State of New Mexico
Energy, Minerals and Natural Resources Department

Risk Ranking

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

PIT REMEDIATION AND CLOSURE REPORT

Operator: Burlington Resources (Williams Field Services) Telephone: (801) 584-6361

Address: P O. Box 58900, Salt Lake City, Utah 84158-0900

WellName: SJ 27-5 UNIT #78 (73417)

Location: Unit or Qtr/Qtr Sec D Sec 5 T 27N R 5W County Rio Arriba

PitType Dehydrator

LandType: BLM

Pit Location: Pit dimensions: length 20 ft., width 17 ft., depth 7 ft.
(Attach diagram)

Reference: Wellhead

Footage from reference: 86 ft.

Direction from reference: 60 Degrees 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) Greater than 100 feet (0 points)	10
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)	0
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)	0
	Ranking Score (TOTAL POINTS):	10

Date Remediation Started: 11/26/96 Date Completed: 2/28/97

Remediation Method: (check all appropriate sections) Excavation ☑ Approx. Cubic Yard 90

Landfarmed ☑ Insitu Bioremediation ☐

Other Landfarmed soil after mechanical aeration.

Remediation Location: (ie. landfarmed onsite, name and location of offsite facility) Onsite ☑ Offsite

General Description Of Remedial Action:

The pit was excavated to remove gross petroleum contamination. The excavated material was mechanically aerated, mixed with fertilizer, and placed into an onsite landfarm. After remediation goals were confirmed, the soil was returned to the excavation.

Ground Water Encountered: No

Final Pit: Closure Sampling: (if multiple samples, attach sample results and diagram of sample locations and depths)

Sample location SJ 27-5 #78 V-EX-01

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

Sample depth Up to 7 feet.

Sample date 12/4/96 Sample time 14:15

Sample Result

Benzene (ppm) 0.97

Total BTEX (ppm) 162

Field Headspace (ppm)

TPH (ppm) 8,430

Ground Water Sample: No

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

DATE 12-28-01

SIGNATURE M. Harvey

PRINTED NAME AND TITLE Mark Harvey for Williams Field Services Project Coord.

73417

PIT RETIREMENT FORM

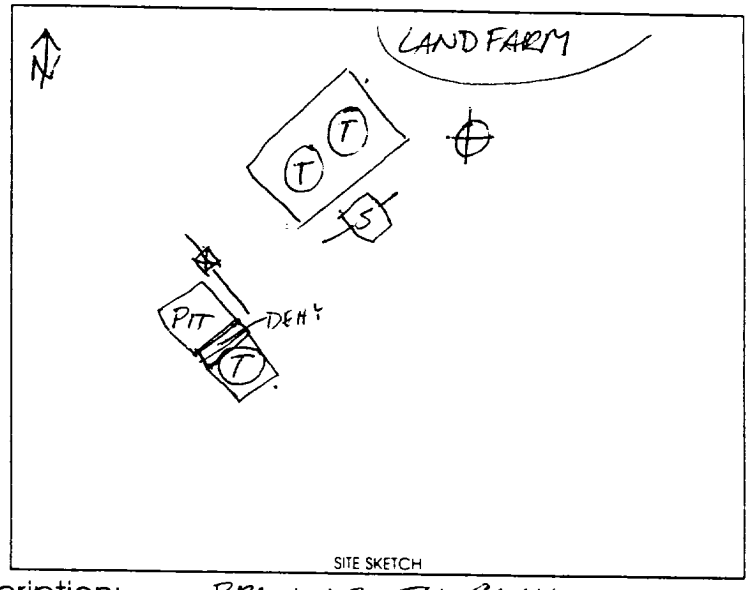
Date: 11/2/90 Weather CLOUDY/40°/RAIN/SNOW

Well Name SJ 27-5 #78 Operator BURLINGTON RESOURCES Sec 5 T 27N R 5W UL 14/M/P 1980 E

Land Type: (BLM) STATE FEE INDIAN County RIO ARRIBA

One Call Made (505-765-1234)? (Y) N

Line Marking Evident? (Y) N



SITE SKETCH

Pit Location:

Reference Wellhead X Other

Distance from: 86'

Direction: 60° Degrees ___ E N ___ of X W S X

Starting Pit Dimensions 10' x 10' x 2'

Final Pit Dimensions 20' x 17' x 7'

Organic Vapor Readings: Start ___

@ 2' ___

@ 4' ___

@ 6' ___

@ 8' ___

@ ___

@ ___

Soil Description: BROWN SILTY CLAY

GRAY SILTY CLAY

" "

" "

D

Well Proximity To: Residence, Domestic Water Well, Stock Well NONE

Arroyo, Wash, Lake, Stream >500 feet to MUNOZ WASH

Estimated or Known Distance to Ground Water >100 feet

Source of Backfill (if other than processed material ___

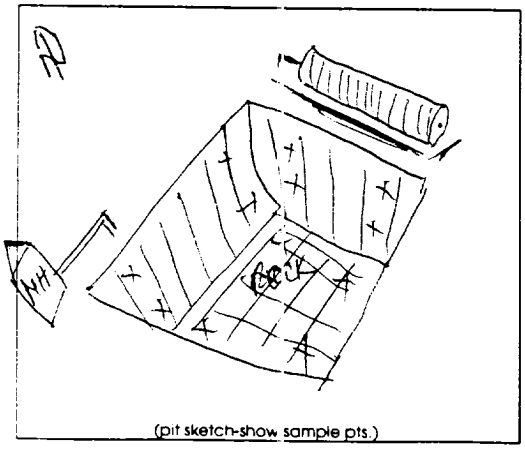
Samples collected: Type

Progress: Verification: ID 27-5 2F-V-02 / ~~275 EX-V-02~~ (soil) / water

Progress: Verification: ID ~~SJ 27-5 #78 V-LF-02~~ soil / water

Progress: Verification: ID 275-EX-V-02 (soil) / water

Sample sent to Lab Via: Courier (Hand Carried) Other ___ Preservative: (ICE) Other ___



(pit sketch-show sample pts.)

Comments: SET UP, EXCAVATE, SHRED MATERIAL, ADD FERTILIZER, LANDFARM MATERIAL ONSITE. EXCAVATION WAS LIMITED BY EQUIPMENT ON THREE SIDES, AND ROCK WALL AND FLOOR.

Soil Shipped to: ___

Prepared by: [signature]

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 the San Juan 27-5 #78 exhibited elevated levels of total petroleum hydrocarbons (TPH) and / or BTEX. Toxicity information indicates that such levels pose little risk to human health and the environment. This conclusion is based in part on the information below:

Toxicity Information

Toxicity values for TPH have not been established due to the variability of the chemical makeup of TPH. Normally, the toxicity is based on the toxicity of particular constituents of concern that may be present and which are evaluated based on health-based standards. The most common constituents examined include benzene, ethylbenzene, toluene, and xylene.

In the absence of constituents of concern or when the concentrations of the constituents of concern are low, the acceptable level of TPH is established by considering the following:

- No liquid product should remain in the soil
- The TPH should not harm vegetation
- The TPH concentrations should not create an odor nuisance
- Hydrocarbon vapors which may emanate from the impacted soil should not generate harmful or explosive vapors
- Site monitoring should indicate that TPH levels are stable or declining

Environmental and Site Conditions

Based on an evaluation of topography, this site is believed to have ground water greater than 50' below ground surface. Due to the immobility of these types of contaminants through soil and a lack of continuous transporting mechanisms, it is very likely that the residual contamination in the pit will degrade in the short term under existing conditions, or certainly during the life of the producing well. Observations and data collected from other sites suggests that contaminant concentrations would diminish vertically and likely be less than 10 ppm within the next 4 - 10 feet of soil depth. Notwithstanding, **bedrock** was discovered at the pit bottom. This condition retards vertical migration of contaminants and serves to significantly limit potential groundwater impact.

While residual TPH and/or BTEX may exist at this site, closure of this site is warranted for the following reasons:

1. The majority of soils which exhibited high levels of TPH and BTEX have been removed.
2. Residual TPH concentrations are below levels considered problematic based on the criteria above.
3. Discharge has been eliminated and a steel tank installed to prevent any future release to soils.
4. Depth to groundwater is estimated at greater than 50'.
5. Vertical migration of contamination is limited due to bedrock and/or the low vertical hydraulic conductivity of underlying soils.
6. TPH / BTEX concentrations will not increase and will degrade over time from natural processes occurring in-situ.
7. Further excavation at the site is impractical due to the presence of bedrock.

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 all closure criteria cannot be practically attained. Additional information may be found in the Technical Background Document titled: *Risk Based Closure of Unlined Surface Impoundment Sites, San Juan Basin, New Mexico.*

ANALYTAS ENVIRONMENTAL LABS

Organic Analysis - Pit Closure

Williams Field Services

Project ID:	OCD Pits	Report Date:	12/09/96
Sample ID:	SJ 27-5 #78 V-EX-01	Date Sampled:	12/04/96
Lab ID:	5843	Date Received:	12/04/96
Sample Matrix:	Soil	Date Extracted:	12/05/96
Preservative:	Cool	Date Analyzed:	12/5-7/96
Condition:	Intact		

Target Analyte	Concentration (mg/kg)	Detection Limit (mg/kg)
Total Aromatic Hydrocarbons	**162**	
Benzene	0.97	0.24
Toluene	24.2	2.38
Ethylbenzene	7.08	2.38
m,p-Xylenes	103	4.76
o-Xylene	26.4	2.38
Total Recoverable Petroleum Hydrocarbons	**8,430**	**527**

Quality Control:	Surrogate	Percent Recovery	Acceptance Limits
	Trifluorotoluene	97	81 - 117%
	Bromofluorobenzene	113	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

ANAITAS ENVIRONMENTAL LABS

Organic Analysis - Pit Closure

Williams Field Services

Project ID:	OCD Pits	Report Date:	12/18/96
Sample ID:	SJ 27-5 #78 V-LF-02	Date Sampled:	12/16/96
Lab ID:	5985	Date Received:	12/16/96
Sample Matrix:	Soil	Date Extracted:	12/17/96
Preservative:	Cool	Date Analyzed:	12/17/96
Condition:	Intact		

Target Analyte	Concentration (mg/kg)	Detection Limit (mg/kg)
Total Aromatic Hydrocarbons	**50.1**	
Benzene	ND	0.72
Toluene	4.21	0.72
Ethylbenzene	1.64	0.72
m,p-Xylenes	34.3	1.44
o-Xylene	9.95	0.72
Total Recoverable Petroleum Hydrocarbons	**1,810**	**130**

Quality Control:	Surrogate	Percent Recovery	Acceptance Limits
	Trifluorotoluene	99	81 - 117%
	Bromofluorobenzene	112	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