

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Risk determined by
BTEX 271
RECEIVED
SEP 23 1999

PIT REMEDIATION AND CLOSURE REPORT OIL CON. DIV.
DIST. 3

Operator: Burlington Resources (Williams Field Services) **Telephone:** (801) 584-6361
Address: P.O. Box 58900, Salt Lake City, Utah 84158-0900
WellName: SJ 27-4 UNIT #50 (86591)
Location: Unit or Qtr/Qtr Sec K Sec 19 T 27N R 4W County Rio Arriba
PitType: Dehydrator
LandType: Fee

Pit Location: Pit dimensions: length 24 ft., width 29 ft., depth 13 ft.
(Attach diagram)

Reference: Wellhead

Footage from reference: 66 ft.

Direction from reference: 261 Degrees East of North

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)	
Greater than 100 feet	(0 points)	<u>0</u>

Wellhead Protection Area:

(Less than 200 feet from a private
domestic water source, or; less than
1000 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)	<u>0</u>

Ranking Score (TOTAL POINTS): 0

Date Remediation Started: 12/13/96

Date Completed: 12/20/96

Remediation Method: Excavation ☒

Approx. Cubic Yard 340

(check all appropriate sections)

Landfarmed ☒Insitu Bioremediation ☐

Other Landfarmed soil after mechanical aeration.

Remediation Location: Onsite ☒ Offsite

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

General Description Of Remedial Action:

The pit was excavated to remove gross petroleum contamination. The excavated material was mechanically aerated and placed into an onsite landfarm. Returned to site 4/3/99 and utilized hydraulic soil probe to collect sample at 27'-28'. TPH: ND BTEX: ND

Ground Water Encountered: No

Final Pit:

Sample location SJ 27-4 #50 V-EX-01

Closure Sampling:

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

A composite sample, made up of 4 points from each excavation face, was collected..

Sample depth

Sample date 12/17/96

Sample time 12:30

Sample Result

Benzene (ppm) <1.95

Total BTEX (ppm) 63.9

Field Headspace (ppm)

TPH (ppm) 522

Ground Water Sample: No

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

DATE 9-20-99

SIGNATURE  FOR WFS

PRINTED NAME AND TITLE MARK HARVEY

PROJECT COORDINATOR



Environmental Services
P.O. Box 58900
Salt Lake City, UT 84158-0900

Pit Closure and Retirement Addendum- Risk Assessment

The sample analyzed for confirmation at this site exhibited slightly elevated levels of xylene. Xylene toxicity information indicates that such low levels (<200 ppm) pose very low risk to human health and the environment. This conclusion is based in part on the information below:

Toxicity Information

Xylene is a colorless liquid with a strong, sweetish aromatic odor. Studies have indicated that it is neither a carcinogen or mutagen. Bio-accumulation of xylene is limited due to the fact that it is rapidly metabolized and eliminated from the body in urine within a few hours. Rats and dogs exposed to xylene vapor for 13 weeks at 180 - 810 ppm showed no adverse effects related to dose or treatment. (1)

Environmental Effects

Xylene released to soil will volatilize and leach into the ground where it will degrade 70% under aerobic conditions in approximately 10 days or under anaerobic (six months before degradation starts) denitrifying conditions.(2) If released to surface water, the half life of xylene is approximately 1-5 days with the main attenuation process being volatilization.

When released to the atmosphere, xylene may degrade by reactions with hydroxyl radicals which are produced photochemically. As a result of this reaction, xylene has been determined to have a half life of 1.5 hours in summer and 15 hours in winter.(2)

EPA's Office of Air Quality Planning and Standards, has evaluated mixed xylenes for chronic toxicity in order to determine a hazard ranking under Section 112(g) of the Clean Air Act Amendments and assigned a composite score of 8. The scores are based on the minimal effect-dose and a rating on the type of effect. Scores range from 1 to 100, with 100 representing the most toxic. (3)

Based on an evaluation of topography, this site is believed to have ground water greater than 75' below ground surface. Due to the immobility of xylene through soil and a lack of continuous transporting mechanisms, it is very likely that the residual xylene remaining in the pit will degrade in the short term under existing conditions, or certainly during the life of the producing well. Granular fertilizer has been added to the soil in order to facilitate further degradation. Observations and data collected from other sites suggests that the concentration of xylene would diminish vertically and likely be less than 10 ppm within the next 1-5 feet of soil depth.

Since there are no nearby receptors or domestic water sources, this site poses little risk to human health and the environment. Closure is justified based on the relatively low total petroleum hydrocarbon (TPH) concentration and the fact that benzene, toluene, and ethylbenzene meet applicable closure criteria.

(1) Canadian Department of Occupational Health and Database, CCINFO Xylene 1991.

(2) *Handbook of Environmental Fate and Exposure Data for Organic Chemicals*, Vol 1, Large Production and Priority Pollutants, Philip H. Howard. Lewis Pub. 1989.

(3) USEPA. *Technical Background Document to Support Rulemaking Pursuant to the Clean air Act Section 112(g). Ranking of Pollutants with Respect to Hazard to Human Health*. EPAB450/3-92-010. Emissions Standards Division, Office of Air Quality Planning and Standards, Research Triangle Park, NC. 1994.

PIT RETIREMENT FORM

86591

Date: 12/13/96

Weather SUNNY ~45°

Well Name 5527-4 #50BK Operator MERIDIAN

Sec 19 T 27N R 4W UL 15005
1575 N

Land Type: BLM STATE FEE INDIAN

County RIO ARriba

One Call Made (505-765-1234)? ☒ N

Line Marking Evident? ☒ N

Pit Location:

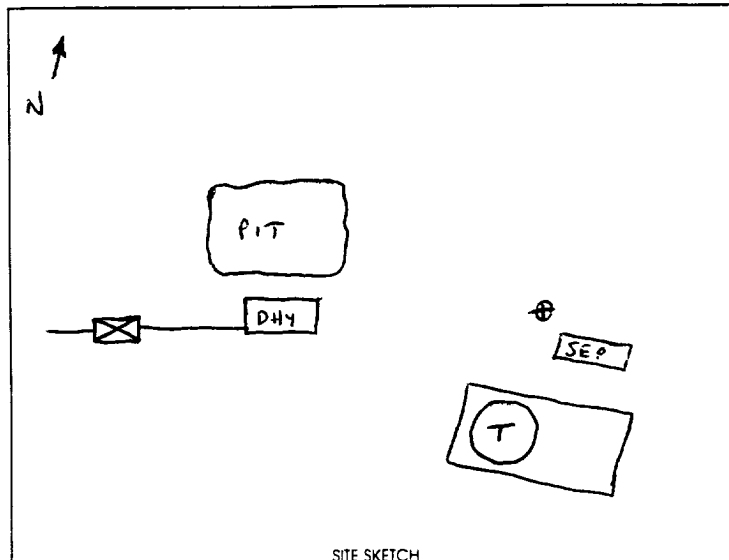
Reference Wellhead ☒ Other _____

Distance from: 66'

Direction: 261 Degrees ☒ E ☒ N ☒ S
_____ of _____

Starting Pit Dimensions 9' x 9' x 3'

Final Pit Dimensions 24' x 29' x 13'



SITE SKETCH

Organic Vapor Readings: Start _____
@ 2' _____
@ 4' _____
@ 6' _____
@ 8' _____
@ _____
@ 13 _____

Soil Description: SILTY SAND
_____ X " _____
_____ X " _____
_____ SILTY " w/CLAY _____
_____ " " " _____
_____ " " _____
_____ X SAND _____

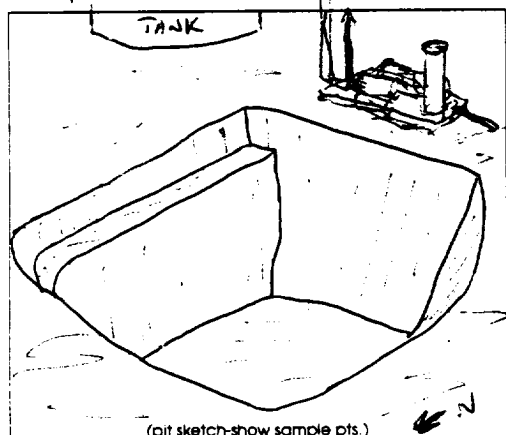
Well Proximity To: Residence, Domestic Water Well, Stock Well < 1 MILE
Arroyo, Wash, Lake, Stream ~ 1/2 MILE NW
Estimated or Known Distance to Ground Water > 100'

Source of Backfill (if other than processed material) _____

Samples collected: Type Progress: Verification: ID 5527-4 #50-V-EX01 soil / water
Progress: Verification: ID 5527-4 #50 V-LF-01 soil / water
Progress: Verification: ID _____ soil / water

Sample sent to Lab Via: Courier

Hand Carried Other _____ Preservative: ICE Other _____



(pit sketch-show sample pts.)

Comments: SET UP + BEGIN EXCAVATING — SANDY MATERIAL
w/ SILT — DEHY WALL SHOWS SLIGHT STANDING — MATERIAL @
6' HAS MODERATE HYDROCARBON ODOR — CONTINUED TO 13' DEPTH
— DUE TO SLOWING + EQUIPMENT POSITION — CEASE EXCAVATING
— CUT TERRACES + DEEM PIT —

Soil Shipped to: _____

Prepared by: M. Harvey

Q W A L L A B O R A T O R I E S , I N C .

2911 ROTARY TERRACE, P.O. BOX 562/PITTSBURG, KS 66762/(316)232-1970

LABORATORY REPORT:

REFERENCE #: 9904322

SENT WILLIAMS FIELD SERVICE
TO: 295 CHIPETA WAY
SALT LAKE CITY, UTAH 84158
MARK HARVEY
PROJECT: NM PITS

DATE REPORTED: 04/19/99
DATE COLLECTED: 04/03/99
DATE RECEIVED: 04/09/99

Reference Fraction: 9904322-02A
Sample ID: SJ27-4 #50 @27-28/86591
Sample Date Collected: 04/03/99 11:30:00

Sample Matrix: SOIL

TEST	METHOD	RESULT	UNITS	DL	ANALYZED	BY
TPH	SW846-8015	ND	MG/KG	2	04/17/99	KKL
BTEX	SW846 8021			3.0		
BENZENE		ND	MG/KG	0.050	04/15/99	JDH
TOLUENE		ND	MG/KG	0.050	04/15/99	JDH
ETHYLBENZENE		ND	MG/KG	0.050	04/15/99	JDH
TOTAL XYLENES		ND	MG/KG	0.050	04/15/99	JDH
BFB (SURROGATE)		86	125	75		

ND=NONE DETECTED
DL=DETECTION LIMIT
SU=STANDARD UNITS
B=DETECTED IN METHOD BLANK

PROBE SAMPLE

APPROVED BY:

TERRY KOESTER (X)
LABORATORY DIRECTOR

90.

Organic Analysis - Pit Closure

Williams Field Services

Project ID:	OCD Pits	Report Date:	12/18/96
Sample ID:	SJ 27-4 #50 V-EX-01	Date Sampled:	12/17/96
Lab ID:	5998	Date Received:	12/17/96
Sample Matrix:	Soil	Date Extracted:	12/18/96
Preservative:	Cool	Date Analyzed:	12/18/96
Condition:	Intact		

Target Analyte	Concentration (mg/kg)	Detection Limit (mg/kg)
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Total Aromatic Hydrocarbons

63.9

Benzene	ND	1.95
Toluene	7.52	1.95
Ethylbenzene	2.71	1.95
m,p-Xylenes	42.9	3.91
o-Xylene	10.7	1.95

Total Recoverable Petroleum Hydrocarbons

522

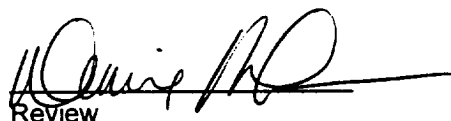
48.6

Quality Control:	<u>Surrogate</u>	<u>Percent Recovery</u>	<u>Acceptance Limits</u>
	Trifluorotoluene	95	81 - 117%
	Bromofluorobenzene	104	74 - 121%

Reference: Method 5030, Purge and Trap; Method 8020, Aromatic Volatile Organics;
Test Methods for Evaluating Solid Wastes, SW-846, United States
Environmental Protection Agency, Final Update I, July, 1992.

Method 3550 - Sonication Extraction; Test Methods for Evaluating Solid Waste,
SW-846, United States Environmental Protection Agency, September, 1986;
Method 418.1 - Petroleum Hydrocarbons, Total Recoverable; Chemical Analysis of
Water and Waste, United States Environmental Protection Agency, 1978.

Comments:


Review



Organic Analysis - Pit Closure

Williams Field Services

Project ID: OCD Pits
Sample ID: SJ 27-4 #50 V-LF-01
Lab ID: 5997
Sample Matrix: Soil
Preservative: Cool
Condition: Intact

Report Date: 12/18/96
Date Sampled: 12/17/96
Date Received: 12/17/96
Date Extracted: 12/18/96
Date Analyzed: 12/18/96

Target Analyte	Concentration (mg/kg)	Detection Limit (mg/kg)
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Total Aromatic Hydrocarbons

28.0

Benzene	ND	1.62
Toluene	2.63	1.62
Ethylbenzene	ND	1.62
m,p-Xylenes	19.8	3.24
o-Xylene	5.57	1.62

Total Recoverable Petroleum Hydrocarbons

402

24.0

Quality Control:

Surrogate

Percent Recovery

Acceptance Limits

Trifluorotoluene	99	81 - 117%
Bromofluorobenzene	103	74 - 121%

Reference:

Method 5030, Purge and Trap; Method 8020, Aromatic Volatile Organics;
Test Methods for Evaluating Solid Wastes, SW-846, United States
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Comments:

Review