

*Denny S. Frost*  
DEPUTY OIL & GAS INSPECTOR

FEB 08 1999

JICARILLA APACHE TRIBE

ENVIRONMENTAL PROTECTION OFFICE

P.O. BOX 507  
DULCE, NEW MEXICO 87528

1984  
137EX  
SUBMIT 1 COPY TO  
NATURAL  
RESOURCE DEPT  
AND OIL -GAS  
ADMINISTRATION

*Approval*  
**PIT REMEDIATION AND CLOSURE REPORT**

Operator: PNM Gas Services ( Conoco ) Telephone: 324-3764

Address: 603 W. Elm Street Farmington, NM 87401

Facility or Well Name: Jicarilla K-22A

Location: Unit: 0 Sec. 2 T. 25 N R. 5 W County Rio Arriba

Pit Type: Separator ☒ Dehydrator ☐ Other ☐

Land Type: Jicarilla Apache

Pit Location: Pit dimensions: length 20' width 20' depth 3'

(Attach diagram) Reference: wellhead ☒ other ☐

Footage from reference: 175'

Direction from reference: 10° Degrees ☐ East of North ☒  
☒ West of South ☐

Depth to Ground Water: (Vertical distance from contaminants to seasonal high water elevation of ground water)

Less than 50 feet	(20 points)	
50 feet to 99 feet	(10 points)	<u>0</u>
Greater than 100 feet	(0 points)	

Wellhead Protection Area: (Less than 200 feet from a private domestic water source, or, less than 1,000 feet from all other water sources)

Yes	(20 points)	
No	(0 points)	<u>0</u>

Distance to Surface Water: (Horizontal distance to perennial lakes, ponds, rivers, streams, creeks, irrigation canals and ditches)

Less than 200 feet	(20 points)	
200 feet to 1,000 feet	(10 points)	
Greater than 1,000 feet	(0 points)	<u>0</u>

Distance to Ephemeral Stream (dry wash): (Horizontal distance to all downgradient streams having a width of at least 10 feet)

Less than or equal to 100 feet	(10 points)	
Greater than 100 feet	(0 points)	<u>0</u>

Distance to Nearest Lake, Playa, or Watering Pond: (Horizontal distance to all downgradient lakes, playas, and livestock or wildlife water ponds)

Less than or equal to 100 feet	(10 points)	
Greater than 100 feet	(0 points)	<u>0</u>

RANKING SCORE (TOTAL POINTS): 0

Date Remediation Started:

9/23/98

Date Completed:

12/15/98 RAD  
~~9/23/98~~

Remediation Method:

Excavation

☒

Approx. Cubic Yards

128 yds.(Check all  
appropriate  
sections)

Landfarmed

☒

Amount Landfarmed (cubic yds):

128 yds.

Other \_\_\_\_\_

Remediation Location:

Onsite

☒

Offsite \_\_\_\_\_

(i.e., landfarmed onsite, name  
and location of offsite facility)

## General Description of Remedial Action:

Removed contaminated soil from all 4 side wells  
and pit bottom as to get a below 100 ppm head space reading  
At 6" depth have hard sandstone layer.  
Excavated pit 25' X 23' X 6'

Ground Water Encountered:

No

☒

Yes \_\_\_\_\_

Depth \_\_\_\_\_

## Final Pit Closure

## Sampling:

(if multiple samples, attach  
sample result and diagram of  
sample locations and  
depths.)

Sample Location

North well, south well, east well & west well @ 3'  
3 points Bottom @ 6'

Sample depth

3' & 6'

Sample date

9/23/98

Sample time

1330

## Sample Results

Soil: Benzene (ppm)

0.780

Water: Benzene (ppb) \_\_\_\_\_

Total BTEX (ppm)

77.680

Toluene (ppb) \_\_\_\_\_

Field headspace (ppm)

1287 ppm

Ethylbenzene (ppb) \_\_\_\_\_

TPH 3200 ppm

Method

TPH-8015

Total Xylenes (ppb) \_\_\_\_\_

Ground Water Sample:

Yes \_\_\_\_\_

No

☒

(If yes, attach sample results)

I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY  
KNOWLEDGE AND MY BELIEF

DATE

9/23/98

PRINTED NAME

Gary Cook  
Roy Burnham

SIGNATURE

Gary Cook

AND TITLE

Environmental Technician IIAFTER REVIEW OF THE PIT CLOSURE INFORMATION, PIT CLOSURE IS APPROVED IN ACCORDANCE  
TO JICARILLA APACHE TRIBE PIT CLOSURE ORDINANCE.

APPROVED: YES

☒

NO \_\_\_\_\_

(REASON):

R.A. Attached

SIGNED:

Ken C Mammall

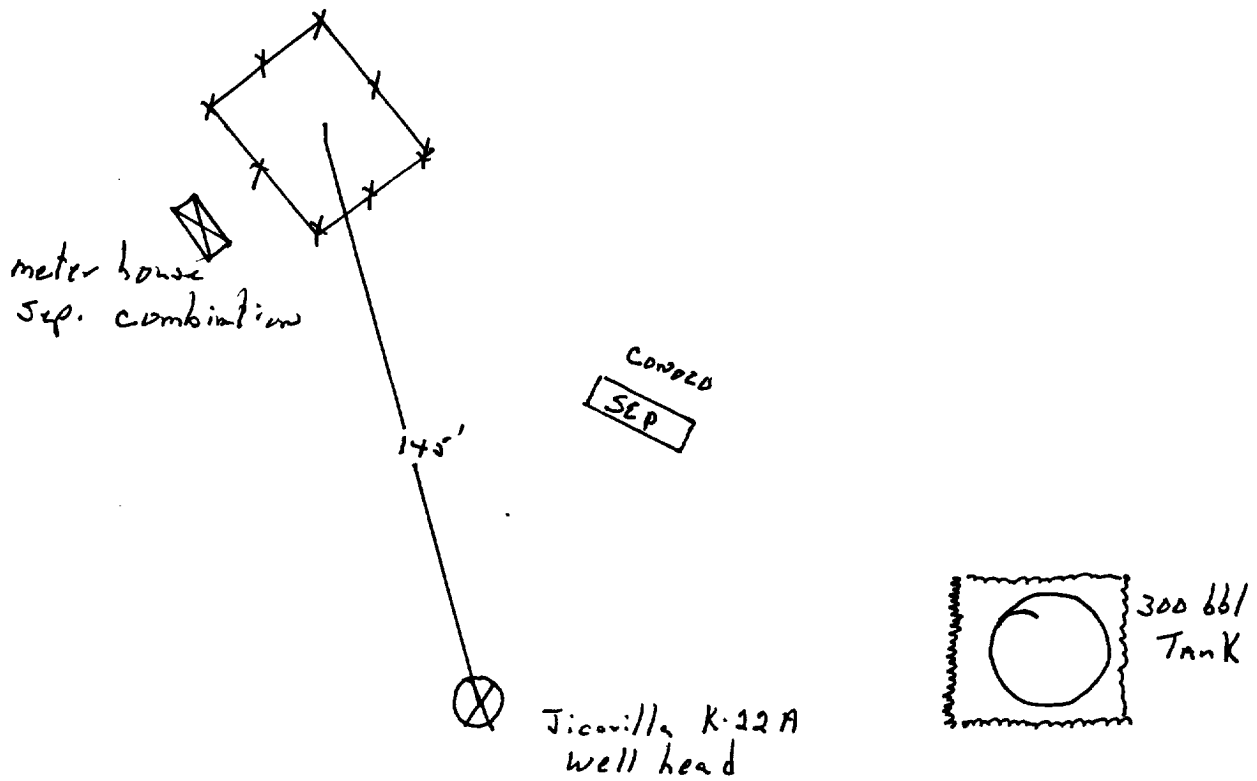
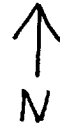
DATE:

11-30-98

Jicavilla K-22A  
Cowoco  
Sec. 2, 25N, 5W, 0

9/23/98

Site diagram:

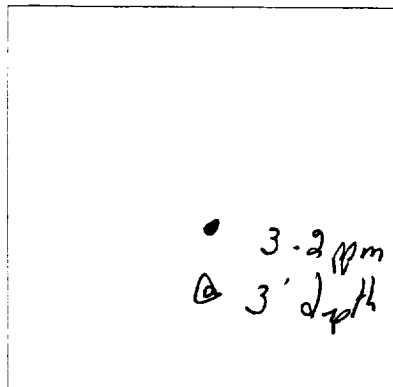


Not to scale

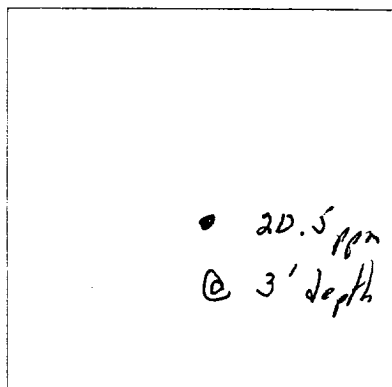
Jicarilla K-22A  
Conoco  
Sec. 2, 25N, 5W, D

9/23/98

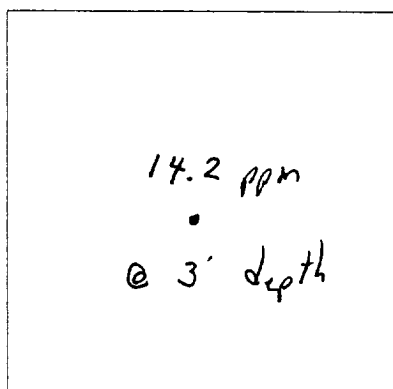
## North Wall



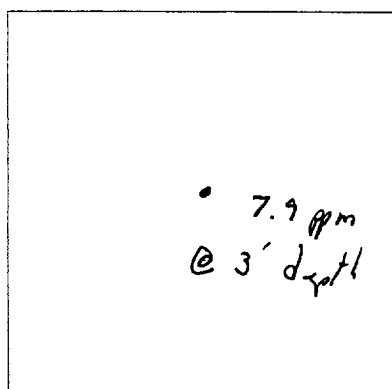
## South Wall



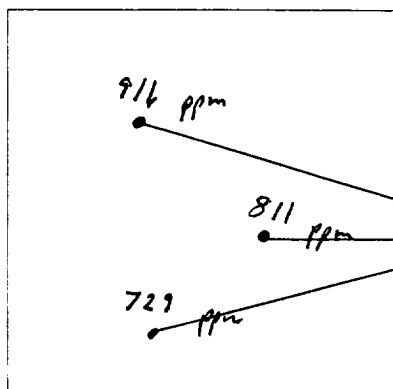
## East Wall



## West Wall



## Bottom



3 pt. comp.  
head space reading = 1287 ppm

849 ppm  
@ 6' depth  
hard sandstone layer

OFF: (505) 325-5667



LAB: (505) 325-1556

**On Site Technologies, LTD.**

**Date:** 08-Oct-98

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**CLIENT:** PNM - Public Service Company of NM

**Project:** Jicarilla K-22A

**Lab Order:** 9809071

## **CASE NARRATIVE**

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Samples were analyzed using the methods outlined in the following references:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives.

OFF: (505) 325-5667



LAB: (505) 325-1556

## ANALYTICAL REPORT

Date: 08-Oct-98

Client: PNM - Public Service Company of NM  
Work Order: 9809071  
Lab ID: 9809071-02A Matrix: SOIL  
Project: Jicarilla K-22A

Client Sample Info: Jicarilla K-22A  
Client Sample ID: 9809231330; Bottom @ 6ft.  
Collection Date: 9/23/98 1:30:00 PM  
COC Record: 7431

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
<b>DIESEL RANGE ORGANICS</b>		<b>SW8015</b>				
T/R Hydrocarbons: C10-C28	3200	25		mg/Kg	1	Analyst: HR 10/5/98
<b>BTEX</b>		<b>SW8020A</b>				Analyst: DC
Benzene	780	500		µg/Kg	500	9/29/98
Toluene	17000	1000		µg/Kg	500	9/29/98
Ethylbenzene	5900	500		µg/Kg	500	9/29/98
m,p-Xylene	44000	1000		µg/Kg	500	9/29/98
o-Xylene	10000	500		µg/Kg	500	9/29/98

77 680  
77.68 ppm

### Qualifiers:

PQL - Practical Quantitation Limit

ND - Not Detected at Practical Quantitation Limit

J - Analyte detected below Practical Quantitation Limit

B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Surr: - Surrogate

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## ANALYTICAL REPORT

Date: 08-Oct-98

**Client:** PNM - Public Service Company of NM  
**Work Order:** 9809071  
**Lab ID:** 9809071-01A     **Matrix:** SOIL  
**Project:** Jicarilla K-22A

**Client Sample Info:** Jicarilla K-22A  
**Client Sample ID:** 9809231345; Wall @ 3ft.  
**Collection Date:** 9/23/98 1:45:00 PM  
**COC Record:** 7431

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
<b>DIESEL RANGE ORGANICS</b>		<b>SW8015</b>				
T/R Hydrocarbons: C10-C28	27	25		mg/Kg	1	Analyst: HR 10/2/98
<b>BTEX</b>		<b>SW8020A</b>				Analyst: DC
Benzene	ND	1		µg/Kg	1	9/29/98
Toluene	ND	2		µg/Kg	1	9/29/98
Ethylbenzene	ND	1		µg/Kg	1	9/29/98
m,p-Xylene	ND	2		µg/Kg	1	9/29/98
o-Xylene	3.5	1		µg/Kg	1	9/29/98

3.5

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Surr: - Surrogate

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OFF: (505) 325-5667



LAB: (505) 325-1556

**ANALYTICAL REPORT**

Date: 08-Oct-98

**Client:** PNM - Public Service Company of NM  
**Work Order:** 9809071  
**Lab ID:** 9809071-01A     **Matrix:** SOIL  
**Project:** Jicarilla K-22A

**Client Sample Info:** Jicarilla K-22A  
**Client Sample ID:** 9809231345; Wall @ 3ft.  
**Collection Date:** 9/23/98 1:45:00 PM  
**COC Record:** 7431

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
<b>DIESEL RANGE ORGANICS</b>		<b>SW8015</b>				Analyst: HR
T/R Hydrocarbons: C10-C28	27	25		mg/Kg	1	10/2/98
<b>BTEX</b>		<b>SW8020A</b>				Analyst: DC
Benzene	ND	1		µg/Kg	1	9/29/98
Toluene	ND	2		µg/Kg	1	9/29/98
Ethylbenzene	ND	1		µg/Kg	1	9/29/98
m,p-Xylene	ND	2		µg/Kg	1	9/29/98
o-Xylene	3.5	1		µg/Kg	1	9/29/98

3.5  
 0.0035 ppm

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Surr: - Surrogate

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## ***Environmental Services***

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Well Name:	Jicarilla K #22A
Well Legals:	Unit O, Sec 2, T25N, R5W
Pit Type:	Separator
Horizontal Distance to Surface Water:	Greater than 1,000 feet
Groundwater Depth:	Greater than 100 feet

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### **RISK ANALYSIS**

PNM requests closure of their former pit on the Jicarilla K #22A well site using a limited risk analysis based on the following conditions:

1. Groundwater is estimated to be at a depth of 177 feet based upon the elevation of the site and the elevation of the nearest "listed" or "named" wash. (Reference: Lapis Point, NM series 7.5 minute topographic map.)
2. The site is located outside of the "vulnerable area" as defined under OCC Order No. R-7940-C.
3. PNM excavated 128 cubic yards of soil from the former pit. Subsurface lateral contamination has been remediated (see attached analytical results). Source removal minimizes the possibility of surface water contamination.
4. Sandstone was encountered at 6 feet below ground surface. Bedrock/sandstone provides a barrier between remaining contamination and groundwater. Vertical migration through bedrock or sandstone to groundwater is unlikely.
5. PNM excavated and performed remediation to the maximum depth and horizontal extent practicable.

PNM believes their former pit on the Jicarilla K #22A well site poses minimal threat to groundwater, human health and the environment based upon our past experience in excavating over 800 pits.

JICARILLA APACHE TRIBE  
ENVIRONMENTAL  
PROTECTION OFFICE  
P.O. BOX 507  
DULCE, NEW MEXICO 87528

SUBMIT 1 COPY TO  
NATURAL  
RESOURCE DEPT  
AND OIL-GAS  
ADMINISTRATION

ON-SITE SOIL REMEDIATION REPORT

<b>Operator:</b> PNM Gas Services ( <u>Conoco</u> ) <b>Telephone:</b> <u>324-3764</u>	
<b>Address:</b> <u>603 W. Elm Street Farmington, NM 87401</u>	
<b>Facility or Well Name:</b> <u>Jicarilla K-22A</u>	
<b>Location:</b>	<b>Unit:</b> <u>0</u> <b>Sec.</b> <u>2</u> <b>T.</b> <u>25 N</u> <b>R.</b> <u>5 W</u> <b>County</b> <u>Rio Arriba</u>
<b>Land Type:</b> <u>Jicarilla Apache</u>	
<b>Date Remediation Started:</b> <u>9-23-98</u> <b>Date Completed:</b> <u>9/23/98</u>	
<b>Remediation Method:</b>	<b>Approx. cubic yards</b>
Landfarmed <u>X</u>	<u>128 yds</u>
Composted <u>    </u>	
Other <u>    </u>	
<b>Depth to Ground Water:</b> (pts.) <u>0</u>	<b>Final Closure Sampling:</b>  <b>Sampling Date:</b> <u>11/23/98</u> <b>Time</b> <u>1232</u> <b>Sampling Results:</b> <b>Field Headspace (ppm)</b> <u>27.2</u> <b>TPH (ppm)</b> <u>79.0</u> <b>Method</b> <u>TPH-80W</u> <b>Other</b> <u>    </u>
<b>Distance to an Ephemeral Stream:</b> (pts.) <u>0</u>	
<b>Distance to Nearest Lake, Playa, or Watering Pond:</b> (pts.) <u>0</u>	
<b>Wellhead Protection Area:</b> (pts.) <u>0</u>	
<b>Distance to Surface Water:</b> (pts.) <u>0</u>	
<b>Ranking Score (Total Points):</b> <u>0</u>	
<p>I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF</p> <p><b>DATE</b> <u>12-9-98</u> <b>PRINTED NAME</b> <u><del>Ronald A. Dedrick</del> Gary Cook</u></p> <p><b>SIGNATURE</b> <u><i>Gary Cook</i></u> <b>AND TITLE</b> <u>Environmental Technician III</u></p>	
<p>AFTER REVIEW OF THE SOIL REMEDIATION INFORMATION, ON-SITE REMEDIATION APPROVED IN ACCORDANCE TO THE JICARILLA APACHE TRIBE PIT CLOSURE ORDINANCE</p> <p><b>APPROVED:</b> YES <u>X</u> NO <u>    </u> <b>(REASON)</b> <u>use as Backfill</u></p> <p><b>SIGNED:</b> <u><i>Kent M...</i></u> <b>DATE:</b> <u>12-15-98</u></p>	

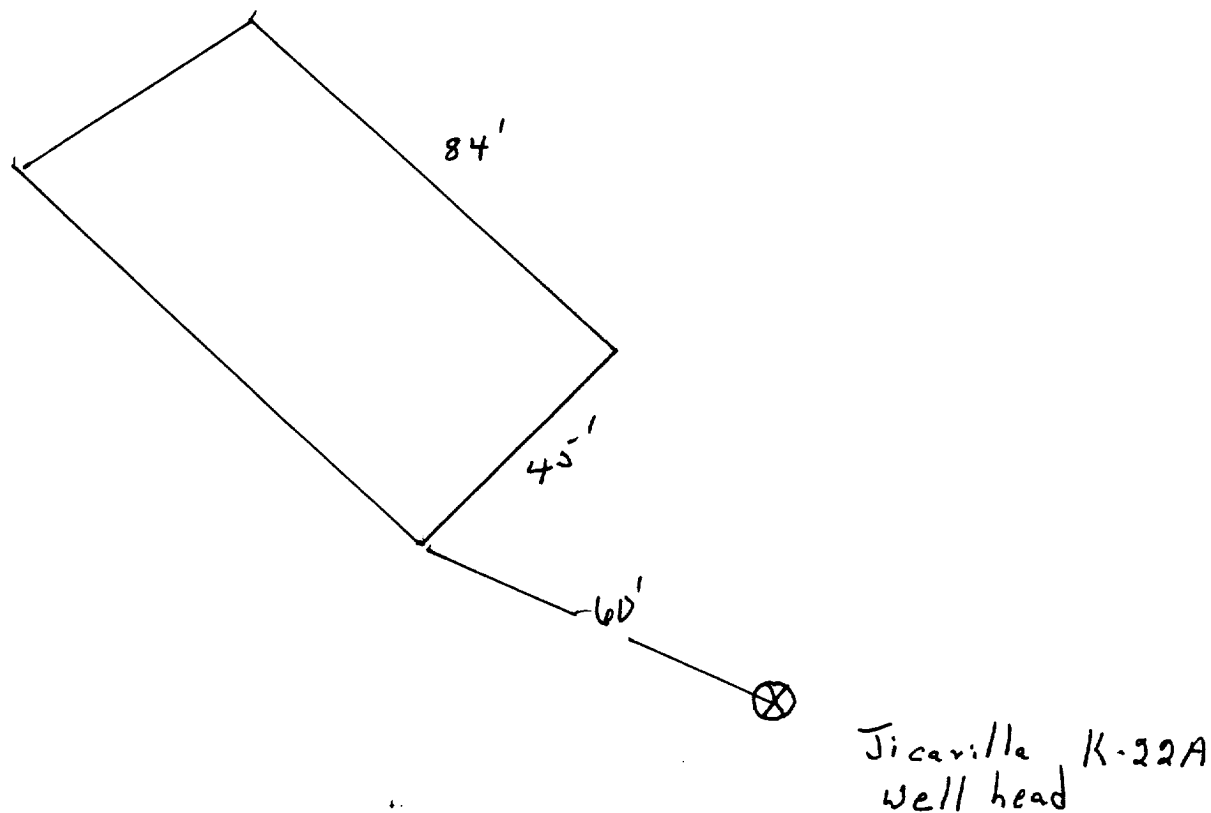
Jicarilla K-22A

9/24/98

CONOCO

Sec. 2, 25N, 5W, 0

Land farm location: On Site



2"-12" depth

soil vapor headspace  $\approx 27.2 \mu\text{m}$

OFF: (505) 325-5667



LAB: (505) 325-1556

**On Site Technologies, LTD.**

**Date:** 04-Dec-98

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**CLIENT:** PNM - Public Service Company of NM  
**Project:** Jicarilla Pit Remediation Landfarms  
**Lab Order:** 9811075

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## **CASE NARRATIVE**

Samples were analyzed using the methods outlined in the following references:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives.

OFF: (505) 325-5667



LAB: (505) 325-1556

## ANALYTICAL REPORT

Date: 04-Dec-98

<b>Client:</b>	PNM - Public Service Company of NM	<b>Client Sample Info:</b>	Jicarilla K-22A LF
<b>Work Order:</b>	9811075	<b>Client Sample ID:</b>	9811231232; 6pt Composite
<b>Lab ID:</b>	9811075-06A	<b>Matrix:</b>	SOIL
<b>Project:</b>	Jicarilla Pit Remediation Landfarms	<b>Collection Date:</b>	11/23/98 12:32:00 PM
		<b>COC Record:</b>	7405

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
<b>DIESEL RANGE ORGANICS</b>		<b>SW8015</b>				Analyst: HR
T/R Hydrocarbons: C10-C28	79	25		mg/Kg	1	12/3/98

**Qualifiers:**

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