



Industrial Services Group
Central Region

March 3, 1999

Project 20477

Mr. Ed Hasely
Burlington Resources
PO Box 4289
Farmington, NM 87499-4289

RE: Report for work performed at the Hampton #4M Well Site

Dear Mr. Hasely:

Philip Services Corporation (Philip) is pleased to submit to Burlington Resources Oil & Gas Company (Burlington) this report for work performed at the Hampton #4M well site on November 10, 1998 through February 2, 1999.

Philip appreciates the opportunity to provide Burlington with professional services and looks forward to providing additional services in the future. If you have any questions or require additional information, please contact Robert Thompson or Martin Nee at (505) 326-2262.

Respectfully submitted,
PHILIP SERVICES CORPORATION

Robert Thompson
Project Manager

Attachments – As stated

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Combining the Strengths of Philip Services Corp., Allwaste and Serv-Tech





Industrial Services Group
Central Region

March 3, 1999

Project 20477

RE: Report for Work Performed at the Hampton #4M Well Site

On November 10, 1998 through February 2, 1999 Philip Services Corporation (Philip) initiated field work at the Hampton #4M well site for Burlington Resources Oil & Gas Company (Burlington). The Scope of Work was to delineate, excavate and remediate hydrocarbon-impacted soils at the site.

SCOPE OF WORK

On November 10, 1998 Philip mobilized to the Hampton #4M well site to begin excavation activities. Burlington contracted the services of Rosenbaum Construction to supply a dozer and operator to excavate the site. Excavation activities began at approximately 8:30 a.m. on the northern portion of the location in the area of Public Service Company of New Mexico's (PNM) former pit. Brush was cleared from an area on the west side of the location to make room for overburden to be stockpiled as it was removed from the area being excavated. Overburden was removed throughout the day and stockpiled. Traces of hydrocarbon impacted soil were encountered from approximately 6 feet below ground surface (bgs) to approximately 12 feet bgs. Heavier amounts of hydrocarbon impacted soil were encountered beyond 12 feet bgs. Heated headspace analyses were performed in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines; the results are recorded in Attachment A listed as Table 1 and the sample locations are plotted in Attachment B on a Plan View diagram. Visitors throughout the day included Ed Hasely and Johnny Ellis with Burlington; Ron Dedrick, Maureen Gannon and Mark Sikelianos with PNM; Robert Foley with Williams Field Services (Williams) and; Denny Foust and Bruce Martin with the NMOCD.

Excavation activities continued on November 11, 1998 through November 17, 1998. Efforts concentrated on excavating impacted soils from the northern section of the well pad in the area of PNM's former pit. Excavation proceeded to approximately 27 feet bgs in this area. Water was encountered at approximately 25 feet bgs. Soil samples were collected for heated headspace analysis throughout the excavation process; the results are recorded in Table 1 and the sample locations are plotted on the Plan View Diagram. A soil sample was also obtained from a natural seep northwest of the well pad and the results are recorded in the above mentioned attachments.

Combining the Strengths of Philip Services Corp., Allwaste and Serv-Tech

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Soil samples collected were sent to Southern Petroleum Laboratories, Inc. located in Farmington, NM and analyzed for Benzene, Toluene, Ethylbenzene and Xylenes (BTEX) using U.S. Environmental Protection Agency (USEPA) method 8020 and Total Petroleum Hydrocarbons using U.S. EPA method 8015 modified.

Three cells were constructed using clean overburden in the bottom of the excavation. The cells were constructed from east to west to observe groundwater entering the different areas of the excavation. The project was temporarily shut down after November 17, 1998 so that the cells could be monitored. The cells were checked periodically by Burlington and then pumped out by Dawn Trucking using a vacuum truck and hauled off to Burlington's McGrath disposal well. Visual observation of the cells indicated that there was free phase hydrocarbons on the surface of the water in the east portion of the excavation. The center and western portions revealed no free phase hydrocarbons.

Excavation activities resumed on November 30, 1998 and continued through December 4, 1998. A trackhoe was used in place of a dozer during this phase of the project. Philip continued to excavate impacted soils from the north portion of the location. The remediation process was concentrated on impacted soils in the northern and western walls to complete the excavation work in these areas. Emphasis was then directed to following the plume of impacted soils into the eastern wall and removing the impacted soils from this area.

Approximately 77 cubic yards of additional material were also excavated from the northern wall of Burlington's former pit that was previously excavated and left open in December 1997. At this time the project was temporarily shut down at Burlington's request while pursuing approval to landfarm on nearby locations.

On January 21, 1999 the excavation activities resumed, using the dozer. The dozer and operator were provided to Burlington, this time, by Aztec Excavation. Excavation activities continued through February 2, 1999. The removal of impacted soils continued by following the plume of impacted soils into the access road to the location east of the former excavation and south toward Burlington's former pit excavation. As the excavation of impacted soils proceeded south toward Burlington's old excavation, the impacted soils ended. There was no connection of impacted soil from Burlington's old excavation in the south to the impacted soil that was being excavated in the north. The excavation also included stripping out a section of the location between the wellhead and the former excavation to determine if there was a connection of impacted soils between the two locations. The soil in the stripped out section between the wellhead and former excavation showed no signs of impacted soil, therefore eliminating concern for the well bore as a possible source.

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On February 2, 1999, the last day of the excavation process, MW-4 was exposed from ground surface to the bottom of the well without disturbing the well components. This was done to examine the layers of soil across MW-4 to see the extent of the impacted soil effecting this well. Sampling the soil around this well showed that there was a band of impacted soil approximately 5" thick between 16.5 feet and 17 feet bgs to the north of MW-4. Soils were clean to the south of MW-4. The monitor well was then removed and the band of impacted soil observed was excavated. The above mentioned activities was the extent of Philip's involvement in the project.

SUMMARY

Various soil samples and heated headspace analyses were collected throughout the excavation process. The sample analyses results are recorded in Table 1 and the sample locations are plotted on the Plan View Diagram. This report is based solely upon field notes received from Philip's supervisor on site during the excavation process.

Respectfully submitted,
PHILIP SERVICES CORPORATION



Robert Thompson
Project Manager

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Attachment A

Table 1

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TABLE 1
SOIL SAMPLE ANALYSES

NUMBER	DATE	SAMPLE TYPE	APPROXIMATE DEPTH	RESULT
1	11/10/98	Heated Headspace	10 feet	1,677 ppm
2	11/10/98	Heated Headspace	12 feet	561 ppm
3	11/11/98	Heated Headspace	7 feet	19.5 ppm
4	11/11/98	Heated Headspace	16 feet	96.8 ppm
5	11/11/98	Soil Sample	18 feet	BTEX - 102.4 ppm TPH - 2.510 ppm
6	11/12/98	Soil Sample	21 feet	BTEX - 412 ppm TPH - 4,300 ppm
7	11/13/98	Heated Headspace	25 feet	431 ppm
8	11/13/98	Heated Headspace	25 feet	3,000 ppm
9	11/13/98	Heated Headspace	25 feet	101 ppm
10	11/13/98	Heated Headspace	24 feet	> 3,000 ppm
11	11/13/98	Heated Headspace	22 feet	18.4 ppm
12	11/16/98	Heated Headspace	25 feet	21.5 ppm
13	11/16/98	Heated Headspace	23.5 feet	9.8 ppm
14	11/16/98	Heated Headspace	25 feet	207 ppm
15	11/16/98	Heated Headspace	25 feet	2,696 ppm
16	11/17/98	Soil Sample	Ground Surface	BTEX - 11.92 ppm TPH - 40 ppm
17	11/30/98	Heated Headspace	16.7 feet	794 ppm
18	11/30/98	Heated Headspace	16.7 feet	196 ppm
19	11/30/98	Heated Headspace	1 foot	19.4 ppm
20	11/30/98	Heated Headspace	23 feet	2,999 ppm
21	11/30/98	Heated Headspace	20 feet	1,946 ppm
22	11/30/98	Heated Headspace	22 feet	2,983 ppm
23	11/30/98	Heated Headspace	20 feet	6.9 ppm

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24	12/01/98	Heated Headspace	22 feet	316 ppm
25	12/01/98	Heated Headspace	24 feet	3.5 ppm
26	12/01/98	Heated Headspace	24 feet	2,541 ppm
27	12/01/98	Heated Headspace	28 feet	7.8 ppm
28	12/01/98	Heated Headspace	24 feet	2,007 ppm
29	12/03/98	Heated Headspace	16.4 feet	2,999 ppm
30	12/03/98	Heated Headspace	13.9 feet	90.3 ppm
31	12/03/98	Heated Headspace	13 feet	9.2 ppm
32	12/03/98	Heated Headspace	13.9 feet	16.5 ppm
33	12/03/98	Heated Headspace	18 feet	35.3 ppm
34	12/03/98	Heated Headspace	14.7 feet	7.9 ppm
35	12/03/98	Heated Headspace	17 feet	1,825 ppm
36	01/21/99	Heated Headspace	6 feet	13.5 ppm
37	01/22/99	Heated Headspace	18 feet	883 ppm
38	01/22/99	Heated Headspace	12 feet	19.1 ppm
39	01/22/99	Heated Headspace	10 feet	15 ppm
40	01/22/99	Heated Headspace	18 feet	70.4 ppm
41	01/22/99	Heated Headspace	18 feet	45.5 ppm
42	01/22/99	Heated Headspace	18 feet	60.1 ppm
43	01/22/99	Heated Headspace	18 feet	9 ppm
44	01/22/99	Heated Headspace	22 feet	38.8 ppm
45	01/22/99	Heated Headspace	20 feet	2,999 ppm
46	01/22/99	Heated Headspace	20 feet	2,999 ppm
47	01/25/99	Heated Headspace	15 feet	9.7 ppm
48	01/25/99	Heated Headspace	15 feet	8.6 ppm
49	01/25/99	Heated Headspace	18 feet	27.9 ppm
50	01/25/99	Heated Headspace	18 feet	714 ppm
51	01/25/99	Heated Headspace	18 feet	20.9 ppm
52	01/25/99	Heated Headspace	20 feet	40 ppm
53	01/25/99	Heated Headspace	15 feet	38.7 ppm
54	01/25/99	Heated Headspace	6 feet	21.1 ppm

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55	01/25/99	Heated Headspace	22 feet	792 ppm
56	01/25/99	Heated Headspace	15 feet	25 ppm
57	01/25/99	Heated Headspace	5 feet	19.6 ppm
58	01/26/99	Heated Headspace	5 feet	12.7 ppm
59	01/26/99	Heated Headspace	12 feet	16.7 ppm
60	01/26/99	Heated Headspace	15 feet	13.9 ppm
61	01/26/99	Heated Headspace	18 feet	167 ppm
62	01/26/99	Heated Headspace	22 feet	452 ppm
63	01/26/99	Heated Headspace	23 feet	385 ppm
64	01/26/99	Heated Headspace	15.4 feet	27 ppm
65	01/26/99	Heated Headspace	17.1 feet	58.3 ppm
66	01/26/99	Heated Headspace	24 feet	2,999 ppm
67	01/27/99	Heated Headspace	15 feet	38.9 ppm
68	01/27/99	Heated Headspace	16.6 feet	2,999 ppm
69	01/27/99	Heated Headspace	21 feet	2,999 ppm
70	01/27/999	Heated Headspace	20 feet	1,121 ppm
71	01/27/99	Heated Headspace	20.6 feet	75.5 ppm
72	02/02/99	Heated Headspace	17 feet	14.5 ppm
73	02/02/99	Heated Headspace	15 feet	18.2 ppm
74	02/02/99	Heated Headspace	15.6 feet	22.8 ppm
75	02/02/99	Heated Headspace	15.4 feet	88.4 ppm
76	02/02/99	Heated Headspace	16.4 feet	2,999 ppm
77	02/02/99	Heated Headspace	18.5 feet	32.6 ppm
78	02/02/99	Heated Headspace	20 feet	43.6 ppm
79	02/02/99	Heated Headspace	17 feet	2,999 ppm

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Attachment B

Plan View Diagram

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Under 100 ppm ☐