1R - 378

GENERAL CORRESPONDENCE

YEAR(S):
2004 - 2003

Mr. Wayne Price
Mr. Mark Fesmire

Nov. 18, 2004

Enclosed pictures speak for themselves.

This is the same company that OCD has been working with to survey polluted underground water.

Been a year or more and no results.

I would like a time or date to tie to so that if you do nothing I can proceed.

Yours truly,

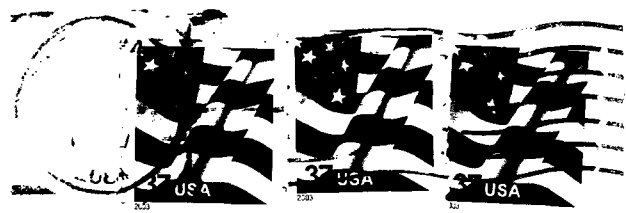
Earl Johnson

No response on my letter to Steve Pearce ??


PENROC OIL CORPORATION
PENROC "10" STATE No. 1
UNIT M, SEC.10, T-10-S, R-34-E
LEA COUNTY, NEW MEXICO

Polluted Well within a mile of this location to the west

CARL L. JOHNSON
Cattle
Box 917
Tatum, New Mexico 88267



ATTN: Wayne Price

Mark Fesmire

N. Mex. Oil Conservation Div

1220 S. St Francis Dr.

Santa Fe, New Mex.

87505/4000

Oct 9, 03

Dear Wayne,

As I informed you there was a massive salt water leak by NM Salt Water Disposal company in Sec 24 10-33. This is the third (3) leak in this particular area and the site is ruined. Ground water is pumped around 30', water strata very shallow, around 18'-20'.

I am requesting OCD to adher to their own rules, regulations, and specifications as to soil sampling and remediation on this site, and, henceforth, on any other leaks, spills, blowouts etc. that may occur on the state lease and deeded land that is in our ownership or control.

We are slowly losing our ranches, private property, due to oil and gas activity. When we lose our water we are finished and out of business.

Thank you for your time and am counting on you, personally, to help.

P.S. I don't think Paul Sheeley is worth trying to work with on anything.

Carl J Johnson

P. 01

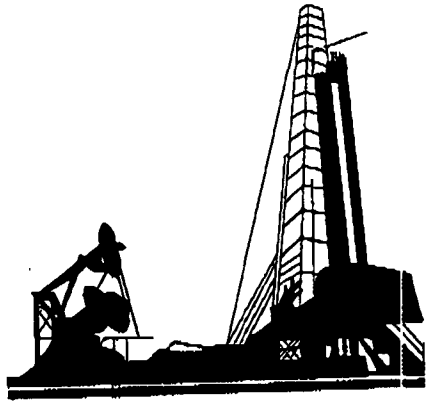
TRANSACTION REPORT

OCT-06-2003 MON 01:40 PM

FOR:

DATE	START	RECEIVER	TX TIME	PAGES	TYPE	NOTE	M#	DP
OCT-06	01:39 PM	915053986549	37″	2	SEND	OK	579	

TOTAL : 37S PAGES: 2



TRANSMITTAL COVER SHEET

OIL CONSERVATION DIVISION
1220 S. ST. FRANCIS DRIVE
SANTA FE, NM 87505
(505) 476-3440
(505)476-3462 (Fax)

PLEASE DELIVER THIS FAX: fax

TO: CARL JOHNSON - 505-398-6549

FROM: W PRICE - OCD

TRANSMITTAL COVER SHEET

OIL CONSERVATION DIVISION
1220 S. ST. FRANCIS DRIVE
SANTA FE, NM 87505
(505) 476-3440
(505)476-3462 (Fax)

PLEASE DELIVER THIS FAX:

TO: CARL JOHNSON - 505-398-6549 fax

FROM: W PRICE - OCD

DATE: 10/06/03

PAGES: 2

SUBJECT: CONTACT WITH NMSLO

IF YOU HAVE TROUBLE RECEIVING THIS FAX, PLEASE CALL THE OFFICE NUMBER ABOVE.

Price, Wayne

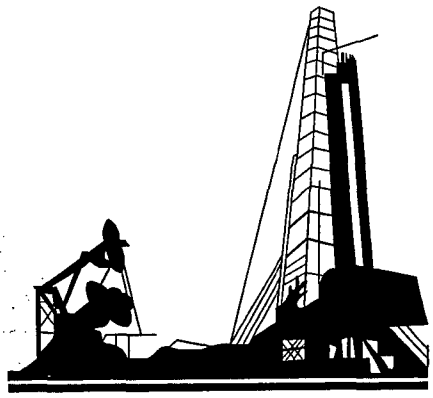
From: Price, Wayne
Sent: Monday, October 06, 2003 1:33 PM
To: Morrow, Cody
Subject: return of telephone call

Hi Cody, got your message, We have sent a field inspector to the site for evaluation and the District office is checking the status of the well. We are going to take samples and analyze for contamination. This process will take about a month. Also the District has contacted Penroc concerning the issue.

Sincerely:

Wayne Price
New Mexico Oil Conservation Division
1220 S. Saint Francis Drive
Santa Fe, NM 87505
505-476-3487
fax: 505-476-3462
E-mail: WPRICE@state.nm.us

fax to Carl Lane Johnson 505-398-6549



TRANSMITTAL COVER SHEET

OIL CONSERVATION DIVISION
1220 S. ST. FRANCIS DRIVE
SANTA FE, NM 87505
(505) 476-3440
(505)476-3462 (Fax)

PLEASE DELIVER THIS FAX:

TO: CARL JOHNSON

FROM: WAYNE PRICE - OCD

DATE: OCT 1, 2003

PAGES: 2

SUBJECT: PENROC LEASE

CARL! THIS WILL BE THE FIRST PHASE! THANKS FOR YOUR PATIENCE!

IF YOU HAVE TROUBLE RECEIVING THIS FAX, PLEASE CALL THE OFFICE NUMBER ABOVE.

Price, Wayne

From: Price, Wayne
Sent: Wednesday, October 01, 2003 1:40 PM
To: Williams, Chris
Cc: Sheeley, Paul; Johnson, Larry; Morrow, Cody
Subject: Penroc Lease on Carl Lane Johnson Ranch

Dear Chris:

Please find enclosed a copy of a complaint OCD received from Carl Johnson concerning a Penrock SWD system located in Sec 23-Ts10s-R32e. Would you please have your environmental staff check this out. Please collect appropriate soil and water samples from the site. Mr. Johnson indicates groundwater is very shallow in this area and is concerned that his water may be contaminated.

Also, he noted an abandoned SWD well. Could you check the status of this well.


Penrock.tif

Thanks

Attention:

Gene Samberson 505-396-5305

OCD 505-476-3462

Lori Wrotenbery

Wayne Price

SLO 505-827-5873

Patrick Lyons

Cody Morrow

We also need to get

Phoenix Hydrocarbons

Chisholm Oil

Tipton Oil

in compliance with

both the OCD and SLO

rules and regulations, along with

all specifications

Oct 1, 2003

TO OCD and SLO,

As of this date I am requesting that the OCD and SLO implement and carry forward their own rules, regulations, specifications, statutes pertaining to salt water disposal systems for produced oil/field water in regards to Pinroc Oil Co.

This system is in violation of every rule and reg, in the first place being in a draw or arroyo as original constructed.

The old disposal well is unplugged and has been abandoned for 10 - 15 years which is in violation of all the rules & regs I have seen.

The site construction and pollution is completely out of compliance and irresponsible by all parties involved, Pinroc, OCD, and SLO.

I turned this in to

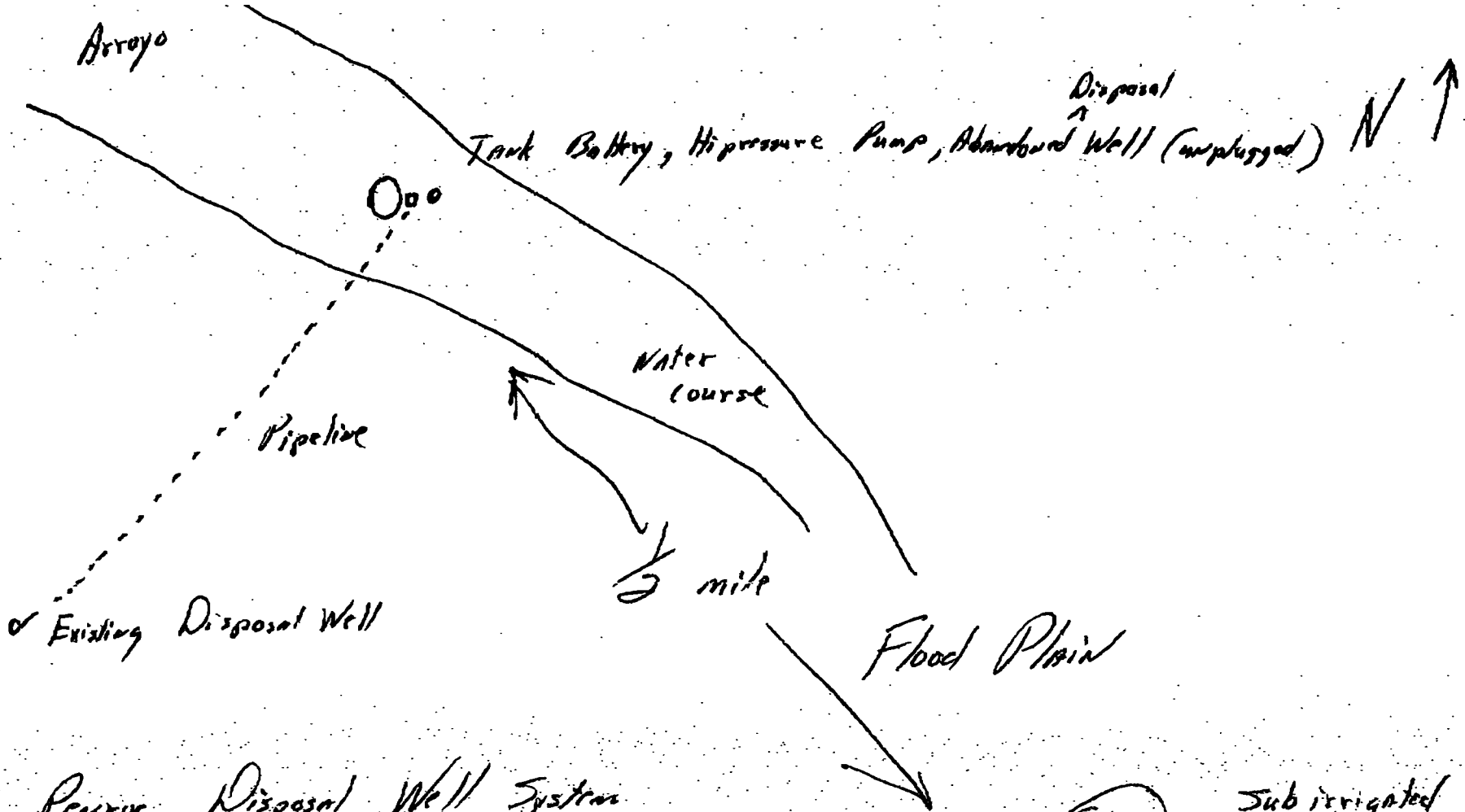
the OCD and SLO on Sept 29, 03 and as of this date Oct 1, 03 nothing has been done.

I, as a state land lessee and private land owner, am requesting that Pantoc Oil be shut down in all of their oil field operations, prosecuted to the full extent of the law, both criminally and civil, and to make whole all of the pollution of water, soil, and other natural resources, that their operations have caused.

As all of us, SLO, OCD, and ranchers, in Lea County are aware, this is an example of how Pantoc operates and has operated for 15-20 years. It is now way past time to put a stop, once and for all, to these types of operations, Pantoc, and other oil companies who operate in flagrant disregard to the laws of the state.

Yours truly,

Carl F. Johnson



Penroc Disposal Well System
Sec 23 10 - 32
Lea County

Water sand formation starts at 18' below surface
Windmills pumping depth 30'-45' deep

5

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON
Governor
Betty Rivera
Cabinet Secretary

Lori Wrotenbery
Director
Oil Conservation Division

November 22, 2002

Mr. Carl Johnson
Box 917
Tatum, NM 88267

Re: Request for THP Tier 1 Clean-up Guidelines Revision

Dear Mr. Johnson:

You have previously expressed concern regarding the request of the New Mexico Oil and Gas Association (NMOGA) that the Oil Conservation Division (OCD) review and potentially update the OCD's clean-up guidelines.

The OCD will consider NMOGA's request and will solicit public comment throughout the process. The enclosed OCD response to NMOGA outlines the process the OCD will follow in evaluating the request. We welcome your participation in this process and have added your name to our mailing list.

If you have any further questions, please contact Roger Anderson at (505) 476-3490 or through e-mail at rcanderson@state.nm.us.

Sincerely,

Lori Wrotenbery

Lori Wrotenbery
Director

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON
Governor
BETTY RIVERA
Cabinet Secretary

Lori Wrotenbery
Director
Oil Conservation Division

To: Bob Gallagher and Deborah Seligman
New Mexico Oil and Gas Association

From: Lori Wrotenbery, Director
Oil Conservation Division

Subject: TPH Tier 1 Clean-up Guidelines

Date: November 22, 2002

The Oil Conservation Division (OCD) has received the document entitled "The Technical Justification Document for Tier 1 Soil Levels for BTEXN and TPH at E&P Sites." We have also received your request, dated October 22, 2002, that we review the document and evaluate the technical justification for revising the Tier 1 clean-up levels now contained in OCD guidelines.

We will review the document and evaluate the guidelines as you requested. OCD will use a three-stage approach to accomplish this task:

Stage 1: The Environmental Bureau will conduct a technical review of the document. Concurrently with the bureau's review, we plan to submit the document to a third party for a technical peer review. We will also seek written public comments.

Stage 2: If, based on the technical review conducted in Stage 1, the bureau determines that the request to revise the Tier 1 clean-up levels in current guidelines may be justified, OCD will conduct public meetings when developing proposed revisions so as to solicit as much public input as possible.

Stage 3: Following the conclusion of the public meetings, the bureau will draft an application for a hearing before the Oil Conservation Commission (OCC) on any proposed revisions to the Tier 1 clean-up levels.

Please let us know if you have any questions about this process.

Apr. 14, 02

Dear Ms. Wrotenbery,

First, I want to thank you for getting these oil wells plugged for me. It has taken a very long time and I appreciate your Efforts.

Next, I would like to suggest that rather than Establishing new increased TPH levels in the soil, the TPH Levels should be decreased.

As you are well aware the oil industry has had a free hand in doing as they want, when they want, to whom ever they want for ever. Only when ~~until~~ the Environmental movement started were we, the land leasers and owners, able to have a little input.

The oil industry can operate in a clean, business like manner as Evidenced just across our border in Texas. The same pay zone, same operator, same everything damages 3 times more acre in N Mex as in Texas.

I would like for you to give any ideas some consideration. My attorney is Cave Samberson in Lovington and he is on top of all oil field damage and pollution issues and can give you any and all the answers. He is also a very fine person.

Again thanks for visiting my wife and I.

Yours truly,

Earl Johnson

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON
Governor

May 14, 2004

Joanna Prukop
Cabinet Secretary
Acting Director
Oil Conservation Division

CERTIFIED MAIL
RETURN RECEIPT NO. 3929 8386

Mr. Mohammed Merchant
Penroc Oil Corporation (Penroc)
P.O. Box 2769
Hobbs, New Mexico 88241-2769

Attention: Mr. Merchant

Subject: **Johnson Ranch-Contamination from Penroc Oilfield Operations**

The New Mexico Oil Conservation Division (OCD) requested Penroc to perform certain actions as outlined in OCD's letter dated November 10, 2003 (copy enclosed for your reference). OCD is in receipt of Penroc's response letter dated February 13, 2004 and requires Penroc to perform the following actions:

A. Please provide for OCD approval, a delineation plan to determine the horizontal and vertical extent of contamination as requested in the OCD November 10, 2003 letter under Actions Required. item C.

B. Please provide a remediation or disposal plan for OCD approval for all of the excavated soils that Penroc indicated is piled up for disposal.

C. Please provide a sketch or map, any available photos and analytical results of any samples taken of areas that Penroc indicated they have addressed.

D. Contaminated soils that were used as berms shall be demonstrated that they will not leach contaminants into the shallow groundwater or off-site in the foreseeable future. Please submit a plan for OCD approval to address this issue.

Please provide the information requested in items A-D listed above by June 15, 2004. If you have any questions please do not hesitate to contact me at 505-476-3487 or e-mail WPRICE@state.nm.us.

Sincerely;

Wayne Price

Wayne Price-Pet. Engr. Spec.

cc: Roger C. Anderson- OCD Envr. Bureau Chief
OCD Hobbs Office
Carl Lane Johnson
Cody Morrow-NMSLO

Attachments- 1

November 10, 2003

CERTIFIED MAIL
RETURN RECEIPT NO. 3929 9949

Penroc Oil Corporation (Penroc)
P.O. Box 2769
Hobbs, New Mexico 88241-2769

Attention: Operator

Subject: **Johnson Ranch-Contamination from Penroc Oilfield Operations**

The New Mexico Oil Conservation Division (OCD) has recently received a complaint from Mr. Carl Lane Johnson owner of ranching operations located approximately 20 miles northwest of Tatum, New Mexico. Mr. Johnson has submitted documentation of contamination caused by Penroc operations located on his ranch in the vicinity of Section 23-Township 10S-Range 32E and surrounding area.

The OCD responded by conducting an inspection of Penroc's operations, collecting soil/groundwater samples, and making a cursory review of the area to determine if protectable groundwater (less than 10,000 mg/l TDS) is present as defined by the Water Quality Control Commission (WQCC) regulations. ***OCD lists the following findings and requires Penroc to perform the following actions:***

Finding #1: Shallow groundwater is located in the area at a depth ranging from approximately 20-50 feet below ground level. This groundwater is of good quality with a Total Dissolved Solids concentration ranging from 599-758 mg/l and is considered protectable. (See attached inspection report and analytical results)

Finding #2: Oilfield products and wastes were discovered being discharged, or had been discharged, to the ground surface. OCD collected soil samples in certain areas and the results reveal that contaminants found exceed OCD guideline levels and groundwater standards. Because there is shallow groundwater underlying Penroc's operations there is a reasonable probability that groundwater may be impacted from Penroc's current or past operating practices. The following problems were noted during the recent inspection: (See attached inspection report and analytical results)

1. Penroc State 11-23 battery #1:

    A. The loading/unloading piping is leaking oil into a below grade unlined sump. (see picture #12 and #13)
    B. Drum liquids (contents unknown) is leaking onto the ground. The area around the drum has visual contamination. (see picture #2)

C. Heater-treater is discharging oil and water to the ground surface. (see picture #3 and #4)
D. Contaminated soil was noted near piping manifold. (see picture #5)
E. Contaminated soil was noted in the berm area. (see picture #8)

2. Penroc 11-23 well #2 flow lines:

A. Contaminated soil was noted near flow lines. (see picture #6)
B. Contaminated soil was noted near flow lines. (see picture #7)

3. Penroc Harris State Well #5:

A. Oil and water is being discharged to ground surface. (see picture #9)
B. There is visual evidence that contaminants are flowing off site into a watercourse that drains into a nearby playa lake.

4. Penroc State AD well #9:

A. Picture shows where oil has been leaking from the pumping unit. (see picture #14)

Finding #3: OCD found an out-of-service well at the Harris State Well #5 location. (see picture #15)

Actions Required:

A. Penroc shall make notification and perform corrective actions on all future leaks and spills pursuant to 19.15.C.116 NMAC and abide by all OCD rules and regulations.

B. Penroc shall immediately stop all releases of oilfield products or waste, make repairs to equipment to prevent future releases, and install best management practices where feasible.

C. Penroc shall submit an action plan for OCD approval by December 15, 2003. The plan shall include all the sites mentioned in Finding #2 shown above. The plan shall describe how Penroc plans to correct the problems OCD found, and include a clean-up and remediation plan, including a delineation plan to determine if groundwater has been impacted at these sites.

D. Penroc shall submit to the OCD District office and copy this office, a plan to properly plug and abandon the out of service well found at the Harris State #5. This plan shall be submitted by December 15, 2003.

If you have any questions please do not hesitate to contact me at 505-476-3487 or e-mail WPRICE@state.nm.us.

Sincerely;

Wayne Price-Pet. Engr. Spec.

cc: Roger C. Anderson- OCD Envr. Bureau Chief
OCD Hobbs Office
Carl Lane Johnson
Cody Morrow-NMSLO
Attachments- 2

#1 Penroc State 11-23 battery #1 Pump area sample point 0310071210

#4 Penroc State 11-23 battery #1-Oil and water observed being discharged to ground surface.

#2 Penroc state 11-23 mp area –drum contents leaking onto ground surface.

#5 Penroc State 11-23 battery #1-sample point 0310071215 near loading area.

#3 Penroc state 11-23 Battery #1

#6 Penroc State 11-23 #2-sample point 0310071225

#7 Penroc State 11-23 #2-sample point 0310071232

#9 Sample point 0310071550

#8 Penroc State 11-23 battery #1-sample point 0310071250 firewall (berm)

#10 Windmill located in Sec 22-Ts10s-R32e-sample point 0310071330

#11 Windmill located in Sec 25-Ts10s-R32e-sample point 03100713350

#12 Penroc State 11-23 battery #1- loading/unloading area.

#15 Penroc Harris State #5 – Well and miscellaneous junk.

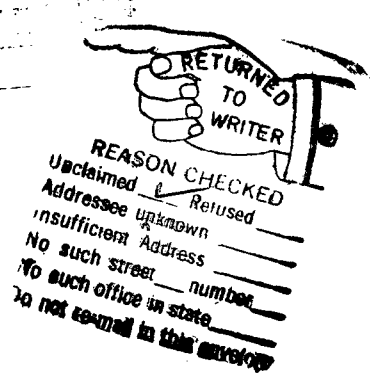
#13 Penroc State 11-23 battery #1- loading/unloading area.

#14 Penroc State AD well#9- shows old leak area

State of New Mexico
ENERGY, MINERALS and NATURAL RESOU

1220 South Saint Francis Drive
P.O. Box 6429
Santa Fe, New Mexico 87505-5472

cc



SEE REVERSE FOR RETURN ADDRESS FOLD AT DOTTED LINE

CERTIFIED MAIL

7001 1940 0004 3929 8386

Wayne

Mr. Mohammed Merchant
Penroc Oil Corporation (Penroc)
P.O. Box 2769
Hobbs, New Mexico 88241-2769

NAME 5-19
1st Notice
2nd Notice 5/24
Return 6/3

Summary Report

Paul Sheeley
OCD-Hobbs
1625 N. French Dr.
Hobbs, NM 88240

Report Date: August 16, 2004

Work Order: 4071613

Project Location: Carl Johnson/State of NM
Project Number: 040714

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
38865	0407141120	soil	2004-07-14	11:20	2004-07-16
38866	0407141220	soil	2004-07-14	12:20	2004-07-16
38867	0407141400	soil	2004-07-14	14:10	2004-07-16
38868	0407141400	soil	2004-07-14	14:00	2004-07-16
38871	0407141425	soil	2004-07-14	14:25	2004-07-16
38872	0407141455	soil	2004-07-14	14:55	2004-07-16
38873	0407141505	soil	2004-07-14	15:05	2004-07-16

	BTEX				TPH 418.1
Sample - Field Code	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	TRPHC (mg/Kg)
38867 - 0407141400	1.67	15.1	16.7	24.7	58700
38868 - 0407141400					740
38871 - 0407141425					<10.0
38872 - 0407141455					25900
38873 - 0407141505					92500

Sample: 38865 - 0407141120

Param	Flag	Result	Units	RL
Hydroxide Alkalinity		<1.00	mg/Kg as CaCo3	1.00
Carbonate Alkalinity		<1.00	mg/Kg as CaCo3	1.00
Bicarbonate Alkalinity		668	mg/Kg as CaCo3	4.00
Total Alkalinity		668	mg/Kg as CaCo3	4.00
Total Calcium		88300	mg/Kg	50.0
Specific Conductance		110000	μMHOS/cm	0.00
Exchangeable Sodium Percent (ESP)		64.8	%	0.00
Chloride		51700	mg/Kg	1.00
Fluoride		<500	mg/Kg	0.500
Sulfate		4800	mg/Kg	2.00
Total Potassium		7060	mg/Kg	50.0
Total Magnesium		16300	mg/Kg	50.0
Total Sodium		35900	mg/Kg	50.0
Nitrate-N		<200	mg/Kg	0.200
pH		7.65	s.u.	0.00

continued ...

sample 38865 continued ...

Param	Flag	Result	Units	RL
SAR		125		0.0100
Extractable Sodium		27300	ppm	0.0100
Extractable Calcium		3100	ppm	0.0100
Extractable Magnesium		292	ppm	0.0100

Sample: 38866 - 0407141220

Param	Flag	Result	Units	RL
Hydroxide Alkalinity		<1.00	mg/Kg as CaCo3	1.00
Carbonate Alkalinity		<1.00	mg/Kg as CaCo3	1.00
Bicarbonate Alkalinity		120	mg/Kg as CaCo3	4.00
Total Alkalinity		120	mg/Kg as CaCo3	4.00
Total Calcium		208000	mg/Kg	50.0
Specific Conductance		64500	μMHOS/cm	0.00
Exchangeable Sodium Percent (ESP)		49.2	%	0.00
Chloride		8360	mg/Kg	1.00
Fluoride		<250	mg/Kg	0.500
Sulfate		4740	mg/Kg	2.00
Total Potassium		7490	mg/Kg	50.0
Total Magnesium		8000	mg/Kg	50.0
Total Sodium		15400	mg/Kg	50.0
Nitrate-N		<100	mg/Kg	0.200
pH		7.94	s.u.	0.00
SAR		66.4		0.0100
Extractable Sodium		13300	ppm	0.0100
Extractable Calcium		2340	ppm	0.0100
Extractable Magnesium		421	ppm	0.0100

Sample: 38867 - 0407141400

Param	Flag	Result	Units	RL
Hydroxide Alkalinity		<1.00	mg/Kg as CaCo3	1.00
Carbonate Alkalinity		<1.00	mg/Kg as CaCo3	1.00
Bicarbonate Alkalinity		298	mg/Kg as CaCo3	4.00
Total Alkalinity		298	mg/Kg as CaCo3	4.00
Total Calcium		91800	mg/Kg	50.0
Specific Conductance		7210	μMHOS/cm	0.00
Chloride		3300	mg/Kg	1.00
Fluoride		<5.00	mg/Kg	0.500
Sulfate		76.9	mg/Kg	2.00
Total Potassium		<5000	mg/Kg	50.0
Total Magnesium		<5000	mg/Kg	50.0
Total Sodium		<5000	mg/Kg	50.0
Nitrate-N		<2.00	mg/Kg	0.200
pH		8.71	s.u.	0.00

Sample: 38868 - 0407141400

Param	Flag	Result	Units	RL
Hydroxide Alkalinity		<1.00	mg/Kg as CaCo3	1.00
Carbonate Alkalinity		<1.00	mg/Kg as CaCo3	1.00
Bicarbonate Alkalinity		100	mg/Kg as CaCo3	4.00
Total Alkalinity		100	mg/Kg as CaCo3	4.00
Total Calcium		59500	mg/Kg	50.0
Specific Conductance		87600	µMHOS/cm	0.00
Chloride		9630	mg/Kg	1.00
Fluoride		<250	mg/Kg	0.500
Sulfate		1330	mg/Kg	2.00
Total Potassium		<5000	mg/Kg	50.0
Total Magnesium		<5000	mg/Kg	50.0
Total Sodium		26600	mg/Kg	50.0
Nitrate-N		<100	mg/Kg	0.200
pH		7.28	s.u.	0.00

Sample: 38871 - 0407141425

Param	Flag	Result	Units	RL
Hydroxide Alkalinity		<1.00	mg/Kg as CaCo3	1.00
Carbonate Alkalinity		<1.00	mg/Kg as CaCo3	1.00
Bicarbonate Alkalinity		128	mg/Kg as CaCo3	4.00
Total Alkalinity		128	mg/Kg as CaCo3	4.00
Total Calcium		6140	mg/Kg	50.0
Specific Conductance		216	µMHOS/cm	0.00
Chloride		9.17	mg/Kg	1.00
Fluoride		<1.00	mg/Kg	0.500
Sulfate		<4.00	mg/Kg	2.00
Total Potassium		3170	mg/Kg	50.0
Total Magnesium		2580	mg/Kg	50.0
Total Sodium		88.1	mg/Kg	50.0
Nitrate-N		2.49	mg/Kg	0.200
pH		8.28	s.u.	0.00

Sample: 38872 - 0407141455

Param	Flag	Result	Units	RL
Hydroxide Alkalinity		<1.00	mg/Kg as CaCo3	1.00
Carbonate Alkalinity		<1.00	mg/Kg as CaCo3	1.00
Bicarbonate Alkalinity		274	mg/Kg as CaCo3	4.00
Total Alkalinity		274	mg/Kg as CaCo3	4.00
Total Calcium		6140	mg/Kg	50.0
Specific Conductance		2080	µMHOS/cm	0.00
Chloride		373	mg/Kg	1.00
Fluoride		<2.50	mg/Kg	0.500
Sulfate		81.1	mg/Kg	2.00
Total Potassium		<5000	mg/Kg	50.0
Total Magnesium		<5000	mg/Kg	50.0
Total Sodium		<5000	mg/Kg	50.0
Nitrate-N		<1.00	mg/Kg	0.200
pH		8.41	s.u.	0.00

Sample: 38873 - 0407141505

Param	Flag	Result	Units	RL
Hydroxide Alkalinity		<1.00	mg/Kg as CaCo3	1.00
Carbonate Alkalinity		<1.00	mg/Kg as CaCo3	1.00
Bicarbonate Alkalinity		128	mg/Kg as CaCo3	4.00
Total Alkalinity		128	mg/Kg as CaCo3	4.00
Total Calcium		136000	mg/Kg	50.0
Specific Conductance		359	μMHOS/cm	0.00
Chloride		26.9	mg/Kg	1.00
Fluoride		1.17	mg/Kg	0.500
Sulfate		33.6	mg/Kg	2.00
Total Potassium		630	mg/Kg	50.0
Total Magnesium		1110	mg/Kg	50.0
Total Sodium		140	mg/Kg	50.0
Nitrate-N		<0.400	mg/Kg	0.200
pH		8.64	s.u.	0.00

38865-73

6701 Aberdeen Avenue, Ste. 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

TraceAnalysis, Inc.

155 McCutcheon, Suite H
El Paso, Texas 79932
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # 407613

Company Name: New Mexico Oil Conservation Div. Phone #: 505.393.6161 x113
Address: (Street, City, Zip) 1625 N. French Dr. Hobbs, Fax #: 505.393.0720
Contact Person: Paul Sheeley – Wayne Price 505.476.3487
Invoice to: (If different from above) Ed Martin 505.476.3492
Project #: 040714 Project Name: Penroc
Project Location: Carl Johnson/State of NM Sampler Signature:

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME
38865	040714 1120	2-g	40Z		X		X					X		7/14	1120
66	040714 1220	2-g	4-oz		X		X					X		7/14	1220
67	040714 1400	1-g	4oz		X		X					X		7/14	1400
68	040714 1400	1-g	40Z		X		X					X		7/14	1400
69	040714 1410	1-p	1-L	X								X		7/14	1410
70	040714 1420	1-g	1-L	X								X		7/14	1420
71	040714 1425	2-g	40Z		X		X					X		7/14	1425
72	040714 1455	1-g	40Z		X		X					X		7/14	1455
73	040714 1505	1-s	40Z		X		X					X		7/14	1505

ANALYSIS REQUEST
(Circle or Specify Method No.)

MTBE 8021B/602	BTEX 8021B/602	TPH (418.1) TX1005	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	General Chemistry	EC	SAR	ESP	Turn Around Time if different from standard	Hold
		X													X	X	X	X		
		X													X	X	X	X		
	X	X													X					
		X													X					
		X													X					
		X													X					
		X													X					
		X													X					
		X													X					
		X													X					

LAB USE ONLY
Intact (Y) N
Headspace Y / N
Temp 4c °
Log-in Review MA

REMARKS:

☐ Check If Special Reporting Limits Are Needed

8/16 FP

Carrier # TNM40 903-069-284-7

Relinquished by: Date: 7-14-04 Time: 14:30
Received by: Date: Time:
Relinquished by: Date: Time:
Received by: Date: Time:
Relinquished by: Date: Time:
Received at Laboratory by: Date: 7.16.04 Time: 11:04

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

ORIGINAL COPY

Analytical and Quality Control Report

Paul Sheeley
OCD-Hobbs
1625 N. French Dr.
Hobbs, NM 88240

Report Date: August 16, 2004

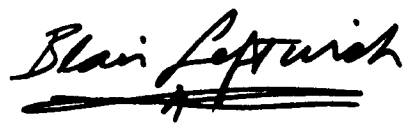
Work Order: 4071613

Project Location: Carl Johnson/State of NM
Project Number: 040714

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
38869	0407141410	Water	2004-07-14	14:10	2004-07-16
38870	0407141420	Water	2004-07-14	14:20	2004-07-16

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.



Dr. Blair Leftwich, Director

Analytical Report

Sample: 38869 - 0407141410

Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	11350	Date Analyzed:	2004-07-26	Analyzed By:	RS
Prep Batch:	10027	Date Prepared:	2004-07-26	Prepared By:	RS

Parameter	Flag	RL Result	Units	Dilution	RL
Hydroxide Alkalinity		<1.00	mg/L as CaCo3	1	1.00
Carbonate Alkalinity		<1.00	mg/L as CaCo3	1	1.00
Bicarbonate Alkalinity		722	mg/L as CaCo3	1	4.00
Total Alkalinity		722	mg/L as CaCo3	1	4.00

Sample: 38869 - 0407141410

Analysis:	Cations	Analytical Method:	S 6010B	Prep Method:	S 3005A
QC Batch:	11826	Date Analyzed:	2004-08-11	Analyzed By:	RR
Prep Batch:	10096	Date Prepared:	2004-07-28	Prepared By:	TP

Parameter	Flag	RL Result	Units	Dilution	RL
Dissolved Calcium		63.6	mg/L	1	0.500
Dissolved Potassium		21.1	mg/L	1	0.500
Dissolved Magnesium		6.24	mg/L	1	0.500
Dissolved Sodium		176	mg/L	1	0.500

Sample: 38869 - 0407141410

Analysis:	Conductivity	Analytical Method:	SM 2510B	Prep Method:	N/A
QC Batch:	11197	Date Analyzed:	2004-07-20	Analyzed By:	MW
Prep Batch:	9896	Date Prepared:	2004-07-20	Prepared By:	MW

Parameter	Flag	RL Result	Units	Dilution	RL
Specific Conductance		1290	µMHOS/cm	1	0.00

Sample: 38869 - 0407141410

Analysis:	Ion Chromatography	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	11352	Date Analyzed:	2004-07-24	Analyzed By:	MW
Prep Batch:	10038	Date Prepared:	2004-07-24	Prepared By:	MW

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		168	mg/L	5	0.500
Fluoride		<1.00	mg/L	5	0.200
Sulfate		15.5	mg/L	5	0.500

Sample: 38869 - 0407141410

Analysis:	NO3 (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	11352	Date Analyzed:	2004-07-24	Analyzed By:	MW
Prep Batch:	10038	Date Prepared:	2004-07-24	Prepared By:	MW

Parameter	Flag	RL Result	Units	Dilution	RL
Nitrate-N	[1]	<1.00	mg/L	5	0.200

Sample: 38869 - 0407141410

Analysis:	pH	Analytical Method:	SM 4500-H+	Prep Method:	N/A
QC Batch:	11222	Date Analyzed:	2004-07-16	Analyzed By:	WB
Prep Batch:	9924	Date Prepared:	2004-07-16	Prepared By:	WB

Parameter	Flag	RL Result	Units	Dilution	RL
pH	[2]	7.84	s.u.	1	0.00

Sample: 38869 - 0407141410

Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	11319	Date Analyzed:	2004-07-26	Analyzed By:	RS
Prep Batch:	10011	Date Prepared:	2004-07-22	Prepared By:	RS

Parameter	Flag	RL Result	Units	Dilution	RL
Total Dissolved Solids		880.0	mg/L	2	10.00

Sample: 38869 - 0407141410

Analysis:	TPH 418.1	Analytical Method:	E 418.1	Prep Method:	N/A
QC Batch:	11235	Date Analyzed:	2004-07-22	Analyzed By:	DS
Prep Batch:	9939	Date Prepared:	2004-07-21	Prepared By:	DS

Parameter	Flag	RL Result	Units	Dilution	RL
TRPHC	[3]	<1.00	mg/L	2	0.500

Sample: 38870 - 0407141420

Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	11350	Date Analyzed:	2004-07-26	Analyzed By:	RS
Prep Batch:	10027	Date Prepared:	2004-07-26	Prepared By:	RS

[1] Sample was missed the day it came in due to heavy volume of samples received. As soon as it was noticed, the sample was run.
[2] received out of holding time
[3] 500 ml sample extracted with 100 ml freon.

Parameter	Flag	RL Result	Units	Dilution	RL
Hydroxide Alkalinity		<1.00	mg/L as CaCo3	1	1.00
Carbonate Alkalinity		<1.00	mg/L as CaCo3	1	1.00
Bicarbonate Alkalinity		112	mg/L as CaCo3	1	4.00
Total Alkalinity		112	mg/L as CaCo3	1	4.00

Sample: 38870 - 0407141420

Analysis:	Cations	Analytical Method:	S 6010B	Prep Method:	S 3005A
QC Batch:	11826	Date Analyzed:	2004-08-11	Analyzed By:	RR
Prep Batch:	10096	Date Prepared:	2004-07-28	Prepared By:	TP

Parameter	Flag	RL Result	Units	Dilution	RL
Dissolved Calcium		39.3	mg/L	1	0.500
Dissolved Potassium		11.8	mg/L	1	0.500
Dissolved Magnesium		2.51	mg/L	1	0.500
Dissolved Sodium		30.0	mg/L	1	0.500

Sample: 38870 - 0407141420

Analysis:	Conductivity	Analytical Method:	SM 2510B	Prep Method:	N/A
QC Batch:	11197	Date Analyzed:	2004-07-20	Analyzed By:	MW
Prep Batch:	9896	Date Prepared:	2004-07-20	Prepared By:	MW

Parameter	Flag	RL Result	Units	Dilution	RL
Specific Conductance		301	µMHOS/cm	1	0.00

Sample: 38870 - 0407141420

Analysis:	Ion Chromatography	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	11352	Date Analyzed:	2004-07-24	Analyzed By:	MW
Prep Batch:	10038	Date Prepared:	2004-07-24	Prepared By:	MW

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		12.8	mg/L	2	0.500
Fluoride		<0.400	mg/L	2	0.200
Sulfate		5.10	mg/L	2	0.500

Sample: 38870 - 0407141420

Analysis:	NO3 (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	11352	Date Analyzed:	2004-07-24	Analyzed By:	MW
Prep Batch:	10038	Date Prepared:	2004-07-24	Prepared By:	MW

Parameter	Flag	RL Result	Units	Dilution	RL
Nitrate-N	[4]	<0.400	mg/L	2	0.200

Sample: 38870 - 0407141420

Analysis:	pH	Analytical Method:	SM 4500-H+	Prep Method:	N/A
QC Batch:	11222	Date Analyzed:	2004-07-16	Analyzed By:	WB
Prep Batch:	9924	Date Prepared:	2004-07-16	Prepared By:	WB

Parameter	Flag	RL Result	Units	Dilution	RL
pH	[5]	7.78	s.u.	1	0.00

Sample: 38870 - 0407141420

Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	11384	Date Analyzed:	2004-07-27	Analyzed By:	RS
Prep Batch:	10064	Date Prepared:	2004-07-26	Prepared By:	RS

Parameter	Flag	RL Result	Units	Dilution	RL
Total Dissolved Solids	[6]	372.0	mg/L	2	10.00

Sample: 38870 - 0407141420

Analysis:	TPH 418.1	Analytical Method:	E 418.1	Prep Method:	N/A
QC Batch:	11235	Date Analyzed:	2004-07-22	Analyzed By:	DS
Prep Batch:	9939	Date Prepared:	2004-07-21	Prepared By:	DS

Parameter	Flag	RL Result	Units	Dilution	RL
TRPHC	[7]	<1.00	mg/L	2	0.500

Method Blank (1) QC Batch: 11197

Parameter	Flag	Result	Units	RL
Specific Conductance		1.70	µMHOS/cm	

Method Blank (1) QC Batch: 11235

[4]Sample was missed the day it came in due to heavy volume of samples received. As soon as it was noticed, the sample was run.
[5]received out of holding time
[6]rerun out of holding time due to an error with crucible weight
[7]500 ml sample extracted with 100 ml freon.

Parameter	Flag	Result	Units	RL
TRPHC		<0.500	mg/L	0.5

Method Blank (1) QC Batch: 11319

Parameter	Flag	Result	Units	RL
Total Dissolved Solids		<10.00	mg/L	10

Method Blank (1) QC Batch: 11350

Parameter	Flag	Result	Units	RL
Hydroxide Alkalinity		<1.00	mg/L as CaCo3	1
Carbonate Alkalinity		<1.00	mg/L as CaCo3	1
Bicarbonate Alkalinity		<4.00	mg/L as CaCo3	4
Total Alkalinity		<4.00	mg/L as CaCo3	4

Method Blank (1) QC Batch: 11352

Parameter	Flag	Result	Units	RL
Nitrate-N		<0.200	mg/L	0.2

Method Blank (1) QC Batch: 11352

Parameter	Flag	Result	Units	RL
Chloride		1.15	mg/L	0.5
Fluoride		<0.200	mg/L	0.2
Sulfate		<0.500	mg/L	0.5

Method Blank (1) QC Batch: 11384

Parameter	Flag	Result	Units	RL
Total Dissolved Solids		<10.00	mg/L	10

Method Blank (1) QC Batch: 11826

Parameter	Flag	Result	Units	RL
Dissolved Calcium		<0.500	mg/L	0.5
Dissolved Potassium		<0.500	mg/L	0.5
Dissolved Magnesium		<0.500	mg/L	0.5
Dissolved Sodium		<0.500	mg/L	0.5

Duplicate (1) QC Batch: 11197

Param	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Specific Conductance	1160	1170	µMHOS/cm	1	1	2.3

Duplicate (1) QC Batch: 11222

Param		Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
pH	[8]	9.60	9.61	s.u.	1	0	0.4

Duplicate (1) QC Batch: 11319

Param	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids	2180	2090	mg/L	2	4	8.7

Duplicate (1) QC Batch: 11350

Param	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Hydroxide Alkalinity	<1.00	<1.00	mg/L as CaCo3	1	0	20
Carbonate Alkalinity	<1.00	<1.00	mg/L as CaCo3	1	0	20
Bicarbonate Alkalinity	236	232	mg/L as CaCo3	1	2	20
Total Alkalinity	236	232	mg/L as CaCo3	1	2	4.8

Duplicate (1) QC Batch: 11384

Param	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids	5900	6310	mg/L	5	7	8.7

Laboratory Control Spike (LCS-1) QC Batch: 11235

[8] received out of holding time

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
TRPHC	8.18	8.17	mg/L	1	8.50	<0.125	96	0	85 - 102	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1) QC Batch: 11352

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Nitrate-N	2.40	2.39	mg/L	1	2.50	<0.0217	96	0	90 - 110	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1) QC Batch: 11352

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Chloride	11.7	11.7	mg/L	1	12.5	<0.337	94	0	90 - 110	20
Fluoride	2.32	2.35	mg/L	1	2.50	<0.0594	93	1	90 - 110	20
Sulfate	11.7	11.8	mg/L	1	12.5	<0.409	94	1	90 - 110	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1) QC Batch: 11826

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Dissolved Calcium	101	100	mg/L	1	100	<0.00971	101	1	85 - 115	20
Dissolved Potassium	95.0	98.6	mg/L	1	100	<0.0297	95	4	85 - 115	20
Dissolved Magnesium	99.9	102	mg/L	1	100	<0.0138	100	2	85 - 115	20
Dissolved Sodium	110	111	mg/L	1	100	<0.0309	110	1	85 - 115	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) QC Batch: 11352

Param	MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Nitrate-N	133	134	mg/L	50	2.50	16.2	93	1	79.6 - 109	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) QC Batch: 11352

Param	MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Chloride	931	928	mg/L	50	12.5	350	93	0	74.3 - 118	20
Fluoride	124	124	mg/L	50	2.50	8.08	93	0	84.9 - 104	20
Sulfate	1030	1040	mg/L	50	12.5	449	93	1	77.8 - 112	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) QC Batch: 11826

Param	MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Dissolved Calcium	109	110	mg/L	1	100	<0.00971	109	1	75 - 125	20
Dissolved Potassium	98.7	96.8	mg/L	1	100	<0.0297	99	2	75 - 125	20
Dissolved Magnesium	103	103	mg/L	1	100	<0.0138	103	0	75 - 125	20
Dissolved Sodium	99.6	101	mg/L	1	100	<0.0309	100	1	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Standard (ICV-1) QC Batch: 11197

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Specific Conductance		µMHOS/cm	1410	1360	96	90 - 110	2004-07-20

Standard (CCV-1) QC Batch: 11197

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Specific Conductance		µMHOS/cm	1410	1460	103	90 - 110	2004-07-20

Standard (ICV-1) QC Batch: 11222

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
pH		s.u.	7.00	7.00	100	98 - 102	2004-07-16

Standard (CCV-1) QC Batch: 11222

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
pH		s.u.	7.00	7.10	101	98 - 102	2004-07-16

Standard (ICV-1) QC Batch: 11235

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
TRPHC		mg/L	100	99.0	99	80 - 120	2004-07-22

Standard (CCV-1) QC Batch: 11235

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
TRPHC		mg/L	100	99.3	99	80 - 120	2004-07-22

Standard (ICV-1) QC Batch: 11319

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Dissolved Solids		mg/L	1000	1059	106	90 - 110	2004-07-26

Standard (CCV-1) QC Batch: 11319

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Dissolved Solids		mg/L	1000	1016	102	90 - 110	2004-07-26

Standard (ICV-1) QC Batch: 11350

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Alkalinity		mg/L as CaCo3	250	244	98	90 - 110	2004-07-26

Standard (CCV-1) QC Batch: 11350

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Alkalinity		mg/L as CaCo3	250	242	97	90 - 110	2004-07-26

Standard (ICV-1) QC Batch: 11352

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Nitrate-N		mg/L	2.50	2.39	96	90 - 110	2004-07-24

Standard (ICV-1) QC Batch: 11352

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.5	11.8	94	90 - 110	2004-07-24
Fluoride		mg/L	2.50	2.44	98	90 - 110	2004-07-24
Sulfate		mg/L	12.5	12.1	97	90 - 110	2004-07-24

Standard (CCV-1) QC Batch: 11352

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Nitrate-N		mg/L	2.50	2.41	96	90 - 110	2004-07-24

Standard (CCV-1) QC Batch: 11352

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.5	11.9	95	90 - 110	2004-07-24
Fluoride		mg/L	2.50	2.38	95	90 - 110	2004-07-24
Sulfate		mg/L	12.5	11.8	94	90 - 110	2004-07-24

Standard (ICV-1) QC Batch: 11384

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Dissolved Solids		mg/L	1000	1056	106	90 - 110	2004-07-27

Standard (CCV-1) QC Batch: 11384

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Dissolved Solids		mg/L	1000	1028	103	90 - 110	2004-07-27

Standard (ICV-1) QC Batch: 11826

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Calcium		mg/L	25.0	24.9	100	90 - 110	2004-08-11
Dissolved Potassium		mg/L	25.0	25.0	100	90 - 110	2004-08-11
Dissolved Magnesium		mg/L	25.0	25.0	100	90 - 110	2004-08-11
Dissolved Sodium		mg/L	25.0	25.6	102	90 - 110	2004-08-11

Standard (CCV-1) QC Batch: 11826

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Calcium		mg/L	25.0	24.3	97	90 - 110	2004-08-11
Dissolved Potassium		mg/L	25.0	25.0	100	90 - 110	2004-08-11
Dissolved Magnesium		mg/L	25.0	24.4	98	90 - 110	2004-08-11
Dissolved Sodium		mg/L	25.0	24.8	99	90 - 110	2004-08-11

Report Date: August 16, 2004
040714

Work Order: 4071613

Page Number: 12 of 12
Carl Johnson/State of NM

Page 1 of 1

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El Paso, Texas 79932
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

TraceAnalysis, Inc.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # 4071613

Company Name: New Mexico Oil Conservation Div. Phone #: 505.393.6161 x113
Address: (Street, City, Zip) 1625 N. French Dr. Hobbs, NM Fax #: 505.393.0720
Contact Person: Paul Sheeley – Wayne Price 505.476.3487
Invoice to: (If different from above) Ed Martin 505.476.3492
Project #: 040714 Project Name: Penroc
Project Location: Carl Johnson/State of NM Sampler Signature:

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME
38865	040714 1120	2-g	4oz		X		X					X		7/14	1120
66	040714 1220	2-g	4oz		X		X					X		7/14	1220
67	040714 1400	1-g	4oz		X		X					X		7/14	1400
68	040714 1400	1-g	4oz		X		X					X		7/14	1402
69	040714 1410	1-p	1-L	X								X		7/14	1410
70	040714 1420	1-g	1-L	X								X		7/14	1420
71	040714 1425	2-g	4oz		X		X					X		7/14	1425
72	040714 1455	1-g	4oz		X		X					X		7/14	1455
73	040714 1505	1-g	4oz		X		X					X		7/14	1505

ANALYSIS REQUEST (Circle or Specify Method No.)

MTBE 8021B/602	BTEX 8021B/602	TPH (418.1) TX1005	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol 8260B/624	GC/MS Semi Vol 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD TSS pH	General Chemistry	EC	SAR	ESP		Turn Around Time if different from standard	Hold
															X	X	X	X			
															X	X	X	X			
	X	X													X						
		X													X						
		X													X						
		X													X						
		X													X						
		X													X						
		X													X						

Relinquished by: Date: 7-14-04 Time: 14:30
Received by: Date: Time:
Relinquished by: Date: Time:
Received by: Date: Time:
Relinquished by: Date: Time:
Received at Laboratory by: Date: 7.16.04 Time: 11:04

LAB USE ONLY
Intact (Y) N
Headspace Y / N
Temp 4c °
Log-in Review MA

REMARKS:

☐ Check if Special Reporting Limits Are Needed

Carrier # TNMD 903-069-284-7

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

ORIGINAL COPY

Analytical and Quality Control Report

Paul Sheeley
OCD-Hobbs
1625 N. French Dr.
Hobbs, NM 88240

Report Date: August 16, 2004

Work Order: 4071613

Project Location: Carl Johnson/State of NM
Project Number: 040714

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
38865	0407141120	soil	2004-07-14	11:20	2004-07-16
38866	0407141220	soil	2004-07-14	12:20	2004-07-16
38867	0407141400	soil	2004-07-14	14:10	2004-07-16
38868	0407141400	soil	2004-07-14	14:00	2004-07-16
38871	0407141425	soil	2004-07-14	14:25	2004-07-16
38872	0407141455	soil	2004-07-14	14:55	2004-07-16
38873	0407141505	soil	2004-07-14	15:05	2004-07-16

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Michael Abel

Dr. Blair Leftwich, Director

Analytical Report

Sample: 38865 - 0407141120

Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	11942	Date Analyzed:	2004-08-14	Analyzed By:	RS
Prep Batch:	10556	Date Prepared:	2004-08-14	Prepared By:	RS

Parameter	Flag	RL Result	Units	Dilution	RL
Hydroxide Alkalinity		<1.00	mg/Kg as CaCo3	1	1.00
Carbonate Alkalinity		<1.00	mg/Kg as CaCo3	1	1.00
Bicarbonate Alkalinity		668	mg/Kg as CaCo3	1	4.00
Total Alkalinity		668	mg/Kg as CaCo3	1	4.00

Sample: 38865 - 0407141120

Analysis:	Ca, Total	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	11173	Date Analyzed:	2004-07-20	Analyzed By:	RR
Prep Batch:	9859	Date Prepared:	2004-07-19	Prepared By:	TP

Parameter	Flag	RL Result	Units	Dilution	RL
Total Calcium		88300	mg/Kg	1	50.0

Sample: 38865 - 0407141120

Analysis:	Conductivity	Analytical Method:	SM 2510B	Prep Method:	N/A
QC Batch:	11923	Date Analyzed:	2004-08-11	Analyzed By:	MW
Prep Batch:	10539	Date Prepared:	2004-08-11	Prepared By:	MW

Parameter	Flag	RL Result	Units	Dilution	RL
Specific Conductance		110000	µMHOS/cm	1	0.00

Sample: 38865 - 0407141120

Analysis:	ESP	Analytical Method:	N/A	Prep Method:	N/A
QC Batch:	11326	Date Analyzed:	2004-07-26	Analyzed By:	BC
Prep Batch:	9917	Date Prepared:	2004-07-21	Prepared By:	TP

Parameter	Flag	RL Result	Units	Dilution	RL
Exchangeable Sodium Percent (ESP)		64.8	%	1	0.00

Sample: 38865 - 0407141120

Analysis:	Ion Chromatography	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	11921	Date Analyzed:	2004-08-11	Analyzed By:	MW
Prep Batch:	10538	Date Prepared:	2004-08-11	Prepared By:	MW

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		51700	mg/Kg	10000	1.00
Fluoride		<500	mg/Kg	1000	0.500
Sulfate		4800	mg/Kg	1000	2.00

Sample: 38865 - 0407141120

Analysis:	K, Total	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	11173	Date Analyzed:	2004-07-20	Analyzed By:	RR
Prep Batch:	9859	Date Prepared:	2004-07-19	Prepared By:	TP

Parameter	Flag	RL Result	Units	Dilution	RL
Total Potassium		7060	mg/Kg	1	50.0

Sample: 38865 - 0407141120

Analysis:	Mg, Total	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	11173	Date Analyzed:	2004-07-20	Analyzed By:	RR
Prep Batch:	9859	Date Prepared:	2004-07-19	Prepared By:	TP

Parameter	Flag	RL Result	Units	Dilution	RL
Total Magnesium		16300	mg/Kg	1	50.0

Sample: 38865 - 0407141120

Analysis:	Na, Total	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	11173	Date Analyzed:	2004-07-20	Analyzed By:	RR
Prep Batch:	9859	Date Prepared:	2004-07-19	Prepared By:	TP

Parameter	Flag	RL Result	Units	Dilution	RL
Total Sodium		35900	mg/Kg	1	50.0

Sample: 38865 - 0407141120

Analysis:	NO3 (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	11921	Date Analyzed:	2004-08-11	Analyzed By:	MW
Prep Batch:	10538	Date Prepared:	2004-08-11	Prepared By:	MW

Parameter	Flag	RL Result	Units	Dilution	RL
Nitrate-N		<200	mg/Kg	1000	0.200

Sample: 38865 - 0407141120

Analysis:	pH	Analytical Method:	SM 4500-H+	Prep Method:	N/A
QC Batch:	11940	Date Analyzed:	2004-08-11	Analyzed By:	MW
Prep Batch:	10548	Date Prepared:	2004-08-11	Prepared By:	MW

Parameter	Flag	Result	RL	Units	Dilution	RL
pH		7.65		s.u.	1	0.00

Sample: 38865 - 0407141120

Analysis:	SAR	Analytical Method:	N/A	Prep Method:	N/A
QC Batch:	11325	Date Analyzed:	2004-07-25	Analyzed By:	BC
Prep Batch:	9917	Date Prepared:	2004-07-21	Prepared By:	TP

Parameter	Flag	Result	RL	Units	Dilution	RL
SAR		125			1	0.0100
Extractable Sodium		27300		ppm	1	0.0100
Extractable Calcium		3100		ppm	1	0.0100
Extractable Magnesium		292		ppm	1	0.0100

Sample: 38866 - 0407141220

Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	11942	Date Analyzed:	2004-08-14	Analyzed By:	RS
Prep Batch:	10556	Date Prepared:	2004-08-14	Prepared By:	RS

Parameter	Flag	Result	RL	Units	Dilution	RL
Hydroxide Alkalinity		<1.00		mg/Kg as CaCo3	1	1.00
Carbonate Alkalinity		<1.00		mg/Kg as CaCo3	1	1.00
Bicarbonate Alkalinity		120		mg/Kg as CaCo3	1	4.00
Total Alkalinity		120		mg/Kg as CaCo3	1	4.00

Sample: 38866 - 0407141220

Analysis:	Ca, Total	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	11173	Date Analyzed:	2004-07-20	Analyzed By:	RR
Prep Batch:	9859	Date Prepared:	2004-07-19	Prepared By:	TP

Parameter	Flag	Result	RL	Units	Dilution	RL
Total Calcium		208000		mg/Kg	100	50.0

Sample: 38866 - 0407141220

Analysis:	Conductivity	Analytical Method:	SM 2510B	Prep Method:	N/A
QC Batch:	11923	Date Analyzed:	2004-08-11	Analyzed By:	MW
Prep Batch:	10539	Date Prepared:	2004-08-11	Prepared By:	MW

Parameter	Flag	RL Result	Units	Dilution	RL
Specific Conductance		64500	µMHOS/cm	1	0.00

Sample: 38866 - 0407141220

Analysis:	ESP	Analytical Method:	N/A	Prep Method:	N/A
QC Batch:	11326	Date Analyzed:	2004-07-26	Analyzed By:	BC
Prep Batch:	9917	Date Prepared:	2004-07-21	Prepared By:	TP

Parameter	Flag	RL Result	Units	Dilution	RL
Exchangeable Sodium Percent (ESP)		49.2	%	1	0.00

Sample: 38866 - 0407141220

Analysis:	Ion Chromatography	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	11921	Date Analyzed:	2004-08-11	Analyzed By:	MW
Prep Batch:	10538	Date Prepared:	2004-08-11	Prepared By:	MW

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		8360	mg/Kg	5000	1.00
Fluoride		<250	mg/Kg	500	0.500
Sulfate		4740	mg/Kg	500	2.00

Sample: 38866 - 0407141220

Analysis:	K, Total	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	11173	Date Analyzed:	2004-07-20	Analyzed By:	RR
Prep Batch:	9859	Date Prepared:	2004-07-19	Prepared By:	TP

Parameter	Flag	RL Result	Units	Dilution	RL
Total Potassium		7490	mg/Kg	100	50.0

Sample: 38866 - 0407141220

Analysis:	Mg, Total	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	11173	Date Analyzed:	2004-07-20	Analyzed By:	RR
Prep Batch:	9859	Date Prepared:	2004-07-19	Prepared By:	TP

Parameter	Flag	RL Result	Units	Dilution	RL
Total Magnesium		8000	mg/Kg	100	50.0

Sample: 38866 - 0407141220

Analysis:	Na, Total	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	11173	Date Analyzed:	2004-07-20	Analyzed By:	RR
Prep Batch:	9859	Date Prepared:	2004-07-19	Prepared By:	TP

Parameter	Flag	Result	RL	Units	Dilution	RL
Total Sodium		15400		mg/Kg	100	50.0

Sample: 38866 - 0407141220

Analysis:	NO3 (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	11921	Date Analyzed:	2004-08-11	Analyzed By:	MW
Prep Batch:	10538	Date Prepared:	2004-08-11	Prepared By:	MW

Parameter	Flag	Result	RL	Units	Dilution	RL
Nitrate-N		<100		mg/Kg	500	0.200

Sample: 38866 - 0407141220

Analysis:	pH	Analytical Method:	SM 4500-H+	Prep Method:	N/A
QC Batch:	11940	Date Analyzed:	2004-08-11	Analyzed By:	MW
Prep Batch:	10548	Date Prepared:	2004-08-11	Prepared By:	MW

Parameter	Flag	Result	RL	Units	Dilution	RL
pH		7.94		s.u.	1	0.00

Sample: 38866 - 0407141220

Analysis:	SAR	Analytical Method:	N/A	Prep Method:	N/A
QC Batch:	11325	Date Analyzed:	2004-07-25	Analyzed By:	BC
Prep Batch:	9917	Date Prepared:	2004-07-21	Prepared By:	TP

Parameter	Flag	Result	RL	Units	Dilution	RL
SAR		66.4			1	0.0100
Extractable Sodium		13300		ppm	1	0.0100
Extractable Calcium		2340		ppm	1	0.0100
Extractable Magnesium		421		ppm	1	0.0100

Sample: 38867 - 0407141400

Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	11942	Date Analyzed:	2004-08-14	Analyzed By:	RS
Prep Batch:	10556	Date Prepared:	2004-08-14	Prepared By:	RS

continued ...

sample 38867 continued ...

Parameter	Flag	RL Result	Units	Dilution	RL

Parameter	Flag	RL Result	Units	Dilution	RL
Hydroxide Alkalinity		<1.00	mg/Kg as CaCo3	1	1.00
Carbonate Alkalinity		<1.00	mg/Kg as CaCo3	1	1.00
Bicarbonate Alkalinity		298	mg/Kg as CaCo3	1	4.00
Total Alkalinity		298	mg/Kg as CaCo3	1	4.00

Sample: 38867 - 0407141400

Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	11137	Date Analyzed:	2004-07-16	Analyzed By:	MS
Prep Batch:	9843	Date Prepared:	2004-07-16	Prepared By:	MS

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene	[1]*Not entered*	1.67	mg/Kg	100	0.00100
Toluene	*Not entered*	15.1	mg/Kg	100	0.00100
Ethylbenzene	*Not entered*	16.7	mg/Kg	100	0.00100
Xylene	*Not entered*	24.7	mg/Kg	100	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	[2]*Not entered*	3.80	mg/Kg	100	0.100	38	57.3 - 140
4-Bromofluorobenzene (4-BFB)	*Not entered*	7.30	mg/Kg	100	0.100	73	47.6 - 146

Sample: 38867 - 0407141400

Analysis:	Ca, Total	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	11173	Date Analyzed:	2004-07-20	Analyzed By:	RR
Prep Batch:	9859	Date Prepared:	2004-07-19	Prepared By:	TP

Parameter	Flag	RL Result	Units	Dilution	RL
Total Calcium		91800	mg/Kg	100	50.0

Sample: 38867 - 0407141400

Analysis:	Conductivity	Analytical Method:	SM 2510B	Prep Method:	N/A
QC Batch:	11923	Date Analyzed:	2004-08-11	Analyzed By:	MW
Prep Batch:	10539	Date Prepared:	2004-08-11	Prepared By:	MW

continued ...

[1]Sample diluted due to hydrocarbon content beyond xylene.
[2]Low TFT surrogate recovery due to matrix interference. BFB surrogate recovery shows the method to be in control.

sample 38867 continued ...

Parameter	Flag	RL Result	Units	Dilution	RL

Parameter	Flag	RL Result	Units	Dilution	RL
Specific Conductance		7210	µMHOS/cm	1	0.00

Sample: 38867 - 0407141400

Analysis:	Ion Chromatography	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	11921	Date Analyzed:	2004-08-11	Analyzed By:	MW
Prep Batch:	10538	Date Prepared:	2004-08-11	Prepared By:	MW

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3300	mg/Kg	100	1.00
Fluoride		<5.00	mg/Kg	10	0.500
Sulfate		76.9	mg/Kg	10	2.00

Sample: 38867 - 0407141400

Analysis:	K, Total	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	11173	Date Analyzed:	2004-07-20	Analyzed By:	RR
Prep Batch:	9859	Date Prepared:	2004-07-19	Prepared By:	TP

Parameter	Flag	RL Result	Units	Dilution	RL
Total Potassium		<5000	mg/Kg	100	50.0

Sample: 38867 - 0407141400

Analysis:	Mg, Total	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	11173	Date Analyzed:	2004-07-20	Analyzed By:	RR
Prep Batch:	9859	Date Prepared:	2004-07-19	Prepared By:	TP

Parameter	Flag	RL Result	Units	Dilution	RL
Total Magnesium		<5000	mg/Kg	100	50.0

Sample: 38867 - 0407141400

Analysis:	Na, Total	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	11173	Date Analyzed:	2004-07-20	Analyzed By:	RR
Prep Batch:	9859	Date Prepared:	2004-07-19	Prepared By:	TP

continued ...

sample 38867 continued . . .

Parameter	Flag	RL Result	Units	Dilution	RL

Parameter	Flag	RL Result	Units	Dilution	RL
Total Sodium		<5000	mg/Kg	100	50.0

Sample: 38867 - 0407141400

Analysis:	NO3 (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	11921	Date Analyzed:	2004-08-11	Analyzed By:	MW
Prep Batch:	10538	Date Prepared:	2004-08-11	Prepared By:	MW

Parameter	Flag	RL Result	Units	Dilution	RL
Nitrate-N		<2.00	mg/Kg	10	0.200

Sample: 38867 - 0407141400

Analysis:	pH	Analytical Method:	SM 4500-H+	Prep Method:	N/A
QC Batch:	11940	Date Analyzed:	2004-08-11	Analyzed By:	MW
Prep Batch:	10548	Date Prepared:	2004-08-11	Prepared By:	MW

Parameter	Flag	RL Result	Units	Dilution	RL
pH		8.71	s.u.	1	0.00

Sample: 38867 - 0407141400

Analysis:	TPH 418.1	Analytical Method:	E 418.1	Prep Method:	N/A
QC Batch:	11180	Date Analyzed:	2004-07-20	Analyzed By:	DS
Prep Batch:	9881	Date Prepared:	2004-07-20	Prepared By:	DS

Parameter	Flag	RL Result	Units	Dilution	RL
TRPHC		58700	mg/Kg	80	10.0

Sample: 38868 - 0407141400

Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	11942	Date Analyzed:	2004-08-14	Analyzed By:	RS
Prep Batch:	10556	Date Prepared:	2004-08-14	Prepared By:	RS

Parameter	Flag	RL Result	Units	Dilution	RL
Hydroxide Alkalinity		<1.00	mg/Kg as CaCo3	1	1.00
Carbonate Alkalinity		<1.00	mg/Kg as CaCo3	1	1.00

continued . . .

sample 38868 continued . . .

Parameter	Flag	RL Result	Units	Dilution	RL
Bicarbonate Alkalinity		100	mg/Kg as CaCo3	1	4.00
Total Alkalinity		100	mg/Kg as CaCo3	1	4.00

Sample: 38868 - 0407141400

Analysis:	Ca, Total	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	11173	Date Analyzed:	2004-07-20	Analyzed By:	RR
Prep Batch:	9859	Date Prepared:	2004-07-19	Prepared By:	TP

Parameter	Flag	RL Result	Units	Dilution	RL
Total Calcium		59500	mg/Kg	100	50.0

Sample: 38868 - 0407141400

Analysis:	Conductivity	Analytical Method:	SM 2510B	Prep Method:	N/A
QC Batch:	11923	Date Analyzed:	2004-08-11	Analyzed By:	MW
Prep Batch:	10539	Date Prepared:	2004-08-11	Prepared By:	MW

Parameter	Flag	RL Result	Units	Dilution	RL
Specific Conductance		87600	µMHOS/cm	1	0.00

Sample: 38868 - 0407141400

Analysis:	Ion Chromatography	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	11921	Date Analyzed:	2004-08-11	Analyzed By:	MW
Prep Batch:	10538	Date Prepared:	2004-08-11	Prepared By:	MW

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		9630	mg/Kg	5000	1.00
Fluoride		<250	mg/Kg	500	0.500
Sulfate		1330	mg/Kg	500	2.00

Sample: 38868 - 0407141400

Analysis:	K, Total	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	11173	Date Analyzed:	2004-07-20	Analyzed By:	RR
Prep Batch:	9859	Date Prepared:	2004-07-19	Prepared By:	TP

Parameter	Flag	RL Result	Units	Dilution	RL
Total Potassium		<5000	mg/Kg	100	50.0

Sample: 38868 - 0407141400

Analysis:	Mg, Total	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	11173	Date Analyzed:	2004-07-20	Analyzed By:	RR
Prep Batch:	9859	Date Prepared:	2004-07-19	Prepared By:	TP

Parameter	Flag	RL Result	Units	Dilution	RL
Total Magnesium		<5000	mg/Kg	100	50.0

Sample: 38868 - 0407141400

Analysis:	Na, Total	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	11173	Date Analyzed:	2004-07-20	Analyzed By:	RR
Prep Batch:	9859	Date Prepared:	2004-07-19	Prepared By:	TP

Parameter	Flag	RL Result	Units	Dilution	RL
Total Sodium		26600	mg/Kg	100	50.0

Sample: 38868 - 0407141400

Analysis:	NO3 (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	11921	Date Analyzed:	2004-08-11	Analyzed By:	MW
Prep Batch:	10538	Date Prepared:	2004-08-11	Prepared By:	MW

Parameter	Flag	RL Result	Units	Dilution	RL
Nitrate-N		<100	mg/Kg	500	0.200

Sample: 38868 - 0407141400

Analysis:	pH	Analytical Method:	SM 4500-H+	Prep Method:	N/A
QC Batch:	11940	Date Analyzed:	2004-08-11	Analyzed By:	MW
Prep Batch:	10548	Date Prepared:	2004-08-11	Prepared By:	MW

Parameter	Flag	RL Result	Units	Dilution	RL
pH		7.28	s.u.	1	0.00

Sample: 38868 - 0407141400

Analysis:	TPH 418.1	Analytical Method:	E 418.1	Prep Method:	N/A
QC Batch:	11180	Date Analyzed:	2004-07-20	Analyzed By:	DS
Prep Batch:	9881	Date Prepared:	2004-07-20	Prepared By:	DS

Parameter	Flag	RL Result	Units	Dilution	RL
TRPHC		740	mg/Kg	1	10.0

Sample: 38871 - 0407141425

Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	11942	Date Analyzed:	2004-08-14	Analyzed By:	RS
Prep Batch:	10556	Date Prepared:	2004-08-14	Prepared By:	RS

Parameter	Flag	RL Result	Units	Dilution	RL
Hydroxide Alkalinity		<1.00	mg/Kg as CaCo3	1	1.00
Carbonate Alkalinity		<1.00	mg/Kg as CaCo3	1	1.00
Bicarbonate Alkalinity		128	mg/Kg as CaCo3	1	4.00
Total Alkalinity		128	mg/Kg as CaCo3	1	4.00

Sample: 38871 - 0407141425

Analysis:	Ca, Total	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	11173	Date Analyzed:	2004-07-20	Analyzed By:	RR
Prep Batch:	9859	Date Prepared:	2004-07-19	Prepared By:	TP

Parameter	Flag	RL Result	Units	Dilution	RL
Total Calcium		6140	mg/Kg	1	50.0

Sample: 38871 - 0407141425

Analysis:	Conductivity	Analytical Method:	SM 2510B	Prep Method:	N/A
QC Batch:	11923	Date Analyzed:	2004-08-11	Analyzed By:	MW
Prep Batch:	10539	Date Prepared:	2004-08-11	Prepared By:	MW

Parameter	Flag	RL Result	Units	Dilution	RL
Specific Conductance		216	µMHOS/cm	1	0.00

Sample: 38871 - 0407141425

Analysis:	Ion Chromatography	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	11921	Date Analyzed:	2004-08-11	Analyzed By:	MW
Prep Batch:	10538	Date Prepared:	2004-08-11	Prepared By:	MW

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		9.17	mg/Kg	2	1.00
Fluoride		<1.00	mg/Kg	2	0.500
Sulfate		<4.00	mg/Kg	2	2.00

Sample: 38871 - 0407141425

Analysis:	K, Total	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	11173	Date Analyzed:	2004-07-20	Analyzed By:	RR
Prep Batch:	9859	Date Prepared:	2004-07-19	Prepared By:	TP

Parameter	Flag	RL Result	Units	Dilution	RL
Total Potassium		3170	mg/Kg	1	50.0

Sample: 38871 - 0407141425

Analysis:	Mg, Total	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	11173	Date Analyzed:	2004-07-20	Analyzed By:	RR
Prep Batch:	9859	Date Prepared:	2004-07-19	Prepared By:	TP

Parameter	Flag	RL Result	Units	Dilution	RL
Total Magnesium		2580	mg/Kg	1	50.0

Sample: 38871 - 0407141425

Analysis:	Na, Total	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	11173	Date Analyzed:	2004-07-20	Analyzed By:	RR
Prep Batch:	9859	Date Prepared:	2004-07-19	Prepared By:	TP

Parameter	Flag	RL Result	Units	Dilution	RL
Total Sodium		88.1	mg/Kg	1	50.0

Sample: 38871 - 0407141425

Analysis:	NO3 (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	11921	Date Analyzed:	2004-08-11	Analyzed By:	MW
Prep Batch:	10538	Date Prepared:	2004-08-11	Prepared By:	MW

Parameter	Flag	RL Result	Units	Dilution	RL
Nitrate-N		2.49	mg/Kg	2	0.200

Sample: 38871 - 0407141425

Analysis:	pH	Analytical Method:	SM 4500-H+	Prep Method:	N/A
QC Batch:	11940	Date Analyzed:	2004-08-11	Analyzed By:	MW
Prep Batch:	10548	Date Prepared:	2004-08-11	Prepared By:	MW

Parameter	Flag	RL Result	Units	Dilution	RL
pH		8.28	s.u.	1	0.00

Sample: 38871 - 0407141425

Analysis:	TPH 418.1	Analytical Method:	E 418.1	Prep Method:	N/A
QC Batch:	11180	Date Analyzed:	2004-07-20	Analyzed By:	DS

Prep Batch: 9881 Date Prepared: 2004-07-20 Prepared By: DS

Parameter	Flag	RL Result	Units	Dilution	RL
TRPHC		<10.0	mg/Kg	1	10.0

Sample: 38872 - 0407141455

Analysis: Alkalinity Analytical Method: SM 2320B Prep Method: N/A
QC Batch: 11942 Date Analyzed: 2004-08-14 Analyzed By: RS
Prep Batch: 10556 Date Prepared: 2004-08-14 Prepared By: RS

Parameter	Flag	RL Result	Units	Dilution	RL
Hydroxide Alkalinity		<1.00	mg/Kg as CaCo3	1	1.00
Carbonate Alkalinity		<1.00	mg/Kg as CaCo3	1	1.00
Bicarbonate Alkalinity		274	mg/Kg as CaCo3	1	4.00
Total Alkalinity		274	mg/Kg as CaCo3	1	4.00

Sample: 38872 - 0407141455

Analysis: Ca, Total Analytical Method: S 6010B Prep Method: S 3050B
QC Batch: 11173 Date Analyzed: 2004-07-20 Analyzed By: RR
Prep Batch: 9859 Date Prepared: 2004-07-19 Prepared By: TP

Parameter	Flag	RL Result	Units	Dilution	RL
Total Calcium		6140	mg/Kg	100	50.0

Sample: 38872 - 0407141455

Analysis: Conductivity Analytical Method: SM 2510B Prep Method: N/A
QC Batch: 11923 Date Analyzed: 2004-08-11 Analyzed By: MW
Prep Batch: 10539 Date Prepared: 2004-08-11 Prepared By: MW

Parameter	Flag	RL Result	Units	Dilution	RL
Specific Conductance		2080	µMHOS/cm	1	0.00

Sample: 38872 - 0407141455

Analysis: Ion Chromatography Analytical Method: E 300.0 Prep Method: N/A
QC Batch: 11922 Date Analyzed: 2004-08-11 Analyzed By: MW
Prep Batch: 10538 Date Prepared: 2004-08-11 Prepared By: MW

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		373	mg/Kg	50	1.00
Fluoride		<2.50	mg/Kg	5	0.500

continued ...

sample 38872 continued . . .

Parameter	Flag	RL Result	Units	Dilution	RL
Sulfate		81.1	mg/Kg	5	2.00

Sample: 38872 - 0407141455

Analysis:	K, Total	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	11173	Date Analyzed:	2004-07-20	Analyzed By:	RR
Prep Batch:	9859	Date Prepared:	2004-07-19	Prepared By:	TP

Parameter	Flag	RL Result	Units	Dilution	RL
Total Potassium		<5000	mg/Kg	100	50.0

Sample: 38872 - 0407141455

Analysis:	Mg, Total	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	11173	Date Analyzed:	2004-07-20	Analyzed By:	RR
Prep Batch:	9859	Date Prepared:	2004-07-19	Prepared By:	TP

Parameter	Flag	RL Result	Units	Dilution	RL
Total Magnesium		<5000	mg/Kg	100	50.0

Sample: 38872 - 0407141455

Analysis:	Na, Total	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	11173	Date Analyzed:	2004-07-20	Analyzed By:	RR
Prep Batch:	9859	Date Prepared:	2004-07-19	Prepared By:	TP

Parameter	Flag	RL Result	Units	Dilution	RL
Total Sodium		<5000	mg/Kg	100	50.0

Sample: 38872 - 0407141455

Analysis:	NO3 (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	11922	Date Analyzed:	2004-08-11	Analyzed By:	MW
Prep Batch:	10538	Date Prepared:	2004-08-11	Prepared By:	MW

Parameter	Flag	RL Result	Units	Dilution	RL
Nitrate-N		<1.00	mg/Kg	5	0.200

Sample: 38872 - 0407141455

Analysis:	pH	Analytical Method:	SM 4500-H+	Prep Method:	N/A
QC Batch:	11940	Date Analyzed:	2004-08-11	Analyzed By:	MW
Prep Batch:	10548	Date Prepared:	2004-08-11	Prepared By:	MW

Parameter	Flag	Result	RL	Units	Dilution	RL
pH		8.41		s.u.	1	0.00

Sample: 38872 - 0407141455

Analysis:	TPH 418.1	Analytical Method:	E 418.1	Prep Method:	N/A
QC Batch:	11180	Date Analyzed:	2004-07-20	Analyzed By:	DS
Prep Batch:	9881	Date Prepared:	2004-07-20	Prepared By:	DS

Parameter	Flag	Result	RL	Units	Dilution	RL
TRPHC		25900		mg/Kg	40	10.0

Sample: 38873 - 0407141505

Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	11942	Date Analyzed:	2004-08-14	Analyzed By:	RS
Prep Batch:	10556	Date Prepared:	2004-08-14	Prepared By:	RS

Parameter	Flag	Result	RL	Units	Dilution	RL
Hydroxide Alkalinity		<1.00		mg/Kg as CaCo3	1	1.00
Carbonate Alkalinity		<1.00		mg/Kg as CaCo3	1	1.00
Bicarbonate Alkalinity		128		mg/Kg as CaCo3	1	4.00
Total Alkalinity		128		mg/Kg as CaCo3	1	4.00

Sample: 38873 - 0407141505

Analysis:	Ca, Total	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	11173	Date Analyzed:	2004-07-20	Analyzed By:	RR
Prep Batch:	9859	Date Prepared:	2004-07-19	Prepared By:	TP

Parameter	Flag	Result	RL	Units	Dilution	RL
Total Calcium		136000		mg/Kg	1	50.0

Sample: 38873 - 0407141505

Analysis:	Conductivity	Analytical Method:	SM 2510B	Prep Method:	N/A
QC Batch:	11923	Date Analyzed:	2004-08-11	Analyzed By:	MW
Prep Batch:	10539	Date Prepared:	2004-08-11	Prepared By:	MW

continued ...

sample 38873 continued ...

Parameter	Flag	RL Result	Units	Dilution	RL

Parameter	Flag	RL Result	Units	Dilution	RL
Specific Conductance		359	µMHOS/cm	1	0.00

Sample: 38873 - 0407141505

Analysis:	Ion Chromatography	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	11922	Date Analyzed:	2004-08-11	Analyzed By:	MW
Prep Batch:	10538	Date Prepared:	2004-08-11	Prepared By:	MW

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		26.9	mg/Kg	2	1.00
Fluoride		1.17	mg/Kg	2	0.500
Sulfate		33.6	mg/Kg	2	2.00

Sample: 38873 - 0407141505

Analysis:	K, Total	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	11173	Date Analyzed:	2004-07-20	Analyzed By:	RR
Prep Batch:	9859	Date Prepared:	2004-07-19	Prepared By:	TP

Parameter	Flag	RL Result	Units	Dilution	RL
Total Potassium		630	mg/Kg	1	50.0

Sample: 38873 - 0407141505

Analysis:	Mg, Total	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	11173	Date Analyzed:	2004-07-20	Analyzed By:	RR
Prep Batch:	9859	Date Prepared:	2004-07-19	Prepared By:	TP

Parameter	Flag	RL Result	Units	Dilution	RL
Total Magnesium		1110	mg/Kg	1	50.0

Sample: 38873 - 0407141505

Analysis:	Na, Total	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	11173	Date Analyzed:	2004-07-20	Analyzed By:	RR
Prep Batch:	9859	Date Prepared:	2004-07-19	Prepared By:	TP

continued ...

sample 38873 continued . . .

Parameter	Flag	RL Result	Units	Dilution	RL

Parameter	Flag	RL Result	Units	Dilution	RL
Total Sodium		140	mg/Kg	1	50.0

Sample: 38873 - 0407141505

Analysis:	NO3 (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	11922	Date Analyzed:	2004-08-11	Analyzed By:	MW
Prep Batch:	10538	Date Prepared:	2004-08-11	Prepared By:	MW

Parameter	Flag	RL Result	Units	Dilution	RL
Nitrate-N		<0.400	mg/Kg	2	0.200

Sample: 38873 - 0407141505

Analysis:	pH	Analytical Method:	SM 4500-H+	Prep Method:	N/A
QC Batch:	11940	Date Analyzed:	2004-08-11	Analyzed By:	MW
Prep Batch:	10548	Date Prepared:	2004-08-11	Prepared By:	MW

Parameter	Flag	RL Result	Units	Dilution	RL
pH		8.64	s.u.	1	0.00

Sample: 38873 - 0407141505

Analysis:	TPH 418.1	Analytical Method:	E 418.1	Prep Method:	N/A
QC Batch:	11180	Date Analyzed:	2004-07-20	Analyzed By:	DS
Prep Batch:	9881	Date Prepared:	2004-07-20	Prepared By:	DS

Parameter	Flag	RL Result	Units	Dilution	RL
TRPHC		92500	mg/Kg	80	10.0

Method Blank (1) QC Batch: 11137

Parameter	Flag	Result	Units	RL
Benzene		<0.0100	mg/Kg	0.001
Toluene		<0.0100	mg/Kg	0.001
Ethylbenzene		<0.0100	mg/Kg	0.001
Xylene		<0.0100	mg/Kg	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.764	mg/Kg	10	0.100	76	70 - 130
4-Bromofluorobenzene (4-BFB)		0.721	mg/Kg	10	0.100	72	70 - 130

Method Blank (1) QC Batch: 11173

Parameter	Flag	Result	Units	RL
Total Calcium		<50.0	mg/Kg	50

Method Blank (1) QC Batch: 11173

Parameter	Flag	Result	Units	RL
Total Potassium		<50.0	mg/Kg	50

Method Blank (1) QC Batch: 11173

Parameter	Flag	Result	Units	RL
Total Magnesium		<50.0	mg/Kg	50

Method Blank (1) QC Batch: 11173

Parameter	Flag	Result	Units	RL
Total Sodium		<50.0	mg/Kg	50

Method Blank (1) QC Batch: 11180

Parameter	Flag	Result	Units	RL
TRPHC		<10.0	mg/Kg	10

Method Blank (1) QC Batch: 11325

Parameter	Flag	Result	Units	RL
Extractable Sodium		0.246	ppm	0.01

Matrix Blank (1) QC Batch: 11921

Parameter	Flag	Result	Units	RL
Nitrate-N		<0.200	mg/Kg	0.2

Matrix Blank (1) QC Batch: 11921

Parameter	Flag	Result	Units	RL
Chloride		12.9	mg/Kg	1
Fluoride		0.550	mg/Kg	0.5
Sulfate		14.5	mg/Kg	2

Matrix Blank (1) QC Batch: 11922

Parameter	Flag	Result	Units	RL
Nitrate-N		<0.200	mg/Kg	0.2

Matrix Blank (1) QC Batch: 11922

Parameter	Flag	Result	Units	RL
Chloride		6.69	mg/Kg	1
Fluoride		<0.500	mg/Kg	0.5
Sulfate		4.64	mg/Kg	2

Method Blank (1) QC Batch: 11923

Parameter	Flag	Result	Units	RL
Specific Conductance		1.63	µMHOS/cm	

Method Blank (1) QC Batch: 11942

Parameter	Flag	Result	Units	RL
Hydroxide Alkalinity		<1.00	mg/Kg as CaCo3	1
Carbonate Alkalinity		<1.00	mg/Kg as CaCo3	1
Bicarbonate Alkalinity		<4.00	mg/Kg as CaCo3	4
Total Alkalinity		<4.00	mg/Kg as CaCo3	4

Duplicate (1) QC Batch: 11923

Param	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Specific Conductance	800	799	µMHOS/cm	1	0	4

Duplicate (1) QC Batch: 11940

Param	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
pH	8.34	8.33	s.u.	1	0	1

Duplicate (1) QC Batch: 11942

Param	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Hydroxide Alkalinity	<1.00	<1.00	mg/Kg as CaCo3	1	0	20
Carbonate Alkalinity	<1.00	<1.00	mg/Kg as CaCo3	1	0	20
Bicarbonate Alkalinity	114	120	mg/Kg as CaCo3	1	5	20
Total Alkalinity	114	120	mg/Kg as CaCo3	1	5	20

Laboratory Control Spike (LCS-1) QC Batch: 11137

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Benzene	0.809	0.815	mg/Kg	10	0.100	<0.0153	81	1	70 - 130	20
Toluene	0.826	0.836	mg/Kg	10	0.100	<0.00954	83	1	70 - 130	20
Ethylbenzene	0.868	0.894	mg/Kg	10	0.100	<0.00954	87	3	70 - 130	20
Xylene	2.92	3.01	mg/Kg	10	0.300	<0.0300	97	3	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.780	0.788	mg/Kg	10	0.100	78	79	70 - 130
4-Bromofluorobenzene (4-BFB)	0.856	0.867	mg/Kg	10	0.100	86	87	70 - 130

Laboratory Control Spike (LCS-1) QC Batch: 11173

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Total Calcium	11000	10400	mg/Kg	100	100	<64.2	110	6	85 - 115	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1) QC Batch: 11173

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Total Potassium	10200	9530	mg/Kg	100	100	<166	102	7	85 - 120	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1) QC Batch: 11173

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Total Magnesium	11000	10300	mg/Kg	100	100	<642	110	6	85 - 115	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1) QC Batch: 11173

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Total Sodium	9570	9130	mg/Kg	100	100	<174	96	5	89.6 - 109	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1) QC Batch: 11180

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
TRPHC	287	260	mg/Kg	1	250	<7.12	115	10	74 - 122	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1) QC Batch: 11325

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
SAR	1.70	1.65		1	0.00	<0.0100		3	-	
Extractable Sodium	103	101	ppm	1	100	<0.0100	103	2	75 - 125	
Extractable Calcium	103	106	ppm	1	100	<0.0100	103	3	75 - 125	
Extractable Magnesium	106	108	ppm	1	100	<0.0100	106	2	75 - 125	

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1) QC Batch: 11921

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Nitrate-N	2.49	2.49	mg/Kg	1	2.50	0.17	93	0	90 - 110	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1) QC Batch: 11921

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Chloride	24.7	24.8	mg/Kg	1	12.5	12.9	94	0	90 - 110	20
Fluoride	2.93	2.92	mg/Kg	1	2.50	0.55	95	0	90 - 110	20
Sulfate	27.4	27.3	mg/Kg	1	12.5	14.5	103	0	90 - 110	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1) QC Batch: 11922

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Nitrate-N	2.53	2.51	mg/Kg	1	2.50	0.17	94	1	90 - 110	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1) QC Batch: 11922

Param		LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Chloride		18.4	18.3	mg/Kg	1	12.5	6.69	94	0	90 - 110	20
Fluoride		2.65	2.66	mg/Kg	1	2.50	<0.329	98	0	90 - 110	20
Sulfate	[3]	17.2	18.9	mg/Kg	1	12.5	4.64	100	9	90 - 110	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) QC Batch: 11137

Param	MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Benzene	0.760	0.778	mg/Kg	10	0.100	<0.0153	76	2	70 - 130	20
Toluene	0.774	0.813	mg/Kg	10	0.100	<0.00954	77	5	70 - 130	20
Ethylbenzene	0.806	0.858	mg/Kg	10	0.100	<0.00954	81	6	70 - 130	20
Xylene	2.71	2.89	mg/Kg	10	0.300	<0.0300	90	6	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.792	0.800	mg/Kg	10	0.1	79	80	70 - 130
4-Bromofluorobenzene (4-BFB)	0.908	0.908	mg/Kg	10	0.1	91	91	70 - 130

Matrix Spike (MS-1) QC Batch: 11173

Param	MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Total Calcium	10400	10600	mg/Kg	100	100	<64.2	104	2	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) QC Batch: 11173

Param	MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Total Potassium	10500	10700	mg/Kg	100	100	<166	105	2	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) QC Batch: 11173

[3]LCS spike duplicate outside of range. All other QC are within range.

Param	MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Total Magnesium	11000	10900	mg/Kg	100	100	<642	110	1	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) QC Batch: 11173

Param	MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Total Sodium	10500	9800	mg/Kg	100	100	<174	105	7	83.5 - 119	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) QC Batch: 11180

Param	MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
TRPHC	262	260	mg/Kg	1	250	41.2	88	1	50 - 142	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) QC Batch: 11325

Param		MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
SAR		99.7	101		1	0.00	125.488		1	-	
Extractable Sodium	[4,5]	29200	29500	ppm	1	1000	27300	190	1	75 - 125	
Extractable Calcium		4260	4170	ppm	1	1000	3100	116	2	75 - 125	
Extractable Magnesium		1360	1400	ppm	1	1000	292	107	3	75 - 125	

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) QC Batch: 11921

Param	MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Nitrate-N	14.8	14.6	mg/Kg	5	2.50	2.9	95	1	73.6 - 122	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) QC Batch: 11921

Param	MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Chloride	71.4	70.8	mg/Kg	5	12.5	12.4	94	1	69.4 - 118	20
Fluoride	12.6	12.4	mg/Kg	5	2.50	<1.64	95	2	49.8 - 148	20
Sulfate	66.3	65.2	mg/Kg	5	12.5	5.5	97	2	89.8 - 112	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

[4]ms recovery out of limits due to matrix effect, use lcs/lcsd
[5]ms recovery out of limits due to matrix effect, use lcs/lcsd

Matrix Spike (MS-1) QC Batch: 11922

Param	MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Nitrate-N	13.7	13.8	mg/Kg	5	2.50	1.8	95	1	73.6 - 122	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) QC Batch: 11922

Param	MS Result	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Chloride	66.4	67.8	mg/Kg	5	12.5	8.4	93	2	69.4 - 118	20
Fluoride	16.8	16.8	mg/Kg	5	2.50	4.75	96	0	49.8 - 148	20
Sulfate	79.4	80.4	mg/Kg	5	12.5	20.4	94	1	89.8 - 112	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Standard (ICV-1) QC Batch: 11137

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene	[6]	mg/Kg	0.100	0.0805	80	85 - 115	2004-07-16
Toluene	[7]	mg/Kg	0.100	0.0833	83	85 - 115	2004-07-16
Ethylbenzene		mg/Kg	0.100	0.0882	88	85 - 115	2004-07-16
Xylene		mg/Kg	0.300	0.298	99	85 - 115	2004-07-16

Standard (CCV-1) QC Batch: 11137

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene	[8]	mg/Kg	0.100	0.0825	82	85 - 115	2004-07-16
Toluene	[9]	mg/Kg	0.100	0.0845	84	85 - 115	2004-07-16
Ethylbenzene		mg/Kg	0.100	0.0893	89	85 - 115	2004-07-16
Xylene		mg/Kg	0.300	0.303	101	85 - 115	2004-07-16

Standard (ICV-1) QC Batch: 11173

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Calcium		mg/Kg	25.0	25.0	100	90 - 110	2004-07-20

Standard (ICV-1) QC Batch: 11173

[6]Benzene outside normal limits in ICV-1. Average of ICV components fall within acceptable range.
[7]Toluene outside normal limits in ICV-1. Average of ICV components fall within acceptable range.
[8]Benzene outside normal limits in CCV. Average of CCV components fall within acceptable range.
[9]Toluene outside normal limits in CCV. Average of CCV components fall within acceptable range.

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Potassium		mg/Kg	25.0	25.4	102	90 - 110	2004-07-20

Standard (ICV-1) QC Batch: 11173

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Magnesium		mg/Kg	25.0	24.7	99	90 - 110	2004-07-20

Standard (ICV-1) QC Batch: 11173

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Sodium		mg/Kg	25.0	25.7	103	90 - 110	2004-07-20

Standard (CCV-1) QC Batch: 11173

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Calcium		mg/Kg	25.0	26.4	106	90 - 110	2004-07-20

Standard (CCV-1) QC Batch: 11173

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Potassium		mg/Kg	25.0	25.6	102	90 - 110	2004-07-20

Standard (CCV-1) QC Batch: 11173

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Magnesium		mg/Kg	25.0	25.2	101	90 - 110	2004-07-20

Standard (CCV-1) QC Batch: 11173

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Sodium		mg/Kg	25.0	25.5	102	90 - 110	2004-07-20

Standard (ICV-1) QC Batch: 11180

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
TRPHC		mg/Kg	100	97.8	98	80 - 120	2004-07-20

Standard (CCV-1) QC Batch: 11180

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
TRPHC		mg/Kg	100	101	101	80 - 120	2004-07-20

Standard (ICV-1) QC Batch: 11325

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
SAR			0.00	0.832		-	2004-07-25
Extractable Sodium		ppm	25.0	24.6	98	75 - 125	2004-07-25
Extractable Calcium		ppm	25.0	24.7	99	75 - 125	2004-07-25
Extractable Magnesium		ppm	25.0	25.2	101	75 - 125	2004-07-25

Standard (CCV-1) QC Batch: 11325

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
SAR			0.00	0.885		-	2004-07-25
Extractable Sodium		ppm	25.0	25.3	101	75 - 125	2004-07-25
Extractable Calcium		ppm	25.0	23.4	94	75 - 125	2004-07-25
Extractable Magnesium		ppm	25.0	23.4	94	75 - 125	2004-07-25

Standard (ICV-1) QC Batch: 11921

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Nitrate-N		mg/Kg	2.50	2.39	96	90 - 110	2004-08-11

Standard (ICV-1) QC Batch: 11921

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	12.5	11.9	95	90 - 110	2004-08-11
Fluoride		mg/Kg	2.50	2.45	98	90 - 110	2004-08-11
Sulfate		mg/Kg	12.5	12.5	100	90 - 110	2004-08-11

Standard (CCV-1) QC Batch: 11921

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Nitrate-N		mg/Kg	2.50	2.40	96	90 - 110	2004-08-11

Standard (CCV-1) QC Batch: 11921

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	12.5	11.9	95	90 - 110	2004-08-11
Fluoride		mg/Kg	2.50	2.42	97	90 - 110	2004-08-11
Sulfate		mg/Kg	12.5	12.4	99	90 - 110	2004-08-11

Standard (ICV-1) QC Batch: 11922

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Nitrate-N		mg/Kg	2.50	2.40	96	90 - 110	2004-08-11

Standard (ICV-1) QC Batch: 11922

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	12.5	11.9	95	90 - 110	2004-08-11
Fluoride		mg/Kg	2.50	2.42	97	90 - 110	2004-08-11
Sulfate		mg/Kg	12.5	12.4	99	90 - 110	2004-08-11

Standard (CCV-1) QC Batch: 11922

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Nitrate-N		mg/Kg	2.50	2.40	96	90 - 110	2004-08-11

Standard (CCV-1) QC Batch: 11922

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	12.5	12.0	96	90 - 110	2004-08-11
Fluoride		mg/Kg	2.50	2.40	96	90 - 110	2004-08-11
Sulfate		mg/Kg	12.5	12.5	100	90 - 110	2004-08-11

Standard (ICV-1) QC Batch: 11923

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Specific Conductance		µMHOS/cm	1410	1460	104	90 - 110	2004-08-11

Standard (CCV-1) QC Batch: 11923

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Specific Conductance		µMHOS/cm	1410	1490	106	90 - 110	2004-08-11

Standard (ICV-1) QC Batch: 11940

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
pH		s.u.	7.00	7.02	100	98 - 102	2004-08-11

Standard (CCV-1) QC Batch: 11940

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
pH		s.u.	7.00	6.99	100	98 - 102	2004-08-11

Standard (ICV-1) QC Batch: 11942

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Alkalinity		mg/Kg as CaCo3	250	240	96	90 - 110	2004-08-14

Standard (CCV-1) QC Batch: 11942

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Alkalinity		mg/Kg as CaCo3	250	242	97	90 - 110	2004-08-14

Report Date: August 16, 2004
040714

Work Order: 4071613

Page Number: 30 of 30
Carl Johnson/State of NM

Page 1 of 1

6701 Aberdeen Avenue, Suite 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

155 McCutcheon, Suite H
El Paso, Texas 79932
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

TraceAnalysis, Inc.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # 4071613

Company Name: New Mexico Oil Conservation Div. Phone #: 505.393.6161 x113
Address: (Street, City, Zip) 1625 N. French Dr. Hobbs, NM Fax #: 505.393.0720
Contact Person: Paul Sheeley – Wayne Price 505.476.3487
Invoice to: (If different from above) Ed Martin 505.476.3492
Project #: 040714 Project Name: Penvoc
Project Location: Carl Johnson/State of NM Sampler Signature:

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME
38865	040714 1120	2-g	40Z		X		X					X		7/14	1120
66	040714 1220	2-g	4-oz		X		X					X		7/14	1220
67	040714 1400	1-g	4-oz		X		X					X		7/14	1400
68	040714 1400	1-g	40Z		X		X					X		7/14	1400
69	040714 1410	1-p	1-L	X								X		7/14	1410
70	040714 1420	1-g	1-L	X								X		7/14	1420
71	040714 1425	2-g	40Z		X		X					X		7/14	1425
72	040714 1455	1-g	40Z		X		X					X		7/14	1455
73	040714 1505	1-g	40Z		X		X					X		7/14	1505

ANALYSIS REQUEST
(Circle or Specify Method No.)

MTBE 8021B/602	BTEX 8021B/602	TPH (418.1) TX1005	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol 8260B/624	GC/MS Semi Vol 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD TSS pH	General Chemistry	EC	SAR	ESP		Turn Around Time if different from standard	Hold
															X	X	X	X			
															X	X	X	X			
	X	X													X						
		X													X						
		X													X						
		X													X						
		X													X						
		X													X						
		X													X						
		X													X						

Relinquished by: Date: 7-14-04 Time: 14:30 Received by: Date: Time:
Relinquished by: Date: Time: Received by: Date: Time:
Relinquished by: Date: Time: Received at Laboratory by: Date: 7.16.04 Time: 11:04

LAB USE ONLY
Intact (Y) N
Headspace Y / N
Temp 4c °
Log-in Review MA

REMARKS:

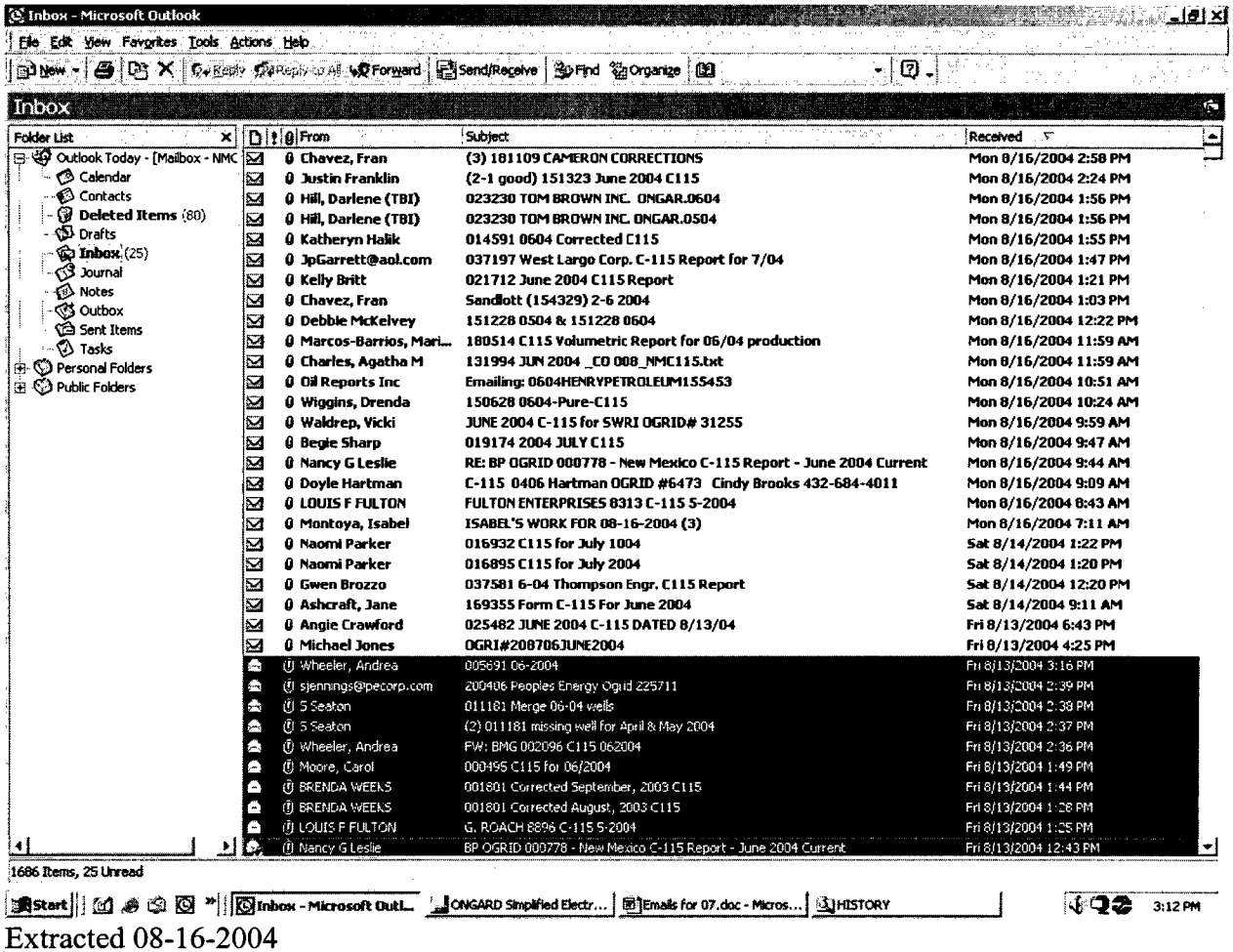
☐ Check If Special Reporting Limits Are Needed

Carrier # TNMD 903-069-284-7

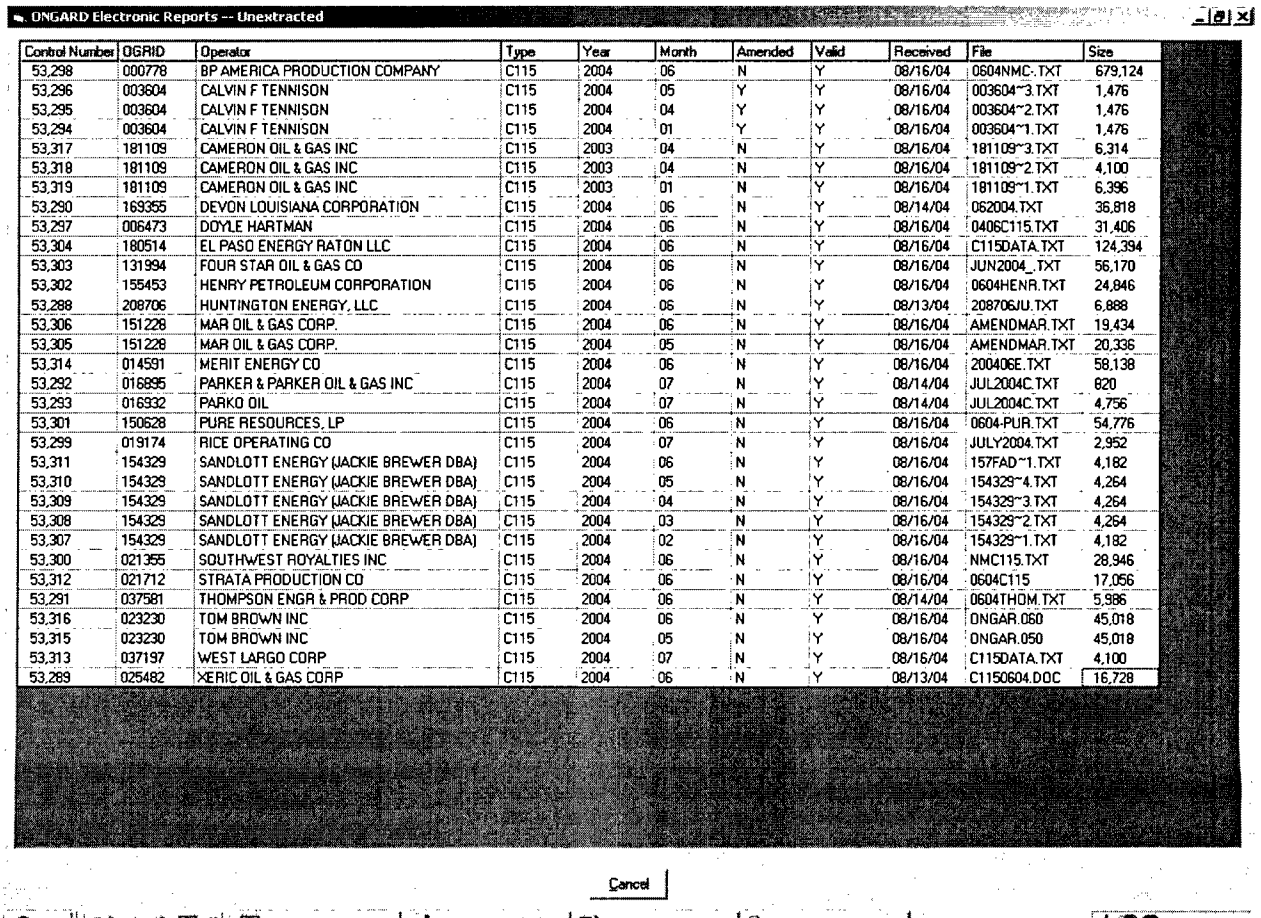
Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

ORIGINAL COPY

Emails for 08-16-2004



Extracted 08-16-2004



Control Number	OGRID	Operator	Type	Year	Month	Amended	Valid	Received	File	Size
53,298	000778	BP AMERICA PRODUCTION COMPANY	C115	2004	06	N	Y	08/16/04	0604NMC.TXT	679,124
53,296	003604	CALVIN F TENNISON	C115	2004	05	Y	Y	08/16/04	003604~3.TXT	1,476
53,295	003604	CALVIN F TENNISON	C115	2004	04	Y	Y	08/16/04	003604~2.TXT	1,476
53,294	003604	CALVIN F TENNISON	C115	2004	01	Y	Y	08/16/04	003604~1.TXT	1,476
53,317	181109	CAMERON OIL & GAS INC	C115	2003	04	N	Y	08/16/04	181109~3.TXT	6,314
53,318	181109	CAMERON OIL & GAS INC	C115	2003	04	N	Y	08/16/04	181109~2.TXT	4,100
53,319	181109	CAMERON OIL & GAS INC	C115	2003	01	N	Y	08/16/04	181109~1.TXT	6,396
53,290	169355	DEVON LOUISIANA CORPORATION	C115	2004	06	N	Y	08/14/04	062004.TXT	36,818
53,297	006473	DOYLE HARTMAN	C115	2004	06	N	Y	08/16/04	0406C115.TXT	31,406
53,304	180514	EL PASO ENERGY RATON LLC	C115	2004	06	N	Y	08/16/04	C115DATA.TXT	124,394
53,303	131994	FOUR STAR OIL & GAS CO	C115	2004	06	N	Y	08/16/04	JUN2004_.TXT	56,170
53,302	155453	HENRY PETROLEUM CORPORATION	C115	2004	06	N	Y	08/16/04	0604HENR.TXT	24,846
53,288	208706	HUNTINGTON ENERGY, LLC	C115	2004	06	N	Y	08/13/04	208706JU.TXT	6,888
53,306	151228	MAR OIL & GAS CORP.	C115	2004	06	N	Y	08/16/04	AMENDMAR.TXT	19,434
53,305	151228	MAR OIL & GAS CORP.	C115	2004	05	N	Y	08/16/04	AMENDMAR.TXT	20,336
53,314	014591	MERIT ENERGY CO	C115	2004	06	N	Y	08/16/04	200406E.TXT	58,138
53,292	016895	PARKER & PARKER OIL & GAS INC	C115	2004	07	N	Y	08/14/04	JUL2004C.TXT	820
53,293	016932	PARKO OIL	C115	2004	07	N	Y	08/14/04	JUL2004C.TXT	4,756
53,301	150628	PURE RESOURCES, LP	C115	2004	06	N	Y	08/16/04	0604-PUR.TXT	54,776
53,299	019174	RICE OPERATING CO	C115	2004	07	N	Y	08/16/04	JULY2004.TXT	2,952
53,311	154329	SANDLOTT ENERGY (JACKIE BREWER DBA)	C115	2004	06	N	Y	08/16/04	157FAD~1.TXT	4,182
53,310	154329	SANDLOTT ENERGY (JACKIE BREWER DBA)	C115	2004	05	N	Y	08/16/04	154329~4.TXT	4,264
53,309	154329	SANDLOTT ENERGY (JACKIE BREWER DBA)	C115	2004	04	N	Y	08/16/04	154329~3.TXT	4,264
53,308	154329	SANDLOTT ENERGY (JACKIE BREWER DBA)	C115	2004	03	N	Y	08/16/04	154329~2.TXT	4,264
53,307	154329	SANDLOTT ENERGY (JACKIE BREWER DBA)	C115	2004	02	N	Y	08/16/04	154329~1.TXT	4,182
53,300	021355	SOUTHWEST ROYALTIES INC	C115	2004	06	N	Y	08/16/04	NMC115.TXT	28,946
53,312	021712	STRATA PRODUCTION CO	C115	2004	06	N	Y	08/16/04	0604C115	17,056
53,291	037581	THOMPSON ENGR & PROD CORP	C115	2004	06	N	Y	08/14/04	0604THOM.TXT	5,986
53,316	023230	TOM BROWN INC	C115	2004	06	N	Y	08/16/04	ONGAR.060	45,018
53,315	023230	TOM BROWN INC	C115	2004	05	N	Y	08/16/04	ONGAR.050	45,018
53,313	037197	WEST LARGO CORP	C115	2004	07	N	Y	08/16/04	C115DATA.TXT	4,100
53,289	025482	XERIC OIL & GAS CORP	C115	2004	06	N	Y	08/13/04	C1150604.DOC	16,728

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON
Governor
Joanna Prukop
Cabinet Secretary

Mark E. Fesmire, P.E.
Director
Oil Conservation Division

FAX

TO: Wayne / Willie

FROM: Paul S.

RE: Penroc / Carl Johnson W.O. Reciept

DATE: 7-22-04

I just got this from the lab
I'll check it with my sampling & shipping
notes. Please check yours.
Let me know if there is any problem

Paul S.

NO. OF PAGES 4 INCLUDING COVERSHEET

Work Order Receipt

Order

Work Order	4071613
Receive Date	at
Requestor	Paul Sheeley - OCD
Invoicing	Ed Martin - OCD-Santa Fe
Purchase Order	N/A
Project	040714
	Project Location = Carl Johnson/State of NM
	Project Number = 040714
Comment	N/A

Samples

Sample	Field Code	Priority	Matrix	Collect Date	Collect Time	Quantity
38865	0407141120	Normal	soil	2004-07-14	11:20	2
38866	0407141220	Normal	soil	2004-07-14	12:20	2
38867	0407141400	Normal	soil	2004-07-14	14:10	1
38868	0407141400	Normal	soil	2004-07-14	14:00	1
38869	0407141410	Normal	Water	2004-07-14	14:10	1
38870	0407141420	Normal	Water	2004-07-14	14:20	1
38871	0407141425	Normal	soil	2004-07-14	14:25	2
38872	0407141455	Normal	soil	2004-07-14	14:55	1
38873	0407141505	Normal	soil	2004-07-14	15:05	1

Sample	Test	Method	Prep	Priority	Due Date
38865	Alkalinity	SM 2320B	N/A	Normal	2004-07-16
	Ca, Total	S 6010B	S 3050B	Normal	2004-07-16
	Chloride (IC)	E 300.0	N/A	Normal	2004-07-16
	Conductivity	SM 2510B	N/A	Normal	2004-06-21
	ESP	N/A	N/A	Normal	2004-06-16
	Fluoride (IC)	E 300.0	N/A	Normal	2004-07-16
	K, Total	S 6010B	S 3050B	Normal	2004-07-16
	Mg, Total	S 6010B	S 3050B	Normal	2004-07-16
	NO3 (IC)	E 300.0	N/A	Normal	2004-07-16
	Na, Total	S 6010B	S 3050B	Normal	2004-07-16
	SAR	N/A	N/A	Normal	2004-06-21
	SO4 (IC)	E 300.0	N/A	Normal	2004-07-16
	pH	SM 4500-H+	N/A	Normal	2004-06-21
38866	Alkalinity	SM 2320B	N/A	Normal	2004-07-16
	Ca, Total	S 6010B	S 3050B	Normal	2004-07-16
	Chloride (IC)	E 300.0	N/A	Normal	2004-07-16
	Conductivity	SM 2510B	N/A	Normal	2004-06-21
	ESP	N/A	N/A	Normal	2004-06-16
	Fluoride (IC)	E 300.0	N/A	Normal	2004-07-16
	K, Total	S 6010B	S 3050B	Normal	2004-07-16
	Mg, Total	S 6010B	S 3050B	Normal	2004-07-16
	NO3 (IC)	E 300.0	N/A	Normal	2004-07-16
	Na, Total	S 6010B	S 3050B	Normal	2004-07-16
	SAR	N/A	N/A	Normal	2004-06-21
	SO4 (IC)	E 300.0	N/A	Normal	2004-07-16
	pH	SM 4500-H+	N/A	Normal	2004-06-21
38867	Alkalinity	SM 2320B	N/A	Normal	2004-07-16
	BTEX	S 8021B	S 5035	Normal	2004-06-21
	Ca, Total	S 6010B	S 3050B	Normal	2004-07-16
	Chloride (IC)	E 300.0	N/A	Normal	2004-07-16
	Conductivity	SM 2510B	N/A	Normal	2004-06-21
	Fluoride (IC)	E 300.0	N/A	Normal	2004-07-16

Work Order Receipt

Sample	Test	Method	Prep	Priority	Due Date
	K, Total	S 6010B	S 3050B	Normal	2004-07-16
	Mg, Total	S 6010B	S 3050B	Normal	2004-07-16
	NO3 (IC)	E 300.0	N/A	Normal	2004-07-16
	Na, Total	S 6010B	S 3050B	Normal	2004-07-16
	SO4 (IC)	E 300.0	N/A	Normal	2004-07-16
	TPH 418.1	E 418.1	N/A	Normal	2004-07-16
	pH	SM 4500-H+	N/A	Normal	2004-06-21
38868	Alkalinity	SM 2320B	N/A	Normal	2004-07-16
	Ca, Total	S 6010B	S 3050B	Normal	2004-07-16
	Chloride (IC)	E 300.0	N/A	Normal	2004-07-16
	Conductivity	SM 2510B	N/A	Normal	2004-06-21
	Fluoride (IC)	E 300.0	N/A	Normal	2004-07-16
	K, Total	S 6010B	S 3050B	Normal	2004-07-16
	Mg, Total	S 6010B	S 3050B	Normal	2004-07-16
	NO3 (IC)	E 300.0	N/A	Normal	2004-07-16
	Na, Total	S 6010B	S 3050B	Normal	2004-07-16
	SO4 (IC)	E 300.0	N/A	Normal	2004-07-16
	TPH 418.1	E 418.1	N/A	Normal	2004-07-16
	pH	SM 4500-H+	N/A	Normal	2004-06-21
38869	Alkalinity	SM 2320B	N/A	Normal	2004-06-21
	Ca, Dissolved	S 6010B	S 3005A	Normal	2004-06-21
	Chloride (IC)	E 300.0	N/A	Normal	2004-06-21
	Conductivity	SM 2510B	N/A	Normal	2004-06-21
	Fluoride (IC)	E 300.0	N/A	Normal	2004-06-21
	K, Dissolved	S 6010B	S 3005A	Normal	2004-06-21
	Mg, Dissolved	S 6010B	S 3005A	Normal	2004-06-21
	NO3 (IC)	E 300.0	N/A	Normal	2004-06-21
	Na, Dissolved	S 6010B	S 3005A	Normal	2004-06-21
	SO4 (IC)	E 300.0	N/A	Normal	2004-06-21
	TDS	SM 2540C	N/A	Normal	2004-06-21
	TPH 418.1	E 418.1	N/A	Normal	2004-06-21
	pH	SM 4500-H+	N/A	Normal	2004-06-21
38870	Alkalinity	SM 2320B	N/A	Normal	2004-06-21
	Ca, Dissolved	S 6010B	S 3005A	Normal	2004-06-21
	Chloride (IC)	E 300.0	N/A	Normal	2004-06-21
	Conductivity	SM 2510B	N/A	Normal	2004-06-21
	Fluoride (IC)	E 300.0	N/A	Normal	2004-06-21
	K, Dissolved	S 6010B	S 3005A	Normal	2004-06-21
	Mg, Dissolved	S 6010B	S 3005A	Normal	2004-06-21
	NO3 (IC)	E 300.0	N/A	Normal	2004-06-21
	Na, Dissolved	S 6010B	S 3005A	Normal	2004-06-21
	SO4 (IC)	E 300.0	N/A	Normal	2004-06-21
	TDS	SM 2540C	N/A	Normal	2004-06-21
	pH	SM 4500-H+	N/A	Normal	2004-06-21
38871	Alkalinity	SM 2320B	N/A	Normal	2004-07-16
	Ca, Total	S 6010B	S 3050B	Normal	2004-07-16
	Chloride (IC)	E 300.0	N/A	Normal	2004-07-16
	Conductivity	SM 2510B	N/A	Normal	2004-06-21
	Fluoride (IC)	E 300.0	N/A	Normal	2004-07-16
	K, Total	S 6010B	S 3050B	Normal	2004-07-16
	Mg, Total	S 6010B	S 3050B	Normal	2004-07-16
	NO3 (IC)	E 300.0	N/A	Normal	2004-07-16
	Na, Total	S 6010B	S 3050B	Normal	2004-07-16
	SO4 (IC)	E 300.0	N/A	Normal	2004-07-16
	TPH 418.1	E 418.1	N/A	Normal	2004-07-16
	pH	SM 4500-H+	N/A	Normal	2004-06-21
38872	Alkalinity	SM 2320B	N/A	Normal	2004-07-16

Work Order Receipt

Sample	Test	Method	Prep	Priority	Due Date
	Ca, Total	S 6010B	S 3050B	Normal	2004-07-16
	Chloride (IC)	E 300.0	N/A	Normal	2004-07-16
	Conductivity	SM 2510B	N/A	Normal	2004-06-21
	Fluoride (IC)	E 300.0	N/A	Normal	2004-07-16
	K, Total	S 6010B	S 3050B	Normal	2004-07-16
	Mg, Total	S 6010B	S 3050B	Normal	2004-07-16
	NO3 (IC)	E 300.0	N/A	Normal	2004-07-16
	Na, Total	S 6010B	S 3050B	Normal	2004-07-16
	SO4 (IC)	E 300.0	N/A	Normal	2004-07-16
	TPH 418.1	E 418.1	N/A	Normal	2004-07-16
	pH	SM 4500-H+	N/A	Normal	2004-06-21
38373	Alkalinity	SM 2320B	N/A	Normal	2004-07-16
	Ca, Total	S 6010B	S 3050B	Normal	2004-07-16
	Chloride (IC)	E 300.0	N/A	Normal	2004-07-16
	Conductivity	SM 2510B	N/A	Normal	2004-06-21
	Fluoride (IC)	E 300.0	N/A	Normal	2004-07-16
	K, Total	S 6010B	S 3050B	Normal	2004-07-16
	Mg, Total	S 6010B	S 3050B	Normal	2004-07-16
	NO3 (IC)	E 300.0	N/A	Normal	2004-07-16
	Na, Total	S 6010B	S 3050B	Normal	2004-07-16
	SO4 (IC)	E 300.0	N/A	Normal	2004-07-16
	TPH 418.1	E 418.1	N/A	Normal	2004-07-16
	pH	SM 4500-H+	N/A	Normal	2004-06-21


CITIES SERVICE OIL COMPANY
PENROC OIL CORP.
STATE AD LEASE WELL NO. 9
1980' FNL & 2310' FEL
SEC. 23 - T 10 S - R 32 E
LEA COUNTY, NEW MEXICO
7. 14. 2004


7. 14. 2004


10. 2. 2003

View Production Data

In Internet Explorer, right click and select "Save Target As..."
In Netscape, right click and select "Save Link As..."

Download: HTTP

Well: STATE AD **No.:** 009
Operator: PENROC OIL CORP [NM SLO data]
API: 3002521207 **Township:** 10.0S **Range:** 32E
Section: 23 **Unit:** G
Land Type: S **County:** Lea **Total Acreage:** 40
Number of Completion with Acreage: 1
Accumulated:
Oil: 24287 (BBLS) **Gas:** 24262 (MCF)
Water: 98657 (BBLS) **Days Produced:** 8456 (Days)

Year: 1973
Pool Name: MESCALERO;SAN ANDRES

Month	Oil(BBLS)	Gas(MCF)	Water(BBLS)	Days Produced	Accum. Oil(BBLS)	Accum. Gas(MCF)
January	486	641	629	31	486	641
February	417	637	540	28	903	1278
March	454	761	588	31	1357	2039
April	419	673	542	30	1776	2712
May	401	576	519	31	2177	3288
June	395	269	579	30	2572	3557
July	415	277	609	31	2987	3834
August	441	346	647	31	3428	4180
September	391	328	573	29	3819	4508
October	383	364	562	31	4202	4872
November	386	363	566	30	4588	5235
December	355	362	521	31	4943	5597
Total	4943	5597	6875	364		

Year: 1975

Month	Oil(BBLS)	Gas(MCF)	Water(BBLS)	Days Produced	Accum. Oil(BBLS)	Accum. Gas(MCF)
January	8	0	62	31	23653	24262
February	74	0	56	28	23727	24262
March	14	0	62	31	23741	24262
April	23	0	62	31	23764	24262
May	27	0	62	31	23791	24262
June	14	0	60	30	23805	24262
July	14	0	62	31	23819	24262
August	14	0	62	31	23833	24262
September	14	0	60	30	23847	24262
October	14	0	62	31	23861	24262
November	26	0	60	30	23887	24262
December	32	0	62	31	23919	24262
Total	274	0	732	366		

Year: 2003
Pool Name: MESCALERO;SAN ANDRES

Month	Oil(BBLS)	Gas(MCF)	Water(BBLS)	Days Produced	Accum. Oil(BBLS)	Accum. Gas(MCF)
January	10	0	62	31	23929	24262
February	10	0	56	28	23939	24262
March	14	0	62	31	23953	24262
April	0	0	60	30	23953	24262
May	16	0	62	31	23969	24262
June	36	0	60	30	24005	24262
July	25	0	62	31	24030	24262
August	16	0	62	31	24046	24262
September	14	0	60	30	24060	24262
October	13	0	62	31	24073	24262
November	15	0	60	30	24088	24262
December	14	0	62	31	24102	24262
Total	183	0	730	365		

Year: 2004
Pool Name: MESCALERO;SAN ANDRES

Month	Oil(BBLS)	Gas(MCF)	Water(BBLS)	Days Produced	Accum. Oil(BBLS)	Accum. Gas(MCF)
January	75	0	62	31	24177	24262
February	13	0	62	31	24190	24262
March	28	0	62	31	24218	24262
April	69	0	60	30	24287	24262
May	0	0	0	0	24287	24262
June	0	0	0	0	24287	24262

July	0	0	0	0	24287	24262
August	0	0	0	0	24287	24262
September	0	0	0	0	24287	24262
October	0	0	0	0	24287	24262
November	0	0	0	0	24287	24262
December	0	0	0	0	24287	24262
Total	185	0	246	123		

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Pool Name: MESCALERO;SAN ANDRES

Month	Oil(BBLS)	Gas(MCF)	Water(BBLS)	Days Produced	Accum. Oil(BBL	ım. Gas(MCF)
January	203	202	142	31	5146	9
February	161	267	113	28	5307	6
March	168	316	118	31	5475	2
April	147	295	103	28	5622	7
May	163	266	380	31	5785	3
June	120	220	280	30	5905	3
July	169	270	394	27	6074	3
August	127	274	296	31	6201	7
September	189	433	441	30	6390	0
October	124	304	289	31	6514	4
November	77	228	180	17	6591	2
December	81	113	189	31	6672	5
Total	1729	3188	2925	346		

Year: 1976
Pool Name: MESCALERO;SAN ANDRES

Month	Oil(BBLS)	Gas(MCF)	Water(BBLS)	Days Produced	Accum. Oil(BBL	m. Gas(MCF)
January	61	168	142	26	6733	3
February	64	189	149	29	6797	2
March	77	223	180	27	6874	5
April	114	254	266	28	6988	9
May	125	343	292	26	7113	2
June	145	543	435	30	7258	05
July	166	638	498	31	7424	43
August	158	532	474	31	7582	75
September	247	677	741	30	7829	52
October	224	746	672	31	8053	98
November	214	488	642	30	8267	86
December	186	503	558	31	8453	89
Total	1781	5304	5049	350		

Year: 1977
Pool Name: MESCALERO;SAN ANDRES

Month	Oil(BBLS)	Gas(MCF)	Water(BBLS)	Days Produced	Accum. Oil(BBL	n. Gas(MCF)
January	202	676	606	31	8655	65
February	193	536	579	28	8848	01
March	210	434	630	31	9058	35
April	221	401	663	30	9279	36

May	156	395	468	31	9435	16531
June	183	483	654	27	9618	17014
July	204	656	729	31	9822	17670
August	181	513	646	31	10003	18183
September	179	505	639	29	10182	18688
October	155	388	554	31	10337	19076
November	170	346	607	30	10507	19422
December	184	353	657	31	10691	19775
Total	2238	5686	7432	361		

Year: 1979
Pool Name: MESCALERO;SAN ANDRES

Month	Oil(BBLS)	Gas(MCF)	Water(BBLS)	Days Produced	Accum. Oil(BBLS)	Accum. Gas(MCF)
January	176	17	528	26	10867	19792
February	185	21	555	28	11052	19813
March	176	22	528	31	11228	19835
April	141	17	423	12	11369	19852
May	215	18	829	30	11584	19870
June	182	27	702	30	11766	19897
July	179	25	690	31	11945	19922
August	179	20	690	31	12124	19942
September	159	23	613	30	12283	19965
October	134	23	517	11	12417	19988
November	168	21	648	28	12585	20009
December	174	34	671	31	12759	20043
Total	2068	268	7394	319		

Year: 1980
Pool Name: MESCALERO;SAN ANDRES

Month	Oil(BBLS)	Gas(MCF)	Water(BBLS)	Days Produced	Accum. Oil(BBLS)	Accum. Gas(MCF)
January	150	24	579	31	12909	20067
February	100	25	386	29	13009	20092
March	138	22	532	31	13147	20114
April	142	199	568	29	13289	20313
May	147	160	588	31	13436	20473
June	170	174	680	30	13606	20647
July	124	170	496	18	13730	20817
August	122	162	488	18	13852	20979
September	110	112	440	30	13962	21091
October	87	109	348	29	14049	21200

November	99	88	396	30	14148	21288
December	86	52	344	11	14234	21340
Total	1475	1297	5845	317		

Year: 1981
Pool Name: MESCALERO;SAN ANDRES

Month	Oil(BBLS)	Gas(MCF)	Water(BBLS)	Days Produced	Accum. Oil(BBLS)	Accum. Gas(MCF)
January	62	45	248	18	14296	21385
February	75	78	300	24	14371	21463
March	66	85	264	29	14437	21548
April	79	88	316	27	14516	21636
May	80	68	220	26	14596	21704
June	89	49	245	30	14685	21753
July	90	32	248	14	14775	21785
August	0	0	0	0	14775	21785
September	68	15	187	14	14843	21800
October	120	12	330	22	14963	21812
November	48	23	132	20	15011	21835
December	97	18	267	31	15108	21853
Total	874	513	2757	255		

Year: 1982
Pool Name: MESCALERO;SAN ANDRES

Month	Oil(BBLS)	Gas(MCF)	Water(BBLS)	Days Produced	Accum. Oil(BBLS)	Accum. Gas(MCF)
January	55	8	151	31	15163	21861
February	86	8	237	28	15249	21869
March	72	8	198	31	15321	21877
April	73	16	201	30	15394	21893
May	83	13	166	31	15477	21906
June	60	13	120	30	15537	21919
July	83	13	166	31	15620	21932
August	74	6	148	31	15694	21938
September	126	7	252	30	15820	21945
October	81	8	162	31	15901	21953
November	111	8	222	30	16012	21961
December	57	5	114	23	16069	21966
Total	961	113	2137	357		

Year: 1983
Pool Name: MESCALERO;SAN ANDRES

Month	Oil(BBLS)	Gas(MCF)	Water(BBLS)	Days Produced	Accum. Oil(BBLS)	Accum. Gas(MCF)
January	71	8	142	27	16140	21974
February	66	7	132	28	16206	21981
March	95	9	190	30	16301	21990
April	63	8	126	30	16364	21998
May	83	0	477	31	16447	21998
June	60	0	345	30	16507	21998
July	73	0	420	30	16580	21998
August	86	0	495	31	16666	21998
September	73	0	420	29	16739	21998
October	107	0	615	30	16846	21998
November	84	0	483	28	16930	21998
December	111	0	638	31	17041	21998
Total	972	32	4483	355		

Year: 1984
Pool Name: MESCALERO;SAN ANDRES

Month	Oil(BBLS)	Gas(MCF)	Water(BBLS)	Days Produced	Accum. Oil(BBLS)	Accum. Gas(MCF)
January	75	0	431	31	17116	21998
February	95	0	546	26	17211	21998
March	42	0	242	15	17253	21998
April	114	0	656	20	17367	21998
May	83	0	488	31	17450	21998
June	80	0	470	28	17530	21998
July	79	1	464	30	17609	21999
August	64	0	376	26	17673	21999
September	87	1	511	30	17760	22000
October	120	1	705	31	17880	22001
November	107	2	629	30	17987	22003
December	172	1	1011	30	18159	22004
Total	1118	6	6529	328		

Year: 1985
Pool Name: MESCALERO;SAN ANDRES

Month	Oil(BBLS)	Gas(MCF)	Water(BBLS)	Days Produced	Accum. Oil(BBLS)	Accum. Gas(MCF)
January	146	1	858	31	18305	22005
February	138	1	811	26	18443	22006
March	150	1	881	31	18593	22007
April	160	0	940	30	18753	22007
May	128	94	992	31	18881	22101
June	128	85	992	29	19009	22186

July	112	46	868	31	19121	22232
August	159	48	1232	31	19280	22280
September	62	39	481	99	19342	22319
October	76	30	589	99	19418	22349
November	57	31	442	99	19475	22380
December	59	26	457	99	19534	22406
Total	1375	402	9543	240		

Year: 1986
Pool Name: MESCALERO;SAN ANDRES

Month	Oil(BBLS)	Gas(MCF)	Water(BBLS)	Days Produced	Accum. Oil(BBLS)	Accum. Gas(MCF)
January	84	23	651	99	19618	22429
February	66	20	512	99	19684	22449
March	64	21	496	99	19748	22470
April	77	20	597	99	19825	22490
May	60	0	300	99	19885	22490
June	50	0	250	99	19935	22490
July	94	0	470	99	20029	22490
August	70	0	350	99	20099	22490
September	57	0	285	99	20156	22490
October	67	0	335	99	20223	22490
November	53	0	265	99	20276	22490
December	26	30	130	99	20302	22520
Total	768	114	4641	0		

Year: 1987
Pool Name: MESCALERO;SAN ANDRES

Month	Oil(BBLS)	Gas(MCF)	Water(BBLS)	Days Produced	Accum. Oil(BBLS)	Accum. Gas(MCF)
January	41	1	205	99	20343	22521
February	61	1	305	28	20404	22522
March	31	1	155	31	20435	22523
April	11	21	55	30	20446	22544
May	11	16	55	28	20457	22560
June	46	5	230	25	20503	22565
July	63	4	315	31	20566	22569
August	55	4	275	30	20621	22573
September	17	2	85	30	20638	22575
October	80	4	400	31	20718	22579
November	37	9	185	21	20755	22588
December	57	7	285	28	20812	22595

Total	510	75	2550	313

Year: 1988
Pool Name: MESCALERO;SAN ANDRES

Month	Oil(BBLS)	Gas(MCF)	Water(BBLS)	Days Produced	Accum. Oil(BBLS)	Accum. Gas(MCF)
January	45	7	225	13	20857	22602
February	77	4	385	29	20934	22606
March	59	2	295	23	20993	22608
April	92	3	460	30	21085	22611
May	77	4	385	30	21162	22615
June	101	2	505	30	21263	22617
July	62	0	2604	24	21325	22617
August	69	0	2898	31	21394	22617
September	32	0	1344	26	21426	22617
October	24	0	1008	22	21450	22617
November	37	0	1554	30	21487	22617
December	39	0	1638	31	21526	22617
Total	714	22	13301	319		

Year: 1989
Pool Name: MESCALERO;SAN ANDRES

Month	Oil(BBLS)	Gas(MCF)	Water(BBLS)	Days Produced	Accum. Oil(BBLS)	Accum. Gas(MCF)
January	31	0	1302	27	21557	22617
February	32	0	1344	27	21589	22617
March	20	0	840	28	21609	22617
April	59	0	1062	30	21668	22617
May	37	0	666	27	21705	22617
June	57	10	1026	30	21762	22627
July	38	13	684	18	21800	22640
August	45	49	810	19	21845	22689
September	65	30	1170	30	21910	22719
October	18	40	324	9	21928	22759
November	0	0	0	0	21928	22759
December	0	0	0	0	21928	22759
Total	402	142	9228	245		

Year: 1990
Pool Name: MESCALERO;SAN ANDRES

Month	Oil(BBLS)	Gas(MCF)	Water(BBLS)	Days Produced	Accum. Oil(BBLS)	Accum. Gas(MCF)
January	0	0	0	0	21928	22759
February						

	0	0	0	0	21928	22759
March	0	0	0	0	21928	22759
April	0	0	0	0	21928	22759
May	0	0	0	0	21928	22759
June	0	0	0	0	21928	22759
July	0	0	0	0	21928	22759
August	0	0	0	0	21928	22759
September	0	0	0	0	21928	22759
October	0	0	0	0	21928	22759
November	0	0	0	0	21928	22759
December	0	0	0	0	21928	22759
Total	0	0	0	0		

Year: 1991
Pool Name: MESCALERO;SAN ANDRES

Month	Oil(BBLS)	Gas(MCF)	Water(BBLS)	Days Produced	Accum. Oil(BBLS)	Accum. Gas(MCF)
January	0	0	0	0	21928	22759
February	0	0	0	0	21928	22759
March	0	0	0	0	21928	22759
April	0	0	0	0	21928	22759
May	0	0	0	0	21928	22759
June	0	0	0	0	21928	22759
July	0	0	0	0	21928	22759
August	0	0	0	0	21928	22759
September	0	0	0	0	21928	22759
October	0	0	0	0	21928	22759
November	0	0	0	0	21928	22759
December	0	0	0	0	21928	22759
Total	0	0	0	0		

Year: 1992
Pool Name: MESCALERO;SAN ANDRES

Month	Oil(BBLS)	Gas(MCF)	Water(BBLS)	Days Produced	Accum. Oil(BBLS)	Accum. Gas(MCF)
January	0	0	0	0	21928	22759
February	0	0	0	0	21928	22759
March	0	0	0	0	21928	22759
April	0	0	0	0	21928	22759
May	0	0	0	0	21928	22759
June	0	0	0	0	21928	22759
July	0	0	0	0	21928	22759

August	0	0	0	0	21928	22759
September	0	0	0	0	21928	22759
October	0	0	0	0	21928	22759
November	0	0	0	0	21928	22759
December	0	0	0	0	21928	22759
Total	0	0	0	0		

Year: 1993
Pool Name: MESCALERO;SAN ANDRES

Month	Oil(BBLS)	Gas(MCF)	Water(BBLS)	Days Produced	Accum. Oil(BBLS)	Accum. Gas(MCF)
January	0	0	0	0	21928	22759
February	0	0	0	0	21928	22759
March	0	0	0	0	21928	22759
April	0	0	0	0	21928	22759
May	51	77	62	31	21979	22836
June	27	74	60	30	22006	22910
July	27	85	62	31	22033	22995
August	20	82	62	31	22053	23077
September	21	58	60	30	22074	23135
October	9	39	62	31	22083	23174
November	28	66	60	30	22111	23240
December	19	63	62	31	22130	23303
Total	202	544	490	245		

Year: 1994
Pool Name: MESCALERO;SAN ANDRES

Month	Oil(BBLS)	Gas(MCF)	Water(BBLS)	Days Produced	Accum. Oil(BBLS)	Accum. Gas(MCF)
January	21	71	60	31	22151	23374
February	0	0	0	0	22151	23374
March	16	52	60	31	22167	23426
April	17	39	60	30	22184	23465
May	14	59	60	31	22198	23524
June	34	42	60	30	22232	23566
July	26	36	62	31	22258	23602
August	28	45	62	31	22286	23647
September	19	43	60	30	22305	23690
October	17	55	62	31	22322	23745
November	15	58	60	30	22337	23803
December	20	48	62	31	22357	23851
Total	227	548	668	337		

Year: 1995
Pool Name: MESCALERO;SAN ANDRES

Month	Oil(BBLS)	Gas(MCF)	Water(BBLS)	Days Produced	Accum. Oil(BBLS)	Accum. Gas(MCF)
January	19	58	62	31	22376	23909
February	17	86	56	28	22393	23995
March	28	28	62	31	22421	24023
April	24	22	60	30	22445	24045
May	3	14	62	31	22448	24059
June	13	15	60	30	22461	24074
July	20	37	62	31	22481	24111
August	10	35	62	31	22491	24146
September	17	36	60	30	22508	24182
October	41	24	62	31	22549	24206
November	15	28	60	30	22564	24234
December	19	25	62	31	22583	24259
Total	226	408	730	365		

Year: 1996
Pool Name: MESCALERO;SAN ANDRES

Month	Oil(BBLS)	Gas(MCF)	Water(BBLS)	Days Produced	Accum. Oil(BBLS)	Accum. Gas(MCF)
January	0	3	62	31	22583	24262
February	33	0	58	29	22616	24262
March	37	0	62	31	22653	24262
April	0	0	60	30	22653	24262
May	21	0	62	31	22674	24262
June	21	0	60	30	22695	24262
July	21	0	62	31	22716	24262
August	0	0	62	31	22716	24262
September	64	0	60	30	22780	24262
October	49	0	62	31	22829	24262
November	1	0	60	30	22830	24262
December	12	0	62	31	22842	24262
Total	259	3	732	366		

Year: 1997
Pool Name: MESCALERO;SAN ANDRES

Month	Oil(BBLS)	Gas(MCF)	Water(BBLS)	Days Produced	Accum. Oil(BBLS)	Accum. Gas(MCF)
January	7	0	62	31	22849	24262
February	38	0	56	28	22887	24262
March	27	0	62	31	22914	24262
April						

	9	0	60	30	22923	24262
May	12	0	62	31	22935	24262
June	37	0	60	30	22972	24262
July	34	0	62	31	23006	24262
August	7	0	62	31	23013	24262
September	2	0	60	30	23015	24262
October	17	0	62	31	23032	24262
November	27	0	60	30	23059	24262
December	3	0	62	31	23062	24262
Total	220	0	730	365		

Year: 1998
Pool Name: MESCALERO;SAN ANDRES

Month	Oil(BBLS)	Gas(MCF)	Water(BBLS)	Days Produced	Accum. Oil(BBLS)	Accum. Gas(MCF)
January	50	0	62	31	23112	24262
February	12	0	56	28	23124	24262
March	19	0	62	31	23143	24262
April	36	0	60	30	23179	24262
May	25	0	62	31	23204	24262
June	0	0	60	30	23204	24262
July	5	0	62	31	23209	24262
August	0	0	62	31	23209	24262
September	0	0	60	30	23209	24262
October	0	0	62	31	23209	24262
November	11	0	60	30	23220	24262
December	10	0	62	31	23230	24262
Total	168	0	730	365		

Year: 1999
Pool Name: MESCALERO;SAN ANDRES

Month	Oil(BBLS)	Gas(MCF)	Water(BBLS)	Days Produced	Accum. Oil(BBLS)	Accum. Gas(MCF)
January	7	0	62	31	23237	24262
February	48	0	56	28	23285	24262
March	21	0	62	31	23306	24262
April	23	0	60	30	23329	24262
May	0	0	62	31	23329	24262
June	0	0	60	30	23329	24262
July	24	0	62	31	23353	24262
August	0	0	62	31	23353	24262
September	0	0	60	30	23353	24262

October	0	0	62	31	23353	24262
November	0	0	60	30	23353	24262
December	0	0	62	31	23353	24262
Total	123	0	730	365		

Year: 2000
Pool Name: MESCALERO;SAN ANDRES

Month	Oil(BBLS)	Gas(MCF)	Water(BBLS)	Days Produced	Accum. Oil(BBLS)	Accum. Gas(MCF)
January	0	0	62	31	23353	24262
February	0	0	58	29	23353	24262
March	0	0	62	31	23353	24262
April	13	0	60	30	23366	24262
May	12	0	62	31	23378	24262
June	14	0	60	30	23392	24262
July	0	0	62	31	23392	24262
August	5	0	62	31	23397	24262
September	6	0	60	30	23403	24262
October	0	0	62	31	23403	24262
November	0	0	60	30	23403	24262
December	0	0	62	31	23403	24262
Total	50	0	732	366		

Year: 2001
Pool Name: MESCALERO;SAN ANDRES

Month	Oil(BBLS)	Gas(MCF)	Water(BBLS)	Days Produced	Accum. Oil(BBLS)	Accum. Gas(MCF)
January	6	0	62	31	23409	24262
February	14	0	56	28	23423	24262
March	10	0	62	31	23433	24262
April	10	0	60	30	23443	24262
May	95	0	62	31	23538	24262
June	22	0	48	24	23560	24262
July	11	0	62	31	23571	24262
August	20	0	62	31	23591	24262
September	25	0	60	30	23616	24262
October	1	0	62	31	23617	24262
November	14	0	60	30	23631	24262
December	14	0	62	31	23645	24262
Total	242	0	718	359		

Year: 2002
Pool Name: MESCALERO;SAN ANDRES

After

Wayne Price: 476-3462

Salt Water Leak:

NM State BB

Tank Battery #1

Sec 14 10-32

Phoenix Hydrocarbons

I asked them to haul off all contaminated soil down to rock, inside & outside the fence. I offered to give them new top soil to fill in the hauled out soil.

Please Help!!

Carl

P.01

TRANSACTION REPORT

JUL-23-2004 FRI 09:19 AM

FOR:

RECEIVE

DATE	START	SENDER	RX TIME	PAGES	TYPE	NOTE	M#	DP
JUL-23	09:18 AM	5053986549	42″	1	RECEIVE	OK		

Price, Wayne

From: Price, Wayne
Sent: Friday, July 16, 2004 1:22 PM
To: Williams, Chris; Wink, Gary
Cc: Sheeley, Paul; Johnson, Larry; Olson, William
Subject: Penroc State 11-23 battery Gas Leak

Dear Chris, can you have someone give Penroc a call and let them know that a gas line is leaking at the 11-23 battery. I do not have their telephone #. We did smell H2S so it might be a safety hazard. I have attached a photo showing the line. We did not sample there because of the gas.


DCP01209.JPG


DCP01215.JPG

Sincerely:

Wayne Price
New Mexico Oil Conservation Division
1220 S. Saint Francis Drive
Santa Fe, NM 87505
505-476-3487
fax: 505-476-3462
E-mail: WPRICE@state.nm.us

OCD Inspection of Penroc Corp. Operations on the Johnson Ranch 20 miles West of Tatum, NM

Inspectors: WPrice, BOlson, LJohnson, PSheeley **July 14, 2004**

Penroc Harris State #5- Looking North

Penroc Harris State #5- Looking North picture shows where pump use to set. Visible oil and salt stains.

Penroc Harris State #5- Looking East- picture shows heavy asphalted type hydrocarbons.

Penroc Harris State #5- Looking Southeast- picture shows heavy asphalted type hydrocarbons.

Penroc Harris State #5- Looking Southeast- picture shows heavy asphalted type hydrocarbons

Penroc Harris State #5- Picture shows heavy asphalted type hydrocarbons free oil being generated. Outside temp 95-100 F.

OCD Inspection of Penroc Corp. Operations on the Johnson Ranch 20 miles West of Tatum, NM

Inspectors: WPrice, BOlson, LJohnson, PSheeley **July 14, 2004**

Penroc Harris State #5- Looking East-Southeast- picture shows salt staining.

Harris State #5 site- First Rainwater pond located southeast of site. Cattle and wildlife tracks found. Collected water sample field code # 0407141410.

Harris State #5 site-Oily contaminated soil found below where pump set. Collected soil sample # 0407141400 field code.

Harris State #5 site- Second rainwater pond #2 located southeast of site. Cattle and wildlife tracks found. This pond is in a watercourse leading to a playa lake. Collected water sample field code # 0407141420.

Harris State #5 site-Salt contaminated soil found east of tank inside of berm area. Collected soil sample # 0407141400 field code.

Harris State #5 site- Picture shows old hydrocarbon asphalted material in watercourse between the Harris State #5 site and rainwater pond #2.

OCD Inspection of Penroc Corp. Operations on the Johnson Ranch 20 miles West of Tatum, NM

Inspectors: WPrice, BOlson, LJohnson, PSheeley **July 14, 2004**

Same as last picture looking down-dip. Wayne Price Paul Sheeley collecting water sample from pond #2. Field code 0407141420.

Penroc State 11-23 well #2

Collecting background soil sample 100 yards south of Harris St #5.

Oily dirt pile found between Well #2 and State 11-23 battery shown in background. Looking NE.

Road leading out of Harris #5. Picture shows where oil and tank bottoms were placed on road.

An area between Well # 2 and 11-23 tank battery. This area appears to have been excavated. Oil stain still present.

OCD Inspection of Penroc Corp. Operations on the Johnson Ranch 20 miles West of Tatum, NM

Inspectors: WPrice, BOlson, LJohnson, PSheeley **July 14, 2004**

Flow lines between well #2 and 11-23 battery. Collected soil sample 6-8 inches deep found oily dirt. Collected soil sample field code # 0407141455.

Same as last picture.

Same as above.

Penroc Battery State 11-23

Looking SW at 11-23 well #2. Picture shows flow line area. Area appears to have been excavated.

Penroc Battery State 11-23 load/unload area.

OCD Inspection of Penroc Corp. Operations on the Johnson Ranch 20 miles West of Tatum, NM

Inspectors: WPrice, BOlson, LJohnson, PSheeley **July 14, 2004**

Penroc Battery State 11-23 berm. New dirt has been placed over old berm. Picture shows old oily dirt.

Penroc Battery State 11-23 looking NE.

Penroc Battery State 11-23 area west of battery. Area has been excavated dirt pile in background.

Penroc Battery State 11-23 picture shows gas line. Line was noted to be leaking and a slight H2S smell was noted. Did not sample for safety reasons. Battery did not have H2S signs.

Same as above except looking NE 11-23 State battery in background.

OCD Inspection of Penroc Corp. Operations on the Johnson Ranch 20 miles West of Tatum, NM

Inspectors: WPrice, BOlson, LJohnson, PSheeley **July 14, 2004**

Penroc Battery State 11-23 Oil stain near small compressor

Penroc Battery State 11-23- Collected soil sample in stained area field code # 0407141505

Penroc New Mexico 1,2 site

Penroc Battery State 11-23 NW of site dirt has oil stains.

Penroc New Mexico 1,2 site Hatch off of tank

OCD Inspection of Penroc Corp. Operations on the Johnson Ranch 20 miles West of Tatum, NM
Inspectors: WPrice, BOlson, LJohnson, PSheeley **July 14, 2004**

Old Tank Bottoms from tank

Penroc New Mexico 1,2 site Contaminated soils observed east of tank. Lane Salt Lake Playa in background.

Same as above

Same as last

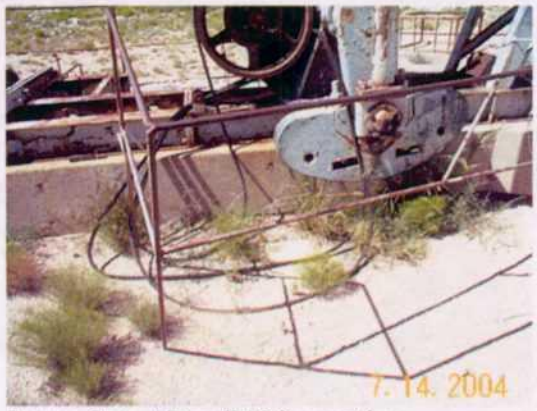
Penroc State AD well #9 inoperative

Penroc State AD well #9 inoperative

OCD Inspection of Penroc Corp. Operations on the Johnson Ranch 20 miles West of Tatum, NM

Inspectors: WPrice, BOlson, LJohnson, PSheeley **July 14, 2004**

Penroc State AD well #9 inoperative



Penroc State AD well #9 inoperative

7/14/04 - Penroc | Harris State Well #5

arrival at 1345 hrs
with Wayne Price - OCD
Paul Sheely - "
Larry Johnson - "

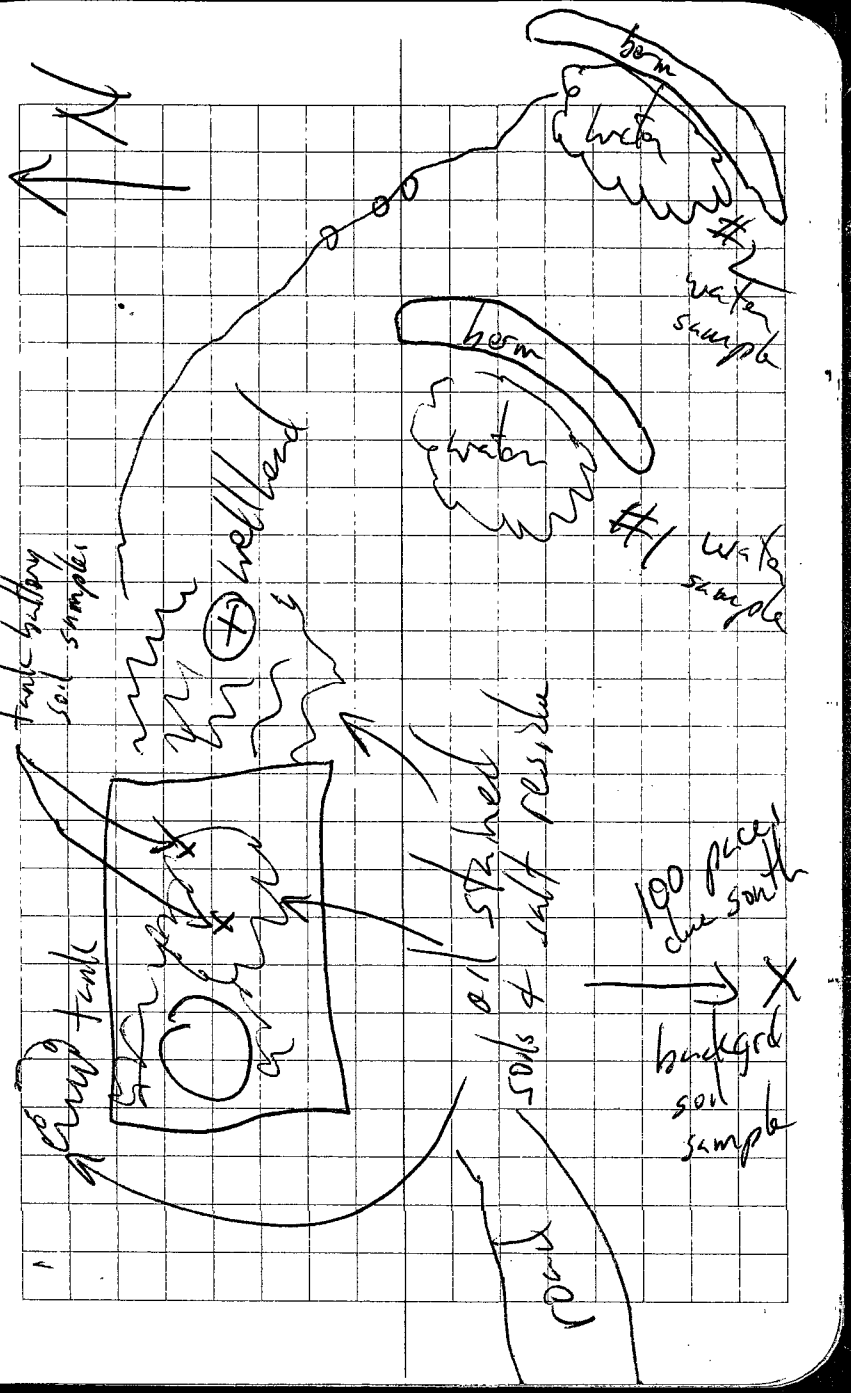
- staining of soil within and outside tank berms
- tanks located in draw
- Draw has multiple berms with surface water

Old Oil residue in draw leading to water
Oil/tank bottoms on road & berms

Samples

- Tank Battery soils - id = 0407141400
  blade oily soils
  surface white crust (salt?)

  sampled for - Gas Chrom
  - BTEX/TPH

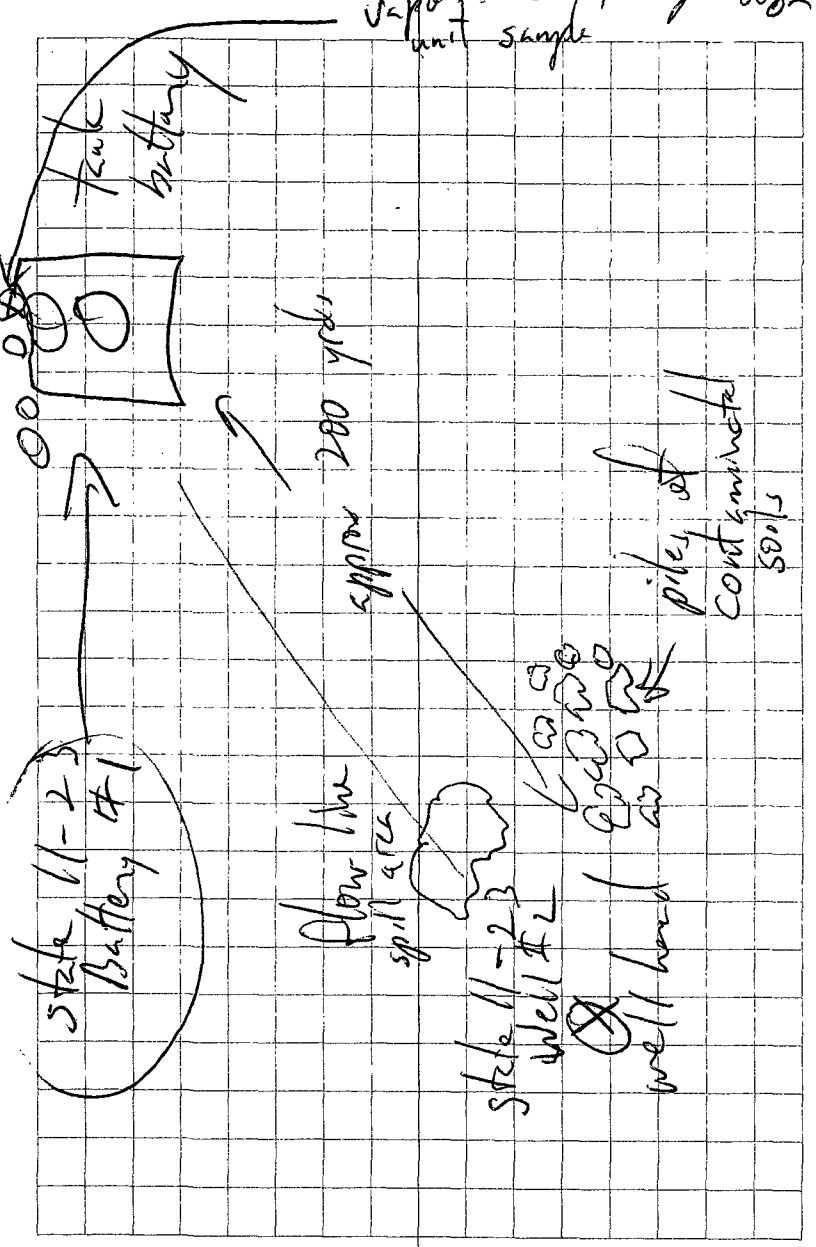


7/14/04 Penroc State 11-23 #2 Well

arrived at 1445 hrs
with Wayne Price - OCD
Gerry Johnson -
Paul Sheely -
Contaminated stained soils piled on site
from attempted flow line spill clean up

samples taken from cleaned up
area
surface soils appeared clean
dug down 6" oily soils/black soils
at approx 3"
took sample by pipe repair clamp
sample id = 0407141455
flow line
Samples - Gen Chem
TPH

Tank battery - state 11-23 Battery #1
sample id = 0407141500
samples - Gen Chem
TPH
sample soil by compressor
scattered cont. soil around battery



Water sample #1

From 1st bermed surface water
cattle + bird tracks on banks
A few chunks of tank bottoms/oil sidi
on berm
sample id = 040714/410
samples - Gen Chem
TPH

Water sample #2

From 2nd bermed surface water
cattle tracks on banks
Few scattered chunks of tank bottoms/oil
soils in draw leading to water tank
These residual oil chunks approx. 4" thick
+ eroded in draw
sample id = 040714/420
samples - Gen Chem
TPH

Background soil sample

approx. 100 yards due south of
tank battery
sample from grassy areas
sample id = 040714/425
samples - Gen Chem
- TPH

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON
Governor
Joanna Prukop
Cabinet Secretary

Mark E. Fesmire, P.E.
Director
Oil Conservation Division

FAX

TO: Wayne / Bill 476 3462

FROM: Paul

RE: Penroc COC 7-14-04

DATE: 7-15-04

Chain of custody — Bud receipt. sample # & Description.

PS

NO. OF PAGES_____INCLUDING COVERSHEET

6701 Aberdeen Avenue, Ste. 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

TraceAnalysis, Inc.

1551 McCuldheon, Suite H
El Paso, Texas 79932
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID #:

Company Name: New Mexico Oil Conservation Div. Phone #: 505.393.6161 x113
Address: (Street, City, Zip) 1625 N. French Dr. Hobbs, [redacted] Fax #: 505.393.0720
Contact Person: Paul Sheeley - Wayne Price 505.476.3487
Invoice to: (If different from above) Ed Martin 505.476.3492
Project #: 040714 Project Name: Pan voc
Project Location: Carl Johnson/State of NM Sampler Signature:

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME	MTBE 8021B/602	BTEX 8021B/602	TPH (418.1/TX1005	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	General Chemistry	EC	SAR	ESP	Turn Around Time if different from standard	Hold
	040714 1120	2-g	4oz		X		X					X		7/14	1120															X	X	X	X		
	040714 1220	2-g	4oz		X		X					X		7/14	1220															X	X	X	X		
	040714 1400	1-g	4oz		X		X					X		7/14	1400		X	X												X					
	040714 1400	1-g	4oz		X		X					X		7/14	1402			X												X					
	0407 14 1410	1-p	1-L	X								X		7/14	1410			X												X					
	040714 1420	1-g	1-L	X								X		7/14	1420			X												X					
	040714 1425	2-g	4oz		X		X					X		7/14	1425			X												X					
	040714 1455	1-g	4oz		X		X					X		7/14	1455			X												X					
	040714 1505	1-g	4oz		X		X					X		7/14	1505			X												X					

Relinquished by:	Date: 7-14-04	Time: 14:30	Received by:
Relinquished by:	Date:	Time:	Received by:
Relinquished by:	Date:	Time:	Received at Laboratory by:

Date: Time:

LAB USE ONLY

REMARKS:

☐ Check if Special Reporting Limits Are Needed

Carrier #:

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

TNM&O

13th Street
Lubbock TX 79401

TMO 082

MO	DAY	YEAR	TIME	AM	PM	FORWARDING AGENCY NO.	FORWARDING AGENT'S INITIALS	PICK-UP AGENT I.D.	DELIVERY AGENT I.D.	DESTINATION AGENCY NO.
7	15	04	2:40		✓					

BUSBILL NUMBER
DO NOT WRITE IN THIS AREA

903 069 284 7

DESTINATION STATION CITY & STATE: Lubbock TX
ZIP: 79404

Consignee's Name: Trace ~~Ana~~ Analysis

Street Address Cannot deliver to P.O. Box or Zip Code: 6701 Aberdeen Ste 9

State / Zip: 79412-96

Consignee's Package Express Account No.

Consignee's Phone Number: (806) 378-1297

Shipper's Package Express Account No.

Shipper's Phone Number ( ) -

Shipper's Name: Trace Analysis

Street Address Cannot deliver to P.O. Box or Zip Code: 1625 N French

Hobbs NM Zip 88240

SHIPPER'S RECEIPT - 1

INTERLINE INFORMATION

Carrier Code	City	Schedule #
Carrier Code	City	Schedule #
Carrier Code	City	Schedule #

SERVICE REQUIRED: NBO / SAME DAY / OVERNIGHT / STD (circled)

PAYMENT: BILL PKG EXPRESS ACCOUNT / CASH / BILL 3RD PARTY (circled) / BILL CRDT CARD

X X = ÷ 200 =
DIMENSIONAL WEIGHT COMPUTATION / DIMENSIONAL WGT LBS

NO. OF PIECES	ACTUAL WEIGHT LBS.	DECLARED VALUE $
1	35	

CONTENTS / CARTON DESCRIPTION

DEL. REQ'D	RATE ZONE	C.O.D.

PREPAID	CHARGES	COLLECT
	EXPRESS	17.45
	REFWD	
	VALUE	
	COLLECT / C.O.D. FEE	2.00
	SUB TOTAL	
	PICK-UP	
	DELIVERY	
	TAX	
	AMOUNT	19.45
	TOTAL	19.45

(NOT NEGOTIABLE) SUBJECT TO TARIFF REGULATIONS LIABILITY: The Carrier will not pay loss or damage claims over $100 per shipment or $50 per package, whichever is greater, unless a greater value is declared and charges for such greater value paid. Maximum valuation on any one shipment is limited by tariff. (See Tariff for interstate exceptions) In no event shall the Carrier be liable for consequential or incidental damage for loss, damage or delay.

1120 - Yates (2-403)
1220 - Strauf #1 (11)
1400 - Hm #5 oil stain
salt stain
1410 " pond 1
1420 " pond 2 (2-40B)
1425 " Bkg.
1455 11-22 #2 gathering line
1505 " TKBat. VRU

Price, Wayne

From: Price, Wayne
Sent: Monday, June 21, 2004 11:44 AM
To: Johnson, Larry; Sheeley, Paul
Cc: Olson, William; Sheeley, Paul; Anderson, Roger; Wrotenbery, Lori; Williams, Chris
Subject: RE: Penroc

I have been working with both Carl Johnson and Penroc on some issues that Carl Johnson has brought up. I think Willie has been working with Justin.

Paul Sheeley went out some time ago and collected soil samples and took pictures of the areas that Carl Johnson complained about. I have sent Penroc two certified letters, one Penroc indicated they never received and the other one was rejected. Gary Wink hand carried one of the letters to Penroc and I E-mail the last one to Penroc. Penroc has indicated they have taken some actions but Mr. Johnson has called several times saying they haven't done anything. So I am not sure what actually has been done. I have ask Penroc to perform clean-up actions and to perform some delineation. Penroc indicated they have performed clean-up actions requested but refuse to delineate. I will enclose a copy of the correspondence for your review and would like to request the assistance of the District on this matter. Lori requested that I ask the district to inspect those areas of concern and file a report with us on the Penroc progress. We would really appreciate if you could do this. Please let me know.


Request for :lean-up October 2..


Penroc Correspondence.tif


Request for lean-up 5_14_04.d..


Penroc Letter June 09, 2004.ti...

-----Original Message-----
From: Johnson, Larry
Sent: Monday, June 21, 2004 9:44 AM
To: Price, Wayne
Subject: Penroc

Wayne, I received a call message from Justin Johnson on "State 1 Penroc 10" - he complained about a messy area and abandon junk equipment @ the site - I remembered that you had sent Merch a letter on requiring cleanups - does this ring any bells?? -- Larry

PENROC Oil Corporation

P.O. Box: 2769 Hobbs, NM 88241 / 1515 Calle Sur, Hobbs, NM 88240

(505) 492-1236 Office
(505) 492-1237 Fax

mymerch@hotmail.com

June 9, 2004

Mr. Wayne Price
New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Re: Mescalero Field Operations
T-10-S, R-32-E
Lea County, New Mexico

Gentlemen:

This letter is in response to your letter dated May 14, 2004. Penroc's response and course of action is as follows:

1. The excavated soils piled up for disposal will be sent to Gandy-Marley, Inc.'s disposal site 16 miles west of Mescalero (currently it waiting on bids).

2. Photos of the areas cleaned up will be furnished when available-hopefully in July.

3. Penroc suggests the OCD or instigating parties do their own delineation plan and execute the same, as Penroc does not believe there have even been any discharges leaks affecting the area mentioned in your November 10, 2003 letter. A verbal comment from OCD Hobbs personnel back in November indicated they had "hell" finding any support for this action-except the surface lessee's hatefulness of the oil industry.

4. As you have been informed the berms were built during Mr. Jerry Sexton's tenure with the OCD and it was done with verbal consent from him and surface lessee. If the department wants Penroc to remove the same and replace with clean dirt, Penroc would like to know the nature of discrimination against Penroc, when other companies operating in the same area have similar issues. Are they being addressed also or does the discrimination against Penroc continue to grow? We have proof not only in the Mescalero, but other areas of Lea and Eddy county, where operations are awful. Not only is the management of Penroc is discriminated against but it also has and is affecting our field personnel when they drive by "sorry" operations of other operators and OCD -ED turns a blind eye to them.

The undersigned will be out of the country until July 4, 2004. If you have any questions, please contact him after that date. Thank you.

Sincerely,

M. Y. (Merch) Merchant
President

P.S. Penroc personnel still remembers when the OCD-Environmental Division was discriminately after Penroc in mid 1990's. The operations were sold to another company and many of the same properties exist the same way today (8 years later!) and nothing has happened w/ ED to address these issues!

CC: Mr. Arnold Divine
Mr. Bill Shoobridge
Mr. Tom Moore
Mr. Cody Morrow
NMOCD-Hobbs

ROSWELL NM 882
PM
10 JUN

USA

MR. WAYNE PRICE
NEW MEXICO OIL CONS. DIV.
1220 SOUTH FRANCIS DR
SANTA FE, NM 87505

87505#4000

Price, Wayne

From: Price, Wayne
Sent: Friday, May 14, 2004 4:41 PM
To: Williams, Chris; Johnson, Larry; Sheeley, Paul
Cc: Morrow, Cody; Anderson, Roger; 'mymerch@hotmail.com'
Subject: Penroc - Carl Lane Johnson Ranch

Request for
lean-up 5_14_04.d..

Sincerely:

Wayne Price
New Mexico Oil Conservation Division
1220 S. Saint Francis Drive
Santa Fe, NM 87505
505-476-3487
fax: 505-476-3462
E-mail: WPRICE@state.nm.us

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON
Governor

May 14, 2004

Joanna Prukop
Cabinet Secretary
Acting Director
Oil Conservation Division

CERTIFIED MAIL
RETURN RECEIPT NO. 3929 8386

Mr. Mohammed Merchant
Penroc Oil Corporation (Penroc)
P.O. Box 2769
Hobbs, New Mexico 88241-2769

Attention: Mr. Merchant

Subject: **Johnson Ranch-Contamination from Penroc Oilfield Operations**

The New Mexico Oil Conservation Division (OCD) requested Penroc to perform certain actions as outlined in OCD's letter dated November 10, 2003 (copy enclosed for your reference). OCD is in receipt of Penroc's response letter dated February 13, 2004 and requires Penroc to perform the following actions:

A. Please provide for OCD approval, a delineation plan to determine the horizontal and vertical extent of contamination as requested in the OCD November 10, 2003 letter under Actions Required. item C.

B. Please provide a remediation or disposal plan for OCD approval for all of the excavated soils that Penroc indicated is piled up for disposal.

C. Please provide a sketch or map, any available photos and analytical results of any samples taken of areas that Penroc indicated they have addressed.

D. Contaminated soils that were used as berms shall be demonstrated that they will not leach contaminants into the shallow groundwater or off-site in the foreseeable future. Please submit a plan for OCD approval to address this issue.

Please provide the information requested in items A-D listed above by June 15, 2004. If you have any questions please do not hesitate to contact me at 505-476-3487 or e-mail WPRICE@state.nm.us.

Sincerely;

Wayne Price

Wayne Price-Pet. Engr. Spec.

cc: Roger C. Anderson- OCD Envr. Bureau Chief
OCD Hobbs Office
Carl Lane Johnson
Cody Morrow-NMSLO

Attachments- 1

PENROC Oil Corporation

P.O. Box: 2769 Hobbs, NM 88241 / 1515 Calle Sur, Hobbs, NM 88240

(505) 492-1236 Office
(505) 492-1237 Fax

mymerch@hotmail.com

February 13, 2004

Mr. Wayne Price
New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Re: Your Letter Dated November 10, 2003

Dear Wayne:

I am in receipt of a copy of the above mentioned letter without attachment hand delivered by Gary Wink on January 5, 2004. The same day I sent you an e-mail requesting copy of the attachments and a follow-up as to who the original letter and attachments were delivered. Your second letter dated January 12, 2004 was received along with a copy of the original letter. Thanks.

As to your letter, Penroc has made concentrated effort all over the oil patch to keep operations in top condition and improve them wherever needed. True, occasional leaks beyond our control do happen, but they do get taken care of and Mescalero is no exception. Mr. Carl Lane Johnson has been against the oil field from the day I met him and has similar issues with many other operators. Penroc and its agents will work with him to the best of their abilities and at the end let the chips fall where they belong!

Prior to your letter and over the past many years Penroc has cleaned up this field after inheriting it from several different oil companies. However, it has not been able to please the surface lessee who has informed us more than once that he wants "oil field out of here". Also prior to your letter we have made review of our operations and had updated various items mentioned in your letter such as:

1. State II-23 battery items mentioned were attended to including the sales line.
2. Contaminated soil used for berm was done by permission from land owner and Mr. Jerry Sexton during his tenure at the Hobbs OCD.
3. Contaminated soil at some of the flow lines are picked up from time to time and the most recent oily dirt is stacked in the field to be hauled away to an approved site.
4. Motor oil leak at injection pump was contained and has not caused any ground water contamination due to hard caliche rock. It has not flowed off into a watercourse as claimed.
5. Pumping unit with old oil leak (at least 15 years old) was dried up 14 gravity oil and it too is part of the oily dirt pile to be hauled away to an approved site.

6. Harris #5 is an approved TA'd well and the approval extends until February 22, 2005. At that time, we will determine the beneficial use of same and either test the well for integrity or put it back in operation for the beneficial use of the lease and recovery of secondary oil.

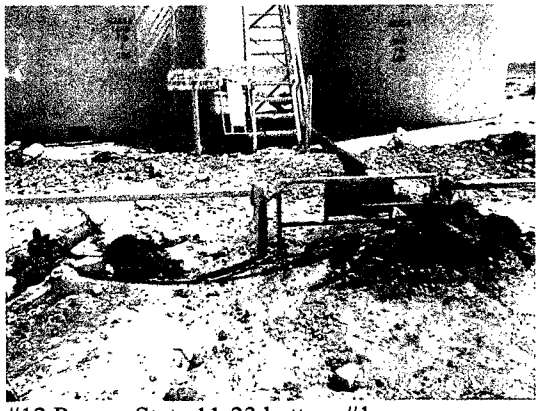
7. The wind mill shown in your picture is not near any of our operations. An inquiry at the OCD Hobbs office also could not confirm the location of this wind mill.

If you have any further questions, please contact me and either I or one of my agents will be glad to meet at the place and time of your choice to discuss the above. Thanks.

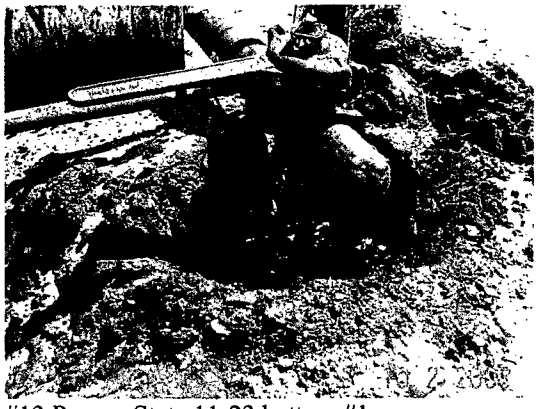
Sincerely,

M. Y. (Merch) Merchant
President

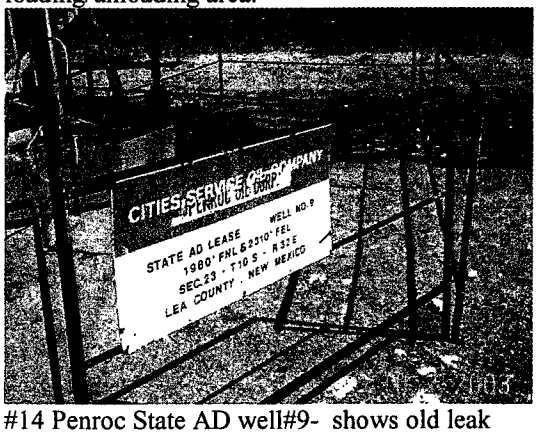
CC: Governor Bill Richardson
William Shoobridge Esq.
Arnold Divine Esq.
Tom Moore Esq.
NMOCD-Hobbs
Cody Morrow-NMSLO



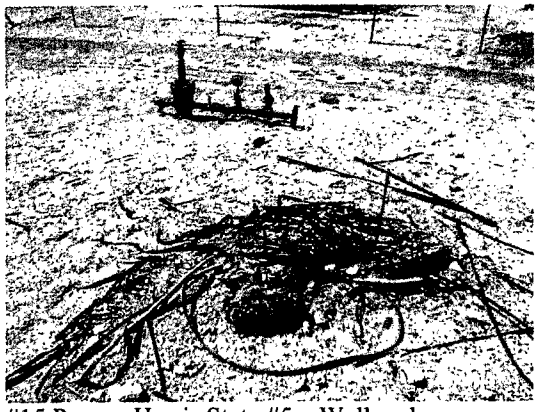
#12 Penroc State 11-23 battery #1- loading/unloading area.



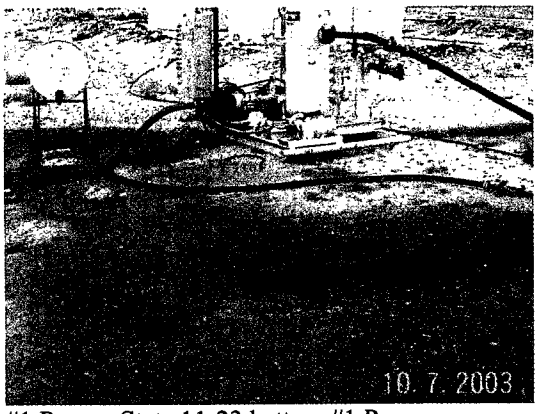
#13 Penroc State 11-23 battery #1- loading/unloading area.



#14 Penroc State AD well#9- shows old leak area



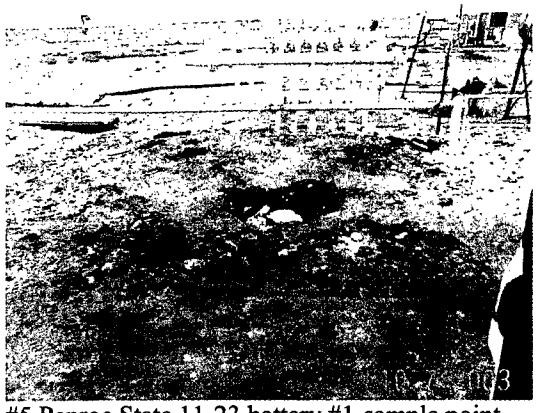
#15 Penroc Harris State #5 – Well and miscellaneous junk.



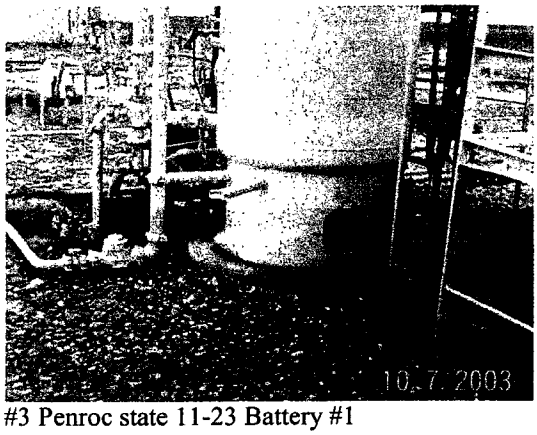
#1 Penroc State 11-23 battery #1 Pump area sample point 0310071210

#4 Penroc State 11-23 battery #1-Oil and water observed being discharged to ground surface.

#2 Penroc state 11-23 mp area –drum contents leaking onto ground surface.



#5 Penroc State 11-23 battery #1-sample point 0310071215 near loading area.



#3 Penroc state 11-23 Battery #1

#6 Penroc State 11-23 #2-sample point 0310071225

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON
Governor
Joanna Prukop
Cabinet Secretary

Lori Wrotenbery
Director
Oil Conservation Division

January 12, 2004

CERTIFIED MAIL
RETURN RECEIPT NO. 7923 4337

Mr. Mohammed Merchant
Penroc Oil Corporation (Penroc)
P.O. Box 2769
Hobbs, New Mexico 88241-2769

Attention: Mr. Merchant

Subject: **Johnson Ranch-Contamination from Penroc Oilfield Operations**

The New Mexico Oil Conservation Division (OCD) has recently received a complaint from Mr. Carl Lane Johnson owner of ranching operations located approximately 20 miles northwest of Tatum, New Mexico. Mr. Johnson has submitted documentation of contamination caused by Penroc operations located on his ranch in the vicinity of Section 23-Township 10S-Range 32E and surrounding area.

The OCD sent you a letter dated November 10, 2003 concerning this issue. Pursuant to your request please find enclosed another copy of that letter with photos and analytical analysis. Please respond by February 15, 2004 to the required action items listed in the November 10, 2003 letter.

If you have any questions please do not hesitate to contact me at 505-476-3487 or e-mail WPRICE@state.nm.us.

Sincerely;

Wayne Price-Pet. Engr. Spec.

cc: Roger C. Anderson- OCD Envr. Bureau Chief
OCD Hobbs Office
Carl Lane Johnson
Cody Morrow-NMSLO
Attachments- 3

Price, Wayne

From: Price, Wayne
Sent: Monday, January 05, 2004 2:41 PM
To: 'mohammed merchant'; Price, Wayne
Subject: RE: YOUR LETTER DATED NOVEMBER 10, 2003

Thank you for your reply. Please give me an address so I may send this information to:

-----Original Message-----
From: mohammed merchant [mailto:mymerch@hotmail.com]
Sent: Monday, January 05, 2004 1:43 PM
To: WPRICE@state.nm.us
Subject: YOUR LETTER DATED NOVEMBER 10, 2003

Dear Wayne: During lunch hour Gary Wink dropped me a copy of a letter addressed to Penroc dated November 10, 2003. I have been out of the U.S. since December 9th, but have NOT seen the letter or the attachments which supposedly came CERTIFIED. Can you please check and see if you have return acknowledgements and inform me the status of same.

In any event I will need the copies of the pictures mentioned in your letter. Penroc has *and continued to strive for improved operations.* The Mescalero Field was in a sorry shape when we took over from previous operators and is in much better shape today. Even Mr. Johnson has commented in the past that "this damn place looks better than it has in 30 years"!

As I mentioned above I have been out of the country and since arrival from Taipie via Albuquerque at 4 a.m. I have been stuck in the office. I will however dig into the issues raised in your letter and will get back with you in the coming days. Again, it will help if I have the attachments so I can discuss the same with my field personnel.

Thanks for your help and look forward to resolve all matters to every ones satisfaction.

M. Y. (Merch) Merchant
Penroc Oil Corporation

P.S. It will be nice to know where the samples were taken of this 14-16 gravity dried up oil. The letter says "OCD collected soil samples in certain areas....." Your field rep. has indicated to me that he just scratched the surface of this hardened tar!

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON
Governor
Joanna Prukop
Cabinet Secretary

Lori Wrotenbery
Director
Oil Conservation Division

November 10, 2003

CERTIFIED MAIL
RETURN RECEIPT NO. 3929 9949

Penroc Oil Corporation (Penroc)
P.O. Box 2769
Hobbs, New Mexico 88241-2769

Attention: Operator

Subject: **Johnson Ranch-Contamination from Penroc Oilfield Operations**

The New Mexico Oil Conservation Division (OCD) has recently received a complaint from Mr. Carl Lane Johnson owner of ranching operations located approximately 20 miles northwest of Tatum, New Mexico. Mr. Johnson has submitted documentation of contamination caused by Penroc operations located on his ranch in the vicinity of Section 23-Township 10S-Range 32E and surrounding area.

The OCD responded by conducting an inspection of Penroc's operations, collecting soil/groundwater samples, and making a cursory review of the area to determine if protectable groundwater (less than 10,000 mg/l TDS) is present as defined by the Water Quality Control Commission (WQCC) regulations. ***OCD lists the following findings and requires Penroc to perform the following actions:***

Finding #1: Shallow groundwater is located in the area at a depth ranging from approximately 20-50 feet below ground level. This groundwater is of good quality with a Total Dissolved Solids concentration ranging from 599-758 mg/l and is considered protectable. (See attached inspection report and analytical results)

Finding #2: Oilfield products and wastes were discovered being discharged, or had been discharged, to the ground surface. OCD collected soil samples in certain areas and the results reveal that contaminants found exceed OCD guideline levels and groundwater standards. Because there is shallow groundwater underlying Penroc's operations there is a reasonable probability that groundwater may be impacted from Penroc's current or past operating practices. The following problems were noted during the recent inspection: (See attached inspection report and analytical results)

1. Penroc State 11-23 battery #1:

   A. The loading/unloading piping is leaking oil into a below grade unlined sump. (see picture #12 and #13)
   B. Drum liquids (contents unknown) is leaking onto the ground. The area around the drum has visual contamination. (see picture #2)

C. Heater-treater is discharging oil and water to the ground surface. (see picture #3 and #4)
D. Contaminated soil was noted near piping manifold. (see picture #5)
E. Contaminated soil was noted in the berm area. (see picture #8)

2. Penroc 11-23 well #2 flow lines:

A. Contaminated soil was noted near flow lines. (see picture #6)
B. Contaminated soil was noted near flow lines. (see picture #7)

3. Penroc Harris State Well #5:

A. Oil and water is being discharged to ground surface. (see picture #9)
B. There is visual evidence that contaminants are flowing off site into a watercourse that drains into a nearby playa lake.

4. Penroc State AD well #9:

A. Picture shows where oil has been leaking from the pumping unit. (see picture #14)

Finding #3: OCD found an out-of-service well at the Harris State Well #5 location. (see picture #15)

Actions Required:

A. Penroc shall make notification and perform corrective actions on all future leaks and spills pursuant to 19.15.C.116 NMAC and abide by all OCD rules and regulations.

B. Penroc shall immediately stop all releases of oilfield products or waste, make repairs to equipment to prevent future releases, and install best management practices where feasible.

C. Penroc shall submit an action plan for OCD approval by December 15, 2003. The plan shall include all the sites mentioned in Finding #2 shown above. The plan shall describe how Penroc plans to correct the problems OCD found, and include a clean-up and remediation plan, including a delineation plan to determine if groundwater has been impacted at these sites.

D. Penroc shall submit to the OCD District office and copy this office, a plan to properly plug and abandon the out of service well found at the Harris State #5. This plan shall be submitted by December 15, 2003.

If you have any questions please do not hesitate to contact me at 505-476-3487 or e-mail WPRICE@state.nm.us.

Sincerely;

Wayne Price-Pet. Engr. Spec.

cc: Roger C. Anderson- OCD Envr. Bureau Chief
OCD Hobbs Office
Carl Lane Johnson
Cody Morrow-NMSLO
Attachments- 2

#1 Penroc State 11-23 battery #1 Pump area sample point 0310071210

#4 Penroc State 11-23 battery #1-Oil and water observed being discharged to ground surface.

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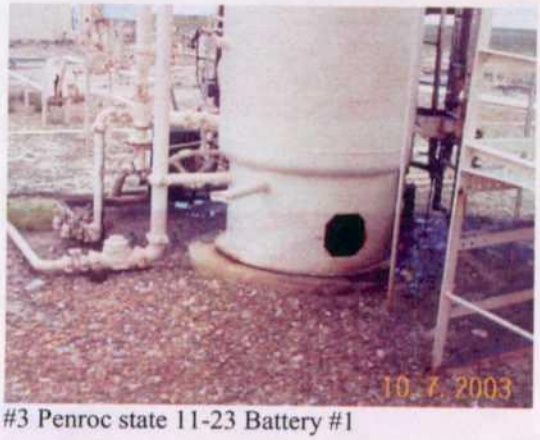
#5 Penroc State 11-23 battery #1-sample point 0310071215 near loading area.



#3 Penroc state 11-23 Battery #1

#6 Penroc State 11-23 #2-sample point 0310071225

#7 Penroc State 11-23 #2-sample point 0310071232

#9 Sample point 0310071550

#8 Penroc State 11-23 battery #1-sample point 0310071250 firewall (berm)

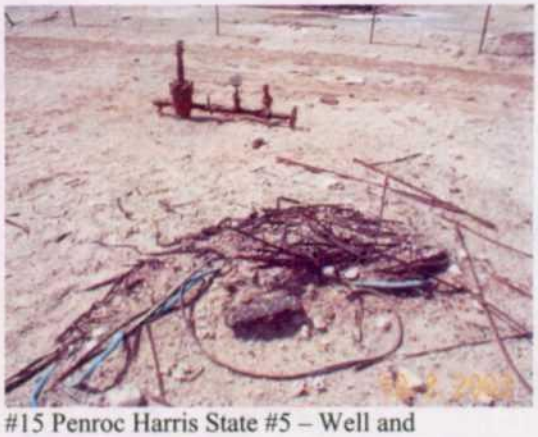
#10 Windmill located in Sec 22-Ts10s-R32e-sample point 0310071330

#11 Windmill located in Sec 25-Ts10s-R32e-sample point 03100713350

#12 Penroc State 11-23 battery #1- loading/unloading area.

#13 Penroc State 11-23 battery #1- loading/unloading area.

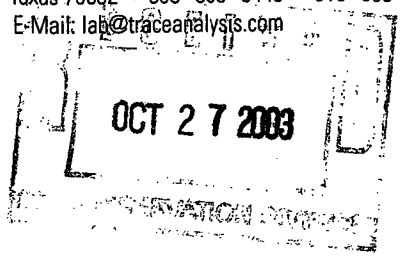
#14 Penroc State AD well#9- shows old leak area



#15 Penroc Harris State #5 – Well and miscellaneous junk.

TRACE ANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
155 McCutcheon, Suite H El Paso, Texas 79932 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com



Bill To: OCD-Santa Fe
1220 S. Saint Francis Dr.
Santa Fe, NM 87505

Attn: Ed Martin

Invoice No. 3402

Invoice Date: 2003-10-21

Payment Due: 2003-11-20

Work Order:	3100915
Project Location:	Section 23-Township 105 Range 32E
Project Name:	Johnson-Penroc
Project Number:	031007

P.A.# 20-521-07-02497

Item	Quantity	Matrix	Description	Price	Sub Total
BTEX	7	soil	19085 - 19091	$40.00	$280.00
Chloride (IC)	7	soil	19085 - 19091	$15.00	$105.00
TPH 418.1	7	soil	19085 - 19091	$40.00	$280.00
Cations and Anions (General Chemistry)	2	water	19092 - 19093	$120.00	$240.00

Payment Terms: Net-30

Total $905.00

Dr. Blair Leftwich, Director

Summary Report

Paul Sheeley
OCD-Hobbs
1625 N. French Dr.
Hobbs, NM 88240

Report Date: October 21, 2003

Work Order: 3100915

Project Location: Section 23-Township 105 Range 32E
Project Name: Johnson-Penroc
Project Number: 031007

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
19085	031007 1210	soil	2003-10-07	12:10	2003-10-09
19086	031007 1215	soil	2003-10-07	12:15	2003-10-09
19087	031007 1225	soil	2003-10-07	12:25	2003-10-09
19088	031007 1232	soil	2003-10-07	12:32	2003-10-09
19089	031007 1250	soil	2003-10-07	12:50	2003-10-09
19090	031007 1305	soil	2003-10-07	13:05	2003-10-09
19091	031007 1550	soil	2003-10-07	15:50	2003-10-09

	BTEX				TPH 418.1
Sample - Field Code	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (isomers) (mg/Kg)	TRPHC (mg/Kg)
19085 - 031007 1210	<0.0200	<0.0200	<0.0200	<0.0200	117000
19086 - 031007 1215	<0.0500	1.00	5.61	4.78	49800
19087 - 031007 1225	<0.500	<0.500	<0.500	0.565	55500
19088 - 031007 1232	<0.0500	0.257	<0.0500	<0.0500	10400
19089 - 031007 1250	<0.0200	<0.0200	<0.0200	<0.0200	52500
19090 - 031007 1305	<0.100	<0.100	<0.100	<0.100	29800
19091 - 031007 1550	<0.0200	<0.0200	<0.0200	<0.0200	109000

Sample: 19085 - 031007 1210

Param	Flag	Result	Units	RL
Chloride		<5.00	mg/Kg	1.00

Sample: 19086 - 031007 1215

Param	Flag	Result	Units	RL
Chloride		18300	mg/Kg	1.00

Sample: 19087 - 031007 1225

Param	Flag	Result	Units	RL
Chloride		2240	mg/Kg	1.00

Sample: 19088 - 031007 1232

Param	Flag	Result	Units	RL
Chloride		1460	mg/Kg	1.00

Sample: 19089 - 031007 1250

Param	Flag	Result	Units	RL
Chloride		139	mg/Kg	1.00

Sample: 19090 - 031007 1305

Param	Flag	Result	Units	RL
Chloride		1720	mg/Kg	1.00

Sample: 19091 - 031007 1550

Param	Flag	Result	Units	RL
Chloride		50400	mg/Kg	1.00

Summary Report

Paul Sheeley
OCD-Hobbs
1625 N. French Dr.
Hobbs, NM 88240

Report Date: October 21, 2003

Work Order: 3100915

Project Location: Section 23-Township 105 Range 32E
Project Name: Johnson-Penroc
Project Number: 031007

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
19092	031007 1330	water	2003-10-07	13:30	2003-10-09
19093	031007 1350	water	2003-10-07	13:50	2003-10-09

	BTEX			
Sample - Field Code	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylene (isomers) (mg/L)
19093 - 031007 1350	<0.00100	<0.00100	<0.00100	<0.00100

Sample: 19092 - 031007 1330

Param	Flag	Result	Units	RL
Hydroxide Alkalinity		<1.00	mg/L as CaCo3	1.00
Carbonate Alkalinity		<1.00	mg/L as CaCo3	1.00
Bicarbonate Alkalinity		134	mg/L as CaCo3	4.00
Total Alkalinity		134	mg/L as CaCo3	4.00
Dissolved Calcium		123	mg/L	0.500
Dissolved Potassium		3.38	mg/L	0.500
Dissolved Magnesium		17.8	mg/L	0.500
Dissolved Sodium		74.4	mg/L	0.500
Specific Conductance		1070	µMHOS/cm	0.00
Chloride		63.2	mg/L	0.500
Fluoride		<1.00	mg/L	0.200
Sulfate		281	mg/L	0.500
Nitrate-N		2.33	mg/L	0.200
pH	[1]	7.70	s.u.	0.00
Total Dissolved Solids		758.0	mg/L	10.00

Sample: 19093 - 031007 1350

Param	Flag	Result	Units	RL
Hydroxide Alkalinity		<1.00	mg/L as CaCo3	1.00

continued ...

[1] received out of holding time

sample 19093 continued ...

Param	Flag	Result	Units	RL
Carbonate Alkalinity		<1.00	mg/L as CaCo3	1.00
Bicarbonate Alkalinity		164	mg/L as CaCo3	4.00
Total Alkalinity		164	mg/L as CaCo3	4.00
Dissolved Calcium		106	mg/L	0.500
Dissolved Potassium		5.51	mg/L	0.500
Dissolved Magnesium		12.7	mg/L	0.500
Dissolved Sodium		58.6	mg/L	0.500
Specific Conductance		906	μMHOS/cm	0.00
Chloride		61.4	mg/L	0.500
Fluoride		<1.00	mg/L	0.200
Sulfate		140	mg/L	0.500
Nitrate-N		5.72	mg/L	0.200
pH	[2]	7.60	s.u.	0.00
Total Dissolved Solids		599.0	mg/L	10.00

[2]received out of holding time

Cation-Anion Balance Sheet

Date 10/21/2003

Sample #	Calcium ppm	Magnesium ppm	Sodium ppm	Potassium ppm	Alkalinity ppm	Sulfate ppm	Chloride ppm	Nitrate ppm	Fluoride ppm	TDS ppm	EC µMHOs/cm
19092	123	17.8	74.4	3.38	134	281	63.2	2.33	0	758	1070
19093	106	12.7	58.6	5.51	164.00	140	61.4	5.72	0	599	906

Sample #	Calcium in meq/L	Magnesium in meq/L	Sodium in meq/L	Potassium in meq/L	Alkalinity in meq/L	Sulfate in meq/L	Chloride in meq/L	Nitrate in meq/L	Fluoride in meq/L	**Total Cations in meq/L**	**Total Anions in meq/L**	**Percentage Error**
19092	6.1377	1.464762	3.2364	0.0864604	2.68	5.85042	1.782872	0.1663387	0	10.9253224	10.48	4.16437913
19093	5.2894	1.045083	2.5491	0.1409458	3.28	2.9148	1.732094	0.4083508	0	9.0245288	8.34	7.94116347

	EC/Cation	EC/Anion				
19092	1092.53224	1047.96307	range	963	to	1177
19093	902.45288	833.52448	range	815.4	to	996.6

TDS/EC	TDS/Cat	TDS/Anion	
0.70841121	0.69380104	0.72330793	needs to be 0.55-0.77
0.6611479	0.66374657	0.71863516	needs to be 0.55-0.77

11085-15

6701 Aberdeen Avenue, Ste. 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

TraceAnalysis, Inc.

4725 Ripley Dr., Ste A
El Paso, Texas 79922-1028
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # 3100915

Company Name: New Mexico Oil Conservation Div. Phone #: 505.393.6161 x113
Address: (Street, City, Zip) 1625 N. French Dr, Hobbs, NM 88240 Fax #: 393.0720
Contact Person: Paul Sheeley email: psheeley@state.nm.us
Invoice to: (If different from above) Ed Martin - Santa Fe Office 505.476.3440
Project #: 031007 Project Name: Johnson - Penroc
Project Location: Section 23 - Township 10S - Range 32E Sampler Signature: [signature]

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE		PRESERVATIVE METHOD: HCL	HNO3	$NaHSO_4$	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME
19085	031007 1210	1	4oz		X									X		10/7	1210
86	031007 1215	1	4oz		X									(		(	1215
87	031007 1225		(		X												1225
88	031007 1232				X												1232
89	031007 1250				X												1250
90	031007 1305				X												1305
91	031007 1550				X												1550
					X												
92	031007 1330	1	1-L	X													1330
93	031007 1350	1	1-L	X													1350
94	031007 1350	2	40mL	X					X								1350

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB #	MTBE 8021B/602	BTEX 8021B/602	TPH (418.1)/TX1005	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC-MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	Chloride	General Chemistry		Turn Around Time if different from standard	Hold
19085		X	X													X			●	
86		X	X													X				
87		X	X													X				
88		X	X													X				
89		X	X													X				
90		X	X													X				
91		X	X													X				
		~~X~~	~~X~~													~~X~~			●	(initials)
92																	X			
93																	X			
94		X																		

Relinquished by: [signature] Date: 10/7/03 Time: 14:45 Received by: Date: Time:
Relinquished by: Date: Time: Received by: Date: Time:
Relinquished by: Date: Time: Received at Laboratory by: [signature] Date: 10-9-03 Time: 1021

LAB USE ONLY
Intact (Y) / N
Headspace Y / (N)
Temp 3°C
Log-in Review MA

REMARKS:

10/21F

Carrier # TNM 0-903112-489-4 2806

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON
Governor
Joanna Prukop
Cabinet Secretary

Lori Wrotenbery
Director
Oil Conservation Division

FAX

TO: Wayne

FROM: Paul S
Energy Minerals and Natural Resources Department,
Oil Conservation Division

RE: Johnson - Penrose 23-10-32

DATE: 10-22-03

anal. report: surface soils — TPH, Cl⁻, BTEX
windmills — Gen. Chem, BTEX

8 Pages (Including Transmittal)

Summary Report

Paul Sheeley
OCD-Hobbs
1625 N. French Dr.
Hobbs, NM 88240

Report Date: October 21, 2003

Work Order: 3100915

Project Location: Section 23-Township 105 Range 32E
Project Name: Johnson-Penroc
Project Number: 031007

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
19085	031007 1210	soil	2003-10-07	12:10	2003-10-09
19086	031007 1215	soil	2003-10-07	12:15	2003-10-09
19087	031007 1225	soil	2003-10-07	12:25	2003-10-09
19088	031007 1232	soil	2003-10-07	12:32	2003-10-09
19089	031007 1250	soil	2003-10-07	12:50	2003-10-09
19090	031007 1305	soil	2003-10-07	13:05	2003-10-09
19091	031007 1550	soil	2003-10-07	15:50	2003-10-09

Sample - Field Code	BTEX Benzene (mg/Kg)	BTEX Toluene (mg/Kg)	BTEX Ethylbenzene (mg/Kg)	BTEX Xylene (isomers) (mg/Kg)	TPH 418.1 TRPHC (mg/Kg)
19085 - 031007 1210	<0.0200	<0.0200	<0.0200	<0.0200	117000
19086 - 031007 1215	<0.0500	1.00	0.61	4.78	49800
19087 - 031007 1225	<0.500	<0.500	<0.500	0.565	55500
19088 - 031007 1232	<0.0500	0.257	<0.0500	<0.0500	10400
19089 - 031007 1250	<0.0200	<0.0200	<0.0200	<0.0200	52500
19090 - 031007 1305	<0.100	<0.100	<0.100	<0.100	29800
19091 - 031007 1550	<0.0200	<0.0200	<0.0200	<0.0200	109000

Sample: 19085 - 031007 1210

Param	Flag	Result	Units	RL
Chloride		<5.00	mg/Kg	1.00

Sample: 19086 - 031007 1215

Param	Flag	Result	Units	RL
Chloride		18300	mg/Kg	1.00

Sample: 19087 - 031007 1225

Report Date: October 21, 2003 Work Order: 3100915 Page Number: 2 of 2
031007 Johnson-Penroc Section 23-Township 105 Range 32E

Param	Flag	Result	Units	RL
Chloride		2240	mg/Kg	1.00

Sample: 19088 - 031007 1232

Param	Flag	Result	Units	RL
Chloride		1460	mg/Kg	1.00

Sample: 19089 - 031007 1250

Param	Flag	Result	Units	RL
Chloride		139	mg/Kg	1.00

Sample: 19090 - 031007 1305

Param	Flag	Result	Units	RL
Chloride		1720	mg/Kg	1.00

Sample: 19091 - 031007 1550

Param	Flag	Result	Units	RL
Chloride		50400	mg/Kg	1.00

Report Date: October 21, 2003
031007

Work Order: 3100915
Johnson-Penroc

Section 23-Township 105 Range 32E

Summary Report

Paul Sheeley
OCD-Hobbs
1625 N. French Dr..
Hobbs, NM 88240

Report Date: October 21, 2003

Work Order: 3100915

Project Location: Section 23-Township 105 Range 32E
Project Name: Johnson-Penroc
Project Number: 031007

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
19092	031007 1330	water	2003-10-07	13:30	2003-10-09
19093	031007 1350	water	2003-10-07	13:50	2003-10-09

	BTEX			
Sample - Field Code	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylene (isomers) (mg/L)
19093 - 031007 1350	<0.00100	<0.00100	<0.00100	<0.00100

Sample: 19092 - 031007 1330

Param	Flag	Result	Units	RL
Hydroxide Alkalinity		<1.00	mg/L as CaCo3	1.00
Carbonate Alkalinity		<1.00	mg/L as CaCo3	1.00
Bicarbonate Alkalinity		134	mg/L as CaCo3	4.00
Total Alkalinity		134	mg/L as CaCo3	4.00
Dissolved Calcium		123	mg/L	0.500
Dissolved Potassium		8.38	mg/L	0.500
Dissolved Magnesium		17.6	mg/L	0.500
Dissolved Sodium		74.4	mg/L	0.500
Specific Conductance		1070	µMHOS/cm	0.00
Chloride		63.2	mg/L	0.500
Fluoride		<1.00	mg/L	0.200
Sulfate		281	mg/L	0.500
Nitrate-N		2.33	mg/L	0.200
pH		7.70	s.u.	0.00
Total Dissolved Solids		758.0	mg/L	10.00

Sample: 19093 - 031007 1350

Param	Flag	Result	Units	RL
Hydroxide Alkalinity		<1.00	mg/L as CaCo3	1.00

continued ...

[1]received out of holding time

Report Date: October 21, 2003
031007

Work Order: 3100918
Johnson-Penroc

Section 23-Township 10S Range 32E

sample 19093 continued ...

Param	Flag	Result	Units	RL
Carbonate Alkalinity		<1.00	mg/L as CaCo3	1.00
Bicarbonate Alkalinity		164	mg/L as CaCo3	4.00
Total Alkalinity		164	mg/L as CaCo3	4.00
Dissolved Calcium		106	mg/L	0.500
Dissolved Potassium		5.51	mg/L	0.500
Dissolved Magnesium		12.7	mg/L	0.500
Dissolved Sodium		58.6	mg/L	0.500
Specific Conductance		900	µMHOS/cm	0.00
Chloride		61.4	mg/L	0.500
Fluoride		<1.00	mg/L	0.200
Sulfate		140	mg/L	0.500
Nitrate-N		5.72	mg/L	0.200
pH	s	7.60	s.u.	0.00
Total Dissolved Solids		599.0	mg/L	10.00

[s] received out of holding time

Cation-Anion Balance Sheet

Date 10/21/2003

Sample #	Calcium ppm	Magnesium ppm	Sodium ppm	Potassium ppm	Alkalinity ppm	Sulfate ppm	Chloride ppm	Nitrate ppm	Fluoride ppm	TDS ppm	EC µMHOs/cm
19092	123	17.8	74.4	3.38	134	281	63.2	2.33	0	758	1070
19093	106	12.7	58.6	5.51	164.90	140	61.4	5.72	0	598	908

Sample #	Calcium in meq/L	Magnesium in meq/L	Sodium in meq/L	Potassium in meq/L	Alkalinity in meq/L	Sulfate in meq/L	Chloride in meq/L	Nitrate in meq/L	Fluoride in meq/L	Total Cations in meq/L	Total Anions in meq/L	Percentage Error
19092	6.1377	1.464762	3.2364	0.0864604	2.68	5.85042	1.782872	0.1663387	0	10.9253224	10.48	4.16437913
19093	5.2894	1.045083	2.5491	0.1409458	3.28	2.9148	1.732094	0.40[illegible]	0	9.0245288	8.34	7.94116347

	EC/Cation	EC/Anion
19092	1092.53224	1047.96307
19093	902.45288	833.52448

range 963 to 1177
range 815.4 to 996.6

TDS/EC	TDS/Cat	TDS/Anion	
0.70841121	0.69380104	0.72330790	needs to be 0.55-0.77
0.6611479	0.66374657	0.71863518	needs to be 0.55-0.77

11085-95

6701 Aberdeen Avenue, Ste. 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

TraceAnalysis, Inc.

4725 Ripley Dr., Ste A
El Paso, Texas 79922-1028
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # 3I0097

Company Name: New Mexico Oil Conservation Div. Phone #: 505.393.6161 X113

Address: (Street, City, Zip) 1625 N. French Dr, Hobbs, NM 88240 Fax #: 393.0720

Contact Person: Paul Sheeley email: psheeley@state.nm.us

Invoice to: (If different from above) Ed Martin - Santa Fe Office 505.476.3440

Project #: 031007 Project Name: Johnson - Penroc

Project Location: Section 23 - Township 10S - Range 32E Sampler Signature: [signature]

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	Matrix: WATER	Matrix: SOIL	Matrix: AIR	Matrix: SLUDGE	Preservative: HCL	HNO3	NaHSO4	H_2SO_4	NaOH	ICE	NONE	Sampling: DATE	Sampling: TIME
19085	031007 1210	1	4oz		X								X		10/7	1210
86	031007 1215	1	4oz		X								(		(	1215
87	031007 1225	)	/		X								)		)	1225
88	031007 1232	)	)		X								)		)	1232
89	031007 1250	)	)		X								)		)	1250
90	031007 1305	)	)		X								)		)	1305
91	031007 1550	)	)		X								)		)	1550
					X											
92	031007 1330	1	1-L	X											)	1330
93	031007 1350	1	1-L	X											)	1350
9394	031007 1350.	2	40ml	X				X							)	1350

LAB #	MTBE 8021B/602	BTEX 8021B/602	TPH (418.1)/TX1005	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC-MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	Chloride	General Chemistry			Turn Around Time if different from standard	Hold
19085		X	X													X					
86		X	X													X					
87		X	X													X					
88		X	X													X					
89		X	X													X					
90		X	X													X					
91		X	X													X					
		~~X~~	~~X~~													~~X~~					[initials]
92																	X				
93																	X				
9394		X																			

Relinquished by: [signature] Date: 10/7/03 Time: 14:45 Received by: Date: Time:

Relinquished by: Date: Time: Received by: Date: Time:

Relinquished by: Date: Time: Received at Laboratory by: [signature] Date: 10-9-03 Time: 10:21

LAB USE ONLY
Intact: (Y) N
Headspace: Y / (N)
Temp: 3°
Log-in Review: [initials]

REMARKS:

Carrier #: TNM 0-903 112-489-4 2206

ORIGINAL COPY

10-7-03

Jerod Johnson 348-2278

Sampling Pennoc, - Carl Johnson Sec 23-10-32

Sample ID #	Sample Location I.D.	(H2O)	Test (Soil) 4oz Surface		GPS N W	JPG. File	DCP
03100712 10	State 11-23 Tk. Bat #1	Pump area	T,B,C	✓	33°26.133' 103°28.835'	DC 4461-62	
03100712 15	" " "	Loading Bay	T,B,C	✓	" .140' " .849'	DC 1465	
03100712 25	State 11-23 #2	Gathering Lines	T,B,C	✓	.034' .953'	4466-68	
03100712 32	"	"	"	"	"	4466-68	
03100712 50	State 11-23 Tk. Bat #1	Fire wall	T,B,C	✓	.133' .835'	4469	
~~03100712 55~~	~~Pasture~~		~~T,B,C~~	~~✓~~	~~N33°26.114' W103°26.838'~~		
03100713 05	Pasture		T,B,C	✓	33°26.122' " " .882'	no picture	
0310 0715 50	Harris State Well #5		T,B,C	✓			
03100713 30	Windmill Sec. ~~20~~ 22	2-40mL 1-L poly	✓ ~~B, GC~~ GC		33°27.168' 103°34.787'	4470-72	
~~1330~~	~~" " 1-L~~		~~✓ GC~~		~~"~~		
03100713 50	Windmill Sec. 25	(1-L poly)	✓ GC		33°24.867 103°32.858	4480-82	
1350	" " 5W/4	(2-40mL)	✓ B		"		

Test Key: B = BTEX, T = TPH, C = Chloride, GC = General Chemistry ~~4477-79~~ 4483

Note: GWM wells in Sec 20 Johnsons are sampling these wells

Lake View Stock tank Pix only — 4477-79

10-7-03

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON
Governor
Joanna Prukop
Cabinet Secretary

Lori Wrotenbery
Director
Oil Conservation Division

FAX

TO: Wayne

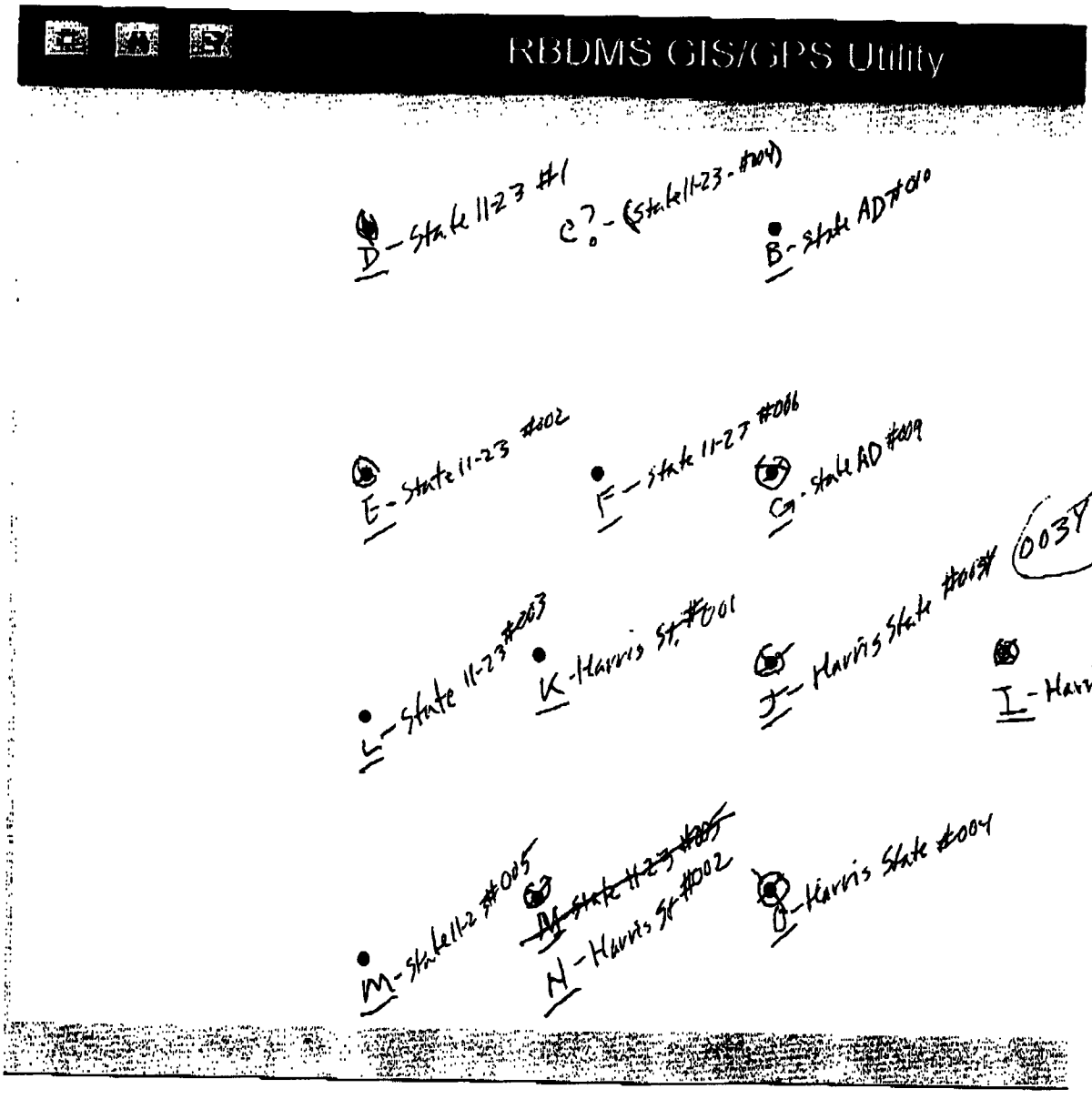
FROM: Paul S

Energy Minerals and Natural Resources Department,
Oil Conservation Division

RE: Psudo - Map 23-10-32 Penrose

DATE: 10-23

2 Pages (Including Transmittal)


RBDMS GIS/GPS Utility
D - State 11-23 #1
C? - (State 11-23 - #004)
B - State AD #010
E - State 11-23 #002
F - State 11-23 #006
G - State AD #009
L - State 11-23 #003
K - Harris St. #001
J - Harris State #0037 (0037?)
I - Harris State #5
M - State 11-2 #005
H - State 11-23 #007
N - Harris St #002
O - Harris State #004

Oct 6, 2003

To: SLO

Patrick Lyons

Cody Morrow

OCD

Lori Wrotenbery

Wayne Price

Gene Samberson

Pat McMahon

On Monday ~~Sept~~ Sept 29, 03 I turned in, to both the OCD and SLO, a salt water leak on a salt water disposal well owned by Pennzoil Oil Co.

As of this date, Oct 6, 03, Exactly one (1) week later, the leak is still on going and if anything, worse. Nothing has been done to rectify the problem.

I have taken pictures of the problem, had them developed, and mailed them to the OCD, SLO and hand delivered them to the Samberson Law Firm.

If the OCD and SLO are not going to do anything to stop the pollution of the soil and ground water I would like to be advised as such.

If there isn't going to be any action on the part of the SLO and/or OCD I will turn the matter over to the the Samberson Law Firm or one of the other law firms that are interested in this type of litigation. Awaiting a reply from OCD and SLO.

Yours Truly

Carl Johnson

12:00 Noon

Oct 6, 2003

Oct 1, 2003

TO OCD and SLO,

As of this date I am requesting that the OCD and SLO implement and carry forward their own rules, regulations, specifications, statutes pertaining to salt water disposal systems for produced oil field water in regards to Pinnacle Oil Co.

This system is in violation of every rule and reg, in the first place being in a draw or arroyo as originally constructed.

The old disposal well is unplugged and has been abandoned for 12 - 15 years which is in violation of all the rules & regs I have seen.

The site construction and pollution is completely out of compliance and irresponsible by all parties involved, Pinnacle, OCD, and SLO.

I turned this in to

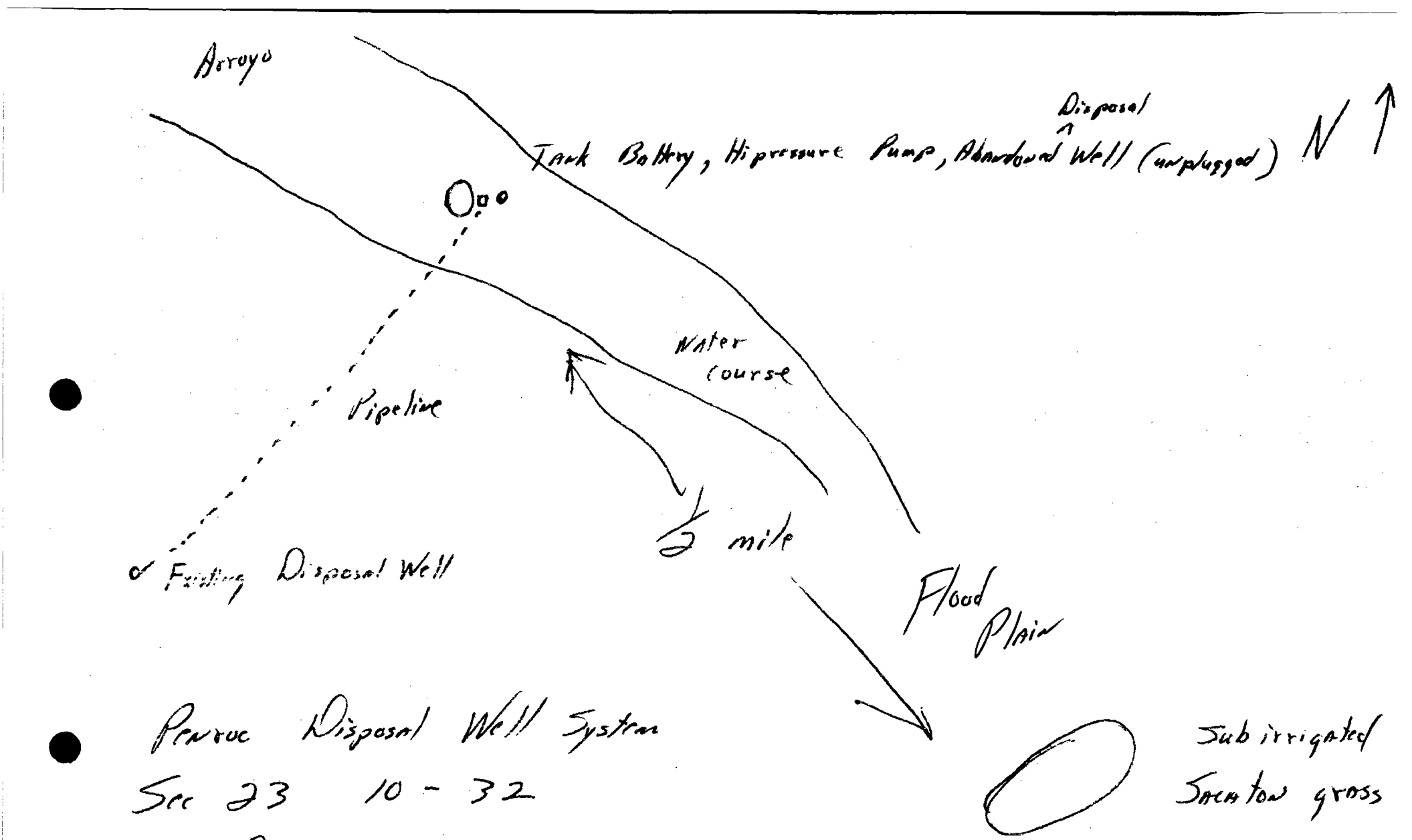
the OCD and SLO on Sept 29, 03 and as of this date Oct 1, 03 nothing has been done.

I, as a state land lessee and private land owner, am requesting that Parroc Oil be shut down in <u>all of their oil field operations</u>, prosecuted to the full Extent of the law, both criminally and civil, and to make whole all of the pollution of water, soil, and other natural resources, that their operations have caused.

As all of us, SLO, OCD, and ranchers, in Lea County are aware this is an Example of how Parroc operates and has operated for 15-20 years. It is now way past time to put a stop, once and for all, to these types of operations, Parroc's and other oil companies who operate in flagrant disregard to the laws of the state.

Yours truly,

Earl F. Johnson



Penroc Disposal Well System

Sec 23 10 - 32

LEA County

Water sand formation starts at 18' below surface

Windmills pumping depth 30-45' deep

5

should be used to sample and analyze ground water at RCRA Subtitle C exempt sites (Note: The installation of monitor wells may not be required if the OCD approves of an alternate ground water investigation or sampling technique):

1. **Monitor Well Installation/Location**

One monitor well should be installed adjacent to and hydrologically down-gradient from the area of the leak, spill or release to determine if protectable fresh water has been impacted by the disposal activities. Additional monitor wells, located up-gradient and down-gradient of the leak, spill or release, may be required to delineate the full extent of ground water contamination if ground water underlying the leak, spill or release has been found to be contaminated.

2. **Monitor Well Construction**

a) Monitor well construction materials should be:

i) selected according to industry standards;

ii) chemically resistant to the contaminants to be monitored; and

iii) installed without the use of glues/adhesives.

b) Monitor wells should be constructed according to OCD approved industry standards to prevent migration of contaminants along the well casing. Monitor wells should be constructed with a minimum of fifteen (15) feet of well screen. At least five (5) feet of the well screen should be above the water table to accommodate seasonal fluctuations in the static water table.

3. **Monitor Well Development**

When ground water is collected for analysis from monitoring wells, the wells should be developed prior to sampling. The objective of monitor well development is to repair damage done to the formation by the drilling operation so that the natural hydraulic properties of the formation are restored and to remove any fluids introduced into the formation that could compromise the integrity of the sample. Monitoring well development is accomplished by purging fluid from the well until the pH and specific conductivity have stabilized and turbidity has been reduced to the greatest extent possible.

4. **Sampling Procedures**

Ground water should be sampled according to OCD accepted standards or other OCD approved methods. Samples should be collected in clean containers supplied by the laboratory which will conduct the analysis or from a reliable laboratory equipment supplier. Samples for

OIL-FIELD BRINE CONTAMINATION---A CASE STUDY, LEA COUNTY, NEW MEXICO

Daniel B. Stephens and Charles P. Spalding

Abstract

Salt-water disposal practices in the Moore-Devonian oil field near Caprock, New Mexico produced a plume of contamination approximately one mile long in the Ogallala aquifer. Maximum chloride concentrations are nearly 26,000 mg/l. The plume heads in the vicinity of an abandoned brine pit and an operating salt-water disposal well which injects brine underground at a depth of about 10,000 feet. There are also numerous pipelines, operating oil wells, and extensive areas scarred from brine spills. A court of law found that the abandoned pit and the injection well contributed to the contamination problem.

Ground-water monitoring near injection wells is not required by State regulation; however, such observation wells emplaced when injection begins and monitored routinely would provide data necessary to protect fresh water resources. In areas of multiple potential sources of seepage, ground-water monitoring may also protect owners and operators of disposal facilities from liability.

Introduction

The Ogallala aquifer is the sole source of potable ground water in much of southeastern New Mexico. The Ogallala is composed mostly of unconsolidated sand and gravel, and well yields are high. The availability of such an abundant supply of fresh ground water at shallow depths makes possible large-scale irrigated agriculture. In parts of eastern New Mexico this aquifer is underlain by oil reservoirs. Large quantities of brine are often produced along with oil.

The purpose of this paper is to describe briefly a case of contamination of the Ogallala aquifer caused by brine seepage from oil-field activities, and to discuss existing legislation designed to protect aquifers from underground injection. It is not our intent to focus on one possible source of

Associate Professor of Hydrology and Graduate Student, respectively, New Mexico Institute of Mining and Technology, Socorro, New Mexico 87801.

Paper previously presented at the Symposium on Water Quality and Water Pollution in New Mexico, Socorro, New Mexico, April 11-12, 1984.

contamination or another, nor do we want any personal bias to be read into our description of the case study; instead we want to use this example to demonstrate that ground-water monitoring could be an effective addition to salt-water disposal practices and regulations. Thus, we have omitted discussion of technical details which, although important, do not pertain directly to the question of ground-water monitoring near salt-water disposal wells.

Site Description

The study area is located in southeastern New Mexico, about fifty miles east of Roswell, just south of Caprock in northern Lea County. The topography is nearly flat, but slopes very gently eastward. Native vegetation consists mostly of sparse grasses. The mean annual precipitation is about 15 inches (38 cm) (Ash, 1963). The Ogallala Formation underlies the area and is about 100 feet (30 m) thick. The upper 20 feet (6 m) contains caliche which appears to be highly fractured in outcrops. The middle section of the Ogallala consists mostly of sand, and the lower 5 to 20 feet (1.5 to 6 m) contains sand with gravel in most parts of the study area. Ground water generally flows to the southeast, but the water table is influenced by irrigation pumping (Figure 1).

The Ogallala Formation was deposited during the Late Tertiary by ancestral streams from mountains to the west. The streams cut channels into underlying shale and claystone of the Triassic Chinle Formation, forming an unconformity with a very irregular surface. The very low permeability of the Chinle, also referred to as "the red beds," makes an excellent hydraulic barrier at the base of the Ogallala. The Chinle Formation is approximately 1600 feet (490 m) thick in this area (Sweeney et al., 1960). Underlying the Chinle is a thick sequence of Paleozoic sedimentary rocks, many of which bear hydrocarbons. Notable among these is a Devonian dolomite approximately 10,000 feet (3000 m) below land surface. Within the study area this oil-bearing formation is called the Moore-Devonian Pool.

Brine Contamination

In the 1950's, oil wells were drilled at approximately one-quarter-mile (400-m) intervals in the Moore-Devonian Pool. The proportion of saline water produced with the oil gradually increased with continued development. From about January 1953 to May 1958, approximately 752,000 barrels (119,500 cu m) of produced salt water were disposed of into an unlined surface pit (Figure 1) in the northeast corner of section 23 (Runyan 1978a). Because of associated wide-spread problems of aquifer contamination, the State banned the use of pits for saline water disposal in 1969. To handle the produced saline water in the

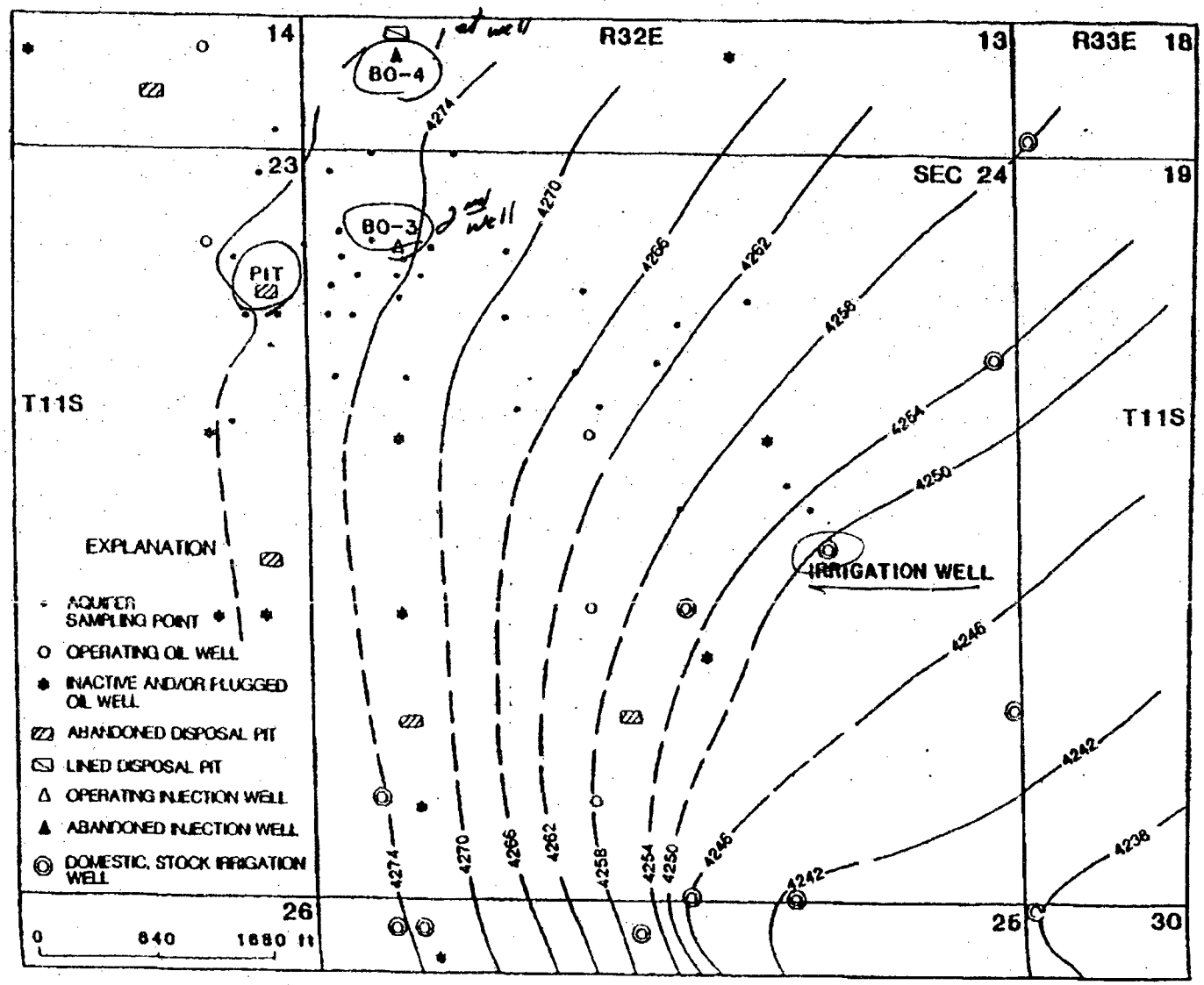


Figure 1. Water table contour map May 27, 1978 and well locations (modified from S.E. Galloway, NM State Engineers Office, Roswell)

Moore-Devonian Field, an oil well in the southwest part of section 13 (Figure 1) was converted to a salt-water disposal well. From 1966 to 1972 approximately 20 million barrels of salt water were collected from the Moore-Devonian Field and injected through this well, designated BO-4, back into the Devonian strata (Evelyn Downs, personal communication, N.M. Oil Conservation Div. [NMOCDJ, 1984). In 1972, it was discovered that the BO-4 injection well was so corroded that a repair of the well was not practical; the well was plugged and abandoned. The oil well one-quarter mile to the south, BO-3, in the northwestern corner of section 24, was then converted to a salt-water disposal well (Figure 1). Construction details of the converted oil well BO-3 are given in Figure 2; these are essentially the same as those of BO-4. From October 1972 through July,1977, approximately 20 million barrels of salt water were injected through BO-3 into the Devonian formation at a depth exceeding 10,500 feet (Evelyn Downs, personal communication, NMOCD, 1984).

An irrigation well, completed in 1973, approximately 3900 feet (1190 m) southeast of BO-3 injection well began producing water from the Ogallala with a chloride concentration exceeding 1200 mg/l in July 1977. Crops irrigated from this well were severely damaged and the bank soon foreclosed on the farm property. There having been no evidence of crop damage prior to 1977, it is assumed that ground water quality at this well had been near background, which is less than 100 mg/l chloride.

Test drilling and sampling from 1977-1978 (Runyan, 1978a,b) showed that there was a plume of saline water which appeared to originate in the northwest corner of section 24 and the northeast corner of section 23 (Figure 3). The highest concentrations of chloride occurred around the BO-3 injection well and southeast of the abandoned brine disposal pit; in places these concentrations were more than 100 times the recommended drinking water standards. The hydraulic gradients indicated in Figure 1 suggest that the probable source of contamination was either the old pit or the BO-3 injection well. On the basis of hydraulic conductivity and effective porosity data obtained from an aquifer pumping test near BO-3 (Water Resources Associates, Phoenix, written communication, 1982), irrigation well performance data (New Mexico State Engineer's Office, Roswell, New Mexico, open file records), and hydrogeologic reports (Ash, 1963; Haven, 1966; Nicholson and Clebsch, 1961) it has been determined that the average ground-water flow velocity is on the order of at least a few hundred feet per year. Assuming a simple solute-transfer model, saline water from the pit, which may have entered the Ogallala shortly after 1958, should have traveled well beyond the irrigation well in question by 1977.

A ground-water monitor well, completed in 1978 near the base of the Ogallala, 60 feet southeast of BO-3, was sampled and analyzed. Figure 4 shows that in this well, sampled over

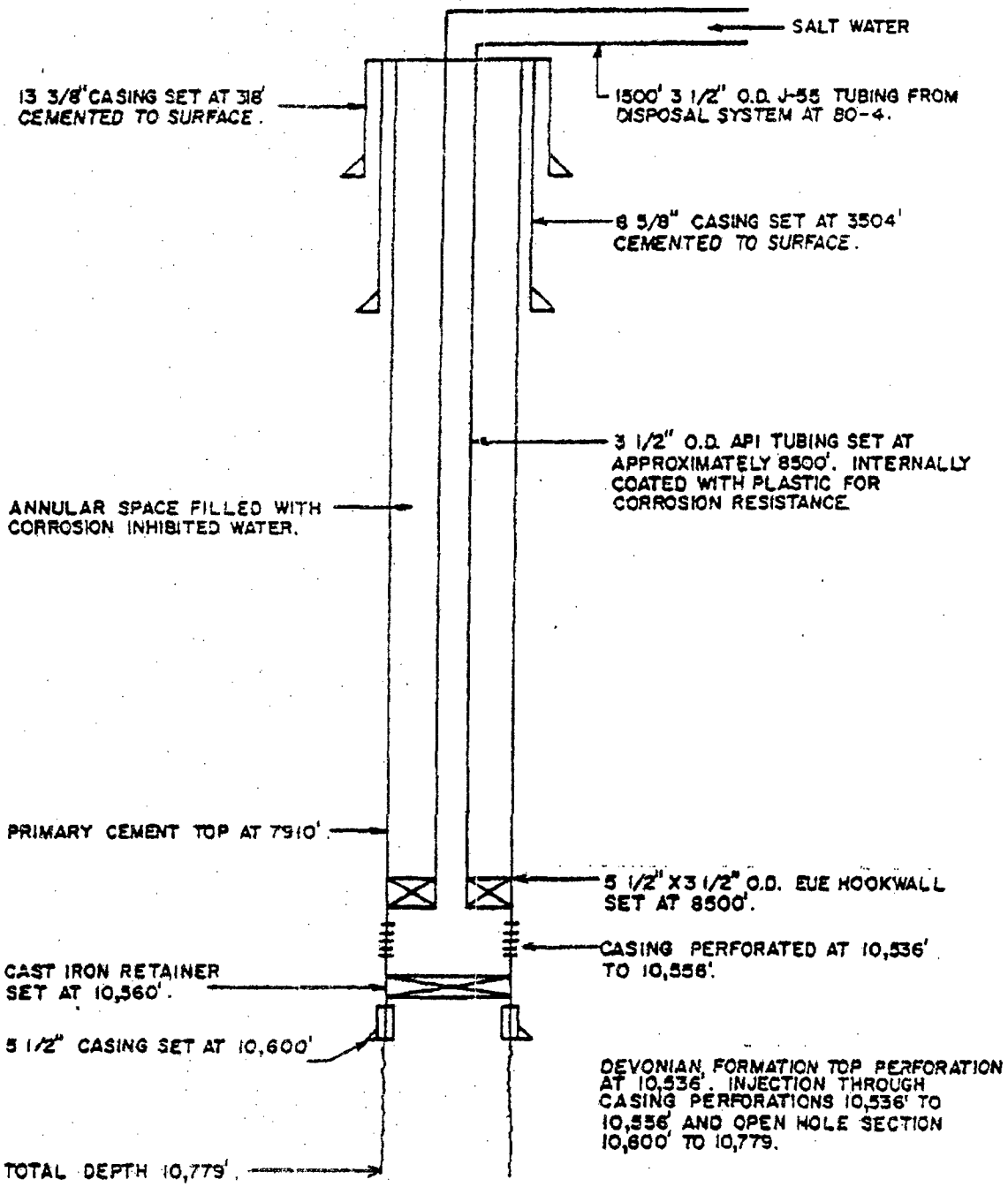


Figure 2. Injection well construction (Modified from Texico, Inc. SWD Well proposal)

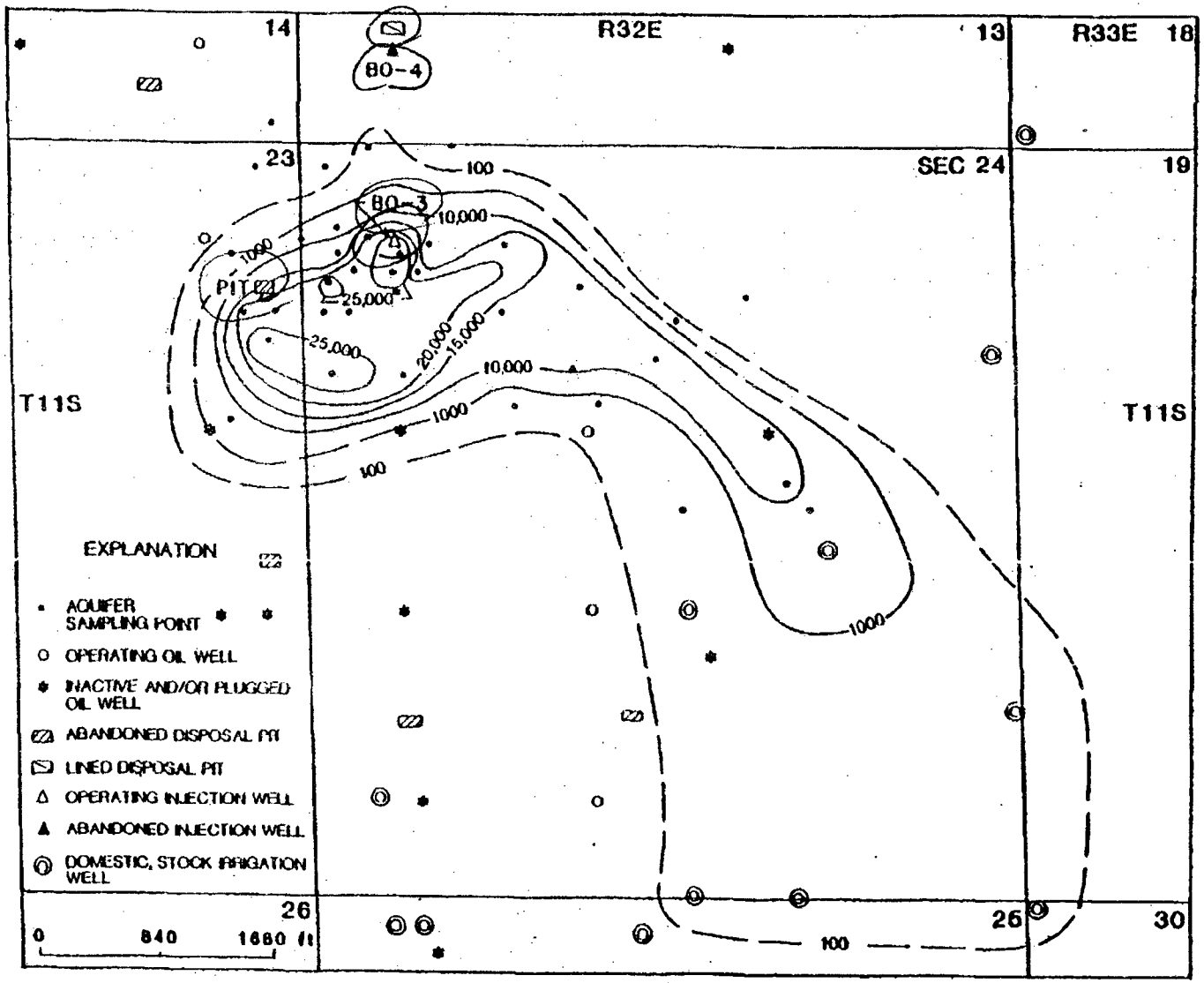


Figure 3. Chloride concentration contour map May 25, 1978 (modified from J. Runyan, NM Oil Conservation Division)

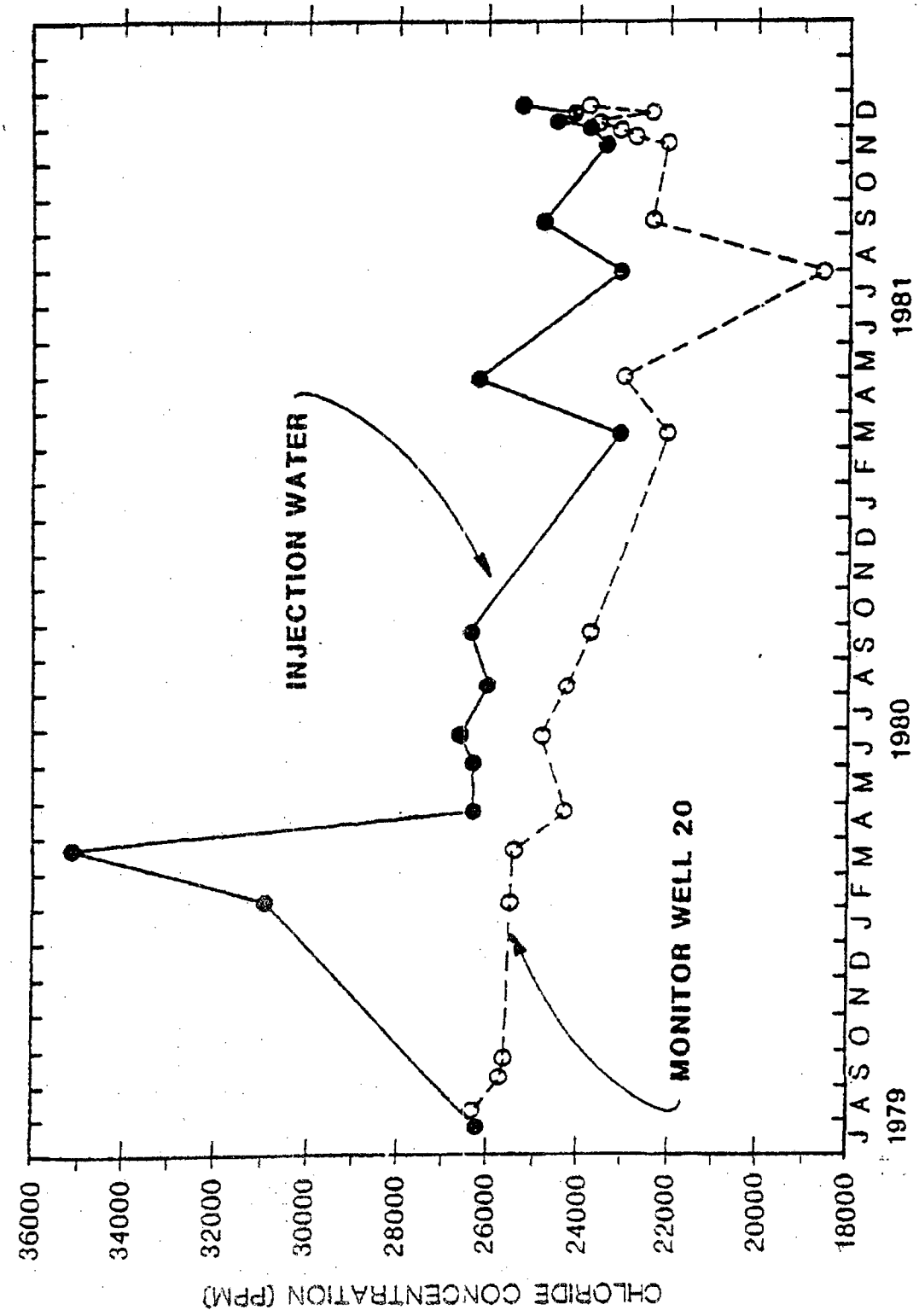


Figure 4. Chloride concentration of injected water and ground water in the Ogallala aquifer. (Analyses by New Mexico Oil Conservation Division)

a two-year period, ground water had a chloride concentration which was generally similar to that of the injection water, except for the obvious peak. Moreover, the chloride concentration in this observation well was relatively unchanged over nearly a three- to five-year period. Unless there was a subsurface barrier inhibiting saline ground-water movement, or a continuous source of saline water introduced to the aquifer, fresh ground water should have displaced much of the contamination from the vicinity of BO-3.

On the other hand, there is also evidence which suggests that BO-3 may not have been leaking. Figure 2 shows that BO-3 was designed to insulate injection fluid from the Ogallala with four steel casings, two of which were cemented to the surface; furthermore, the saline water is being injected nearly two miles below the bottom of the Ogallala. Mechanical integrity tests, which consist of applying and/or monitoring pressure on the casing or injection tubing annuli, were ordered by the New Mexico Oil Conservation Division to detect leakage. Radioactive tracer surveys were also conducted. Mr. Richard L. Stamets (NMOCD, written communication, 1984) indicates that on the basis of "the numerous hearings conducted on this matter before the Oil Conservation Division, the expert witnesses appearing, the expert testimony presented, and the findings of the Commission,... there was no definitive evidence that the salt-water disposal well in question was the source of the contamination."

In 1982, a jury found, on the basis of the above described and many other technical issues, that both the pit and the injection well contributed to ground-water contamination which reached the irrigation well, (Hamilton v. Texaco, U.S. District Court, Santa Fe).

Discussion

In 1981, the NMOCD assumed responsibility for enforcing the federal Underground Injection Control (UIC) Program which was set forth under the Safe Drinking Water Act (PL 93-523, as amended). According to these regulations, monitoring for Class II injection wells is required only in the injection well unless otherwise stipulated in the permit by the NMOCD. Monitoring essentially consists of a mechanical integrity test at least once every five years; however, since 1978 New Mexico has performed bradenhead tests to check mechanical integrity annually on all salt-water disposal wells in southeastern New Mexico (R.L. Stamets, NMOCD, written communication, 1984). According to regulations, the injection well must also have facilities available to make measurements of injection and annulus pressure, and monthly injected fluid volume. Other tests may also be required, as ordered by the Director of NMOCD. In reference to the case study of under-ground injection of saline oil-field

water in northern Lea County, no ground-water monitoring in the Ogallala aquifer was required, according to existing regulations. The following discussion will illustrate some of the arguments in favor of ground-water monitoring for the protection of injection well operators and potable ground-water users.

In a typical oil field there are numerous potential sources, in addition to injection wells and pits, of saline seepage to shallow aquifers. Quoting from the July 1967 issue of Petroleum Engineer, (p. 35), "oil field pollution occurs from...overflowing waste pits, leakage from broken lines, improperly plugged wells, improperly cased and cemented wells, salt water production from an exploratory core hole, and many other surface and subsurface forms". Many of these potential sources of contamination may be owned and operated by different companies. On the basis of this case study, it might be prudent for the owner of a newly completed salt-water disposal well to install monitor wells to establish baseline conditions before injection begins, as well as a ground-water monitoring-well network surrounding the injection well in order to detect encroaching salt water from other sources. That is, if it is true that the injection well did not ever leak and that all saline water is attributed to the pit, then a few shallow ground water monitor wells drilled prior to converting BO-3 would have shown that the aquifer was already contaminated; this conclusive finding probably would have prevented the costly litigation just described.

Ground-water monitoring of underground injection beneath highly vulnerable and valuable aquifers, such as the Ogallala, is crucial to protecting the agricultural economy of the area described in this report. In this case study, the irrigation water for 160 acres of farm land was rendered unfit for use, owing to the brine contamination. (However, the present landowner, Mr. Jess Tolton [Caprock NM, personal communication, 1984], reported that he has used an irrigation well located south of the affected irrigation well, apparently just beyond the plume, for small-scale irrigation.) If one assumes, on the basis of hydrologic evidence, that the injection well actually had a leak when the mechanical integrity tests were performed, then the mechanical integrity tests alone may not be a sufficiently reliable means of protecting aquifers. Part of the problem in interpreting mechanical integrity tests may be in detecting leaks which are quite small. A continuous, slow rate of leakage comprising only a few percent of the total injection rate could have accounted for contamination near BO-3, for example. Without ground-water monitor wells, extensive aquifer contamination is possible during the five-year period between mechanical integrity tests. At rates of ground-water flow on the order of a few hundred feet per year, typical of high-permeability aquifers, the number of contaminated agricultural and domestic wells would soon be appreciable. Annual testing of Class II wells in New Mexico which began in 1978, is a step

Important

toward minimizing impacts to ground water, and annual mechanical integrity tests on all injection wells (including Class I and III) completed near fresh-water sources should be encouraged. Depending upon the magnitude of the leak and the time when the leak first develops, even annual mechanical integrity tests may not be adequate to avoid extensive brine contamination. It is reported that annual testing in New Mexico reveals about two percent failures (U.S. EPA, 1983, p. 5).

Injection well BO-3 continues to operate as the salt-water disposal well for the Moore-Devonian Pool. There has been no effort to date to clean-up the contamination described in this case study, owing in part to litigation which was pending in 1982. More importantly perhaps, the cost of restoring the Ogallala would be quite substantial, inasmuch as the volume of aquifer contamination is on the order of 50 million cubic feet. Valuable irrigated farm land is located east and southeast of the case study area, in the direction of the contaminant plume described in Figure 3. A few shallow ground-water monitor wells at strategic locations near injection wells, drilled at a cost of approximately $15 per foot of depth, would be a relatively inexpensive means of monitoring injection wells and protecting ground-water resources.

Acknowledgements

The authors wish to thank the reviewers of drafts of this paper, in particular Mr. R.L. Stamets and staff of the New Mexico Oil Conservation Division, for their comments. The cooperation of Mr. John Gannon of Texaco Inc., Mr. Paul Hamilton, Mr. Jim Wright, and Mr. Sherman "Pinky" Galloway of the State Engineer's Office is also acknowledged.

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U.S. Environmental Protection Agency, 1983, Mechanical Integrity Workshop, February 1-2, Dallas, Texas, 9 p.

[redacted] REMOVAL OF PRODUCED WATER FROM LEASES AND FIELD FACILITIES

A. Transportation of any produced water by motor vehicle from any lease, central tank battery, or other facility, without an approved Form C-133 (Authorization to Move Produced Water) is prohibited.

B. Authorization to transport produced water may be obtained by filing three copies of Form C-133 with the Director of the Division in Santa Fe.

C. No owner or operator shall permit produced water to be removed from its leases or field facilities by motor vehicle except by a person possessing an approved Form C-133.

[1-1-50...2-1-96; 19.15.9.709 NMAC - Rn, 19 NMAC 15.I.709, 11-30-00]

[redacted] DISPOSITION OF TRANSPORTED PRODUCED WATER

Violation

A. No person, including any transporter, may dispose of produced water on the surface of the ground, or in any pit, pond, lake, depression, draw, streambed, or arroyo, or in any watercourse, or in any other place or in any manner which will constitute a hazard to any fresh water supplies.

B. Delivery of produced water to approved salt water disposal facilities, secondary recovery or pressure maintenance injection facilities, or to a drill site for use in drilling fluid will not be construed as constituting a hazard to fresh water supplies provided the produced waters are placed in tanks or other impermeable storage at such facilities.

C. The supervisor of the appropriate district office of the Division may grant temporary exceptions to Paragraph A. above for emergency situations, for use of produced water in road construction or maintenance, or for use of produced waters for other construction purposes upon request and a proper showing by a holder of an approved Form C-133 (Authorization to Move Produced Water).

D. Vehicular movement or disposition of produced water in any manner contrary to these rules shall be considered cause, after notice and hearing, for cancellation of Form C-133.

[2-1-82...2-1-96; 19.15.9.710 NMAC - Rn, 19 NMAC 15.I.710, 11-30-00]

19.15.9.711 APPLICABLE TO SURFACE WASTE MANAGEMENT FACILITIES ONLY:

A. A surface waste management facility is defined as any facility that receives for collection, disposal, evaporation, remediation, reclamation, treatment or storage any produced water, drilling fluids, drill cuttings, completion fluids, contaminated soils, bottom sediment and water (BS&W), tank bottoms, waste oil or, upon written approval by the Division, other oilfield related waste. Provided, however, if (a) a facility performing these functions utilizes underground injection wells subject to regulation by the Division pursuant to the federal Safe Drinking Water Act, and does not manage oilfield wastes on the ground in pits, ponds, below grade tanks or land application units, (b) if a facility, such as a tank only facility, does not manage oilfield wastes on the ground in pits, ponds below grade tanks or land application units or (c) if a facility performing these functions is subject to Water Quality Control Commission Regulations, then the facility shall not be subject to this rule.

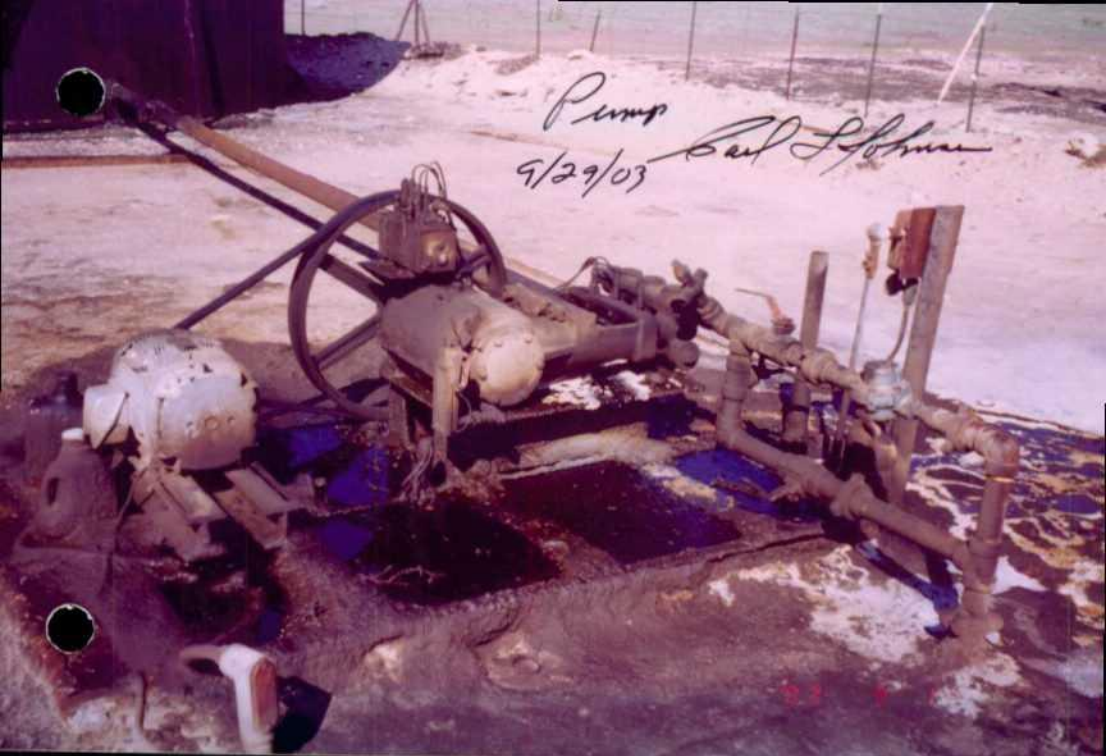
(1) A commercial facility is defined as any surface waste management facility that does not meet the definition of centralized facility.

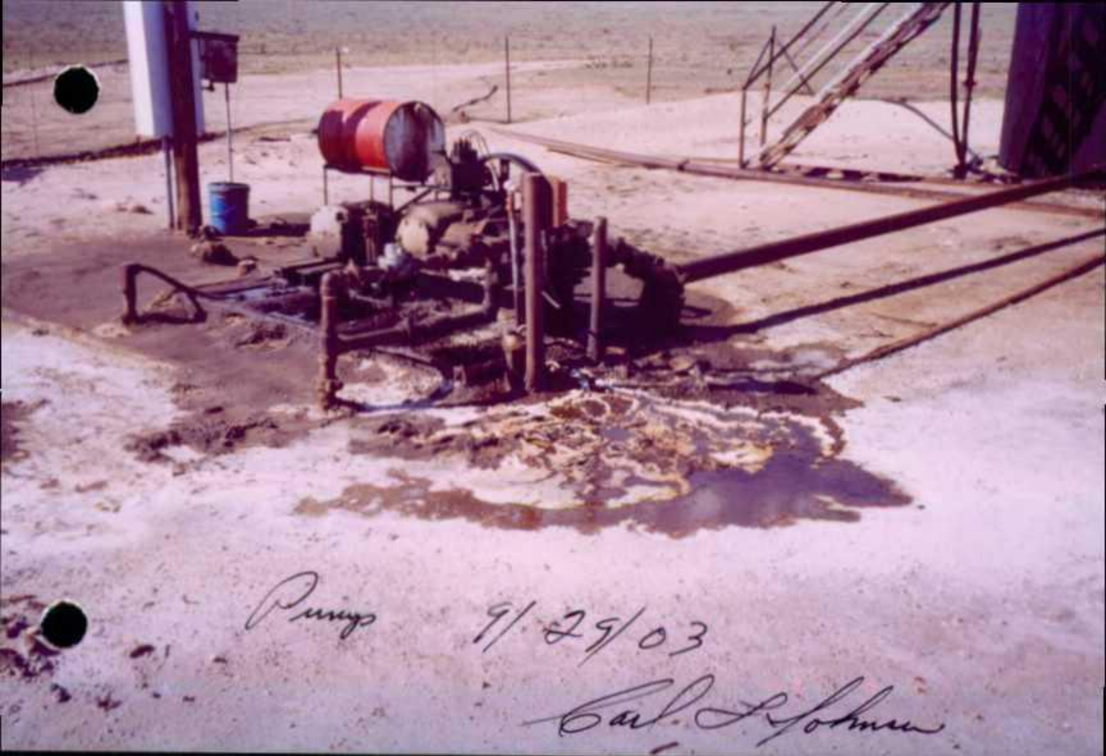
(2) A centralized facility is defined as a surface waste management facility that accepts only waste generated in New Mexico and that:

(a) does not receive compensation for waste management;

(b) is used exclusively by one generator subject to New Mexico's "Oil and Gas Conservation Tax Act" Section 7-30-1 NMSA-1978 as amended; or

(c) is used by more than one generator subject to New Mexico's "Oil and Gas Conservation Tax Act" Section 7-30-1 NMSA-1978 as amended under an operating agreement and which receives wastes that are generated from two or


Pump
9/29/03
Earl Schuman


Pump
9/29/03


Un muffled Motor
9/29/03 non-compliance
on Pearce Ranch Not Pearce


Un muffled Motor
9/29/03
on Pintoc Ranch
not Pintoc
non- compliance


New disposal well &
junk pile
9/29/03
Earl L. Johnson


Spark – Penroc
9/29/03
Carl L Johnson

Salt Water Leak

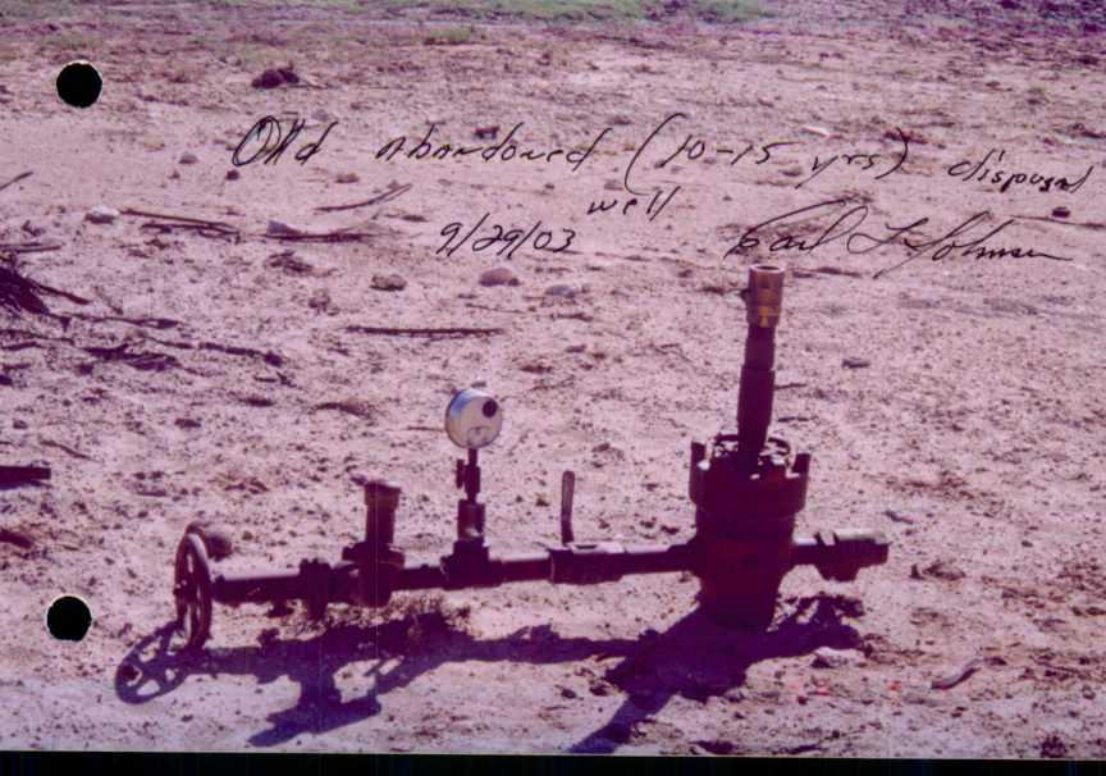
30-35 yrs old in area

9/29/03 by Earl L. Johnson


Pollution
ARROYO
½ mile
Sub irrigted
Photo Taken
9/29/03 by Earl Johnson


Pollution
Flood Plain
Subirrigated
Photo taken
9/29/03


Salt & oil
9/29/03
Carl Tolman


Old abandoned (10-15 yrs) disposal well
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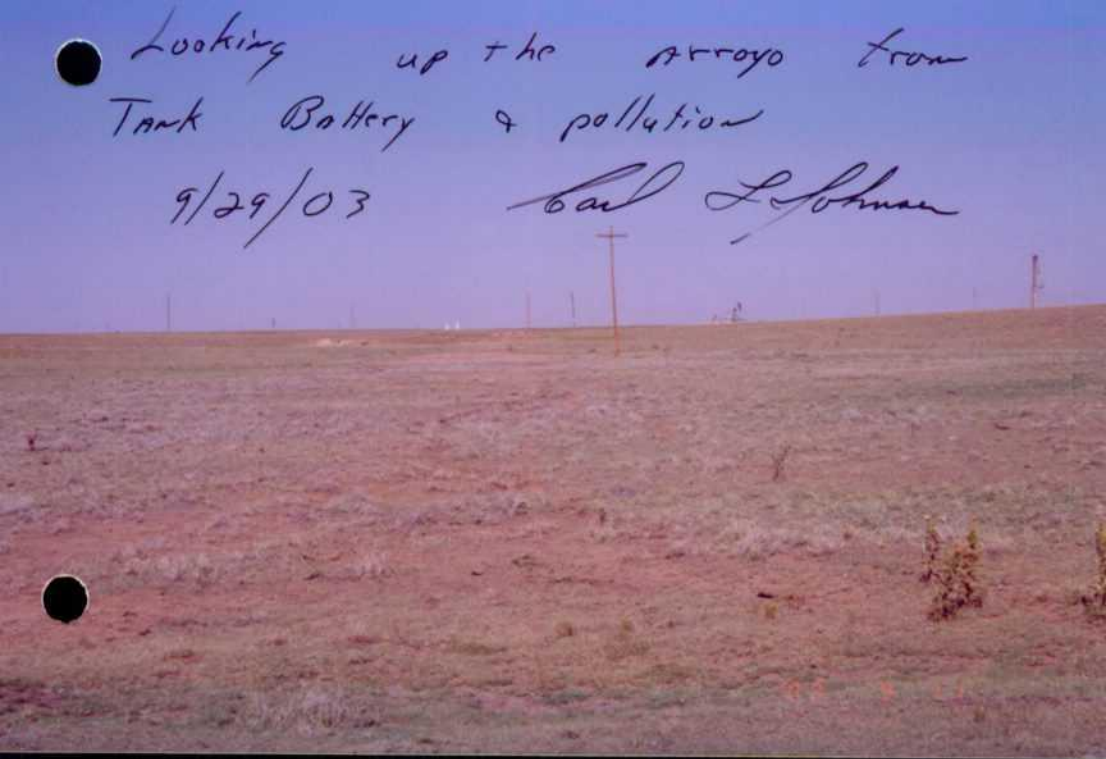
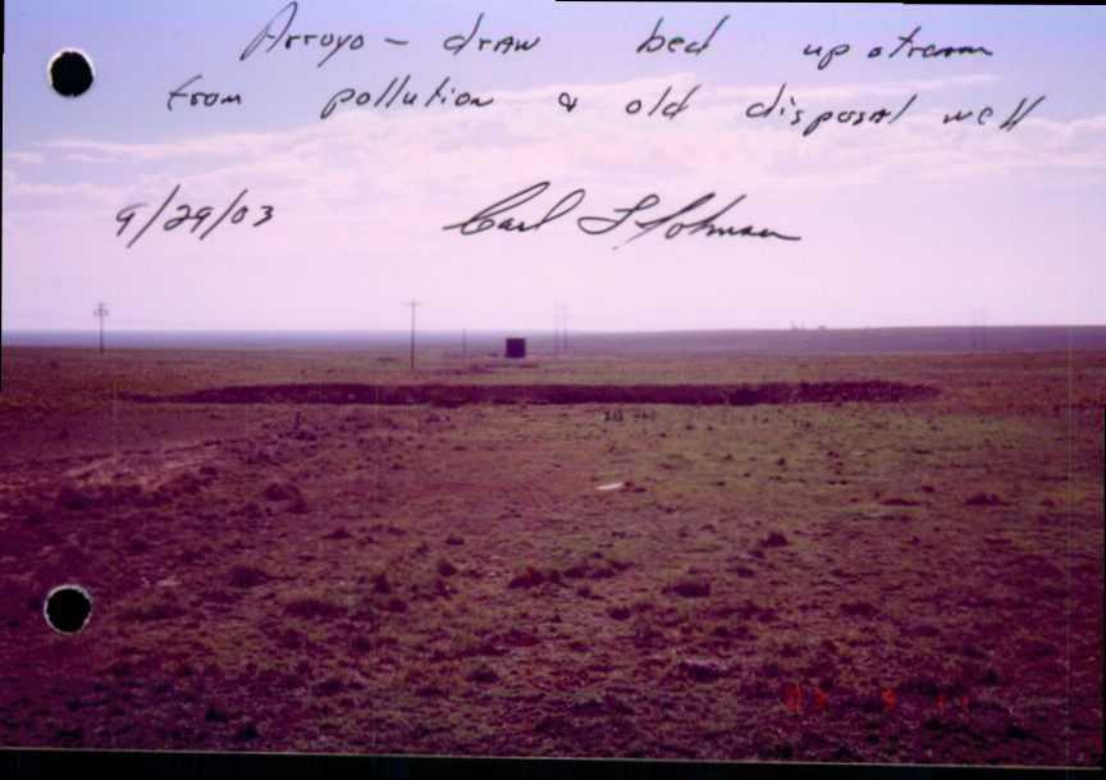
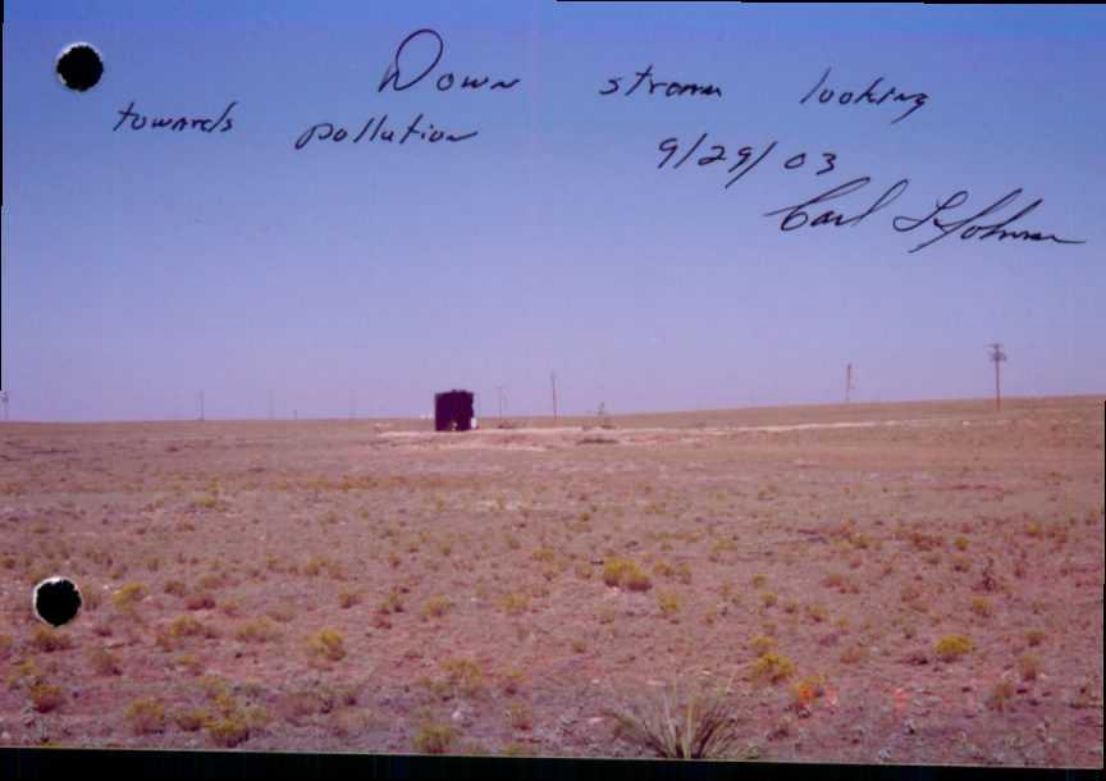
Earl F. Johnson


New disposal
Well & junk pile
Pollution
old well
Photo Taken 9/29/03
Earl L Johnson


Looking up the arroyo from
Tank Battery & pollution
9/29/03
Carl L Johnson


Arroyo - down up stream
from pollution a old disposal
well
9/29/03 Carl Lohman


Arroyo – draw bed up stream
from pollution & old disposal well
9/29/03
Carl L Johnson


Down stream looking
towards pollution
9/29/03
Carl L Johnson


Down stream looking up
Towards pollution
9/29/03
Earl L Stoner
Arroyo

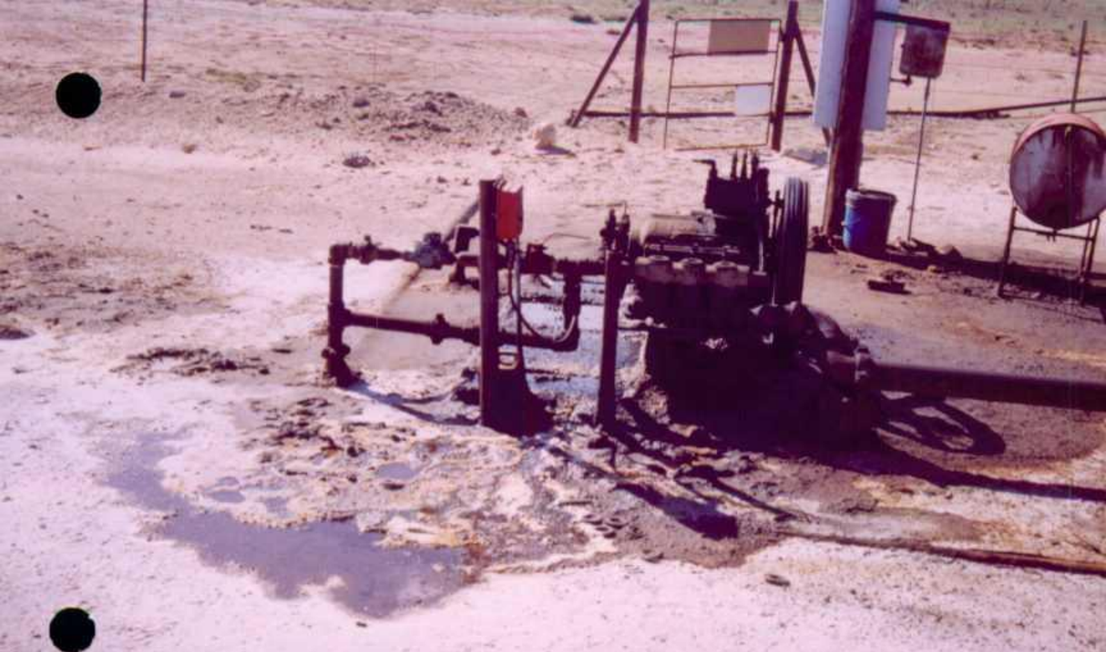

Down storm looking up
to pollution
9/29/03
Carl Lehman
ARROYO


Pipe going from hi pressure
pump to disposal well.
9/29/03 Carl Lohmann

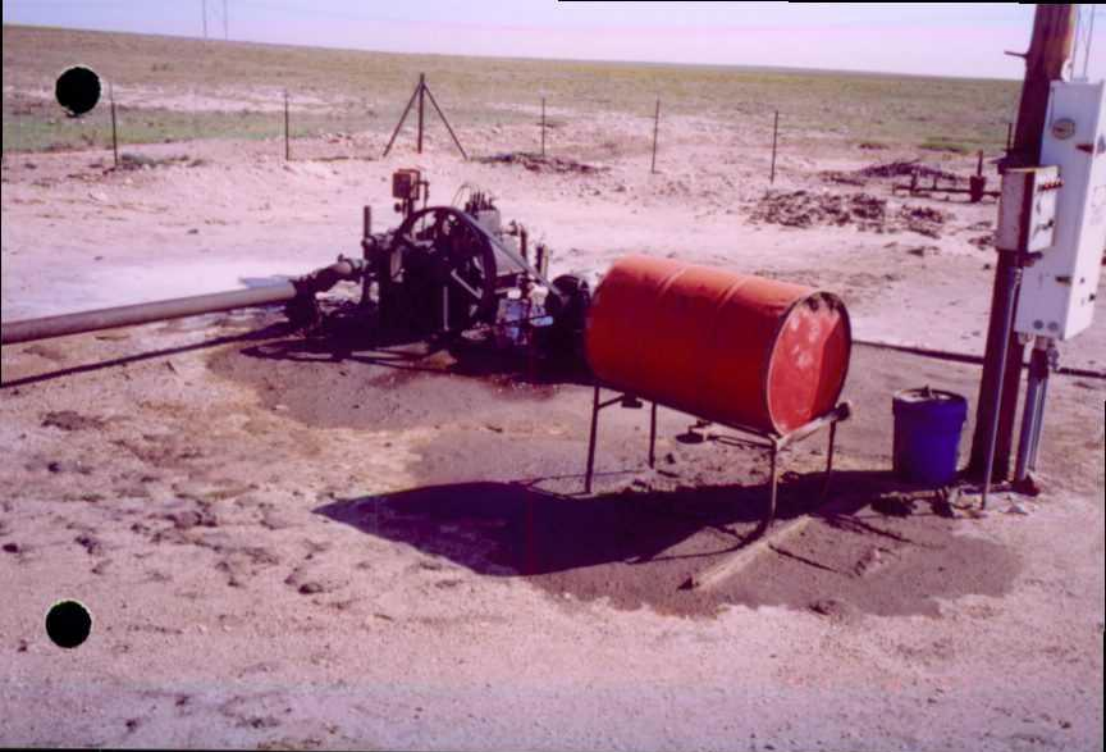
Hi pressure pipeline
Pemex
9/29/03 Carl

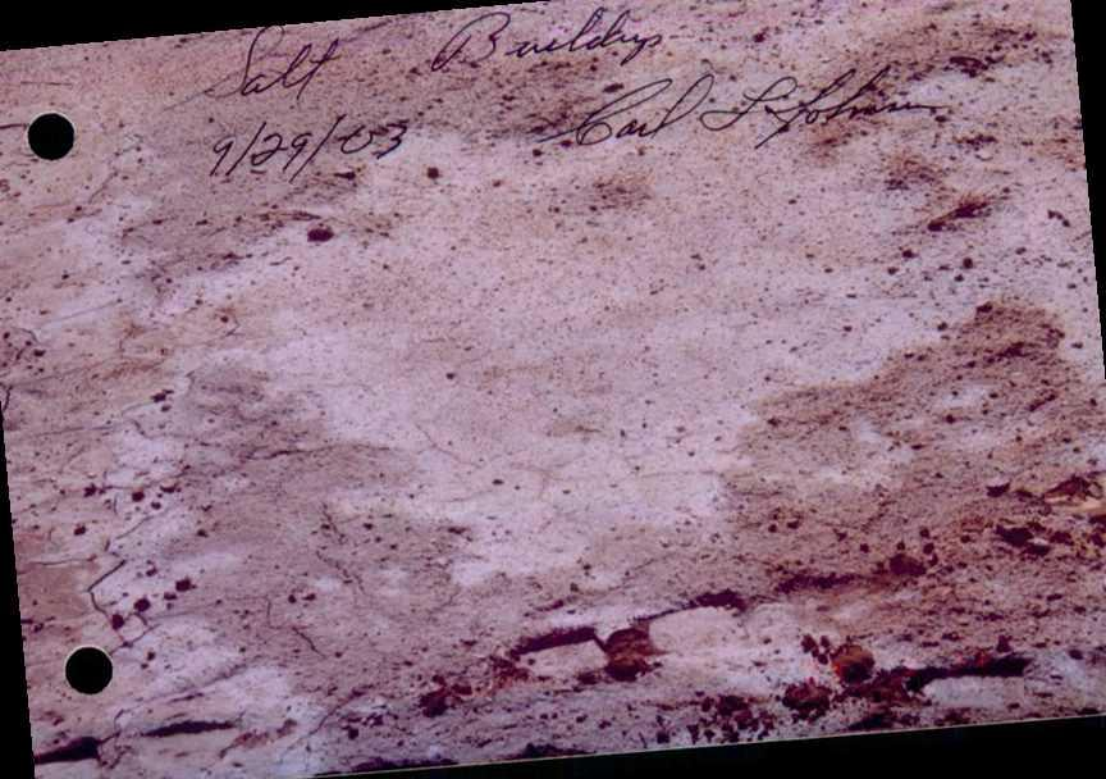

Ponroe debris 9/29/03
Earl Lyohnson


Pearoc Disposal Well
9/29/03
Carl Lohman
Junk



Pumps 9/29/03 Carl L Johnson




Salt Buildings
9/29/03
Carl Lyford

Carl L Johnson

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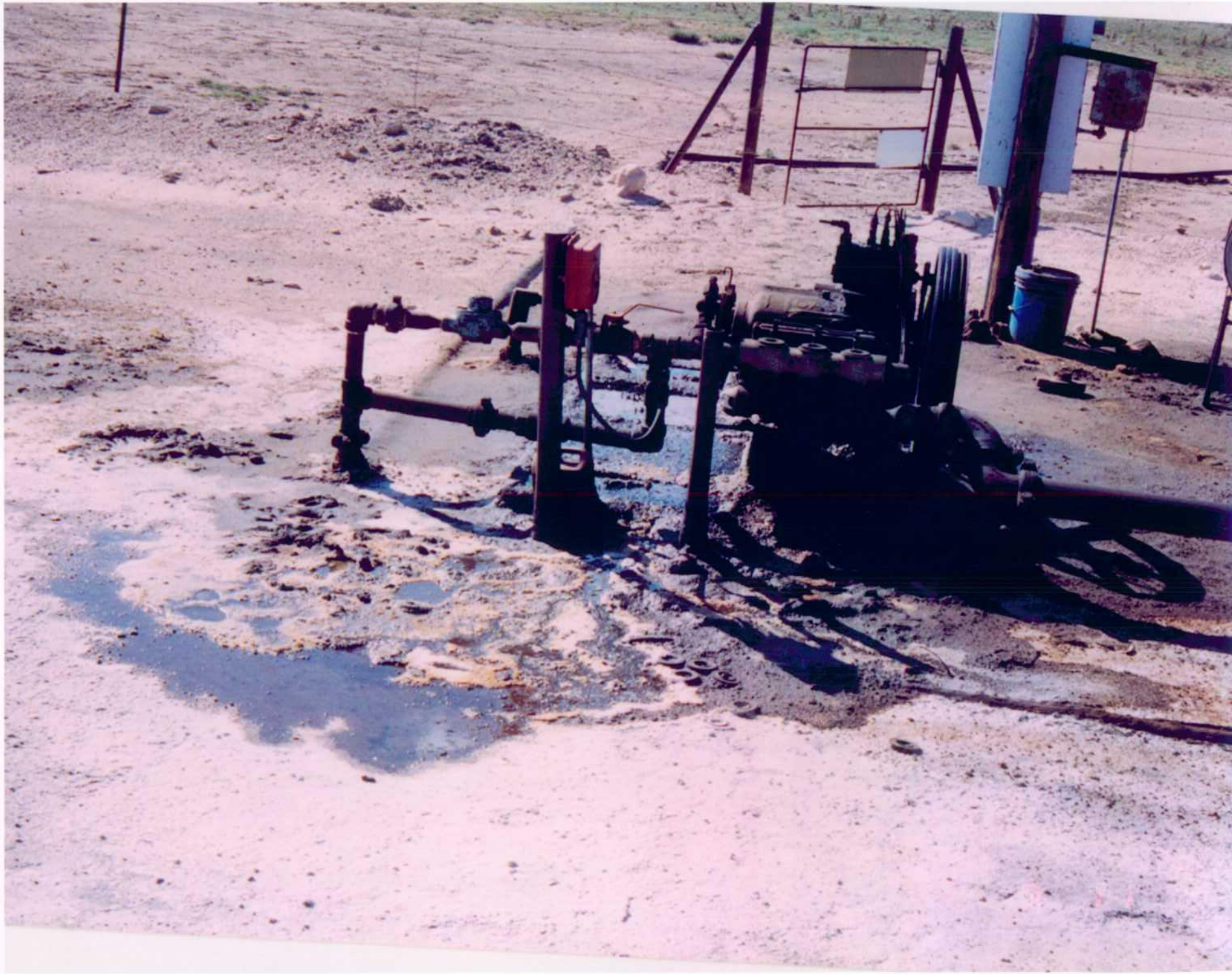
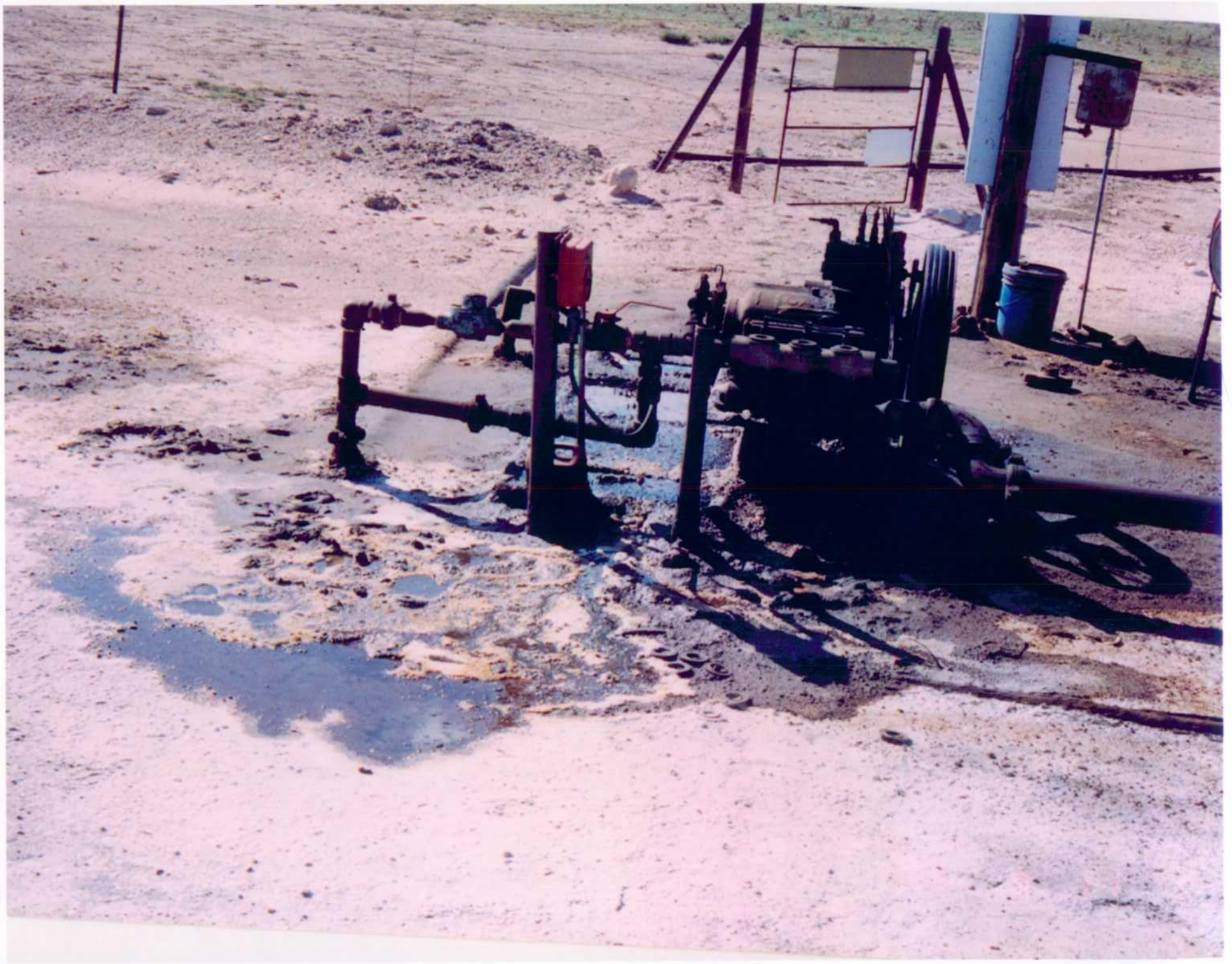
Penrose Sec 23 10-32

Carl L. Johnson

9/29/03

Penroe Sec 23 10-32





Carl T. Johnson

9/29/03

Penrose Sec 23 10-32