

District I  
P.O. Box 1980, Hobbs, NM  
District II  
P.O. Drawer DD, Artesia, NM 88211  
District III  
1000 Rio Brazos Rd, Aztec, NM 87410

State of New Mexico  
Energy, Minerals and Natural Resources Department

SUBMIT 1 COPY TO  
APPROPRIATE  
DISTRICT OFFICE  
AND 1 COPY TO  
SANTA FE OFFICE  
DEPUTY OIL & GAS INSPECTOR  
(Revised 3/9/94)

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

NOV 11 4 1995

**PIT REMEDIATION AND CLOSURE REPORT**

Operator: Hallwood Petroleum Telephone: (303)259-1374  
Address: P.O. Box 378111 Denver, CO 80237  
Facility Or: Yager #4  
Well Name  
Location: Unit or Qtr/Qtr Sec E Sec 10 T 31 R 7 County San Juan  
Pit Type: Separator Dehydrator X Other & Tank  
Land Type: BLM State Fee X Other

Pit Location: Pit dimensions: length 105', width 60', depth 15'  
(Attach diagram) Reference: wellhead other  
Footage from reference:  
Direction from reference: Degrees East North  
of  
West South

Depth To Ground Water: (Vertical distance from contaminants to seasonal high water elevation of ground water)  
RECEIVED  
AUG 29 1994  
Less than 50 feet (20 points)  
50 feet to 99 feet (10 points)  
Greater than 100 feet (0 Points) 0

Wellhead Protection Area: (Less than 200 feet from a private domestic water source, or, less than 1000 feet from all other water sources)  
OIL CON. DIV.  
DIST. 3  
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 1000 feet (10 points)  
Greater than 1000 feet (0 points) 0

RANKING SCORE (TOTAL POINTS): 0

Date Remediation Started: \_\_\_\_\_ Date Completed: \_\_\_\_\_

Remediation Method: Excavation \_\_\_\_\_ Approx. cubic yards \_\_\_\_\_  
(Check all appropriate sections) Landfarmed \_\_\_\_\_ Insitu Bioremediation \_\_\_\_\_  
Other \_\_\_\_\_ No remediation needed \_\_\_\_\_

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

General Description Of Remedial Action: \_\_\_\_\_ No remediation needed \_\_\_\_\_

Sampling on pit was in Sandstone. Pit has been cut in Sandstone.

Ground Water Encountered: No ☒ Yes \_\_\_\_\_ Depth \_\_\_\_\_

Final Pit: Sample location \_\_\_\_\_ See pit diagram \_\_\_\_\_

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

Sample depth \_\_\_\_\_ 6" below bottom of pit \_\_\_\_\_

Sample date \_\_\_\_\_ 05/24/94 \_\_\_\_\_ Sample time \_\_\_\_\_

Sample Results

Benzene(ppm) \_\_\_\_\_ 0.204 ppm \_\_\_\_\_

Total BTEX(ppm) \_\_\_\_\_ 36.875 ppm \_\_\_\_\_

Field headspace(ppm) \_\_\_\_\_ 132 ppm \_\_\_\_\_

TPH \_\_\_\_\_ 4176 mg/kg \_\_\_\_\_

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 BELIEF

DATE 8-1-94

SIGNATURE

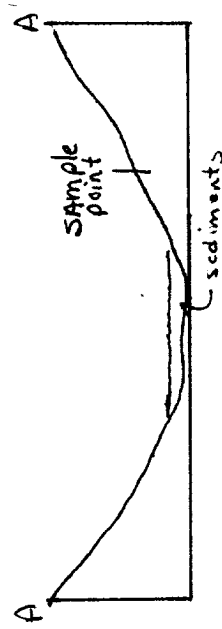
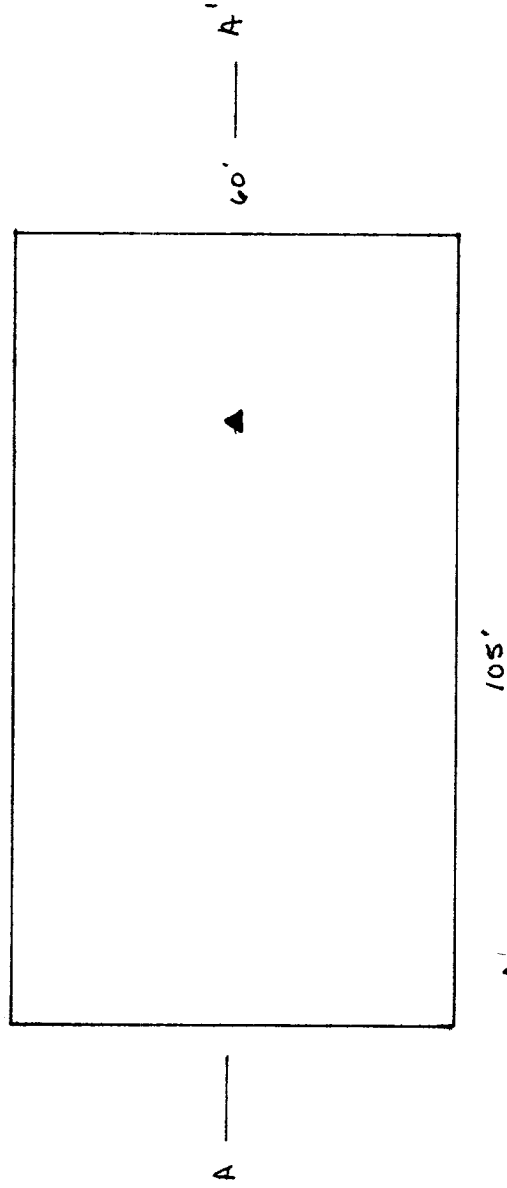
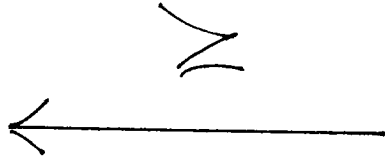


PRINTED NAME  
AND TITLE

Doug Elworthy (Lead Pump)

Hallwood Petroleum Inc.  
 pit diagram

Yaser #4



▲ - sample point

pit has been cut out of sandstone.  
 well has been P<sub>1</sub>A'd

○ well head  
 P<sub>1</sub>A'd



**ON SITE  
TECHNOLOGIES, LTD.**

**AROMATIC VOLATILE ORGANICS**

Attn: *Cindy Gray*  
Company: *On Site Technologies*  
Address: *657 W. Maple Std.*  
City, State: *Farmington, NM 87401*

Date: *6/10/94*  
Lab ID: *1549*  
Sample ID: *1575*  
Job No. *4-1097*

Project Name: *Hallwood Petroleum / Pit Assessments*  
Project Location: *Yager #4 Dehy. Pit; Grab*  
Sampled by: *JL* Date: *6/1/94*  
Analyzed by: *DLA* Date: *6/10/94*  
Sample Matrix: *Soil*

Time: *15:15*

**Aromatic Volatile Organics**

| <b>Component</b>    | <b>**Measured<br/>Concentration ug/kg</b> |
|---------------------|-------------------------------------------|
| <i>Benzene</i>      | <i>204</i>                                |
| <i>Toluene</i>      | <i>3,320</i>                              |
| <i>Ethylbenzene</i> | <i>2,276</i>                              |
| <i>m,p-Xylene</i>   | <i>24,622</i>                             |
| <i>o-Xylene</i>     | <i>6,453</i>                              |
| <b>TOTAL</b>        | <b>36,875 ug/kg</b>                       |

*ND - Not Detectable*

*\*\* - Method Detection Limit, 2 ug/kg*

**Method - SW-846 EPA Method 8020 Aromatic Volatile Organics by  
Gas Chromatography**

Approved by:

Date:

*Bill Wahl*  
*6/10/94*



**QUALITY ASSURANCE REPORT**  
for EPA Method 8020

Date Analyzed: 6/10/94

Internal QC No.: 0222-STD

Surrogate QC No.: 0223-STD

Reference Standard QC No.: 0300-STD

**Method Blank**

| Analytes in Blank                       | Amount |
|-----------------------------------------|--------|
| Average Amount of All Analytes In Blank | <1 ppb |

**Calibration Check**

| Calibration Standards | Units of Measure | *True Value | Analyzed Value | % Diff | Limit |
|-----------------------|------------------|-------------|----------------|--------|-------|
| Benzene               | ppb              | 20          | 20             | 2      | 15%   |
| Toluene               | ppb              | 20          | 21             | 4      | 15%   |
| Ethylbenzene          | ppb              | 20          | 19             | 6      | 15%   |
| m,p-Xylene            | ppb              | 40          | 40             | 0      | 15%   |
| o-Xylene              | ppb              | 20          | 21             | 3      | 15%   |

**Spike Results**

| Analyte      | 1 - Percent Recovered | 2 - Percent Recovered | Limit    | %RSD | Limit |
|--------------|-----------------------|-----------------------|----------|------|-------|
| Benzene      | 99                    | 95                    | (39-150) | 3    | 20%   |
| Toluene      | 95                    | 94                    | (46-148) | 1    | 20%   |
| Ethylbenzene | 95                    | 93                    | (32-160) | 2    | 20%   |
| m,p-Xylene   | 96                    | 94                    | (35-145) | 1    | 20%   |
| o-Xylene     | 94                    | 93                    | (35-145) | 1    | 20%   |

**Surrogate Recoveries**

| Laboratory Identification | S1<br>Percent<br>Recovered | S2<br>Percent<br>Recovered | S3<br>Percent<br>Recovered |
|---------------------------|----------------------------|----------------------------|----------------------------|
| Limits                    | (70-130)                   |                            |                            |
| 1574-1549                 | 97                         |                            |                            |
|                           |                            |                            |                            |
|                           |                            |                            |                            |
|                           |                            |                            |                            |
|                           |                            |                            |                            |
|                           |                            |                            |                            |
|                           |                            |                            |                            |
|                           |                            |                            |                            |

S1: Fluorobenzene



**ON SITE  
TECHNOLOGIES, LTD.**  
**TOTAL PETROLEUM HYDROCARBONS**

Attn: *Cindy Gray*  
Company: *On Site Technologies*  
Address: *657 W Maple St.*  
City, State: *Farmington, NM 87401*

Date: *6/8/94*  
Lab ID: *1549*  
Sample No.  
Job No. *4-1097*

Project Name: *Hallwood Petroleum / Pit Assessments*  
Project Location: *Yager #3 / #4*  
Sampled by: *JL*  
Analyzed by: *TT*  
Type of Sample: *Soil*

Date: *6/1/94* Time: *1515*  
Date: *6/6/94*

**Laboratory Analysis**

| <b>Laboratory<br/>Identification</b> | <b>Sample Identification</b>                                                  | <b>Total Petroleum<br/>Hydrocarbons</b> |
|--------------------------------------|-------------------------------------------------------------------------------|-----------------------------------------|
| <i>1574-1549</i>                     | <i>Hallwood Petroleum / Pit Assessments<br/>Yager #3 Dehy. Pit; Composite</i> | <i>45 mg/kg</i>                         |
| <i>1575-1549</i>                     | <i>Hallwood Petroleum / Pit Assessments<br/>Yager #4 Dehy. Pit; Grab</i>      | <i>4176 mg/kg</i>                       |

**Method - EPA Method 418.1 Total Petroleum Hydrocarbons**

Approved by:

Date:

*[Signature]*  
*6/8/94*

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Page \_\_\_\_\_ of \_\_\_\_\_

[illegible]