximately 6 to 7 mg/l.

Orion ion selective electrodes (ISEs) were used in conjunction with a digital millivolt meter to allow rapid field determination of ground-water nitrate and bromide concentrations. The ISE operates much like a pH electrode, except that the probe is sensitive to ions other than H^+, in this case NO_3^- or Br^-. A double-junction reference electrode serves to establish the reference potential (voltage). Because the potentials of both the ISE and the reference electrode tend to vary with temperature and time, the method of standard addition (MSA) was chosen for field use, to avoid the necessity of frequent recalibration with standard solutions.

Using MSA, the ISE is immersed in the ground-water sample and the potential is measured on the millivolt meter relative to the constant potential of the reference electrode. A nitrate or bromide "spike" of known concentration is then added to the sample, and the potential measured again. The difference between the unspiked and spiked millivolt readings may then be used to calculate the initial NO_3^- (or Br^-) concentration of the sample prior to adding the spike. A programmable calculator was used to facilitate calculations in the field.

Following solute breakthrough, field (ISE) and laboratory results for nitrate were in good agreement, generally within about 30% relative difference. Prior to breakthrough, the nitrate ISE had consistently indicated concentrations of several mg/l, even when the laboratory results indicated that nitrate was below the detection limit (0.06 mg/l). It is believed that the laboratory results are correct, since the analytical method employed by the laboratory is subject to fewer interferences. The reason for the positive systematic error of the ISE at low nitrate concentrations is unknown, but hydrocarbon concentrations may be a factor.

Following bromide breakthrough, the relative percent differences between the field- and laboratory-determined values ranged from 8% to 84%. Thus, the bromide ISE exhibited somewhat lower precision than the nitrate ISE, if the laboratory values are assumed to be correct. A systematic error was also evident for bromide, with the bromide ISE consistently indicating higher concentrations than the laboratory. Although the systematic error was evident, similar general trends in bromide concentrations were apparent in both the ISE and laboratory data.

Observations

Bromide and nitrate concentrations measured in the monitoring and extraction wells are shown on Figures 3 and 4, respectively. Bromide was first detected above background levels at the monitoring well approximately eight days after injection began. This observed travel time from the injection well to the monitoring well corresponds well with the calculated travel time of seven days, obtained by using the observed hydraulic gradient between the two wells and the site average hydraulic conductivities and effective porosities. Bromide concentrations continued to rise to approximately 10 mg/l, and stabilized at that level for approximately two weeks. The plateau at the 10 mg/l level is most likely due to dilution effects resulting from mechanical problems which lowered the average injection concentration. Once injection reached a steady average bromide concentration of 25 mg/l, bromide concentrations continued to increase until approximately 95% of the bromide concentration injected was detected in the monitoring well, and approximately 80% was detected in the extraction well. The lower concentrations of bromide detected in the extraction well, which is further from the source, are indicative of dilution and dispersion. A subsequent decline in bromide concentrations is most likely due to lower-than-average injection rates resulting from temporary shutdowns of the extraction well pump.

Nitrate concentrations in the monitoring and extraction wells were not observed to be increasing at the same rate as the bromide concentrations. In fact, during the first five weeks of operation, nitrate concentrations measured by the analytical laboratory were at or below detection limits (0.06 mg/l) in both the monitoring and extraction wells, with the exception of 0.4 mg/l nitrate measured on June 22, 1992 in the monitoring well. As discussed previously, some nitrate was detected with the ISEs, but it was believed to be due to hydrocarbon interference, and greater confidence was held in the laboratory data. In mid-June, the concentrations of bromide in the monitoring well and extraction wells were approximately 60% and 30%, respectively, of the average injection concentration. Since the nitrate levels were well below those percentages, it was surmised that either the nitrate was being retarded to a higher degree than the bromide, denitrification was occurring, or a combination of both. Retardation of nitrate was considered unlikely, and nitrate consumption was believed to be responsible. Since it appeared that denitrification was occurring, the injection concentration was increased to 50 mg/l nitrate (as N).

Following the increased injection rates, an increase in nitrate concentrations was observed in both the injection and monitoring wells. Two possible explanations for the lack of total nitrate consumption are 1) there is insufficient contact time for the nitrate to be totally consumed, or 2) some essential nutrient was lacking, therefore limiting growth of the denitrifying bacteria population. Consequently, monosodium phosphate was added at 10 mg/l to determine if this nutrient would enhance denitrification. The monosodium phosphate concentration was later increased to 20 mg/l. Even with the addition of the monosodium phosphate, however, nitrate breakthrough concentrations persisted at approximately 20 mg/l in the monitoring well and 10 to 15 mg/l in the extraction well.

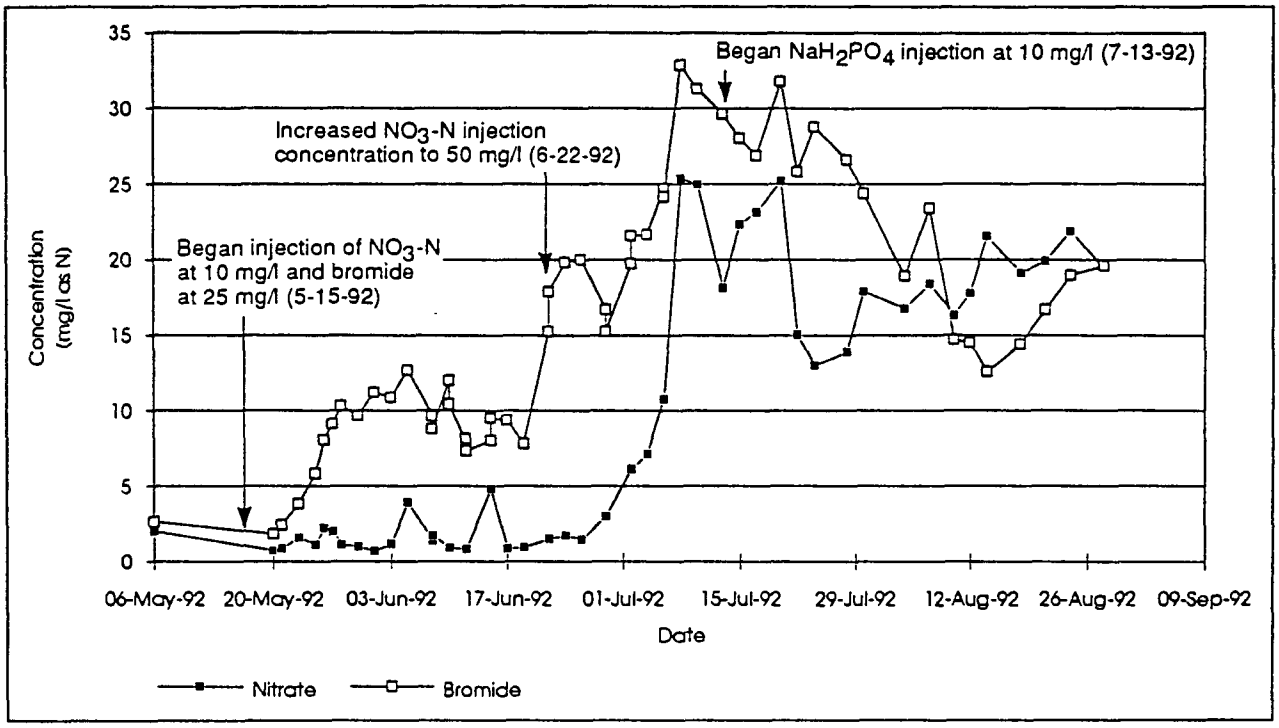

Figure 3. Monitoring Well: Nitrate and Bromide Concentrations (measured with ISEs)

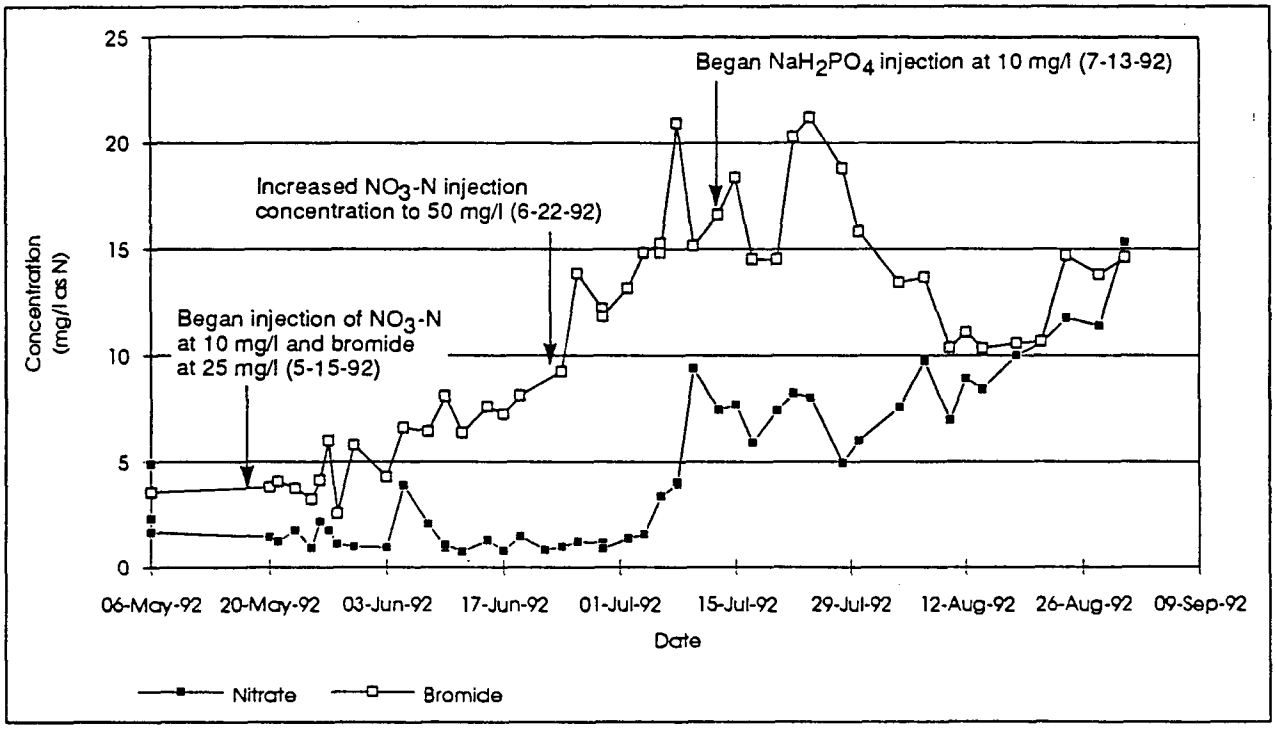

Figure 4. Extraction Well: Nitrate and Bromide Concentrations (measured with ISEs)

In spite of the nitrate breakthrough, an increase in nitrite concentrations indicated that denitrification was occurring. Nitrite concentrations measured by the analytical laboratory were initially below the detection limit of 0.06 mg/l. Following the increase in the nitrate injection rates, nitrite was measured at concentrations up to 6.1 mg/l and 2.7 mg/l in the monitoring and extraction wells, respectively. Nitrite is produced as an intermediate product in the conversion of nitrate to nitrogen gas (Rxn. 2) and is indicative of denitrification.

Concentrations of BTEX in the monitoring and extraction wells are shown in Figures 5 to 8. These plots show that toluene was the most readily degraded of the BTEX compounds. Toluene concentrations in monitoring well 5-35B decreased steadily from an initial concentration of 7600 µg/l to approximately 1000 µg/l (an 87% reduction) between May 15 and August 15. Ethylbenzene and total xylene decreased by 67% and 34%, respectively, at the monitoring well during this period. Benzene concentrations were not observed to decline during the pilot test. Previous researchers have hypothesized that once the majority of the hydrocarbons are removed, dissolved oxygen levels will increase and aerobic degradation of benzene will be initiated (Hutchins, 1991). However, hydrocarbon levels did not drop sufficiently during this test period for aerobic conditions to develop.

After approximately six weeks of continuous pumping, free product was observed pooling in the extraction well. The free product (approximately 0.4 ft) provides a persistent source which may keep dissolved hydrocarbon concentrations from continuing to drop. The slight increases in TEX concentrations shown on Figures 5 to 8, following initial reductions, may be due to contributions from the free product, and/or from additional hydrocarbons released as a result of the saturation of previously unsaturated sediments near the injection well.

Conclusions

The pilot test has been operational for approximately four months. At this point, the following conclusions can be drawn:

1. Denitrification is actively degrading hydrocarbons within the pilot study area, as evidenced by the following:

   - Nitrite production has been observed, with concentrations of up to 6.1 mg/l (NO_2-N) measured in ground water from the monitoring well.
   - After recirculation of approximately 1½ pore volumes of ground water (50,000 gallons), the concentration of nitrate being removed from the extraction well has only reached about 30% of the injection concentration, as compared with approximately 80% for the conservative bromide tracer. Since nitrate and bromide are considered equally conservative (mobile) in the subsurface, the difference is attributable to nitrate consumption.
   - Concentrations of toluene, ethylbenzene, and total xylene in the monitoring well have dropped to 13%, 33%, and 66%, respectively, of their initial concentrations since the start of nitrate injection.

2. No benzene degradation has been observed as a result of the nitrate addition.

3. At the present nitrate injection rate (95 g/day NO_3-N), approximately 88 g of hydrocarbons are being degraded per day due to denitrification.

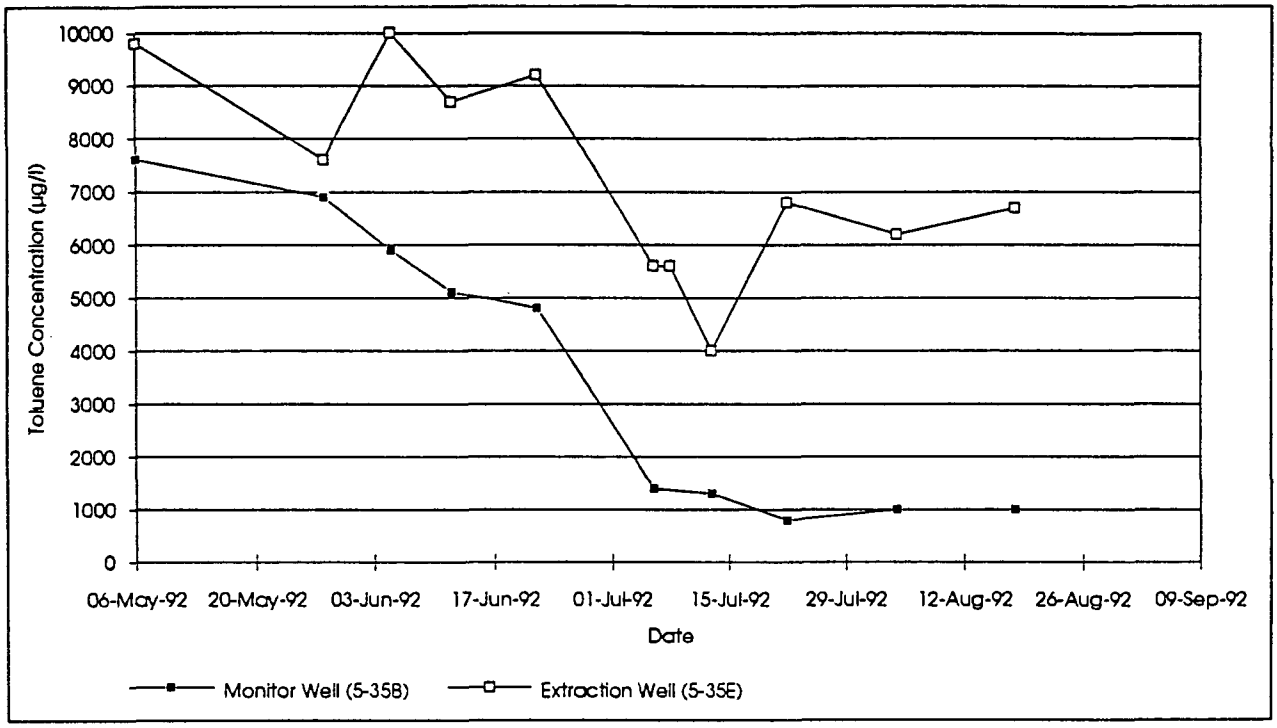

Figure 5. Toluene vs Time

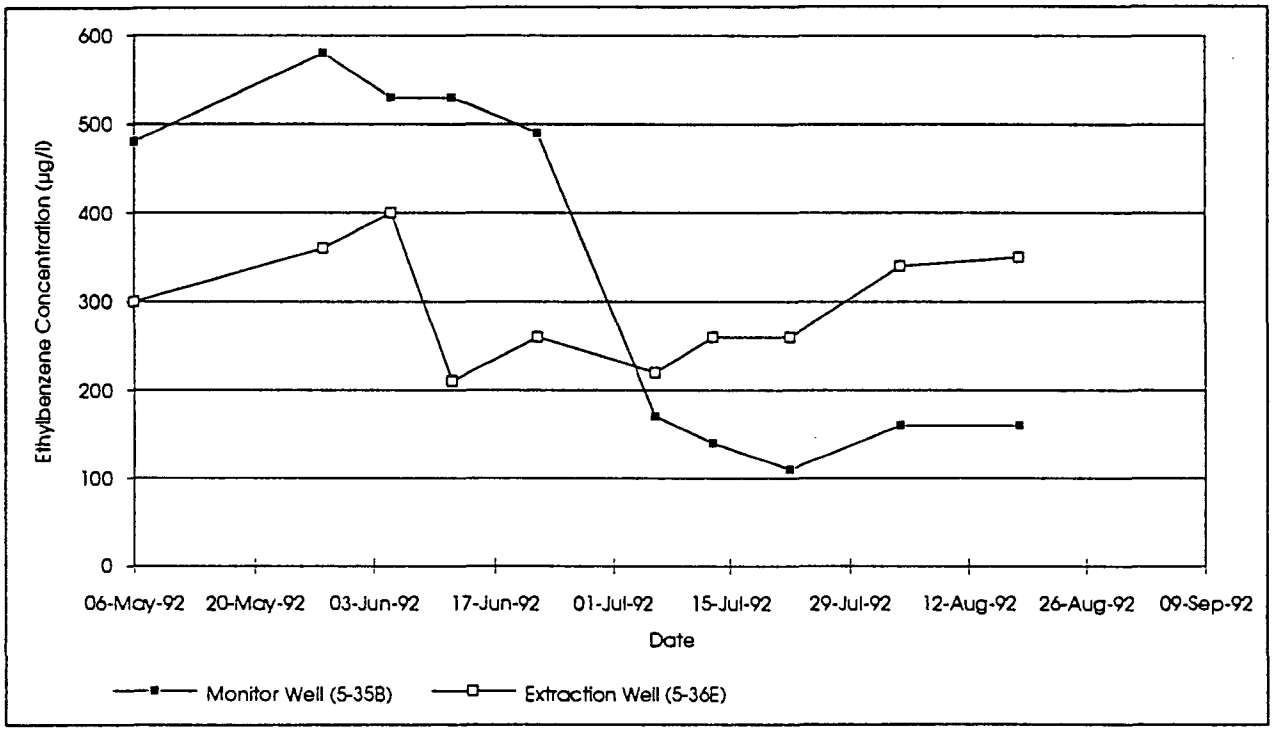

Figure 6. Ethylbenzene vs Time

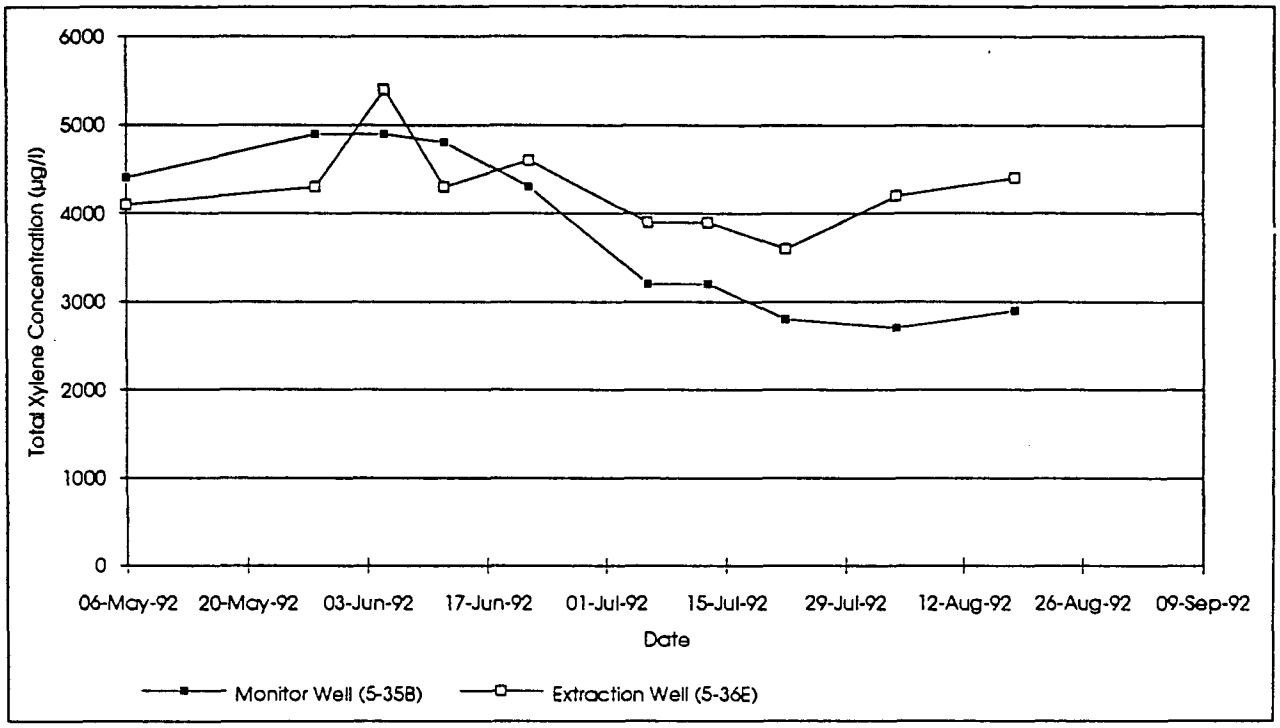

Figure 7. Xylene vs Time

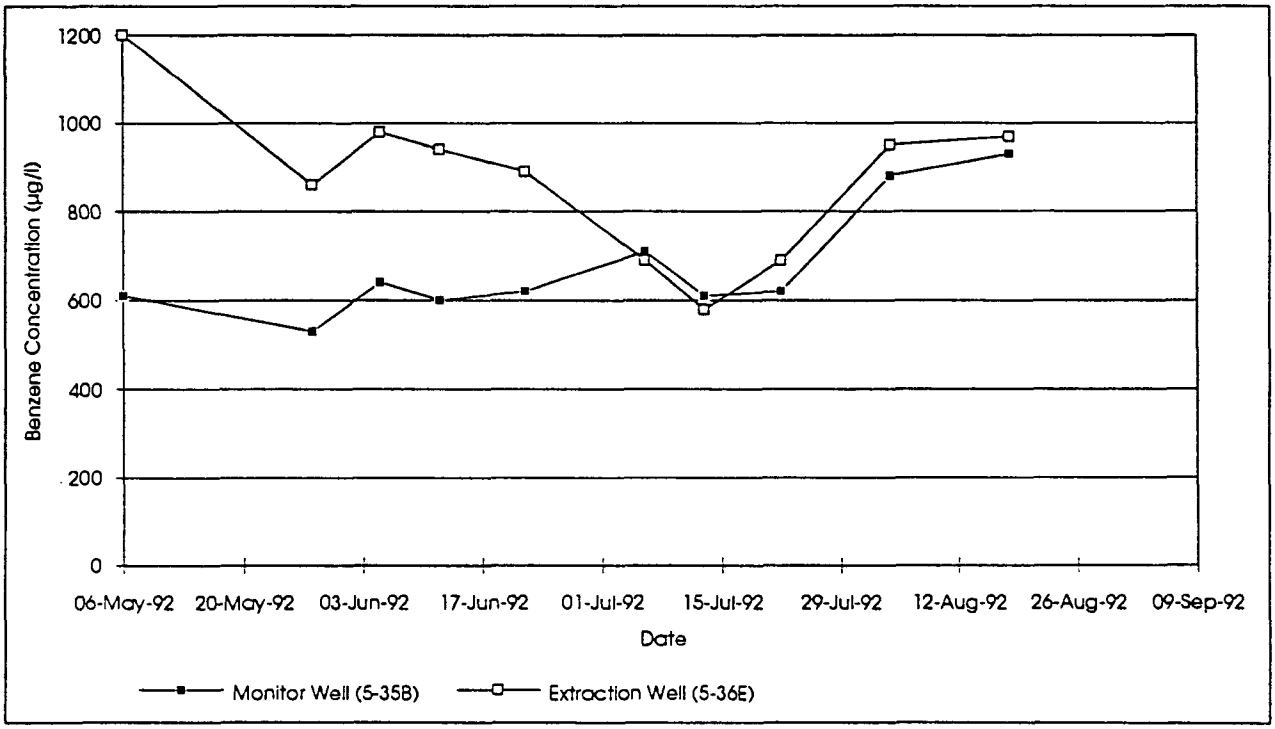

Figure 8. Benzene vs Time

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Biographical Sketches

Joanne Hilton is a senior hydrologist and projects group manager with Daniel B. Stephens & Associates, Inc. in Albuquerque, New Mexico. She has eight years of experience in ground-water investigations at hazardous waste sites, including landfills, mill tailings, and underground storage tank leaks. She is currently involved in numerous hydrogeologic investigations pertaining to contaminant transport and remedial design. Ms. Hilton received her bachelors degree in hydrology from the University of Arizona and her masters degree in hydrology from Colorado State University.

Bob Marley is a hydrogeologist with Daniel B. Stephens & Associates, Inc. in Albuquerque, New Mexico, specializing in site characterization and remediation and in-situ hydraulic testing. He has conducted contaminant transport and water supply investigations in the southwestern U.S. and Australia, and is currently involved in remedial actions at several sites in New Mexico. He holds a bachelors degree in geology from Northern Arizona University and an M.S. in hydrology from the University of Arizona.

Fenley "Ted" Ryther received his Bachelor of Civil Engineering degree from the Georgia Institute of Technology. He has practiced consulting civil and environmental engineering, including permitting, design, site investigation, and remediation of hazardous and toxic wastes in soils and ground water, for more than 35 years. He has project experience in 25 states and 8 foreign countries. He is a registered Professional Engineer in six states, a member of the National Society of Professional Engineers and the Air and Waste Management Association, and a Fellow and Past President of the Houston Branch of the American Society of Civil Engineers.

Jeffrey Forbes is a senior hydrogeochemist with Daniel B. Stephens & Associates, Inc. in Albuquerque, New Mexico. He has seven years of experience in the analysis and interpretation of geochemical data pertaining to environmental site investigations. He has also worked as an analytical chemist performing laboratory analysis of water and soil samples for major elements, trace metals, and isotopic composition. Mr. Forbes received a bachelors degree in geology from Indiana University and a masters degree in geological sciences from the University of Washington. He is a Registered Geologist in Arizona and Indiana and is a member of the American Chemical Society.