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REPORTS

DATE: July 30, 1997



SAN JUAN DIVISION July 30, 1997

Certified P 358 636 562

Bill Olson New Mexico Oil Conservation Division 2040 S. Pacheco Santa Fe, NM 85704

RE: Hampton 4M - Groundwater Contamination Unit Letter N, Section 13, Township 30N, Range 11W

Dear Mr. Olson

On December 16, 1996 PNM Gas Services (PNM) discovered contaminated groundwater at the Hampton 4M gas production location. This location is owned and operated by Burlington Resources Oil and Gas Inc. (Burlington). Since the discovery of contaminated groundwater, action has been taken to identify the source of hydrocarbon contamination.

The Hampton 4M gas production location is located approximately 3 miles East of Aztec, NM (Figure 1). Figure 2 illustrates all equipment and the orientation of that equipment on the pad surface. Burlington owns and operates the location and PNM Gas Services owns and operates two dehydrators with associated equipment on the Northern end of the location. Burlington's equipment is all situated to the South of the well head.

-Work Done To Date-

Beginning in December of 1996, actions have been taken to address the contamination at the Hampton 4M production location. Following is a chronological summary of the events at the Hampton 4M.

December 16, 1996 Vertical Extent Drilling	To determine the vertical extent of hydrocarbon contamination in the former dehydrator discharge pit, PNM conducted vertical extent drilling. Beneath the center of the former discharge pit, PNM encountered groundwater at approximately 28 feet. At that time monitoring Well 2, MW-2, was installed (see Figure 2 for monitoring well location). Samples from the groundwater indicated total BTEX of 20,620 ppb v/v and a benzene concentration of 3,840 ppb v/v.
January 13, 1997 Notification	PNM notified NMOCD in writing of groundwater contamination at the site.
January 28, 1997 Sampling	PNM gauged MW-2 and approximately 4 feet of free phase floating product was discovered in the well.
January 31, 1997 MW-3 and MW-4 Installation	PNM installed two additional monitoring wells, MW-3 and MW-4. Water level, product measurements and groundwater samples were taken in all three monitoring wells at the time of the installation. All samples were analyzed for BTEX compounds (RM 8020).
February 4, 1997 On-site Meeting	PNM hosted an on-site meeting with the NMOCD, and Burlington to discuss remediation options at the site.
April 9, 1997 On-site Meeting	On site visit with Burlington and PNM

Hampton 4M Production Location Data Summary

April 14, 1997	During a site visit Burlington discovered a surface seep of hydrocarbons to the north of the
Off-site Hydrocarbon	well pad. Free phase hydrocarbons were found seeping from the ground surface into a
Seep Discovered	small drainage area.
	Burlington notified both NMOCD and PNM about the hydrocarbon seep.
April 16, 1997	Burlington hosted an on-site meeting with PNM, and NMOCD to discuss the off-site
On-site Meeting	hydrocarbon seep. NMOCD asked that immediate action be taken to contain the seep. The
	group agreed that a collection trench should be installed to slow or stop the hydrocarbons
	seep.
April 16, 1997	Burlington Resources obtained archeological clearance to construct an off-site collection
Archeological	trench to the north of the well location (Figure 2).
Clearance	
April 17, 1997	Burlington constructed a collection trench to the north of the well location. The trench was
Collection Trench	situated between the hydrocarbon seep and the well location. A sandstone shelf was
Construction	encountered six to eight feet below the ground surface. Black to gray saturated soil with
	signs of hydrocarbons were found on top of the sandstone shelf. No analytical samples
	were taken. P.I.D. readings were in the 1,000 ppm to 2,000 ppm range.
	Water and a small amount of hydrocarbons began collecting in the trench.
April 30, 1997	Burlington attempted to excavate the area of the former tank discharge pit. Sandstone was
Tank Discharge Pit	encountered at one foot below the bottom of the pit. The excavator could not penetrate the
Excavation	sandstone. A PID survey of the soil and sandstone revealed no volatile hydrocarbons. No
	visual signs of hydrocarbon contamination existed.
	To identify any hydrocarbon contaminated area, Burlington began excavating 9 to 10 test
	holes over the location. On the southern end of the location sandstone was encountered at
	0 to 1 foot below the surface. Sandstone dipped snarply to the north to a depth of
	approximately 15 leet below the surface. No hydrocarbon contaminated areas were found
	in any of the test noies.
T 4 1007	Destination boated on an aits mostion with DND(and ND(OCD to diagona forther
June 4, 199/	Burlington hosted an on-site meeting with PNW and NWOOD to discuss further
On-sue meening	investigation at the site. The group agreed to continue surveying using a son boring fig.
I	Three halos were bared on the site just to the south of DNM's dehudrators and discharge
Soil Roring	Three holes were bored on the she just to the south of river's denydrators and use hard to the regults of groundwater and soil
Don Dorme	complex. Information gathered during the horing was sail characteristics and sail vanor
	samples. Information gamered during the borning was son characteristics and son vapor analysis every five feet to groundwater. A soil sample for laboratory analysis was taken
	inclusion of the water level and a groundwater cample will be taken
	Just above the water rever and a groundwater sample will be taken.
June 6, 1997	Burlington continued soil boring on the location A total of four more points were bored
Soil Boring	These points are shown in Figure 2.
	These points are shown in Figure 2.
June 10, 199	Burlington and PNM met to discuss costs for other groundwater sites and to discuss the
Meeting - Discussion	results of the soil boring at the Hampton 4M.
of Roring Results	results of the soft coming at the manpfold with

<u>-Sample Results-</u> The results of all analytical samples taken to date at the Hampton 4M are listed in Table 1. Provided with the results of the samples is supporting information about the depth to water in feet, the depth the sample was taken in feet, and the matrix of the sample. Water samples were only analyzed for Benzene, Toluene, Ethylbenzene, and Xylene (BTEX) compounds. Each soil sample was analyzed for BTEX compounds and Total Petroleum Hydrocarbons (TPH). Associated backup for all analytical samples is located in Appendix A.



Hampton 4M Production Location Data Summary

-Monitoring Wells-

Three permanent groundwater monitoring wells were installed on location (Figure 2). Monitoring Well 2 (MW-2) was installed in the center of the former gas dehydrator discharge pit operated by PNM. MW-3 and MW-4 were installed to establish the groundwater gradient under the location. A contour map of the groundwater was developed from water level information in the monitoring wells (Figure 3). The contour surface map shows the groundwater flows northwest across the location.

Groundwater in the permanent monitoring wells has been sampled twice. Results of the sampling events are summarized in Table 1. Samples of groundwater in MW-3 and MW-4 for BTEX compounds revealed dissolved phase contamination in MW-4 but not in MW-3, indicating a contamination source upgradient of MW-4. Approximately 4 feet of a Non-Aqueous Phase Liquid (NAPL) was discovered on the top of the groundwater in MW-2.

Samples were taken of the NAPL in MW-2 and compared to samples of produced hydrocarbons stored on the location. Fingerprinting analysis revealed that the NAPL in MW-2 is similar to produced hydrocarbons from the Dakota formation stored on location. Copies of the analysis and results are provided in Appendix A - Sample Backup. Due to the NAPL, the groundwater from MW-2 well has not been analyzed for BTEX compounds.

It is thought that there are two separate sources of groundwater contamination at the Hampton 4M location. One source is the former discharge pit for the gas dehydrators operated by PNM and the second source being upgradient of MW-4 supplying a dissolved phase BTEX component. This is supported by the fact that a NAPL on the groundwater has only been found in the area directly around the dehydration equipment.

-Temporary Wells-

To identify the second contaminant source, Burlington initiated an investigation using a hollow stem auger and split spoon sampler. A total of seven Temporary Wells (TPW) were drilled at the location. While drilling each TPW, soil samples were taken every five feet and screened using a Photo Ionization Detector (PID). Results of the soil screening were recorded in drilling logs (Appendix B - Drilling Logs). Also in each well a soil sample was captured just above the groundwater interval to be analyzed, in a laboratory, for TPH and BTEX components.

In order to sample the groundwater in a TPW, screened PVC pipe was installed in the well and groundwater was allowed to flow in. Once the water level became static, a sample of the water was taken using a disposable Teflon bailer. The water sample was properly preserved and analyzed, in a a laboratory, for BTEX components.

TPW 1 through 3 were drilled in an east to west transect just to the south of PNM's gas dehydration equipment. TPW 4 was drilled midway between TPW 2 and MW-4. The remainder of the temporary wells were drilled to the south of MW-4 to locate the source of dissolved phase BTEX contamination. TPW 5 and 6 were drilled on the southern most boundary of the production location. The seventh temporary well (TPW 7) was drilled directly under the former location of the produced hydrocarbon storage tanks. Relative locations of the temporary wells can be seen in Figure 2.

-TPW Sampling Results-

Contamination to some degree was found in each groundwater sample from the temporary wells. The highest dissolved phase concentrations occurred in TPW 7 and TPW 5. This result may indicate a source that is off site, upgradient of TPW 5. A NAPL was found on top of the groundwater in TPW 2, therefore no groundwater sample was taken.

Soil screening while drilling the TPWs revealed no hydrocarbon contamination in the soil from the surface to several feet above the groundwater zone. For example, the TPW Record of Subsurface Exploration (Appendix B - Drilling Logs) shows no volatile contamination (using a PID) until just above the groundwater zone (see Air Monitoring column). Results are similar at each TPW.

Hampton 4M Production Location Data Summary

Since no contamination exists until just above the saturated zone this may indicate subsurface flow of contaminants to that particular sampling location. This result may or may not indicate contamination from an off site source. The geology of the location may cause a release on the surface to channel through fractures while traveling downward through the soil. This channeling effect may not leave a direct trail of contaminants in the soil directly under the release site. Leading to the possible conclusion that the soil auger did not penetrate the contaminant channels leading to the groundwater.

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-Location Geology-

Drilling logs were compiled from each Monitoring Well and Temporary Well that was drilled on the location. Copies of all the drilling logs are in Appendix B - Drilling Logs. Generally the logs show that a sandstone shelf underlies the entire site. The sandstone surfaces in the southern half of the site and dips northward to a depth of approximately 18 feet on the edge of the location. During construction, fill material was used to level the surface of the location on the northern half.

And generally groundwater was encountered just below the sandstone layer and above a green to gray clay material.

-Conclusions-

Based on the work done at the Hampton 4M, Burlington Resources firmly believes that contamination to the groundwater under the location is caused by at least two sources. Source No. 1 has been identified as PNM's unlined earthen dehydrator discharge pit. Source No. 2 is contributing dissolved BTEX to the groundwater upgradient to MW-4.

To identify Source No. 2, probable locations were investigated with the soil auger, but no on site source was identified. Groundwater contaminant levels from TPW 5 and TPW 6, on the southern most edge of the location, indicates the second source may be off site and upgradient of the well location. A survey of nearby facilities revealed a pipeline drip pot approximately 1/4 mile to the southeast of the well location.

Results of groundwater sampling over the location indicates a significant amount of NAPL on the top of the groundwater under the gas dehydration equipment operated by PNM. NAPL from the area under the dehydration equipment has migrated to the northwest and is the source of hydrocarbons surfacing in the seep.

-Plan of Action-

The most immediate concerns at the Hampton 4M are the hydrocarbon seep to the northwest and the NAPL on the groundwater in the area of the gas dehydration equipment. These two areas should be the focus of initial activities. NAPL recovery should be implemented in MW-2. Because the NAPLs found to date are located near the former dehydrator discharge pit, Burlington believes this initial action should be the responsibility of PNM Gas Services.

Burlington Resources will focus on identifying the source of groundwater contamination upgradient of MW-4. Burlington proposes constructing a small pad off site and upgradient of the well location to conduct an investigation of the groundwater. Results from the off site investigation will determine the background levels of contaminants in the groundwater flowing to the Hampton 4M location.

If through the off site investigation, Burlington discovers the influence of an off site source then Burlington will cease operations and consult with the NMOCD about other responsible parties. However, if Burlington discovers no contaminants in the groundwater flowing to the Hampton 4M location, then further investigation will be conducted on site.

The unique characteristics of the Hampton 4M location pose challenges of site characterization and remediation. All parties working together will be the most efficient means to address the contamination at the Hampton 4M site. If further clarification is needed regarding this matter, please contact me at (505) 326-9537.

Sincerely,

cc:

Craig A. Boch

Environmental Representative

Enclosures: Figure 1: Area Map Figure 2: Hampton 4M Site Diagram Figure 3: Groundwater Contour Map Table 1: Sample Results Appendix A - Sample Back up Appendix B - Drilling Logs

> Denny Foust - NMOCD Aztec Johnny Ellis - BR Ken Raybon - BR Keith Baker - BR Denver Bearden - PNM Farmington Maurene Gannon - PNM Albuquerque

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Figure 2: Hampton 4M Site Diagram



	Groundwa	ter Sampi	ing summar	y	
Location (SeeFigure 2)	Sam ple Date	B T E X (p p b)	Depth to Water (ft)	Sample Matrix	Comments.
M W -2	12/16/96	20,620		water	Taken by PN M
M W -3	1/31/97	ND	2.0	water	Taken by PN M
M W - 3	5/1/97	ND	2.0	water	
M W - 4	1/31/97	2,651	16.4	water	Taken by PN M
M W - 4	5/1/97	3,477	16.4	water	
M W -4	5/1/97	3,470	16.4	water	Blind Duplicate Sample
TPW 1	6/5/97	20	22.75	water	
TPW 4	6/6/97	5,967	19	water	
TPW 5	6/6/97	29,260	15	water	
TPW 6	6/6/97	5,738	15	water	
TPW 7	6/6/07	33 220	14.6	water	

Figure 3: Hampton 4M Groundwater Contour Map (January 1997)



Source well located in the center of the former pit. Approximately 4.5 feet of product in the well.

Well is located near product tank batteries and separators. Disselved phase contamination (benzene=811 ppb)

Location	X	Y	TOC Elevation (feet)	GW Elevation (feet)	DTW 1/4/97 (feet)	DTP 1/4/97 (feet)
MW-2	237.36	330.165	6124.088	*6102.208	25.28	20.75
MW-3	176,435	202.725	6122.943	6102.913	20.03	N/A
MW-4	256.437	188.695	6124.372	6103.002	16.37	N/A
Well Head	232.926	205.649	6124.241			
Former Tank Battery	290.325	169.909				
*Adjusted water level b X and Y are relative dis	ased on 4.53 stances	feet of proo TOC - 1 GW - G	duct and a specific Fop Of Casing	gravity of 0.75. DTW	- Depth to Wate	r T

TABLE 1: HAMPTON 4MSample Results

	Sample		ТРН	BTEX	Depth to	Sample	Sample	
Location (SeeFigure 2)	Date	Sample Number	(ppm)	(ppb)	Water (ft)	Depth (ft)	Matrix	Comments
MW-2	12/16/96	TB #1	N/A	20,620			water	Taken by PNM
MW-3	1/31/97	MW-03	N/A	ND	20	N/A	water	Taken by PNM
MW-3	5/1/97	MW-03	N/A	ND	20	N/A	water	
MW-4	1/31/97	MW-04	N/A	2,651	16.4	N/A	water	Taken by PNM
MW-4	5/1/97	MW-04	N/A	3,477	16.4	N/A	water	
MW-4	5/1/97	MW-54	N/A	3,470	16.4	N/A	water	Blind Duplicate Sample
TPW 1	6/5/97	TPW-01-25-26	ND	ND	22.75	25	soil	
TPW 1	6/5/97	TPW-01	N/A	20	22.75	N/A	water	
TPW 2	6/5/97	TPW-02-25-26	600	59,600	23.38	25	soil	Free hydrocarbons on water
TPW 3	6/5/97	TPW-03-25-26	25	ND	N/A	25	soil	Groundwater not encountered.
TPW 4	6/6/97	TPW-04	N/A	5,967	19	N/A	water	
TPW 4	6/6/97	TPW-04-20-21.5	52	148	19	20	soil	
TPW 5	6/6/97	TPW-05	N/A	29,260	15	N/A	water	
TPW 5	6/6/97	TPW-05-15-16	61	46,500	15	15	soil	
TPW 6	6/6/97	TPW-06	N/A	5,738	15	N/A	water	
TPW 6	6/6/97	TPW-06-15-16.5	11	8	15	15	soil	
TPW 7	6/6/97	TPW-07	N/A	33,220	14.6	N/A	water	
TPW 7	6/6/97	TPW-07-15-16	250	271,000	14.6	15	soil	
N. of Lined Separator Pit *	4/30/97	APP-6.5-01	ND	ND	N/A	6.5	soil	
Former BR Unlined Pit *	4/30/97	OP-3-01	ND	2	N/A	3	soil	
S. of MW 4 *	4/30/97	SSMW4-2-01	274	9	N/A	2	soil	

* Refer to Figure 1: Hampton 4M Site Diagram

APPENDIX A

SAMPLE BACK UP



10:08AM PNM SOLUTIONS FOR A BET RACTICAL TOMORROW

EPA METHOD 8020 **AROMATIC VOLATILE ORGANIC**

P.2/2

MW-2

Client:	Public Service Co. of NM.	Project #:	93108-02
Sample ID:	TB #1	Date Reported:	12-18-95
Chain of Custody:	50 35	Date Sampled:	12-16-96
Laboratory Number:	A842	Date Received:	12-16-96
Sample Matrix	Water	Date Analyzed:	12-17-96
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det Limi (ug/L
Benzene	3,840	10	1.6
Toluene	7.960	10	1.7
Ethylbenzene	896	10	1.5
p,m-Xylene	5,600	10	2.2
o-Xylene	2,320	10	1.0
Total BTEX	20.620		

ND - Parameter not detected at the stated detection limit.

Surrogate Re	coveries:	Parameter	Percent Recovery
		Trifluorotoluene Bromofluorobenzene	101 % 98 %
References:	Method 5030 July 1992.), Purge-and-Trap, Test Methods for Eva	luating Solid Waste, SW-846, USEPA,
	Method 8020 USEPA, Sep), Aromatic Volatile Organics, Test Metho t. 1994.	nds for Evaluating Solid Waste, SW-846,
Comments:	2.1 Miles (South on CR 2585, Hampton #4A	M (@ GW).
^ 3			

Analyst

<u>Itacy W Lendler</u>

1

LAB: (505) 325-1556

505 325 6256



OFF: (505) 325-5667

ANALYTICAL REPORT

Attn: Company: Address: City, State:	Denver Be PNM Gas 603 W. El Farmingto	arden Services Im n, NM 87401		Date: COC No.: Sample No.: Job No.;	3-Feb-97 5735 13616 2-1000
Project Nam Project Loca	ne: ation:	PNM Gas Sa 970131150	ervices - Hempton 4M 0; MW-3'	· · ·	· · · ·
Sampled by Analyzed by Sample Mat	: /: wix:	MŠ DC Liquid	Date: Date:	31-Jan-97 Time: 3-Feb-97	15:00

Laboratory Analysis

Perameter	. :	Result	Unit of Measure	Detection Limit	Unit of Measure
Benzene	`	<0.2	ug/L	0.2	ug/L
Toluene		< 0.2	ug/L	0.2	4 <u>5</u> / <u>1</u> _
Ethylbenzene		<0.2	ug/L	0.2	ug/L
m,p-Xylene		<0.2	ug/L	0.2	ug/L
o-Xylene		<0.2	ug/L	0.2	ug/L
	TOTAL	< 0.2	ug/L		

Method - 5W-846 EPA Method 8020 Aromanic Volatile Organics by Gas Chromolography

Approved by: Date:

P.O. BOX 2606 • FARMINGTON, NM 87499 - Technology Blending Industry with the Environment - 262388 Philip-Farm NM ON SITE TECHNOLOGIES 303 320 0200

009

OFF: (505) 325-5667



LAB: (505) 325-1555

ANALYTICAL REPORT

Attn:	Scott Po	pe		Date:	5-May-97
Company:	npany: Philip Environmental			COC No.:	C3056
Address: 4000 Monroe Road			Sample No.:	14428	
City, State:	Fattning	ton, NM 87401		Job No.:	17877
Project Nan	ne:	Philip Envirome	ntal - Hampton 4M	r	
Project Loc.	ation:	MW-3			
Sampled by	/;	STP	Date:	1-May-97 Time:	14:00
Analyzed b	v:	DĆ	Date:	2-May-97	
Sample Ma	trix:	Liquid			

	Results as	Unit of	Limit of	Unit of
Perameter	Received	Measure	Quantitation	Measure
		·		
Benzene	ND	ug/L	0.2	ug/L
Toluene	ND	ug/L	0.2	ug/L
Ethylbenzene	ND	ug/I_	0.2	us/L
m,p-Xylene	ND	ug/L	0.2	ug/L
o-Xylene	ND	ug/L	0.2	ug/L
TOTAL	ND	ug/L		

ND - Not Detected at Limit of Quantitation

Method - SW 8-16 EPA Method 80204 Aromatic Volatile Organics by Gas Chromatography

Approved By: Date:

PO BOY JARA - EXTRAINMETONE NINA OFFAN



OPF: (505) 325-5667

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	Deriver Bear	den		Date:	3-Feb-97
Company: /	PNM Gas Se	ervices		COC No.:	5735
Address: 👘	6 0 3 W. Elm	í		Sample No.:	13617
City, State: /	Ferminaton,	NM 87401		Job No.:	2-1000
Project Name		PNM Gas Servic	es - Hampton 4M	· · · ·	
Project Locat	ti ģn:	9701311530; M	AM-4		, 1
Sampled by:	1	M\$	Date:	31-Jan-97 Time:	15:30
	. 1	DC.	Date:	3-Feb-97	•
Analyzed by:	· 1	**		-	

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Laboratory Analysis

Parameter		Result	Unit of Measure	Detection Limit	Unit of Measure
Benzene		\$11.7	ug/L	0.2	ug/L
Toluene		1420.5	ug/L	0.2	ug/L
Ethylbenzene		31.0	ug/L	0.2	ug/L
m,p-Xylene	· · ·	303.B	ug/L	0.2	ug/L
o-Xylene		84.3	ug/L	0.2	ug/L
ł	TOTAL	2651.4	ug/L		

Method - SW-846 EPA Method 8020 Aromatic Volatile Organics by Gas Chromalography

Approved by: Date:

2/3/97

P.O. BOX 2606 • FARMINGTON, NM 87499 - Technology Blending Industry with the Environment -



LAB: (505) 325-1556

OFF: (505) 325-5667

ANALYTICAL REPORT

Attn:	Scort Pa	pe		Date:	5-May-97
Company:	Philip Environmental			COC No.:	C3056
Address:	4000 Monroe Road			Sample No.:	14429
City, State: Familington, NM 87401				Job No.:	17877
Project Nan	ne:	Philip Envirome	ntal - Hampton 41v	1	
Project Loc	ation:	MW-4			
Sampled by	<i>(</i> :	STP	Date:	1-May-97 Time:	15:30
Analyzed b	V:	DC	Date:	2-May-97	
Sample Ma	trix:	Liquid			

	Hesuita as	Unit of	Limit of	Unit of
Parameter	Received	Mesaura	Quantitation	Wear Alc
Renzene	1162	ug/L	2	ug/L
Toluene	1797	ug/L	2	ug/L
Ethylbenzene	41	ug/l.	2	ug/L
m,p-Xylene	373	ug/L	2	ug/L
o-Xylene	103	ug/L	2	ug/L
7074	aL 3477	ug/L		

ND - Not Detected at Limit of Quantitation

Method - SW-844 KPA Method 8020A Aromatic Volatile Organics by Gas Chromotography

Approved By: Date:

DO DOV SCAL & FABARSTOTONE STATE STOR

OFF: (505) 325-5667

25053262388 Philip-Farm NM ON SITE TECHNOLOGIES

2011



LAB: (505) 325-1556

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ANALYTICAL REPORT

Attn:	Scott Po	pe		Date:	5-May-97
Company:	npany: Philip Environmental			COC No.:	C3056
Address: 4000 Manroe Road			Sample No.:	14430	
City, State: Farmington, NM 87401				Job No.:	17877
Project Nan	ne:	Philip Envirome	ntal - Hempton 4N	1	
Project Loca	ation:	MW-54	·		
Sampled by	';	STP	Date:	1-May-97 Time:	15:35
Analyzed by	y:	DĊ	Date:	2-May-97	
Sample Mat	trix:	Liquid		r	

Parameter	Reputto of Received	Unit of Measure	Limit of Quantitation	Unit of Measure
Benzene	1180	ug/L	2	ug/L
Toluene	1755	ug/L	2	Ug/L
Ethylbenzene	43	ug/L	2	ue/L
m,p-Xylene	387	ug/L	2	ug/L
o-Xylene	105	ug/L	2	ug/L
TOTAL	3470	ug/L		

ND - Not Detected at Limit of Quantitation

Method - SW-846 EPA Method 8020A Aromatic Volatile Organics by Gas Chromotography

Approved By: Date: 515/57

PO. ROY 2604 . FARMINICTON NINE OPAGE



5053262552

FARMINGTON LABORATORY P.O. BOX 1269 FARMINGTON, NEW MEXICO 87499-1289 PHONE (505) 328-2568

Certificate of Analysis No. F2-9706041-01

SPL FARMINGTON

TPW-01

Philip Environmental Corp. 4000 Monroe Rd. Farmington, NM 87401 ATTN: Scott Pope

DATE: 06/16/97

PROJECT: Hampton SITE: SAMPLED BY: STP SAMPLE ID: 004375

water
06/05/97
06/06/97

······································		ANALYTICAL	DATA		
PARAMETER			RESULT	S DETECT LIMIT	TION UNITS
Benzene Method 8020A Analyzed by: Date:	JN 06/11/97		2	0 1.0	ppb
Ethylbenzene Method 8020A Analyzed by: Date:	JN 06/11/97		Ν	D 1.0	dqq
Toluene Method 8020A Analyzed by: Date:	JN 06/11/97		N	D 1.0	ddd
Total Xylene Method 8020A Analyzed by: Date:	JN 06/11/97		N	D 1.0	dqq
Total Volatile Method 8020A Analyzed by: Date:	Aromatic Hy JN 06/11/97	drocarbons	2	0	ppb

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA **Ref: Standard Methods for Examination of Water & Wastewater, 18th ed. ***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

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06/16/1997 07:29

nel

QUALITY ASSURANCE: These analyses are performed in accordance with

ND - Not detected.

EPA guidelines for quality assurance.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA **Ref: Standard Methods for Examination of Water & Wastewater, 18th ed. ***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

	i	ANALYTICAL	DATA			
PARAMETER				RESULTS	DETECTION LIMIT	UNITS
Total Petrole EPA 418.1 Analyzed by: Date:	um Hydrocarbon MP 06/12/97	S		ND	10	mg/kg
Benzene Method 8020A Analyzed by: Date:	FAB 06/10/97			ND	1.0	ug/kg
Ethylbenzene Method 8020A Analyzed by: Date:	FAB 06/10/97			ND	1.0	ug/kg
Toluene Method 8020A Analyzed by: Date;	FAB 06/10/97			ND	1.0	ug/kg

PROJECT: Hampton 4M SITE: SAMPLED BY: STP

Philip Environmental Corp.

SAMPLE ID: 004372/TPW-01-25-26

5053262552

PROJECT NO: MATRIX: **DATE SAMPLED:** 06/05/97 DATE RECEIVED: 06/05/97

Certificate of Analysis No. F2-9706040-01

FARMINGTON LABORATORY P.O. BOX 1289 FARMINGTON, NEW MEXICO 87499-1289 PHONE (505) 326-2588



4000 Monroe Rd.

Farmington, NM 87401 ATTN: Scott Pope

06/16/1997 07:29

DATE: 06/16/97



FARMINGTON LABORATORY P.O. BOX 1289 FARMINGTON, NEW MEXICO 87499-1289 PHONE (505) 326-2588

Certificate of Analysis No. F2-9706040-01

SPL FARMINGTON

Philip Environmental Corp. 4000 Monroe Rd. Farmington, NM 87401 ATTN: Scott Pope

DATE: 06/16/97

PAGE 04

PROJECT: Hampton 4M SITE: SAMPLED BY: STP SAMPLE ID: 004372 7Pw -ol- 25-2b PROJECT NO: MATRIX: DATE SAMPLED: 06/05/97 DATE RECEIVED: 06/05/97

	ANALYTICAL	DATA		
PARAMETER		RESULTS	DETECTION LIMIT	UNITS
Total Xylene Method 8020A Analyzed by: FAB Date: 06/10/97		ND	1.0	ug/kg
Total Volatile Aromatic H Method 8020A Analyzed by: FAB Date: 06/10/97	Aydrocarbons	ND		ug/kg

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA **Ref: Standard Methods for Examination of Water & Wastewater, 18th ed. ***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.



FARMINGTON LABORATORY P.O. BOX 1289 FARMINGTON, NEW MEXICO 87499-1289 PHONE (505) 326-2588

Certificate of Analysis No. F2-9706040-02

SPL FARMINGTON

Philip Environmental Corp. 4000 Monroe Rd. Farmington, NM 87401 ATTN: Scott Pope

DATE: 06/16/97

PAGE 05

PROJECT: Hampton 4M	PROJECT NO:
SITE:	MATRIX:
SAMPLED BY: STP	DATE SAMPLED: 06/05/97
SAMPLE ID: 004373 TOW 07.26.26	DATE RECEIVED: 06/05/97

5053262552

	ANALY	TICAL DATA			
PARAMETER			RESULTS	DETECTION LIMIT	UNITS
Total Petrole EPA 418.1 Analyzed by: Date:	um Hydrocarbons MP 06/12/97		600	10	mg/kg
Benzene Method 8020A Analyzed by: Date:	FAB 06/11/97		2000	500	ug/kg
Ethylbenzene Method 8020A Analyzed by: Date:	FAB 06/11/97		4600	500	ug/kg
Toluene Method 8020A Analyzed by: Date:	FAB 06/11/97		14000	500	ug/kg
Total Xylene Method 8020A Analyzed by: Date:	FAB 06/11/97		39000	500	ug/kg

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA **Ref: Standard Methods for Examination of Water & Wastewater, 18th ed. ***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

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SPL, Inc.	a fais	men



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FARMINGTON LABORATORY P.O. BOX 1289 FARMINGTON, NEW MEXICO 87499-1289 PHONE (505) 328-2588

Certificate of Analysis No. F2-9706040-02

Philip Environmental Corp. 4000 Monroe Rd. Farmington, NM 87401 ATTN: Scott Pope

DATE: 06/16/97

PROJECT: Hampton 4M SITE: SAMPLED BY: STP SAMPLE ID: 004373 PROJECT NO: MATRIX: DATE SAMPLED: 06/05/97 DATE RECEIVED: 06/05/97

ANALYTICAL	DATA		
PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Total Volatile Aromatic Hydrocarbons Method 8020A Analyzed by: FAB Date: 06/11/97	59600		ug/kg

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA **Ref: Standard Methods for Examination of Water & Wastewater, 18th ed. ***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

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FARMINGTON LABORATORY P.O. BOX 1289 FARMINGTON, NEW MEXICO 87499-1289 PHONE (505) 326-2588

Certificate of Analysis No. F2-9706040-03

TPW-03-25.26

Philip Environmental Corp. 4000 Monroe Rd. Farmington, NM 87401 ATTN: Scott Pope

DATE: 06/16/97

PROJECT: Hampton 4M SITE: SAMPLED BY: STP SAMPLE ID: 004374 PROJECT NO: MATRIX: DATE SAMPLED: 06/05/97 DATE RECEIVED: 06/05/97

		ANA	LYTICAL DATA			
	PARAMETER			RESULTS	DETECTION LIMIT	UNITS
	Total Petrole EPA 418.1 Analyzed by: Date:	ım Hydrocarbons MP 06/12/97		25	10	mg/kg
)	Benzene Method 8020A Analyzed by: Date:	FAB 06/10/97		ND	1.0	ug/kg
	Ethylbenzene Method 8020A Analyzed by: Date:	FAB 06/10/97		ND	1.0	ug/kg
	Toluene Method 8020A Analyzed by: Date:	FAB 06/10/97		ND	1.0	ug/kg

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA **Ref: Standard Methods for Examination of Water & Wastewater, 18th ed. ***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

SPL FARMINGTON



FARMINGTON LABORATORY P.O. BOX 1289 FARMINGTON, NEW MEXICO 87499-1289 PHONE (505) 326-2588

Certificate of Analysis No. F2-9706040-03

Philip Environmental Corp. 4000 Monroe Rd. Farmington, NM 87401 ATTN: Scott Pope

DATE: 06/16/97

PROJECT: Hampton 4M SITE: SAMPLED BY: STP SAMPLE ID: 004374 PROJECT NO: MATRIX: DATE SAMPLED: 06/05/97 DATE RECEIVED: 06/05/97

ANALYTICAL L	DATA		
PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Total Xylene Method 8020A Analyzed by: FAB Date: 06/10/97	ND	1.0	ug/kg
Total Volatile Aromatic Hydrocarbons Method 8020A Analyzed by: FAB Date: 06/10/97	ND		ug/kg

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA **Ref: Standard Methods for Examination of Water & Wastewater, 18th ed. ***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.



FARMINGTON LABORATORY P.O. BOX 1289 FARMINGTON, NEW MEXICO 87499-1289 PHONE (505) 326-2588

Certificate of Analysis No. F2-9706048-01

SPL FARMINGTON

TPW.04

Philip Environmental Corp. 4000 Monroe Rd. Farmington, NM 87401 ATTN: Scott Pope

DATE: 06/16/97

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PROJECT: Hampton 4M SITE: SAMPLED BY: STP SAMPLE ID: 004376 PROJECT NO: MATRIX: MATRIX: DATE SAMPLED: 06/06/97 DATE RECEIVED: 06/09/97

	ANALYTICA	L DATA		
PARAMETER		RESULTS	DETECTION LIMIT	UNITS
Benzene Method 8020A Analyzed by: Date:	AA 06/12/97	2000	5.0	ppb
Ethylbenzene Method 8020A Analyzed by: Date:	AA 06/12/97	57	5.0	dqq
Toluene Method 8020A Analyzed by: Date:	AA 06/12/97	3100	25.0	dqq
Total Xylene Method 8020A Analyzed by: Date:	AA 06/12/97	810	5.0	ppb
Total Volatile Method 8020A Analyzed by: Date:	Aromatic Hydrocarbons AA 06/12/97	5967		ppb

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA **Ref: Standard Methods for Examination of Water & Wastewater, 18th ed. ***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

FARMINGTON LABORATORY P.O. BOX 1289 FARMINGTON, NEW MEXICO 87499-1289 PHONE (505) 326-2588

Certificate of Analysis No. F2-9706048-05

TPW' 04-20-21.5

DATE: 06/16/97

PROJECT: Hampton 4M **SITE: SAMPLED BY:** STP **SAMPLE ID:** 004380

Farmington, NM 87401 ATTN: Scott Pope

4000 Monroe Rd.

PROJECT NO: MATRIX: 50 DATE SAMPLED: 06/06/97 DATE RECEIVED: 06/09/97

	ANALYTICAL DATA			
PARAMETER		RESULTS	DETECTION LIMIT	UNITS
Total Petrole EPA 418.1 Analyzed by: Date:	um Hydrocarbons MP 06/13/97	52	10	mg/kg
Benzene Method 8020A Analyzed by: Date:	SB 06/11/97	28	1.0	ug/kg
Ethylbenzene Method 8020A Analyzed by: Date;	SB 06/11/97	3.4	1.0	ug/kg
Toluene Method 8020A Analyzed by: Date:	SB 06/11/97	76	1.0	ug/kg
Total Xylene Method 8020A		40	1.0	ug/kg
Analyzed by: Date:	SB 06/11/97	. 7		

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA **Ref: Standard Methods for Examination of Water & Wastewater, 18th ed. ***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

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06/16/1997 07:29 5053262552

Philip Environmental Corp.

SPL FARMINGTON

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FARMINGTON LABORATORY P.O. BOX 1289 FARMINGTON, NEW MEXICO 87499-1289 PHONE (505) 326-2588

Certificate of Analysis No. F2-9706048-05

SPL FARMINGTON

Philip Environmental Corp. 4000 Monroe Rd. Farmington, NM 87401 ATTN: Scott Pope

DATE: 06/16/97

PROJECT: Hampton 4M
SITE:
SAMPLED BY: STP
SAMPLE ID: 004380

PROJECT NO: MATRIX: DATE SAMPLED: 06/06/97 DATE RECEIVED: 06/09/97

ANAL	TICAL DATA		
Parameter	RESULTS	DETECTION LIMIT	UNITS
Total Volatile Aromatic Hydrocan Method 8020A Analyzed by: SB Date: 06/11/97	bons 147.4		ug/kg

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA **Ref: Standard Methods for Examination of Water & Wastewater, 18th ed. ***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

FARMINGTON LABORATORY P.O. BOX 1289 FARMINGTON, NEW MEXICO 87499-1289 PHONE (505) 326-2588

Certificate of Analysis No. F2-9706048-02

SPL FARMINGTON

TWP-05

Philip Environmental Corp. 4000 Monroe Rd. Farmington, NM 87401 ATTN: Scott Pope

> PROJECT NO: MATRIX: DATE SAMPLED: 06/06/97 DATE RECEIVED: 06/09/97

PROJECT: Hampton 4M SITE: SAMPLED BY: STP SAMPLE ID: 004377

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Benzene Method 8020A Analyzed by: AA Date: 06/12/97	5800	250	ppb
Ethylbenzene Method 8020A Analyzed by: AA Date: 06/12/97	460	250	ppb
Toluene Method 8020A Analyzed by: AA Date: 06/12/97	16000	250	ppb
Total Xylene Method 8020A Analyzed by: AA Date: 06/12/97	7000	250	dqq
Total Volatile Aromatic Hydrocarbons Method 8020A Analyzed by: AA Date: 06/12/97	29260		ppb

ANALYTICAL DATA

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA **Ref: Standard Methods for Examination of Water & Wastewater, 18th ed. ***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with **EPA** guidelines for quality assurance.



5053262552

06/16/1997 07:29

DATE: 06/16/97

SPL FARMINGTON

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FARMINGTON LABORATORY P.O. BOX 1289 FARMINGTON, NEW MEXICO 87499-1289 PHONE (505) 326-2588

Certificate of Analysis No. F2-9706048-06

TWP-05-15.-16

Philip Environmental Corp. 4000 Monroe Rd. Farmington, NM 87401 ATTN: Scott Pope

DATE: 06/16/97

PROJECT: Hampton 4M SITE: SAMPLED BY: STP SAMPLE ID: 004381 PROJECT NO: MATRIX: DATE SAMPLED: 06/06/97 DATE RECEIVED: 06/09/97

	ANALYTICAL DAT	A		
PARAMETER		RESULTS	DETECTION LIMIT	UNITS
Total Petrole EPA 418.1 Analyzed by: Date:	um Hydrocarbons MP 06/13/97	61	10	mg/kg
Benzene Method 8020A Analyzed by: Date:	SB 06/11/97	4000	1000	ug/kg
Ethylbenzene Method 8020A Analyzed by: Date:	SB 06/11/97	4500	1000	ug/kg
Toluene Method 8020A Analyzed by: Date:	SB 06/11/97	10000	1000	ug/kg
Total Xylene Method 8020A Analyzed by: Date:	SB 06/11/97	28000	1000	ug/kg

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA **Ref: Standard Methods for Examination of Water & Wastewater, 18th ed. ***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

06/16/1997	07:29	5053262552

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Certificate of Analysis No. F2-9706048-06

SPL FARMINGTON

Philip Environmental Corp. 4000 Monroe Rd. Farmington, NM 87401 ATTN: Scott Pope

DATE: 06/16/97

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PROJECT: Hampton 4M SITE: SAMPLED BY: STP **SAMPLE ID: 004381**

PROJECT NO: MATRIX: **DATE SAMPLED:** 06/06/97 DATE RECEIVED: 06/09/97

ANALYTICAL D	ATA		
PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Total Volatile Aromatic Hydrocarbons Method 8020A Analyzed by: SB Date: 06/11/97	46500		ug/kg

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA **Ref: Standard Methods for Examination of Water & Wastewater, 18th ed. ***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.



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FARMINGTON LABORATORY P.O. BOX 1289 FARMINGTON, NEW MEXICO 87499-1289 FHONE (505) 328-2588

Certificate of Analysis No. F2-9706048-03

TWP-06

Philip Environmental Corp. 4000 Monroe Rd. Farmington, NM 87401 ATTN: Scott Pope

DATE: 06/16/97

PROJECT: Hampton 4M **SITE: SAMPLED BY:** STP **SAMPLE ID:** 004378

PROJECT NO:	
MATRIX:	•• 2 ≥}≊ €
DATE SAMPLED:	06/06/97
DATE RECEIVED:	06/09/97

		ANALYTICAL	DATA		
PARAMETER			RESULTS	DETECTION LIMIT	UNITS
Benzene Method 8020A Analyzed by: Date:	AA 06/11/97		1600	25	ddd
Ethylbenzene Method 8020A Analyzed by: Date:	AA 06/11/97		48	25	ppb
Toluene Method 8020A Analyzed by: Date:	AA 06/11/97		3400	25	ddd
Total Xylene Method 8020A Analyzed by: Date:	AA 06/11/97		690	25	وطط
Total Volatile Method 8020A Analyzed by: Date:	Aromatic Hyd AA 06/11/97	rocarbon s	5738	25	לקק

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA **Ref: Standard Methods for Examination of Water & Wastewater, 18th ed. ***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

SPL FARMINGTON

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FARMINGTON LABORATORY P.O. BOX 1289 FARMINGTON, NEW MEXICO 87499-1289 PHONE (505) 326-2588

Certificate of Analysis No. F2-9706048-07

-pw-06-16,-16,5

Philip Environmental Corp. 4000 Monroe Rd. Farmington, NM 87401 ATTN: Scott Pope

DATE: 06/16/97

PROJECT: Hampton 4M SITE: SAMPLED BY: STP SAMPLE ID: 004382

06/06/97
06/09/97

	ANALYI	TICAL DATA			
PARAMETER			RESULTS	DETECTION LIMIT	UNITS
Total Petrole EPA 418.1 Analyzed by: Date:	um Hydrocarbons MP 06/13/97		11	10	mg/kg
Benzene Method 8020A Analyzed by: Date:	SB 06/11/97		ND	1.0	ug/kg
Ethylbenzene Method 8020A Analyzed by: Date:	SB 06/11/97		ND	1.0	ug/kg
Toluene Method 8020A Analyzed by: Date:	SB 06/11/97		2.8	1.0	ug/mg
Total Xylene Method 8020A Analyzed by: Date:	SB 06/11/97		4.8	1.0	ug/kg

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA **Ref: Standard Methods for Examination of Water & Wastewater, 18th ed. ***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

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QUALITY ASSURANCE: These analyses are performed in accordance with SPA guidelines for quality assurance.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA **Ref: Standard Methods for Examination of Water & Wastewater, 18th ed. ***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

ANALYTICAL DATA PARAMETER RESULTS DETECTION LIMIT Total Volatile Aromatic Hydrocarbons 7.6 Method 8020A

PROJECT: Hampton 4M SITE:

5053262552

SAMPLED BY: STP

Analyzed by: SB

SAMPLE ID: 004382

Philip Environmental Corp. 4000 Monroe Rd. Farmington, NM 87401 ATTN: Scott Pope

Date: 06/11/97

Certificate of Analysis No. F2-9706048-07

FARMINGTON LABORATORY P.O. BOX 1289 FARMINGTON, NEW MEXICO 87499-1289 PHONE (505) 326-2588

SPL FARMINGTON

PROJECT NO:

MATRIX:

DATE SAMPLED: 06/06/97

DATE RECEIVED: 06/09/97



06/16/1997 07:29

DATE: 06/16/97

UNITS

ug/kg

SPL FARMINGTON



FARMINGTON LABORATORY P.O. BOX 1289 FARMINGTON, NEW MEXICO 87499-1289 PHONE (505) 326-2588

Certificate of Analysis No. F2-9706048-04

TPW-07

Philip Environmental Corp. 4000 Monroe Rd. Farmington, NM 87401 ATTN: Scott Pope

DATE: 06/16/97

PROJECT: Hampton 4M **SITE: SAMPLED BY:** STP **SAMPLE ID:** 004379 PROJECT NO: MATRIX: DATE SAMPLED: 06/06/97 DATE RECEIVED: 06/09/97

		ANALYTICAL	DATA		
PARAMETER			RESULTS	DETECTION LIMIT	UNITS
Benzene Method 8020A Analyzed by: Date:	AA 06/11/97		5300	100	dqq
Ethylbenzene Method 8020A Analyzed by: Date:	AA 06/11/97		620	100	ddd
Toluene Method 8020A Analyzed by: Date:	AA 06/11/97		18000	100	dđđ
Total Xylene Method 8020A Analyzed by: Date:	AA 06/11/97		9300	100	ppb
Total Volatile Method 8020A Analyzed by: Date:	Aromatic Hyd AA 06/11/97	rocarbons	33220	100	ppb

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA **Ref: Standard Methods for Examination of Water & Wastewater, 18th ed. ***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

SPL FARMINGTON

P.O. BOX 1289 FARMINGTON, NEW MEXICO 87499-1289

TOP-07-15.16

Certificate of Analysis No. F2-9706048-08

Philip Environmental Corp.

PROJECT NO: MATRIX: **DATE SAMPLED:** 06/06/97 **DATE RECEIVED:** 06/09/97

	ANALITICAL	DATA		
PARAMETER		RESULTS	DETECTION LIMIT	UNITS
Total Petrole EPA 418.1 Analyzed by: Date:	um Hydrocarbons MP 06/13/97	250	10	mg/kg
Benzene Method 8020A Analyzed by: Date:	SB 06/11/97	7000	1000	ug/kg
Ethylbenzene Method 8020A Analyzed by: Date:	SB 06/11/97	20000	1000	ug/kg
Toluene Method 8020A Analyzed by: Date:	SB 06/11/97	74000	1000	ug/kg
Total Xylene Method 8020A Analyzed by: Date:	SB 06/11/97	170000	1000	ug/kg

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA **Ref: Standard Methods for Examination of Water & Wastewater, 18th ed. ***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with PA guidelines for quality assurance.

FARMINGTON LABORATORY PHONE (505) 326-2588

PAGE 22

DATE: 06/16/97

4000 Monroe Rd. Farmington, NM 87401 ATTN: Scott Pope

PROJECT: Hampton 4M SITE: SAMPLED BY: STP **SAMPLE ID: 004383**

5053262552

FARMINGTON LABORATORY P.O. BOX 1289 FARMINGTON, NEW MEXICO 87499-1289 PHONE (505) 326-2588

Certificate of Analysis No. F2-9706048-08

SPL FARMINGTON

Philip Environmental Corp. 4000 Monroe Rd. Farmington, NM 87401 ATTN: Scott Pope

DATE: 06/16/97

PROJECT: Hampton 4M **SITE: SAMPLED BY:** STP **SAMPLE ID:** 004383

06/16/1997 07:29

PROJECT NO: MATRIX: DATE SAMPLED: 06/06/97 DATE RECEIVED: 06/09/97

ANALYTICAL DA	TA		
PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Total Volatile Aromatic Hydrocarbons Method 8020A Analyzed by: SB Date: 06/11/97	271000		ug/kg

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA **Ref: Standard Methods for Examination of Water & Wastewater, 18th ed. ***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

INA Inc.

PAGE 23

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	Scott Pope			Date:	6-May-97
Company:	Philip Favin	nmental		COC No.:	C3056
Address:	4000 Monu	oe Road		Sample No.:	14427
City, State:	; Fermington,	NM 87401		Job No.:	17877
Project Nar	ne:	Philip Environment	al - Hampton 4N	1 .1	
Project Loc	ation:	APP-5.5-01 - Ac-	five Procue	from Pit	
Sampled by	Y:	STP	Dato:	30-Apr-97 Time:	16:35
Analyzed b		DC	Date:	6-May-97	
Sample Ma	trix:	Soil			

Laboratory Analysis

Parameter	Received	Limit of Quantitation	Unit of Measure	Method
Intal Petroleum Hydrocarbons, TPH	ND	25	mg/kg	EPA Method 418.1

ND - Not Catented at Limit of Quantitation

Quality Assurance Report

Laboratory	Fortified	Blank/Spike	: Soil

Laboratory Identification	Analyzad Value	Acceptable Range	Unit of Measure
Luburniory Fortified Blank Soll - QCRS2	<25	<25	mg/kg
Laboratory Farified Spike Soil - QCSSi	872	828 - 1024	mg/kg

Duplication		
Laboratory Identification	% RSD	Limit % RSD
14425-C3056	<100	15.0

Approved by: Date: 5/4/77

LAB: (305) 325-1555

. . .

OFF: (505) 325-5667



ANALYTICAL REPORT

Attn: Company: Address: City, State:	Scott Pope Philip Envil 4000 Mon Farmingtor	ronmental roe Rosd n, NM 87401		Date: COC No.: Sample No.: Job No.:	6-May-97 C3056 14427 17877
Project Nam Project Loca	ie: stion:	Philip Environme APP-6.5-01	ntal - Hampton 4M Active Preduction	P; + @ 6.5 \$	
Sampled by	;	STP	Date:	30-Apr-97 Time:	16:35
Analyzed by		DC	Date:	5-May-97	
Sample Mat	rix:	Soil			

Laboratory Analysis

Parameter		Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
Benzene		ND	ug/kg	1.0	ug/kg
Toluene		ND	ug/kg	1,0	ug/kg
Ethylbenzene		ND	uging	1.0	_ug/kg
m.o-Xylene		ND	ug/kg	1.0	ug/kg
o-Xylene		ND	ug/kg	1.0	ug/kg
	TOTAL	ND	ug/kg]	

ND - Not Detected at Limit of Quentitation

Method - SVV-345 EPA Method 8030A Aromatic Volatile Organics by Gas Chromatography

Approved by: Date: 5/6/97



OFF: (505) 325-5667

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	Scott Po	pe		Date;	6-May-97
Company:	Philip En	vironmental		COC No.:	C3056
Address: 4000 Monroe Road			Sample No.:	14426	
City, States	Farming	ton, NM 87401		Job No.:	17877
Project Nan	ne:	Philip Environme	intal Hampton 4M	1	
Project Loc	ation:	SSMW4-2-01	South nw-4	@ a'	
Sampled by	/:	STP	Date:	30-Apr 97 Time:	15:40
Analyzed b	y:	DĈ	Date:	6-May-97	
Sample Ma	TRIX:	Soil			

Laboratory Analysis

Perameter	Results as Received	Limit of Quantitation	Unit of Measure	Method
Total Petroleum Hydrocarbons, TPH	274	25	mg/ks	EPA Method 418.1

ND - Not Detected at Limit of Quantitation

Quality Assurance Report

Laboratory Fortified Blank/Spike Soil

Laboratory Identification	Analyzed Value	Acceptable Rango	Unit of Measure
Luburatory Forefied Blank Soil - QCRS2	<25	< 25	mg/kg
Laboratory Fortified Spike Soil - QCSSI	872	828 - 1024	nig/kg

Duplication

Laboratory Identification	% RSD	Limit % RSD
14425-C3056	<100	15.0

Approved by: 5/2/97 Date.

#3 #56 #FE10070551 STY & America 77 / The 22



LAB: (503) 325-1556

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OFF: (\$05) 325-5667

10:35

05/07/97

ANALYTICAL REPORT

Attn:	ttn: Scott Pope			Date:	6-Maγ-97
Company:	Philip En	vironmental		COC No.:	C3056
Address: 4000 Monroe Road			Sample No.:	14426	
City, State:	Farmingi	ton, NM 87401		Job No.:	17877
Project Nan	ne:	Philip Environment	al - Hampton 41	И	
Project Loc	ation:	SSMW4-2-01			
Sampled by	/:	STP	Date:	30-Apr-97 Time:	15:40
Analyzed b	y:	DC.	Date:	5-May-97	
Samole Ma	trix:	Soil			

Laboratory Analysis

Parameter		Results as Received	Unix of Measure	Limit of Quantitation	Unix of Measure	
Benzene		ND	ue/kg	1.0	ug/kg	
Toluene		2.1	ug/kg	1.0	ug/kg	
Ethylbenzene		1.3	ug/kg	1.0	ug/kg	
m,p-Xylene		5.8	ug/kg	1.0	ug/kg	
o-Xylene		ND	ug/kg	1.0	ug/kg	
	TOTAL	9.2	ug/kg			

ND - Not Detected at Limit of Quantitation

Method - SW-046 EPA Method 8020A Aromatic Volutile Organics by Gas Chromatography

Approved by: Date: 5/6 (97

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Philip-Farm NM

505 325 6256

ON SITE TECHNOLOGIES

P. 62



LAB- (\$05) 325-1856

OFF: (505) 325 5667

ANALYTICAL REPORT

Atm:	Scott Pa	pe		Date:	o-may-37
Company:	Philip En	vironmentel		COC No.:	C3056
Address:	dress: 4000 Monroe Road			Sample No.:	14425
City, State:	Farming	on, NM 87401		Job No.:	17877
Project Nar	ne:	Philip Envit	onmental - Hampton 4M		
Project Loc	ation:	OP-3-01 (opl Pite 3'		
Sampled by	<i>;</i> :	STP	Date:	30-Apr-97 Time:	15:10
Analyzed b	y:	DC	Date:	6-May-97	
Sample Ma	trix:	Soil			

Laboratory Analysis

Parameter	Results as Received	Limit of Quantitation	Unit of Measure	Method
Total Petroleum Hydrorarbans, TPH	ND	25	mg/kg	EPA Method 418.1

ND - Not Educated at Limit of Quantitation

Quality Assurance Report

Laboratory Fortified Blank/Spike Soil

Leboratory Identification	Analyzed Value	Accepteble Renge	Unit of Measure
Laboratory Fortified Blank Soil - QCB52	< 25	< 25	nig/kg
Laboratory Fortified Spike Soil - QCS51	872	828 - 1024	m <u>z</u> /k <u>g</u>

Duplication		Limit
Laboratory Identification	% RSD	% RSD
14425- <u>C3056</u>	<100	15,0



05/07/97 10:34 25053262388		Phi	lip-Farm NM		
		DN SIIE	TECHNOLOG	169 505 325 6	256 P.
OFE: (505) 3	25 -56 67	TECHN	OLOGIES, LTE		LAB: (305) 325-1556
		£1			
Attn:	Scott Po	pe		Date:	6-May-97
Company:	Philip En	vironmental		COC No.:	C3056
Address:	4000 M	ontoe Read		Sample No.:	14425
City, State:	. Farming	ton, NM 87401		Job No.:	17877
Project Nar	ne:	Philip Environment	tal - Hampton 4N	1	
Project Loc	ation:	OP-3-01	-		
Sampled by	/:	STP	Date:	30-Apr-97 Time:	15:10
Analyzed b	γ:	DC	Date:	5-May-97	
Sample Ma	trix:	Sail		-	

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P.03

Laboratory Analysis

Parameter	· · · · · · · · · · · · · · · · · · ·	Resuits as Received	Unit of Measure	Limit of Quantitation	Unit of Massure
Benzene		ND	ug/kg	1.0	ug/kg
Toluene		ND	ug/kg	1.0	ug/kg
Ethylbenzene		ND	ug/kg	1.0	ug/kg
m,p-Xylene		1.6	ug/kg	1.0	ug/kg
o-Xylené		ND	ug/kg	1.0	ug/kg
	TOTAL	1.6	ug/kg		

ND - Not Detected at Limit of Quantitation

Method - SW-RAF FPA Method 8020A Aromatic Valutile Organics by Gas Chromatography

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and a fair has shown as

Approved by: Oct Date: 5/6/47

OFF: (505) 325-	1 566?	· · ·	//	VIN 3			LAB (SOS	1) 325-1654
	-•		CHNOLOG	GIES, LTD.				y 040-1008
	i.		y		Y			
· .	1	1	OUALITY	ASSURANC	E REPOR	T [.]	, i	
		•	för	EPA Method &	020	-	1 J	
		A au 1 A au	· · · · · · · · · · · · · · · · · · ·		•			
Date	Analyzed:	' 3-Feb-97		1	Inte. Surror	rnal QÇ No.: Insta OC No.:	0527-570	
		(Refe	rence Stand	lard OC No.:	0417-00	
2	, ,			<u>r</u>			•/// 20	
, <u> </u>	1 1		11				· <u>······························</u> ·······	•
/	Nethod Bla	nk				1 11 1 1	1	
Parameter			• •• •		Anzult	Manager a		
Average Arm	ount of All	Analytes In I	Blank		<0.2	ppb .	ł ·	
1	1	1 + +						
(alibration	Check				· ·	······	
Bunning	5 }		Unit of	Trute	Analyzed	64 D144		
			///0450/70	Valve	Value	76 Diff		
Benzene	ť	•	ррь	20.0 /	19.2	4	15%	
Toluene	l	t. T	ppb	20.0	19.6	2	15%	
Ethy/benzene	•	3.1	' ppb	20.0	20.0	0	15%	
m,p-Xylene	<u> </u>		pob	40.0	39.0	· 3	15%	
o-Xylenel		1	· ppb	20.0	19.7	11	15%	
	Antrix Spik	•)		· · ·		• .	
		1- Percent	2 · Percent			1	1 - 21	
Parameter 1		Recovered	Recovered	Limit	%R5D	Limit		
1							:	
Benzene)		92	90 ·	(39-150)	<u> </u>	20%		
Fibudbaaraaa	····••	1 35	93	(40-148)		20%	,	
m n. Yvlene		94	90	(32-100)	1	20%		
o-Xvlene		95	94	(35-145)	1 /	20%	,	
T	بالمستجد المستج بالكري		11.	1				
[5	Surrogate H	lecoverios	!	}				•••
		S1	\$2 8			\$1 Brance	52	•
ł	fication	Racovered	Recovered	Leboratory Idea	tilication	Recovered	Roonverent	. ,
sbarstory Mert		(70-130)	1	Limit Percent R	ecovered	(70-130)		
abaretary kienti Jinit Percent Ae	CONTRO	T				· · · · ·		
sboretary Identi Jmit Percent Re	covered							
eboretory kienti Jmit Percent Re 13616-5735	covered	97		<u> </u>				
sboretary Identi Jimit Parcent Fe 13616-5735 13617-5735		97 96						
Leboretory Identi Umit Percent Per 13616-5735 13617-5735		97 96	· · · · · · · · · · · · · · · · · · ·		······································			•

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P.O. BOX 2606 • FARMINGTON, NM 87499

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- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

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05/07/97 10:37

OFF: (505) 325-5662

25053262388



LAB: (505) 325-1556

QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 5-May-97

Internal QC No.: 0527-575 Surrogate QC No.: 0528-STD Reference Standard QC No.: 0528/30-QC

Method Blank

	ļ	Units of	
Analyte	Result	Measure	Ĺ
Average Amount of All Analytes in Blank	< 1.0	ppb	

Calibration Chock Units of True Analyzad Mescuro Value Value % DiH Limit Analyte 7 Benzene ppb 20.0 18.7 15% 20.0 19.4 3 15% Toluene ppb 20.0 19.7 15% Ethylbenzene 1 ppb 40.0 38.1 5 15% In,p-Xylenc ppb 20,0 a-Xylene 19.7 2 15% ppb

Matrix Spika 1. Farcent 2 - Percent

Analyze	Recovered	Recovered	Limit	%RSD	Limit
Benzene	90	86	(39-150)	4	20%
Toluene	92	88	(46-148)	4	20%
Ethylbenzene	92	87	(32-160)	3	20%
m,p-Xylene	88	83	(35-145)	3	20%
o-Xylene	88	84	(35-145)	3	20%

Surrogate Recoveries

	S1 Percent	S2 Percent		S1 Percent	SZ Parcant
Lebermory Montification	Recovered	Recovered	Laboratory Identification	Recovered	Recovered
Limit Percent Recovery	(70-130)		Limit Fercent Recovery	(70-130)	
31: Neurobonzeno			S1: Flourobenzene		
14425-03055	92				
14426-C3056	92				
14427-C3056	93				
					(ne)
					5/4/97



LAB: (505) 325-1556

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QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 2-May-97

05/07/97

OFF: (505) 325-5667

10:39

Internal QC No.: 0527-STD Surrogate QC No.: 0528-STD Reference Standard QC No.: 0529/30-QC

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Method Blank

		Unit of	i
Peremoter	Aasult	Messura	ĺ
Average Amount of All Analytes in Blank	<0.2	ppb	ŀ

Calibration Ch	eck				
Perameter	Unit of Measure	True Ve <u>lua</u>	Analyzed Value	% Diff	Limit
Senzene	ppb	20.0	18.8	6	15%
Toluene	ppb	20.0	19.3	3	15%
Ethylbenzene	քքն	20.0	19.8	2	15%
m.p-Xylene	ррб	40.0	37.7	6	75%
o-Xylene	ppb	20,0	19.5	2	15%

Matrix Spike

Parameter	1- Percent Recovered	2 - Percent Recovered	Limit	%RSD	Limit
Benzene	89	83	(39-150)	0	20%
Toluene	93	91	(45-148)	1	20%
Ethvibenzene	92	92	(32-160)	Ó	20%
m,p-Xylene	93	92	(35-145)	0	20%
n-Xylene	92	91	(35-145)	0	20%

Surrogate R	ecoveries	
	\$1	S 2

	\$1	52	3	51	32
	Percent	Percent		Fereent	Percent
Leboratory Identification	Recovered	Recovered	Laboratory Identification	Recovered	Recovered
Limit Percent Recovered	(70-130)		Umi: Percent Recovered	(70-130)	
14428-C3056	94				
14429-03056	93				
14430-C3056	92			+	
	+				(171)
و و المعامل من الموالي الكاف المجال المعالي المحالي المحالي المحالي المحالي المحالي المحالي المحالي ا					5/5/27

St: Hourobenzene



CHAIN OF CUSODY RECORD

Date: 1/31/97



657 W. Maple • P. O. Box 2606 • Farmington NM 87499 LAB: (505) 325-5667 • FAX: (505) 325-6256

Purchas	se Orde	ar No.:			Job No.						_	Name	••••••••••••••••••••••	Ma	aureer	ı Gan	non		Tiffe			
	Nam	8	Denver Beard	dən		· · · · · · · · · · · · · · · · · · ·					54	Comp	any	PN	IM Ga	s Ser	vices					
BÃO	Com	pany	PNM Gas Ser	rvices			T	Dep1. 32	24-3763		PO FI	Mailin	g Addres	s Al	verad	o Squ	are, N	Aail Sto	op 04	08		
S S S S S S S S S S S S S S S S S S S	Addre	ess	603 W. Elm S	Street							E S	City, S	Stale, Zip	AI	buque	erque,	NM 8	37158				
-	City,	Stale, Zip	Farmington,	NM 874	01						u	Telepi	hone No.	50	5-848	-2974		Т	elefax	No.		
Samplin	ng Loca H-Gr	ition: ヽPや∩	, YM								u00					ANAL	YSIS	REQU	ESTE	D		
Sample	۱ ۱	Nark	sike (100	107							Number of Containers	/	1000 ×	7	T	T	Τ,	Τ	7	<i> </i>		
		SAI	MPLE IDENTIFICATI	ION		-	SAM DATE	PLE	MATRIX	PRES.		×		/							<u> </u>	AB ID
Mu	J-3	9	7013115	00		l	31/97		410	Ice	3	V	<u>k</u>									
Mu	1-4	9	7013153	00					L	Tre	2	V										
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	Hishod L	<u>. 72</u>						ato/Time	11117	11063	- NeU	aived hy	; ; (¥-e	$\not\leftarrow$						<u>┉</u> -대재	1 1015
Beline	uiched -	<u>у.</u>			<u></u>			ale/Time			Ren	eived hu	<u>. </u>							Date/Tir		
Molbod		<u></u>		01				0.0111110			Rus	h	2	 24-48 -	lours	10	Workir	ng Days	Spec	ial Instru	ictions:	
Authori	ized by:		(Client Signature	US Acco	npany Requ	uesi)		Date	/31/	97										Resul to boi	ts to be h partie	e sent es.

Distribution: White - On Site Yellow - LAB Pink - Sampler Goldenrod - Client

ECTERATION CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR C					7401 (505) 326-2388 FAX							erial N	o. U Z.	104
Project Name HAMPT	NY 4 M	2		ttles	Type	e ot ysie		/ /	/ /		/ / /	/ /		
Project Number 17877	Phase , 1	iesk 600	01.77	f Bo	and	Bottle	1		/ /			/ /		' / /
Samplers STP				ber o			U.S.	o Ciul		/ /				
Laboratory Name 5/	<u>2</u>			E			Y.	V /				/ /		
Location	EAR MING	non		otal		R	K.		/ /			/ /		r
Sample Number (and depth)	Date	Time	Matrix	۲ ۲		<u> </u>	<u>y</u>						\square	Comments
TPW-04	6/6/97	1150	WATER	2		X								
TPW-05	6/6/97	1215	INATZE	2		x								
TPW-06	6/6/97	1710	WATER	2		×								-
TPW-07	6/6/97	1740	WATER	2		×								
TPW-04-20-21.5	6/6/57	0840	Sou	1	×	X								
TPW-05-15-16	6/6/97	1050	Soil	1	×	X								
PW-06-15-16,5	616/97	1420	Sout	1	X	X		,						
TPW-07-15-16	6/6/97	1615	SOLL	1	×	×								
												· · · · · · · · · · · · · · · · · · ·		
telinquished by:				A		<i></i>	Re	ceive	d Bv:					
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Samples Iced: X Ye	S I No		Carrier:		······	<u></u>					- +	Airbill	No.	·····
Samples Iced: X Ye Preservatives (ONLY for Water	s 🗌 No Samples)		Carrier: Shipping and	d Lab I	Notes:							Airbill	No.	

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SPL FARMINGTON

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		4000 Farmi	Monroe Road ngton, NM 8	d 7401	isto	ody (5 (5	Ke (05) 32 (05) 32	COI 6-226 6-238	2 Pho 8 FA>	one (co	C Ser	ial No	. C	3()57	
Project Name $HAMPTON$ Project Number 17877 Samplers $57P$ Laboratory Name $5PC$ Location FC Sample Number (and depth) TPW-02 - 25-26 TPW-03 - 25 - 26 TPW-01	Phase . T Phase . T Phase . T Date G/S/97 G/S/97 G/S/97 G/S/97	ask Time 1045 1325 1520 1035	Matrix Soil Soil Soil Water	7 / Total Number of Bottles	Type Analiand I and I X X X X	of ysis Bottle X X X X	211		620									Commen	
Ielinguished by: Signature Signature	No iamples) 	oxide (NeOH) wite acid (NCI) c scid (HrQS) acid (Hr2SOs)	Date / 6 / 9 7 Carrier: Shipping an	d Lab I	T 07	'ime 40	F		ived	By: sig	nature	na.			Airbill	Date /9 No.	7	7.5	me 25

PAGE 09

SPL FARMINGTON

06/16/1997 07:29 5053262552

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-1 1 auril11													
Chain o 4000 Monroe Ro Farmington, NM	f Cu ad 87401	usto	ody	505) 326-2 505) 326-2	ord 262 Ph 388 FA	one X			coc	Serial	No. (03	• 3057
Project Name HAMPTON 4M. Project Number 17877 Phase. Task Samplers STP Laboratory Name SPL Location FRRMIN TON, NM	otal Number of Bottles	Type Anai and I	of ysis Bottle	Ule-	89220								
Sample Number (and depth) Date Time Matrix			<u> </u>	¥		/ /		{					Comments
TPW-01-25-26° 6/5/97 1045 Soil	1	X	X			ļ							<u></u>
TPW-02-25-26 6/5/17 1325 Soil	1	א	×										
TPW-03-25-76 615197 1520 Soil	1	×	×									Ţ.,	
TPIN-01 6/5/97 1035 WATER	, 2		X										
Relinguished by:	.)	_1	1	Rec	eiveo	iBv:							
// Signature Date		٦	ime			Sign	ature				Dat	0	Time
Ave. T. Por 6/6/97	,	07	40	(a	na	L	um	an	<u>~</u>	6/	6/0	17	7:35
Samples Iced: 🔀 Yes 🗌 No Carrier:										Airt	ill No.		
Preservatives (ONLY for Water Samples) Shipping a Cyanide Sodium hyroxide (NaOH) K Volatile Organic Analysis Matals Netric acid (HO3) TPH (418.1) Suffuence coid (H2SO4)	nd Lab	Notes:											
Other (Specify) Other (Specify)													

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SPL FARMINGTON

APPENDIX B

DRILLING LOGS

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Envirotech Inc.

FIELD BORING LOG

78-	HING NO. N the l	MW-	□LL No. PI	novect n 93	1 DR	DZ PAIM GAS SERVICES
G. DE	SIGNATION	OF DRILL:				PROJECT LOCATION:
	MOBI	123	DRIL		B-6	L HAMPTON # 4M
-E OF			AUGE	? R	DRI	ILLING SURFACE ELEVATION TOTAL DEPTH OF HOLE:
AIE	STARTED:	<u> 12/</u>	16/0	<u>i 6</u>	⁰	MILLING Co.: 45 PT
	ION TYPE:	<u>b:</u> [2	114 /	10	EI	ENUROTECH INC.
	COMP	LETC	ed A	S	c	AL CHAHATR CANG GROUNDWATER DEPTH 1045 TIME 27.8
FACE	CONDITION	<u>vi 7 0 /</u> 5:		JELL		<u>Ms. /pz.</u>
		G R	ADE1	<u>}</u>	ELL	OW SILTY SAND
u F	SAMPLE TYPE	SAMPLE No.	READ	BLOWS PER	uscs	LOG OF MATERIAL/COMMENTS
					SM	LIGHT BROW SILTY SAND, SLIGHTLY MOIST MEDIUM
1 —						HARD, NO HYDROCARBON ODOR
				\mid		
5 <u> </u>						
_ +						
<u>.</u> -					SM	SAME AS ABOUE PLUE GEOGLE II - ADD
						(ASSESSMENT FROM SURFACE CUTTING, VISUM.)
						Q'12 DAR BROWN STREAK OF SILT TO CLAYEY SAND.
_	<u> </u>					A 16 ANATHER STACANE THILLAND AT SHERE SA
						DARK BROWN + STRONG H.C. ODDR
9¦						
,					SM	STRONG H.C. ODOR VISUAL
、コ	└ └		ł			
				1		I I GALT ISHANT TO UNDERSTICTT I DAY COMPANY TA PLAVEY PAILS
					i	WET HARD STRONG His ODD (AND RE MONTH
						WET, HARD, STRONG H.C. ODDR (COULD BE PRODUCT SATURATED SOIL).
						WET, HARD, STRONG H.C. ODDR (COULD BE PRODULT SATURATED SOIL).
					P	WET, HARD, STRONG H.C. ODDR. (COULD BE PRODUCT SATURATED SOIL).
					P-	GROUND WATER TAOLE (COLLECTED WATER SAMPLE FOR STER(ROY)
					P SM	GROUND WITTER THOLE (COLLECTED WATER SAMPLE FOR STER(ROT AND TPH(ROIS) . N 2" PAOU & T ORSERVED IN THE BAILER SA ME AS ABOUE
					<u>P</u> 5M	GROUND WATER THOLE (COLLECTED WATER SAMPLE FOR STER(80) AND TPH(8015) N 2" PAOULT DREERSAMPLE FOR STER(80) SA ME AS ABOUE
					P sm	GROUND WATER THOLE (COLLECTED WATER SAMPLE FOR STER(ROZ AND TPH(ROIS) . N 2" PAOULT DREEZUED IN THE BAILER SA ME AS ABOUE
┙ <u></u> <u></u> <u></u> <u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u>					P SM	GROUND WATER TAOLE (COLLECTED WATER SAMPLE FOR STER(802) AND TPH(8015) . N 2" PROUGT DREEDUED IN THE BAILER SA ME AS ABOUE
┓ ┨ ┯╌┨╾┓┾╼╋╌┨╌┨╼╋╼╋┿┥┥╸┿╸┥╼┝┥╼╿					P SM	GROUND WATER THOLE (COLLECTED WATER SAMPLE FOR STER(802) AND TPH(8015) N 2" PAOUAT DREENVED IN THE BAILER SA ME AS ABOUE
					P SM	GROUND WATER THOLE (COLLECTED UNTER SAMPLE FOR STER(802) AND TPH(8015) N 2" PROVAT DREERVED IN THE BAILER SA ME AS ABOUE
					P SM	GROUND WATER THOLE (COLLECTED UNTER SAMPLE FOR MELLER SATURATED SOIL). GROUND WATER THOLE (COLLECTED UNTER SAMPLE FOR MELLER AND TPH(2015) N 2" PROUGT DESERVED IN THE BAILER SAME AS ABOUE
					P SM	SAME AS ABOUE
					P= SM SM	<u>WET, HARD, STRONG</u> H.C. ODDR. (COULD BE PROPULA SATURATED SOIL). GROUND WATER THOLE (COLLECTED UNTER SAMPLE FOR STER (BOX AND TPH(BOIS). N 2" PADULT DREEDUED IN THE BAILER SA ME AS ABOUE SAME AS ABOVE
					P SM	WET, MARD, STRONG H.C. ODDR. (COULD BE PRODUCT SATURATED SOIL). GROUND UTTER THOLE (COLLECTED VATER SAMPLE FOR STER(CON AND TPH(ROIS) N 2" PAOUST DREERVED IN THE BAILER SAME AS ABOUE SAME AS ABOVE



								BORING L (Continue	JOG d)	Page of LOCATION ID: MW-3
0 E P T	WELL	LITH.	USCS	FROM	S/ TO	MPLE	BLOW-	NUMBER OR	LITHOLOGIC (LITH., USCS, GRAIN COLOR, RNDG., SORT.	DESCRIPTION SIZE PROPORTIONS, WET CONSOL, DIST. FEATURES)
H 30- 35-			a 5(11 - 0,0 10+1ed 10/12 Pack	1 Scree Sand			NO Reading With PID Cuting Very Wet t disturbed	25'-30' Sand SC Orangeish 10w-med Pi 30'-35 Sand Sm s Slightly (ons 34-35 Cley Olive Plestre:ty 35' TD of Bore	Med Grained Wet Brown, Mod Sonted asticity ac med graned wet olideted drilling = lowed Brown wet hole
40									- 34'-35' Clay Slight 34-35' cuttings dark wa below la	Dive grey Wery wet ter up From ter up From
45									w;+5 Pil	5 0.0 PPM
50					-					_
55										
60		-								

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Harpton # 4m MW#4



Hampton # 4m Mw# 4 BORING LOG Page____ of (Continued) LOCATION ID: MW-4 LITHOLOGIC DESCRIPTION SAMPLE WELL LITH. (LITH., USCS, GRAIN SIZE PROPORTIONS, WET X BLOW-REC COUNT NUMBER OR PID READING CONST USCS FROM то COLOR, RNDG., SORT., CONSOL, DIST. FEATURES) H 27' HED 80.7₄ X GRY color, moist clay slotted screen 30 28' Hand layou clay GRY cola 700 fbs CH to dill the 5AnH 29' 30' GRY color Clay OH high plasterly Organic Silts 31' 900 lbs press. hand drilling 35' GRY Clay OH hist plastity hand dilling stopped duilling set 20' slott of screm (sand to 13.2' Bentmik 10.2' growt to surface ·50 -55



Match 1000 Match 1000 Match 1000 Match 1000 Match 1000 Match 1000 Match 10000 Match 100000 Match 100000 Match 100000 Match 100000 Match 1000000 Match 1000000000000000000000000000000000000	Model Notice Hade Project Notice Model Notice <th c<="" th=""><th>RECORD Philip Enviro</th><th>OF S</th><th>UBSUF al Servic</th><th>RFACE es Corp.</th><th>EXPLORATION</th><th></th><th></th><th></th><th></th><th>Boreho Well # Pege</th><th>ole # <u>TPW-01</u></th></th>	<th>RECORD Philip Enviro</th> <th>OF S</th> <th>UBSUF al Servic</th> <th>RFACE es Corp.</th> <th>EXPLORATION</th> <th></th> <th></th> <th></th> <th></th> <th>Boreho Well # Pege</th> <th>ole # <u>TPW-01</u></th>	RECORD Philip Enviro	OF S	UBSUF al Servic	RFACE es Corp.	EXPLORATION					Boreho Well # Pege	ole # <u>TPW-01</u>	
	Elevation Bachelic Location Sound (Lice of Sile Bachelic Location Sound (Lice of Sile 22,4/5) Logged By $\underline{X} = \frac{2}{2}$ $\frac{2}{2}$ $\frac{2}{3}$ \frac	4000 Monroe Farmington, Ne (505) 326-226:	Road w Maxic 2 FAX (0 87401 505} 326-	2388		Project N Project N Project L	lame lumber .ocation	<u>HAMPTON 4m</u> <u>17877</u> Phase <u>6001</u> AZTEC					
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Depth into Complete $\frac{10/2}{2}$ $\frac{6/2}{2}$ $\frac{10}{2}$	Elevation Borehole Lo GWL Depth Logged By Drilled By Date/Time	cation	50ut 22 5.1 K	h Wes 45 OpE Pudine 845	6/5/97	Well Log Personne Contract Client Pe Drilling N	Site						
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Date/lime Depth (Feet)	Comple Sample Number	Sample	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	Air Monit USCS Symbol	Depth Lithology Change (feet)	Ai BZ	r Monito Inits: NI BH	ring DU S	Drilling Conditions & Blow Counts		
	Comments: 1015 Cot 7" W/10 screen is hale Dulled bert 5, with Pring to Tong well T NST	5 10 115 20 25 30 315 35 35	1 2 3 4 5 6	57 1011.5 1517 2022 2527 30 32	24 18 8 12 10 24	Brown SAND, Med Co grained, trace scient stone Frags, Soft Moist SAA Brown-Gran SAND Med Cogrand Very Wand Some Comentation Moist Brock (way SAND Trace Chap, Concreded fled co granned, Very Dunse, Moist Greenish Gray SAND, Med - Co graine Very hard, Wed @Botom spoon Gran SAND COARSE Grain Well Sorted, Hard, Satur etcl TOB 30'		21 36 ∑	0	000000000000000000000000000000000000000	0 0 0	Loose Fill Sandston @ 15' Refusel @ 21' J/Spoor Refusel @ 8" on spoor Refusel @ 8"		

L

MONITORING WELL INSTALLATION RECORD

Nouth West Side of Site

Elevation

Well Location

GWL Depth

Installed By

•

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Philip Environmental Services Corp. 4000 Morroe Road Farmington, New Mexico 87401 (5051 326-2262 FAX (5061 326-2388

17

K. Padilla

.45

	8 N	orehole /ell #	#	TPL	<u>v- c</u>
	P	age	of		
Project Name	Hani	OTON	4 M		
Project Number	187	77	Ph	ase	600
Project Location	_A2.T	Ë C_	·····		
On-Site Geologis	t _	S.F	PE		
Personnel On-Site	e .	D.Ch	male.		
Contractors On-S	ite			P	
Client Personnel	On-Site				

Depths in Reference to Ground S	Gurface		 Top of Protective Casing	
Item	Material	Depth	Ground Surface	
Top of Protective Casing			Γ	
Bottom of Protective Casing		-		
Top of Permanent Borehole				
Casing				
Bottom of Permanent Borehole		-	-	
Top of Concrete		-		
Bottom of Concrete		-		
Fop of Grout				
Bottom of Grout				
Top of Well Riser		+,4		
Bottom of Well Riser		19.1		
Top of Well Screen		19.1	Top of Seal	NA
Bottom of Well Screen		<u>795</u>		
Top of Peltonite Seal	1		×	
Bottom of Peltonite Seal			X Top of Gravel Pack	<u>N/A</u>
Top of Gravel Pack			Top of Screen	<u> 17.1</u>
Bottom of Gravel Pack				
Top of Natural Cave-In				
Bottom of Natural Cave-In				
Top of Groundwater		22.45	Bottom of Screen	295
Total Depth of Borehole		300	Domoni or Dorenole	_30

Comments: 1015 INSTALLED 2" TEMP WELL W/10' Screen, WATER CAME UPTO 22 US Collect SAMPLE @ 1035 WI Clean No DOW. BACK Filled BOIL ADD TO TO WI ADD Plus

RECORD OF SUBSURFACE EXPLORATION

		ł
		4
		,
۰.	-	a

Depth

Philip Environmental Services Corp. 000 Monroe Road armington, New Mexico 87401 505) 326-2262 FAX (505) 326-2388

Sample

Elevation	
Borehole Location	Hidway North Emport SiTE
GWL Depth	23.95
Logged By	5. PODE
Drilled By	K. Pady 11A
Date/Time Started	1145 615197
Date/Time Complete	d ,300 6/5/97

Sample

Sample

Type &

Page HAMPTON 4m Project Name 17877 Project Number Project Location AZTEC Well Logged By

Personnel On-Site					
Contractors On-Site					
Client Personnel On-Site					

ItsA 4/410 PID

Air Monitoring

Borehole # TPW-02 TPW-07

2001

Phase SiPon

Well #

D. Chan

Drilling Method Air Monitoring Method

USCS

Sample Description

Depth

Lithology

Drilling Conditions

Classification System: USCS Units: NDU Symbol Change & Blow Counts (Feet) Number Interval Recovery (feet) вz BH (inches) s 0 ŗ, •.' 5 Brown SAND Med- LO grained, Fill 5 0 0 \mathcal{O} 24 7 Some Clary Moise, Loose 10 Refusel " O σ Ð L+ Brown SAND Meet (0 GRAINED 16 Z 12 Very dense possible, Semanted, Tran Moismer 12 15 SAT LIBrow - Yellow 15 5 О 13 Refuser @1' О 15 Z DK Brown Clay, Very Stiff, trave Moisture, Calcium Crystalis in Voids, 12 0 17 Ø 0 18.0 20 Brown SAND, Some Livy Mod-LO 20 Refusal @ 1 4 89 grainded, Hand, trace Moistine, 0 \diamond 12 22 V23,95 23,0 Giaix Abd Co grained SAND Very havel, Statu-ated to 26' 187 25 0 σ 15 21.0 Refusal @ 22" 20 5 Gray Siling Clay, Very Dense trace fine sound, Moist 27 149 + HS = 851 0 0 TOB 25 30 ł 35 40 water Come up to 23.38 After Sitting, 10 Mins Diill to 27. INSTALL TEMDWELL Comments: WATEZ Level Coming up slow he will pull Augers a 1 leave well I.W. Move TO NeveT location

MONITORING WELL INSTALLATION RECORD

Philip Environmental Services Corp. 4000 Monroe Road Fermington, New Mexico 87401 (505) 326-2262 FAX (506) 326-2388

K.

Date/Time Completed _/400

Depths in Reference to Ground Surface

PADILLA

Elevation Well Location

GWL Depth Installed By

Date/Time Started

VELL INS	STALLATION R	ECORD			Borehole	#	
Services Co	rp.				Well # Page	_ <u></u>	-02
87401				Project Name	HAMPTON	4m	
07 320-2388				Project Number Project Location	17877 AZTEL, A	Phase ///	[000]
<u>Midway</u> 38 AdduuA <u>130</u> <u>140</u>	0 6/5/97 0 6/5/97	Site		On-Site Geologist Personnel On-Site Contractors On-S Client Personnel (ite On-Site	pe harley	
e to Ground	Surface			Top of Prote	ective Casing r	+3,0	-
	Material	Depth		Ground Sur	face		_
asing							
Casing			┍╸╎				
Sorehole		-					
-+ Decobale	1						1

-	

					10h of Lison	<u></u>
ltem	Material	Depth			Ground Surface	
Top of Protective Casing						
Rottom of Destastive Casing			, P			
Bottom of Protective Casing	<u> </u>					
Casing		-				
Bottom of Permanent Borehole					1	
Casing						
Top of Concrete						
Bottom of Concrete						
			1			
Top of Grout		-				
Bottom of Grout						
			1			
Top of Well Riser		+50				
		1				
Bottom of Well Riser		14.6				
Top of Well Screen		12,6			Top of Seal	
			XXX	ox ox	4	
Bottom of Well Screen		23	kox	d pox	X	
			kox	d pox	4	
Top of Peltonite Seal			(XXX)	o xox	1	
			XXX	d jox	Top of Gravel Pack	
Bottom of Peltonite Seal		-				
					Top of Screen	14,6
Top of Gravel Pack						
Bottom of Gravel Pack						
Top of Natural Cave-In	Surfacer	140				
Bottom of Natural Cave-In		25				
	-					
Top of Groundwater	~ ~ ~ ~	23.38			Bottom of Screen	25
		200		<u> </u>	Bottom of Borehole	25
Total Depth of Borehole		23.0				
	-1 1	A 1-	\sim	29-		
Comments: Froduct	I hick NESS (<u>y 15</u>		21 12		- and
6/6/97	roduct Thicknes	<u>s 90</u>	0 HE. 61	19/97	Froduct THILENESS = "	X.TP FEET
		~		- 4	$\lambda - T$	Vina
		Ge	eologist Sign	ature	June	

RECORD OF SUBSURFACE EXPLORATION

Philip Environmental Services Corp. 4000 Monroe Road ermington, New Mexico 87401 (505) 326-2262 FAX (505) 326-2388

Elevation	
Borehole Location	NORTH EAST SIDE OF SITE
GWL Depth	NOT ENCOUNTERED
Logged By	S. PODE
Drilled By	K. PADILIA
Date/Time Started	145 6/5/97
Date/Time Complete	ed 15:30 615/97

Project Name Project Number Project Location

Well Logged By Personnel On-Site **Contractors On-Site**

Client Personnel On-Site

Drilling Method Air Monitoring Method

Phase 6001 AZTEL Nn 5, POPE Charley

Borehole #

Well #

Page

MPTON 4M

877

<u>tPW-03</u>

of

· · · · · · · · · · · · · · · · · · ·			Sample			Depth			- .	
Depth (Feet)	Sample Number	Sample Interval	Type & Recovery	Sample Description Classification System: USCS	USCS Symbol	Lithology Change	Air Monitoring Units: NDU			Drilling Conditions & Blow Counts
			(inches)			(feet)	BZ	ВН	s	
-										
[°]		5		BIOWN SAND MED- LO Grainad						0.4
	/	7	6	Very hand, + VacE MOISTURE			0	.O	0	Kutuskl @6"
				some concuration		-				, , , , , , , , , , , , , , , , , , ,
10		10		(Anno Parto						
	2	12	18	Med - CO Graine D, trace Silt,			0	0	0	Riefusac @ 18"
				some Oxister ming, trace Maisture						14 > 1
15						<u>1</u>				Refra 0 124
	3	גז 1	12	Some CLAY (Shale) very land of			6		0	1450
				+ vace more + upE			e			1.70
20										Rection A . I'
	4	20 21	6	SAA Vera havd			0	0	0	1502
	-			0						
- 25										
	٢	25	12"	Gray - DK GRAY SLITY SAND STONE				ค	0	REE
		27		VERY HAD VERY, Trace Moismare			0	0		1520
- 30				-22 - 20 at						
									1	
							{			
- 25										
40 L40										
Comments:		No	EVIDES	URE OF MOIOTURE (D) This L	-OCAT	ION 1	hLl	Not	DRI	Le Dooper
	-	Pull	·out a	not Grout						

4/21/95\DRILLOG.XLS

RECORD OF SUBSURFACE EXPLORATION

Philip Environmental Services Corp. 4000 Monroe Road armington, New Mexico 87401 (506) 326-2262 FAX (506) 326-2388

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Elevation	
Borehole Location	
GWL Depth	20.0/19.0 After Sitting
Logged By	S. PODE
Drilled By	K. PADILLA
Date/Time Started	1610 615197 10830 6/6/47
Date/Time Complet	ed 1645 615197 0930 6/6197

HAMPTON 4 M Project Name Project Number Phase 7877 6001 Project Location NM 2TECC S. PODE Well Logged By Personnel On-Site D. Chin **Contractors On-Site Client Personnel On-Site** 4/14/17 **Drilling Method**

Borehole #

Well #

Page

TPW-04

of

Air Monitoring Method

Depth (Feet)	Sample Number	Sample Interval	Semple Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Ai L BZ	r Monitor Inits: ND BH	ing U S	Drilling Conditions & Blow Counts
0 	-	5 7	10	Brown - LA Brown SAND Mech- cograins Very LARD SOME Cementation oxistains Truce Moisture.			Ø	0	0	Refusac @ 10" ICZI Rufusac @ 10"
15	2	12	10	SAA	7		0	0 0	Ð	REFUSAL @ 12"
20	5	17 20 27_	12	GRAY SANN W/SOME CLAY, Mod. Cograined WI SOME CEMENTATION Have, WET		20 \$	L 20. 0	0	15	1638 - STOP FOR DAY Neadspace = 33ppm Remore @ 18" No odor ONSAMPLE
25	5	25 27	10	GRAY SILT CLAYEY SAND, FINE- Vorm Fire graned somewhat consider Very hard, Trace Moisture TOB-25		25	0	0	0	OBAS Refusel @ 10" Out of WATER WITT Putwell IN AND PULL BACK TONFOR OGIQ
35 35 40							3			
comments:	ا ــــــــــــــــــــــــــــــــــــ	AFTER AND M	E TN37	ALLING WELL LETINGS ;+ 10-1 Next LOCATION	5 Min	I WATE	R C) Z7	5	LJ.")) Lot 5.4

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MONITORING WELL INST	FALLATION RECO	ORD			Borehole # TPW-04
Philip Environmental Services Corp).				Well# <u>Pw-04</u> Pageof
4000 Monroe Road					
Fermington, New Mexico 87401				Project Name	HAMPTON 4/M
(606) 326-2262 FAX (606) 326-2388					
				Project Number Project Location	18777 Phase 6001 AZTEC. NM
Flevation				On-Site Geologist	< Page
Well Location Middle D	FSITE			Personnel On-Site	D. Charkey
GWL Depth 193				Contractors On-Site	
Installed By K. Pasille	A			Client Personnel On	-Site
Date/Time Started 0920	6/6/97				
	<u>1970/14-1</u>				
Depths in Reference to Ground S	urface			Top of Protect	ive Casing
				Top of Riser	+1.0
ltem	Material	Depth		Ground Surfac	ce
Top of Protective Casing					
Bottom of Protective Casing					
Top of Permanent Borehole					
Casing					
Bottom of Permanent Borehole					
Casing					
Top of Concrete					
Bottom of Concrete					
Top of Grout					
Bottom of Grout					
Top of Well Riser		+1.0			
Bottom of Well Riser		14/6			
Top of Well Screen		146		Top of Seal	_
Bottom of Well Screen		25			
Top of Peltonite Seal			000 000		
Bottom of Peltonite Seal			×××	XXX Top of Gravel	Pack
Top of Gravel Pack				Top of Screen	14.6
Bottom of Gravel Pack					
Top of Natural Cave-In		14.0			
Bottom of Natural Cave-In		25			
Top of Groundwater		\$20		Bottom of Scr	een <u>Z5,0</u>
Total Depth of Borehole		25	<u> </u>	Bottom of Bor	ehole <u>2.5.0</u>

Geologist Signature

Comments: WL= 19.0 FLBGS PRIOL TO SAMALING D 1150

op Aut .

RECORD OF SUBSURFACE EXPLORATION

Philip Environmental Services Corp. 4000 Monroe Road rmington, New Mexico 87401 (505) 326-2262 FAX (505) 326-2388

Elevation

Borehole Location	SE, CORNER OF SITE
GWL Depth	15.0
Logged By	S. POPE
Drilled By	KPADILLA
Date/Time Started	1000 6/6/97
Date/Time Comple	ted 1/10 6/6/97

Borehole #	¥
Well #	
Page	

TPU TPW-0. of

Project Name Project Number Project Location

4 HAMPTON m 17877 Phase 6001 NN AZTEL

Well Logged By Personnel On-Site Contractors On-Site Client Personnel On-Site

Drilling Method

Air Monitoring Method

HSA 414

Depth (Feet)	Sample Number	Sample Interval	Sample ple Type & Sample Description val Recovery Classification System: USCS (inches)		USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: NDU BZ BH S		ring)U S	Drilling Conditions & Blow Counts
	1 2 3 4	2 7 10 12 15 17 20 21	10 12 12 24	Brown-TAN SAND WITTALS SILT ANCLAY, Med- LO Grained, Some Oristains, havel, Trace Moisture SAA SAA SAA GRAY SAND Med- Co Grained, trace S:H Hard; SATURATED, Trace Grael GRAY, CLAY/Shale Very have, trac Vine Som visible Bedding Phones, Trace Moisture. TOB-20		20 Z1.5	0 0	0030	0 20 470 3	REFUSAL @ 10" 1025 Refusal @ 12" 1035 No Hydrolanbow odor REFUSAL @ 12" Stione HC Odor No Huosar ABL WHTER I hole, Refusal @ 20 WL 17,45 (110) 1210 WL 14,75 SAMPLE @ 1215 No free Phase
comments:										

MONITORING WELL INSTALLATION RECORD

PADDILLA

1110

EAST CORNER OF SITE

6/6/97

Elevation

Well Location GWL Depth___ Installed By__

Date/Time Started

Philip Environmental Services Corp. 4000 Morroe Road Fermington, New Mexico 87401 (606) 326-2262 FAX (606) 326-2388

	Well # Page	ot	-05
Project Name	HAMPTON	il pr	
Project Number	17871	Phase	6001
Project Location	ALTEL	NM	
On-Site Geologis	t <u>S</u> P	PE	
Personnel On-Sit	e D.C	harter.	
Contractors On-S	Site		
Client Personnel	On-Site _	·······	

7.

Borehole #

Depths in Reference to Ground S	Surface			Top of Protective Casing Top of Riser	+.4
Item	Material	Depth		Ground Surface	
Top of Protective Casing					
Bottom of Protective Casing					
Top of Permanent Borehole Casing		-			
Bottom of Permanent Borehole Casing					
Top of Concrete					
Bottom of Concrete					
Top of Grout					
Bottom of Grout					
Top of Well Riser		+.4			
Bottom of Well Riser		9.6			
Top of Well Screen		10-6		Top of Seal	
Bottom of Well Screen		20			
Top of Pettonite Seal					_
Bottom of Peltonite Seal				G TOP OF GRAVEL MACK	
Top of Gravel Pack	<u> </u>			l op of Screen	7,6
Bottom of Gravel Pack	ļ				
Top of Natural Cave-In		14			
Bottom of Natural Cave-In		20			
Top of Groundwater		14,75		Bottom of Screen	20
Total Depth of Borehole		20	<u></u>	Borrow of Rolenoie	_20

RECORD OF SUBSURFACE EXPLORATION

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Philip Environmental Services Corp. 4000 Monroe Road Farmington, New Mexico 87401 1605) 326-2262 FAX (505) 326-2388

Elevation	
Borehole Location	
GWL Depth	13,0 B65
Logged By	S. Pope
Drilled By	K. PADILLA
Date/Time Started	1345 6/6/97
Date/Time Complete	1595 6/6/97

	Borehole #	······
	Well #	TPW-06
	Page	of
Project Name	MPTON 4m	
Project Number 178	<u>877</u> Phase	10001
Project Location Az	TEC, NM	
Weil Logged By	5. Pope	
Personnel On-Site	D. Charles	
Contractors On-Site		
Client Personnel On-Site		

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Drilling Method Air Monitoring Method

<u>HSA 4'14</u> ID \mathcal{P} ID

Dept (Fee	th t}	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Ai U BZ	r Monitor Inits: ND BH	ing U S	Drilling Conditions & Blow Counts
	10 5 10 15 20 25 30 35	Sample Number	Semple Interval 5 7 10 12 15 17 17 20 22 25 27	1ype & Recovery (inches) 16 ⁻ 16 18 10 10	BROWN SAND Med Grainsel, trave Classification System: USCS BROWN SAND Med Grainsel, trave Clay, 'Vory hard some Concentration Moist. SNA GRAY SAND w/ Schwarts, Five - Med grained, Moist; VELY Hard Brown - Redrich Brown SAND w/ Some Clay, Med. Co SAND, MACD, Moist Wet. Grayich - Green Clay/Shale, Trave Fine SAND, Hard, Trave Moisture SAP. TOB - 25	Symbol	III.5 II.5 Zo	в <u>г</u> 0 0 0	o o o	s s 61 0 0	Refusel @16" Refusel at 18 Refusel at 18 Refusel Collect ed Sarph Mo Fore WATE Refusel @18" Refusel @8" 1505
	40										
Comm	ents:		No wa	TER -	Between 20-25 will Back	<u>c Cill</u>	to Ze	<u>) w/</u>	1fole 9 152	plue,	Put siver iN
		•			Geologist Sig	gnature		0-	- 7.	D	~

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MONITORING WELL INS	TALLATION RE	ECORD			Borehol	e #	
Philip Environmental Services Cor 4000 Monroe Road	p.				Vvell # Page		106
Fermington, New Mexico 87401			F	roject Name	HAMPTOI	v 4m	
(506) 326-2262 FAX (506) 326-2388			c	roiect Number		Phese	(00)
			F	roject Location			600
Elevation			C)n-Site Geologist	_5,4	LASE	
Well Location			P	ersonnel On-Site	$\frac{D}{C}$	charley	
GWL Depth 15.0				Client Personnel (ne On-Site -		<u></u>
					_		
Date/Time Started 6/6/97	1505						
Date/ Inte Completed 6/6/5/	1523						
		······			ويوري بينو المحمد فرزمهم		
Depths in Reference to Ground S	Surface			Top of Prote	ective Casing		-
	1				1 *	7	-
Item	Material	Depth		Ground Sur	Tace		-
Top of Protective Casing							
Bottom of Protoctive Cooleg				4			
Top of Permanent Borehole							
Casing							
Bottom of Permanent Borehole Casing		-					
— (0)							
Top of Concrete							
Bottom of Concrete							
Top of Grout							
		_					
Bottom of Grout							
Top of Well Riser		.4					
Bottom of Well Riser		9.6					
Tan of Wall Some		96		Ton of Sool	I		_
Top of well Screen		7.0		NO TOP OF Seat			-
Bottom of Well Screen		20		x			
Top of Peltonite Seal				»x			
0-#				X Top of Grav	el Pack		_
Bottom of Pertonite Seal				Top of Scre	en	9.4	
Top of Gravel Pack							
Bottom of Gravel Pack		-					
Tag of Notwol Own In		96					
Top of Natural Cave-In		1.					
Bottom of Natural Cave-In		20					
Top of Groundwater		15		Bottom of S	Screen	20	
Total Depth of Parabala		24		Bottom of E	Sorehole	25	_
I Ordi Dahri ol Doleuole	<u></u>	162		1			<u> </u>
Comments: $WL = 15$	00 1710	PRIOR TO	SAMPLII	VG. HOLD	EPLUG6	ED	
DOREHOLE T	0 ZU Bet	WE LAUSTAL	LING SCR	EEN		-	—
		Geol	ogist Signature	Aur	$\equiv 1. P$	g	

Geologist Signature

A

RECORD OF SUBSURFACE EXPLORATION

Philip Environmental Services Corp. 4000 Monroe Road armington, New Mexico 87401 (505) 326-2262 FAX (505) 326-2388

Elevation

Borehole Location	TANK AREA
GWL Depth	15,0
Logged By	5. PODE
Drilled By	K PADILLA
Date/Time Started	1540 6/6/97
Date/Time Complet	ed 1170 111107

Project Name AMPTON 4M Project Number Phase NA 7877 Project Location AZTEC S.P.P.P.F. Well Logged By Personnel On-Site DChow Contractors On-Site **Client Personnel On-Site**

Borehole #

14

D

4

Well #

Page

TPW-07

600

of

Drilling Method Air Monitoring Method

Depth Sample (Feet) Number		Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: NDU BZ BH S		ing U S	ng Drilling Conditions J & Blow Counts S	
	- ⁰ - ⁵		57	7"	BROWN SAND Med- W Grainer Very Honc', Trace MoisruRE Some Comministion.			D	0	0	Refuser @7" 1553	
	15	2	12	12	SAA			0	0	0	nerusal & 12	
	- 15	3	15 17	12	SPA trace Save, Wet		۰.ی ⊻	0	13	948	REFUSAL @ 12" Head Space & 1175 PDM	
	_ ²⁰ _ 25	4	20 22	14	GRAY SAND COARSE Orained, trace clay Vory Land, Saturated Gray, CLMY/Shale, Trace Fire Sand and Silt Very hand, Trace Moistan 70B - 20	e	20 21	0 0	0	3	Refusa @12" 1620 Will put well into 20-10 Screen for WATER SAMPLE	
	30							3				
	- ³⁵											
Comm	nents:			90		L	·	· · · · · · · · · · · · · · · · · · ·	I			

MONITORING WELL INSTALLATION RECORD

Philip Euvironmental Services Corp. 4000 Monroe Road Fermington, New Mexico 87401 (6061 326-2262 FAX (6061 326-2388

Elevation			
Well Location	TANK	AREA	
GWL Depth	14.6		
Installed By	K. PADDILL	-A	

Date/Time Started	1620	61	6/97
Date/Time Completed	16:46	6/	6/97

Depths in Reference to Ground S	Surface		Top of Protective Casing			
ltem	Material	Depth	Ground Surface			
Top of Protective Casing						
Bottom of Protective Casing		-				
Top of Permanent Borehole Casing		-				
Bottom of Permanent Borehole Casing		-				
Top of Concrete						
Bottom of Concrete						
Top of Grout						
Bottom of Grout						
Top of Well Riser		+.4		` t		
Bottom of Well Riser		9,6				
Top of Well Screen		9,6	Top of Seal			
Bottom of Well Screen	ļ,	20				
Top of Peltonite Seal						
Bottom of Peltonite Seal		-	J Top of Gravel Pack	<u> </u>		
Top of Gravel Pack			Top of Screen			
Bottom of Gravel Pack						
Top of Natural Cave-In		9.6				
Bottom of Natural Cave-In		20				
Top of Groundwater		14,6	Bottom of Screen	20		
Total Depth of Borehole		20	Bottom of Borenole	_70		

Comments: WL price TO SAMPLING 14.6 @ 1738

Borehole #_TPW-07_ Well # Page ___ of HAMPTON You Project Name Phase Project Number 17877 Project Location ALTEC POPE On-Site Geologist Personnel On-Site Contractors On-Site Client Personnel On-Site