

AP - 2

**STAGE 1 & 2
REPORTS
(APPENDIX II-VI)**

DATE:

Nov. 1998

**WESTGATE SUBDIVISION,
GRIMES BATTERY and TASKER ROAD
STAGE 1 ABATEMENT PLAN INTERIM REPORT
(SITE ASSESSMENT INVESTIGATION)**

November 1998

**Shell Exploration and Production
Technology Company
Houston, Texas**

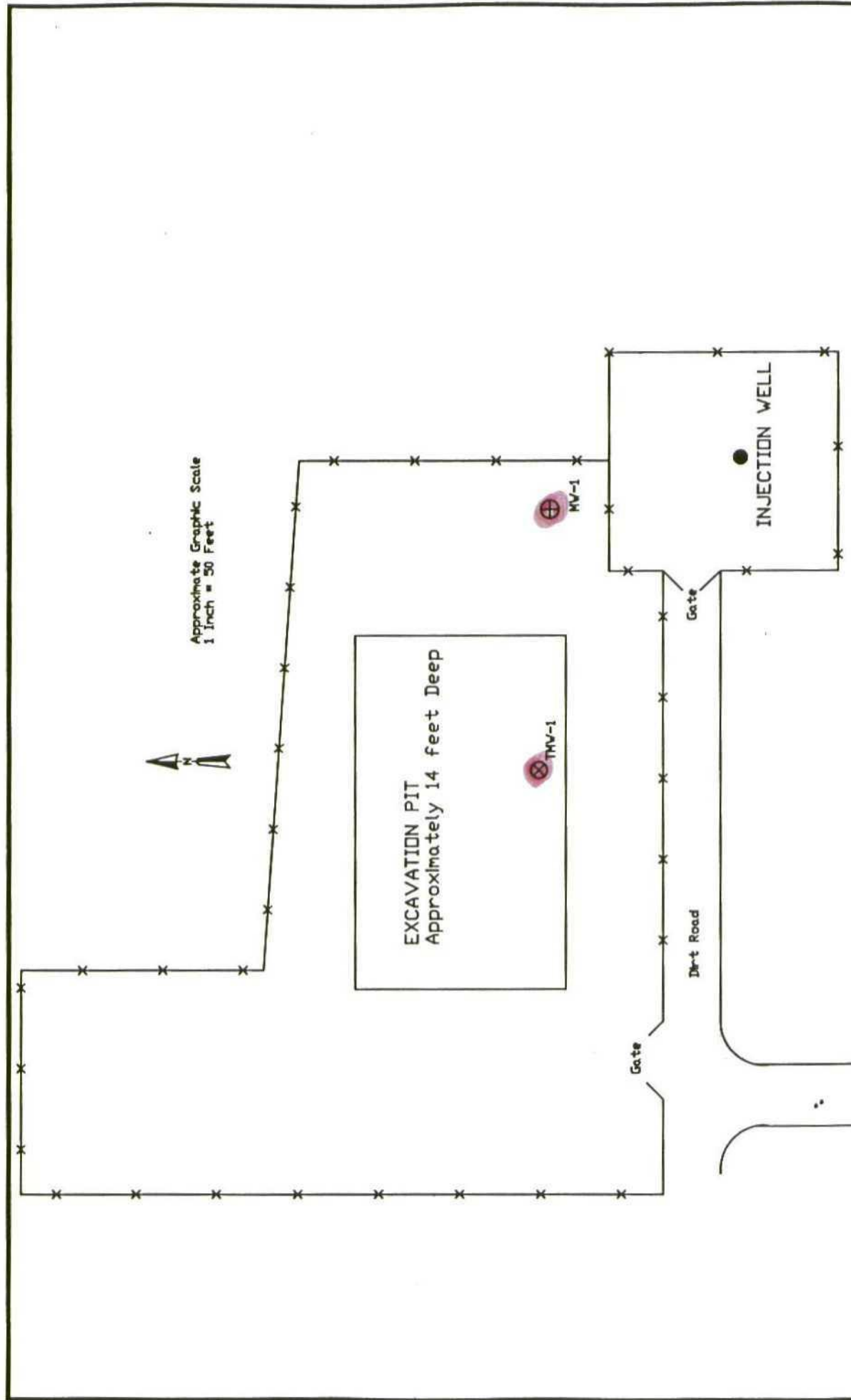
Prepared by

**Philip Services Corporation
Midland, Texas**

**BBC International Incorporated
Hobbs, New Mexico**

Appendix II

Previous Assessment Work



 PHILIP SERVICES CORP.				TITLE: SHELL EXPLORATION & TECHNOLOGY COMPANY GRIMES BATTERY MONITOR WELL LOCATIONS				PROJECT NO.: 18906 GRIMES ASSESSMENT Hobbs, New Mexico			
				DWN: KO		DES: JWK		FIGURE 2			
				CHKD: SEH		APPD: SEH					
				DATE: FEB. 1998		REV: 2					

Table 1
Laboratory Analysis
(Samples Collected 12/5/97-12/8/97)

Sample ID	Sample Depth	TPH	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	Chloride
TMW-1	15'	10,300	<0.500	1.74	9.39	53.1	64.2	160
TMW-1	50'	3,930	<0.500	<0.500	2.19	18.6	20.8	110
MW-1	55'	2,610	<0.100	<0.100	0.669	5.99	6.66	84
MW-1	65'	4,650	<0.500	0.792	2.68	19.3	22.8	88

All units in milligrams per kilograms (mg/kg)

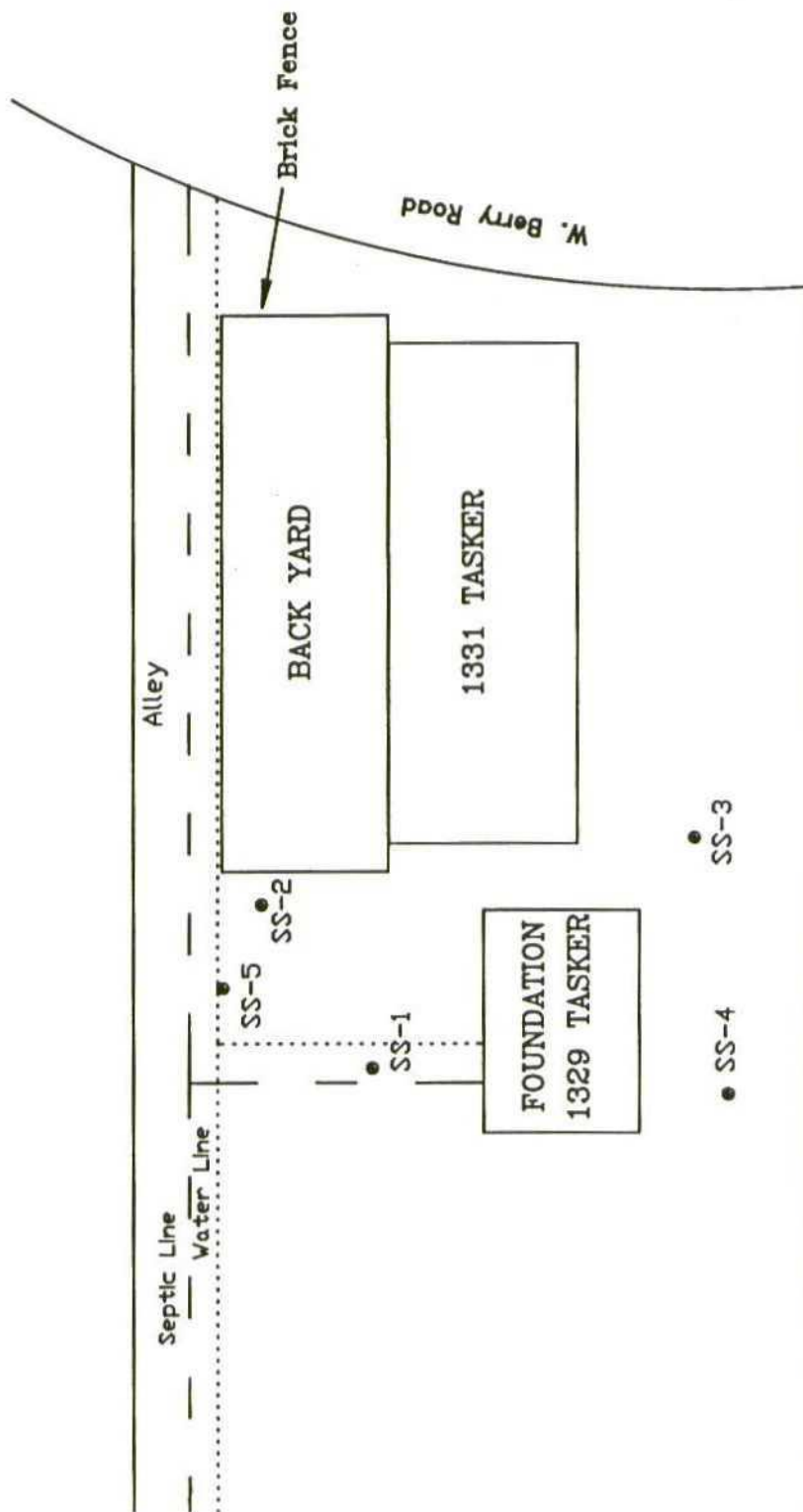
Table 2
Groundwater Analytical Results

Analyte	MW-1	TMW-1	Human Health Standard [#]	Analysis Method
MTBE	<0.001	0.011	NS	* 8020
Benzene	007*/0055**	044*/044**	0.01	** 8260
Toluene	006*/0061**	033*/044**	0.75	
Ethylbenzene	048*/046**	085*/089**	0.75	
Xylenes	256*/222**	48*/443**	0.62	
Total BTEX	0.317	0.642	NS	
Naphthalene	0.02	0.02	0.030	
1-Methylnaphthalene	<0.05	<0.005	Combined	
Benzo [a] pyrene	<0.01	<0.005	0.0007	
Vinyl Chloride	<0.002	<0.02	0.001	
1,1-Dichloroethene	--	<10	0.005	
Methylene Chloride	<0.005	0.11	0.10	
1,1-Dichloroethane	<0.001	<0.01	0.025	
Chloroform	<0.001	<0.01	0.10	
1,2-Dichloroethane	<0.001	<0.01	0.01	
1,1,1-Trichloroethane	<0.001	<0.01	0.06	
Carbon Tetrachloride	<0.001	<0.01	0.01	
1,1,2-Trichloroethane	<0.001	<0.01	0.1	
1,2-Dibromoethane	<0.001	<0.01	NS	
1,1,2,2-Tetrachloroethane	<0.001	<0.01	0.01	
As	<0.10	<0.1	0.10	
Se	<0.05	<0.05	0.05	
Cd	<0.01	<0.01	0.01	
Cr	<0.05	<0.05	0.05	
Pb	<0.05	<0.05	0.05	
Ag	<0.01	<0.01	0.05	
Ba	0.5	0.4	1.0	
Cu	0.03	0.03	1.0	
Fe	0.49	0.56	1.0	
Mn	0.15	0.11	0.2	
Zn	0.1	<0.02	10.0	
U	<0.10	<0.10	5.0	
Hg	<0.001	<0.001	0.002	
pH (su)	8.1	7.2	6 - 9	
Ra-226 (pci/L)	2.48	NA	30.0	
Ra-228 (pci/L)	3.89	NA	Combined	
TDS	530	960	1000.0	
Total PCB	<0.002	<0.002	0.001	
Cyanide	<0.01	<0.01	0.20	
Phenols	0.15	0.14	0.005	
Fluoride	<5.0	<5.0	1.60	
Chloride	120	29	250.0	
Nitrate-N	<6.0	<6.0	10.0	
Sulfate	80	<10	600.0	

Unless otherwise indicated, all units in milligrams per liter (mg/l).

[#] New Mexico Water Quality Control Commission, Title 20, Chapter 6, Part 2, Subpart I, Section 3103.A

NA = Not Analyzed NS = No Standard



APPROXIMATE GRAPHIC SCALE

PSI
PHILIP SERVICES
CORP.

SHELL EXPLORATION & TECHNOLOGY COMPANY
TASKER ROAD
SAMPLE LOCATIONS

DRAWN: koa	DESIGN: jwk	PROJECT NO.: 18906
CHECKED: seh	APPROVED: seh	TASKER ROAD Hobbs, New Mexico
DATE: Jan 1998	REV.: 2	FIGURE 2

TABLE 2
SUMMARY OF ANALYTICAL RESULTS

ANALYTE	SAMPLE IDENTIFICATION									
	SS-1 @ 2-3' (mg/kg)	SS-1 @ 5' (mg/kg)	SS-2 @ 2-3' (mg/kg)	SS-2 @ 6' (mg/kg)	SS-3 @ 2-3' (mg/kg)	SS-3 @ 5.5' (mg/kg)	SS-4 @ 1' (mg/kg)	SS-4 @ 5' (mg/kg)	SS-5 @ 2' (mg/kg)	SS-5 @ 5' (mg/kg)
EPA Method 8260										
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichloropropane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,2-Dichloropropane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chlorotoluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Chlorotoluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Isopropyltoluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND = NOT DETECTED

TABLE 2
SUMMARY OF ANALYTICAL RESULTS

ANALYTE	SAMPLE IDENTIFICATION									
	SS-1 @ 2-3' (mg/kg)	SS-1 @ 5' (mg/kg)	SS-2 @ 2-3' (mg/kg)	SS-2 @ 6' (mg/kg)	SS-3 @ 2-3' (mg/kg)	SS-3 @ 5.5' (mg/kg)	SS-4 @ 1' (mg/kg)	SS-4 @ 5' (mg/kg)	SS-5 @ 2' (mg/kg)	SS-5 @ 5' (mg/kg)
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	7.00	9.70	1.40	0.66	ND	ND	0.100	9.200
Hexachlorobutadiene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m & p-Xylene	ND	ND	31.00	37.00	4.90	2.00	ND	ND	0.130	39.000
Methylene chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
o-Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
sec-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
tert-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND	ND	0.540	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EPA Method 8270										
1,2,4,5-Tetrachlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1-Chloronaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1-Naphthylamine	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,3,4,6-Tetrachlorophenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4,5-Trichlorophenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4,6-Trichlorophenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dichlorophenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dimethylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dinitrophenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND = NOT DETECTED

TABLE 2
SUMMARY OF ANALYTICAL RESULTS

ANALYTE	SAMPLE IDENTIFICATION									
	SS-1 @ 2-3' (mg/kg)	SS-1 @ 5' (mg/kg)	SS-2 @ 2-3' (mg/kg)	SS-2 @ 6' (mg/kg)	SS-3 @ 2-3' (mg/kg)	SS-3 @ 5.5' (mg/kg)	SS-4 @ 1' (mg/kg)	SS-4 @ 5' (mg/kg)	SS-5 @ 2' (mg/kg)	SS-5 @ 5' (mg/kg)
2,4-Dinitrotoluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,6-Dichlorophenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,6-Dinitrotoluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chloronaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chlorophenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Naphthylamine	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Nitroaniline	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Nitrophenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Picoline	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3,3-Dichlorobenzidine	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3-Methylcholanthrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3-Nitroaniline	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4,6-Dinitro-2-methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Aminobiphenyl	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Bromophenyl-phenylether	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Chloro-3-methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Chloroaniline	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Chlorophenyl-phenylether	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methylphenol/3-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Nitroaniline	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Nitrophenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
7,12-Dimethylbenz(a)anthracene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
a,a-Dimethylphenethylamine	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetophenone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aniline	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Anthracene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzidine	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzol(a)anthracene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzol(a)pyrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzol(b)fluoranthene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzol(g,h,i)perylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzol(k)fluoranthene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzoic acid	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND = NOT DETECTED

TABLE 2
SUMMARY OF ANALYTICAL RESULTS

ANALYTE	SAMPLE IDENTIFICATION									
	SS-1 @ 2-3' (mg/kg)	SS-1 @ 5' (mg/kg)	SS-2 @ 2-3' (mg/kg)	SS-2 @ 6' (mg/kg)	SS-3 @ 2-3' (mg/kg)	SS-3 @ 5.5' (mg/kg)	SS-4 @ 1' (mg/kg)	SS-4 @ 5' (mg/kg)	SS-5 @ 2' (mg/kg)	SS-5 @ 5' (mg/kg)
Benzyl alcohol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
bis(2-Chloroethoxy)methane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
bis(2-Chloroethyl)ether	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
bis(2-chloroisopropyl)ether	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
bis(2-Ethylhexyl)phthalate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Butylbenzylphthalate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chrysene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-n-butylphthalate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-n-octylphthalate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenz[a,h]anthracene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzo[a,j]acridine	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diethylphthalate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dimethylphthalate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diphenylhydrazine	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl methanesulfonate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorocyclopentadiene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Indeno[1,2,3-cd]pyrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isophorone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl methanesulfonate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-Nitroso-di-n-butylamine	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Nitrosodi-n-propylamine	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-Nitrosodimethylamine	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Nitrosodiphenylamine & Diphenyl	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-Nitrosopiperidine	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
p-Dimethylaminoazobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pentachlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pentachloronitrobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pentachlorophenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenacetin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND = NOT DETECTED

TABLE 2
SUMMARY OF ANALYTICAL RESULTS

ANALYTE	SAMPLE IDENTIFICATION									
	SS-1 @ 2-3' (mg/kg)	SS-1 @ 5' (mg/kg)	SS-2 @ 2-3' (mg/kg)	SS-2 @ 6' (mg/kg)	SS-3 @ 2-3' (mg/kg)	SS-3 @ 5.5' (mg/kg)	SS-4 @ 1' (mg/kg)	SS-4 @ 5' (mg/kg)	SS-5 @ 2' (mg/kg)	SS-5 @ 5' (mg/kg)
Phenanthrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pronamide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pyrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EPA METHODS 200.7, 245.1)										
Aluminum (Al)	4,900	4,700	1,900	4,100	5,800	5,700	9,200	7,500	7,800	4,200
Arsenic (As)	ND	ND	ND	ND	ND	3.8	ND	ND	ND	<0.50
Barium (Ba)	87	320	37	650	130	170	95	310	73	73
Boron (B)	ND	ND	ND	ND	ND	ND	ND	ND	ND	<10
Cadmium (Cd)	ND	ND	ND	ND	ND	ND	0.06	0.21	0.06	<0.05
Chromium (Cr)	ND	ND	ND	ND	ND	ND	ND	ND	ND	<10
Colbalt (Co)	ND	ND	ND	ND	ND	ND	ND	ND	ND	<10
Copper (Cu)	13	ND	ND	ND	ND	ND	ND	ND	ND	<10
Iron (Fe)	7,300	3,300	1,800	2,400	5,900	4,300	7,600	5,500	5,800	2,800
Lead (Pb)	ND	ND	ND	ND	ND	ND	ND	ND	ND	<10
Manganese (Mn)	91	38	47	20	93	51	120	60	81	19
Molybdenum (Mo)	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0
Nickel (Ni)	11	6.1	7.6	8.1	8.9	6	9	7.7	7.1	6.1
Selenium (Se)	ND	ND	ND	ND	ND	1.8	ND	ND	ND	<1.0
Silver (Ag)	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.50
Zinc (Zn)	21	9.5	6.7	6.6	17	14	22	15	17	6.9
EPA METHODS SW 846-3051, 6010B, 7471.										
TOTAL Hg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOTAL U	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EPA METHODS SW 846-3550, 8080										
TOTAL PCB	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EPA METHODS: 150.1, 160.1, 375.4, SM 4500 Cl-B, 353.3, 335.2, 340.2.										
CHLORIDE	340	220	300	350	120	79	39	59	99	260
CYANIDE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FLUORIDE	0.26	8.0	0.77	11	0.85	3.3	0.92	7.0	0.66	11
N03-N	0.64	ND	ND	ND	ND	ND	0.40	2.5	ND	ND
pH	8.1	7.9	8.4	9.2	8.2	8.1	7.8	8.1	7.7	9.2
SULFATE	702	240	590	82	350	310	880	720	860	36
TDS	1,600	900	2,600	2,000	2,000	2,200	2,400	3,000	2,800	1,700
EPA METHODS 3550, 418.1										
TRPHC	24,800	14,100	200,000	30,900	134,000	21,900	2,930	1,800	68,200	50,200

ND = NOT DETECTED

TABLE 2
SUMMARY OF ANALYTICAL RESULTS

ANALYTE	SAMPLE IDENTIFICATION									
	SS-1 @ 2-3' (mg/kg)	SS-1 @ 5' (mg/kg)	SS-2 @ 2-3' (mg/kg)	SS-2 @ 6' (mg/kg)	SS-3 @ 2-3' (mg/kg)	SS-3 @ 5.5' (mg/kg)	SS-4 @ 1' (mg/kg)	SS-4 @ 5' (mg/kg)	SS-5 @ 2' (mg/kg)	SS-5 @ 5' (mg/kg)
EPA METHOD 901.1M										
Ra-226	pCi/gm ND	pCi/gm ND	pCi/gm 2.17	pCi/gm ND	pCi/gm ND	pCi/gm ND	pCi/gm ND	pCi/gm ND	pCi/gm ND	pCi/gm ND
Ra-228	Bq/gm ND	Bq/gm ND	Bq/gm ND	Bq/gm ND	Bq/gm 0.78	Bq/gm ND	Bq/gm 1.28	Bq/gm ND	Bq/gm 0.76	Bq/gm ND
Ra-226	ND	ND	0.08	ND	ND	ND	ND	ND	ND	ND
Ra-228	ND	ND	ND	ND	0.029	ND	0.047	ND	0.028	ND

ND = NOT DETECTED

Appendix III

Lithology Logs



RECORD OF SUBSURFACE EXPLORATION

Page 1 of 2
Soil Boring GSB-1

Project Name: <u>Shell Grimes Battery</u>	Project No. <u>19349</u>
Borehole Location: <u>Hobbs, Lea County, New Mexico</u>	Logged By: <u>Jeffrey Kindley</u>
Drilled By: <u>Eades Drilling Company</u>	Drilling/Rig Methods: <u>Air Rotary 7 7/8"</u>
Date/Time Started: <u>08/13/98 @ 911</u>	Date/Time Completion(s): <u>08/13/98 @ 1530</u>
Air Monitoring Type: <u>Not Applicable</u>	GWL Depth: <u>65 feet</u>

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
0-	GSB1	2-3	SS	Buff/tan fine-grain calcareous sand (unconsolidated)	0	SM/L	Dry No hydrocarbon odors or staining
5		3-5	SS		0		
-10		8-10	SS	Hard red/pink sandstone	0	Ss	Dry No hydrocarbon odors or staining
-15		13-15	SS	Buff/tan fine-grain calcareous sand (unconsolidated)	0	SM/L	Dry No hydrocarb odors or staining
-20		18-20	SS		0		
-25		23-25	SS		0		
-30		28-30	SS		0		
-35		33-35	SS	Tan fine-grain well sorted sand	0	SW	Dry No hydrocarbon odors or staining
-40		38-40	SS		0		

Comments: _____

Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 2 of 2
Soil Boring GSB-1

Project Name: Shell Grimes Battery Project No. 19349
Borehole Location: Hobbs, Lea County, New Mexico Logged By: Jeffrey Kindley
Drilled By: Eades Drilling Drilling/Rig Methods: Air Rotary 7 7/8"
Date/Time Started: 08/13/98 @ 0911 Date/Time Completion(s): 08/13/98 @ 1530
Air Monitoring Type: Not Applicable GWL Depth: 65 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
-40-							
-45		43-45	SS	Tan fine-grain well sorted sand	0	SW	Slight moisture No hydrocarbon odor or staining
-50		48-50	SS		1		Moist Slight hydrocarbon odor with no taining
-55		53-55	SS		116		Strong hydrocarbo odor with no staining
-60	GSB1	58-60	SS		145		
-65	GSB1	63-65	SS		120		Water on rods at 65 feet
-70				Boring terminated at 65 feet			
-75							
-80							

Comments: _____

Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 1 of 2
Soil Boring GSB-2

Project Name: <u>Shell Grimes Battery</u>	Project No. <u>19349</u>
Borehole Location: <u>Hobbs, Lea County, New Mexico</u>	Logged By: <u>Jeffrey Kindley</u>
Drilled By: <u>Eades Drilling Company</u>	Drilling/Rig Methods: <u>Air Rotary 7 7/8"</u>
Date/Time Started: <u>08/14/98 @ 909</u>	Date/Time Completion(s): <u>08/14/98 @ 1330</u>
Air Monitoring Type: <u>Not Applicable</u>	GWL Depth: <u>58 feet</u>

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
0-	GSB2	0-3	SS	Backfill material of fine-grain sand	0	SM/L	Dry No hydrocarbon odors or staining
5		5-6	SS		0		
10		10-12	SS	Buff/tan fine-grain calcareous sand (unconsolidated) intermixed with sandy limestone	0		Dry No hydrocarbon odors or staining
15		15-17	SS		0		
20				Hard red/pink sandstone		Ss	Dry Slight hydrocarbon odor no staining
25		21-23	SS		2	SW	
30		25-27	SS	Tan fine-grain well sorted calcareous sand	1		
35		30-32	SS		1		
40			35-37	SS		5	

Comments: _____

Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 2 of 2
Soil Boring GSB-2

Project Name: Shell Grimes Battery Project No. 19349
Borehole Location: Hobbs, Lea County, New Mexico Logged By: Jeffrey Kindley
Drilled By: Eades Drilling Drilling/Rig Methods: Air Rotary 7 7/8"
Date/Time Started: 08/14/98 @ 0909 Date/Time Completion(s): 08/14/98 @ 1330
Air Monitoring Type: Not Applicable GWL Depth: 58 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OV Readings (ppm)	USCS Symbol	Comments
-40-		40-42	SS		4	SW	
-45	GSB2	45-47	SS	Tan fine-grain well sorted calcareous sand	157		Slight moisture Strong hydrocarbon odor no staining
-50		50-52	SS	Tan fine-grain well sorted sand with gypsum	137	SW	Moist Strong hydrocarbon odor no staining
-55	GSB2	55-57	SS		124		Water on rods at 58 feet
-60				Boring terminated at 58 feet			
-65							
-70							
-75							
-80							

Comments: _____

Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 1 of 2
Soil Boring GSB-3

Project Name: Shell Grimes Battery Project No. 19349
Borehole Location: Hobbs, Lea County, New Mexico Logged By: Jeffrey Kindley
Drilled By: Eades Drilling Company Drilling/Rig Methods: Air Rotary 7 7/8"
Date/Time Started: 09/03/98 @ 0825 Date/Time Completion(s): 09/03/98 @ 1218
Air Monitoring Type: Not Applicable GWL Depth: 53 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
0-	GSB3	2-3	SS	Backfill material of fine-grain sand	3	SM/L	Dry Slight hydrocarbon odor with no staining-
5		3-5	SS		4		
-10		8-10	SS	Buff/tan fine-grain calcareous sand (unconsolidated) intermixed with sandy limestone	2		
-15		13-15	SS		3		
-20		18-20	SS	Tan fine-grain well sorted calcareous sand with sandstone fragments	2		
-25	GSB3	23-24	SS	Red/pink sandstone (hard)	1	Ss	Dry Slight hydrocarbon odor with no staining
-30		28-30	SS		6	SW	Dry Strong hydrocarbon odor with no staining
-35		33-35	SS	Tan fine-grain well sorted calcareous sand with gypsum streamers	25		
-40		38-40	SS		207		

Comments: _____

Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 2 of 2
Soil Boring GSB-3

Project Name: Shell Grimes Battery Project No. 19349
Borehole Location: Hobbs, Lea County, New Mexico Logged By: Jeffrey Kindley
Drilled By: Eades Drilling Drilling/Rig Methods: Air Rotary 7 7/8"
Date/Time Started: 09/03/98 @ 0825 Date/Time Completion(s): 09/03/98 @ 1218
Air Monitoring Type: Not Applicable GWL Depth: 58 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
-40-						SW	
-45		43-45	SS	Tan fine-grain well sorted calceous sand with gypsum streamers	190	SW	Slight moisture Strong hydrocarbon odor no staining
-50	GSB3	48-50	SS		168		Moist Strong hydrocarbon odor with dark hydrocarbon staining
-55				Boring terminated at 53 feet			Water on rods at 53 feet
-60							
-65							
-70							
-75							
-80							

Comments: _____

Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 1 of 2
Soil Boring GSB-4

Project Name: Shell Grimes Battery Project No. 19349
 Borehole Location: Hobbs, Lea County, New Mexico Logged By: Jeffrey Kindley
 Drilled By: Eades Drilling Company Drilling/Rig Methods: Air Rotary 7 7/8"
 Date/Time Started: 09/04/98 @ 1025 Date/Time Completion(s): 09/04/98 @ 1451
 Air Monitoring Type: Not Applicable GWL Depth: 59 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
0-	GSB4	2-3	SS		1		Dry No hydrocarbon odor or staining
5		3-5	SS		1		
--10		8-10	SS	Buff/tan fine-grain calcareous sand (unconsolidated) intermixed with sandy limestone	1	SM/L	
--15		13-15	SS		2		Dry No hydrocarbon odor with slight straining
--20		18-20	SS	with sandstone fragments	4	SW/Ss	Slight hydrocarbon odor
--25		23-25	SS	Red/pink sandstone (hard)	1	Ss	
--30		28-30	SS		0		Dry Slight hydrocarbon odor with no staining
--35		33-35	SS	Tan fine-grain well sorted calcareous sand	1	SW	
--40		38-40	SS		2		

Comments: _____

Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 2 of 2
Soil Boring GSB-4

Project Name: Shell Grimes Battery Project No. 19349
 Borehole Location: Hobbs, Lea County, New Mexico Logged By: Jeffrey Kindley
 Drilled By: Eades Drilling Drilling/Rig Methods: Air Rotary 7 7/8"
 Date/Time Started: 09/04/98 @ 1025 Date/Time Completion(s): 09/04/98 @ 1451
 Air Monitoring Type: Not Applicable GWL Depth: 59 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
-40-							
-45		43-45	SS	Tan fine-grain well sorted calcareous sand with gypsum streamers	102	SW	Dry Strong hydrocarbon odor no staining
-50	GSB4	48-50	SS		151		Slight moister
-55		57-59	SS		145		Wet Strong hydrocarbon odor with soil staining
-60				Boring terminated at 59 feet			Water on rods at 59 feet
-65							
-70							
-75							
-80							

Comments: _____

Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 1 of 1
Soil Boring GSB-5

Project Name: Shell Grimes Battery Project No. 19349
 Borehole Location: Hobbs, Lea County, New Mexico Logged By: Jeffrey Kindley
 Drilled By: Eades Drilling Company Drilling/Rig Methods: Air Rotary 7 7/8"
 Date/Time Started: 08/26/98 @ 1318 Date/Time Completion(s): 08/26/98 @ 1555
 Air Monitoring Type: Not Applicable GWL Depth: Unknown

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
0-	GSB5	2-3	SS	Buff/tan fine-grain siliceous limestone (unconsolidated)	0	L	Dry No hydrocarbon odor or staining
5		3-5	SS		0		
--10	GSB5	8-10	SS	Buff/tan fine grain well sorted calcareous sand	0	SW	Dry No hydrocarbon odor or staining
--15		13-15	SS	Buff/tan fine-grain siliceous limestone	0	L	
--20		18-20	SS		0		
--25		23-25	SS	Red/pink sandstone (hard)	0	Ss	
--30	GSB5	29-31	SS		0		Dry No hydrocarbon odor or staining
--35		33-35	SS	Tan fine-grain well sorted calcareous sand	0	SW	
				Tan fine-grain well sorted sand with gypsum streamers		SW	
--40	GSB5	38-40	SS	Boring terminated at 40 feet	0		

Comments: _____ Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 1 of 1
Soil Boring GSB-6

Project Name: Shell Grimes Battery Project No. 19349
 Borehole Location: Hobbs, Lea County, New Mexico Logged By: Jeffrey Kindley
 Drilled By: Eades Drilling Company Drilling/Rig Methods: Air Rotary 7 7/8"
 Date/Time Started: 09/01/98 @ 1229 Date/Time Completion(s): 09/01/98 @ 1535
 Air Monitoring Type: Not Applicable GWL Depth: Unknown

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
0-	GSB6	2-3	SS	Tan fine-grain well sorted sand (powdery)	0	SW	Dry No hydrocarbon odor or staining
5		3-5	SS		0		
--10	GSB6	8-10	SS	Red/brown fine-grain well sorted calcareous sand	0	SW	Dry No hydrocarbon odor or staining
--15		13-15	SS		0		
--20		18-20	SS	Buff/tan siliceous limestone (unconsolidated)	0	L	Dry No hydrocarbon odor or staining
--25		23-25	SS	Red/pink sandstone (hard)	0	Ss	Dry No hydrocarbon odor or staining
--30	GSB6	28-30	SS	Tan fine-grain well sorted calcareous sand	0	SW	Dry No hydrocarbon odor or staining
--35		33-35	SS		0		
--40	GSB6	38-40	SS	Boring terminated at 40 feet	0		

Comments: _____
 Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 1 of 2
Soil Boring GSB-7

Project Name: Shell Grimes Battery Project No. 19349
 Borehole Location: Hobbs, Lea County, New Mexico Logged By: Jeffrey Kindley
 Drilled By: Eades Drilling Company Drilling/Rig Methods: Air Rotary 7 7/8"
 Date/Time Started: 08/25/98 @ 1513 Date/Time Completion(s): 08/26/98 @ 1111
 Air Monitoring Type: Not Applicable GWL Depth: Unknown

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
0-	GSB7	2-3	SS	Buff/tan fine-grain siliceous limestone (unconsolidated)	0	L	Dry No hydrocarbon odor or staining
-5		3-5	SS		0		
-10		8-10	SS	Tan fine-grain well sorted calcareous sand	0	SW	Dry No hydrocarbon odor or staining
-15		13-15	SS		1		
-20		18-20	SS		160		
-25	GSB7	23-25	SS	Red/pink sandstone (hard)	168	Ss	Dry Hydrocarbon odor with no staining
-30		28-30	SS	Tan fine-grain well-sorted calcareous sand	168	SW	Dry Hydrocarbon odor with no staining
-35		33-35	SS		186		
-40		38-40	SS		34		

Comments: _____ Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 2 of 2
Soil Boring GSB-7

Project Name: Shell Grimes Battery Project No. 19349
Borehole Location: Hobbs, Lea County, New Mexico Logged By: Jeffrey Kindley
Drilled By: Eades Drilling Drilling/Rig Methods: Air Rotary 7 7/8"
Date/Time Started: 08/25/98 @ 1513 Date/Time Completion(s): 08/26/98 @ 1111
Air Monitoring Type: Not Applicable GWL Depth: unknown

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
-40-							
-45		43-45	SS	Tan fine-grain well sorted sand with sandstone fragments	72	SW/Ss	Dry Hydrocarbon odor with no staining
-50		48-50	SS		9		Dry Slight hydrocarbon odor with no staining
-55		53-55	SS	with gypsum streamers	1	SW	
-60	GBS7	58-60	SS	Boring terminated at 60 feet	0		Dry No hydrocarbon odors or staining
-65							
-70							
-75							
-80							

Comments: _____

Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 1 of 2
Soil Boring SB-8

Project Name: Shell Grimes Battery Project No. 19349
 Borehole Location: Hobbs, Lea County, New Mexico Logged By: Jeffrey Kindley
 Drilled By: Eades Drilling Company Drilling/Rig Methods: Air Rotary 7 7/8"
 Date/Time Started: 09/03/98 @ 1421 Date/Time Completion(s): 09/04/98 @ 0920
 Air Monitoring Type: Not Applicable GWL Depth: 59 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
0-	GSB8	2-3	SS	Buff/tan fine-grain siliceous limestone (unconsolidated)	0	L	Dry No hydrocarbon odor or staining
5		3-5	SS		0		
-10		8-10	SS	Tan fine-grain well sorted calcareous sand	0	SW	Dry No hydrocarbon odor or staining
-15		13-15	SS		0		Some hydrocarbon staining
-20		18-20	SS		1		Dry Slight hydrocarbon odor with staining
-25		23-25	SS	Red/pink sandstone (hard)	0	Ss	
-30		28-30	SS	Tan fine-grain well sorted calcareous sand	0	SW	
-35		33-35	SS	increasing amount of sand	1		Dry Slight hydrocarbon odor with no staining
-40		38-40	SS		19		Stronger hydrocarbon odor with staining

Comments: _____ Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 2 of 2
Soil Boring GSB-8

Project Name: Shell Grimes Battery Project No. 19349
 Borehole Location: Hobbs, Lea County, New Mexico Logged By: Jeffrey Kindley
 Drilled By: Eades Drilling Drilling/Rig Methods: Air Rotary 7 7/8"
 Date/Time Started: 09/03/98 @ 1421 Date/Time Completion(s): 09/04/98 @ 0920
 Air Monitoring Type: Not Applicable GWL Depth: 59 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
-40-							
-45	GSB8	43-45	SS	Tan fine-grain well sorted calcareous sand	164	SW	Slight moisture Hydrocarbon odor with staining
-50		48-50	SS		158		Moist
-55	GSB8	57-59	SS	with gypsum streamers	89		Water on rods at 59 feet
-60				Boring terminated at 59 feet			
-65							
-70							
-75							
-80							

Comments: _____

 Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 1 of 2
Soil Boring GSB-9

Project Name: <u>Shell Grimes Battery</u>	Project No. <u>19349</u>
Borehole Location: <u>Hobbs, Lea County, New Mexico</u>	Logged By: <u>Jeffrey Kindley</u>
Drilled By: <u>Eades Drilling Company</u>	Drilling/Rig Methods: <u>Air Rotary 7 7/8"</u>
Date/Time Started: <u>09/02/98 @ 0930</u>	Date/Time Completion(s): <u>09/02/98 @ 1159</u>
Air Monitoring Type: <u>Not Applicable</u>	GWL Depth: <u>52 feet</u>

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
0-	GSB9	2-3	SS	Tan fine-grain well sorted calcareous sand	1	SW	Dry No hydrocarbon odor or staining
5		3-5	SS		4		
8-10	GSB9	8-10	SS	Light brown color	122	SW	Dry Strong Hydrocarbon odor with staining
13-15		13-15	SS		178		
18-20		18-20	SS		162		
23-25		23-25	SS		168		
28-30		28-30	SS	Red/pink sandstone	168	Ss	
33-35		33-35	SS	Tan fine-grain well sorted calcareous sand	102	SW	Dry Hydrocarbon odor with no staining
38-40		38-40	SS		98		

Comments: _____

Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 2 of 2
Soil Boring GSB-9

Project Name: Shell Grimes Battery Project No. 19349
Borehole Location: Hobbs, Lea County, New Mexico Logged By: Jeffrey Kindley
Drilled By: Eades Drilling Drilling/Rig Methods: Air Rotary 7 7/8"
Date/Time Started: 09/02/98 @ 0930 Date/Time Completion(s): 09/02/98 @ 1159
Air Monitoring Type: Not Applicable GWL Depth: 52 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
-40-	GSB9	43-45	SS	Tan fine-grain well sorted calcareous sand	176	SW	Moist Hydrocarbon odor with no staining
-45-				Light brown	266		Hydrocarbon odor with staining Water on rods at 52 feet
-50-		50-52	SS	Boring terminated at 52 feet			
-55-							
-60-							
-65-							
-70-							
-75-							
-80-							

Comments: _____

Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 1 of 2
Soil Boring GSB-10

Project Name: Shell Grimes Battery Project No. 19349
 Borehole Location: Hobbs, Lea County, New Mexico Logged By: Jeffrey Kindley
 Drilled By: Eades Drilling Company Drilling/Rig Methods: Air Rotary 7 7/8"
 Date/Time Started: 09/02/98 @ 1354 Date/Time Completion(s): 09/02/98 @ 1641
 Air Monitoring Type: Not Applicable GWL Depth: 52 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
0-							
-	GSB10	2-3	SS	Tan fine-grain well sorted calcareous sand	196	SW/L	Dry
-				with buff/tan siliceous limestone intermixed			Strong hydrocarbon odor
5	GSB10	3-5	SS		194		with staining
-							
-							
-10		8-10	SS		170		
-				Red/pink hard sandstone		Ss	
-							
-15		13-15	SS	Tan fine-grain well sorted calcareous sand with	162	SW/L	Dry
-				some limestone fragments intermixed			Strong hydrocarbon odor
-							with staining
-20		18-20	SS		146		
-							
-25		23-25	SS	Dark brown fine-grain well sorted calcareous	155	SW/Ss	Dark brown staining
-				sand intermixed with sandstone fragments			Oil on rods
-30		28-30	SS		186		
-							
-35		33-35	SS	Light Brown sandstone hard	191	Ss	Dry
-							Strong hydrocarbon odors
-							with hydrocarbon staining
-							oil on rods
-40		38-40	SS	Light brown fine-grain well sorted calcareous	131	SW	
				sand			

Comments: _____

Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 1 of 2
Soil Boring GSB-11

Project Name: Shell Grimes Battery Project No. 19349
 Borehole Location: Hobbs, Lea County, New Mexico Logged By: Jeffrey Kindley
 Drilled By: Eades Drilling Company Drilling/Rig Methods: Air Rotary 7 7/8"
 Date/Time Started: 09/08/98 @ 0911 Date/Time Completion(s): 09/08/98 @ 1509
 Air Monitoring Type: Not Applicable GWL Depth: 49 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
0-	GSB11	2-3	SS	Tan fine-grain well sorted calcareous sand with buff/tan siliceous limestone intermixed	2	SW/L	Dry No hydrocarbon odor or staining
5		3-5	SS				No sample collected at 3 to 5 feet
8-10		SS	Red/pink hard sandstone	3	Ss	Dry Slight hydrocarbon odor with no staining	
13-15		SS		Tan fine-grain well sorted calcareous sand	3	SW	Strong hydrocarbon odor with no staining
18-20		SS		32			
23-25		SS	with sandstone fragmensts with increasing amount of sand	25	SW/Ss		
28-30		SS		19			
33-35	GSB11	33-35	SS		195		Dry Strong hydrocarbon odor with staining
38-40		38-40	SS		195		Moist

Comments: _____
 Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 2 of 2
Soil Boring GSB-11

Project Name: Shell Grimes Battery Project No. 19349
Borehole Location: Hobbs, Lea County, New Mexico Logged By: Jeffrey Kindley
Drilled By: Eades Drilling Drilling/Rig Methods: Air Rotary 7 7/8"
Date/Time Started: 09/08/98 @ 0911 Date/Time Completion(s): 09/08/98 @ 1509
Air Monitoring Type: Not Applicable GWL Depth: 49 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
-40-							
-45		43-45	SS	Light brown fine-grain well sorted calcareous sand with sandstone	195	SW/Ss	Moist Hydrocarbon odor with staining
-50	GSB11	48-50	SS		150		
-55				Boring terminated at 52 feet			Water on rods at 52 feet
-60							
-65							
-70							
-75							
-80							

Comments: _____

Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 1 of 2
Monitor Well GMW-2

Project Name: Shell Grimes Battery Project No. 19349
Borehole Location: Hobbs, Lea County, New Mexico Logged By: Jeffrey Kindley
Drilled By: Eades Drilling Drilling/Rig Methods: Air Rotary 7 7/8"
Date/Time Started: 07/29/98 @ 0956 Date/Time Completion(s): 07/29/98 @ 1530
Air Monitoring Type: Not Applicable GWL Depth: 63 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
0-							
5		3-5	SS	Tan/buff fine-grain calcareous sand with minor amounts of clay	1	SW/CL	Dry No hydrocarbon odor or staining
-10		8-10	SS	Tan/buff fine-grain calcareous sand intermixed with hard siliceous limestone	1	SW/L	
-15	GMW2	13-15	SS		1		Dry No hydrocarbon odor or staining
-20		18-20	SS		0		
-25		23-25	SS	Red/pink hard sandstone	1	Ss	Dry No hydrocarbon odor or staining
-30		28-30	SS		0	SW	
-35		33-35	SS	Tan fine-grain well sorted calcareous sand	0		Dry No hydrocarbon odor or staining
-40		38-40	SS		0		

Comments: _____

Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 2 of 2
Monitor Well GMW-2

Project Name: Shell Grimes Battery Project No. 18906
 Borehole Location: Hobbs, Lea County, New Mexico Logged By: Jeffrey Kindley
 Drilled By: Eades Drilling Drilling/Rig Methods: Air Rotary 7 7/8"
 Date/Time Started: 07/29/98 @ 0956 Date/Time Completion(s): 07/29/98 @ 1530
 Air Monitoring Type: Not Applicable GWL Depth: 63 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
--40-							
--45		43-45	SS	Tan fine-grain calcareous sand with some sandstones intermixed	0	SW/Ss	Moist No hydrocarbon odor or staining
--50		48-50	SS		0		
--55		53-55	SS	Tan fine-grain calcareous sand with limestone fragments intermixed	0	SW/L	Moist No hydrocarbon odor or staining
--60	GMW2	58-60	SS	with sandstones	0	SW/Ss	
--65		63-65	SS				Water on rods at 63 feet
--70							
--75							
--80				Completed as a monitor well at 75 feet			

Comments: _____

Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 1 of 2
Monitor Well GMW-3

Project Name: <u>Shell Grimes Battery</u>	Project No. <u>19349</u>
Borehole Location: <u>Hobbs, Lea County, New Mexico</u>	Logged By: <u>Jeffrey Kindley</u>
Drilled By: <u>Eades Drilling</u>	Drilling/Rig Methods: <u>Air Rotary 7 7/8"</u>
Date/Time Started: <u>07/30/98 @ 0935</u>	Date/Time Completion(s): <u>07/31/98 @ 1745</u>
Air Monitoring Type: <u>Not Applicable</u>	GWL Depth: <u>64 feet</u>

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
0-				Buff limestone		L	
5		3-5	SS		0		Dry No hydrocarbon odor or staining
-10		8-10	SS	Tan/buff fine-grain well sorted sand	0	SW	
-15		13-15	SS	No samples collected from 13 to 21 feet due to collapsing sands			Dry No hydrocarbon odor or staining
-20		18-20	SS				
-25		23-25	SS	Tan/grey fine-grain well sorted calcareous sand	0	SW	
				Hard grey sandstone		Ss	Dry No hydrocarbon odor with some staining
-30		28-30	SS	Tan fine-grain well sorted sand	0	SW	
-35		33-35	SS		2		
-40		38-40	SS	with some sandstone intermixed	4		Dry Sight hydrocarbon odor no staining

Comments: _____

Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 2 of 2
Monitor Well GMW-3

Project Name: <u>Shell Grimes Battery</u>	Project No. <u>18906</u>
Borehole Location: <u>Hobbs, Lea County, New Mexico</u>	Logged By: <u>Jeffrey Kindley</u>
Drilled By: <u>Eades Drilling</u>	Drilling/Rig Methods: <u>Air Rotary 7 7/8"</u>
Date/Time Started: <u>07/30/98 @ 0935</u>	Date/Time Completion(s): <u>07/31/98 @ 1745</u>
Air Monitoring Type: <u>Not Applicable</u>	GWL Depth: <u>64 feet</u>

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
-40-							
-45		43-45	SS	Tan fine-grain well sorted calcareous sand	1	SW	Dry Slight hydrocarbon odor with or staining
-50		48-50	SS		25		
-55	GMW3	53-55	SS		294		
-60		58-60	SS		294		
-65	GMW3	63-65	SS	OVM readings of 229 ppm around rig	178		Water/oil on rods at 64 feet
-70							
-75							
-80				Completed as a monitor well at 77 feet			

Comments: _____

Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 1 of 2
Monitor Well GMW-4

Project Name: Shell Grimes Battery Project No. 19349
Borehole Location: Hobbs, Lea County, New Mexico Logged By: Jeffrey Kindley
Drilled By: Eades Drilling Drilling/Rig Methods: Air Rotary 7 7/8"
Date/Time Started: 08/03/98 @ 0915 Date/Time Completion(s): 08/03/98 @ 1450
Air Monitoring Type: Not Applicable GWL Depth: 64 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
0-							
5		3-5	SS	Tan/buff fine grain well sorted calcareous sand	0	SW	Dry No hydrocarbon odor or staining
-10		8-10	SS		0		
-15		13-15	SS	Buff siliceous limestone	0	L	Dry No hydrocarbon odor or staining
-20	GMW4	18-20	SS		0		
-25		23-25	SS		0		
-30		28-30	SS	Tan fine-grain well sorted sand	0	SW	Dry No hydrocarbon odor- or staining-
-35		33-35	SS	Red/pink sandstone	0	Ss	
-40		38-40	SS	Tan fine-grain well sorted sand	0	SW	Dry No hydrocarbon odor no staining

Comments: _____
Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 2 of 2
Monitor Well GMW-4

Project Name: Shell Grimes Battery Project No. 18906
Borehole Location: Hobbs, Lea County, New Mexico Logged By: Jeffrey Kindley
Drilled By: Eades Drilling Drilling/Rig Methods: Air Rotary 7 7/8"
Date/Time Started: 08/03/98 @ 0927 Date/Time Completion(s): 08/03/98 @ 1450
Air Monitoring Type: Not Applicable GWL Depth: 64 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
-40-							
-45		43-45	SS	Tan fine-grain well sorted sand	0	SW	Dry- No hydrocarbon odor or staining
-50		48-50	SS	with sandstone fragments intermixed	0	SW/Ss	
-55		53-55	SS	Tan fine-grain well sorted sand	0	SW	Dry No hydrocarbon odor or staining
-60		58-60	SS		0		
-65	GMW4	63-65	SS	with gypsum layers	0		Water on rods at 64 feet
-70							
-75							
-80				Boring terminated at 77 feet			

Comments: _____
Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 1 of 2
Monitor Well GMW-5

Project Name: Shell Grimes Battery Project No. 19349
Borehole Location: Hobbs, Lea County, New Mexico Logged By: Jeffrey Kindley
Drilled By: Eades Drilling Drilling/Rig Methods: Air Rotary 7 7/8"
Date/Time Started: 08/04/98 @ 0947 Date/Time Completion(s): 08/05/98 @ 1300
Air Monitoring Type: Not Applicable GWL Depth: 65 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
0-							
5		3-5	SS	Tan/buff fine-grain well sorted calcareous sand	0	SW	Dry No hydrocarbon odor or staining
-10		8-10	SS		0		
-15		13-15	SS	Tan fine-grain wellsorted sand collapses to 19 feet	0	SW	Dry No hydrocarbon odor or staining
-20		18-20	SS		0		
-25		23-25	SS	Buff siliceous limestone	0	L	Dry No hydrocarbon odor or staining
-30		28-30	SS	Hard red/pink sandstone	0	Ss	
-35		33-35	SS	Tan fine-grain well sorted sand with some sandstone fragments	0	SW/Ss	
-40		38-40	SS	with gypsum	0	SW	Dry No hydrocarbon odor no staining

Comments: _____

Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 2 of 2
Monitor Well GMW-5

Project Name: Shell Grimes Battery Project No. 18906
Borehole Location: Hobbs, Lea County, New Mexico Logged By: Jeffrey Kindley
Drilled By: Eades Drilling Drilling/Rig Methods: Air Rotary 7 7/8"
Date/Time Started: 08/04/98 @ 0947 Date/Time Completion(s): 08/05/98 @ 1300
Air Monitoring Type: Not Applicable GWL Depth: 65 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
-40-							
-45		43-45	SS	Tan fine-grain well sorted sand	1	SW	Dry- No hydrocarbon odor or staining
-50		48-50	SS		1		Moist
-55		53-55	SS	with gypsum streamers	4		
-60	GMW5	58-60	SS		237		Moist Hydrocarbon odor with no staining
-65	GMW5	63-65	SS		299		Hydrocarbon staining Water on rods at 65 feet
-70							
-75							
-80				Completed as a monitor well at 77 feet			

Comments: _____
Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 1 of 2
Monitor Well GMW-6

Project Name: Shell Grimes Battery Project No. 19349
 Borehole Location: Hobbs, Lea County, New Mexico Logged By: Jeffrey Kindley
 Drilled By: Eades Drilling Drilling/Rig Methods: Air Rotary 7 7/8"
 Date/Time Started: 08/06/98 @ 0902 Date/Time Completion(s): 08/06/98 @ 1500
 Air Monitoring Type: Not Applicable GWL Depth: 65 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
0-							
5	GMW6	3-5	SS	Tan fine-grain well sorted calcareous sand	1	SW	Dry No hydrocarbon odor or staining
-10		8-10	SS	intermixed with sandstones	0	SW/Ss	
-15		13-15	SS		0		Dry No hydrocarbon odor or staining
-20		18-20	SS		0		
-25		23-25	SS		0		Dry No hydrocarbon odor or staining
-30		28-30	SS	Red/pink hard sandstone	0	Ss	
-35		33-35	SS	Tan fine-grain well sorted calcareous sand	0	SW	
-40		38-40	SS	with sandstone intermixed	0	SW/Ss	Dry No hydrocarbon odor no staining

Comments: _____

Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 2 of 2
Monitor Well GMW-6

Project Name: Shell Grimes Battery Project No. 18906
 Borehole Location: Hobbs, Lea County, New Mexico Logged By: Jeffrey Kindley
 Drilled By: Eades Drilling Drilling/Rig Methods: Air Rotary 7 7/8"
 Date/Time Started: 08/06/98 @ 0902 Date/Time Completion(s): 08/06/98 @ 1500
 Air Monitoring Type: Not Applicable GWL Depth: 65 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
-40-							
-45		43-45	SS	Tan fine-grain well sorted calcareous sand	0	SW	Dry- No hydrocarbon odor or staining
-50		48-50	SS	Tan fine-grain well sorted sand	1	SW	Dry No hydrocarbon odor or staining
-55		53-55	SS	with sandstone	0	SW/Ss	
-60		58-60	SS	with gypsum streamers	0	SW	Moist No hydrocarbon odor or staining
-65	GMW6	63-65	SS		0		Water on rods at 65 feet
-70							
-75							
-80				Completed as a monitor well at 77 feet			

Comments: _____
 Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 1 of 2
Monitor Well GMW-7

Project Name: Shell Grimes Battery Project No. 19349
Borehole Location: Hobbs, Lea County, New Mexico Logged By: Jeffrey Kindley
Drilled By: Eades Drilling Drilling/Rig Methods: Air Rotary 7.7/8"
Date/Time Started: 08/07/98 @ 0858 Date/Time Completion(s): 08/10/98 @ 1354
Air Monitoring Type: Not Applicable GWL Depth: 65 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
0-							
5		3-5	SS	Tan fine-grain well sorted calcareous sand	0	SW	Dry No hydrocarbon odor or staining
--10		8-10	SS	intermixed with sandstones	0	SW/Ss	
--15		13-15	SS	Soils collapsed	0		
--20		18-20	SS		0		
--25		23-25	SS	Red/pink sandstone	0	Ss	Dry No hydrocarbon odor or staining
--30		28-30	SS	Tan fine-grain well sorted calcareous sand	0	SW	
--35		33-35	SS		0		
--40		38-40	SS	with sandstone intermixed	0	SW/Ss	Dry No hydrocarbon odor no staining

Comments: _____

Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 2 of 2
Monitor Well GMW-7

Project Name: Shell Grimes Battery Project No. 18906
Borehole Location: Hobbs, Lea County, New Mexico Logged By: Jeffrey Kindley
Drilled By: Eades Drilling Drilling/Rig Methods: Air Rotary 7 7/8"
Date/Time Started: 08/07/98 @ 0858 Date/Time Completion(s): 08/10/98 @ 1356
Air Monitoring Type: Not Applicable GWL Depth: 65 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
-40-							
-45		43-45	SS	Tan fine-grain well sorted calcareous sand with sandstones intermixed	0	SW/Ss	Dry No hydrocarbon odor or staining
-50	GMW7	48-50	SS		1		
-55		53-55	SS	Tan fine-grain well sorted sand	0	SW	
-60		58-60	SS	with gypsum streamers	0		Moist No hydrocarbon odor or staining
-65	GMW7	63-65	SS		0		Water on rods at 65 feet
-70							
-75							
-80				Completed as a monitor well at 77 feet			

Comments: _____ Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 1 of 2
Monitor Well GMW-8

Project Name: Shell Grimes Battery Project No. 19349
Borehole Location: Hobbs, Lea County, New Mexico Logged By: Jeffrey Kindley
Drilled By: Eades Drilling Drilling/Rig Methods: Air Rotary 7 7/8"
Date/Time Started: 08/11/98 @ 0840 Date/Time Completion(s): 08/12/98 @ 1500
Air Monitoring Type: Not Applicable GWL Depth: 66 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
0-							
5		3-5	SS	Tan fine-grain calcareous sand intermixed with limestone fragment	0	SW/L	Dry No hydrocarbon odor or staining
-10		8-10	SS		0		
-15		13-15	SS	Soils collapsed	0		
-20		18-20	SS		0		
-25		23-25	SS	Tan/buff fine-grain well sorted sand intermixed with limestone and some sandstones	0	SW/L/Ss	Dry No hydrocarbon odor or staining
-30	GMW8	28-30	SS	Tan fine-grain calcareous sand well sorted	0	SW	
-35		33-35	SS		0		
-40		38-40	SS	Red/pink hard sandstone	0	Ss	Dry No hydrocarbon odor no staining

Comments: _____

Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 2 of 2
Monitor Well GMW-8

Project Name: Shell Grimes Battery Project No. 18906
 Borehole Location: Hobbs, Lea County, New Mexico Logged By: Jeffrey Kindley
 Drilled By: Eades Drilling Drilling/Rig Methods: Air Rotary 7 7/8"
 Date/Time Started: 08/11/98 @ 0840 Date/Time Completion(s): 08/12/98 @ 1500
 Air Monitoring Type: Not Applicable GWL Depth: 66 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
-40-							
-45		43-45	SS	Tan fine-grain well sorted sand with gypsum	0	SW	Dry Hydrocarbon odor or staining
-50		48-50	SS		1		
-55		53-55	SS		0		
-60		58-60	SS		0		
-65	GMW8	63-65	SS		0		
-70							
-75							
-80				Completed as a monitor well at 77 feet			Water on rods at 66 feet

Comments: _____
 Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 1 of 2
Monitor Well GMW-9

Project Name: Shell Grimes Battery Project No. 19349
Borehole Location: Hobbs, Lea County, New Mexico Logged By: Jeffrey Kindley
Drilled By: Eades Drilling Drilling/Rig Methods: Air Rotary 7 7/8"
Date/Time Started: 08/31/98 @ 0841 Date/Time Completion(s): 08/31/98 @ 1500
Air Monitoring Type: Not Applicable GWL Depth: 65 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
0-							
5		3-5	SS	Tan fine-grain well sorted calcareous sand	0	SW	Dry No hydrocarbon odor or staining
--10	GMW9	8-10	SS		7		
--15		13-15	SS		0		
--20		18-20	SS		0		
--25		23-25	SS	Buff hard siliceous limestone	0	L	Dry No hydrocarbon odors or staining
--30		28-30	SS	Red/Pink sandstone (hard)	0	Ss	Dry No hydrocarbon odors or staining
--35		33-35	SS		0		
--40		38-40	SS	Tan fine-grain well sorted calcareous sand with some sandstones intermixed	0	SW/Ss	Dry No hydrocarbon odor no staining

Comments: _____
Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 2 of 2
Monitor Well GMW-9

Project Name: Shell Grimes Battery Project No. 18906
 Borehole Location: Hobbs, Lea County, New Mexico Logged By: Jeffrey Kindley
 Drilled By: Eades Drilling Drilling/Rig Methods: Air Rotary 7 7/8"
 Date/Time Started: 08/31/98 @ 0841 Date/Time Completion(s): 08/31/98 @ 1500
 Air Monitoring Type: Not Applicable GWL Depth: 65 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
-40-							
-45		43-45	SS	Tan fine-grain well sorted calcareous sand with gypsum	0	SW	Dry No hydrocarbon odors or staining
-50		48-50	SS		0		
-55		53-55	SS	Tan fine-grain well sorted sand with gypsum well sorted	0	SW	
-60		58-60	SS		0		Moist No hydrocarbon odor or staining
-65	GMW9	63-65	SS		180		Strong hydrocarbon odor with no staining Water on rods at 65 feet
-70							
-75							
-80				Monitor well completed at 77 feet			

Comments: _____ Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 2 of 2
Monitor Well GMW-10

Project Name: Shell Grimes Battery Project No. 18906
Borehole Location: Hobbs, Lea County, New Mexico Logged By: Jeffrey Kindley
Drilled By: Eades Drilling Drilling/Rig Methods: Air Rotary 7 7/8"
Date/Time Started: 08/27/98 @ 0858 Date/Time Completion(s): 08/27/98 @ 1600
Air Monitoring Type: Not Applicable GWL Depth: 65 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
--40-							
--45		43-45	SS	Tan fine-grain well sorted sand with gypsum streamers	0	SW	Dry No hydrocarbon odors or staining
--50		48-50	SS		0		
--55		53-55	SS		0		
--60		58-60	SS		0		Moist No hydrocarbon odor or staining
--65	GMW10	63-65	SS		0		Water on rods at 65 feet
--70							
--75							
--80				Monitor well completed at 77 feet			

Comments: _____
Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 1 of 2
Monitor Well GMW-10

Project Name: Shell Grimes Battery Project No. 19349
Borehole Location: Hobbs, Lea County, New Mexico Logged By: Jeffrey Kindley
Drilled By: Eades Drilling Drilling/Rig Methods: Air Rotary 7 7/8"
Date/Time Started: 08/27/98 @ 0858 Date/Time Completion(s): 08/27/98 @ 1600
Air Monitoring Type: Not Applicable GWL Depth: 65 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
0-	GMW10	3-5	SS	Tan/brown clay of high plasticity with small well rounded pebbles intermixed	6	CL	Dry- Slight hydrocarbon odor- with no staining
5							
-10		8-10	SS	Tan fine-grain well sorted calcareous sand intermixed with clay of high plasticity	0	SW/CL	Dry No hydrocarbon odor with no staining
-15		13-15	SS	Tan fine-grain well soted calcareous sand	0	SW	
-20		18-20	SS		0		Dry No hydrocarbon odors or staining
-25		23-25	SS	Red/pink hard sandstone	0	Ss	
-30		28-30	SS	Tan fine-grain well sorted calcareous sand intermixed with sandstone fragments	0	SW/Ss	Dry No hydrocarbon odors or staining
-35		33-35	SS		0		
-40		38-40	SS	Red/pink hard sandstone Tan fine-grain sand with gypsum intermixed with sandstone fragments	0	Ss SW/Ss	Dry No hydrocarbon odor no staining

Comments: _____

Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 1 of 2
Soil Boring TSB-1

Project Name: Shell Tasker Road Project No. 19350
Borehole Location: Hobbs, Lea County, New Mexico Logged By: Jeffrey Kindley
Drilled By: Eades Drilling Company Drilling/Rig Methods: Air Rotary 7 7/8"
Date/Time Started: 08/20/98 @ 0852 Date/Time Completion(s): 08/20/98 @ 1211
Air Monitoring Type: Not Applicable GWL Depth: Not encountered

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
0-							
-							
-	TSB1	2-3	SS	Backfill to 2.5 feet	0		Dry- Hydrocarbon staining with no odors
-							
5	TSB1	3-5	SS	Dark brown clay of high plasticity intermixed with sandy limestone	193	CL/L	some oil on rods
-							
-							
-10	TSB1	8-10	SS	Brown oil stained fine-grain siliceous limestone (unconsolidated)	253	L	Oil on rods
-							
-							
-15		13-15	SS		235		
-							
-							Staining predominately in fissures of limestone
-							
-20		18-20	SS		236		
-							
-							
-25		23-25	SS		159		
-							
-				Red/pink sandstone (hard)		Ss	Dry Slight hydrocarbon odor with no staining
-							
-30		28-30	SS		11		
-							
-				Tan fine-grain well sorted sand			
-							
-35		33-35	SS		1	SW	Dry Slight hydrocarbon odor with no staining
-							
-							
-40		38-40	SS		1		

Comments: _____

Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 2 of 2
Soil Boring TSB-1

Project Name: Shell Tasker Road Project No. 19350
Borehole Location: Hobbs, Lea County, New Mexico Logged By: Jeffrey Kindley
Drilled By: Eades Drilling Drilling/Rig Methods: Air Rotary 7 7/8"
Date/Time Started: 08/20/98 @ 0852 Date/Time Completion(s): 08/20/98 @ 1211
Air Monitoring Type: Not Applicable GWL Depth: Not encountered

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
-40-	TSB1	43-45	SS	Tan fine-grain well sorted sand	0	SW	Slight moisture No hydrocarbon odor or staining
-45				Boring terminated at 45 feet			
-50							
-55							
-60							
-65							
-70							
-75							
-80							

Comments: _____

Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 1 of 1
Soil Boring TSB-2

Project Name: <u>Shell Tasker Road</u>	Project No. <u>19350</u>
Borehole Location: <u>Hobbs, Lea County, New Mexico</u>	Logged By: <u>Jeffrey Kindley</u>
Drilled By: <u>Eades Drilling Company</u>	Drilling/Rig Methods: <u>Air Rotary 7 7/8"</u>
Date/Time Started: <u>08/20/98 @ 1417</u>	Date/Time Completion(s): <u>08/20/98 @ 1503</u>
Air Monitoring Type: <u>Not Applicable</u>	GWL Depth: <u>Not encountered</u>

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
0-							
-	TSB2	2-3	SS	Tan/brown inorganic clay of high plasticity	0	CL	Wet
-							No hydrocarbon odor
5	TSB2	3-5	SS		0		or staining
-							
-							
-10		8-10	SS	Tan fine-grain well sorted calcareous sand intermixed with tan inorganic clay of high plasticity	0	SW/CL	Moist
-							No hydrocarbon odor
-							or staining
-15		13-15	SS	White/Tan inorganic clay intermixed with rip-up clasts of sandstone	0	CL/Ss	Moist
-							No hydrocarbon odor
-							or staining
-20	TSB2	18-20	SS	Tan fine-grain well sorted calcareous sand intermixed with sandstones and clay Red/pink hard sandstone at 20 feet	0	SW Ss	
-				Boring terminated at 20 feet			
-25							
-30							
-35							
-40							

Comments: _____

Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 1 of 1
Soil Boring TSB-3

Project Name: Shell Tasker Road Project No. 19350
 Borehole Location: Hobbs, Lea County, New Mexico Logged By: Jeffrey Kindley
 Drilled By: Eades Drilling Company Drilling/Rig Methods: Air Rotary 7 7/8"
 Date/Time Started: 08/25/98 @ 1335 Date/Time Completion(s): 08/25/98 @ 1416
 Air Monitoring Type: Not Applicable GWL Depth: Not encountered

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
0-							
-	TSB3	2-3	SS	Buff hard limestone	0	L	Dry No hydrocarbon odor or staining
5	TSB3	3-5	SS	Tan fine-grain well sorted calcareous sand	0	SW	
-							
-10		8-10	SS	with sandstones	0	SW/Ss	Dry No hydrocarbon odor or staining
-							
-15		13-15	SS		0		
-							
-20	TSB3	18-20	SS	Buff hard siliceous limestone	0	L	Dry No hydrocarbon odor or staining
-							
-25							
-							
-30							
-							
-35							
-							
-40							

Comments: _____

Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 1 of 1
Soil Boring TSB-3

Project Name: Shell Tasker Road Project No. 19350
 Borehole Location: Hobbs, Lea County, New Mexico Logged By: Jeffrey Kindley
 Drilled By: Eades Drilling Company Drilling/Rig Methods: Air Rotary 7 7/8"
 Date/Time Started: 08/25/98 @ 1335 Date/Time Completion(s): 08/25/98 @ 1416
 Air Monitoring Type: Not Applicable GWL Depth: Not encountered

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
0-							
-	TSB3	2-3	SS	Buff hard limestone	0	L	Dry No hydrocarbon odor or staining
5	TSB3	3-5	SS	Tan fine-grain well sorted calcareous sand	0	SW	
-							
-10		8-10	SS	with sandstones	0	SW/Ss	Dry No hydrocarbon odor or staining
-15		13-15	SS		0		
-							
-20	TSB3	18-20	SS	Buff hard siliceous limestone	0	L	Dry No hydrocarbon odor or staining
-25							
-							
-30							
-							
-35							
-							
-40							

Comments: _____

Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 1 of 1
Soil Boring TSB-4

Project Name: Shell Tasker Road Project No. 19350
 Borehole Location: Hobbs, Lea County, New Mexico Logged By: Jeffrey Kindley
 Drilled By: Eades Drilling Company Drilling/Rig Methods: Air Rotary 7 7/8"
 Date/Time Started: 08/24/98 @ 1022 Date/Time Completion(s): 08/24/98 @ 1058
 Air Monitoring Type: Not Applicable GWL Depth: Not encountered

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
0-							
-	TSB4	2-3	SS	Tan fine-grain well sorted calcareous sand	0	SW	Dry No hydrocarbon odor or staining
5	TSB4	3-5	SS	Red brown rip up clasts of sandstone	0	SS	
-							
-10		8-10	SS	Tan fine-grain calcareous sand (well sorted) with sandstone fragments intermixed	0	SW/Ss	Dry No hydrocarbon odor or staining
-15		13-15	SS	Buff siliceous limestone with well rounded calcareous nodules	0	L	
-20	TSB4	18-20	SS	Tan fine-grain calcareous sand well sorted with some sandstone fragments	0	SW/Ss	Dry No hydrocarbon odor or staining
-25				Boring terminated at 20 feet			
-30							
-35							
-40							

Comments: _____

Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 1 of 1
Soil Boring TSB-5

Project Name: Shell Tasker Road Project No. 19350
 Borehole Location: Hobbs, Lea County, New Mexico Logged By: Jeffrey Kindley
 Drilled By: Eades Drilling Company Drilling/Rig Methods: Air Rotary 7 7/8"
 Date/Time Started: 08/24/98 @ 0853 Date/Time Completion(s): 08/24/98 @ 0925
 Air Monitoring Type: Not Applicable GWL Depth: Not encountered

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
0-							
-	TSB5	2-3	SS	Tan fine-grain well sorted calcareous sand	0	SW	Dry No hydrocarbon odor or staining
-5	TSB5	3-5	SS		0		
-							
-10		8-10	SS	Buff to tan siliceous limestone intermixed with red/pink sandstones	0	L/Ss	Dry No hydrocarbon odor or staining
-15		13-15	SS	Tan fine-grain well sorted calcareous sand	0	SW	
-20	TSB5	18-20	SS		0		Dry No hydrocarbon odor or staining
-				Boring terminated at 20 feet			
-25							
-							
-30							
-							
-35							
-							
-40							

Comments: _____

Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 1 of 1
Soil Boring TSB-6

Project Name: <u>Shell Tasker Road</u>	Project No. <u>19350</u>
Borehole Location: <u>Hobbs, Lea County, New Mexico</u>	Logged By: <u>Jeffrey Kindley</u>
Drilled By: <u>Eades Drilling Company</u>	Drilling/Rig Methods: <u>Air Rotary 7 7/8"</u>
Date/Time Started: <u>08/21/98 @ 1123</u>	Date/Time Completion(s): <u>08/21/98 @ 1158</u>
Air Monitoring Type: <u>Not Applicable</u>	GWL Depth: <u>Not encountered</u>

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
0-							
-	TSB6	2-3	SS	Backfill material	0		Dry No hydrocarbon odor or staining
5	TSB6	3-5	SS	Tan fine-grain calcareous sand, well sorted	0	SW	
-							
-10		8-10	SS		0		Dry No hydrocarbon odor or staining
-							
-15		13-15	SS	Buff siliceous limestone with some sandstones intermixed	0	L/Ss	
-							
-20	TSB6	18-20	SS		0		Dry No hydrocarbon odor or staining
-							
-25				Boring terminated at 20 feet			
-							
-30							
-							
-35							
-							
-40							

Comments: _____

Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 1 of 1
Soil Boring TSB-7

Project Name: Shell Tasker Road Project No. 19350
 Borehole Location: Hobbs, Lea County, New Mexico Logged By: Jeffrey Kindley
 Drilled By: Eades Drilling Company Drilling/Rig Methods: Air Rotary 7 7/8"
 Date/Time Started: 08/21/98 @ 1406 Date/Time Completion(s): 08/21/98 @ 1545
 Air Monitoring Type: Not Applicable GWL Depth: Not encountered

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
0-							
-							
-	TSB7	2-3	SS	Asphaltic hydrocarbon material	194		Moist
-							Strong hydrocarbon odor
5	TSB7	3-5	SS	Tan/brown hydrocarbon impacted calcareous fine-grain sand	216	Ss	and staining
-							
-							
-10	TSB7	8-10	SS		91		with less staining
-							
-							
-15		13-15	SS	Tan/Buf siliceous limestone with some sandstones intermixed	4	L/Ss	Dry
-							Slight hydrocarbon odor
-							with no staining
-20		18-20	SS		1		
-							
-							
-25		23-25	SS		3		
-				Pink/Red sandstone		Ss	
-							
-30	TSB7	28-30	SS	Tan fine-grain calcareous sand	0	Ss	Dry
-				Boring terminated at 30 feet			No hydrocarbon odor
-							or staining
-35							
-							
-40							

Comments:

Geologist Signature



RECORD OF SUBSURFACE EXPLORATION

Page 1 of 1
Soil Boring TSB-8

Project Name: <u>Shell Tasker Road</u>	Project No. <u>19350</u>
Borehole Location: <u>Hobbs, Lea County, New Mexico</u>	Logged By: <u>Jeffrey Kindley</u>
Drilled By: <u>Eades Drilling Company</u>	Drilling/Rig Methods: <u>Air Rotary 7 7/8"</u>
Date/Time Started: <u>08/17/98 @ 1325</u>	Date/Time Completion(s): <u>08/17/98 @ 1552</u>
Air Monitoring Type: <u>Not Applicable</u>	GWL Depth: <u>Not encountered</u>

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
0-							
-	TSB8	2-3	SS	Dark gray/black sandy clay with specks of oil and burned asphaltic material (Backfill material)	372		Moist Strong hydrocarbon odor and staining
5	TSB8	3-5	SS		324		
-							
-							
-10	TSB8	8-10	SS	Dark gray fine-grain calcareous sand (stained)	393	SW	Moist Strong hydrocarbon odor and staining
-							
-15		13-15	SS	Tan calcareous fine-grain well sorted sand	6	SW	Dry Slight hydrocarbon odor with no staining
-							
-20		18-20	SS		3		
-							
-25		23-25	SS		2		
-				Pink/Red sandstone		Ss	
-							
-30		31-33	SS	Tan fine-grain calcareous sand	1	SW	Dry No hydrocarbon odor or staining
-							
-35		35-37	SS		16		
-							
-40	TSB8	40-42	SS	Boring terminated at 42 feet	0		Dry No hydrocarbon odor or staining

Comments: _____
Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 1 of 1
Soil Boring TSB-9

Project Name: Shell Tasker Road Project No. 19350
 Borehole Location: Hobbs, Lea County, New Mexico Logged By: Jeffrey Kindley
 Drilled By: Eades Drilling Company Drilling/Rig Methods: Air Rotary 7 7/8"
 Date/Time Started: 08/24/98 @ 1530 Date/Time Completion(s): 08/24/98 @ 1605
 Air Monitoring Type: Not Applicable GWL Depth: Not encountered

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
0-							
-							
-	TSB9	2-3	SS	Backfill material			
-							
5	TSB9	3-5	SS	Buff siliceous limestone		L	Dry No hydrocarbon odor or staining
-							
-							
-10		8-10	SS	Tan, fine-grain calcareous sand, well sorted		SW	
-							
-							
-15		13-15	SS				Dry No hydrocarbon odor or staining
-							
-							
-20	TSB9	18-20	SS				
-				Boring terminated at 20 feet			
-							
-25							
-							
-							
-30							
-							
-							
-35							
-							
-							
-40							

Comments: _____



RECORD OF SUBSURFACE EXPLORATION

Page 1 of 1
Soil Boring TSB-10

Project Name: <u>Shell Tasker Road</u>	Project No. <u>19350</u>
Borehole Location: <u>Hobbs, Lea County, New Mexico</u>	Logged By: <u>Jeffrey Kindley</u>
Drilled By: <u>Eades Drilling Company</u>	Drilling/Rig Methods: <u>Air Rotary 7 7/8"</u>
Date/Time Started: <u>08/21/98 @ 0900</u>	Date/Time Completion(s): <u>08/21/98 @ 1016</u>
Air Monitoring Type: <u>Not Applicable</u>	GWL Depth: <u>Not encountered</u>

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
0-							
-							
-	TSB10	2-3	SS	Backfill material of hydrocarbon impacted clay	140	CL	Dry No hydrocarbon odor or staining
5	TSB10	3-5	SS		322		
-							
-							
-10		8-10	SS	Tan, fine-grain calcareous sand, well sorted	347	SW	Dry Strong hydrocarbon odor with staining in seams
-							
-15		13-15	SS	Buff, siliceous limestone with traces of fine grain hydrocarbon stained sand	207	L/SW	
-							
-20		18-20	SS		321		Dry Strong hydrocarbon odor with minor staining
-							
-25		23-25	SS		342		
-							
-				Red/pink sandstone		Ss	
-30	TSB10	29-31	SS	Tan fine-grain calcareous sand well sorted	0	SW	Dry No hydrocarbon odor or staining
-							
-35				Boring terminated at 31 feet			
-							
-40							

Comments: _____
Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 1 of 1
Soil Boring TSB-11

Project Name: <u>Shell Tasker Road</u>	Project No. <u>19350</u>
Borehole Location: <u>Hobbs, Lea County, New Mexico</u>	Logged By: <u>Jeffrey Kindley</u>
Drilled By: <u>Eades Drilling Company</u>	Drilling/Rig Methods: <u>Air Rotary 7 7/8"</u>
Date/Time Started: <u>08/24/98 @ 1306</u>	Date/Time Completion(s): <u>08/24/98 @ 1430</u>
Air Monitoring Type: <u>Not Applicable</u>	GWL Depth: <u>Not encountered</u>

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
0-							
-	TSB11	2-3	SS	Backfill material	0		Dry No hydrocarbon odor or staining
5	TSB11	3-5	SS	Tan fine-grain calcareous sand well sorted	0		
-							
-10		8-10	SS		0	SW	
-							
-15		13-15	SS	some staining at 13 feet	92		Dry Hydrocarbon staining and odor
-							
-20	TSB11	18-20	SS		113		
-							
-25		23-25	SS		17		Dry Strong hydrocarbon odor with no staining
-				Red/pink sandstone		Ss	
-30	TSB11	29-31	SS	Tan fine-grain well sorted sand	0	SW	
-							
-35				Boring terminated at 31 feet			
-							
-40							

Comments: _____
Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 1 of 2
Soil Boring TSB-12

Project Name: Shell Tasker Road Project No. 19350
Borehole Location: Hobbs, Lea County, New Mexico Logged By: Jeffrey Kindley
Drilled By: Eades Drilling Company Drilling/Rig Methods: Air Rotary 7 7/8"
Date/Time Started: 08/25/98 @ 0844 Date/Time Completion(s): 08/25/98 @ 1124
Air Monitoring Type: Not Applicable GWL Depth: Not encountered

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
0-							
-	TSB12	2-3	SS	Tan fine-grain calcareous sand	0	SW	Dry No hydrocarbon odor or staining
-	TSB12	3-5	SS		0		
-		8-10	SS		0		
-10							
-							
-							
-15		13-15	SS	Brown tan mottled clay intermixed with rip-up clasts of limestone	0	CL/L	Dry Hydrocarbon odor with slight staining
-							
-							
-20	TSB12	18-20	SS	Tan/brown, fine-grain, calcareous sand, well sorted and stained	134	SW	
-							
-25		23-25	SS		130		
-							
-30		28-30	SS	Red/pink sandstone	71	Ss	with no staining
-							
-35		33-35	SS	Tan, fine-grain calcareous sand, well sorted	1	SW	Dry Slight hydrocarbon odor with no staining
-							
-40		38-40	SS	Tan/buff siliceous limestone with sandstones	3	L/Ss	



RECORD OF SUBSURFACE EXPLORATION

Page 2 of 2
Soil Boring TSB-12

Project Name: Shell Tasker Road Project No. 19350
Borehole Location: Hobbs, Lea County, New Mexico Logged By: Jeffrey Kindley
Drilled By: Eades Drilling Drilling/Rig Methods: Air Rotary 7 7/8"
Date/Time Started: 08/25/98 @ 0844 Date/Time Completion(s): 08/25/98 @ 1124
Air Monitoring Type: Not Applicable GWL Depth: Not encountered

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
-40-							
-45		43-45	SS	Tan fine-grain well sorted sand with sandstones	2		
-50	TSB12	48-50	SS	with gypsum streamers Boring terminated at 50 feet	0		Dry No hydrocarbon odor or staining
-55							
-60							
-65							
-70							
-75							
-80							

Comments: _____

Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 1 of 1
Soil Boring TSB-13

Project Name: Shell Tasker Road Project No. 19350
Borehole Location: Hobbs, Lea County, New Mexico Logged By: Jeffrey Kindley
Drilled By: Eades Drilling Company Drilling/Rig Methods: Air Rotary 7 7/8"
Date/Time Started: 09/01/98 @ 0845 Date/Time Completion(s): 09/01/98 @ 0949
Air Monitoring Type: Not Applicable GWL Depth: Not encountered

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
0-							
-	TSB13	2-3	SS	Tan inorganic clay with high plasticity	1.5	CL	Dry Slight hydrocarbon odor and no staining
-	TSB13	3-5	SS		36		
-							
-							
-							
-							
-10	TSB13	8-10	SS	Tan fine-grain calcareous sand with sandstones intermixed	27	SW/Ss	
-							
-							
-							
-15		13-15	SS	Red/pink sandstone (hard)	21	Ss	Dry Slight hydrocarbon odor with no staining
-				Tan fine-grain calcareous sand (well sorted) with minor amounts of clay		SW/CL	
-							
-20		18-20	SS		2		
-							
-							
-25	TSB13	23-25	SS		0		Dry No hydrocarbon odor or staining
-				Boring terminated at 25 feet			
-							
-30							
-							
-							
-35							
-							
-							
-40							

Comments: _____
Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 1 of 2
Monitor well TMW-1

Project Name: Shell Tasker Road Project No. 19350
Borehole Location: Hobbs, Lea County, New Mexico Logged By: Jeffrey Kindley
Drilled By: Eades Drilling Company Drilling/Rig Methods: Air Rotary 7 7/8"
Date/Time Started: 08/19/98 @ 0830 Date/Time Completion(s): 08/19/98 @ 1500
Air Monitoring Type: Not Applicable GWL Depth: 65 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
0-		2-3		Gray hydrocarbon impacted sandy clay	378	CL	Dry Hydrocarbon odor with staining
5		3-5	SS		302		
				Tan brown well sorted calcareous sand with sandstones		SW/Ss	
--10		8-10	SS		348		
--15		13-15	SS		0		Dry No hydrocarbon odor or staining
--20		18-20	SS	Tan/buff fine-grain sandy limestone (hard)	0	L	Dry No hydrocarbon odor or staining
--25		23-25	SS		0		
--30		31-33	SS	Pink/red sandstone (hard)	0	Ss	Dry No hydrocarbon odor or staining
--35			SS	Tan fine-grain well sorted sand		SW	Dry No hydrocarbon odor or staining
--40		38-40	SS		0		

Comments: _____

Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 2 of 2
Monitor well TMW-1

Project Name: Shell Tasker Road Project No. 19350
Borehole Location: Hobbs, Lea County, New Mexico Logged By: Jeffrey Kindley
Drilled By: Eades Drilling Company Drilling/Rig Methods: Air Rotary 7 7/8"
Date/Time Started: 08/19/98 @ 0830 Date/Time Completion(s): 08/19/98 @ 1500
Air Monitoring Type: Not Applicable GWL Depth: 65 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
40							
45		43-45	SS	Tan fine-grain well sorted sand	0	SW	Dry Hydrocarbon odor and staining
-50		48-50	SS	with gypsum streamers	0		
-55		53-55	SS	with sandstone fragments	6	SW/Ss	Dry No hydrocarbon odor or staining
-60		58-60	SS		6		Dry No hydrocarbon odor or staining
-65	TMW1	63-65	SS		0		Water on rods at 65 feet
-70			SS		0		
-75			SS				
-80				Completed as a monitor well at 77 feet deep			

Comments: _____

Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 1 of 2
Monitor well TMW-2

Project Name: Shell Tasker Road Project No. 19350
Borehole Location: Hobbs, Lea County, New Mexico Logged By: Jeffrey Kindley
Drilled By: Eades Drilling Company Drilling/Rig Methods: Air Rotary 7 7/8"
Date/Time Started: 08/17/98 @ 0930 Date/Time Completion(s): 08/18/98 @ 1350
Air Monitoring Type: Not Applicable GWL Depth: 65 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
0-				Backfill of gravel and clay			
5		3-5	SS	Tan fine-grain well sorted calcareous sand	1	SW	Dry No hydrocarbon odor or staining
-10		8-10	SS	collapsed to 20 feet	0		
-15		13-15	SS		0		Dry No hydrocarbon odor or staining
-20		18-20	SS		0	L	Dry No hydrocarbon odor or staining
-25		23-25	SS		0		
-30		31-33	SS	Red/pink sandstone	0	Ss	
-35		33-35	SS	Tan fine-grain well sorted sand		SW	Dry No hydrocarbon odor or staining
-40		38-40	SS		0		

Comments: _____

Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 2 of 2
Monitor well TMW-2

Project Name: Shell Tasker Road Project No. 19350
Borehole Location: Hobbs, Lea County, New Mexico Logged By: Jeffrey Kindley
Drilled By: Eades Drilling Company Drilling/Rig Methods: Air Rotary 7 7/8"
Date/Time Started: 08/17/98 @ 0935 Date/Time Completion(s): 08/17/98 @ 1350
Air Monitoring Type: Not Applicable GWL Depth: 65 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
40				Red/pink sandstone		Ss	Dry Hydrocarbon odor and staining
45		43-45	SS	Tan fine-grain well sorted sand	0	SW	
-50		48-50	SS	with gypsum streamers	0		Dry No hydrocarbon odor or staining
-55		53-55	SS	with sandstone fragments	6	SW/Ss	
-60		58-60	SS		6		
-65	TMW2	63-65	SS	with limestone rip-up clasts	0	SW/L	Water on rods at 65 feet
-70			SS				
-75			SS				
-80				Completed as a monitor well at 77 feet deep			

Comments: _____

Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 1 of 2
Monitor Well TMW-3

Project Name: Shell Tasker Road Project No. 19350
Borehole Location: Hobbs, Lea County, New Mexico Logged By: Jeffrey Kindley
Drilled By: Eades Drilling Company Drilling/Rig Methods: Air Rotary 7 7/8"
Date/Time Started: 09/22/98 @ 0850 Date/Time Completion(s): 09/22/98 @ 1450
Air Monitoring Type: Not Applicable GWL Depth: 65 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
0-							
-	TMW3	2-3		Tan/brown clayey silt (Backfill material)	0		Dry No hydrocarbon odor or staining
5	TMW3	3-5	SS		0		
-				Tan buff silty calcareous sand well sorted		SW	
-10		8-10	SS		9		
-				with gravel	186		Dry Hydrocarbon odor and staining
-15		13-15	SS				
-20		18-20	SS		182		
-25		23-25	SS	Red/pink sandstones	194	Ss	
-30		28-30	SS		58		
-				Tan light gray fine-grain well sorted sand		SW	Dry No hydrocarbon odor or staining
-35		3-35	SS		35		
-40		38-40	SS	Light gray hydrocarbon stained sandstone	0	Ss	

Comments: _____

Geologist Signature _____



RECORD OF SUBSURFACE EXPLORATION

Page 2 of 2
Monitor Well TMW-3

Project Name: Shell Tasker Road Project No. 19350
 Borehole Location: Hobbs, Lea County, New Mexico Logged By: Jeffrey Kindley
 Drilled By: Eades Drilling Company Drilling/Rig Methods: Air Rotary 7 7/8"
 Date/Time Started: 09/22/98 @ 0850 Date/Time Completion(s): 09/22/98 @ 1450
 Air Monitoring Type: Not Applicable GWL Depth: 65 feet

Depth (feet)	Sample Number	Sample Interval	Sample Type	Sample Description	OVM Readings (ppm)	USCS Symbol	Comments
40-							
45		43-45	SS	Tan fine-grain well sorted sand with gypsum streamers	0	SW	Dry No hydrocarbon odor or staining
-50		48-50	SS	with some sandstones intermixed	0	SW/Ss	
-55		53-55	SS		0		
-60		58-60	SS		1		
-65	TMW3	63-65	SS		1		Water on rods at 65 feet
-70							
-75							
-80				Completed as a monitor well at 77 feet			

Comments: _____

 Geologist Signature _____

Appendix IV

Photographs

Soil Gas Vapor Survey- Westgate Neighborhood - Hobbs, New Mexico



Soil Gas Sample Point-Abandoned Well #8



Soil Gas Sample Point-Abandoned Well #8

Soil Gas Vapor Survey- Westgate Neighborhood - Hobbs, New Mexico



Soil Gas Sample - Front Yard



Soil Gas Sample - Front Yard

Soil Gas Vapor Survey- Westgate Neighborhood - Hobbs, New Mexico

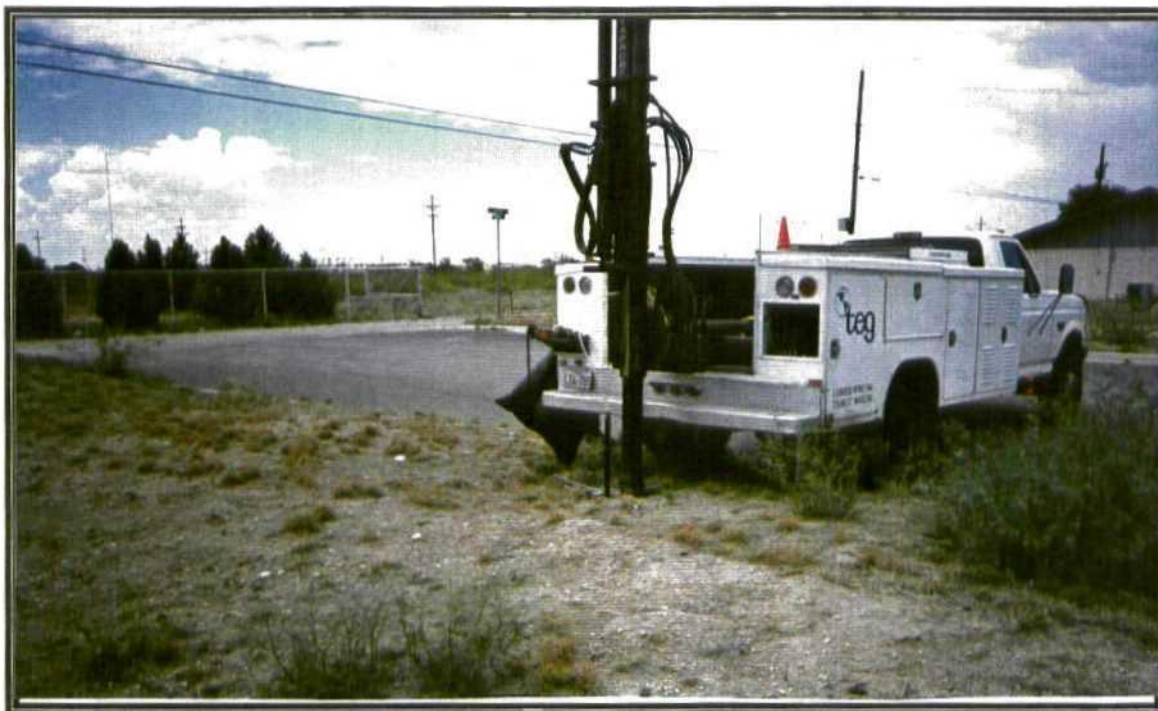


Soil Gas Sample - Street Corner



Soil Gas Sample - Front Yard

Soil Gas Vapor Survey- Westgate Neighborhood - Hobbs, New Mexico



Soil Gas Sample - Vacant Lot



Soil Gas Sample - Front Yard

Soil Gas Vapor Survey- Westgate Neighborhood - Hobbs, New Mexico



Soil Boring - Casey Backyard



Soil Sample - Casey Backyard

Soil Gas Vapor Survey- Westgate Neighborhood - Hobbs, New Mexico



Soil Gas Sample - Under the Foundation



Soil Gas Sample - Decontamination of Probe

Soil Gas Vapor Survey- Westgate Neighborhood - Hobbs, New Mexico



Soil Gas Sample Point-Alley



Soil Gas Sample Point-Alley

Soil Gas Vapor Survey- Westgate Neighborhood - Hobbs, New Mexico



Soil Gas Sample - Front Yard



Soil Gas Mobile Laboratory



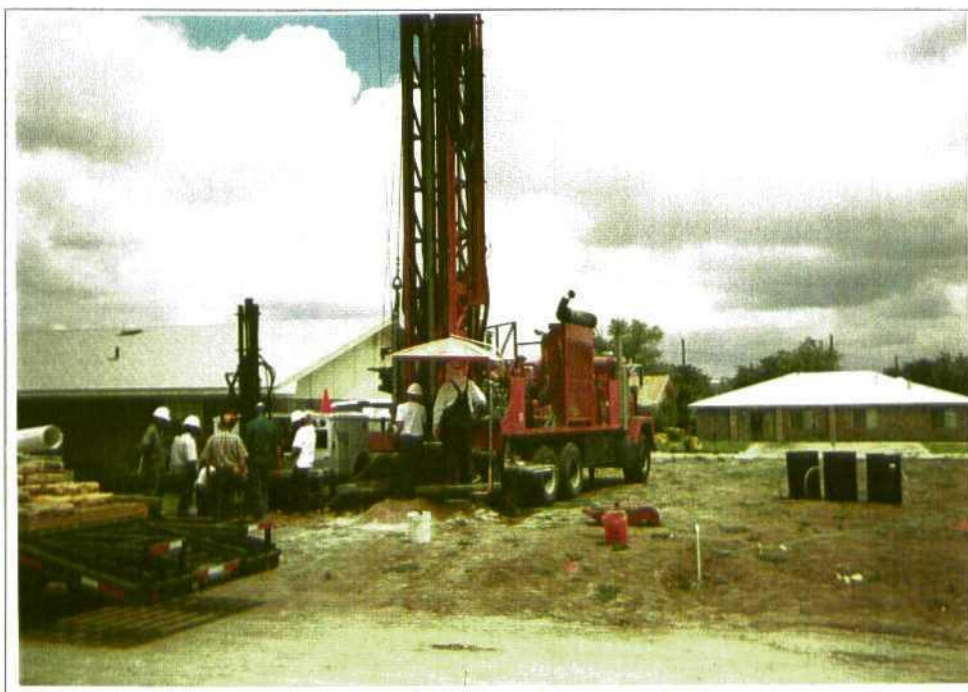
Drilling TMW-2



Completed GMW-2



Drilling GMW-3



**TEG Installation of TSV-M &
Installation of TMW-1 by Eades Drilling**



Collecting Decon Water



**Checking PID Readings from Casey's Front Yard
CSS #8**



Drilling TMW-2



Completed GMW-2



Drilling GMW-3



**TEG Installation of TSV-M &
Installation of TMW-1 by Eades Drilling**



Collecting Decon Water



**Checking PID Readings from Casey's Front Yard
CSS #8**

Appendix V

Laboratory Analytical Results

Appendix V

Laboratory Analytical Results

Variable Reporting Limits

Reporting limits reflect dilution's, interference's, or correction for equivalent dry weight. Generally, reporting limits for soils are about 25 times higher than groundwater if the samples are field preserved with methanol. Soil samples that are field preserved with methanol may have additional variations on reporting limits from sample to sample, depending on the actual soil to methanol ratio.

The method detection limits listed in SW-846 EPA Methods were developed in clean, distilled, deionized water and are based on the standard deviation of seven replicate measurements of a low concentration spike. Analysis of soil and groundwater samples may have different reporting limits than those listed in the method because the samples may need to be diluted to properly quantitate the target analytes. Dilutions result in elevated reporting limits for some of the analytes with no reportable concentrations. Reasons for dilution of samples include:

- * If some of the target analytes are not within the calibration range, the sample must be diluted to be able to adequately measure those analytes. This may result in increases in reporting limits for other compounds in the same analysis.
- * Reporting limits may also be affected by matrix interference's. In some cases, biogenic type materials or other chemicals in the sample may be significant so that the sample must be diluted to minimize instrument contamination and carryover. These matrix interference's may also impact the surrogates and/or internal standards used for recovery assessment and quantitation which may only be within the method's acceptable ranges after dilution of the sample.
- * It is a standard practice for environmental laboratories to screen samples prior to analysis. In this laboratory, water and soil samples are screened using an organic vapor monitor (OVM) to get a rough estimate of volatiles in water and soil samples. Initial dilution's, if necessary, are based on these readings. Samples which are diluted on the basis of the OVM reading and are later found to have no detectable concentrations of target analytes at that dilution and with no obvious potential interference's are often reanalyzed at a lesser dilution.
- * Soils that have been preserved in the field with methanol may have more variable reporting limits because of more variable soil/solvent ratios.
- * Moisture correction for soil samples also results in variable reporting limits.

References

- ASTM D 5283-92 (Volume 11.04) Section 8.6.9.3 Data Reporting
- SW846 - Method 8260B - Section 1.4 and Table 3 and Method 8270C - Section 1.5

Appendix V

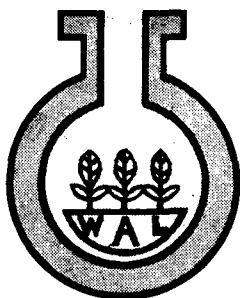
Laboratory Analytical Results

Phthalates

Bis(2-ethylhexyl) phthalate was reported in a few of the samples. The low frequency (4 groundwater samples) and low concentration (range of 0.008 to 0.054 mg/L) reported in these few samples, indicate that the most likely sources of this phthalate are sampling and/or laboratory contamination. The occurrence of phthalates has long been recognized as originating due to cross-contamination in the field and laboratory. Studies in the late 1960's to early 1970's documented phthalate sources that included containers, laboratory water, tubing, packaging, solvents and filter paper. In addition, bis(2-ethylhexyl) phthalate is the most commonly used plasticizer (imparts flexibility and malleability to plastic products) in PVC formulations. A great number of groundwater wells have PVC casings.

Reference

Brian P. Sullivan, David J. Carty and Mark . Lupo, KW Brown
Environmental Services, College Station, Texas and Jack Felkey,
Inter-Mountain Laboratories, Inc., Bozeman, Montana "Phthalates:
Unreliable Indicators of Hydrocarbon Contamination in Environmental Soil
and Water Analysis", Chapter 5, Hydrocarbon Contaminated Soils (1993)



WESTERN AGRICULTURAL LABORATORIES, INC.

Agricultural Testing & Consulting Services

P.O. Box 64666 5173 69th
LUBBOCK, TEXAS 79464
Phone: 806-794-4888

Submitted By: BBC INT
PO BOX 297
Address: HOBBS NM

Grower: SAME

Address:

Date: 9/10/98

SOIL ANALYSIS REPORT

Results are expressed in Parts Per Million: For approximate lbs./acre multiply by 2.

Lab. No.	8677	Sample No.	CSS#8	COMMENTS:	
Soil pH	8.1	Crop	GRASS	VERY LOW IN AVAILABLE NITRATE LEVEL AND PHOSPHORUS. * FOR BEST RESULT SPLIT APPLY FERTILIZER. EARLY SPRING AND LATE JUNE. Approximate Relation of CEC to Soil Texture 0-8 Sand 8-12 Loamy Sand 12-20 Sandy/Silt Loam 20-28 Loam 28-40 Clay Loam 40+ Clay	
Buffer pH		Yield Goal	GOOD		
Free Lime	H				
Soluble Salts (mmhos / cm)	0.32	Nutrient Recommendations (lbs/Acre)			
% Organic Matter	1.7	Nitrogen N	250		
Nitrogen - NO ₃	3 VL				
Phosphorus Bray P1	4 VL	Phosphate P ₂ O ₅	80		
Available Bray P2	44 M				
Potassium Exchangeable - K	200 M	Potash K ₂ O	40		
Calcium - Ca Exchangeable	3160 H	Lime	-		
Magnesium - Mg Exchangeable	320 H	Magnesium Oxide	-		
Sodium - Na Exchangeable	93 VL	Gypsum			
CEC Meq/100g	19.4	Sulfur - S Elemental			
Iron Available - Fe	2.5 L	Iron - Fe	2		
Manganese - Mn Available	6.9 M	Manganese Mn	-		
Zinc - Zn Available	0.8 L	Zinc - Zn	3		
Copper - Cu Available	0.4 L	Copper - Cu	-		
Boron - B Available		Boron - B			
Sulfur - SO ₄ Available	35 H	Sulfate Sulfur	-		
Particle Size Analysis	% Sand	% Silt	% Clay	Field Capacity	
	Soil Texture			Wilting Point	
% H Saturation Ideal: 0-5%	0	% Ca Saturation Ideal: 65-75%	81.5	Available Water (Top Foot) in.	
% K Saturation Ideal: 5-7%	2.6	% Na Saturation Ideal: 0-2%	2	BY <i>C. J. J. J. J.</i>	
% Mg Saturation Ideal: 15-20%	13.8				

Reports are intended only for the sample tested. Reports, letters, and name of Western Agricultural Laboratories, Inc., are not to be used under any circumstances in advertising to the general public. Unused portions of the sample are retained for a period of 30 days after the sample is received.

Analytical Results Report

Jeff kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 9-29-98
Page # 4

Project Number: 19349
Project Name: Shell Grimes
Project Location: Casey House, Hobbs, NM

Order ID Number: 9807000518
Sample Number: 103639

Sample Description: CSS #1

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Benzene		<0.050	mg/Kg	S 8021B		8/4/98	JG		4730	0.05
Toluene		<0.050	mg/Kg	S 8021B		8/4/98	JG		4730	0.05
Ethylbenzene		<0.050	mg/Kg	S 8021B		8/4/98	JG		4730	0.05
Total xylenes		<0.050	mg/Kg	S 8021B		8/4/98	JG		4730	0.05
TRPHC		460	mg/Kg	E 418.1	8/27/98	8/30/98	SR	4810	5168	10.0

Analytical Results Report

Jeff kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 9-29-98
Page # 5

Project Number: 19349
Project Name: Shell Grimes
Project Location: Casey House, Hobbs, NM

Order ID Number: 9807000518
Sample Number: 103640

Sample Description: CSS #2

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Benzene		<0.050	mg/Kg	S 8021B		8/4/98	JG		4730	0.05
Toluene		<0.050	mg/Kg	S 8021B		8/4/98	JG		4730	0.05
Ethylbenzene		<0.050	mg/Kg	S 8021B		8/4/98	JG		4730	0.05
Total xylenes		<0.050	mg/Kg	S 8021B		8/4/98	JG		4730	0.05
TRPHC		222	mg/Kg	E 418.1	8/27/98	8/30/98	SR	4810	5168	10.0

Analytical Results Report

Jeff kindley / Sharon Hall
Philip Services Corp.
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Midland, TX 79706

Date: 9-29-98
Page # 6

Project Number: 19349
Project Name: Shell Grimes
Project Location: Casey House, Hobbs, NM

Order ID Number: 9807000518
Sample Number: 103641

Sample Description: CSS #3

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Benzene		<0.050	mg/Kg	S 8021B		8/4/98	JG		4730	0.05
Toluene		<0.050	mg/Kg	S 8021B		8/4/98	JG		4730	0.05
Ethylbenzene		<0.050	mg/Kg	S 8021B		8/4/98	JG		4730	0.05
Total xylenes		<0.050	mg/Kg	S 8021B		8/4/98	JG		4730	0.05
TRPHC		39.8	mg/Kg	E 418.1	8/27/98	8/30/98	SR	4810	5168	10.0

Analytical Results Report

Jeff kindley / Sharon Hall
Philip Services Corp.
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Midland, TX 79706

Date: 9-29-98
Page # 7

Project Number: 19349
Project Name: Shell Grimes
Project Location: Casey House, Hobbs, NM

Order ID Number: 9807000518
Sample Number: 103642

Sample Description: CSS #4

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Benzene		<0.050	mg/Kg	S 8021B		8/4/98	JG		4730	0.05
Toluene		<0.050	mg/Kg	S 8021B		8/4/98	JG		4730	0.05
Ethylbenzene		<0.050	mg/Kg	S 8021B		8/4/98	JG		4730	0.05
Total xylenes		<0.050	mg/Kg	S 8021B		8/4/98	JG		4730	0.05
TRPHC		24.7	mg/Kg	E 418.1	8/27/98	8/30/98	SR	4810	5168	10.0

Analytical Results Report

Jeff kindley / Sharon Hall
Philip Services Corp.
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Midland, TX 79706

Date: 9-29-98
Page # 8

Project Number: 19349
Project Name: Shell Grimes
Project Location: Casey House, Hobbs, NM

Order ID Number: 9807000518
Sample Number: 103643

Sample Description: CSS #5

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Benzene		<0.050	mg/Kg	S 8021B		8/4/98	JG		4730	0.05
Toluene		<0.050	mg/Kg	S 8021B		8/4/98	JG		4730	0.05
Ethylbenzene		<0.050	mg/Kg	S 8021B		8/4/98	JG		4730	0.05
Total xylenes		<0.050	mg/Kg	S 8021B		8/4/98	JG		4730	0.05
TRPHC		19.2	mg/Kg	E 418.1	8/27/98	8/30/98	SR	4810	5168	10.0

Analytical Results Report

Jeff kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 9-29-98
Page # 9

Project Number: 19349
Project Name: Shell Grimes
Project Location: Casey House, Hobbs, NM

Order ID Number: 9807000518
Sample Number: 103644

Sample Description: CSS #7

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Benzene		<0.050	mg/Kg	S 8021B		8/4/98	JG		4730	0.05
Toluene		<0.050	mg/Kg	S 8021B		8/4/98	JG		4730	0.05
Ethylbenzene		<0.050	mg/Kg	S 8021B		8/4/98	JG		4730	0.05
Total xylenes		<0.050	mg/Kg	S 8021B		8/4/98	JG		4730	0.05
TRPHC		55.0	mg/Kg	E 418.1	8/27/98	8/30/98	SR	4810	5168	10.0

Analytical Results Report

Jeff kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 9-29-98
Page # 10

Project Number: 19349
Project Name: Shell Grimes
Project Location: Casey House, Hobbs, NM

Order ID Number: 9807000518
Sample Number: 103645

Sample Description: CSS #6

Parameter	Flag	Result	Units	Method	Prepared	Analyzed	Analyst	Batch #	Batch #	Limit
Acrolein		<340	ug/Kg	S 8260B		7/31/98	AG		4719	340
Acrylonitrile		<340	ug/Kg	S 8260B		7/31/98	AG		4719	340
Benzene		<68	ug/Kg	S 8260B		7/31/98	AG		4719	68
Carbon tetrachloride		<68	ug/Kg	S 8260B		7/31/98	AG		4719	68
Chlorobenzene		<68	ug/Kg	S 8260B		7/31/98	AG		4719	68
1,2-dichloroethane		<68	ug/Kg	S 8260B		7/31/98	AG		4719	68
1,1,2,2-tetrachloroethane		<68	ug/Kg	S 8260B		7/31/98	AG		4719	68
1,1,1-trichloroethane		<68	ug/Kg	S 8260B		7/31/98	AG		4719	68
1,1,2-trichloroethane		<68	ug/Kg	S 8260B		7/31/98	AG		4719	68
1,1,2-trichloroethylene		<68	ug/Kg	S 8260B		7/31/98	AG		4719	68
Chloroform		<68	ug/Kg	S 8260B		7/31/98	AG		4719	68
Dichlorobenzene		<136	ug/Kg	S 8260B		7/31/98	AG		4719	136
1,1-dichloroethylene		<68	ug/Kg	S 8260B		7/31/98	AG		4719	68
Dichloropropenes		<68	ug/Kg	S 8260B		7/31/98	AG		4719	68
Ethylbenzene		<68	ug/Kg	S 8260B		7/31/98	AG		4719	68
Bromodichloromethane		<68	ug/Kg	S 8260B		7/31/98	AG		4719	68
Bromomethane		<340	ug/Kg	S 8260B		7/31/98	AG		4719	340
Chloromethane		<68	ug/Kg	S 8260B		7/31/98	AG		4719	68
Dichlorodifluoromethane		<68	ug/Kg	S 8260B		7/31/98	AG		4719	68
Dichloromethane		<68	ug/Kg	S 8260B		7/31/98	AG		4719	68
Trichlorofluoromethane		<68	ug/Kg	S 8260B		7/31/98	AG		4719	68
Tetrachloroethylene		<68	ug/Kg	S 8260B		7/31/98	AG		4719	68
Toluene		<68	ug/Kg	S 8260B		7/31/98	AG		4719	68
Trichloroethylene		<68	ug/Kg	S 8260B		7/31/98	AG		4719	68
Vinyl chloride		<68	ug/Kg	S 8260B		7/31/98	AG		4719	68
m,p-xylene		190	ug/Kg	S 8260B		7/31/98	AG		4719	68
o-xylene		<68	ug/Kg	S 8260B		7/31/98	AG		4719	68
1,1-dichloroethane		<68	ug/Kg	S 8260B		7/31/98	AG		4719	68
Ethylene dibromide		<68	ug/Kg	S 8260B		7/31/98	AG		4719	68
cis-1,2-dichloroethylene		<68	ug/Kg	S 8260B		7/31/98	AG		4719	68
trans-1,2-dichloroethylene		<68	ug/Kg	S 8260B		7/31/98	AG		4719	68
Methylene chloride		<340	ug/Kg	S 8260B		7/31/98	AG		4719	340
Surr. Dibromofluoromethane		97	%	S 8260B		7/31/98	AG		4719	71-132
Surr. Toluene-d8		90	%	S 8260B		7/31/98	AG		4719	82-124
Surr. 4-Bromofluorobenzene		102	%	S 8260B		7/31/98	AG		4719	76-126
Benzidine		<500	mg/Kg	S 8270C	7/31/98	8/13/98	DG	4590	4860	500
Pentachlorobenzene		<50	mg/Kg	S 8270C	7/31/98	8/13/98	DG	4590	4860	50
1,2,4,5-tetrachlorobenzene		<50	mg/Kg	S 8270C	7/31/98	8/13/98	DG	4590	4860	50
Hexachloroethane		<50	mg/Kg	S 8270C	7/31/98	8/13/98	DG	4590	4860	50

Date: 9-29-98

Page # 11

Project Number: 19349
 Project Name: Shell Grimes
 Project Location: Casey House, Hobbs, NM

Order ID Number: 9807000518
 Sample Number: 103645

Sample Description: CSS #6

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
2,4-dichlorophenol		<250	mg/Kg	S 8270C	7/31/98	8/13/98	DG	4590	4860	250
2,4,5-trichlorophenol		<250	mg/Kg	S 8270C	7/31/98	8/13/98	DG	4590	4860	250
2,4,6-trichlorophenol		<250	mg/Kg	S 8270C	7/31/98	8/13/98	DG	4590	4860	250
bis (2-chloroethyl) ether		<250	mg/Kg	S 8270C	7/31/98	8/13/98	DG	4590	4860	250
bis (2-chloroisopropyl) ether		<250	mg/Kg	S 8270C	7/31/98	8/13/98	DG	4590	4860	250
bis (chloromethyl) ether		<250	mg/Kg	S 8270C	7/31/98	8/13/98	DG	4590	4860	250
3,3-dichlorobenzidine		<250	mg/Kg	S 8270C	7/31/98	8/13/98	DG	4590	4860	250
2,4-dinitrotoluene		<50	mg/Kg	S 8270C	7/31/98	8/13/98	DG	4590	4860	50
Diphenylhydrazine		<250	mg/Kg	S 8270C	7/31/98	8/13/98	DG	4590	4860	250
Hexachlorobutadiene		<50	mg/Kg	S 8270C	7/31/98	8/13/98	DG	4590	4860	50
Hexachlorocyclopentadiene		<50	mg/Kg	S 8270C	7/31/98	8/13/98	DG	4590	4860	50
Isophorone		<250	mg/Kg	S 8270C	7/31/98	8/13/98	DG	4590	4860	250
Nitrobenzene		<50	mg/Kg	S 8270C	7/31/98	8/13/98	DG	4590	4860	50
2,4-dinitro- <i>o</i> -cresol		<50	mg/Kg	S 8270C	7/31/98	8/13/98	DG	4590	4860	50
2,4-dinitrophenols		<250	mg/Kg	S 8270C	7/31/98	8/13/98	DG	4590	4860	250
<i>i</i> -nitrosodiethylamine		<50	mg/Kg	S 8270C	7/31/98	8/13/98	DG	4590	4860	50
<i>N</i> -nitrosodimethylamine		<50	mg/Kg	S 8270C	7/31/98	8/13/98	DG	4590	4860	50
<i>N</i> -nitrosodibutylamine		<250	mg/Kg	S 8270C	7/31/98	8/13/98	DG	4590	4860	250
<i>N</i> -nitrosodiphenylamine		<50	mg/Kg	S 8270C	7/31/98	8/13/98	DG	4590	4860	50
<i>N</i> -nitrosopyrrolidine		<50	mg/Kg	S 8270C	7/31/98	8/13/98	DG	4590	4860	50
Pentachlorophenol		<250	mg/Kg	S 8270C	7/31/98	8/13/98	DG	4590	4860	250
Phenol		<50	mg/Kg	S 8270C	7/31/98	8/13/98	DG	4590	4860	50
Dibutyl phthalate		<50	mg/Kg	S 8270C	7/31/98	8/13/98	DG	4590	4860	50
bis(2-ethylhexyl) phthalate		<50	mg/Kg	S 8270C	7/31/98	8/13/98	DG	4590	4860	50
Diethyl phthalate		<50	mg/Kg	S 8270C	7/31/98	8/13/98	DG	4590	4860	50
Dimethyl phthalate		<50	mg/Kg	S 8270C	7/31/98	8/13/98	DG	4590	4860	50
Anthracene		<50	mg/Kg	S 8270C	7/31/98	8/13/98	DG	4590	4860	50
Benzo(b)fluoranthene		<50	mg/Kg	S 8270C	7/31/98	8/13/98	DG	4590	4860	50
Benzo(k)fluoranthene		<50	mg/Kg	S 8270C	7/31/98	8/13/98	DG	4590	4860	50
Fluoranthene		<50	mg/Kg	S 8270C	7/31/98	8/13/98	DG	4590	4860	50
Fluorene		<50	mg/Kg	S 8270C	7/31/98	8/13/98	DG	4590	4860	50
Phenanthrene		<50	mg/Kg	S 8270C	7/31/98	8/13/98	DG	4590	4860	50
Pyrene		<50	mg/Kg	S 8270C	7/31/98	8/13/98	DG	4590	4860	50
Naphthalene		<50	mg/Kg	S 8270C	7/31/98	8/13/98	DG	4590	4860	50
1-methylnaphthalene		<50	mg/Kg	S 8270C	7/31/98	8/13/98	DG	4590	4860	50
2-methylnaphthalene		<50	mg/Kg	S 8270C	7/31/98	8/13/98	DG	4590	4860	50
Benzo-a-pyrene		<50	mg/Kg	S 8270C	7/31/98	8/13/98	DG	4590	4860	50
Surr. 2-Fluorophenol	*	0	%	S 8270C	7/31/98	8/13/98	DG	4590	4860	25-121
Surr. Phenol-d6	*	460	%	S 8270C	7/31/98	8/13/98	DG	4590	4860	24-113
Surr. Nitroobenzene-d5		60	%	S 8270C	7/31/98	8/13/98	DG	4590	4860	23-120
Surr. 2-Fluorobiphenyl	*	620	%	S 8270C	7/31/98	8/13/98	DG	4590	4860	30-115
Surr. 2,4,6-Tribromophenol	*	0	%	S 8270C	7/31/98	8/13/98	DG	4590	4860	19-122
Surr. Terphenyl-d14	*	1,480	%	S 8270C	7/31/98	8/13/98	DG	4590	4860	28-137

Date: 9-29-98

Page # 12

Project Number: 19349

Project Name: Shell Grimes

Project Location: Casey House, Hobbs, NM

Order ID Number: 9807000518

Sample Number: 103645

Sample Description: CSS #6

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	8/10/98	9/18/98	SH	---	---	50
Chlordane		<50	ug/Kg	S-8080	8/10/98	9/18/98	SH	---	---	50
DDT		<50	ug/Kg	S-8080	8/10/98	9/18/98	SH	---	---	50
Dieldrin		<50	ug/Kg	S-8080	8/10/98	9/18/98	SH	---	---	50
Endosulfan		<50	ug/Kg	S-8080	8/10/98	9/18/98	SH	---	---	50
Endrin		<50	ug/Kg	S-8080	8/10/98	9/18/98	SH	---	---	50
Heptachlor		<50	ug/Kg	S-8080	8/10/98	9/18/98	SH	---	---	50
PCB's		<0.1	mg/Kg	S-8082	8/10/98	8/10/98	RC	4691	4801	0.1
Arsenic		<0.50	mg/Kg	S 6010B	8/3/98	8/18/98	RR	4645	4955	0.5
Barium		95	mg/Kg	S 6010B	8/3/98	8/10/98	RR	4643	4795	0.5
Cadmium		0.31	mg/Kg	S 6010B	8/3/98	8/10/98	RR	4643	4795	0.50
Chromium		12	mg/Kg	S 6010B	8/3/98	8/18/98	RR	4645	4955	0.50
Lead		7.2	mg/Kg	S 6010B	8/3/98	8/18/98	RR	4645	4955	0.5
Total Mercury		0.32	mg/Kg	S 6010B	8/3/98	8/6/98	HC	4325	4737	0.25
Selenium		<0.50	mg/Kg	S 6010B	8/3/98	8/18/98	RR	4645	4955	0.50
Silver		<0.50	mg/Kg	S 6010B	8/3/98	8/10/98	RR	4643	4795	0.5
Uranium		<1.0	mg/Kg	S 6010B	8/3/98	8/18/98	RR	4645	4955	1.0
Copper		5.4	mg/Kg	S 6010B	8/3/98	8/10/98	RR	4643	4795	1
Iron		11,000	mg/Kg	S 6010B	8/3/98	8/18/98	RR	4645	4955	1.0
Manganese		180	mg/Kg	S 6010B	8/3/98	8/10/98	RR	4643	4795	1
Zinc		38	mg/Kg	S 6010B	8/3/98	8/10/98	RR	4643	4795	1.0
Aluminum		13,000	mg/Kg	S 6010B	8/3/98	8/18/98	RR	4645	4955	10.0
Boron		20	mg/Kg	S 6010B	8/3/98	8/10/98	RR	4643	4795	10
Cobalt		11	mg/Kg	S 6010B	8/3/98	8/10/98	RR	4643	4795	1.0
Molybdenum		3.7	mg/Kg	S 6010B	8/3/98	8/10/98	RR	4643	4795	0.50
Nickel		11	mg/Kg	S 6010B	8/3/98	8/18/98	RR	4645	4955	0.5
Cyanide		<0.01	mg/Kg	SM 4500 C,E		8/11/98	RC		4815	0.01
Fluoride		0.54	mg/Kg	E 300.0		8/5/98	JS		4731	0.2
Nitrate		7.2	mg/Kg	E 300.0		8/5/98	JS		4731	0.2
Chloride		43	mg/Kg	E 300.0		8/5/98	JS		4731	1
Sulfate		120	mg/Kg	E 300.0		8/5/98	JS		4731	1
TDS		850	mg/Kg	E 160.1		8/12/98	RS		4835	---
pH		7.9	s.u.	E 150.1		7/31/98	BP		4715	---
TRPHC		12,900	mg/Kg	E 418.1	8/21/98	8/22/98	SR	4743	5045	10
Total Phenols		1.5	mg/Kg	S 5530 A,D		8/11/98	RC		4813	0.25
Total Radium		1.67	pCi/gm	E 901.1M		8/18/98	DS	---	---	---

* Surrogate out of standard limits.



1726 Wooddale Court • Baton Rouge, Louisiana 70806

1 (800) 401-4277 • Fax (504) 927-6822

ARS Tracking Number: ARS-98-0769 P.O. Number: Project Location: Hobbs, NM
 Client I.D.: 103645 CSS #6 ARS Sample I.D.: ARS-98-2764
 Date Sampled: N/A Date Received: 08/04/98
 Time Sampled: N/A Time Received: 1145
 Type of Sample: Solid Date of Report: 8/26/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	4.81	2.06	pCi/gm	0.178	0.076	Bq/gm	EPA 901.1M	8/05/98 1636	DC
Ra-228	0.99	0.32	pCi/gm	0.037	0.012	Bq/gm	EPA 901.1M	8/05/98 1636	DC
Pb-210	<1.18	N/A	pCi/gm	<0.044	N/A	Bq/gm	EPA 901.1M	8/05/98 1636	DC
Total Activity	21.06	N/A	pCi/gm	0.779	N/A	Bq/gm	EPA 901.1M	8/05/98 1636	DC

Notes:

Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.



Notes:

Comments:

- 1.0) Soil and Sludge analysis are reported on a wet basis or an as received basis unless otherwise indicated.
- 2.0) The data in this report are within the limits of uncertainty specified in the reference method unless specified.
- 3.0) Modified analysis procedures are procedures that are modified to meet the certain specifications. An example may be the use of a water method to analyze a solid matrix due to the lack of an officially recognized procedure for the analysis of the solid matrix.
- 4.0) Derived Air Concentrations and Effluent Release Concentrations are obtained from 10 CFR 20 Appendix B
- 5.0) Total activity is actually total gamma activity and is determined utilizing the prominent gamma emitters from the naturally occurring radioactive decay chains and other prominent radioactive nuclides. Total activity may be lower than actual total activity due to the extent of secular equilibrium achieved in the various decay chains at the time of analysis. The total activity is not representative of nuclides that emit solely alpha or beta particles.
- 6.0) Ra-228 is determined via secular equilibrium with its daughter, Actinium 228. (Gamma Spectroscopy only)
- 7.0) U-238 is determined via secular equilibrium with its daughter, Thorium 234. (Gamma Spectroscopy only)
- 8.0) All Gamma spectroscopy was performed utilizing high purity germanium detectors (HPGE).

Method References:

- 1.0) EPA 600/4-80-032, Prescribed Procedures for the Measurement of Radioactivity in Drinking Water, August 1980.
- 2.0) Standard Methods for the Examination of Water and Waste Water, 18th, 1992
- 3.0) EPA SW-846, Test Methods for Evaluating Solid Waste, Third Edition, (9/86). (Updated through 1995)
- 4.0) EPA 600/4/79-020, Methods for Chemical Analysis of Water and Waste, March 1983.
- 5.0) HASL 300

Definitions:

- | | | |
|-------|-----------------|--|
| 1.0) | BDL | Analyte not detected because the value was below the detection limit. |
| 2.0) | ND | Not detected above the detection limit. |
| 3.0) | Detection Limit | The minimum amount of the analyte that ARS can detect utilizing the specific analysis. |
| 4.0) | B | Method Blank |
| 5.0) | D | Method Duplicate |
| 6.0) | MS | Matrix Spike |
| 7.0) | S | Spike |
| 8.0) | RS | Reference Spike |
| 9.0) | *SC | Subcontracted out to another qualified laboratory |
| 10.0) | NR | Not Referenced |

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.



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American Radiation Services, Inc.

Laboratory Analysis Report

Prepared For:

**Trace Analysis, Inc.
Nell Green
6701 Aberdeen Avenue, Ste. 9
Lubbock, TX 79424
Phone: 800-378-1296
Fax: (806) 794-1298**



Quality Assurance Review



**Danny L. Coleman
Laboratory Manager**

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 9-29-98
Page # 9

Project Number: 19349
Project Name: Shell Grimes
Project Location: Casey House, Hobbs, NM

Order ID Number: 9807000518
Sample Number: 103644

Sample Description: CSS #7

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Benzene		<0.050	mg/Kg	S 8021B		8/4/98	JG		4730	0.05
Toluene		<0.050	mg/Kg	S 8021B		8/4/98	JG		4730	0.05
Ethylbenzene		<0.050	mg/Kg	S 8021B		8/4/98	JG		4730	0.05
Total xylenes		<0.050	mg/Kg	S 8021B		8/4/98	JG		4730	0.05
TRPHC		55.0	mg/Kg	E 418.1	8/27/98	8/30/98	SR	4810	5168	10.0

Analytical Results Report

Jeff kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-6-98
Page # 6

Project Number: 19349
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000070
Sample Number: 104146

Sample Description: CSS #8

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
TRPHC		<10.0	mg/Kg	S 418.1	8/6/98	8/6/98	MS	4663	4738	10
Chloride		51	mg/Kg	E 300.0		8/17/98	JS		4930	1.0

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 9-30-98
Page # 4

Project Number: 19349
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000307
Sample Number: 105071

Field Code: GSB-1 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<125	ug/Kg	S-8260B		8/24/98	AG		5082	125
Acrylonitrile		<125	ug/Kg	S-8260B		8/24/98	AG		5082	125
Benzene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Carbon tetrachloride		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Chlorobenzene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
1,2-dichloroethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
1,1,2,2-tetrachloroethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
1,1,1-trichloroethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
1,1,2-trichloroethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
1,1,2-trichloroethylene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Chloroform		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Dichlorobenzene		<50	ug/Kg	S-8260B		8/24/98	AG		5082	50
1,1-dichloroethylene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Dichloropropenes		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Ethylbenzene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Bromodichloromethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Bromomethane		<125	ug/Kg	S-8260B		8/24/98	AG		5082	125
Chloromethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Dichlorodifluoromethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Dichloromethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Trichlorofluorometane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Tetrachloroethylene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Toluene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Trichloroethylene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Vinyl chloride		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
m,p-xylene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
o-xylene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
1,1-dichloroethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Ethylene dibromide		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
cis-1,2-dichloroethylene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
trans-1,2-dichloroethylene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Methylene chloride		<125	ug/Kg	S-8260B		8/24/98	AG		5082	125
Surr. Dibromofluoromethane		118	%	S-8260B		8/24/98	AG		5082	72-130
Surr. Toluene-d8		102	%	S-8260B		8/24/98	AG		5082	77-127
Surr. 4-Bromofluorobenzene		116	%	S-8260B		8/24/98	AG		5082	72-131
Benzidine		<2.5	mg/Kg	S-8270C	8/18/98	8/29/98	JG			2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	8/18/98	8/29/98	JG			0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	8/18/98	8/29/98	JG			0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	8/18/98	8/29/98	JG			0.25

Project Number: 19349
 Project Name: Shell Grimes
 Project Location: Grimes Battery, Hobbs, NM

Date: 9-30-98
 Page # 5
 Order ID Number: 9808000307
 Sample Number: 105071

Field Code: GSB-1 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<0.25	mg/Kg	S-8270C	8/18/98	8/29/98	JG			0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	8/18/98	8/29/98	JG			1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	8/18/98	8/29/98	JG			1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	8/18/98	8/29/98	JG			1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	8/18/98	8/29/98	JG			1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	8/18/98	8/29/98	JG			1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	8/18/98	8/29/98	JG			1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	8/18/98	8/29/98	JG			1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	8/18/98	8/29/98	JG			0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	8/18/98	8/29/98	JG			1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	8/18/98	8/29/98	JG			0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	8/18/98	8/29/98	JG			0.25
Isophorone		<1.25	mg/Kg	S-8270C	8/18/98	8/29/98	JG			1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	8/18/98	8/29/98	JG			0.25
2,4-dinitro-o-cresol		<1.25	mg/Kg	S-8270C	8/18/98	8/29/98	JG			1.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	8/18/98	8/29/98	JG			1.25
n-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	8/18/98	8/29/98	JG			0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	8/18/98	8/29/98	JG			0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	8/18/98	8/29/98	JG			1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	8/18/98	8/29/98	JG			0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	8/18/98	8/29/98	JG			0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	8/18/98	8/29/98	JG			1.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	8/18/98	8/29/98	JG			0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	8/18/98	8/29/98	JG			0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	8/18/98	8/29/98	JG			0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	8/18/98	8/29/98	JG			0.25
Anthracene		<0.25	mg/Kg	S-8270C	8/18/98	8/29/98	JG			0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	8/18/98	8/29/98	JG			0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	8/18/98	8/29/98	JG			0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	8/18/98	8/29/98	JG			0.25
Fluorene		<0.25	mg/Kg	S-8270C	8/18/98	8/29/98	JG			0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	8/18/98	8/29/98	JG			0.25
Pyrene		<0.25	mg/Kg	S-8270C	8/18/98	8/29/98	JG			0.25
Naphthalene		<0.25	mg/Kg	S-8270C	8/18/98	8/29/98	JG			0.25
1-methylnaphthalene		<0.25	mg/Kg	S-8270C	8/18/98	8/29/98	JG			0.25
2-methylnaphthalene		<0.25	mg/Kg	S-8270C	8/18/98	8/29/98	JG			0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	8/18/98	8/29/98	JG			0.25
Surr. 2-Fluorophenol		65	%	S-8270C	8/18/98	8/29/98	JG			25-121
Surr. Phenol-d6		62	%	S-8270C	8/18/98	8/29/98	JG			24-113
Surr. Nitrobenzene-d5		61	%	S-8270C	8/18/98	8/29/98	JG			23-120
Surr. 2-Fluorobiphenyl		76	%	S-8270C	8/18/98	8/29/98	JG			30-115
Surr. 2,4,6-Tribromophenol		62	%	S-8270C	8/18/98	8/29/98	JG			19-122
Surr. Terphenyl-d14		61	%	S-8270C	8/18/98	8/29/98	JG			28-137

Date: 9-30-98

Page # 6

Order ID Number: 9808000307

Sample Number: 105071

Project Number: 19349

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Field Code: GSB-1 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	8/18/98	9/23/98	SH	---	---	50
Chlordane		<50	ug/Kg	S-8080	8/18/98	9/23/98	SH	---	---	50
DDT		<50	ug/Kg	S-8080	8/18/98	9/23/98	SH	---	---	50
Dieldrin		<50	ug/Kg	S-8080	8/18/98	9/23/98	SH	---	---	50
Endosulfan		<50	ug/Kg	S-8080	8/18/98	9/23/98	SH	---	---	50
Endrin		<50	ug/Kg	S-8080	8/18/98	9/23/98	SH	---	---	50
Heptachlor		<50	ug/Kg	S-8080	8/18/98	9/23/98	SH	---	---	50
PCB's		<0.1	mg/Kg	S 8082	8/26/98	8/26/98	RC	4796	5112	
Arsenic		4.2	mg/Kg	6010	8/26/98	9/1/98	RR	4799	5182	0.50
Barium		370	mg/Kg	6010	8/26/98	9/1/98	RR	4799	5182	0.50
Cadmium		<0.10	mg/Kg	6010	8/26/98	9/1/98	RR	4799	5182	0.10
Chromium		4.9	mg/Kg	6010	8/26/98	9/1/98	RR	4799	5182	0.50
Lead		1.8	mg/Kg	6010	8/26/98	9/1/98	RR	4799	5182	0.50
Total Mercury		<0.25	mg/Kg	S 7471	8/16/98	8/18/98	MS	4745	4952	0.25
Selenium		0.85	mg/Kg	6010	8/26/98	9/1/98	RR	4799	5182	0.50
Silver		<.50	mg/Kg	6010	8/26/98	9/1/98	RR	4799	5182	0.50
Uranium		<2.0	mg/Kg	6010	8/26/98	9/1/98	RR	4799	5182	2.0
Copper		1.9	mg/Kg	6010	8/26/98	9/1/98	RR	4799	5182	1.0
Iron		4200	mg/Kg	6010	8/26/98	9/1/98	RR	4799	5182	2.0
Manganese		36	mg/Kg	6010	8/26/98	9/1/98	RR	4799	5182	10
Zinc		9.3	mg/Kg	6010	8/26/98	9/1/98	RR	4799	5182	2.0
Aluminum		6600	mg/Kg	6010	8/26/98	9/1/98	RR	4799	5182	10
Boron		13	mg/Kg	6010	8/26/98	9/1/98	RR	4799	5182	1.0
Cobalt		8.1	mg/Kg	6010	8/26/98	9/1/98	RR	4799	5182	0.50
Molybdenum		2.8	mg/Kg	6010	8/26/98	9/1/98	RR	4799	5182	1.0
Nickel		8.6	mg/Kg	6010	8/26/98	9/1/98	RR	4799	5182	0.50
Cyanide		0.062	mg/Kg	SM 4500 CN,CE		8/20/98	SA		5029	0.01
Fluoride		13	mg/Kg	E 335.2		8/25/98	JS		5096	0.01
Nitrate		2.1	mg/Kg	E 300.0		8/25/98	JS		5096	0.01
Chloride		8.9	mg/Kg	E 300.0		8/25/98	JS		5096	0.05
Sulfate		29	mg/Kg	E 300.0		8/25/98	JS		5096	0.05
TDS		300	mg/Kg	E 160.2		9/10/98	RS		5273	---
pH		8.5	s.u.	E 150.1		8/17/98			4935	---
TRPHC		<10.0	mg/Kg	S 418.1	8/21/98	8/22/98	SR	4743	5045	10.0
Total Phenol		<0.25	mg/Kg	SM 5530 A,D		8/19/98	RC		5015	0.25
Total Radium		4.80	pCi/gm	E 901.1M		8/23/98	DS	---	---	---



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ARS Tracking Number:	ARS-98-0838	P.O. Number:	Project 19349
Client I.D.:	105071	ARS Sample I.D.:	ARS-98-3059
Date Sampled:	08/13/98	Date Received:	08/20/98
Time Sampled:	N/A	Time Received:	1041
Type of Sample:	Soil	Date of Report:	8/25/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	<0.84	N/A	pCi/gm	<0.031	N/A	Bq/gm	EPA 901.1M	8/23/98 0951	MK
Ra-228	<0.14	N/A	pCi/gm	<0.005	N/A	Bq/gm	EPA 901.1M	8/23/98 0951	MK
Pb-210	<1.20	N/A	pCi/gm	<0.044	N/A	Bq/gm	EPA 901.1M	8/23/98 0951	MK
Total Activity	4.80	N/A	pCi/gm	0.178	N/A	Bq/gm	EPA 901.1M	8/23/98 0951	MK

Notes:


Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 9-30-98
Page # 7

Project Number: 19349
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000307
Sample Number: 105072

Field Code: GSB-1 58-60'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Benzene		<0.050	mg/kg	E 8021B		8/18/98	JG		4967	0.050
Toluene		<0.050	mg/kg	E 8021B		8/18/98	JG		4967	0.050
Ethylbenzene		<0.050	mg/kg	E 8021B		8/18/98	JG		4967	0.050
m,p,o-xylene		0.857	mg/kg	E 8021B		8/18/98	JG		4967	0.050
TRPHC		1,770	mg/kg	S 418.1	8/27/98	8/30/98	SR	4810	5168	10.0
Chloride		<8.0	mg/kg	SM 4500 CIB		9/1/98	JS		5187	2.0

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 9-30-98
Page # 8

Project Number: 19349
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000307
Sample Number: 105073

Field Code: GSB-1 63-65'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Benzene		<0.050	mg/kg	E 8021B		8/18/98	JG		4967	0.050
Toluene		<0.050	mg/kg	E 8021B		8/18/98	JG		4967	0.050
Ethylbenzene		<0.050	mg/kg	E 8021B		8/18/98	JG		4967	0.050
m,p,o-xylene		0.075	mg/kg	E 8021B		8/18/98	JG		4967	0.050
TRPHC		274	mg/kg	S 418.1	8/27/98	8/30/98	SR	4810	5168	10.0
Chloride		13	mg/kg	SM 4500 ClB		9/1/98	JS		5187	2.0

Analytical Results Report

Jeff Kindley / Sharon Hall
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Midland, TX 79706

Date: 9-30-98
Page # 9

Project Number: 19349
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000307
Sample Number: 105074

Field Code: GSB-1B 63-65'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Benzene		<0.050	mg/kg	E 8021B		8/18/98	JG		4967	0.050
Toluene		<0.050	mg/kg	E 8021B		8/18/98	JG		4967	0.050
Ethylbenzene		<0.050	mg/kg	E 8021B		8/18/98	JG		4967	0.050
m,p,o-xylene		<0.050	mg/kg	E 8021B		8/18/98	JG		4967	0.050
TRPHC		1,340	mg/kg	S 418.1	8/27/98	8/30/98	SR	4810	5168	10.0
Chloride		11	mg/kg	SM 4500 ClB		9/1/98	JS		5187	2.0

Analytical Results Report

Jeff Kindley / Sharon Hall
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Midland, TX 79706

Date: 9-29-98
Page # 4

Project Number: 19349
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000344
Sample Number: 105224

Field Code: GSB-2 5-6'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<125	ug/Kg	S-8260B		8/24/98	AG		5082	125
Acrylonitrile		<125	ug/Kg	S-8260B		8/24/98	AG		5082	125
Benzene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Carbon tetrachloride		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Chlorobenzene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
1,2-dichloroethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
1,1,2,2-tetrachloroethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
1,1,1-trichloroethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
1,1,2-trichloroethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
1,1,2-trichloroethylene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Chloroform		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Dichlorobenzene		<50	ug/Kg	S-8260B		8/24/98	AG		5082	2
1,1-dichloroethylene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	50
Dichloropropenes		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Ethylbenzene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Bromodichloromethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Bromomethane		<125	ug/Kg	S-8260B		8/24/98	AG		5082	125
Chloromethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Dichlorodifluoromethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Dichloromethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Trichlorofluoromethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Tetrachloroethylene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Toluene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Trichloroethylene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Vinyl chloride		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
m,p-xylene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
o-xylene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
1,1-dichloroethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Ethylene dibromide		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
cis-1,2-dichloroethylene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
trans-1,2-dichloroethylene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Methylene chloride		<125	ug/Kg	S-8260B		8/24/98	AG		5082	125
Surr. Dibromofluoromethane		118	%	S-8260B		8/24/98	AG		5082	72-130
Surr. Toluene-d8		102	%	S-8260B		8/24/98	AG		5082	77-127
Surr. 4-Bromofluorobenzene		116	%	S-8260B		8/24/98	AG		5082	72-131
Benzidine		<2.5	mg/Kg	S-8270C	8/24/98	8/31/98	JG	4770	5172	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	8/24/98	8/31/98	JG	4770	5172	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	8/24/98	8/31/98	JG	4770	5172	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	8/24/98	8/31/98	JG	4770	5172	0.25

Date: 9-29-98

Page # 6

Order ID Number: 9808000344

Sample Number: 105224

Project Number: 19349

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Field Code: GSB-2 5-6'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<0.25	mg/Kg	S-8270C	8/24/98	8/31/98	JG	4770	5172	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	8/24/98	8/31/98	JG	4770	5172	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	8/24/98	8/31/98	JG	4770	5172	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	8/24/98	8/31/98	JG	4770	5172	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	8/24/98	8/31/98	JG	4770	5172	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	8/24/98	8/31/98	JG	4770	5172	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	8/24/98	8/31/98	JG	4770	5172	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	8/24/98	8/31/98	JG	4770	5172	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	8/24/98	8/31/98	JG	4770	5172	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	8/24/98	8/31/98	JG	4770	5172	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	8/24/98	8/31/98	JG	4770	5172	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	8/24/98	8/31/98	JG	4770	5172	0.25
Isophorone		<1.25	mg/Kg	S-8270C	8/24/98	8/31/98	JG	4770	5172	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	8/24/98	8/31/98	JG	4770	5172	0.25
2,4-dinitro-o-cresol		<1.25	mg/Kg	S-8270C	8/24/98	8/31/98	JG	4770	5172	1.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	8/24/98	8/31/98	JG	4770	5172	1.25
n-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	8/24/98	8/31/98	JG	4770	5172	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	8/24/98	8/31/98	JG	4770	5172	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	8/24/98	8/31/98	JG	4770	5172	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	8/24/98	8/31/98	JG	4770	5172	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	8/24/98	8/31/98	JG	4770	5172	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	8/24/98	8/31/98	JG	4770	5172	1.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	8/24/98	8/31/98	JG	4770	5172	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	8/24/98	8/31/98	JG	4770	5172	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	8/24/98	8/31/98	JG	4770	5172	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	8/24/98	8/31/98	JG	4770	5172	0.25
Anthracene		<0.25	mg/Kg	S-8270C	8/24/98	8/31/98	JG	4770	5172	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	8/24/98	8/31/98	JG	4770	5172	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	8/24/98	8/31/98	JG	4770	5172	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	8/24/98	8/31/98	JG	4770	5172	0.25
Fluorene		<0.25	mg/Kg	S-8270C	8/24/98	8/31/98	JG	4770	5172	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	8/24/98	8/31/98	JG	4770	5172	0.25
Pyrene		<0.25	mg/Kg	S-8270C	8/24/98	8/31/98	JG	4770	5172	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	8/24/98	8/31/98	JG	4770	5172	0.25
1-methylnaphthalene		<0.25	mg/Kg	S-8270C	8/24/98	8/31/98	JG	4770	5172	0.25
2-methylnaphthalene		<0.25	mg/Kg	S-8270C	8/24/98	8/31/98	JG	4770	5172	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	8/24/98	8/31/98	JG	4770	5172	0.25
Surr. 2-Fluorophenol		51	%	S-8270C	8/24/98	8/31/98	JG	4770	5172	25-121
Surr. Phenol-d6		57	%	S-8270C	8/24/98	8/31/98	JG	4770	5172	24-113
Surr. Nitrobenzene-d5		60	%	S-8270C	8/24/98	8/31/98	JG	4770	5172	23-120
Surr. 2-Fluorobiphenyl		64	%	S-8270C	8/24/98	8/31/98	JG	4770	5172	30-115

Date: 9-29-98

Page # 6

Project Number: 19349

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000344

Sample Number: 105224

Field Code: GSB-2 5-6'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Surr. 2,4,6-Tribromophenol		59	%	S-8270C	8/24/98	8/31/98	JG	4770	5172	19-122
Surr. Terphenyl-d14		99	%	S-8270C	8/24/98	8/31/98	JG	4770	5172	28-137
Aldrin		<50	ug/Kg	S-8080	8/25/98	9/27/98	KC	---	---	50
Chlordane		<50	ug/Kg	S-8080	8/25/98	9/27/98	KC	---	---	50
DDT		<50	ug/Kg	S-8080	8/25/98	9/27/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S-8080	8/25/98	9/27/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S-8080	8/25/98	9/27/98	KC	---	---	50
Endrin		<50	ug/Kg	S-8080	8/25/98	9/27/98	KC	---	---	50
Heptachlor		<50	mg/Kg	S-8080	8/25/98	9/27/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S-8080	8/26/98	8/26/98	RC	4796	5112	0.1
Arsenic		4.1	mg/Kg	6010	8/26/98	9/3/98	RR	4800	5202	0.50
Barium		170	mg/Kg	6010	8/26/98	9/3/98	RR	4800	5202	0.50
Cadmium		0.14	mg/Kg	6010	8/26/98	9/3/98	RR	4800	5202	0.10
Chromium		2.7	mg/Kg	6010	8/26/98	9/3/98	RR	4800	5202	0.50
Lead		0.72	mg/Kg	6010	8/26/98	9/3/98	RR	4800	5202	0.50
Total Mercury		<0.10	mg/Kg	S 7471	8/24/98	8/25/98	MS	4765	5101	0.25
Selenium		<0.50	mg/Kg	6010	8/26/98	9/3/98	RR	4800	5202	0.50
Silver		<0.50	mg/Kg	6010	8/26/98	9/3/98	RR	4800	5202	0.50
Uranium		<2.0	mg/Kg	6010	8/26/98	9/3/98	RR	4800	5202	2.0
Copper		2.9	mg/Kg	6010	8/26/98	9/3/98	RR	4800	5202	1.0
Iron		1900	mg/Kg	6010	8/26/98	9/3/98	RR	4800	5202	2.0
Manganese		28	mg/Kg	6010	8/26/98	9/3/98	RR	4800	5202	1.0
Zinc		13	mg/Kg	6010	8/26/98	9/3/98	RR	4800	5202	2.0
Aluminum		3500	mg/Kg	6010	8/26/98	9/3/98	RR	4800	5202	10
Boron		11	mg/Kg	6010	8/26/98	9/3/98	RR	4800	5202	10
Cobalt		5.5	mg/Kg	6010	8/26/98	9/3/98	RR	4800	5202	0.50
Molybdenum		2.6	mg/Kg	6010	8/26/98	9/3/98	RR	4800	5202	1.0
Nickel		6.1	mg/Kg	6010	8/26/98	9/3/98	RR	4800	5202	0.50
Cyanide		0.01	mg/Kg	Sm 4500 Cn,CE		8/20/98	SA		5029	0.01
Fluoride		6.1	mg/Kg	E 300.0		8/25/98	JS		5096	0.1
Nitrate		1.8	mg/Kg	E 300.0		8/25/98	JS		5096	0.1
Chloride		41	mg/Kg	E 300.0		8/25/98	JS		5096	0.5
Sulfate		240	mg/Kg	E 300.0		8/25/98	JS		5096	0.5
TDS		880	mg/Kg	E 160.1		9/10/98	RS		5273	---
pH		8.6	s.u.	E 150.1		8/19/98	SA		5018	---
TRPHC		<10.0	mg/Kg	S 418.1	8/21/98	8/22/98	SR	4743	5045	10.0
Total Phenols		<0.01	mg/Kg	SM 5530 A,d		8/26/98	RC		5110	0.01
Total Radium		1.67	pCi/gm	E 901.1M		8/18/98	DS	---	---	---

Analytical Results Report
Corrected *

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 9-29-98
Page # 7

Project Number: 19349
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000344
Sample Number: 105225

Field Code: GSB-2 45-47'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
MTBE		<0.050	mg/kg	E 8021B		8/20/98	JG		5031	0.050
Benzene		<0.050	mg/kg	E 8021B		8/20/98	JG		5031	0.050
Toluene		0.101	mg/kg	E 8021B		8/20/98	JG		5031	0.050
Ethylbenzene		0.125	mg/kg	E 8021B		8/20/98	JG		5031	0.050
m,p,o-xylene		1.25	mg/kg	E 8021B		8/20/98	JG		5031	0.050
TRPHC		870	mg/kg	S 418.1	8/21/98	8/22/98	SR	4743	5045	10.0
Chloride		26	mg/kg	E 300.0		8/25/98	JS		5103	0.5

* Corrected - Added MTBE result.

Analytical Results Report
Corrected *

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 9-29-98
Page # 8

Project Number: 19349
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000344
Sample Number: 105226

Field Code: GSB-2 55-57'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
MTBE		<0.050	mg/kg	E 8021B		8/20/98	JG		5031	0.050
Benzene		<0.050	mg/kg	E 8021B		8/20/98	JG		5031	0.050
Toluene		0.481	mg/kg	E 8021B		8/20/98	JG		5031	0.050
Ethylbenzene		0.296	mg/kg	E 8021B		8/20/98	JG		5031	0.050
m,p,o-xylene		2.62	mg/kg	E 8021B		8/20/98	JG		5031	0.050
TRPHC		1,020	mg/kg	S 418.1	8/27/98	8/30/98	SR	4810	5168	10.0
Chloride		37	mg/kg	E 300.0		8/25/98	JS		5103	0.5

* Corrected - Added MTBE results



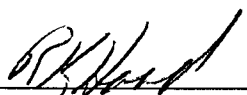
1726 Wooddale Court • Baton Rouge, Louisiana 70806

1 (800) 401-4277 • Fax (504) 927-6822

ARS Tracking Number: ARS-98-0843 P.O. Number: Project #19349
Client I.D.: 105224 5362 56 ARS Sample I.D.: ARS-98-3088
Date Sampled: 08/14/98 Date Received: 08/20/98
Time Sampled: N/A Time Received: 1510
Type of Sample: Solid Date of Report: 8/25/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	3.29	1.80	pCi/gm	0.122	0.067	Bq/gm	EPA 901.1M	8/23/98 1037	MK
Ra-228	<0.14	N/A	pCi/gm	<0.005	N/A	Bq/gm	EPA 901.1M	8/23/98 1037	MK
Pb-210	<1.04	N/A	pCi/gm	<0.038	N/A	Bq/gm	EPA 901.1M	8/23/98 1037	MK
Total Activity	16.61	N/A	pCi/gm	0.615	N/A	Bq/gm	EPA 901.1M	8/23/98 1037	MK

Notes:


Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-1-98
Page # 4

Project Number: 19349
Project Name: Shell Grimes Tank Battery
Project Location: Hobbs, NM

Order ID Number: 9808000168
Sample Number: 107012

Sample Description: GSB-3 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<150	ug/Kg	S-8260B		9/20/98	AG		5461	150
Acrylonitrile		<150	ug/Kg	S-8260B		9/20/98	AG		5461	150
Benzene		<30	ug/Kg	S-8260B		9/20/98	AG		5461	30
Carbon tetrachloride		<30	ug/Kg	S-8260B		9/20/98	AG		5461	30
Chlorobenzene		<30	ug/Kg	S-8260B		9/20/98	AG		5461	30
1,2-dichloroethane		<30	ug/Kg	S-8260B		9/20/98	AG		5461	30
1,1,2,2-tetrachloroethane		<30	ug/Kg	S-8260B		9/20/98	AG		5461	30
1,1,1-trichloroethane		<30	ug/Kg	S-8260B		9/20/98	AG		5461	30
1,1,2-trichloroethane		<30	ug/Kg	S-8260B		9/20/98	AG		5461	30
1,1,2-trichloroethylene		<30	ug/Kg	S-8260B		9/20/98	AG		5461	30
Chloroform		<30	ug/Kg	S-8260B		9/20/98	AG		5461	30
Dichlorobenzene		<60	ug/Kg	S-8260B		9/20/98	AG		5461	60
1,1-dichloroethylene		<30	ug/Kg	S-8260B		9/20/98	AG		5461	30
Dichloropropenes		<30	ug/Kg	S-8260B		9/20/98	AG		5461	30
Ethylbenzene		<30	ug/Kg	S-8260B		9/20/98	AG		5461	30
Bromodichloromethane		<30	ug/Kg	S-8260B		9/20/98	AG		5461	30
Bromomethane		<150	ug/Kg	S-8260B		9/20/98	AG		5461	150
Chloromethane		<30	ug/Kg	S-8260B		9/20/98	AG		5461	30
Dichlorodifluoromethane		<30	ug/Kg	S-8260B		9/20/98	AG		5461	30
Dichloromethane		<30	ug/Kg	S-8260B		9/20/98	AG		5461	30
Trichlorofluoromethane		<30	ug/Kg	S-8260B		9/20/98	AG		5461	30
Tetrachloroethylene		<30	ug/Kg	S-8260B		9/20/98	AG		5461	30
Toluene		<30	ug/Kg	S-8260B		9/20/98	AG		5461	30
Trichloroethylene		<30	ug/Kg	S-8260B		9/20/98	AG		5461	30
Vinyl chloride		<30	ug/Kg	S-8260B		9/20/98	AG		5461	30
m,p-xylene		<30	ug/Kg	S-8260B		9/20/98	AG		5461	30
o-xylene		<30	ug/Kg	S-8260B		9/20/98	AG		5461	30
1,1-dichloroethane		<30	ug/Kg	S-8260B		9/20/98	AG		5461	30
Ethylene dibromide		<30	ug/Kg	S-8260B		9/20/98	AG		5461	30
cis-1,2-dichloroethylene		<30	ug/Kg	S-8260B		9/20/98	AG		5461	30
trans-1,2-dichloroethylene		<30	ug/Kg	S-8260B		9/20/98	AG		5461	30
Methylene chloride		<150	ug/Kg	S-8260B		9/20/98	AG		5461	150
Dibromofluoromethane		93	%	S-8260B		9/20/98	AG		5461	71-132
Toluene-d8		100	%	S-8260B		9/20/98	AG		5461	82-124
4-Bromofluorobenzene		102	%	S-8260B		9/20/98	AG		5461	76-126

Date: 10-1-98

Page # 5

Order ID Number: 9808000168

Sample Number: 107012

Project Number: 19349

Project Name: Shell Grimes Tank Battery

Project Location: Hobbs, NM

Sample Description: GSB-3 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Benzidine		<2.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Hexachloroethane		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Isophorone		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
2,4-dinitro-o-cresol		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
i-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
Phenol		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Anthracene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Fluorene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Pyrene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
1-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
2-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25

Date: 10-1-98

Page # 6

Project Number: 19349

Project Name: Shell Grimes Tank Battery

Project Location: Hobbs, NM

Order ID Number: 9808000168

Sample Number: 107012

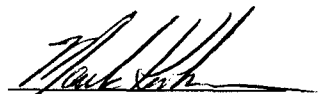
Sample Description: GSB-3 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Surr. 2-Fluorophenol		54	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	25-121
Surr. Phenol-d6		71	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	24-113
Surr. Nitroobenzene-d5		62	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	23-120
Surr. 2-Fluorobiphenyl		78	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	30-115
Surr. 2,4,6-Tribromophenol		70	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	19-122
Surr. Terphenyl-d14		62	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	28-137
Aldrin		<50	ug/Kg	S 8081A	9/16/98	9/21/98	KC	---	---	50
Chlordane		<75	ug/Kg	S 8081A	9/16/98	9/21/98	KC	---	---	50
DDT		<50	ug/Kg	S 8081A	9/16/98	9/21/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S 8081A	9/16/98	9/21/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S 8081A	9/16/98	9/21/98	KC	---	---	50
Endrin		<50	ug/Kg	S 8081A	9/16/98	9/21/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S 8081A	9/16/98	9/21/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8081A	9/15/98	9/18/98	RC	5044	5401	0.1
Arsenic		4.5	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Barium		375	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Cadmium		<0.10	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.10
Chromium		3.8	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Lead		1.7	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Total Mercury		<0.10	mg/Kg	E 7471A	9/9/98	9/10/98	MS	4917	5275	0.10
Selenium		0.86	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Silver		<0.50	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Uranium		<2.0	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	2.0
Copper		3.1	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	1.0
Iron		2,900	mg/Kg	E 6010B	9/17/98	9/20/98	RR	5090	5461	10
Manganese		39	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	1.0
Zinc		6.2	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	2.0
Aluminum		4,400	mg/Kg	E 6010B	9/17/98	9/20/98	RR	5090	5461	10
Boron		15	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	10
Cobalt		3.1	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Molybdenum		2.2	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	1.0
Nickel		6.9	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Cyanide		<0.010	mg/Kg	Sm 4500 Cn,CE		9/15/98	SA		5331	0.01
Fluoride		5.9	mg/Kg	E 300.0		9/21/98	JS		5490	0.2
Nitrate		<0.2	mg/Kg	E 300.0		9/21/98	JS		5490	0.2
Chloride		87	mg/Kg	E 300.0		9/21/98	JS		5490	1.0
Sulfate		600	mg/Kg	E 300.0		9/21/98	JS		5491	10.0
TDS		1,100	mg/Kg	E 160.1		9/21/98	RS		5449	---
pH		8.3	s.u.	E 150.1		9/10/98	SA		5270	---
TRPHC		3,130	mg/Kg	S 418.1	9/15/98	9/15/98	SR	4988	5324	10.0
Total Phenols		4.0	mg/Kg	SM 5530 A,D		9/20/98	RC		5451	0.25
Total Radium		21.20	pCi/gm	E 901.1M		9/14/98	DS	---	---	---

ARS Tracking Number:	ARS-98-0915	P.O. Number:	N/A
Client I.D.:	107012	ARS Sample I.D.:	ARS-98-3350
Date Sampled:	9/3/98	Date Received:	9/11/98
Time Sampled:	N/A	Time Received:	1037
Type of Sample:	Solid	Date of Report:	9/14/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	3.34	1.39	pCi/gm	0.124	0.051	Bq/gm	EPA 901.1M	9/14/98 1117	kh
Ra-228	<0.08	N/A	pCi/gm	<0.003	N/A	Bq/gm	EPA 901.1M	9/14/98 1117	kh
Pb-210	2.09	1.76	pCi/gm	0.077	0.065	Bq/gm	EPA 901.1M	9/14/98 1117	kh
Total Activity	21.20	N/A	pCi/gm	0.784	N/A	Bq/gm	EPA 901.1M	9/14/98 1117	kh

Notes:


 Quality Assurance Review

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Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-1-98
Page # 7

Project Number: 19349
Project Name: Shell Grimes Tank Battery
Project Location: Hobbs, NM

Order ID Number: 9808000168
Sample Number: 107013

Sample Description: GSB-3 38-40'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
MTBE		<0.050	mg/Kg	S 8021B		9/14/98	CS		5321	0.050
Benzene		<0.050	mg/Kg	S 8021B		9/14/98	CS		5321	0.050
Toluene		<0.050	mg/Kg	S 8021B		9/14/98	CS		5321	0.050
Ethylbenzene		0.321	mg/Kg	S 8021B		9/14/98	CS		5321	0.050
m,p,o-xylene		2.50	mg/Kg	S 8021B		9/14/98	CS		5321	0.050
TRPHC		1,310	mg/Kg	S 418.1	9/15/98	9/15/98	SR	4988	5324	10.0
Chloride		81	mg/Kg	E 300.0		9/20/98	JS		5421	2.0

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-1-98
Page # 8

Project Number: 19349
Project Name: Shell Grimes Tank Battery
Project Location: Hobbs, NM

Order ID Number: 9808000168
Sample Number: 107014

Sample Description: GSB-3 48-50'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
MTBE		<0.050	mg/Kg	S 8021B		9/14/98	CS		5321	0.050
Benzene		<0.050	mg/Kg	S 8021B		9/14/98	CS		5321	0.050
Toluene		<0.050	mg/Kg	S 8021B		9/14/98	CS		5321	0.050
Ethylbenzene		1.1	mg/Kg	S 8021B		9/14/98	CS		5321	0.050
m,p,o-xylene		8.0	mg/Kg	S 8021B		9/14/98	CS		5321	0.050
TRPHC		771	mg/Kg	S 418.1	9/15/98	9/15/98	SR	4988	5324	10.0
Chloride		37	mg/Kg	E 300.0		9/20/98	JS		5421	2.0

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-1-98
Page # 9

Project Number: 19349
Project Name: Shell Grimes Tank Battery
Project Location: Hobbs, NM

Order ID Number: 9808000168
Sample Number: 107015

Sample Description: GSB-3D 48-50'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
MTBE		<0.050	mg/Kg	S 8021B		9/14/98	CS		5321	0.050
Benzene		<0.050	mg/Kg	S 8021B		9/14/98	CS		5321	0.050
Toluene		2.07	mg/Kg	S 8021B		9/14/98	CS		5321	0.050
Ethylbenzene		2.80	mg/Kg	S 8021B		9/14/98	CS		5321	0.050
m,p,o-xylene		18.4	mg/Kg	S 8021B		9/14/98	CS		5321	0.050
TRPHC		1,890	mg/Kg	S 418.1	9/15/98	9/15/98	SR	4988	5324	10.0
Chloride		52	mg/Kg	E 300.0		9/20/98	JS		5421	2.0

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-1-98
Page # 4

Project Number: 19349
Project Name: Shell Grimes
Project Location: Hobbs, NM

Order ID Number: 9809000167
Sample Number: 107002

Sample Description: GSB-4 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<280	ug/Kg	S-8260B		9/9/98	AG		5264	280
Acrylonitrile		<280	ug/Kg	S-8260B		9/9/98	AG		5264	280
Benzene		<56	ug/Kg	S-8260B		9/9/98	AG		5264	56
Carbon tetrachloride		<56	ug/Kg	S-8260B		9/9/98	AG		5264	56
Chlorobenzene		<56	ug/Kg	S-8260B		9/9/98	AG		5264	56
1,2-dichloroethane		<56	ug/Kg	S-8260B		9/9/98	AG		5264	56
1,1,2,2-tetrachloroethane		<56	ug/Kg	S-8260B		9/9/98	AG		5264	56
1,1,1-trichloroethane		<56	ug/Kg	S-8260B		9/9/98	AG		5264	56
1,1,2-trichloroethane		<56	ug/Kg	S-8260B		9/9/98	AG		5264	56
1,1,2-trichloroethylene		<56	ug/Kg	S-8260B		9/9/98	AG		5264	56
Chloroform		<56	ug/Kg	S-8260B		9/9/98	AG		5264	56
Dichlorobenzene		<112	ug/Kg	S-8260B		9/9/98	AG		5264	112
1,1-dichloroethylene		<56	ug/Kg	S-8260B		9/9/98	AG		5264	56
Dichloropropenes		<56	ug/Kg	S-8260B		9/9/98	AG		5264	56
Ethylbenzene		<56	ug/Kg	S-8260B		9/9/98	AG		5264	56
Bromodichloromethane		<56	ug/Kg	S-8260B		9/9/98	AG		5264	56
Bromomethane		<280	ug/Kg	S-8260B		9/9/98	AG		5264	280
Chloromethane		<56	ug/Kg	S-8260B		9/9/98	AG		5264	56
Dichlorodifluoromethane		<56	ug/Kg	S-8260B		9/9/98	AG		5264	56
Dichloromethane		<56	ug/Kg	S-8260B		9/9/98	AG		5264	56
Trichlorofluoromethane		<56	ug/Kg	S-8260B		9/9/98	AG		5264	56
Tetrachloroethylene		<56	ug/Kg	S-8260B		9/9/98	AG		5264	56
Toluene		<56	ug/Kg	S-8260B		9/9/98	AG		5264	56
Trichloroethylene		<56	ug/Kg	S-8260B		9/9/98	AG		5264	56
Vinyl chloride		<56	ug/Kg	S-8260B		9/9/98	AG		5264	56
m,p-xylene		<56	ug/Kg	S-8260B		9/9/98	AG		5264	56
o-xylene		<56	ug/Kg	S-8260B		9/9/98	AG		5264	56
1,1-dichloroethane		<56	ug/Kg	S-8260B		9/9/98	AG		5264	56
Ethylene dibromide		<56	ug/Kg	S-8260B		9/9/98	AG		5264	56
cis-1,2-dichloroethylene		<56	ug/Kg	S-8260B		9/9/98	AG		5264	56
trans-1,2-dichloroethylene		<56	ug/Kg	S-8260B		9/9/98	AG		5264	56
Methylene chloride		<280	ug/Kg	S-8260B		9/9/98	AG		5264	280
Dibromofluoromethane		86	%	S-8260B		9/9/98	AG		5264	71-132
Toluene-d8		83	%	S-8260B		9/9/98	AG		5264	82-124
4-Bromofluorobenzene		81	%	S-8260B		9/9/98	AG		5264	76-126
Benzidine		<2.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25

Project Number: 19349
 Project Name: Shell Grimes
 Project Location: Hobbs, NM

Date: 10-1-98
 Page # 5
 Order ID Number: 9809000167
 Sample Number: 107002

Sample Description: GSB-4 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Isophorone		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
2,4-dinitro-o-cresol		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
i-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
Phenol		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Anthracene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Fluorene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Pyrene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
1-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
2-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Surr. 2-Fluorophenol		51	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	25-121
Surr. Phenol-d6		61	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	24-113
Surr. Nitrobenzene-d5		52	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	23-120
Surr. 2-Fluorobiphenyl		66	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	30-115
Surr. 2,4,6-Tribromophenol		63	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	19-122
Surr. Terphenyl-d14		64	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	28-137

Project Number: 19349
 Project Name: Shell Grimes
 Project Location: Hobbs, NM

Date: 10-1-98
 Page # 6
 Order ID Number: 9809000167
 Sample Number: 107002

Sample Description: GSB-4 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Chlordane		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
DDT		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Endrin		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	9/18/98	9/18/98	RC	5044	5401	0.1
Arsenic		2.9	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Barium		166	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Cadmium		0.16	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.10
Chromium		5.4	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Lead		2.7	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Total Mercury		<0.10	mg/Kg	E 7471 A	9/9/98	9/10/98	MS	4917	5275	0.10
Selenium		<0.50	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Silver		<0.50	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Uranium		<1.0	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	1.0
Copper		2.5	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	1.0
Iron		4,300	mg/Kg	E 6010B	9/17/98	9/20/98	RR	5090	5461	10
Manganese		51	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	1.0
Zinc		11	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	2.0
Aluminum		5,900	mg/Kg	E 6010B	9/17/98	9/20/98	RR	5090	5461	10
Boron		15	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	10
Cobalt		7.6	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Molybdenum		2.6	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	1.0
Nickel		7.9	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Cyanide		<0.010	mg/Kg	SM 4500 CN,CE		9/15/98	SA		5330	0.01
Fluoride		6	mg/Kg	E 300.0		9/21/98	JS		5488	0.2
Nitrate		9.8	mg/Kg	E 300.0		9/21/98	JS		5488	0.2
Chloride		1,200	mg/Kg	E 300.0		9/21/98	JS		5488	25.0
Sulfate		350	mg/Kg	E 300.0		9/21/98	JS		5488	5.0
TDS		2,700	mg/Kg	E 160.1		9/21/98	RS		5449	---
pH		8.0	s.u.	E 150.1		9/10/98	SA		5271	---
TRPHC		13.5	mg/Kg	S 418.1	9/15/98	9/15/98	SR	4988	5324	10.0
Total Phenols		1.8	mg/Kg	SM 5530 A,D		9/20/98	RC		5450	0.25
Total Radium		7.48	pCi/gm	E 901.1M		9/15/98	DS	---	---	---



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ARS Tracking Number: ARS-98-0914

P.O. Number:

Client I.D.: 107002

ARS Sample I.D.: ARS-98-3345

Date Sampled: 9/4/98

Date Received: 9/11/98

Time Sampled: N/A

Time Received: 1000

Type of Sample: Solid

Date of Report: 9/15/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	1.70	1.25	pCi/gm	0.063	0.046	Bq/gm	EPA 901.1M	9/15/98 1015	kh
Ra-228	0.40	0.23	pCi/gm	0.015	0.009	Bq/gm	EPA 901.1M	9/15/98 1015	kh
Pb-210	1.89	1.61	pCi/gm	0.070	0.060	Bq/gm	EPA 901.1M	9/15/98 1015	kh
Total Activity	7.48	N/A	pCi/gm	0.277	N/A	Bq/gm	EPA 901.1M	9/15/98 1015	kh

Notes:

Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-1-98
Page # 7

Project Number: 19349
Project Name: Shell Grimes
Project Location: Hobbs, NM

Order ID Number: 9808000167
Sample Number: 107003

Sample Description: GSB-4 48-50'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
MTBE		<0.100	mg/Kg	S 8021B		9/14/98	CS		5321	0.100
Benzene		<0.100	mg/Kg	S 8021B		9/14/98	CS		5321	0.100
Toluene		0.400	mg/Kg	S 8021B		9/14/98	CS		5321	0.100
Ethylbenzene		3.21	mg/Kg	S 8021B		9/14/98	CS		5321	0.100
m,p,o-xylene		21.3	mg/Kg	S 8021B		9/14/98	CS		5321	0.100
TRPHC		2,900	mg/Kg	S 418.1	9/15/98	9/15/98	SR	4988	5324	10.0
Chloride		40	mg/Kg	SM 4500 CIB		9/20/98	JS		5421	2.0

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-1-98
Page # 8

Project Number: 19349
Project Name: Shell Grimes
Project Location: Hobbs, NM

Order ID Number: 9808000167
Sample Number: 107004

Sample Description: GSB-4 57-59'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
MTBE		<0.100	mg/Kg	S 8021B		9/14/98	CS		5321	0.100
Benzene		<0.100	mg/Kg	S 8021B		9/14/98	CS		5321	0.100
Toluene		5.54	mg/Kg	S 8021B		9/14/98	CS		5321	0.100
Ethylbenzene		1.79	mg/Kg	S 8021B		9/14/98	CS		5321	0.100
m,p,o-xylene		6.13	mg/Kg	S 8021B		9/14/98	CS		5321	0.100
TRPHC		5,340	mg/Kg	S 418.1	9/15/98	9/15/98	SR	4988	5324	10.0
Chloride		66	mg/Kg	SM 4500 CIB		9/20/98	JS		5421	2.0

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-1-98
Page # 9

Project Number: 19349
Project Name: Shell Grimes
Project Location: Hobbs, NM

Order ID Number: 9808000167
Sample Number: 107005

Sample Description: GSB-4D 57-59'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
MTBE		<0.100	mg/Kg	S 8021B		9/14/98	CS		5321	0.100
Benzene		<0.100	mg/Kg	S 8021B		9/14/98	CS		5321	0.100
Toluene		10.3	mg/Kg	S 8021B		9/14/98	CS		5321	0.100
Ethylbenzene		2.17	mg/Kg	S 8021B		9/14/98	CS		5321	0.100
m,p,o-xylene		9.56	mg/Kg	S 8021B		9/14/98	CS		5321	0.100
TRPHC		5,720	mg/Kg	S 418.1	9/15/98	9/15/98	SR	4988	5324	10.0
Chloride		77	mg/Kg	SM 4500 ClB		9/20/98	JS		5421	2.0

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
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Midland, TX 79706

Date: 9-30-98
Page # 9

Project Number: 19350
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000488
Sample Number: 106262

Field Code: GSB-5 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<125	ug/Kg	S-8260B		9/8/98			5230	125
Acrylonitrile		<125	ug/Kg	S-8260B		9/8/98			5230	125
Benzene		<25	ug/Kg	S-8260B		9/8/98			5230	25
Carbon tetrachloride		<25	ug/Kg	S-8260B		9/8/98			5230	25
Chlorobenzene		<25	ug/Kg	S-8260B		9/8/98			5230	25
1,2-dichloroethane		<25	ug/Kg	S-8260B		9/8/98			5230	25
1,1,2,2-tetrachloroethane		<25	ug/Kg	S-8260B		9/8/98			5230	25
1,1,1-trichloroethane		<25	ug/Kg	S-8260B		9/8/98			5230	25
1,1,2-trichloroethane		<25	ug/Kg	S-8260B		9/8/98			5230	25
1,1,2-trichloroethylene		<25	ug/Kg	S-8260B		9/8/98			5230	25
Chloroform		<25	ug/Kg	S-8260B		9/8/98			5230	25
Dichlorobenzene		<50	ug/Kg	S-8260B		9/8/98			5230	50
1,1-dichloroethylene		<25	ug/Kg	S-8260B		9/8/98			5230	25
Dichloropropenes		<25	ug/Kg	S-8260B		9/8/98			5230	25
Ethylbenzene		<25	ug/Kg	S-8260B		9/8/98			5230	25
Bromodichloromethane		<25	ug/Kg	S-8260B		9/8/98			5230	25
Bromomethane		<125	ug/Kg	S-8260B		9/8/98			5230	125
Chloromethane		<25	ug/Kg	S-8260B		9/8/98			5230	25
Dichlorodifluoromethane		<25	ug/Kg	S-8260B		9/8/98			5230	25
Dichloromethane		<25	ug/Kg	S-8260B		9/8/98			5230	25
Trichlorofluoromethane		<25	ug/Kg	S-8260B		9/8/98			5230	25
Tetrachloroethylene		<25	ug/Kg	S-8260B		9/8/98			5230	25
Toluene		<25	ug/Kg	S-8260B		9/8/98			5230	25
Trichloroethylene		<25	ug/Kg	S-8260B		9/8/98			5230	25
Vinyl chloride		<25	ug/Kg	S-8260B		9/8/98			5230	25
m,p-xylene		<25	ug/Kg	S-8260B		9/8/98			5230	25
o-xylene		<25	ug/Kg	S-8260B		9/8/98			5230	25
1,1-dichloroethane		<25	ug/Kg	S-8260B		9/8/98			5230	25
Ethylene dibromide		<25	ug/Kg	S-8260B		9/8/98			5230	25
cis-1,2-dichloroethylene		<25	ug/Kg	S-8260B		9/8/98			5230	25
trans-1,2-dichloroethylene		<25	ug/Kg	S-8260B		9/8/98			5230	25
Methylene chloride		<125	ug/Kg	S-8260B		9/8/98			5230	125
Surr. Dibromofluoromethane		80	%	S-8260B		9/8/98			5230	72-130
Surr. Toluene-d8		82	%	S-8260B		9/8/98			5230	77-127
Surr. 4-Bromofluorobenzene		83	%	S-8260B		9/8/98			5230	72-131
Benzidine		<25	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	25
Hexachlorobenzene		<2.5	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	2.5
Pentachlorobenzene		<2.5	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	2.5
1,2,4,5-tetrachlorobenzene		<2.5	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	2.5

Date: 9-30-98
Page # 10
Order ID Number: 9808000488
Sample Number: 106262

Project Number: 19350
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Field Code: GSB-5 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<2.5	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	2.5
2,4-dichlorophenol		<12.5	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	12.5
2,4,5-trichlorophenol		<12.5	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	12.5
2,4,6-trichlorophenol		<12.5	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	12.5
bis (2-chloroethyl) ether		<12.5	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	12.5
bis (2-chloroisopropyl) ether		<12.5	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	12.5
bis (chloromethyl) ether		<12.5	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	12.5
3,3-dichlorobenzidine		<12.5	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	12.5
2,4-dinitrotoluene		<2.5	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	2.5
Diphenylhydrazine		<12.5	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	12.5
Hexachlorobutadiene		<2.5	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	2.5
Hexachlorocyclopentadiene		<2.5	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	2.5
Isophorone		<12.5	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	12.5
Nitrobenzene		<2.5	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	2.5
2,4-dinitro-o-cresol		<12.5	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	12.5
2,4-dinitrophenols		<12.5	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	12.5
n-nitrosodiethylamine		<2.5	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	2.5
N-nitrosodimethylamine		<2.5	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	2.5
N-nitrosodibutylamine		<12.5	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	12.5
N-nitrosodiphenylamine		<2.5	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	2.5
N-nitrosopyrrolidine		<2.5	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	2.5
Pentachlorophenol		<12.5	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	12.5
Dibutyl phthalate		<2.5	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	2.5
di-2-ethylhexyl phthalate		<2.5	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	2.5
Diethyl phthalate		<2.5	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	2.5
Dimethyl phthalate		<2.5	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	2.5
Anthracene		<2.5	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	2.5
3,4-benzofluoranthene		<2.5	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	2.5
Benzo(k)fluoranthene		<2.5	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	2.5
Fluoranthene		<2.5	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	2.5
Fluorene		<2.5	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	2.5
Phenanthrene		<2.5	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	2.5
Pyrene		<2.5	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	2.5
Naphthalene		<2.5	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	2.5
1-methylnaphthalene		<2.5	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	2.5
2-methylnaphthalene		<2.5	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	2.5
Benzo-a-pyrene		<2.5	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	2.5
Surr. 2-Fluorophenol		63	%	S-8270C	9/2/98	9/15/98	DG	4849	5339	25-121
Surr. Phenol-d6		71	%	S-8270C	9/2/98	9/15/98	DG	4849	5339	24-113
Surr. Nitroobenzene-d5		76	%	S-8270C	9/2/98	9/15/98	DG	4849	5339	23-120
Surr. 2-Fluorobiphenyl		111	%	S-8270C	9/2/98	9/15/98	DG	4849	5339	30-115
Surr. 2,4,6-Tribromophenol		42	%	S-8270C	9/2/98	9/15/98	DG	4849	5339	19-122
Surr. Terphenyl-d14		105	%	S-8270C	9/2/98	9/15/98	DG	4849	5339	28-137

Project Number: 19350
 Project Name: Shell Grimes
 Project Location: Grimes Battery, Hobbs, NM

Date: 9-30-98
 Page # 11
 Order ID Number: 9808000488
 Sample Number: 106262

Field Code: GSB-5 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
Chlordane		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
DDT		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
Endrin		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	9/15/98	9/18/98	RC	5044	5401	0.1
Arsenic		2.1	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	0.50
Barium		312	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	0.50
Cadmium		0.1	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	0.10
Chromium		2.1	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	0.50
Lead		0.78	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	0.50
Total Mercury		<0.10	mg/Kg	S 7471	8/31/98	9/1/98	MS	4826	5180	<0.10
Selenium		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	0.50
Silver		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	2.0
Copper		2.1	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	1.0
Iron		1,500	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5050	5376	10
Manganese		11	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	1.0
Zinc		4.8	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	2.0
Aluminum		2,800	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5050	5376	10
Boron		10	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	10
Cobalt		4.5	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	0.50
Molybdenum		1.1	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	1.0
Nickel		5.7	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	0.50
Cyanide		<0.01	mg/Kg	SM 4500 CN,CE		9/3/98	sa		5200	0.01
Fluoride		1.8	mg/Kg	E 300.0		9/21/98	JS		5483	0.2
Nitrate		2.2	mg/Kg	E 300.0		9/21/98	JS		5483	0.2
Chloride		8.4	mg/Kg	E 300.0		9/21/98	JS		5483	1.0
Sulfate		60	mg/Kg	E 300.0		9/21/98	JS		5483	1.0
TDS		290	mg/Kg	E 160.1		9/19/98	RS		5418	---
pH		8.5	s.u.	E 150.1		8/28/98	SA		5155	7.0
TRPHC		<10.0	mg/Kg	S 418.1	8/27/98	8/30/98	SR	4810	5168	10.0
Total Phenols		21.2	mg/Kg	SM 5530 A,D		9/16/98	RC		5355	0.25
Total Radium		0.96	pCi/gm	E 901.1M		9/7/98	DS	---	---	---



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ARS Tracking Number: ARS-98-0888 P.O. Number:
 Client I.D.: Sample No. 106262 ARS Sample I.D.: ARS-98-3239
 Date Sampled: 8/26/98 Date Received: 9/4/98
 Time Sampled: N/A Time Received: 0915
 Type of Sample: Soil Date of Report: 9/8/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	<0.83	N/A	pCi/gm	<0.031	N/A	Bq/gm	EPA 901.1M	9/7/98 1117	SW
Ra-228	<0.15	N/A	pCi/gm	<0.006	N/A	Bq/gm	EPA 901.1M	9/7/98 1117	SW
Pb-210	<0.85	N/A	pCi/gm	<0.031	N/A	Bq/gm	EPA 901.1M	9/7/98 1117	SW
Total Activity	0.96	N/A	pCi/gm	0.036	N/A	Bq/gm	EPA 901.1M	9/7/98 1117	SW

Notes:


 Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 9-30-98
Page # 12

Project Number: 19350
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000488
Sample Number: 106263

Field Code: GSB-5 18-20'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
MTBE		<0.050	mg/Kg	E 8021B		9/2/98	CS		5197	0.050
Benzene		<0.050	mg/Kg	E 8021B		9/2/98	CS		5197	0.050
Toluene		<0.050	mg/Kg	E 8021B		9/2/98	CS		5197	0.050
Ethylbenzene		<0.050	mg/Kg	E 8021B		9/2/98	CS		5197	0.050
m,p,o-xylene		<0.050	mg/Kg	E 8021B		9/2/98	CS		5197	0.050
TRPHC		<10.0	mg/Kg	S 418.1	8/27/98	8/30/98	SR	4810	5168	10.0
Chloride		150	mg/Kg	E 8021B		9/16/98	JS		5360	2.000

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 9-30-98
Page # 13

Project Number: 19350
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000488
Sample Number: 106264

Field Code: GSB-5 38-40'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
MTBE		<0.050	mg/Kg	E 8021B		9/2/98	CS		5197	0.050
Benzene		<0.050	mg/Kg	E 8021B		9/2/98	CS		5197	0.050
Toluene		<0.050	mg/Kg	E 8021B		9/2/98	CS		5197	0.050
Ethylbenzene		<0.050	mg/Kg	E 8021B		9/2/98	CS		5197	0.050
m,p,o-xylene		<0.050	mg/Kg	E 8021B		9/2/98	CS		5197	0.050
TRPHC		<10.0	mg/Kg	S 418.1	8/27/98	8/30/98	SR	4810	5168	10.0
Chloride		120	mg/Kg	E 300.0		9/16/98	JS		5360	2

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-1-98
Page # 17

Project Number: 19350
Project Name: Shell Tasker Road
Project Location: Hobbs, NM

Order ID Number: 9809000114
Sample Number: 106828

Sample Description: GSB-6 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<415	ug/Kg	S-8260B		9/9/98	AG		5264	415
Acrylonitrile		<415	ug/Kg	S-8260B		9/9/98	AG		5264	415
Benzene		<83	ug/Kg	S-8260B		9/9/98	AG		5264	83
Carbon tetrachloride		<83	ug/Kg	S-8260B		9/9/98	AG		5264	83
Chlorobenzene		<83	ug/Kg	S-8260B		9/9/98	AG		5264	83
1,2-dichloroethane		<83	ug/Kg	S-8260B		9/9/98	AG		5264	83
1,1,2,2-tetrachloroethane		<83	ug/Kg	S-8260B		9/9/98	AG		5264	83
1,1,1-trichloroethane		<83	ug/Kg	S-8260B		9/9/98	AG		5264	83
1,1,2-trichloroethane		<83	ug/Kg	S-8260B		9/9/98	AG		5264	83
1,1,2-trichloroethylene		<83	ug/Kg	S-8260B		9/9/98	AG		5264	83
Chloroform		<83	ug/Kg	S-8260B		9/9/98	AG		5264	83
Dichlorobenzene		<166	ug/Kg	S-8260B		9/9/98	AG		5264	166
1,1-dichloroethylene		<83	ug/Kg	S-8260B		9/9/98	AG		5264	83
Dichloropropenes		<83	ug/Kg	S-8260B		9/9/98	AG		5264	83
Ethylbenzene		<83	ug/Kg	S-8260B		9/9/98	AG		5264	83
Bromodichloromethane		<83	ug/Kg	S-8260B		9/9/98	AG		5264	83
Bromomethane		<415	ug/Kg	S-8260B		9/9/98	AG		5264	415
Chloromethane		<83	ug/Kg	S-8260B		9/9/98	AG		5264	83
Dichlorodifluoromethane		<83	ug/Kg	S-8260B		9/9/98	AG		5264	83
Dichloromethane		<83	ug/Kg	S-8260B		9/9/98	AG		5264	83
Trichlorofluoromethane		<83	ug/Kg	S-8260B		9/9/98	AG		5264	83
Tetrachloroethylene		<83	ug/Kg	S-8260B		9/9/98	AG		5264	83
Toluene		<83	ug/Kg	S-8260B		9/9/98	AG		5264	83
Trichloroethylene		<83	ug/Kg	S-8260B		9/9/98	AG		5264	83
Vinyl chloride		<83	ug/Kg	S-8260B		9/9/98	AG		5264	83
m,p-xylene		<83	ug/Kg	S-8260B		9/9/98	AG		5264	83
o-xylene		<83	ug/Kg	S-8260B		9/9/98	AG		5264	83
1,1-dichloroethane		<83	ug/Kg	S-8260B		9/9/98	AG		5264	83
Ethylene dibromide		<83	ug/Kg	S-8260B		9/9/98	AG		5264	83
cis-1,2-dichloroethylene		<83	ug/Kg	S-8260B		9/9/98	AG		5264	83
trans-1,2-dichloroethylene		<83	ug/Kg	S-8260B		9/9/98	AG		5264	83
Methylene chloride		<415	ug/Kg	S-8260B		9/9/98	AG		5264	415
Dibromofluoromethane		84	%	S-8260B		9/9/98	AG		5264	72-130
Toluene-d8		83	%	S-8260B		9/9/98	AG		5264	77-127
4-Bromofluorobenzene		84	%	S-8260B		9/9/98	AG		5264	72-131
Benzidine		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25

Project Number: 19350
Project Name: Shell Tasker Road
Project Location: Hobbs, NM

Date: 10-1-98
Page # 18
Order ID Number: 9809000114
Sample Number: 106828

Sample Description: GSB-6 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
Isophorone		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
2,4-dinitro-o-cresol		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	1.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	1.25
n-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	1.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
Anthracene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
Fluorene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
Pyrene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
1-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
2-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
Surr. 2-Fluorophenol		65	%	S-8270C	9/18/98	9/19/98	DG	5100	5430	25-121
Surr. Phenol-d6		72	%	S-8270C	9/18/98	9/19/98	DG	5100	5430	24-113
Surr. Nitroobenzene-d5		64	%	S-8270C	9/18/98	9/19/98	DG	5100	5430	23-120
Surr. 2-Fluorobiphenyl		83	%	S-8270C	9/18/98	9/19/98	DG	5100	5430	30-115
Surr. 2,4,6-Tribromophenol		68	%	S-8270C	9/18/98	9/19/98	DG	5100	5430	19-122
Surr. Terphenyl-d14		76	%	S-8270C	9/18/98	9/19/98	DG	5100	5430	28-137

Project Number: 19350
 Project Name: Shell Tasker Road
 Project Location: Hobbs, NM

Date: 10-1-98
 Page # 19
 Order ID Number: 9809000114
 Sample Number: 106828

Sample Description: GSB-6 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Chlordane		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
DDT		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Endrin		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	9/15/98	9/18/98	RC	5044	5401	0.1
Arsenic		1.6	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Barium		730	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Cadmium		0.22	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.10
Chromium		6.3	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Lead		3.2	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Total Mercury		<0.10	mg/Kg	E 7471A	9/9/98	9/10/98	MS	4916	5274	0.10
Selenium		1.6	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Silver		0.94	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Uranium		<1.0	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	1.0
Copper		2.6	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	1.0
Iron		3210	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	10
Manganese		44	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	1.0
Zinc		12	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	2.0
Aluminum		4940	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	10
Boron		16	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	10
Cobalt		8.7	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Molybdenum		2.6	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	1.0
Nickel		11	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Cyanide		<0.010	mg/Kg	SM 4500 CN,CE		9/15/98	SA		5330	0.01
Fluoride		6.5	mg/Kg	E 300.0		9/21/98	JS		5488	0.2
Nitrate		1.7	mg/Kg	E 300.0		9/21/98	JS		5488	0.2
Chloride		8.9	mg/Kg	E 300.0		9/21/98	JS		5488	1.0
Sulfate		18	mg/Kg	E 300.0		9/21/98	JS		5488	1.0
TDS		510	mg/Kg	E 160.1		9/21/98	JS		5449	---
pH		8.7	s.u.	E 150.1		9/8/98	SA		5241	---
TRPHC		18.7	mg/Kg	S 418.1	9/9/98	9/10/98	SR	4915	5270	10.0
Total Phenols		0.64	mg/Kg	SM 5530 A,D		9/20/98	RC		5450	0.25
Total Radium		19.43	pCi/gm	E 901.1M		9/15/98	DS	---	---	---



1726 Wooddale Court • Baton Rouge, Louisiana 70806

1 (800) 401-4277 • Fax (504) 927-6822

ARS Tracking Number: ARS-98-0914

P.O. Number:

Client I.D.: 106828

ARS Sample I.D.: ARS-98-3344

Date Sampled: 9/1/98

Date Received: 9/11/98

Time Sampled: N/A

Time Received: 1000

Type of Sample: Solid

Date of Report: 9/15/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	<1.09	N/A	pCi/gm	<0.040	N/A	Bq/gm	EPA 901.1M	9/15/98 0940	kh
Ra-228	<0.11	N/A	pCi/gm	<0.004	N/A	Bq/gm	EPA 901.1M	9/15/98 0940	kh
Pb-210	<1.06	N/A	pCi/gm	<0.039	N/A	Bq/gm	EPA 901.1M	9/15/98 0940	kh
Total Activity	19.43	N/A	pCi/gm	0.719	N/A	Bq/gm	EPA 901.1M	9/15/98 0940	kh

Notes:

Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-1-98
Page # 20

Project Number: 19350
Project Name: Shell Tasker Road
Project Location: Hobbs, NM

Order ID Number: 9809000114
Sample Number: 106829

Sample Description: GSB-6 18-20'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
MTBE		<0.050	mg/Kg	S 8021B		9/9/98	JG		5263	0.050
Benzene		<0.050	mg/Kg	S 8021B		9/9/98	JG		5263	0.050
Toluene		<0.050	mg/Kg	S 8021B		9/9/98	JG		5263	0.050
Ethylbenzene		<0.050	mg/Kg	S 8021B		9/9/98	JG		5263	0.050
m,p,o-xylene		0.162	mg/Kg	S 8021B		9/9/98	JG		5263	0.050
TRPHC		<10.0	mg/Kg	S 418.1	9/9/98	9/10/98	SR	4915	5270	10.0
Chloride		75	mg/Kg	E 300.0		9/20/98	JS		5421	2.0

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-1-98
Page # 21

Project Number: 19350
Project Name: Shell Tasker Road
Project Location: Hobbs, NM

Order ID Number: 9809000114
Sample Number: 106830

Sample Description: GSB-6 38-40'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
MTBE		<0.050	mg/Kg	S 8021B		9/9/98	JG		5263	0.050
Benzene		<0.050	mg/Kg	S 8021B		9/9/98	JG		5263	0.050
Toluene		<0.050	mg/Kg	S 8021B		9/9/98	JG		5263	0.050
Ethylbenzene		<0.050	mg/Kg	S 8021B		9/9/98	JG		5263	0.050
m,p,o-xylene		<0.050	mg/Kg	S 8021B		9/9/98	JG		5263	0.050
TRPHC		<10.0	mg/Kg	S 418.1	9/9/98	9/10/98	SR	4915	5270	10.0
Chloride		11	mg/Kg	E 300.0		9/20/98	JS		5421	2.0

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 9-30-98
Page # 4

Project Number: 19350
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000488
Sample Number: 106259

Field Code: GSB-7 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<125	ug/Kg	S-8260B		9/8/98	AG		5230	125
Acrylonitrile		<125	ug/Kg	S-8260B		9/8/98	AG		5230	125
Benzene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Carbon tetrachloride		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Chlorobenzene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,2-dichloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1,2,2-tetrachloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1,1-trichloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1,2-trichloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1,2-trichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Chloroform		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Dichlorobenzene		<50	ug/Kg	S-8260B		9/8/98	AG		5230	2
1,1-dichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	50
Dichloropropenes		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Ethylbenzene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Bromodichloromethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Bromomethane		<125	ug/Kg	S-8260B		9/8/98	AG		5230	125
Chloromethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Dichlorodifluoromethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Dichloromethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Trichlorofluoromethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Tetrachloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Toluene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Trichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Vinyl chloride		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
m,p-xylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
o-xylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1-dichloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Ethylene dibromide		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
cis-1,2-dichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
trans-1,2-dichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Methylene chloride		<125	ug/Kg	S-8260B		9/8/98	AG		5230	125
Surr. Dibromofluoromethane		80	%	S-8260B		9/8/98	AG		5230	72-130
Surr. Toluene-d8		81	%	S-8260B		9/8/98	AG		5230	77-127
Surr. 4-Bromofluorobenzene		82	%	S-8260B		9/8/98	AG		5230	72-131
Benzidine		<2.5	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	0.25

Project Number: 19350
 Project Name: Shell Grimes
 Project Location: Grimes Battery, Hobbs, NM

Date: 9-30-98
 Page # 5
 Order ID Number: 9808000488
 Sample Number: 106259

Field Code: GSB-7 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<0.25	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	0.25
Isophorone		<1.25	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	0.25
2,4-dinitro-o-cresol		<1.25	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	1.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	1.25
n-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	1.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	0.25
Anthracene		<0.25	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	0.25
Fluorene		<0.25	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	0.25
Pyrene		<0.25	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	0.25
1-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	0.25
2-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	0.25
monomethylnaphthalenes		<0.25	mg/Kg	S-8270C	9/2/98	9/15/98	DG	4849	5339	0.25
Surr. 2-Fluorophenol		50	%	S-8270C	9/2/98	9/15/98	DG	4849	5339	25-121
Surr. Phenol-d6		61	%	S-8270C	9/2/98	9/15/98	DG	4849	5339	24-113
Surr. Nitrobenzene-d5		48	%	S-8270C	9/2/98	9/15/98	DG	4849	5339	23-120
Surr. 2-Fluorobiphenyl		55	%	S-8270C	9/2/98	9/15/98	DG	4849	5339	30-115
Surr. 2,4,6-Tribromophenol		39	%	S-8270C	9/2/98	9/15/98	DG	4849	5339	19-122
Surr. Terphenyl-d14		46	%	S-8270C	9/2/98	9/15/98	DG	4849	5339	28-137

Project Number: 19350
 Project Name: Shell Grimes
 Project Location: Grimes Battery, Hobbs, NM

Date: 9-30-98
 Page # 6
 Order ID Number: 9808000488
 Sample Number: 106259

Field Code: GSB-7 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
Chlordane		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
DDT		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
Endrin		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	9/15/98	9/18/98	RC	5044	5401	0.1
Arsenic		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	0.50
Barium		187	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	0.50
Cadmium		0.31	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	0.10
Chromium		3.1	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	0.50
Lead		1.5	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	0.50
Total Mercury		<0.10	mg/Kg	S 7471	8/31/98	9/1/98	MS	4826	5180	0.10
Selenium		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	0.50
Silver		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	2.0
Copper		2.1	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	1.0
Iron		2,200	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5050	5376	10
Manganese		28	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	1.0
Zinc		44	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	2.0
Aluminum		3,800	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5050	5376	10
Boron		<10	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	10
Cobalt		6.3	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	0.50
Molybdenum		1.3	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	1.0
Nickel		5.3	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	0.50
Cyanide		<0.01	mg/Kg	SM 4500 CN,CE		9/3/98	SA		5200	0.01
Fluoride		1.2	mg/Kg	E 300.0		9/21/98	JS		5483	0.2
Nitrate		2.8	mg/Kg	E 300.0		9/21/98	JS		5483	0.2
Chloride		16	mg/Kg	E 300.0		9/21/98	JS		5483	0.4
Sulfate		450	mg/Kg	E 300.0		9/21/98	JS		5483	5.0
TDS		1,200	mg/Kg	E 160.1		9/19/98	RS		5418	---
pH		8.0	s.u.	E 150.1		8/28/98	SA		5155	---
TRPHC		217	mg/Kg	S 418.1	8/27/98	8/30/98	SR	4810	5168	10.0
Total Phenols		2.9	mg/Kg	SM 5530 A,D		9/16/98	RC		5355	0.25
Total Radium		5.30	pCi/gm	E 901.1M		9/7/98	DS	---	---	---



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ARS Tracking Number: ARS-98-0888 P.O. Number:
Client I.D.: Sample No. 106259 ARS Sample I.D.: ARS-98-3238
Date Sampled: 8/26/98 Date Received: 9/4/98
Time Sampled: N/A Time Received: 0915
Type of Sample: Soil Date of Report: 9/8/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	1.35	1.29	pCi/gm	0.050	0.048	Bq/gm	EPA 901.1M	9/7/98 1045	SW
Ra-228	<0.14	N/A	pCi/gm	<0.005	N/A	Bq/gm	EPA 901.1M	9/7/98 1045	SW
Pb-210	<0.98	N/A	pCi/gm	<0.036	N/A	Bq/gm	EPA 901.1M	9/7/98 1045	SW
Total Activity	5.30	N/A	pCi/gm	0.196	N/A	Bq/gm	EPA 901.1M	9/7/98 1045	SW

Notes:


Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Project Number: 19349
 Project Name: Shell Grimes
 Project Location: Grimes Battery, Hobbs, NM

Date: 10-1-98
 Page # 11
 Order ID Number: 9808000598
 Sample Number: 106344

Field Code: GSB-7 33-35'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Isophorone		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
2,4-dinitro-o-cresol		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
n-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Anthracene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Fluorene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Pyrene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
1-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
2-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
monomethylnaphthalenes		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Surr. 2-Fluorophenol		62	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	25-121
Surr. Phenol-d6		67	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	24-113
Surr. Nitroobenzene-d5		59	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	23-120
Surr. 2-Fluorobiphenyl		75	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	30-115
Surr. 2,4,6-Tribromophenol		42	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	19-122
Surr. Terphenyl-d14		62	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	28-137
Aldrin		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50

Date: 10-1-98

Page # 12

Order ID Number: 9808000598

Sample Number: 106344

Project Number: 19349

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Field Code: GSB-7 33-35'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Chlordane		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
DDT		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
Endrin		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	9/15/98	9/18/98	RC	5044	5401	0.1
Arsenic		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	0.50
Barium		11	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	0.50
Cadmium		0.63	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	0.10
Chromium		4.9	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	0.50
Lead		1.6	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	0.50
Total Mercury		<0.10	mg/Kg	S 7471	8/31/98	9/1/98	MS	4826	5180	0.10
Selenium		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	0.50
Silver		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	2.0
Copper		2.1	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	1.0
Iron		3,500	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5050	5376	10
Manganese		25	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	1.0
Zinc		8.5	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	2.0
Aluminum		2,900	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5050	5376	10
Boron		<10	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	10
Cobalt		2.9	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	0.50
Molybdenum		1.3	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	1.0
Nickel		2.6	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	0.50
Cyanide		<0.01	mg/Kg	Sm 4500 CN,CE		9/3/98	SA		5200	0.01
Fluoride		1.3	mg/Kg	E 300.0		9/21/98	JS		5484	0.2
Nitrate		1.6	mg/Kg	E 300.0		9/21/98	JS		5484	0.2
Chloride		11	mg/Kg	E 300.0		9/21/98	JS		5484	1.0
Sulfate		120	mg/Kg	E 300.0		9/21/98	JS		5484	2.0
TDS		480	mg/Kg	E 160.1		9/19/98	RS		5418	---
pH		9.0	s.u.	E 150.1		8/31/98	SA		5170	---
TRPHC		<10.0	mg/Kg	S 418.1	8/27/98	8/30/98	SR	4810	5168	10.0
Total Phenols		6.9	mg/Kg	SM 5530 A,D		9/16/98	RC		5355	0.25
Total Radium		11.55	pCi/gm	E 901.1M		9/7/98	DS	---	---	---



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ARS Tracking Number: ARS-98-0888 P.O. Number:
Client I.D.: Sample No. 106344 ARS Sample I.D.: ARS-98-3237
Date Sampled: 8/27/98 Date Received: 9/4/98
Time Sampled: N/A Time Received: 0915
Type of Sample: Soil Date of Report: 9/8/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	1.31	1.24	pCi/gm	0.048	0.046	Bq/gm	EPA 901.1M	9/7/98 1014	SW
Ra-228	0.40	0.21	pCi/gm	0.015	0.008	Bq/gm	EPA 901.1M	9/7/98 1014	SW
Pb-210	<0.97	N/A	pCi/gm	<0.036	N/A	Bq/gm	EPA 901.1M	9/7/98 1014	SW
Total Activity	11.55	N/A	pCi/gm	0.427	N/A	Bq/gm	EPA 901.1M	9/7/98 1014	SW

Notes:


Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 9-30-98
Page # 7

Project Number: 19350
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000488
Sample Number: 106260

Field Code: GSB-7 33-35'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
MTBE		<0.050	mg/Kg	E 8021B		9/2/98	CS		5197	0.050
Benzene		<0.050	mg/Kg	E 8021B		9/2/98	CS		5197	0.050
Toluene		<0.050	mg/Kg	E 8021B		9/2/98	CS		5197	0.050
Ethylbenzene		0.433	mg/Kg	E 8021B		9/2/98	CS		5197	0.050
m,p,o-xylene		2.42	mg/Kg	E 8021B		9/2/98	CS		5197	0.050
TRPHC		692	mg/Kg	S 418.1	8/27/98	8/30/98	SR	4810	5168	10.0
Chloride		37	mg/Kg	E 300.0		9/16/98	JS		5360	2

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 9-30-98
Page # 8

Project Number: 19350
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000488
Sample Number: 106261

Field Code: GSB-7 58-60'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
MTBE		<0.050		E 8021B		9/2/98	CS		5197	0.050
Benzene		<0.050		E 8021B		9/2/98	CS		5197	0.050
Toluene		<0.050		E 8021B		9/2/98	CS		5197	0.050
Ethylbenzene		<0.050		E 8021B		9/2/98	CS		5197	0.050
m,p,o-xylene		<0.050		E 8021B		9/2/98	CS		5197	0.050
TRPHC		<10.0		S 418.1	8/27/98	8/30/98	SR	4810	5168	10.0
Chloride		11		E 300.0		9/16/98	JS		5360	2

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-1-98
Page # 10

Project Number: 19349
Project Name: Shell Grimes Tank Battery
Project Location: Hobbs, NM

Order ID Number: 9808000168
Sample Number: 107016

Sample Description: GSB-8 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<435	ug/Kg	S-8260B		9/20/98	AG		5461	435
Acrylonitrile		<435	ug/Kg	S-8260B		9/20/98	AG		5461	435
Benzene		<87	ug/Kg	S-8260B		9/20/98	AG		5461	87
Carbon tetrachloride		<87	ug/Kg	S-8260B		9/20/98	AG		5461	87
Chlorobenzene		<87	ug/Kg	S-8260B		9/20/98	AG		5461	87
1,2-dichloroethane		<87	ug/Kg	S-8260B		9/20/98	AG		5461	87
1,1,2,2-tetrachloroethane		<87	ug/Kg	S-8260B		9/20/98	AG		5461	87
1,1,1-trichloroethane		<87	ug/Kg	S-8260B		9/20/98	AG		5461	87
1,1,2-trichloroethane		<87	ug/Kg	S-8260B		9/20/98	AG		5461	87
1,1,2-trichloroethylene		<87	ug/Kg	S-8260B		9/20/98	AG		5461	87
Chloroform		<87	ug/Kg	S-8260B		9/20/98	AG		5461	87
Dichlorobenzene		<174	ug/Kg	S-8260B		9/20/98	AG		5461	174
1,1-dichloroethylene		<87	ug/Kg	S-8260B		9/20/98	AG		5461	87
Dichloropropenes		<87	ug/Kg	S-8260B		9/20/98	AG		5461	87
Ethylbenzene		<87	ug/Kg	S-8260B		9/20/98	AG		5461	87
Bromodichloromethane		<87	ug/Kg	S-8260B		9/20/98	AG		5461	87
Bromomethane		<435	ug/Kg	S-8260B		9/20/98	AG		5461	435
Chloromethane		<87	ug/Kg	S-8260B		9/20/98	AG		5461	87
Dichlorodifluoromethane		<87	ug/Kg	S-8260B		9/20/98	AG		5461	87
Dichloromethane		<87	ug/Kg	S-8260B		9/20/98	AG		5461	87
Trichlorofluorometane		<87	ug/Kg	S-8260B		9/20/98	AG		5461	87
Tetrachloroethylene		<87	ug/Kg	S-8260B		9/20/98	AG		5461	87
Toluene		<87	ug/Kg	S-8260B		9/20/98	AG		5461	87
Trichloroethylene		<87	ug/Kg	S-8260B		9/20/98	AG		5461	87
Vinyl chloride		<87	ug/Kg	S-8260B		9/20/98	AG		5461	87
m,p-xylene		<87	ug/Kg	S-8260B		9/20/98	AG		5461	87
o-xylene		<87	ug/Kg	S-8260B		9/20/98	AG		5461	87
1,1-dichloroethane		<87	ug/Kg	S-8260B		9/20/98	AG		5461	87
Ethylene dibromide		<87	ug/Kg	S-8260B		9/20/98	AG		5461	87
cis-1,2-dichloroethylene		<87	ug/Kg	S-8260B		9/20/98	AG		5461	87
trans-1,2-dichloroethylene		<87	ug/Kg	S-8260B		9/20/98	AG		5461	87
Methylene chloride		<435	ug/Kg	S-8260B		9/20/98	AG		5461	435
Dibromofluoromethane		100	%	S-8260B		9/20/98	AG		5461	71-132
Toluene-d8		99	%	S-8260B		9/20/98	AG		5461	82-124
4-Bromofluorobenzene		104	%	S-8260B		9/20/98	AG		5461	76-126

Date: 10-1-98

Page # 11

Project Number: 19349

Project Name: Shell Grimes Tank Battery

Project Location: Hobbs, NM

Order ID Number: 9808000168

Sample Number: 107016

Sample Description: GSB-8 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Benzidine		<2.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Hexachloroethane		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Isophorone		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
2,4-dinitro-o-cresol		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
i-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
Phenol		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Anthracene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Fluorene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Pyrene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
1-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
2-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25

Date: 10-1-98

Page # 12

Order ID Number: 9808000168

Sample Number: 107016

Project Number: 19349

Project Name: Shell Grimes Tank Battery

Project Location: Hobbs, NM

Sample Description: GSB-8 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Surr. 2-Fluorophenol		43	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	25-121
Surr. Phenol-d6		52	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	24-113
Surr. Nitroobenzene-d5		47	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	23-120
Surr. 2-Fluorobiphenyl		60	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	30-115
Surr. 2,4,6-Tribromophenol		57	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	19-122
Surr. Terphenyl-d14		67	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	28-137
Aldrin		<50	ug/Kg	S 8081A	9/16/98	9/21/98	KC	---	---	50
Chlordane		<75	ug/Kg	S 8081A	9/16/98	9/21/98	KC	---	---	50
DDT		<50	ug/Kg	S 8081A	9/16/98	9/21/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S 8081A	9/16/98	9/21/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S 8081A	9/16/98	9/21/98	KC	---	---	50
Endrin		<50	ug/Kg	S 8081A	9/16/98	9/21/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S 8081A	9/16/98	9/21/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8081A	9/15/98	9/18/98	RC	5044	5401	0.1
Arsenic		5.3	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Barium		276	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Cadmium		<0.10	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.10
Chromium		2.6	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Lead		1.2	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Total Mercury		<0.10	mg/Kg	E 7471A	9/9/98	9/10/98	MS	4917	5275	0.10
Selenium		<0.50	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Silver		<0.50	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Uranium		<2.0	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	2.0
Copper		2.6	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	1.0
Iron		1,800	mg/Kg	E 6010B	9/17/98	9/20/98	RR	5090	5461	10
Manganese		30	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	1.0
Zinc		5	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	2.0
Aluminum		3,000	mg/Kg	E 6010B	9/17/98	9/20/98	RR	5090	5461	10
Boron		10	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	10
Cobalt		5.7	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Molybdenum		2.5	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	1.0
Nickel		7.1	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Cyanide		<0.010	mg/Kg	Sm 4500 Cn,CE		9/15/98	SA		5331	0.01
Fluoride		4.8	mg/Kg	E 300.0		9/21/98	JS		5491	0.2
Nitrate		5.1	mg/Kg	E 300.0		9/21/98	JS		5491	0.2
Chloride		290	mg/Kg	E 300.0		9/21/98	JS		5491	5.0
Sulfate		230	mg/Kg	E 300.0		9/21/98	JS		5491	5.0
TDS		870	mg/Kg	E 160.1		9/21/98	RS		5449	---
pH		8.5	s.u.	E 150.1		9/10/98	SA		5270	<0.10
TRPHC		28	ug/Kg	S 418.1	9/15/98	9/15/98	SR	4988	5324	10.0
Total Phenols		1.9	mg/Kg	SM 5530 A,D		9/20/98	RC		5451	0.25
Total Radium		3.80	pCi/gm	E 901.1M		9/14/98	DS	---	---	---



1726 Wooddale Court • Baton Rouge, Louisiana 70806

1 (800) 401-4277 • Fax (504) 927-6822

ARS Tracking Number: ARS-98-0915

P.O. Number: N/A

Client I.D.: 107016

ARS Sample I.D.: ARS-98-3351

Date Sampled: 9/3/98

Date Received: 9/11/98

Time Sampled: N/A

Time Received: 1037

Type of Sample: Solid

Date of Report: 9/14/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	1.88	1.72	pCi/gm	0.070	0.064	Bq/gm	EPA 901.1M	9/14/98 1045	kh
Ra-228	<0.12	N/A	pCi/gm	<0.004	N/A	Bq/gm	EPA 901.1M	9/14/98 1045	kh
Pb-210	<1.08	N/A	pCi/gm	<0.040	N/A	Bq/gm	EPA 901.1M	9/14/98 1045	kh
Total Activity	3.80	N/A	pCi/gm	0.141	N/A	Bq/gm	EPA 901.1M	9/14/98 1045	kh

Notes:

Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-1-98
Page # 13

Project Number: 19349
Project Name: Shell Grimes Tank Battery
Project Location: Hobbs, NM

Order ID Number: 9808000168
Sample Number: 107017

Sample Description: GSB-8 43-45'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
MTBE		<0.050	mg/Kg	S 8021B		9/14/98	CS		5321	0.050
Benzene		<0.050	mg/Kg	S 8021B		9/14/98	CS		5321	0.050
Toluene		<0.050	mg/Kg	S 8021B		9/14/98	CS		5321	0.050
Ethylbenzene		0.558	mg/Kg	S 8021B		9/14/98	CS		5321	0.050
m,p,o-xylene		4.04	mg/Kg	S 8021B		9/14/98	CS		5321	0.050
TRPHC		1,350	mg/Kg	S 418.1	9/15/98	9/15/98	SR	4988	5324	10.0
Chloride		100	mg/Kg	E 300.0		9/20/98	JS		5422	2.0

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-1-98
Page # 14

Project Number: 19349
Project Name: Shell Grimes Tank Battery
Project Location: Hobbs, NM

Order ID Number: 9808000168
Sample Number: 107018

Sample Description: GSB-8 57-59'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
MTBE		<0.050	mg/Kg	S 8021B		9/14/98	CS		5321	0.050
Benzene		<0.050	mg/Kg	S 8021B		9/14/98	CS		5321	0.050
Toluene		5.69	mg/Kg	S 8021B		9/14/98	CS		5321	0.050
Ethylbenzene		1.78	mg/Kg	S 8021B		9/14/98	CS		5321	0.050
m,p,o-xylene		7.20	mg/Kg	S 8021B		9/14/98	CS		5321	0.050
TRPHC		4,030	mg/Kg	S 418.1	9/15/98	9/15/98	SR	4988	5324	10.0
Chloride		140	mg/Kg	E 300.0		9/20/98	JS		5422	2.0

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-1-98
Page # 15

Project Number: 19349
Project Name: Shell Grimes Tank Battery
Project Location: Hobbs, NM

Order ID Number: 9808000168
Sample Number: 107019

Sample Description: GSB-8D 57-59'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
MTBE		<0.050	mg/Kg	S 8021B		9/14/98	CS		5321	0.050
Benzene		<0.050	mg/Kg	S 8021B		9/14/98	CS		5321	0.050
Toluene		2.81	mg/Kg	S 8021B		9/14/98	CS		5321	0.050
Ethylbenzene		4.27	mg/Kg	S 8021B		9/14/98	CS		5321	0.050
m,p,o-xylene		34.6	mg/Kg	S 8021B		9/14/98	CS		5321	0.050
TRPHC		6,380	mg/Kg	S 418.1	9/15/98	9/15/98	SR	4988	5324	10.0
Chloride		140	mg/Kg	E 300.0		9/20/98	JS		5422	2.0

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-20-98
Page # 2

Project Number: 19349
Project Name: Shell Grimes Tank Battery
Project Location: Hobbs, NM

Order ID Number: 9809000108
Sample Number: 106786

Sample Description: GSB-9 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<180	ug/Kg	S-8260B		9/9/98	AG		5264	125
Acrylonitrile		<180	ug/Kg	S-8260B		9/9/98	AG		5264	125
Benzene		<36	ug/Kg	S-8260B		9/9/98	AG		5264	25
Carbon tetrachloride		<36	ug/Kg	S-8260B		9/9/98	AG		5264	25
Chlorobenzene		<36	ug/Kg	S-8260B		9/9/98	AG		5264	25
1,2-dichloroethane		<36	ug/Kg	S-8260B		9/9/98	AG		5264	25
1,1,2,2-tetrachloroethane		<36	ug/Kg	S-8260B		9/9/98	AG		5264	25
1,1,1-trichloroethane		<36	ug/Kg	S-8260B		9/9/98	AG		5264	25
1,1,2-trichloroethane		<36	ug/Kg	S-8260B		9/9/98	AG		5264	25
1,1,2-trichloroethylene		<36	ug/Kg	S-8260B		9/9/98	AG		5264	25
Chloroform		<36	ug/Kg	S-8260B		9/9/98	AG		5264	25
Dichlorobenzene		<72	ug/Kg	S-8260B		9/9/98	AG		5264	50
1,1-dichloroethylene		<36	ug/Kg	S-8260B		9/9/98	AG		5264	25
Dichloropropenes		<36	ug/Kg	S-8260B		9/9/98	AG		5264	25
Ethylbenzene		<36	ug/Kg	S-8260B		9/9/98	AG		5264	25
Bromodichloromethane		<36	ug/Kg	S-8260B		9/9/98	AG		5264	25
Bromomethane		<180	ug/Kg	S-8260B		9/9/98	AG		5264	125
Chloromethane		<36	ug/Kg	S-8260B		9/9/98	AG		5264	25
Dichlorodifluoromethane		<36	ug/Kg	S-8260B		9/9/98	AG		5264	25
Dichloromethane		<36	ug/Kg	S-8260B		9/9/98	AG		5264	25
Trichlorofluorometane		<36	ug/Kg	S-8260B		9/9/98	AG		5264	25
Tetrachloroethylene		<36	ug/Kg	S-8260B		9/9/98	AG		5264	25
Toluene		<36	ug/Kg	S-8260B		9/9/98	AG		5264	25
Trichloroethylene		<36	ug/Kg	S-8260B		9/9/98	AG		5264	25
Vinyl chloride		<36	ug/Kg	S-8260B		9/9/98	AG		5264	25
m,p-xylene		<36	ug/Kg	S-8260B		9/9/98	AG		5264	25
o-xylene		<36	ug/Kg	S-8260B		9/9/98	AG		5264	25
1,1-dichloroethane		<36	ug/Kg	S-8260B		9/9/98	AG		5264	25
Ethylene dibromide		<36	ug/Kg	S-8260B		9/9/98	AG		5264	25
cis-1,2-dichloroethylene		<36	ug/Kg	S-8260B		9/9/98	AG		5264	25
trans-1,2-dichloroethylene		<36	ug/Kg	S-8260B		9/9/98	AG		5264	25
Methylene chloride		<180	ug/Kg	S-8260B		9/9/98	AG		5264	180
Dibromofluoromethane		86	%	S-8260B		9/9/98	AG		5264	71-132
Toluene-d8		84	%	S-8260B		9/9/98	AG		5264	82-124
4-Bromofluorobenzene		84	%	S-8260B		9/9/98	AG		5264	76-126
Benzidine		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25

Project Number: 19349
Project Name: Shell Grimes Tank Battery
Project Location: Hobbs, NM

Date: 10-20-98
Page # 3
Order ID Number: 9809000108
Sample Number: 106786

Sample Description: GSB-9 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
Isophorone		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
2,4-dinitro-o-cresol		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	1.25
i-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
N-nitrosodibutylamine		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	1.25
Phenol		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
Anthracene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
Fluorene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
Pyrene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
1-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
2-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
Surr. 2-Fluorophenol		43	%	S-8270C	9/18/98	9/19/98	MB	5100	5430	25-121
Surr. Phenol-d6		47	%	S-8270C	9/18/98	9/19/98	MB	5100	5430	24-113
Surr. Nitrobenzene-d5		42	%	S-8270C	9/18/98	9/19/98	MB	5100	5430	23-120
Surr. 2-Fluorobiphenyl		53	%	S-8270C	9/18/98	9/19/98	MB	5100	5430	30-115
Surr. 2,4,6-Tribromophenol		41	%	S-8270C	9/18/98	9/19/98	MB	5100	5430	19-122
Surr. Terphenyl-d14		52	%	S-8270C	9/18/98	9/19/98	MB	5100	5430	28-137

Project Number: 19349
 Project Name: Shell Grimes Tank Battery
 Project Location: Hobbs, NM

Date: 10-20-98
 Page # 4
 Order ID Number: 9809000108
 Sample Number: 106786

Sample Description: GSB-9 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	10/2/98	10/9/98	KC	---	---	50
Chlordane		<50	ug/Kg	S-8080	10/2/98	10/9/98	KC	---	---	50
DDT		<50	ug/Kg	S-8080	10/2/98	10/9/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S-8080	10/2/98	10/9/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S-8080	10/2/98	10/9/98	KC	---	---	50
Endrin		<50	ug/Kg	S-8080	10/2/98	10/9/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S-8080	10/2/98	10/9/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	9/15/98	9/18/98	RC	5044	5401	0.1
Arsenic		2.6	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5065	5361	0.50
Barium		100	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5065	5361	0.50
Cadmium		0.17	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5065	5361	0.10
Chromium		3.8	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5065	5361	0.50
Lead		1.3	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5065	5361	0.50
Total Mercury		<0.10	mg/Kg	S 7471A	9/9/98	9/10/98	MS	4916	5274	0.10
Selenium		<0.50	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5065	5361	0.50
Silver		<0.50	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5065	5361	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5065	5361	2.0
Copper		2.3	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5065	5361	1.0
Iron		3,000	mg/Kg	S 6010B	9/16/98	9/20/98	RR	5065	5460	10
Manganese		33	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5065	5361	1.0
Zinc		5.8	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5065	5361	2.0
Aluminum		4,300	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5065	5460	10
Boron		<10	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5065	5361	10
Cobalt		5.3	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5065	5361	0.50
Molybdenum		1.7	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5065	5361	1.0
Nickel		5	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5065	5361	0.50
Cyanide		<0.010	mg/Kg	SM 4500 CN,CE		9/15/98	SA		5330	0.01
Fluoride		5.4	mg/Kg	E 300.0		9/21/98	JS		5486	0.2
Nitrate		<0.4	mg/Kg	E 300.0		9/21/98	JS		5486	0.2
Chloride		19	mg/Kg	E 300.0		9/21/98	JS		5486	1.0
Sulfate		110	mg/Kg	E 300.0		9/21/98	JS		5486	2.0
TDS		400	mg/Kg	E 160.1		9/20/98	RS		5435	---
pH		8.4	s.u.	E 150.1		9/8/98	SA		5241	---
TRPHC		24.1	mg/Kg	S 418.1	9/9/98	9/10/98	SR	4915	5270	10.0
Total Radium		11.01	pCi/gm	E 901.1M		10/1/98	DS	---	---	---
Total Phenol		1.2	mg/Kg	SM 5530 A,D		9/20/98	RC		5450	0.25

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-20-98
Page # 5

Project Number: 19349
Project Name: Shell Grimes Tank Battery
Project Location: Hobbs, NM

Order ID Number: 9809000108
Sample Number: 106787

Sample Description: GSB-9 13-15'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Benzene		<0.050	mg/Kg	S 8021B		9/9/98	JG		5263	0.050
Toluene		<0.050	mg/Kg	S 8021B		9/9/98	JG		5263	0.050
Ethylbenzene		0.93	mg/Kg	S 8021B		9/9/98	JG		5263	0.050
m,p,o-xylene		6.48	mg/Kg	S 8021B		9/9/98	JG		5263	0.050
TRPHC		2,050	mg/Kg	S 418.1	9/9/98	9/10/98	SR	4915	5270	10.0
Chloride		32	mg/Kg	E 300.0		9/16/98	JS		5360	2

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-20-98
Page # 6

Project Number: 19349
Project Name: Shell Grimes Tank Battery
Project Location: Hobbs, NM

Order ID Number: 9809000108
Sample Number: 106788

Sample Description: GSB-9 50-52'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Benzene		<0.050	mg/Kg	S 8021B		9/9/98	JG		5263	0.050
Toluene		<0.050	mg/Kg	S 8021B		9/9/98	JG		5263	0.050
Ethylbenzene		0.546	mg/Kg	S 8021B		9/9/98	JG		5263	0.050
m,p,o-xylene		4.24	mg/Kg	S 8021B		9/9/98	JG		5263	0.050
TRPHC		2,310	mg/Kg	S 418.1	9/9/98	9/10/98	SR	4915	5270	10.0
Chloride		96	mg/Kg	E 300.0		9/16/98	JS		5360	2

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-20-98
Page # 7

Project Number: 19349
Project Name: Shell Grimes Tank Battery
Project Location: Hobbs, NM

Order ID Number: 9809000108
Sample Number: 106789

Sample Description: GSB-10 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<470	ug/Kg	S-8260B		9/9/98	AG		5264	470
Acrylonitrile		<470	ug/Kg	S-8260B		9/9/98	AG		5264	470
Benzene		<94	ug/Kg	S-8260B		9/9/98	AG		5264	94
Carbon tetrachloride		<94	ug/Kg	S-8260B		9/9/98	AG		5264	94
Chlorobenzene		<94	ug/Kg	S-8260B		9/9/98	AG		5264	94
1,2-dichloroethane		<94	ug/Kg	S-8260B		9/9/98	AG		5264	94
1,1,2,2-tetrachloroethane		<94	ug/Kg	S-8260B		9/9/98	AG		5264	94
1,1,1-trichloroethane		<94	ug/Kg	S-8260B		9/9/98	AG		5264	94
1,1,2-trichloroethane		<94	ug/Kg	S-8260B		9/9/98	AG		5264	94
1,1,2-trichloroethylene		<94	ug/Kg	S-8260B		9/9/98	AG		5264	94
Chloroform		<94	ug/Kg	S-8260B		9/9/98	AG		5264	94
Dichlorobenzene		<188	ug/Kg	S-8260B		9/9/98	AG		5264	188
1,1-dichloroethylene		<94	ug/Kg	S-8260B		9/9/98	AG		5264	94
Dichloropropenes		<94	ug/Kg	S-8260B		9/9/98	AG		5264	94
Ethylbenzene		3,100	ug/Kg	S-8260B		9/9/98	AG		5264	94
Bromodichloromethane		<94	ug/Kg	S-8260B		9/9/98	AG		5264	94
Bromomethane		<470	ug/Kg	S-8260B		9/9/98	AG		5264	180
Chloromethane		<94	ug/Kg	S-8260B		9/9/98	AG		5264	94
Dichlorodifluoromethane		<94	ug/Kg	S-8260B		9/9/98	AG		5264	94
Dichloromethane		<94	ug/Kg	S-8260B		9/9/98	AG		5264	94
Trichlorofluorometane		<94	ug/Kg	S-8260B		9/9/98	AG		5264	94
Tetrachloroethylene		<94	ug/Kg	S-8260B		9/9/98	AG		5264	94
Toluene		<94	ug/Kg	S-8260B		9/9/98	AG		5264	94
Trichloroethylene		<94	ug/Kg	S-8260B		9/9/98	AG		5264	94
Vinyl chloride		<94	ug/Kg	S-8260B		9/9/98	AG		5264	94
m,p-xylene		15,000	ug/Kg	S-8260B		9/9/98	AG		5264	94
o-xylene		<94	ug/Kg	S-8260B		9/9/98	AG		5264	94
1,1-dichloroethane		<94	ug/Kg	S-8260B		9/9/98	AG		5264	94
Ethylene dibromide		<94	ug/Kg	S-8260B		9/9/98	AG		5264	94
cis-1,2-dichloroethylene		<94	ug/Kg	S-8260B		9/9/98	AG		5264	94
trans-1,2-dichloroethylene		<94	ug/Kg	S-8260B		9/9/98	AG		5264	94
Methylene chloride		<470	ug/Kg	S-8260B		9/9/98	AG		5264	470
Dibromofluoromethane		87	%	S-8260B		9/9/98	AG		5264	71-132
Toluene-d8		92	%	S-8260B		9/9/98	AG		5264	82-124
4-Bromofluorobenzene		102	%	S-8260B		9/9/98	AG		5264	76-126
Benzidine		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25

Date: 10-20-89

Page # 8

Project Number: 19349

Project Name: Shell Grimes Tank Battery

Project Location: Hobbs, NM

Order ID Number: 9808000159

Sample Number: 106789

Sample Description: GSB-10 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
Isophorone		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
2,4-dinitro-o-cresol		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	1.25
i-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	1.25
Phenol		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
Anthracene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
Fluorene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
Pyrene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
1-methylnaphthalene		2.3	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
2-methylnaphthalene		2.2	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	MB	5100	5430	0.25
Surr. 2-Fluorophenol		67	%	S-8270C	9/18/98	9/19/98	MB	5100	5430	25-121
Surr. Phenol-d6		48	%	S-8270C	9/18/98	9/19/98	MB	5100	5430	24-113
Surr. Nitroobenzene-d5		64	%	S-8270C	9/18/98	9/19/98	MB	5100	5430	23-120
Surr. 2-Fluorobiphenyl		83	%	S-8270C	9/18/98	9/19/98	MB	5100	5430	30-115
Surr. 2,4,6-Tribromophenol		65	%	S-8270C	9/18/98	9/19/98	MB	5100	5430	19-122
Surr. Terphenyl-d14		73	%	S-8270C	9/18/98	9/19/98	MB	5100	5430	28-137

Project Number: 19349
 Project Name: Shell Grimes Tank Battery
 Project Location: Hobbs, NM

Date: 10-20-89
 Page # 9
 Order ID Number: 9809000108
 Sample Number: 106789

Sample Description: GSB-10 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	10/2/98	10/9/98	KC	---	---	50
Chlordane		<50	ug/Kg	S-8080	10/2/98	10/9/98	KC	---	---	50
DDT		<50	ug/Kg	S-8080	10/2/98	10/9/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S-8080	10/2/98	10/9/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S-8080	10/2/98	10/9/98	KC	---	---	50
Endrin		<50	ug/Kg	S-8080	10/2/98	10/9/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S-8080	10/2/98	10/9/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	9/15/98	9/18/98	RC	5044	5401	0.1
Arsenic		0.75	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5065	5361	0.50
Barium		315	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5065	5361	0.50
Cadmium		0.13	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5065	5361	0.10
Chromium		5.3	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5065	5361	0.50
Lead		2.2	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5065	5361	0.50
Total Mercury		<0.10	mg/Kg	E 7471A	9/9/98	9/10/98	MS	4916	5274	0.10
Selenium		<0.50	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5065	5361	0.50
Silver		<0.50	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5065	5361	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5065	5361	2.0
Copper		2.7	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5065	5361	1.0
Iron		4,100	mg/Kg	S 6010B	9/16/98	9/20/98	RR	5065	5460	10
Manganese		57	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5065	5361	1.0
Zinc		9.9	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5065	5361	2.0
Aluminum		5,400	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5065	5460	10
Boron		<10	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5065	5361	10
Cobalt		5.4	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5065	5361	0.50
Molybdenum		1.2	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5065	5361	1.0
Nickel		4.9	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5065	5361	0.50
Cyanide		<0.010	mg/Kg	SM 4500 CN,CE		9/15/98	SA		5330	0.01
Fluoride		8.5	mg/Kg	E 300.0		9/21/98	JS		5485	0.2
Nitrate		1.8	mg/Kg	E 300.0		9/21/98	JS		5485	0.2
Chloride		100	mg/Kg	E 300.0		9/21/98	JS		5485	1.0
Sulfate		920	mg/Kg	E 300.0		9/21/98	JS		5485	10.0
TDS		1,600	mg/Kg	E 160.1		9/20/98	RS		5435	---
pH		8.2	s.u.	E 150.1		9/8/98	SA		5241	---
TRPHC		1,960	mg/Kg	S 418.1	9/9/98	9/10/98	SR	4915	5270	10.0
Total Radium		2.98	pCi/gm	E 901.1M		8/18/98	DS	---	---	---
Total Phenol		1.8	mg/Kg	SM 5530 A,D		9/20/98	RC		5450	0.25

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-20-98
Page # 10

Project Number: 19349
Project Name: Shell Grimes Tank Battery
Project Location: Hobbs, NM

Order ID Number: 9809000108
Sample Number: 106790

Sample Description: GSB-10 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
MTBE		<0.050	mg/Kg	S 8021B		9/9/98	JG		5263	0.050
Benzene		<0.050	mg/Kg	S 8021B		9/9/98	JG		5263	0.050
Toluene		<0.050	mg/Kg	S 8021B		9/9/98	JG		5263	0.050
Ethylbenzene		2.48	mg/Kg	S 8021B		9/9/98	JG		5263	0.050
m,p,o-xylene		15.8	mg/Kg	S 8021B		9/9/98	JG		5263	0.050
TRPHC		3,960	mg/Kg	S 418.1	9/9/98	9/10/98	SR	4915	5270	10.0
Chloride		150	mg/Kg	E 300.0		9/16/98	JS		5360	2

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-20-98
Page # 11

Project Number: 19349
Project Name: Shell Grimes Tank Battery
Project Location: Hobbs, NM

Order ID Number: 9809000108
Sample Number: 106791

Sample Description: GSB-10 50-52'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Benzene		<0.050	mg/Kg	S 8021B		9/9/98	JG		5263	0.050
Toluene		0.092	mg/Kg	S 8021B		9/9/98	JG		5263	0.050
Ethylbenzene		0.577	mg/Kg	S 8021B		9/9/98	JG		5263	0.050
m,p,o-xylene		4.31	mg/Kg	S 8021B		9/9/98	JG		5263	0.050
TRPHC		2,920	mg/Kg	S 418.1	9/9/98	9/10/98	SR	4915	5270	10.0
Chloride		54	mg/Kg	E 300.0		9/20/98	JS		5421	2.0

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-9-98
Page # 4

Project Number: 19349
Project Name: Shell Grimes Tank Battery
Project Location: Hobbs, NM

Order ID Number: 9809000195
Sample Number: 107159

Sample Description: GSB-11 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<455	ug/Kg	S-8260B		9/20/98	AG		5461	455
Acrylonitrile		<455	ug/Kg	S-8260B		9/20/98	AG		5461	455
Benzene		<91	ug/Kg	S-8260B		9/20/98	AG		5461	91
Carbon tetrachloride		<91	ug/Kg	S-8260B		9/20/98	AG		5461	91
Chlorobenzene		<91	ug/Kg	S-8260B		9/20/98	AG		5461	91
1,2-dichloroethane		<91	ug/Kg	S-8260B		9/20/98	AG		5461	91
1,1,2,2-tetrachloroethane		<91	ug/Kg	S-8260B		9/20/98	AG		5461	91
1,1,1-trichloroethane		<91	ug/Kg	S-8260B		9/20/98	AG		5461	91
1,1,2-trichloroethane		<91	ug/Kg	S-8260B		9/20/98	AG		5461	91
1,1,2-trichloroethylene		<91	ug/Kg	S-8260B		9/20/98	AG		5461	91
Chloroform		<91	ug/Kg	S-8260B		9/20/98	AG		5461	91
Dichlorobenzene		<182	ug/Kg	S-8260B		9/20/98	AG		5461	182
1,1-dichloroethylene		<91	ug/Kg	S-8260B		9/20/98	AG		5461	91
Dichloropropenes		<91	ug/Kg	S-8260B		9/20/98	AG		5461	91
Ethylbenzene		<91	ug/Kg	S-8260B		9/20/98	AG		5461	91
Bromodichloromethane		<91	ug/Kg	S-8260B		9/20/98	AG		5461	91
Bromomethane		<455	ug/Kg	S-8260B		9/20/98	AG		5461	455
Chloromethane		<91	ug/Kg	S-8260B		9/20/98	AG		5461	91
Dichlorodifluoromethane		<91	ug/Kg	S-8260B		9/20/98	AG		5461	91
Dichloromethane		<91	ug/Kg	S-8260B		9/20/98	AG		5461	91
Trichlorofluoromethane		<91	ug/Kg	S-8260B		9/20/98	AG		5461	91
Tetrachloroethylene		<91	ug/Kg	S-8260B		9/20/98	AG		5461	91
Toluene		<91	ug/Kg	S-8260B		9/20/98	AG		5461	91
Trichloroethylene		<91	ug/Kg	S-8260B		9/20/98	AG		5461	91
Vinyl chloride		<91	ug/Kg	S-8260B		9/20/98	AG		5461	91
m,p-xylene		<91	ug/Kg	S-8260B		9/20/98	AG		5461	91
o-xylene		<91	ug/Kg	S-8260B		9/20/98	AG		5461	91
1,1-dichloroethane		<91	ug/Kg	S-8260B		9/20/98	AG		5461	91
Ethylene dibromide		<91	ug/Kg	S-8260B		9/20/98	AG		5461	91
cis-1,2-dichloroethylene		<91	ug/Kg	S-8260B		9/20/98	AG		5461	91
trans-1,2-dichloroethylene		<91	ug/Kg	S-8260B		9/20/98	AG		5461	91
Methylene chloride		<455	ug/Kg	S-8260B		9/20/98	AG		5461	455
Dibromofluoromethane		100	%	S-8260B		9/20/98	AG		5461	72-132
Toluene-d8		99	%	S-8260B		9/20/98	AG		5461	82-124
4-Bromofluorobenzene		101	%	S-8260B		9/20/98	AG		5461	76-126
Benzidine		<2.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25

Project Number: 19349
 Project Name: Shell Grimes Tank Battery
 Project Location: Hobbs, NM

Date: 10-1-98
 Page # 5
 Order ID Number: 9809000195
 Sample Number: 107159

Sample Description: GSB-11 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Hexachloroethane		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Isophorone		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
2,4-dinitro-o-cresol		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
n-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Anthracene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Fluorene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Pyrene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
1-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
2-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Surr. 2-Fluorophenol		45	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	25-121
Surr. Phenol-d6		50	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	24-113
Surr. Nitrobenzene-d5		47	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	23-120
Surr. 2-Fluorobiphenyl		53	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	30-115
Surr. 2,4,6-Tribromophenol		56	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	19-122
Surr. Terphenyl-d14		87	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	28-137

Project Number: 19349
 Project Name: Shell Grimes Tank Battery
 Project Location: Hobbs, NM

Date: 10-1-98
 Page # 6
 Order ID Number: 9809000195
 Sample Number: 107159

Sample Description: GSB-11 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	9/22/98	10/6/98	SH	---	---	50
Chlordane		<50	ug/Kg	S-8080	9/22/98	10/6/98	SH	---	---	50
DDT		<50	ug/Kg	S-8080	9/22/98	10/6/98	SH	---	---	50
Dieldrin		<50	ug/Kg	S-8080	9/22/98	10/6/98	SH	---	---	50
Endosulfan		<50	ug/Kg	S-8080	9/22/98	10/6/98	SH	---	---	50
Endrin		<50	ug/Kg	S-8080	9/22/98	10/6/98	SH	---	---	50
Heptachlor		<50	ug/Kg	S-8080	9/22/98	10/6/98	SH	---	---	50
PCB's		<0.1	mg/Kg	S 8082	9/15/98	9/15/98	RC	5044	5401	0.1
Arsenic		3.9	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Barium		274	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Cadmium		<0.10	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.10
Chromium		3.4	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Lead		1.7	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Total Mercury		<0.10	mg/Kg	E 7471	9/17/98	9/18/98	MS	506	5399	<0.10
Selenium		<0.50	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Silver		<0.50	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Uranium		<2.0	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	2.0
Copper		3.9	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	1.0
Iron		2,600	mg/Kg	E 6010B	9/17/98	9/20/98	RR	5090	5461	10
Manganese		24	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	1.0
Zinc		5.5	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	2.0
Aluminum		3,900	mg/Kg	E 6010B	9/17/98	9/20/98	RR	5090	5461	10
Boron		10	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	10
Cobalt		5.9	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Molybdenum		1.8	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	1.0
Nickel		5.4	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Cyanide		<0.010	mg/Kg	SM 4500 CN,CE		9/15/98	SA		5330	0.01
Fluoride		7.2	mg/Kg	E 300.0		9/21/98	JS		5491	0.2
Nitrate		<0.4	mg/Kg	E 300.0		9/21/98	JS		5491	0.4
Chloride		160	mg/Kg	E 300.0		9/21/98	JS		5491	2.0
Sulfate		56	mg/Kg	E 300.0		9/21/98	JS		5491	1.0
TDS		380	mg/Kg	E 160.1		9/21/98	RS		5449	---
pH		8.2	s.u.	E 150.1		9/11/98	SA		5284	---
TRPHC		12	mg/Kg	S 418.1	9/15/98	9/15/98	SR	4988	5324	10.0
Total Phenols		2.8	mg/Kg	SM 5530 A,D		9/20/98	RC		5451	0.25
Total Radium		2.85	pCi/gm	E 901.1M		9/17/98	DS	---	---	---

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-9-98
Page # 7

Project Number: 19349
Project Name: Shell Grimes Tank Battery
Project Location: Hobbs, NM

Order ID Number: 9809000195
Sample Number: 107160

Sample Description: GSB-11 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
MTBE		<0.050	mg/Kg	S 8021B		9/14/98	CS		5321	0.05
Benzene		<0.050	mg/Kg	S 8021B		9/14/98	CS		5321	0.05
Toluene		<0.050	mg/Kg	S 8021B		9/14/98	CS		5321	0.05
Ethylbenzene		0.469	mg/Kg	S 8021B		9/14/98	CS		5321	0.05
m,p,o-xylene		2.95	mg/Kg	S 8021B		9/14/98	CS		5321	0.05
TRPHC		1,100	mg/Kg	S 418.1	9/15/98	9/15/98	SR	4988	5324	10.0
Chloride		140	mg/Kg	E 300.0		9/20/98	JS		5422	2.0



1726 Wooddale Court • Baton Rouge, Louisiana 70806

1 (800) 401-4277 • Fax (504) 927-6822

ARS Tracking Number: ARS-98-0921

P.O. Number:

Client I.D.: 107159

ARS Sample I.D.: ARS-98-3360

Date Sampled: 9/8/98

Date Received: 9/15/98

Time Sampled: N/A

Time Received: 1240

Type of Sample: Solid

Date of Report: 9/17/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	<0.78	N/A	pCi/gm	<0.029	N/A	Bq/gm	EPA 901.1M	9/17/98 1006	kh
Ra-228	<0.17	N/A	pCi/gm	<0.006	N/A	Bq/gm	EPA 901.1M	9/17/98 1006	kh
Pb-210	1.66	1.55	pCi/gm	0.061	0.057	Bq/gm	EPA 901.1M	9/17/98 1006	kh
Total Activity	2.85	N/A	pCi/gm	0.105	N/A	Bq/gm	EPA 901.1M	9/17/98 1006	kh

Notes:

Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-9-98
Page # 8

Project Number: 19349
Project Name: Shell Grimes Tank Battery
Project Location: Hobbs, NM

Order ID Number: 9809000195
Sample Number: 107161

Sample Description: GSB-11 48-50'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
MTBE		<0.050	mg/Kg	S 8021B		9/14/98	CS		5321	0.05
Benzene		<0.050	mg/Kg	S 8021B		9/14/98	CS		5321	0.05
Toluene		<0.050	mg/Kg	S 8021B		9/14/98	CS		5321	0.05
Ethylbenzene		0.694	mg/Kg	S 8021B		9/14/98	CS		5321	0.05
m,p,o-xylene		7.41	mg/Kg	S 8021B		9/14/98	CS		5321	0.05
TRPHC		1,990	mg/Kg	S 418.1	9/15/98	9/15/98	SR	4988	5324	10.0
Chloride		7.6	mg/Kg	E 300.0		9/20/98	JS		5422	2.0

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-9-98
Page # 9

Project Number: 19349
Project Name: Shell Grimes Tank Battery
Project Location: Hobbs, NM

Order ID Number: 9809000195
Sample Number: 107162

Sample Description: GSB-11

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
MTBE		<0.050	mg/Kg	S 8021B		9/14/98	CS		5321	0.05
Benzene		<0.050	mg/Kg	S 8021B		9/14/98	CS		5321	0.05
Toluene		<0.050	mg/Kg	S 8021B		9/14/98	CS		5321	0.05
Ethylbenzene		0.309	mg/Kg	S 8021B		9/14/98	CS		5321	0.05
m,p,o-xylene		3.25	mg/Kg	S 8021B		9/14/98	CS		5321	0.05
TRPHC		704	mg/Kg	S 418.1	9/15/98	9/15/98	SR	4988	5324	10.0
Chloride		22	mg/Kg	E 300.0		9/20/98	JS		5422	2.0

Analytical Results Report

Jeff Kindley/Sharon Hall
Phillip Services Corp.
7904 IH 29 West
Midland, Texas 79706

Date: 10-19-98
Paage #4

Project Number : 19350
Project Name: Shell Tasker Roaad
Project Location: Hobbs, NM

Order ID Number: 9806000114
Sample Number: 106823

Sample Description: GMW-2 3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	PREP BATCH#	RUN BATCH#	Reporting Limit
Arsenic		2.7	mg/kg	E 6010B	09/16/98	09/16/98	RR	5065	5361	0.50
Barium		514	mg/kg	E 6010B	09/16/98	09/16/98	RR	5065	5361	0.50
Cadmium		0.19	mg/kg	E 6010B	09/16/98	09/16/98	RR	5065	5361	0.10
Chromium		3.0	mg/kg	E 6010B	09/16/98	09/16/98	RR	5065	5361	0.50
Cobalt		6.3	mg/kg	E 6010B	09/16/98	09/16/98	RR	5065	5361	0.50
Copper		1.5	mg/kg	E 6010B	09/16/98	09/16/98	RR	5065	5361	1.0
Manganese		16	mg/kg	E 6010B	09/16/98	09/16/98	RR	5065	5361	1.0
Molybdenum		1.3	mg/kg	E 6010B	09/16/98	09/16/98	RR	5065	5361	1.0
Lead		0.91	mg/kg	E 6010B	09/16/98	09/16/98	RR	5065	5361	0.50
Mercury		<0.10	mg/kg	E 7471A	09/16/98	09/16/98	MS	4916	5274	0.10
Nickel		6.8	mg/kg	E 6010B	09/16/98	09/16/98	RR	5065	5361	0.50
Selenium		<0.50	mg/kg	E 6010B	09/16/98	09/16/98	RR	5065	5361	0.50
Silver		<0.50	mg/kg	E 6010B	09/16/98	09/16/98	RR	5065	5361	0.50
Iron		2010	mg/kg	E 6010B	09/16/98	10/12/98	RR	5065	5361	5.0
Aluminum		3160	mg/kg	E 6010B	09/16/98	10/12/98	RR	5065	5361	5.0
Zinc		6.6	mg/kg	E 6010B	09/16/98	09/16/98	RR	5065	5361	2.0
Boron		<10	mg/kg	E 6010B	09/16/98	09/16/98	RR	5065	5361	10
Uranium		<2.0	mg/kg	E 6010B	09/16/98	09/16/98	RR	5065	5361	2.0

Analytical Results Report

Jeff kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 9-29-98
Page # 10

Project Number: 19349
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9807000548
Sample Number: 103766

Sample Description: MW-2 13-15'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<125	ug/Kg	S 8260B		8/4/98	AG		4727	125
Acrylonitrile		<125	ug/Kg	S 8260B		8/4/98	AG		4727	125
Benzene		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Carbon tetrachloride		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Chlorobenzene		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
1,2-dichloroethane		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
1,1,2,2-tetrachloroethane		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
1,1,1-trichloroethane		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
1,1,2-trichloroethane		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
1,1,2-trichloroethylene		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Chloroform		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Dichlorobenzene		<50	ug/Kg	S 8260B		8/4/98	AG		4727	50
1,1-dichloroethylene		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Dichloropropenes		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Ethylbenzene		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Bromodichloromethane		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Bromomethane		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Chloromethane		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Dichlorodifluoromethane		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Dichloromethane		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Trichlorofluoromethane		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Tetrachloroethylene		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Toluene		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Trichloroethylene		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Vinyl chloride		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
m,p-xylene		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
o-xylene		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
1,1-dichloroethane		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Ethylene dibromide		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
cis-1,2-dichloroethylene		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
trans-1,2-dichloroethylene		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Methylene chloride		<125	ug/Kg	S 8260B		8/4/98	AG		4727	125
Surr. Dibromofluoromethane		97	%	S 8260B		8/4/98	AG		4727	71-132
Surr. Toluene-d8		105	%	S 8260B		8/4/98	AG		4727	82-124
Surr. 4-Bromofluorobenzene		105	%	S 8260B		8/4/98	AG		4727	76-126
Benzidine		<2.5	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	2.5

Date: 9-29-98

Page # 11

Project Number: 19349

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9807000548

Sample Number: 103766

Sample Description: MW-2 13-15'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachlorobenzene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Pentachlorobenzene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Hexachloroethane		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Diphenylhydrazine		<1.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Isophorone		<1.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	1.25
Nitrobenzene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
2,4-dinitro-o-cresol		<1.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	1.25
2,4-dinitrophenols		<1.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	1.25
i-nitrosodiethylamine		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Pentachlorophenol		<1.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	1.25
Phenol		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Dibutyl phthalate		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Diethyl phthalate		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Dimethyl phthalate		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Anthracene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Fluoranthene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Fluorene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Phenanthrene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Pyrene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Naphthalene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
1-methylnaphthalene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
2-methylnaphthalene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25

Date: 9-29-98

Page # 12

Project Number: 19349

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9807000548

Sample Number: 103766

Sample Description: MW-2 13-15'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Surr. 2-Fluorophenol		69	%	S 8270C	7/31/98	8/14/98	DG	4592	4892	25-121
Surr. Phenol-d6		77	%	S 8270C	7/31/98	8/14/98	DG	4592	4892	24-113
Surr. Nitroobenzene-d5		69	%	S 8270C	7/31/98	8/14/98	DG	4592	4892	23-120
Surr. 2-Fluorobiphenyl		73	%	S 8270C	7/31/98	8/14/98	DG	4592	4892	30-115
Surr. 2,4,6-Tribromophenol		88	%	S 8270C	7/31/98	8/14/98	DG	4592	4892	19-122
Surr. Terphenyl-d14		74	%	S 8270C	7/31/98	8/14/98	DG	4592	4892	28-137
Aldrin		<50	ug/Kg	S 8082	8/10/98	9/18/98	SH	---	---	50
Chlordane		<50	ug/Kg	S 8082	8/10/98	9/18/98	SH	---	---	50
DDT		<50	ug/Kg	S 8082	8/10/98	9/18/98	SH	---	---	50
Dieldrin		<50	ug/Kg	S 8082	8/10/98	9/18/98	SH	---	---	50
Endosulfan		<50	ug/Kg	S 8082	8/10/98	9/18/98	SH	---	---	50
Endrin		<50	ug/Kg	S 8082	8/10/98	9/18/98	SH	---	---	50
Heptachlor		<50	ug/Kg	S 8082	8/10/98	9/18/98	SH	---	---	50
PCB's		<0.1	mg/Kg	S 8082	8/4/98	8/4/98	RC	4628	4728	0.10
Arsenic		<0.50	mg/Kg	S 6010B	8/3/98	8/18/98	RR	4645	4955	0.50
Barium		65	mg/Kg	S 6010B	8/3/98	8/8/98	RR	4641	4761	0.50
Cadmium		0.16	mg/Kg	S 6010B	8/3/98	8/8/98	RR	4641	4761	0.1
Chromium		2.3	mg/Kg	S 6010B	8/3/98	8/18/98	RR	4645	4955	0.5
Lead		1.0	mg/Kg	S 6010B	8/3/98	8/18/98	RR	4645	4955	0.5
Total Mercury		<0.25	mg/Kg	S 7471	8/3/98	8/4/98	HC	4626	4729	0.25
Selenium		0.93	mg/Kg	S 6010B	8/3/98	8/18/98	RR	4645	4955	0.5
Silver		<0.50	mg/Kg	S 6010B	8/3/98	8/8/98	RR	4641	4761	0.5
Uranium		<1.0	mg/Kg	S 6010B	8/3/98	8/18/98	RR	4645	4955	1.0
Copper		1.8	mg/Kg	S 6010B	8/3/98	8/8/98	RR	4641	4761	1.0
Iron		1,800	mg/Kg	S 6010B	8/3/98	8/18/98	RR	4645	4955	2.0
Manganese		25	mg/Kg	S 6010B	8/3/98	8/8/98	RR	4641	4761	1.0
Zinc		11	mg/Kg	S 6010B	8/3/98	8/8/98	RR	4641	4761	2.0
Aluminum		2,400	mg/Kg	S 6010B	8/3/98	8/18/98	RR	4645	4955	10.0
Boron		<10	mg/Kg	S 6010B	8/3/98	8/8/98	RR	4641	4761	10
Cobalt		5.0	mg/Kg	S 6010B	8/3/98	8/8/98	RR	4641	4761	0.5
Molybdenum		2.5	mg/Kg	S 6010B	8/3/98	8/8/98	RR	4641	4761	1.0
Nickel		5.1	mg/Kg	S 6010B	8/3/98	8/18/98	RR	4645	4955	0.5
Cyanide		0.08	mg/Kg	SM 4500 C,E		8/11/98	RC		4815	0.01
Fluoride		3.4	mg/Kg	E 300.0		8/5/98	JS		4730	0.1
Nitrate		6.2	mg/Kg	E 300.0		8/5/98	JS		4730	0.1
Chloride		170	mg/Kg	E 300.0		8/5/98	JS		4730	0.5
Sulfate		340	mg/Kg	E 300.0		8/5/98	JS		4730	0.5
TDS		2500	mg/Kg	E 160.1		8/12/98	RS		4835	---
pH		8.3	s.u.	E 150.1		7/31/98	BP		4715	---
TRPHC		<10.0	mg/Kg	S 418.1	8/27/98	8/30/98	SR	4810	5168	10.0
Total Phenols		0.25	mg/Kg	SM 5530 A,D		8/11/98	RC		4813	0.25
Total Radium		13.32	pCi/gm	E 901.1M		8/18/98	DS	---	---	---



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ARS Tracking Number: ARS-98-0769 P.O. Number: Project Location: Hobbs, NM
Client I.D.: 103766 ARS Sample I.D.: ARS-98-2767
Date Sampled: N/A Date Received: 08/04/98
Time Sampled: N/A Time Received: 1145
Type of Sample: Solid Date of Report: 8/26/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	<1.16	N/A	pCi/gm	<0.043	N/A	Bq/gm	EPA 901.1M	8/06/98 0859	DC
Ra-228	<0.06	N/A	pCi/gm	<0.002	N/A	Bq/gm	EPA 901.1M	8/06/98 0859	DC
Pb-210	<0.85	N/A	pCi/gm	<0.031	N/A	Bq/gm	EPA 901.1M	8/06/98 0859	DC
Total Activity	7.45	N/A	pCi/gm	0.276	N/A	Bq/gm	EPA 901.1M	8/06/98 0859	DC

Notes:

Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 9-29-98
Page # 7

Project Number: 19349
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9807000548
Sample Number: 103765

Sample Description: MW-2 58-60

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<125	ug/Kg	S 8260B		8/4/98	AG		4727	125
Acrylonitrile		<125	ug/Kg	S 8260B		8/4/98	AG		4727	125
Benzene		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Carbon tetrachloride		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Chlorobenzene		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
1,2-dichloroethane		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
1,1,2,2-tetrachloroethane		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
1,1,1-trichloroethane		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
1,1,2-trichloroethane		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
1,1,2-trichloroethylene		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Chloroform		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Dichlorobenzene		<50	ug/Kg	S 8260B		8/4/98	AG		4727	50
1,1-dichloroethylene		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Dichloropropenes		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Ethylbenzene		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Bromodichloromethane		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Bromomethane		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Chloromethane		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Dichlorodifluoromethane		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Dichloromethane		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Trichlorofluoromethane		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Tetrachloroethylene		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Toluene		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Trichloroethylene		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Vinyl chloride		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
m,p-xylene		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
o-xylene		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
1,1-dichloroethane		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Ethylene dibromide		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
cis-1,2-dichloroethylene		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
trans-1,2-dichloroethylene		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Methylene chloride		<125	ug/Kg	S 8260B		8/4/98	AG		4727	125
Surr. Dibromofluoromethane		97	%	S 8260B		8/4/98	AG		4727	72-130
Surr. Toluene-d8		106	%	S 8260B		8/4/98	AG		4727	77-127
Surr. 4-Bromofluorobenzene		104	%	S 8260B		8/4/98	AG		4727	72-131

Date: 9-29-98

Page # 8

Order ID Number: 9807000548

Sample Number: 103765

Project Number: 19349

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Sample Description: MW-2 58-60

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Benzidine		<2.5	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	2.5
Hexachlorobenzene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Pentachlorobenzene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Hexachloroethane		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Diphenylhydrazine		<1.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Isophorone		<1.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	1.25
Nitrobenzene		<1.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	1.25
2,4-dinitro-o-cresol		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
2,4-dinitrophenols		<1.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	1.25
i-nitrosodiethylamine		<1.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	1.25
N-nitrosodimethylamine		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	1.25
N-nitrosodiphenylamine		<1.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	1.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Pentachlorophenol		<1.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	1.25
Phenol		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Dibutyl phthalate		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Diethyl phthalate		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Dimethyl phthalate		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Anthracene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Fluoranthene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Fluorene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Phenanthrene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Pyrene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Naphthalene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
1-methylnaphthalene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
2-methylnaphthalene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25

Date: 9-29-98

Page # 9

Project Number: 19349

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9807000548

Sample Number: 103765

Sample Description: MW-2 58-60

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Benzo-a-pyrene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Surr. 2-Fluorophenol		71	%	S 8270C	7/31/98	8/14/98	DG	4592	4892	25-121
Surr. Phenol-d6		80	%	S 8270C	7/31/98	8/14/98	DG	4592	4892	24-113
Surr. Nitroobenzene-d5		76	%	S 8270C	7/31/98	8/14/98	DG	4592	4892	23-120
Surr. 2-Fluorobiphenyl		81	%	S 8270C	7/31/98	8/14/98	DG	4592	4892	30-115
Surr. 2,4,6-Tribromophenol		91	%	S 8270C	7/31/98	8/14/98	DG	4592	4892	19-122
Surr. Terphenyl-d14		77	%	S 8270C	7/31/98	8/14/98	DG	4592	4892	28-137
Aldrin		<50	ug/Kg	S 8082	8/10/98	9/18/98	SH	---	---	50
Chlordane		<50	ug/Kg	S 8082	8/10/98	9/18/98	SH	---	---	50
DDT		<50	ug/Kg	S 8082	8/10/98	9/18/98	SH	---	---	50
Dieldrin		<50	ug/Kg	S 8082	8/10/98	9/18/98	SH	---	---	50
Endosulfan		<50	ug/Kg	S 8082	8/10/98	9/18/98	SH	---	---	50
Endrin		<50	ug/Kg	S 8082	8/10/98	9/18/98	SH	---	---	50
Heptachlor		<50	ug/Kg	S 8082	8/10/98	9/18/98	SH	---	---	50
PCB's		<0.1	mg/Kg	S 8082	8/4/98	8/4/98	RC	4628	4728	0.10
Arsenic		<0.50	mg/Kg	S 6010B	8/3/98	8/18/98	RR	4645	4955	0.50
Barium		7.4	mg/Kg	S 6010B	8/3/98	8/8/98	RR	4641	4761	0.50
Cadmium		0.14	mg/Kg	S 6010B	8/3/98	8/8/98	RR	4641	4761	0.1
Chromium		4.4	mg/Kg	S 6010B	8/3/98	8/18/98	RR	4645	4955	0.5
Lead		1.8	mg/Kg	S 6010B	8/3/98	8/18/98	RR	4645	4955	0.5
Total Mercury		<0.25	mg/Kg	S 7471	8/3/98	8/4/98	HC	4626	4729	0.25
Selenium		<0.50	mg/Kg	S 6010B	8/3/98	8/18/98	RR	4645	4955	0.5
Silver		<0.50	mg/Kg	S 6010B	8/3/98	8/8/98	RR	4641	4761	0.5
Uranium		<1.0	mg/Kg	S 6010B	8/3/98	8/18/98	RR	4645	4955	1.0
Copper		<1.0	mg/Kg	S 6010B	8/3/98	8/8/98	RR	4641	4761	1.0
Iron		2,600	mg/Kg	S 6010B	8/3/98	8/18/98	RR	4645	4955	2.0
Manganese		20	mg/Kg	S 6010B	8/3/98	8/8/98	RR	4641	4761	1.0
Zinc		11	mg/Kg	S 6010B	8/3/98	8/8/98	RR	4641	4761	2.0
Aluminum		2,200	mg/Kg	S 6010B	8/3/98	8/18/98	RR	4645	4955	10.0
Boron		<10	mg/Kg	S 6010B	8/3/98	8/8/98	RR	4641	4761	10
Cobalt		2.8	mg/Kg	S 6010B	8/3/98	8/8/98	RR	4641	4761	0.5
Molybdenum		1.1	mg/Kg	S 6010B	8/3/98	8/8/98	RR	4641	4761	1.0
Nickel		2.7	mg/Kg	S 6010B	8/3/98	8/18/98	RR	4645	4955	0.5
Cyanide		<0.01	mg/Kg	SM 4500 C,E		8/11/98	RC		4815	0.01
Fluoride		0.78	mg/Kg	E 300.0		8/5/98	JS		4730	0.1
Nitrate		1.4	mg/Kg	E 300.0		8/5/98	JS		4730	0.1
Chloride		28	mg/Kg	E 300.0		8/5/98	JS		4730	0.5
Sulfate		26	mg/Kg	E 300.0		8/5/98	JS		4730	0.5
TDS		400	mg/Kg	E 160.1		8/12/98	RS		4835	---
pH		8.6	s.u.	E 150.1		7/31/98	BP		4715	---
TRPHC		<10.0	mg/Kg	S 418.1	8/21/98	8/22/98	SR	4743	5045	10.0
Total Phenols		11	s.u.	SM 5530 A,D		8/11/98	RC		4813	0.25
Total Radium		40.61	pCi/gm	E 901.1M		8/18/98	DS	---	---	---



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ARS Tracking Number:	ARS-98-0769	P.O. Number:	Project Location: Hobbs, NM
Client I.D.:	103765	ARS Sample I.D.:	ARS-98-2766
Date Sampled:	N/A	Date Received:	08/04/98
Time Sampled:	N/A	Time Received	1145
Type of Sample:	Solid	Date of Report	8/26/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	2.47	1.71	pCi/gm	0.091	0.063	Bq/gm	EPA 901.1M	8/06/98 0902	DC
Ra-228	<0.12	N/A	pCi/gm	<0.004	N/A	Bq/gm	EPA 901.1M	8/06/98 0902	DC
Pb-210	2.74	2.08	pCi/gm	0.101	0.077	Bq/gm	EPA 901.1M	8/06/98 0902	DC
Total Activity	40.61	N/A	pCi/gm	1.502	N/A	Bq/gm	EPA 901.1M	8/06/98 0902	DC

Notes:


 Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

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Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 9-29-98
Page # 4

Project Number: 19349
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9807000548
Sample Number: 103764

Sample Description: MW-2 62-64D

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<125	ug/Kg	S 8260B		8/4/98	AG		4727	125
Acrylonitrile		<125	ug/Kg	S 8260B		8/4/98	AG		4727	125
Benzene		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Carbon tetrachloride		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Chlorobenzene		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
1,2-dichloroethane		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
1,1,2,2-tetrachloroethane		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
1,1,1-trichloroethane		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
1,1,2-trichloroethane		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
1,1,2-trichloroethylene		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Chloroform		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Dichlorobenzene		<50	ug/Kg	S 8260B		8/4/98	AG		4727	50
1,1-dichloroethylene		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Dichloropropenes		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Ethylbenzene		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Bromodichloromethane		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Bromomethane		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Chloromethane		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Dichlorodifluoromethane		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Dichloromethane		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Trichlorofluoromethane		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Tetrachloroethylene		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Toluene		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Trichloroethylene		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Vinyl chloride		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
m,p-xylene		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
o-xylene		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
1,1-dichloroethane		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Ethylene dibromide		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
cis-1,2-dichloroethylene		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
trans-1,2-dichloroethylene		<25	ug/Kg	S 8260B		8/4/98	AG		4727	25
Methylene chloride		<125	ug/Kg	S 8260B		8/4/98	AG		4727	125
Surr. Dibromofluoromethane		95	%	S 8260B		8/4/98	AG		4727	72-130
Surr. Toluene-d8		105	%	S 8260B		8/4/98	AG		4727	77-127
Surr. 4-Bromofluorobenzene		105	%	S 8260B		8/4/98	AG		4727	72-131

Date: 9-29-98

Page # 5

Order ID Number: 9807000548

Sample Number: 103764

Project Number: 19349

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Sample Description: MW-2 62-64D

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Benzidine		<2.5	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	2.5
Hexachlorobenzene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Pentachlorobenzene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Hexachloroethane		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Diphenylhydrazine		<1.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Isophorone		<1.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	1.25
Nitrobenzene		<1.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	1.25
2,4-dinitro-o-cresol		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
2,4-dinitrophenols		<1.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	1.25
i-nitrosodiethylamine		<1.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	1.25
N-nitrosodimethylamine		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	1.25
N-nitrosodiphenylamine		<1.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	1.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Pentachlorophenol		<1.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	1.25
Phenol		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Dibutyl phthalate		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Diethyl phthalate		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Dimethyl phthalate		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Anthracene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Fluoranthene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Fluorene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Phenanthrene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Pyrene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Naphthalene		<1.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	1.25
1-methylnaphthalene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
2-methylnaphthalene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25

Date: 9-29-98

Page # 6

Project Number: 19349

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9807000548

Sample Number: 103764

Sample Description: MW-2 62-64D

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Benzo-a-pyrene		<0.25	mg/Kg	S 8270C	7/31/98	8/14/98	DG	4592	4892	0.25
Surr. 2-Fluorophenol		79	%	S 8270C	7/31/98	8/14/98	DG	4592	4892	25-121
Surr. Phenol-d6		90	%	S 8270C	7/31/98	8/14/98	DG	4592	4892	24-113
Surr. Nitroobenzene-d5		84	%	S 8270C	7/31/98	8/14/98	DG	4592	4892	23-120
Surr. 2-Fluorobiphenyl		87	%	S 8270C	7/31/98	8/14/98	DG	4592	4892	30-115
Surr. 2,4,6-Tribromophenol		97	%	S 8270C	7/31/98	8/14/98	DG	4592	4892	19-122
Surr. Terphenyl-d14		83	%	S 8270C	7/31/98	8/14/98	DG	4592	4892	28-137
Aldrin		<50	ug/Kg	S 8082	8/10/98	9/18/98	SH	---	---	50
Chlordane		<50	ug/Kg	S 8082	8/10/98	9/18/98	SH	---	---	50
DDT		<50	ug/Kg	S 8082	8/10/98	9/18/98	SH	---	---	50
Dieldrin		<50	ug/Kg	S 8082	8/10/98	9/18/98	SH	---	---	50
Endosulfan		<50	ug/Kg	S 8082	8/10/98	9/18/98	SH	---	---	50
Endrin		<50	ug/Kg	S 8082	8/10/98	9/18/98	SH	---	---	50
Heptachlor		<50	ug/Kg	S 8082	8/10/98	9/18/98	SH	---	---	50
PCB's		<0.1	mg/Kg	S 8082	8/4/98	8/4/98	RC	4628	4728	0.10
Arsenic		0.79	mg/Kg	S 6010B	8/3/98	8/18/98	RR	4645	4955	0.50
Barium		64	mg/Kg	S 6010B	8/3/98	8/8/98	RR	4641	4761	0.50
Cadmium		0.15	mg/Kg	S 6010B	8/3/98	8/8/98	RR	4641	4761	0.1
Chromium		5.4	mg/Kg	S 6010B	8/3/98	8/18/98	RR	4645	4955	0.5
Lead		2.1	mg/Kg	S 6010B	8/3/98	8/18/98	RR	4645	4955	0.5
Total Mercury		<0.25	mg/Kg	S 7471	8/3/98	8/4/98	HC	4626	4729	0.25
Selenium		<0.50	mg/Kg	S 6010B	8/3/98	8/18/98	RR	4645	4955	0.5
Silver		<0.50	mg/Kg	S 6010B	8/3/98	8/8/98	RR	4641	4761	0.5
Uranium		<1.0	mg/Kg	S 6010B	8/3/98	8/18/98	RR	4645	4955	1.0
Copper		1.3	mg/Kg	S 6010B	8/3/98	8/8/98	RR	4641	4761	1.0
Iron		3,600	mg/Kg	S 6010B	8/3/98	8/18/98	RR	4645	4955	2.0
Manganese		25	mg/Kg	S 6010B	8/3/98	8/8/98	RR	4641	4761	1.0
Zinc		11	mg/Kg	S 6010B	8/3/98	8/8/98	RR	4641	4761	2.0
Aluminum		2,700	mg/Kg	S 6010B	8/3/98	8/18/98	RR	4645	4955	10.0
Boron		<10	mg/Kg	S 6010B	8/3/98	8/8/98	RR	4641	4761	10
Cobalt		3.4	mg/Kg	S 6010B	8/3/98	8/8/98	RR	4641	4761	0.5
Molybdenum		1.7	mg/Kg	S 6010B	8/3/98	8/8/98	RR	4641	4761	1.0
Nickel		3.3	mg/Kg	S 6010B	8/3/98	8/18/98	RR	4645	4955	0.5
Cyanide		0.02	mg/Kg	SM 4500 C,E		8/11/98	RC		4815	0.01
Fluoride		0.84	mg/Kg	E 300.0		8/5/98	JS		4730	0.1
Nitrate		1.5	mg/Kg	E 300.0		8/5/98	JS		4730	0.1
Chloride		35	mg/Kg	E 300.0		8/5/98	JS		4730	0.5
Sulfate		36	mg/Kg	E 300.0		8/5/98	JS		4730	0.5
TDS		570	mg/Kg	E 160.1		8/12/98	RS		4835	---
pH		8.7	s.u.	E 150.1		7/31/98	BP		4715	---
TRPHC		10.6	mg/Kg	S 418.1	8/21/98	8/22/98	SR	4743	5045	10.0
Total Phenols		3.8	mg/Kg	SM 5530 A,D		8/11/98	RC		4813	0.25
Total Radium		11.48	pCi/gm	E 901.1M		8/5/98	DS	---	---	---

Analytical Results Report

Jeff kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-6-98
Page # 7

Project Number: 19349
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000070
Sample Number: 104147

Sample Description: MW-3 53-55'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<2500	ug/Kg	S-8260B		8/6/98	AG		4736	2500
Acrylonitrile		<2500	ug/Kg	S-8260B		8/6/98	AG		4736	2500
Benzene		<500	ug/Kg	S-8260B		8/6/98	AG		4736	500
Carbon tetrachloride		<500	ug/Kg	S-8260B		8/6/98	AG		4736	500
Chlorobenzene		<500	ug/Kg	S-8260B		8/6/98	AG		4736	500
1,2-dichloroethane		<500	ug/Kg	S-8260B		8/6/98	AG		4736	500
1,1,2,2-tetrachloroethane		<500	ug/Kg	S-8260B		8/6/98	AG		4736	500
1,1,1-trichloroethane		<500	ug/Kg	S-8260B		8/6/98	AG		4736	500
1,1,2-trichloroethane		<500	ug/Kg	S-8260B		8/6/98	AG		4736	500
1,1,2-trichloroethylene		<500	ug/Kg	S-8260B		8/6/98	AG		4736	500
Chloroform		<500	ug/Kg	S-8260B		8/6/98	AG		4736	500
Dichlorobenzene		<1000	ug/Kg	S-8260B		8/6/98	AG		4736	1000
1,1-dichloroethylene		<500	ug/Kg	S-8260B		8/6/98	AG		4736	500
Dichloropropenes		<500	ug/Kg	S-8260B		8/6/98	AG		4736	500
Ethylbenzene		2,000	ug/Kg	S-8260B		8/6/98	AG		4736	500
Bromodichloromethane		<500	ug/Kg	S-8260B		8/6/98	AG		4736	500
Bromomethane		<500	ug/Kg	S-8260B		8/6/98	AG		4736	500
Chloromethane		<500	ug/Kg	S-8260B		8/6/98	AG		4736	500
Dichlorodifluoromethane		<500	ug/Kg	S-8260B		8/6/98	AG		4736	500
Dichloromethane		<500	ug/Kg	S-8260B		8/6/98	AG		4736	500
Trichlorofluorometane		<500	ug/Kg	S-8260B		8/6/98	AG		4736	500
Tetrachloroethylene		<500	ug/Kg	S-8260B		8/6/98	AG		4736	500
Toluene		<500	ug/Kg	S-8260B		8/6/98	AG		4736	500
Trichloroethylene		<500	ug/Kg	S-8260B		8/6/98	AG		4736	500
Vinyl chloride		<500	ug/Kg	S-8260B		8/6/98	AG		4736	500
m,p-xylene		8,700	ug/Kg	S-8260B		8/6/98	AG		4736	500
o-xylene		1,400	ug/Kg	S-8260B		8/6/98	AG		4736	500
1,1-dichloroethane		<500	ug/Kg	S-8260B		8/6/98	AG		4736	500
Ethylene dibromide		<500	ug/Kg	S-8260B		8/6/98	AG		4736	500
cis-1,2-dichloroethylene		<500	ug/Kg	S-8260B		8/6/98	AG		4736	500
trans-1,2-dichloroethylene		<500	ug/Kg	S-8260B		8/6/98	AG		4736	500
Methylene chloride		<2500	ug/Kg	S-8260B		8/6/98	AG		4736	2500
Surr. Dibromofluoromethane		98	%	S-8260B		8/6/98	AG		4736	72-130
Surr. Toluene-d8		105	%	S-8260B		8/6/98	AG		4736	77-127
Surr. 4-Bromofluorobenzene		108	%	S-8260B		8/6/98	AG		4736	72-131
Benzidine		<2.5	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	2.5
Hexachlorobenzene		<12.5	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	12.5
Pentachlorobenzene		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
1,2,4,5-tetrachlorobenzene		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25

Corrected *

Date: 10-6-98

Page # 8

Project Number: 19349

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000070

Sample Number: 104147

Sample Description: MW-3 53-55'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
2,4-dichlorophenol		<6.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	6.25
2,4,5-trichlorophenol		<6.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	6.25
2,4,6-trichlorophenol		<6.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	6.25
bis (2-chloroethyl) ether		<6.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	6.25
bis (2-chloroisopropyl) etl		<6.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	6.25
bis (chloromethyl) ether		<6.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	6.25
3,3-dichlorobenzidine		<6.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	6.25
2,4-dinitrotoluene		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
Diphenylhydrazine		<6.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	6.25
Hexachlorobutadiene		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
Hexachlorocyclopentadie		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
Isophorone		<6.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	6.25
Nitrobenzene		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
2,4-dinitro-o-cresol		<6.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	6.25
2,4-dinitrophenols		<6.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	6.25
n-nitrosodiethylamine		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
N-nitrosodimethylamine		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
N-nitrosodibutylamine		<6.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	6.25
N-nitrosodiphenylamine		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
N-nitrosopyrrolidine		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
Pentachlorophenol		<6.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	6.25
Dibutyl phthalate		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
di-2-ethylhexyl phthalate		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
Diethyl phthalate		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
Dimethyl phthalate		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
Anthracene		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
3,4-benzofluoranthene		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
Benzo(k)fluoranthene		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
Fluoranthene		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
Fluorene		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
Phenanthrene		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
Pyrene		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
Naphthalene		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
1-methylnaphthalene		2.90	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
2-methylnaphthalene		2.85	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
Benzo-a-pyrene		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
Phenol		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
Surr. 2-Fluorophenol		70	%	S-8270C	8/5/98	8/21/98	DG	4650	5040	25-121
Surr. Phenol-d6		65	%	S-8270C	8/5/98	8/21/98	DG	4650	5040	24-113
Surr. Nitroobenzene-d5		66	%	S-8270C	8/5/98	8/21/98	DG	4650	5040	23-120
Surr. 2-Fluorobiphenyl		93	%	S-8270C	8/5/98	8/21/98	DG	4650	5040	30-115
Surr. 2,4,6-Tribromophenol		61	%	S-8270C	8/5/98	8/21/98	DG	4650	5040	19-122
Surr. Terphenyl-d14		113	%	S-8270C	8/5/98	8/21/98	DG	4650	5040	28-137

* Corrected - Added Phenol result.

Date: 10-6-98

Page # 9

Order ID Number: 9808000070

Sample Number: 104147

Project Number: 19349

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Sample Description: MW-3 53-55'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
Chlordane		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
DDT		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
Dieldrin		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
Endosulfan		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
Endrin		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
Heptachlor		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
PCB's		<0.1	mg/Kg	S-8082	8/10/98	8/10/98	RC	4691	4805	0.1
Arsenic		<0.50	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	0.5
Barium		20	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	0.5
Cadmium		0.64	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	0.1
Chromium		3.7	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	0.5
Lead		2.7	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	0.5
Total Mercury		<0.25	mg/Kg	S 7470	8/6/98	8/11/98	MS	4662	4812	0.25
Selenium		<0.50	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	0.5
Silver		<0.50	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	0.5
Uranium		<1.0	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	1
Copper		2.2	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	1
Iron		2,400	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	2
Manganese		18	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	1
Zinc		7.0	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	2
Aluminum		2,000	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	10
Boron		6.3	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	10
Cobalt		2.5	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	0.5
Molybdenum		1.3	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	1
Nickel		2.1	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	0.5
Cyanide		<0.01	mg/Kg	SM 4500 Cn,CE		8/11/98	RC		4815	0.01
Fluoride		0.96	mg/Kg	E 300.0		8/13/98	JS		4862	0.2
Nitrate		1.2	mg/Kg	E 300.0		8/13/98	JS		4862	0.2
Chloride		28	mg/Kg	E 300.0		8/13/98	JS		4862	1.0
Sulfate		7.6	mg/Kg	E 300.0		8/13/98	JS		4862	1.0
TDS		330	mg/Kg	E 160.1		8/13/98	RS		4872	---
pH		9.6	s.u.	E 150.1		8/9/98	BP		4775	---
TRPHC		3,000	mg/Kg	S 418.1	8/21/98	8/22/98	SR	4743	5045	10.0
Total Phenols		9.5	mg/Kg	SM 5530 A,D		8/11/98	RC		4813	0.25
Total Radium		4.80	pCi/gm	E 901.1M		8/19/98	DS	---	---	---



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ARS Tracking Number: ARS-98-0814 P.O. Number: Project Location: Hobbs, NM
 Client I.D.: 104147 m803 33-75 ARS Sample I.D.: ARS-98-2946
 Date Sampled: N/A Date Received: 08/14/98
 Time Sampled: N/A Time Received: 1551
 Type of Sample: Soil Date of Report: 8/25/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	2.89	1.78	pCi/gm	0.107	0.066	Bq/gm	EPA 901.1M	8/19/98 1345	DC
Ra-228	<0.16	N/A	pCi/gm	<0.006	N/A	Bq/gm	EPA 901.1M	8/19/98 1345	DC
Pb-210	<1.03	N/A	pCi/gm	<0.038	N/A	Bq/gm	EPA 901.1M	8/19/98 1345	DC
Total Activity	4.80	N/A	pCi/gm	0.178	N/A	Bq/gm	EPA 901.1M	8/19/98 1345	DC

Notes:

Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-6-98
Page # 10

Project Number: 19349
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000070
Sample Number: 104148

Sample Description: MW-3 63-65'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<500	ug/Kg	S-8260B		8/6/98	AG		4736	500
Acrylonitrile		<500	ug/Kg	S-8260B		8/6/98	AG		4736	500
Benzene		<100	ug/Kg	S-8260B		8/6/98	AG		4736	100
Carbon tetrachloride		<100	ug/Kg	S-8260B		8/6/98	AG		4736	100
Chlorobenzene		<100	ug/Kg	S-8260B		8/6/98	AG		4736	100
1,2-dichloroethane		<100	ug/Kg	S-8260B		8/6/98	AG		4736	100
1,1,2,2-tetrachloroethane		<100	ug/Kg	S-8260B		8/6/98	AG		4736	100
1,1,1-trichloroethane		<100	ug/Kg	S-8260B		8/6/98	AG		4736	100
1,1,2-trichloroethane		<100	ug/Kg	S-8260B		8/6/98	AG		4736	100
1,1,2-trichloroethylene		<100	ug/Kg	S-8260B		8/6/98	AG		4736	100
Chloroform		<100	ug/Kg	S-8260B		8/6/98	AG		4736	100
Dichlorobenzene		<200	ug/Kg	S-8260B		8/6/98	AG		4736	200
1,1-dichloroethylene		<100	ug/Kg	S-8260B		8/6/98	AG		4736	100
Dichloropropenes		<100	ug/Kg	S-8260B		8/6/98	AG		4736	100
Ethylbenzene		150	ug/Kg	S-8260B		8/6/98	AG		4736	100
Bromodichloromethane		<100	ug/Kg	S-8260B		8/6/98	AG		4736	100
Bromomethane		<100	ug/Kg	S-8260B		8/6/98	AG		4736	100
Chloromethane		<100	ug/Kg	S-8260B		8/6/98	AG		4736	100
Dichlorodifluoromethane		<100	ug/Kg	S-8260B		8/6/98	AG		4736	100
Dichloromethane		<100	ug/Kg	S-8260B		8/6/98	AG		4736	100
Trichlorofluoromethane		<100	ug/Kg	S-8260B		8/6/98	AG		4736	100
Tetrachloroethylene		<100	ug/Kg	S-8260B		8/6/98	AG		4736	100
Toluene		<100	ug/Kg	S-8260B		8/6/98	AG		4736	100
Trichloroethylene		<100	ug/Kg	S-8260B		8/6/98	AG		4736	100
Vinyl chloride		<100	ug/Kg	S-8260B		8/6/98	AG		4736	100
m,p-xylene		810	ug/Kg	S-8260B		8/6/98	AG		4736	100
o-xylene		180	ug/Kg	S-8260B		8/6/98	AG		4736	100
1,1-dichloroethane		<100	ug/Kg	S-8260B		8/6/98	AG		4736	100
Ethylene dibromide		<100	ug/Kg	S-8260B		8/6/98	AG		4736	100
cis-1,2-dichloroethylene		<100	ug/Kg	S-8260B		8/6/98	AG		4736	100
trans-1,2-dichloroethylene		<100	ug/Kg	S-8260B		8/6/98	AG		4736	100
Methylene chloride		<500	ug/Kg	S-8260B		8/6/98	AG		4736	500
Surr. Dibromofluoromethane		100	%	S-8260B		8/6/98	AG		4736	72-130
Surr. Toluene-d8		103	%	S-8260B		8/6/98	AG		4736	77-127
Surr. 4-Bromofluorobenzene		107	%	S-8260B		8/6/98	AG		4736	72-131
Benzidine		<12.5	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	12.5
Hexachlorobenzene		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
Pentachlorobenzene		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
1,2,4,5-tetrachlorobenzene		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25

Corrected *

Date: 10-6-98

Project Number: 19349

Page # 11

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000070

Sample Number: 104148

Sample Description: MW-3 63-65'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
2,4-dichlorophenol		<6.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	6.25
2,4,5-trichlorophenol		<6.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	6.25
2,4,6-trichlorophenol		<6.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	6.25
bis (2-chloroethyl) ether		<6.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	6.25
bis (2-chloroisopropyl) et		<6.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	6.25
bis (chloromethyl) ether		<6.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	6.25
3,3-dichlorobenzidine		<6.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	6.25
2,4-dinitrotoluene		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
Diphenylhydrazine		<6.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	6.25
Hexachlorobutadiene		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
Hexachlorocyclopentadie		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
Isophorone		<6.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	6.25
Nitrobenzene		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
2,4-dinitro-o-cresol		<6.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	6.25
2,4-dinitrophenols		<6.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	6.25
n-nitrosodiethylamine		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
N-nitrosodimethylamine		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
N-nitrosodibutylamine		<6.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	6.25
N-nitrosodiphenylamine		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
N-nitrosopyrrolidine		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
Pentachlorophenol		<6.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	6.25
Dibutyl phthalate		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
di-2-ethylhexyl phthalate		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
Diethyl phthalate		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
Dimethyl phthalate		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
Anthracene		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
3,4-benzofluoranthene		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
Benzo(k)fluoranthene		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
Fluoranthene		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
Fluorene		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
Phenanthrene		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
Pyrene		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
Naphthalene		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
1-methylnaphthalene		2.60	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
2-methylnaphthalene		2.52	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
Benzo-a-pyrene		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
Phenol		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
Surr. 2-Fluorophenol		53	%	S-8270C	8/5/98	8/21/98	DG	4650	5040	25-121
Surr. Phenol-d6		54	%	S-8270C	8/5/98	8/21/98	DG	4650	5040	24-113
Surr. Nitroobenzene-d5		49	%	S-8270C	8/5/98	8/21/98	DG	4650	5040	23-120
Surr. 2-Fluorobiphenyl		81	%	S-8270C	8/5/98	8/21/98	DG	4650	5040	30-115
Surr. 2,4,6-Tribromophenol		49	%	S-8270C	8/5/98	8/21/98	DG	4650	5040	19-122
Surr. Terphenyl-d14		96	%	S-8270C	8/5/98	8/21/98	DG	4650	5040	28-137

* Corrected - Added Phenol result.

Date: 10-6-98

Page # 12

Project Number: 19349

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000070

Sample Number: 104148

Sample Description: MW-3 63-65'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
Chlordane		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
DDT		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
Dieldrin		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
Endosulfan		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
Endrin		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
Heptachlor		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
PCB's		<0.1	mg/Kg	S-8082	8/10/98	8/10/98	RC	4691	4805	0.1
Arsenic		1.1	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	0.5
Barium		29	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	0.5
Cadmium		0.61	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	0.1
Chromium		4.4	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	0.5
Lead		1.7	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	0.5
Total Mercury		<0.25	mg/Kg	S 7470	8/6/98	8/11/98	MS	4662	4812	0.25
Selenium		0.76	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	0.5
Silver		<0.50	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	0.5
Uranium		<1.0	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	1
Copper		2.3	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	1
Iron		2,600	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	2
Manganese		23	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	1
Zinc		9.3	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	2
Aluminum		2,100	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	10
Boron		6.9	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	10
Cobalt		2.9	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	0.5
Molybdenum		1.9	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	1
Nickel		2.6	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	0.5
Cyanide		0.02	mg/Kg	SM 4500 C,E		8/11/98	RC		4815	0.01
Fluoride		1.1	mg/Kg	E 300.0		8/13/98	JS		4862	0.2
Nitrate		<0.2	mg/Kg	E 300.0		8/13/98	JS		4862	0.2
Chloride		37	mg/Kg	E 300.0		8/13/98	JS		4862	1.0
Sulfate		6.1	mg/Kg	E 300.0		8/13/98	JS		4862	1.0
pH		9.0	s.u.	E 150.1		8/9/98	BP		4775	---
TRPHC		3,820	mg/Kg	S 418.1	8/21/98	8/22/98	SR	4743	5045	10.0
Total Phenols		7.5	mg/Kg	SM 5530 A,D		8/11/98	RC		4813	0.25
TDS		310	mg/Kg	S 160.1		8/13/98	RS		4872	---
Total Radium		4.34	pCi/gm	E 901.1M		8/19/98	DS	---	---	---



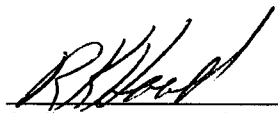
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ARS Tracking Number: ARS-98-0814 P.O. Number: Project Location: Hobbs, NM
Client I.D.: 104148 m036365 ARS Sample I.D.: ARS-98-2947
Date Sampled: N/A Date Received: 08/14/98
Time Sampled: N/A Time Received: 1551
Type of Sample: Soil Date of Report: 8/25/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	<1.16	N/A	pCi/gm	<0.043	N/A	Bq/gm	EPA 901.1M	8/19/98 1416	DC
Ra-228	<0.12	N/A	pCi/gm	<0.004	N/A	Bq/gm	EPA 901.1M	8/19/98 1416	DC
Pb-210	3.03	2.84	pCi/gm	0.112	0.105	Bq/gm	EPA 901.1M	8/19/98 1416	DC
Total Activity	4.34	N/A	pCi/gm	0.161	N/A	Bq/gm	EPA 901.1M	8/19/98 1416	DC

Notes:


Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 9-29-98
Page # 4

Project Number: 19349
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000066
Sample Number: 104099

Sample Description: MW-4 18-20'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<125	ug/Kg	S-8260B		8/6/98	AG		4736	125
Acrylonitrile		<125	ug/Kg	S-8260B		8/6/98	AG		4736	125
Benzene		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
Carbon tetrachloride		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
Chlorobenzene		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
1,2-dichloroethane		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
1,1,2,2-tetrachloroethane		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
1,1,1-trichloroethane		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
1,1,2-trichloroethane		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
1,1,2-trichloroethylene		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
Chloroform		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
Dichlorobenzene		<50	ug/Kg	S-8260B		8/6/98	AG		4736	50
1,1-dichloroethylene		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
Dichloropropenes		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
Ethylbenzene		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
Bromodichloromethane		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
Bromomethane		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
Chloromethane		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
Dichlorodifluoromethane		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
Dichloromethane		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
Trichlorofluoromethane		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
Tetrachloroethylene		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
Toluene		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
Trichloroethylene		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
Vinyl chloride		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
m,p-xylene		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
o-xylene		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
1,1-dichloroethane		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
Ethylene dibromide		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
cis-1,2-dichloroethylene		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
trans-1,2-dichloroethylene		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
Methylene chloride		<125	ug/Kg	S-8260B		8/6/98	AG		4736	125
Surr. Dibromofluoromethane		97	%	S-8260B		8/6/98	AG		4736	72-130
Surr. Toluene-d8		103	%	S-8260B		8/6/98	AG		4736	77-127
Surr. 4-Bromofluorobenzene		103	%	S-8260B		8/6/98	AG		4736	72-131

Corrected *

Date:

Page # 5

Project Number: 19349

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000066

Sample Number: 104099

Sample Description: MW-4 18-20'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Benzidine		<2.5	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
Hexachloroethane		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
Isophorone		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
2,4-dinitro-o-cresol		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
n-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
Anthracene		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
Fluorene		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
Pyrene		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
1-methylnaphthalene		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
2-methylnaphthalene		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
Phenol		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
Surr. 2-Fluorophenol		67	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	25-121

* Corrected - Added Phenol result.

Date:

Page # 6

Project Number: 19349
 Project Name: Shell Grimes
 Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000066
 Sample Number: 104099

Sample Description: MW-4 18-20'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Surr. Phenol-d6		68	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	24-113
Surr. Nitroobenzene-d5		57	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	23-120
Surr. 2-Fluorobiphenyl		65	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	30-115
Surr. 2,4,6-Tribromophenol		76	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	19-122
Surr. Terphenyl-d14		95	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	28-137
Aldrin		<50	ug/Kg	S-8080	8/10/98	9/18/98	SH	---	---	50
Chlordane		<50	ug/Kg	S-8080	8/10/98	9/18/98	SH	---	---	50
DDT		<50	ug/Kg	S-8080	8/10/98	9/18/98	SH	---	---	50
Dieldrin		<50	ug/Kg	S-8080	8/10/98	9/18/98	SH	---	---	50
Endosulfan		<50	ug/Kg	S-8080	8/10/98	9/18/98	SH	---	---	50
Endrin		<50	ug/Kg	S-8080	8/10/98	9/18/98	SH	---	---	50
Heptachlor		<50	ug/Kg	S-8080	8/10/98	9/18/98	SH	---	---	50
PCB's		<0.1	mg/Kg	S-8082	8/10/98	8/10/98	RC	4691	4805	0.1
Arsenic		3.0	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	0.5
Barium		100	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	0.5
Cadmium		0.52	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	0.1
Chromium		3.7	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	0.5
Lead		1.9	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	0.5
Total Mercury		<0.25	mg/Kg	S 7470	8/6/98	8/11/98	MS	4662	4812	0.25
Selenium		0.78	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	0.5
Silver		<0.50	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	0.5
Uranium		<1.0	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	1
Copper		5.6	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	1
Iron		2,300	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	2
Manganese		40	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	1
Zinc		7.3	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	2
Aluminum		3,800	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	10
Boron		9.2	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	10
Cobalt		5.0	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	0.5
Molybdenum		3.0	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	1
Nickel		4.5	mg/Kg	S 6010B	8/10/98	8/20/98	RR	4710	5030	0.5
Cyanide		0.01	mg/Kg	SM 4500 C,E		8/11/98	RC		4815	0.01
Fluoride		2.9	mg/Kg	E 300.0		8/13/98	JS		4861	0.2
Nitrate		2.4	mg/Kg	E 300.0		8/13/98	JS		4861	1
Chloride		85	mg/Kg	E 300.0		8/20/98	JS		5025	1
Sulfate		85	mg/Kg	E 300.0		8/17/98	JS		4930	0.2
TDS		160	mg/Kg	E 160.1		8/13/98	RS		4872	---
pH		8.7	s.u.	E 150.1		8/9/98	BP		4775	---
TRPHC		<10.0	mg/Kg	S 418.1	8/21/98	8/22/98	SR	4743	5045	10.0
Total Phenols		6.5	mg/Kg	SM 5530 A,D		8/11/98	RC		4813	0.25
Total Radium		1.67	pCi/gm	E 901.1M		8/18/98	DS	---	---	---



1726 Wooddale Court • Baton Rouge, Louisiana 70806

1 (800) 401-4277 • Fax (504) 927-6822

American Radiation Services, Inc.

Laboratory Analysis Report

Prepared For:

Trace Analysis, Inc.

Nell Green

6701 Aberdeen Avenue, Ste. 9

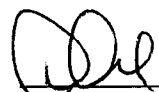
Lubbock, TX 79424

Phone: 800-378-1296

Fax: (806) 794-1298



Quality Assurance Review



Danny L. Coleman
Laboratory Manager

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.



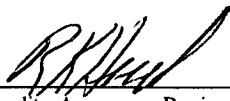
1726 Wooddale Court • Baton Rouge, Louisiana 70806

1 (800) 401-4277 • Fax (504) 927-6822

ARS Tracking Number: ARS-98-0782 P.O. Number: Project Location: Hobbs, NM
Client I.D.: 104099 4 18-20 ARS Sample I.D.: ARS-98-2825
Date Sampled: 08/03/98 Date Received: 08/07/98
Time Sampled: N/A Time Received: 1105
Type of Sample: Soil Date of Report: 8/26/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	<0.86	N/A	pCi/gm	<0.032	N/A	Bq/gm	EPA 901.1M	8/18/98 0827	DC
Ra-228	<0.15	N/A	pCi/gm	<0.006	N/A	Bq/gm	EPA 901.1M	8/18/98 0827	DC
Pb-210	<1.03	N/A	pCi/gm	<0.038	N/A	Bq/gm	EPA 901.1M	8/18/98 0827	DC
Total Activity	1.67	N/A	pCi/gm	0.062	N/A	Bq/gm	EPA 901.1M	8/18/98 0827	DC

Notes:


Quality Assurance Review

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ARS Tracking Number: ARS-98-0782

P.O. Number:

Project Location: Hobbs, NM

Client I.D.: 104100

ARS Sample I.D.:

ARS-98-2826

Date Sampled: N/A

Date Received:

08/07/98

Time Sampled: N/A

Time Received

1105

Type of Sample: Soil

Date of Report

8/26/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	2.08	2.01	pCi/gm	0.077	0.074	Bq/gm	EPA 901.1M	8/18/98 1051	DC
Ra-228	<0.12	N/A	pCi/gm	<0.004	N/A	Bq/gm	EPA 901.1M	8/18/98 1051	DC
Pb-210	2.78	2.58	pCi/gm	0.103	0.095	Bq/gm	EPA 901.1M	8/18/98 1051	DC
Total Activity	13.32	N/A	pCi/gm	0.493	N/A	Bq/gm	EPA 901.1M	8/18/98 1051	DC

Notes:

Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Notes:

Comments:

- 1.0) Soil and Sludge analysis are reported on a wet basis or an as received basis unless otherwise indicated.
- 2.0) The data in this report are within the limits of uncertainty specified in the reference method unless specified.
- 3.0) Modified analysis procedures are procedures that are modified to meet the certain specifications. An example may be the use of a water method to analyze a solid matrix due to the lack of an officially recognized procedure for the analysis of the solid matrix.
- 4.0) Derived Air Concentrations and Effluent Release Concentrations are obtained from 10 CFR 20 Appendix B
- 5.0) Total activity is actually total gamma activity and is determined utilizing the prominent gamma emitters from the naturally occurring radioactive decay chains and other prominent radioactive nuclides. Total activity may be lower than actual total activity due to the extent of secular equilibrium achieved in the various decay chains at the time of analysis. The total activity is not representative of nuclides that emit solely alpha or beta particles.
- 6.0) Ra-228 is determined via secular equilibrium with its daughter, Actinium 228. (Gamma Spectroscopy only)
- 7.0) U-238 is determined via secular equilibrium with its daughter, Thorium 234. (Gamma Spectroscopy only)
- 8.0) All Gamma spectroscopy was performed utilizing high purity germanium detectors (HPGE).

Method References:

- 1.0) EPA 600/4-80-032, Prescribed Procedures for the Measurement of Radioactivity in Drinking Water, August 1980.
- 2.0) Standard Methods for the Examination of Water and Waste Water, 18th, 1992
- 3.0) EPA SW-846, Test Methods for Evaluating Solid Waste, Third Edition, (9/86). (Updated through 1995)
- 4.0) EPA 600/4/79-020, Methods for Chemical Analysis of Water and Waste, March 1983.
- 5.0) HASL 300

Definitions:

- | | | |
|-------|-----------------|--|
| 1.0) | BDL | Analyte not detected because the value was below the detection limit. |
| 2.0) | ND | Not detected above the detection limit. |
| 3.0) | Detection Limit | The minimum amount of the analyte that ARS can detect utilizing the specific analysis. |
| 4.0) | B | Method Blank |
| 5.0) | D | Method Duplicate |
| 6.0) | MS | Matrix Spike |
| 7.0) | S | Spike |
| 8.0) | RS | Reference Spike |
| 9.0) | *SC | Subcontracted out to another qualified laboratory |
| 10.0) | NR | Not Referenced |

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date:
Page # 7

Project Number: 19349
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000066
Sample Number: 104100

Sample Description: MW-4 63-65'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<125	ug/Kg	S-8260B		8/6/98	AG		4736	125
Acrylonitrile		<125	ug/Kg	S-8260B		8/6/98	AG		4736	125
Benzene		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
Carbon tetrachloride		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
Chlorobenzene		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
1,2-dichloroethane		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
1,1,2,2-tetrachloroethane		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
1,1,1-trichloroethane		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
1,1,2-trichloroethane		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
1,1,2-trichloroethylene		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
Chloroform		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
Dichlorobenzene		<50	ug/Kg	S-8260B		8/6/98	AG		4736	50
1,1-dichloroethylene		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
Dichloropropenes		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
Ethylbenzene		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
Bromodichloromethane		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
Bromomethane		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
Chloromethane		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
Dichlorodifluoromethane		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
Dichloromethane		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
Trichlorofluorometane		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
Tetrachloroethylene		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
Toluene		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
Trichloroethylene		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
Vinyl chloride		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
m,p-xylene		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
o-xylene		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
1,1-dichloroethane		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
Ethylene dibromide		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
cis-1,2-dichloroethylene		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
trans-1,2-dichloroethylene		<25	ug/Kg	S-8260B		8/6/98	AG		4736	25
Methylene chloride		<125	ug/Kg	S-8260B		8/6/98	AG		4736	125
Surr. Dibromofluoromethane		98	%	S-8260B		8/6/98	AG		4736	72-130
Surr. Toluene-d8		102	%	S-8260B		8/6/98	AG		4736	77-127
Surr. 4-Bromofluorobenzene		105	%	S-8260B		8/6/98	AG		4736	72-131

Corrected *

Date:

Page # 8

Project Number: 19349

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000066

Sample Number: 104100

Sample Description: MW-4 63-65'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Benzidine		<2.5	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
Hexachloroethane		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
Isophorone		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
2,4-dinitro-o-cresol		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
n-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	1.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
Anthracene		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
Fluorene		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
Pyrene		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
1-methylnaphthalene		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
2-methylnaphthalene		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
Phenol		<0.25	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	0.25
Surr. 2-Fluorophenol		63	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	25-121

* Corrected - Added Phenol result.

Project Number: 19349
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000066
Sample Number: 104100

Sample Description: MW-4 63-65'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Surr. Phenol-d6		61	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	24-113
Surr. Nitroobenzene-d5		60	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	23-120
Surr. 2-Fluorobiphenyl		65	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	30-115
Surr. 2,4,6-Tribromophenol		78	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	19-122
Surr. Terphenyl-d14		107	mg/Kg	S-8270C	8/5/98	8/21/98	DG	4650	5040	28-137
Aldrin		<50	ug/Kg	S-8080	8/10/98	9/18/98	SH	---	---	50
Chlordane		<50	ug/Kg	S-8080	8/10/98	9/18/98	SH	---	---	50
DDT		<50	ug/Kg	S-8080	8/10/98	9/18/98	SH	---	---	50
Dieldrin		<50	ug/Kg	S-8080	8/10/98	9/18/98	SH	---	---	50
Endosulfan		<50	ug/Kg	S-8080	8/10/98	9/18/98	SH	---	---	50
Endrin		<50	ug/Kg	S-8080	8/10/98	9/18/98	SH	---	---	50
Heptachlor		<50	ug/Kg	S-8080	8/10/98	9/18/98	SH	---	---	50
PCB's		<0.1	mg/Kg	S-8082	8/10/98	8/10/98	RC	4691	4805	0.1
Arsenic		1.5	mg/Kg	S 6101B	8/10/98	8/20/98	RR	4710	5030	0.5
Barium		8.2	mg/Kg	S 6101B	8/10/98	8/20/98	RR	4710	5030	0.5
Cadmium		0.58	mg/Kg	S 6101B	8/10/98	8/20/98	RR	4710	5030	0.1
Chromium		3.7	mg/Kg	S 6101B	8/10/98	8/20/98	RR	4710	5030	0.5
Lead		1.7	mg/Kg	S 6101B	8/10/98	8/20/98	RR	4710	5030	0.5
Total Mercury		<0.25	mg/Kg	S 7470	8/6/98	8/11/98	MS	4662	4812	0.25
Selenium		<0.50	mg/Kg	S 6101B	8/10/98	8/20/98	RR	4710	5030	0.5
Silver		<0.50	mg/Kg	S 6101B	8/10/98	8/20/98	RR	4710	5030	0.5
Uranium		<1.0	mg/Kg	S 6101B	8/10/98	8/20/98	RR	4710	5030	1
Copper		1.6	mg/Kg	S 6101B	8/10/98	8/20/98	RR	4710	5030	1
Iron		2,600	mg/Kg	S 6101B	8/10/98	8/20/98	RR	4710	5030	2
Manganese		22	mg/Kg	S 6101B	8/10/98	8/20/98	RR	4710	5030	1
Zinc		5.2	mg/Kg	S 6101B	8/10/98	8/20/98	RR	4710	5030	2
Aluminum		2,200	mg/Kg	S 6101B	8/10/98	8/20/98	RR	4710	5030	10
Boron		6.6	mg/Kg	S 6101B	8/10/98	8/20/98	RR	4710	5030	10
Cobalt		2.7	mg/Kg	S 6101B	8/10/98	8/20/98	RR	4710	5030	0.5
Molybdenum		1.6	mg/Kg	S 6101B	8/10/98	8/20/98	RR	4710	5030	1
Nickel		2.0	mg/Kg	S 6101B	8/10/98	8/20/98	RR	4710	5030	0.5
Cyanide		0.07	mg/Kg	SM 4500 C,E		8/11/98	RC		4815	0.01
Fluoride		0.81	mg/Kg	E 300.0		8/13/98	JS		4861	0.2
Nitrate		1.2	mg/Kg	E 300.0		8/13/98	JS		4861	1
Chloride		29	mg/Kg	E 300.0		8/17/98	JS		4930	1
Sulfate		18	mg/Kg	E 300.0		8/17/98	JS		4930	0.2
TDS		240	mg/Kg	E 160.1		8/13/98	rs		4872	---
pH		8.8	s.u.	E 150.1		8/9/98	BP		4775	---
TRPHC		<10.0	mg/Kg	S 418.1	8/21/98	8/22/98	SR	4743	5045	10.0
Total Phenols		2.75	mg/Kg	SM 5530 A,D		8/11/98	RC		4813	0.25
Total Radium		13.32	pCi/gm	E 901.1M		8/18/98	DS	---	---	---

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 9-29-98
Page # 4

Project Number: 19349
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000123
Sample Number: 104339

Sample Description: MW-5 58-60'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<125	ug/Kg	S-8260B		8/13/98	AG		4869	125
Acrylonitrile		<125	ug/Kg	S-8260B		8/13/98	AG		4869	125
Benzene		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
Carbon tetrachloride		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
Chlorobenzene		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
1,2-dichloroethane		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
1,1,2,2-tetrachloroethane		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
1,1,1-trichloroethane		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
1,1,2-trichloroethane		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
1,1,2-trichloroethylene		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
Chloroform		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
Dichlorobenzene		<50	ug/Kg	S-8260B		8/13/98	AG		4869	50
1,1-dichloroethylene		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
Dichloropropenes		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
Ethylbenzene		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
Bromodichloromethane		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
Bromomethane		<125	ug/Kg	S-8260B		8/13/98	AG		4869	125
Chloromethane		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
Dichlorodifluoromethane		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
Dichloromethane		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
Trichlorofluoromethane		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
Tetrachloroethylene		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
Toluene		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
Trichloroethylene		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
Vinyl chloride		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
m,p-xylene		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
o-xylene		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
1,1-dichloroethane		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
Ethylene dibromide		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
cis-1,2-dichloroethylene		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
trans-1,2-dichloroethylene		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
Methylene chloride		<125	ug/Kg	S-8260B		8/13/98	AG		4869	125
Surr. Dibromofluoromethane		112	%	S-8260B		8/13/98	AG		4869	72-130
Surr. Toluene-d8		114	%	S-8260B		8/13/98	AG		4869	77-127
Surr. 4-Bromofluorobenzene		119	%	S-8260B		8/13/98	AG		4869	72-131
Benzidine		<25	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	25
Hexachlorobenzene		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
Pentachlorobenzene		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
1,2,4,5-tetrachlorobenzene		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5



1726 Wooddale Court • Baton Rouge, Louisiana 70806

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ARS Tracking Number: ARS-98-0769 P.O. Number: Project Location: Hobbs, NM
 Client I.D.: 103764 m02 62-64 ARS Sample I.D.: ARS-98-2765
 Date Sampled: N/A Date Received: 08/04/98
 Time Sampled: N/A Time Received: 1145
 Type of Sample: Solid Date of Report: 8/26/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	1.49	1.33	pCi/gm	0.055	0.049	Bq/gm	EPA 901.1M	8/05/98 1659	DC
Ra-228	0.50	0.19	pCi/gm	0.019	0.007	Bq/gm	EPA 901.1M	8/05/98 1659	DC
Pb-210	1.38	1.31	pCi/gm	0.051	0.048	Bq/gm	EPA 901.1M	8/05/98 1659	DC
Total Activity	11.48	N/A	pCi/gm	0.425	N/A	Bq/gm	EPA 901.1M	8/05/98 1659	DC

Notes:

Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Date: 9-29-98

Page # 5

Project Number: 19349

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000123

Sample Number: 104339

Sample Description: MW-5 58-60'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
2,4-dichlorophenol		<12.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	12.5
2,4,5-trichlorophenol		<12.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	12.5
2,4,6-trichlorophenol		<12.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	12.5
bis (2-chloroethyl) ether		<12.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	12.5
bis (2-chloroisopropyl) ether		<12.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	12.5
bis (chloromethyl) ether		<12.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	12.5
3,3-dichlorobenzidine		<12.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	12.5
2,4-dinitrotoluene		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
Diphenylhydrazine		<12.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	12.5
Hexachlorobutadiene		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
Hexachlorocyclopentadiene		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
Isophorone		<12.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	12.5
Nitrobenzene		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
2,4-dinitro-o-cresol		<12.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	12.5
2,4-dinitrophenols		<12.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	12.5
i-nitrosodiethylamine		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
N-nitrosodimethylamine		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
N-nitrosodibutylamine		<12.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	12.5
N-nitrosodiphenylamine		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
N-nitrosopyrrolidine		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
Pentachlorophenol		<12.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	12.5
Phenol		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
Dibutyl phthalate		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
di-2-ethylhexyl phthalate		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
Diethyl phthalate		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
Dimethyl phthalate		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
Anthracene		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
3,4-benzofluoranthene		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
Benzo(k)fluoranthene		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
Fluoranthene		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
Fluorene		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
Phenanthrene		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
Pyrene		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
Naphthalene		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
1-methylnaphthalene		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
2-methylnaphthalene		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
Benzo-a-pyrene		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
Surr. 2-Fluorophenol		67	%	S-8270C	8/10/98	8/18/98	DG	4702	4965	25-121
Surr. Phenol-d6		61	%	S-8270C	8/10/98	8/18/98	DG	4702	4965	24-113
Surr. Nitrobenzene-d5		56	%	S-8270C	8/10/98	8/18/98	DG	4702	4965	23-120
Surr. 2-Fluorobiphenyl		93	%	S-8270C	8/10/98	8/18/98	DG	4702	4965	30-115
Surr. 2,4,6-Tribromophenol		22	%	S-8270C	8/10/98	8/18/98	DG	4702	4965	19-122

Date: 9-29-98

Page # 6

Project Number: 19349

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000123

Sample Number: 104339

Sample Description: MW-5 58-60'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Surr. Terphenyl-d14		101	%	S-8080	8/10/98	8/18/98	DG	4702	4965	28-137
Aldrin		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
Chlordane		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
DDT		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
Dieldrin		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
Endosulfan		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
Endrin		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
Heptachlor		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
PCB's		<0.25	mg/Kg	S 8082	8/10/98	8/12/98	MS	4699	4832	0.25
Arsenic		<0.50	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	0.50
Barium		<0.50	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	0.50
Cadmium		<0.10	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	0.10
Chromium		<0.50	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	0.50
Lead		<0.50	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	0.50
Total Mercury		<0.50	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	0.50
Selenium		<0.50	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	0.50
Silver		<0.50	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	0.50
Uranium		<10	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	10
Copper		<1.0	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	1.0
Iron		<0.50	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	0.50
Manganese		<1.0	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	1.0
Zinc		<2.0	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	2.0
Aluminum		<0.50	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	0.50
Boron		<10	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	10
Cobalt		<0.50	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	0.50
Molybdenum		<1.0	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	1.0
Nickel		<0.50	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	0.50
Cyanide		<0.01	mg/Kg	SM 4500 CN,CE		8/20/98			5028	0.01
Fluoride		0.77	mg/Kg	E 300.0		8/20/98			5025	0.1
Nitrate		1.1	mg/Kg	E 300.0		8/20/98			5025	0.2
Chloride		18	mg/Kg	E 300.0		8/20/98			5025	1.0
Sulfate		38	mg/Kg	E 300.0		8/20/98			5025	1.0
TDS		280	mg/Kg	E 160.1		9/2/98			5195	---
TRPHC		3,170	mg/Kg	S 418.1	8/21/98	8/22/98	SR	4743	5045	10.0
Total Phenols		7.8	mg/Kg	SM 5530 A,D		8/19/98	RC		5015	0.25
Total Radium		4.33	pCi/gm	E 901.1M		8/18/98	DS	---	---	---
pH		10.3	s.u.	E 150.1		8/9/98	BP		4775	---



1726 Wooddale Court • Baton Rouge, Louisiana 70806

1 (800) 401-4277 • Fax (504) 927-6822

ARS Tracking Number: ARS-98-0798 P.O. Number: Project Location: Hobbs, NM
Client I.D.: 104339 ARS Sample I.D.: ARS-98-2879
Date Sampled: 08/05/98 Date Received: 08/11/98
Time Sampled: N/A Time Received: 1617
Type of Sample: Soil Date of Report: 8/25/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	2.04	1.32	pCi/gm	0.075	0.049	Bq/gm	EPA 901.1M	8/18/98 1125	DC
Ra-228	<0.11	N/A	pCi/gm	<0.004	N/A	Bq/gm	EPA 901.1M	8/18/98 1125	DC
Pb-210	3.14	1.63	pCi/gm	0.116	0.060	Bq/gm	EPA 901.1M	8/18/98 1125	DC
Total Activity	9.49	N/A	pCi/gm	0.351	N/A	Bq/gm	EPA 901.1M	8/18/98 1125	DC

Notes:

Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 9-29-98
Page # 7

Project Number: 19349
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000123
Sample Number: 104340

Sample Description: MW-5 63-65'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<125	ug/Kg	S-8260B		8/13/98	AG		4869	125
Acrylonitrile		<125	ug/Kg	S-8260B		8/13/98	AG		4869	125
Benzene		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
Carbon tetrachloride		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
Chlorobenzene		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
1,2-dichloroethane		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
1,1,2,2-tetrachloroethane		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
1,1,1-trichloroethane		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
1,1,2-trichloroethane		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
1,1,2-trichloroethylene		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
Chloroform		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
Dichlorobenzene		<50	ug/Kg	S-8260B		8/13/98	AG		4869	50
1,1-dichloroethylene		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
Dichloropropenes		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
Ethylbenzene		110	ug/Kg	S-8260B		8/13/98	AG		4869	25
Bromodichloromethane		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
Bromomethane		<125	ug/Kg	S-8260B		8/13/98	AG		4869	125
Chloromethane		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
Dichlorodifluoromethane		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
Dichloromethane		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
Trichlorofluorometane		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
Tetrachloroethylene		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
Toluene		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
Trichloroethylene		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
Vinyl chloride		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
m,p-xylene		970	ug/Kg	S-8260B		8/13/98	AG		4869	25
o-xylene		210	ug/Kg	S-8260B		8/13/98	AG		4869	25
1,1-dichloroethane		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
Ethylene dibromide		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
cis-1,2-dichloroethylene		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
trans-1,2-dichloroethylene		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
Methylene chloride		<125	ug/Kg	S-8260B		8/13/98	AG		4869	125
Surr. Dibromofluoromethane		119	%	S-8260B		8/13/98	AG		4869	72-130
Surr. Toluene-d8		113	%	S-8260B		8/13/98	AG		4869	77-127
Surr. 4-Bromofluorobenzene		116	%	S-8260B		8/13/98	AG		4869	72-131
Benzidine		<25	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	25
Hexachlorobenzene		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
Pentachlorobenzene		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
1,2,4,5-tetrachlorobenzene		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
Hexachloroethane		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 9-29-98
Page # 7

Project Number: 19349
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000123
Sample Number: 104340

Sample Description: MW-5 63-65'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<125	ug/Kg	S-8260B		8/13/98	AG		4869	125
Acrylonitrile		<125	ug/Kg	S-8260B		8/13/98	AG		4869	125
Benzene		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
Carbon tetrachloride		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
Chlorobenzene		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
1,2-dichloroethane		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
1,1,2,2-tetrachloroethane		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
1,1,1-trichloroethane		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
1,1,2-trichloroethane		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
1,1,2-trichloroethylene		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
Chloroform		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
Dichlorobenzene		<50	ug/Kg	S-8260B		8/13/98	AG		4869	50
1,1-dichloroethylene		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
Dichloropropenes		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
Ethylbenzene		110	ug/Kg	S-8260B		8/13/98	AG		4869	25
Bromodichloromethane		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
Bromomethane		<125	ug/Kg	S-8260B		8/13/98	AG		4869	125
Chloromethane		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
Dichlorodifluoromethane		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
Dichloromethane		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
Trichlorofluoromethane		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
Tetrachloroethylene		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
Toluene		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
Trichloroethylene		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
Vinyl chloride		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
m,p-xylene		970	ug/Kg	S-8260B		8/13/98	AG		4869	25
o-xylene		210	ug/Kg	S-8260B		8/13/98	AG		4869	25
1,1-dichloroethane		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
Ethylene dibromide		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
cis-1,2-dichloroethylene		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
trans-1,2-dichloroethylene		<25	ug/Kg	S-8260B		8/13/98	AG		4869	25
Methylene chloride		<125	ug/Kg	S-8260B		8/13/98	AG		4869	125
Surr. Dibromofluoromethane		119	%	S-8260B		8/13/98	AG		4869	72-130
Surr. Toluene-d8		113	%	S-8260B		8/13/98	AG		4869	77-127
Surr. 4-Bromofluorobenzene		116	%	S-8260B		8/13/98	AG		4869	72-131
Benzidine		<25	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	25
Hexachlorobenzene		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
Pentachlorobenzene		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
1,2,4,5-tetrachlorobenzene		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
Hexachloroethane		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5

Date: 9-29-98

Page # 8

Project Number: 19349

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000123

Sample Number: 104340

Sample Description: MW-5 63-65'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
2,4-dichlorophenol		<12.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	12.5
2,4,5-trichlorophenol		<12.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	12.5
2,4,6-trichlorophenol		<12.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	12.5
bis (2-chloroethyl) ether		<12.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	12.5
bis (2-chloroisopropyl) ether		<12.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	12.5
bis (chloromethyl) ether		<12.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	12.5
3,3-dichlorobenzidine		<12.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	12.5
2,4-dinitrotoluene		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
Diphenylhydrazine		<12.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	12.5
Hexachlorobutadiene		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
Hexachlorocyclopentadiene		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
Isophorone		<12.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	12.5
Nitrobenzene		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
2,4-dinitro-o-cresol		<12.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	12.5
2,4-dinitrophenols		<12.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	12.5
i-nitrosodiethylamine		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
N-nitrosodimethylamine		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
N-nitrosodibutylamine		<12.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	12.5
N-nitrosodiphenylamine		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
N-nitrosopyrrolidine		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
Pentachlorophenol		<12.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	12.5
Phenol		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
Dibutyl phthalate		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
di-2-ethylhexyl phthalate		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
Diethyl phthalate		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
Dimethyl phthalate		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
Anthracene		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
3,4-benzofluoranthene		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
Benzo(k)fluoranthene		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
Fluoranthene		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
Fluorene		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
Phenanthrene		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
Pyrene		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
Naphthalene		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
1-methylnaphthalene		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
2-methylnaphthalene		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
Benzo-a-pyrene		<2.5	mg/Kg	S-8270C	8/10/98	8/18/98	DG	4702	4965	2.5
Surr. 2-Fluorophenol		68	%	S-8270C	8/10/98	8/18/98	DG	4702	4965	25-121
Surr. Phenol-d6		57	%	S-8270C	8/10/98	8/18/98	DG	4702	4965	24-113
Surr. Nitroobenzene-d5		54	%	S-8270C	8/10/98	8/18/98	DG	4702	4965	23-120
Surr. 2-Fluorobiphenyl		96	%	S-8270C	8/10/98	8/18/98	DG	4702	4965	30-115
Surr. 2,4,6-Tribromophenol		3	%	S-8270C	8/10/98	8/18/98	DG	4702	4965	19-122
Surr. Terphenyl-d14		113	%	S-8270C	8/10/98	8/18/98	DG	4702	4965	28-137

Project Number: 19349
 Project Name: Shell Grimes
 Project Location: Grimes Battery, Hobbs, NM

Date: 9-29-98
 Page # 9
 Order ID Number: 9808000123
 Sample Number: 104340

Sample Description: MW-5 63-65'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
Chlordane		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
DDT		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
Dieldrin		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
Endosulfan		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
Endrin		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
Heptachlor		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
PCB's		<0.25	mg/Kg	S 8082	8/10/98	8/12/98	MS	4699	4832	0.25
Arsenic		<0.50	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	0.50
Barium		<0.50	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	0.50
Cadmium		<0.10	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	0.10
Chromium		<0.50	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	0.50
Lead		<0.50	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	0.50
Total Mercury		<0.50	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	0.50
Selenium		<0.50	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	0.50
Silver		<0.50	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	0.50
Uranium		<10	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	10
Copper		<1.0	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	1.0
Iron		<0.50	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	0.50
Manganese		<1.0	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	1.0
Zinc		<2.0	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	2.0
Aluminum		<0.50	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	0.50
Boron		<10	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	10
Cobalt		<0.50	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	0.50
Molybdenum		<1.0	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	1.0
Nickel		<0.50	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	0.50
Cyanide		<0.01	mg/Kg	SM 4500 CN,CE		8/20/98	sa		5028	0.01
Fluoride		0.83	mg/Kg	E 300.0		8/13/98	JS		4863	0.2
Nitrate		<0.2	mg/Kg	E 300.0		8/17/98	JS		4930	0.2
Chloride		37	mg/Kg	E 300.0		8/13/98	JS		4863	1.0
Sulfate		35	mg/Kg	E 300.0		8/13/98	JS		4863	1.0
TDS		260	mg/Kg	E 160.1		9/2/98	RS		5195	---
pH		8.9	s.u.	E 150.1		8/9/98	BP		4775	---
TRPHC		1,950	mg/Kg	S 418.1	8/21/98	8/22/98	SR	4743	5045	10.0
Total Phenols		<0.25	mg/Kg	SM 5530 A,D		8/19/98	RC		5015	0.25
Total Radium		4.33	pCi/gm	E 901.1M		8/18/98	DS	---	---	---



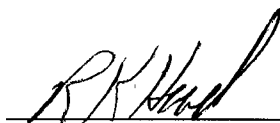
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ARS Tracking Number: ARS-98-0798 P.O. Number: Project Location: Hobbs, NM
Client I.D.: 104340 ARS Sample I.D.: ARS-98-2880
Date Sampled: 08/05/98 Date Received: 08/11/98
Time Sampled: N/A Time Received: 1617
Type of Sample: Soil Date of Report: 8/25/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	<0.71	N/A	pCi/gm	<0.026	N/A	Bq/gm	EPA 901.1M	8/18/98 1204	DC
Ra-228	<0.06	N/A	pCi/gm	<0.002	N/A	Bq/gm	EPA 901.1M	8/18/98 1204	DC
Pb-210	1.93	1.82	pCi/gm	0.071	0.067	Bq/gm	EPA 901.1M	8/18/98 1204	DC
Total Activity	2.98	N/A	pCi/gm	0.110	N/A	Bq/gm	EPA 901.1M	8/18/98 1204	DC

Notes:


Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 9-29-98
Page # 4

Project Number: 19349
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000159
Sample Number: 104532

Sample Description: MW-6 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<180	ug/Kg	S-8260B		8/24/98	AG		5082	180
Acrylonitrile		<180	ug/Kg	S-8260B		8/24/98	AG		5082	180
Benzene		<36	ug/Kg	S-8260B		8/24/98	AG		5082	36
Carbon tetrachloride		<36	ug/Kg	S-8260B		8/24/98	AG		5082	36
Chlorobenzene		<36	ug/Kg	S-8260B		8/24/98	AG		5082	36
1,2-dichloroethane		<36	ug/Kg	S-8260B		8/24/98	AG		5082	36
1,1,2,2-tetrachloroethane		<36	ug/Kg	S-8260B		8/24/98	AG		5082	36
1,1,1-trichloroethane		<36	ug/Kg	S-8260B		8/24/98	AG		5082	36
1,1,2-trichloroethane		<36	ug/Kg	S-8260B		8/24/98	AG		5082	36
1,1,2-trichloroethylene		<36	ug/Kg	S-8260B		8/24/98	AG		5082	36
Chloroform		<36	ug/Kg	S-8260B		8/24/98	AG		5082	36
Dichlorobenzene		<72	ug/Kg	S-8260B		8/24/98	AG		5082	72
1,1-dichloroethylene		<36	ug/Kg	S-8260B		8/24/98	AG		5082	36
Dichloropropenes		<36	ug/Kg	S-8260B		8/24/98	AG		5082	36
Ethylbenzene		<36	ug/Kg	S-8260B		8/24/98	AG		5082	36
Bromodichloromethane		<36	ug/Kg	S-8260B		8/24/98	AG		5082	36
Bromomethane		<180	ug/Kg	S-8260B		8/24/98	AG		5082	180
Chloromethane		<36	ug/Kg	S-8260B		8/24/98	AG		5082	36
Dichlorodifluoromethane		<36	ug/Kg	S-8260B		8/24/98	AG		5082	36
Dichloromethane		<36	ug/Kg	S-8260B		8/24/98	AG		5082	36
Trichlorofluoromethane		<36	ug/Kg	S-8260B		8/24/98	AG		5082	36
Tetrachloroethylene		<36	ug/Kg	S-8260B		8/24/98	AG		5082	36
Toluene		<36	ug/Kg	S-8260B		8/24/98	AG		5082	36
Trichloroethylene		<36	ug/Kg	S-8260B		8/24/98	AG		5082	36
Vinyl chloride		<36	ug/Kg	S-8260B		8/24/98	AG		5082	36
m,p-xylene		<36	ug/Kg	S-8260B		8/24/98	AG		5082	36
o-xylene		<36	ug/Kg	S-8260B		8/24/98	AG		5082	36
1,1-dichloroethane		<36	ug/Kg	S-8260B		8/24/98	AG		5082	36
Ethylene dibromide		<36	ug/Kg	S-8260B		8/24/98	AG		5082	36
cis-1,2-dichloroethylene		<36	ug/Kg	S-8260B		8/24/98	AG		5082	36
trans-1,2-dichloroethylene		<36	ug/Kg	S-8260B		8/24/98	AG		5082	36
Methylene chloride		<180	ug/Kg	S-8260B		8/24/98	AG		5082	180
Dibromofluoromethane		103	%	S-8260B		8/24/98	AG		5082	72-130
Toluene-d8		96	%	S-8260B		8/24/98	AG		5082	77-127
4-Bromofluorobenzene		101	%	S-8260B		8/24/98	AG		5082	72-131
Benzidine		<2.5	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25

Date: 9-29-98

Page # 5

Project Number: 19349

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000159

Sample Number: 104532

Sample Description: MW-6 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Hexachloroethane		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Isophorone		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
2,4-dinitro-o-cresol		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
i-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
Phenol		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Anthracene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Fluorene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Pyrene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
1-methylnaphthalene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
2-methylnaphthalene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25

Date: 9-29-98

Page # 6

Project Number: 19349

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000159

Sample Number: 104532

Sample Description: MW-6 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Surr. 2-Fluorophenol		63	%	S-8270C	8/12/98	8/25/98	DG	4721	5105	25-121
Surr. Phenol-d6		65	%	S-8270C	8/12/98	8/25/98	DG	4721	5105	24-113
Surr. Nitroobenzene-d5		62	%	S-8270C	8/12/98	8/25/98	DG	4721	5105	23-120
Surr. 2-Fluorobiphenyl		64	%	S-8270C	8/12/98	8/25/98	DG	4721	5105	30-115
Surr. 2,4,6-Tribromophenol		65	%	S-8270C	8/12/98	8/25/98	DG	4721	5105	19-122
Surr. Terphenyl-d14		69	%	S-8270C	8/12/98	8/25/98	DG	4721	5105	28-137
Aldrin		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
Chlordane		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
DDT		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
Dieldrin		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
Endosulfan		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
Endrin		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
Heptachlor		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
PCB's		<0.1	mg/Kg	S 8082	8/20/98	8/20/98	RC	4741	5026	0.1
Arsenic		1.8	mg/Kg	6010	8/12/98	8/24/98	RR	4718	5090	0.50
Barium		320	mg/Kg	6010	8/12/98	8/24/98	RR	4718	5090	0.50
Cadmium		0.32	mg/Kg	6010	8/12/98	8/24/98	RR	4718	5090	0.10
Chromium		5.4	mg/Kg	6010	8/12/98	8/24/98	RR	4718	5090	0.50
Lead		2.0	mg/Kg	6010	8/12/98	8/24/98	RR	4718	5090	0.50
Total Mercury		<0.10	mg/Kg	6010	8/24/98	8/25/98	MS	4765	5101	<0.10
Selenium		<.50	mg/Kg	6010	8/12/98	8/24/98	RR	4718	5090	0.50
Silver		<.50	mg/Kg	6010	8/12/98	8/24/98	RR	4718	5090	0.50
Uranium		<1.0	mg/Kg	6010	8/12/98	8/24/98	RR	4718	5090	1.0
Copper		2.1	mg/Kg	6010	8/12/98	8/24/98	RR	4718	5090	1.0
Iron		3210	mg/Kg	6010	8/12/98	8/24/98	RR	4718	5090	10
Manganese		25	mg/Kg	6010	8/12/98	8/24/98	RR	4718	5090	1.0
Zinc		20	mg/Kg	6010	8/12/98	8/24/98	RR	4718	5090	2.0
Aluminum		4940	mg/Kg	6010	8/12/98	8/24/98	RR	4718	5090	10
Boron		12	mg/Kg	6010	8/12/98	8/24/98	RR	4718	5090	10
Cobalt		6.2	mg/Kg	6010	8/12/98	8/24/98	RR	4718	5090	0.50
Molybdenum		1.6	mg/Kg	6010	8/12/98	8/24/98	RR	4718	5090	1.0
Nickel		8.6	mg/Kg	6010	8/12/98	8/24/98	RR	4718	5090	0.50
Cyanide		0.02	mg/Kg	SM 4500 CN,CE		8/20/98	SA		5028	0.02
Fluoride		8.3	mg/Kg	E 300.0		8/13/98	JS		4863	0.2
Nitrate		4.2	mg/Kg	E 300.0		8/13/98	JS		4863	0.2
Chloride		22	mg/Kg	E 300.0		8/13/98	JS		4863	1.0
Sulfate		96	mg/Kg	E 300.0		8/13/98	JS		4863	1.0
TDS		3900	mg/Kg	E 160.1		9/2/98	RS		5195	
TRPHC		15.6	mg/Kg	S 418.1	8/21/98	8/22/98	SR	4743	5045	10
Phenolics		<0.01	mg/Kg	SM 5530 A,D		8/19/98	RC		8270	0.01
Total Radium		3.59	pCi/gm	E 901.1M		8/18/98	DS	---	---	---
pH		8.7	s.u.	E 150.1		9/30/98	SA		5565	---



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ARS Tracking Number: ARS-98-0798

P.O. Number:

Project Location: Hobbs, NM

Client I.D.: 104532

ARS Sample I.D.:

ARS-98-2881

Date Sampled: 08/06/98

Date Received:

08/11/98

Time Sampled: N/A

Time Received

1617

Type of Sample: Soil

Date of Report

8/25/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	1.83	1.59	pCi/gm	0.068	0.059	Bq/gm	EPA 901.1M	8/18/98 1256	DC
Ra-228	<0.12	N/A	pCi/gm	<0.004	N/A	Bq/gm	EPA 901.1M	8/18/98 1256	DC
Pb-210	<0.97	N/A	pCi/gm	<0.036	N/A	Bq/gm	EPA 901.1M	8/18/98 1256	DC
Total Activity	3.59	N/A	pCi/gm	0.133	N/A	Bq/gm	EPA 901.1M	8/18/98 1256	DC

Notes:

Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 9-29-98
Page # 7

Project Number: 19349
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000159
Sample Number: 104533

Sample Description: MW-6 63-65'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<293	ug/Kg	S-8260B		8/24/98	AG		5082	293
Acrylonitrile		<293	ug/Kg	S-8260B		8/24/98	AG		5082	293
Benzene		<59	ug/Kg	S-8260B		8/24/98	AG		5082	59
Carbon tetrachloride		<59	ug/Kg	S-8260B		8/24/98	AG		5082	59
Chlorobenzene		<59	ug/Kg	S-8260B		8/24/98	AG		5082	59
1,2-dichloroethane		<59	ug/Kg	S-8260B		8/24/98	AG		5082	59
1,1,2,2-tetrachloroethane		<59	ug/Kg	S-8260B		8/24/98	AG		5082	59
1,1,1-trichloroethane		<59	ug/Kg	S-8260B		8/24/98	AG		5082	59
1,1,2-trichloroethane		<59	ug/Kg	S-8260B		8/24/98	AG		5082	59
1,1,2-trichloroethylene		<59	ug/Kg	S-8260B		8/24/98	AG		5082	59
Chloroform		<59	ug/Kg	S-8260B		8/24/98	AG		5082	59
Dichlorobenzene		<118	ug/Kg	S-8260B		8/24/98	AG		5082	118
1,1-dichloroethylene		<59	ug/Kg	S-8260B		8/24/98	AG		5082	59
Dichloropropenes		<59	ug/Kg	S-8260B		8/24/98	AG		5082	59
Ethylbenzene		<59	ug/Kg	S-8260B		8/24/98	AG		5082	59
Bromodichloromethane		<59	ug/Kg	S-8260B		8/24/98	AG		5082	59
Bromomethane		<293	ug/Kg	S-8260B		8/24/98	AG		5082	293
Chloromethane		<59	ug/Kg	S-8260B		8/24/98	AG		5082	59
Dichlorodifluoromethane		<59	ug/Kg	S-8260B		8/24/98	AG		5082	59
Dichloromethane		<59	ug/Kg	S-8260B		8/24/98	AG		5082	59
Trichlorofluorometane		<59	ug/Kg	S-8260B		8/24/98	AG		5082	59
Tetrachloroethylene		<59	ug/Kg	S-8260B		8/24/98	AG		5082	59
Toluene		<59	ug/Kg	S-8260B		8/24/98	AG		5082	59
Trichloroethylene		<59	ug/Kg	S-8260B		8/24/98	AG		5082	59
Vinyl chloride		<59	ug/Kg	S-8260B		8/24/98	AG		5082	59
m,p-xylene		<59	ug/Kg	S-8260B		8/24/98	AG		5082	59
o-xylene		<59	ug/Kg	S-8260B		8/24/98	AG		5082	59
1,1-dichloroethane		<59	ug/Kg	S-8260B		8/24/98	AG		5082	59
Ethylene dibromide		<59	ug/Kg	S-8260B		8/24/98	AG		5082	59
cis-1,2-dichloroethylene		<59	ug/Kg	S-8260B		8/24/98	AG		5082	59
trans-1,2-dichloroethylene		<59	ug/Kg	S-8260B		8/24/98	AG		5082	59
Methylene chloride		<293	ug/Kg	S-8260B		8/24/98	AG		5082	293
Dibromofluoromethane		106	%	S-8260B		8/24/98	AG		5082	72-130
Toluene-d8		95	%	S-8260B		8/24/98	AG		5082	77-127
4-Bromofluorobenzene		105	%	S-8260B		8/24/98	AG		5082	72-131
Benzidine		<2.5	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25

Project Number: 19349
 Project Name: Shell Grimes
 Project Location: Grimes Battery, Hobbs, NM

Date: 9-29-98
 Page # 8
 Order ID Number: 9808000159
 Sample Number: 104533

Sample Description: MW-6 63-65'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Hexachloroethane		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Isophorone		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
2,4-dinitro-o-cresol		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
i-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
Phenol		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Anthracene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Fluorene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Pyrene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
1-methylnaphthalene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
2-methylnaphthalene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Surr. 2-Fluorophenol		53	%	S-8270C	8/12/98	8/25/98	DG	4721	5105	25-121
Surr. Phenol-d6		57	%	S-8270C	8/12/98	8/25/98	DG	4721	5105	24-113
Surr. Nitroobenzene-d5		55	%	S-8270C	8/12/98	8/25/98	DG	4721	5105	23-120
Surr. 2-Fluorobiphenyl		55	%	S-8270C	8/12/98	8/25/98	DG	4721	5105	30-115
Surr. 2,4,6-Tribromophenol		59	%	S-8270C	8/12/98	8/25/98	DG	4721	5105	19-122
Surr. Terphenyl-d14		65	%	S-8270C	8/12/98	8/25/98	DG	4721	5105	28-137

Date: 9-29-98

Page # 9

Project Number: 19349

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000159

Sample Number: 104533

Sample Description: MW-6 63-65'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
Chlordane		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
DDT		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
Dieldrin		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
Endosulfan		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
Endrin		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
Heptachlor		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
PCB's		<0.1	mg/Kg	S 8082	8/20/98	8/20/98	RC	4741	5026	0.02
Arsenic		<.50	mg/Kg	6010	8/12/98	8/24/98	RR	4718	5090	0.50
Barium		9.7	mg/Kg	6010	8/12/98	8/24/98	RR	4718	5090	0.50
Cadmium		0.23	mg/Kg	6010	8/12/98	8/24/98	RR	4718	5090	0.10
Chromium		5.2	mg/Kg	6010	8/12/98	8/24/98	RR	4718	5090	0.50
Lead		1.4	mg/Kg	6010	8/12/98	8/24/98	RR	4718	5090	0.50
Total Mercury		<0.10	mg/Kg	6010	8/24/98	8/25/98	MS	4765	5101	<0.10
Selenium		<0.50	mg/Kg	6010	8/12/98	8/24/98	RR	4718	5090	0.50
Silver		<0.50	mg/Kg	6010	8/12/98	8/24/98	RR	4718	5090	0.50
Uranium		<0.10	mg/Kg	6010	8/12/98	8/24/98	RR	4718	5090	1.0
Copper		<1.0	mg/Kg	6010	8/12/98	8/24/98	RR	4718	5090	1.0
Iron		1880	mg/Kg	6010	8/12/98	8/24/98	RR	4718	5090	10
Manganese		21	mg/Kg	6010	8/12/98	8/24/98	RR	4718	5090	1.0
Zinc		8.3	mg/Kg	6010	8/12/98	8/24/98	RR	4718	5090	2.0
Aluminum		1620	mg/Kg	6010	8/12/98	8/24/98	RR	4718	5090	10
Boron		<10	mg/Kg	6010	8/12/98	8/24/98	RR	4718	5090	10
Cobalt		2.3	mg/Kg	6010	8/12/98	8/24/98	RR	4718	5090	0.50
Molybdenum		<1.0	mg/Kg	6010	8/12/98	8/24/98	RR	4718	5090	1.0
Nickel		4.9	mg/Kg	6010	8/12/98	8/24/98	RR	4718	5090	0.50
Cyanide		<0.01	mg/Kg	E 335.2		8/20/98	SA		5028	0.01
Fluoride		0.75	mg/Kg	E 300.0		8/13/98	JS		4863	0.2
Nitrate		1.3	mg/Kg	E 300.0		8/20/98	JS		5025	0.2
Nitrate		4.2	mg/Kg	E 300.1		8/13/98	JS		4863	
Chloride		13	mg/Kg	E 300.0		8/13/98	JS		4863	1.0
Sulfate		30	mg/Kg	E 300.0		8/13/98	JS		4863	1.0
TDS		220	mg/Kg	E 160.1		9/2/98	RS		5195	
TRPHC		<10.0	mg/Kg	E 150.1	8/21/98	8/22/98	SR	4743	5045	10
Phenolics		<0.01	mg/Kg	SM 5530 A,D		8/19/98	RC		8270	0.01
Total Radium		2.38	pCi/gm	E 901.1M		8/18/98	DS	---	---	---
pH		8.5	s.u.	E 150.1		9/30/98	SA		5565	---



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ARS Tracking Number: ARS-98-0798

P.O. Number: Project Location: Hobbs, NM

Client I.D.: 104533

ARS Sample I.D.: ARS-98-2882

Date Sampled: 08/06/98

Date Received: 08/11/98

Time Sampled: N/A

Time Received: 1617

Type of Sample: Soil

Date of Report: 8/26/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	<0.85	N/A	pCi/gm	<0.031	N/A	Bq/gm	EPA 901.1M	8/19/98 1106	DC
Ra-228	0.50	0.25	pCi/gm	0.019	0.009	Bq/gm	EPA 901.1M	8/19/98 1106	DC
Pb-210	<1.20	N/A	pCi/gm	<0.044	N/A	Bq/gm	EPA 901.1M	8/19/98 1106	DC
Total Activity	2.38	N/A	pCi/gm	0.088	N/A	Bq/gm	EPA 901.1M	8/19/98 1106	DC

Notes:

Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

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Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-1-98
Page # 4

Project Number: 19349
Project Name: Grimes Tank Battery
Project Location: Hobbs, NM

Order ID Number: 9808000186
Sample Number: 104633

Field Code: MW-7 48-50'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<125	ug/Kg	S 8260B		8/13/98	AG		4869	125
Acrylonitrile		<125	ug/Kg	S 8260B		8/13/98	AG		4869	125
Benzene		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
Carbon tetrachloride		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
Chlorobenzene		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
1,2-dichloroethane		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
1,1,2,2-tetrachloroethane		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
1,1,1-trichloroethane		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
1,1,2-trichloroethane		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
1,1,2-trichloroethylene		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
Chloroform		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
Dichlorobenzene		<50	ug/Kg	S 8260B		8/13/98	AG		4869	50
1,1-dichloroethylene		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
Dichloropropenes		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
Ethylbenzene		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
Bromodichloromethane		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
Bromomethane		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
Chloromethane		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
Dichlorodifluoromethane		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
Dichloromethane		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
Trichlorofluoromethane		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
Tetrachloroethylene		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
Toluene		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
Trichloroethylene		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
Vinyl chloride		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
m,p-xylene		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
o-xylene		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
1,1-dichloroethane		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
Ethylene dibromide		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
cis-1,2-dichloroethylene		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
trans-1,2-dichloroethylene		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
Methylene chloride		<125	ug/Kg	S 8260B		8/13/98	AG		4869	125
Surr. Dibromofluoromethane		110	%	S 8260B		8/13/98	AG		4869	71-132
Surr. Toluene-d8		110	%	S 8260B		8/13/98	AG		4869	82-124
Surr. 4-Bromofluorobenzene		118	%	S 8260B		8/13/98	AG		4869	76-126
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Hexachloroethane		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25

Corrected *

Date: 10-1-98

Page # 5

Order ID Number: 9808000186

Sample Number: 104633

Project Number: 19349

Project Name: Grimes Tank Battery

Project Location: Hobbs, NM

Field Code: MW-7 48-50'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Isophorone		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
2,4-dinitro-o-cresol		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
i-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
Phenol		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Anthracene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Fluorene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Pyrene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
1-methylnaphthalene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
2-methylnaphthalene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Benzidine		<2.5	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Surr. 2-Fluorophenol		53	%	S-8270C	8/12/98	8/25/98	DG	4721	5105	25-121
Surr. Phenol-d6		57	%	S-8270C	8/12/98	8/25/98	DG	4721	5105	24-113
Surr. Nitrobenzene-d5		53	%	S-8270C	8/12/98	8/25/98	DG	4721	5105	23-120
Surr. 2-Fluorobiphenyl		53	%	S-8270C	8/12/98	8/25/98	DG	4721	5105	30-115
Surr. 2,4,6-Tribromophenol		54	%	S-8270C	8/12/98	8/25/98	DG	4721	5105	19-122
Surr. Terphenyl-d14		55	%	S-8270C	8/12/98	8/25/98	DG	4721	5105	28-137
Aldrin		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
Chlordane		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
DDT		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
Dieldrin		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50

Corrected - Added Benzidine, Hexachlorobenzene, & Pentachlorobenzene results.

Project Number: 19349
 Project Name: Grimes Tank Battery
 Project Location: Hobbs, NM

Date: 10-1-98
 Page # 6
 Order ID Number: 9808000186
 Sample Number: 104633

Field Code: MW-7 48-50'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Endosulfan		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
Endrin		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
Heptachlor		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
PCB's		<0.1	mg/Kg	S 8082	8/20/98	8/20/98	RC	4741	5026	0.1
Arsenic		0.68	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	0.50
Barium		6.5	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	0.50
Cadmium		0.14	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	0.10
Chromium		4.5	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	0.50
Lead		2.2	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	0.50
Total Mercury		<0.25	mg/Kg	S 7471	8/12/98	8/13/98	MS	4715	4866	0.25
Selenium		<0.50	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	0.50
Silver		<0.50	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	0.50
Uranium		<1.0	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	1.0
Copper		1.3	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	1.0
Iron		1,790	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	10
Manganese		21	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	1.0
Zinc		3.7	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	2.0
Aluminum		1,950	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	10
Boron		<10	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	10
Cobalt		2.8	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	0.50
Molybdenum		<0.50	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	0.50
Nickel		2.4	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	0.50
Cyanide		0.01	mg/Kg	SM 4500 CN,CE		8/20/98	SA		5028	0.01
Fluoride		0.79	mg/Kg	E 300.0		8/25/98	JS		5096	0.2
Nitrate		1.2	mg/Kg	E 300.0		8/25/98	JS		5096	0.2
Chloride		10	mg/Kg	E 300.0		8/25/98	JS		5096	1.0
Sulfate		8.8	mg/Kg	E 300.0		8/25/98	JS		5096	1.0
TDS		200	mg/Kg	E 160.1		9/2/98	RS		5195	---
pH		8.8	s.u.	E 150.1		8/13/98	SA		4870	---
TRPHC		<10.0	mg/Kg	S 418.1	8/21/98	8/22/98	SR	4743	5045	10.0
Total Radium		17.62	pCi/gm	E 901.1M		8/18/98	DS	---	---	---
Total Phenols		3.75	mg/Kg	SM 5530 A,D		8/19/98	RC		5015	---



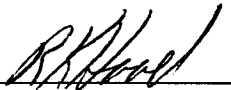
1726 Wooddale Court • Baton Rouge, Louisiana 70806

1 (800) 401-4277 • Fax (504) 927-6822

ARS Tracking Number:	ARS-98-0814	P.O. Number:	Project Location: Hobbs, NM
Client I.D.:	104633	ARS Sample I.D.:	ARS-98-2944
Date Sampled:	08/10/98	Date Received:	08/14/98
Time Sampled:	N/A	Time Received	1551
Type of Sample:	Soil	Date of Report	8/25/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	4.02	2.01	pCi/gm	0.149	0.074	Bq/gm	EPA 901.1M	8/19/98 1211	DC
Ra-228	0.61	0.27	pCi/gm	0.023	0.010	Bq/gm	EPA 901.1M	8/19/98 1211	DC
Pb-210	5.12	2.58	pCi/gm	0.189	0.095	Bq/gm	EPA 901.1M	8/19/98 1211	DC
Total Activity	17.62	N/A	pCi/gm	0.652	N/A	Bq/gm	EPA 901.1M	8/19/98 1211	DC

Notes:


 Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-1-98
Page # 7

Project Number: 19349
Project Name: Grimes Tank Battery
Project Location: Hobbs, NM

Order ID Number: 9808000186
Sample Number: 104634

Field Code: MW-7 63-65'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<125	ug/Kg	S 8260B		8/13/98	AG		4869	125
Acrylonitrile		<125	ug/Kg	S 8260B		8/13/98	AG		4869	125
Benzene		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
Carbon tetrachloride		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
Chlorobenzene		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
1,2-dichloroethane		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
1,1,2,2-tetrachloroethane		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
1,1,1-trichloroethane		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
1,1,2-trichloroethane		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
1,1,2-trichloroethylene		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
Chloroform		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
Dichlorobenzene		<50	ug/Kg	S 8260B		8/13/98	AG		4869	50
1,1-dichloroethylene		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
Dichloropropenes		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
Ethylbenzene		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
Bromodichloromethane		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
Bromomethane		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
Chloromethane		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
Dichlorodifluoromethane		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
Dichloromethane		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
Trichlorofluoromethane		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
Tetrachloroethylene		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
Toluene		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
Trichloroethylene		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
Vinyl chloride		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
m,p-xylene		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
o-xylene		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
1,1-dichloroethane		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
Ethylene dibromide		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
cis-1,2-dichloroethylene		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
trans-1,2-dichloroethylene		<25	ug/Kg	S 8260B		8/13/98	AG		4869	25
Methylene chloride		<125	ug/Kg	S 8260B		8/13/98	AG		4869	125
Surr. Dibromofluoromethane		108	%	S 8260B		8/13/98	AG		4869	71-132
Surr. Toluene-d8		113	%	S 8260B		8/13/98	AG		4869	82-124
Surr. 4-Bromofluorobenzene		117	%	S 8260B		8/13/98	AG		4869	76-126
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Hexachloroethane		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25

Corrected *

Date: 10-1-98

Page # 8

Order ID Number: 9808000186

Sample Number: 104634

Project Number: 19349

Project Name: Grimes Tank Battery

Project Location: Hobbs, NM

Field Code: MW-7 63-65'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Isophorone		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
2,4-dinitro-o-cresol		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
i-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	1.25
Phenol		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Anthracene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Fluorene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Pyrene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
1-methylnaphthalene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
2-methylnaphthalene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Benzidine		<2.5	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	8/12/98	8/25/98	DG	4721	5105	0.25
Surr. 2-Fluorophenol		54	%	S-8270C	8/12/98	8/25/98	DG	4721	5105	25-121
Surr. Phenol-d6		57	%	S-8270C	8/12/98	8/25/98	DG	4721	5105	24-113
Surr. Nitroobenzene-d5		55	%	S-8270C	8/12/98	8/25/98	DG	4721	5105	23-120
Surr. 2-Fluorobiphenyl		56	%	S-8270C	8/12/98	8/25/98	DG	4721	5105	30-115
Surr. 2,4,6-Tribromophenol		59	%	S-8270C	8/12/98	8/25/98	DG	4721	5105	19-122
Surr. Terphenyl-d14		65	%	S-8270C	8/12/98	8/25/98	DG	4721	5105	28-137
Aldrin		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
Chlordane		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
DDT		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
Dieldrin		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50

* Corrected - Added Benzidine, Hexachlorobenzene, & Pentachlorobenzene results.

Project Number: 19349
 Project Name: Grimes Tank Battery
 Project Location: Hobbs, NM

Date: 10-1-98
 Page # 9
 Order ID Number: 9808000186
 Sample Number: 104634

Field Code: MW-7 63-65'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Endosulfan		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
Endrin		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
Heptachlor		<50	ug/Kg	S-8080	8/13/98	9/20/98	SH	---	---	50
PCB's		<0.1	mg/Kg	S 8082	8/20/98	8/20/98	RC	4741	5026	0.1
Arsenic		<0.50	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	0.50
Barium		4.3	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	0.50
Cadmium		0.23	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	0.10
Chromium		4.0	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	0.50
Lead		1.2	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	0.50
Total Mercury		<0.25	mg/Kg	S 7471	8/12/98	8/13/98	MS	4715	4866	0.25
Selenium		<0.50	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	0.50
Silver		<0.50	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	0.50
Uranium		<1.0	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	1.0
Copper		<1.0	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	1.0
Iron		1,200	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	10
Manganese		8.7	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	1.0
Zinc		2.8	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	2.0
Aluminum		1,390	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	10
Boron		<10	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	10
Cobalt		1.5	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	0.50
Molybdenum		<0.50	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	0.50
Nickel		1.7	mg/Kg	S 6010B	8/12/98	8/24/98	RR	4718	5090	0.50
Cyanide		0.02	mg/Kg	SM 4500 CN,CE		8/20/98	SA		5028	0.01
Fluoride		0.75	mg/Kg	E 300.0		8/25/98	JS		5096	0.2
Nitrate		1.3	mg/Kg	E 300.0		8/25/98	JS		5096	0.2
Chloride		12	mg/Kg	E 300.0		8/25/98	JS		5096	1.0
Sulfate		6.0	mg/Kg	E 300.0		8/25/98	JS		5096	1.0
TDS		280	mg/Kg	E 160.1		9/2/98	RS		5195	---
pH		8.9	s.u.	E 150.1		8/13/98	SA		4870	---
TRPHC		<10.0	mg/Kg	S 418.1	8/21/98	8/22/98	SR	4743	5045	10.0
Total Radium		6.55	pCi/gm	E 901.1M		8/19/98	DS	---	---	---
Total Phenols		4.0	mg/Kg	SM 5530 A,D		8/19/98	RC		5015	---



1726 Wooddale Court • Baton Rouge, Louisiana 70806

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ARS Tracking Number: ARS-98-0814

P.O. Number:

Project Location: Hobbs, NM

Client I.D.: 104634

ARS Sample I.D.:

ARS-98-2945

Date Sampled: 08/10/98

Date Received:

08/14/98

Time Sampled: N/A

Time Received

1551

Type of Sample: Soil

Date of Report

8/25/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	<1.31	N/A	pCi/gm	<0.048	N/A	Bq/gm	EPA 901.1M	8/19/98 1233	DC
Ra-228	<0.23	N/A	pCi/gm	<0.009	N/A	Bq/gm	EPA 901.1M	8/19/98 1233	DC
Pb-210	<1.46	N/A	pCi/gm	<0.054	N/A	Bq/gm	EPA 901.1M	8/19/98 1233	DC
Total Activity	6.55	N/A	pCi/gm	0.242	N/A	Bq/gm	EPA 901.1M	8/19/98 1233	DC

Notes:


Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 9-30-98
Page # 4

Project Number: 19349
Project Name: Grimes Tank Battery
Project Location: Hobbs, NM

Order ID Number: 9808000272
Sample Number: 104948

Field Code: MW-8 28-30'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<125	ug/Kg	S-8260B		8/24/98	AG		5082	125
Acrylonitrile		<125	ug/Kg	S-8260B		8/24/98	AG		5082	125
Benzene		400	ug/Kg	S-8260B		8/24/98	AG		5082	25
Carbon tetrachloride		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Chlorobenzene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
1,2-dichloroethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
1,1,2,2-tetrachloroethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
1,1,1-trichloroethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
1,1,2-trichloroethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
1,1,2-trichloroethylene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Chloroform		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Dichlorobenzene		<50	ug/Kg	S-8260B		8/24/98	AG		5082	2
1,1-dichloroethylene		370	ug/Kg	S-8260B		8/24/98	AG		5082	50
Dichloropropenes		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Ethylbenzene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Bromodichloromethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Bromomethane		<125	ug/Kg	S-8260B		8/24/98	AG		5082	125
Chloromethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Dichlorodifluoromethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Dichloromethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Trichlorofluoromethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Tetrachloroethylene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Toluene		410	ug/Kg	S-8260B		8/24/98	AG		5082	25
Trichloroethylene		420	ug/Kg	S-8260B		8/24/98	AG		5082	25
Vinyl chloride		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
m,p-xylene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
o-xylene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
1,1-dichloroethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Ethylene dibromide		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
cis-1,2-dichloroethylene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
trans-1,2-dichloroethylene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Methylene chloride		<125	ug/Kg	S-8260B		8/24/98	AG		5082	125
Surr. Dibromofluoromethane		114	%	S-8260B		8/24/98	AG		5082	72-130
Surr. Toluene-d8		104	%	S-8260B		8/24/98	AG		5082	77-127
Surr. 4-Bromofluorobenzene		112	%	S-8260B		8/24/98	AG		5082	72-131
Benzidine		<2.5	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25

Project Number: 19349
 Project Name: Grimes Tank Battery
 Project Location: Hobbs, NM

Date: 9-30-98
 Page # 5
 Order ID Number: 9808000272
 Sample Number: 104948

Field Code: MW-8 28-30'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
Isophorone		<1.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
2,4-dinitro-o-cresol		<1.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	1.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	1.25
i-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	1.25
Phenol		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
Anthracene		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
Fluorene		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
Pyrene		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
1-methylnaphthalene		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	
2-methylnaphthalene		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
Surr. 2-Fluorophenol		49	%	S-8270C	8/18/98	9/1/98	JG	4730	5188	25-121
Surr. Phenol-d6		60	%	S-8270C	8/18/98	9/1/98	JG	4730	5188	24-113
Surr. Nitroobenzene-d5		49	%	S-8270C	8/18/98	9/1/98	JG	4730	5188	23-120
Surr. 2-Fluorobiphenyl		89	%	S-8270C	8/18/98	9/1/98	JG	4730	5188	30-115
Surr. 2,4,6-Tribromophenol		72	%	S-8270C	8/18/98	9/1/98	JG	4730	5188	19-122
Surr. Terphenyl-d14		68	%	S-8270C	8/18/98	9/1/98	JG	4730	5188	28-137

Project Number: 19349
 Project Name: Grimes Tank Battery
 Project Location: Hobbs, NM

Date: 9-30-98
 Page # 6
 Order ID Number: 9808000272
 Sample Number: 104948

Field Code: MW-8 28-30'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	8/18/98	9/23/98	SH	---	---	50
Chlordane		<50	ug/Kg	S-8080	8/18/98	9/23/98	SH	---	---	50
DDT		<50	ug/Kg	S-8080	8/18/98	9/23/98	SH	---	---	50
Dieldrin		<50	ug/Kg	S-8080	8/18/98	9/23/98	SH	---	---	50
Endosulfan		<50	ug/Kg	S-8080	8/18/98	9/23/98	SH	---	---	50
Endrin		<50	ug/Kg	S-8080	8/18/98	9/23/98	SH	---	---	50
Heptachlor		<50	ug/Kg	S-8080	8/18/98	9/23/98	SH	---	---	50
PCB's		<0.1	mg/Kg	S 8082	8/20/98	8/20/98	RC	4741	5026	0.1
Arsenic		0.2	mg/Kg	S 6010B	8/26/98	9/1/98	RR	4799	5182	0.50
Barium		490	mg/Kg	S 6010B	8/26/98	9/1/98	RR	4799	5182	0.50
Cadmium		<0.10	mg/Kg	S 6010B	8/26/98	9/1/98	RR	4799	5182	0.10
Chromium		3.2	mg/Kg	S 6010B	8/26/98	9/1/98	RR	4799	5182	0.50
Lead		0.59	mg/Kg	S 6010B	8/26/98	9/1/98	RR	4799	5182	0.50
Total Mercury		<0.10	mg/Kg	S 7471	8/16/98	8/18/98	MS	4745	4952	0.10
Selenium		1.2	mg/Kg	S 6010B	8/26/98	9/1/98	RR	4799	5182	0.50
Silver		<0.50	mg/Kg	S 6010B	8/26/98	9/1/98	RR	4799	5182	0.50
Uranium		<2.0	mg/Kg	S 6010B	8/26/98	9/1/98	RR	4799	5182	2.0
Copper		1.9	mg/Kg	S 6010B	8/26/98	9/1/98	RR	4799	5182	1.0
Iron		2,600	mg/Kg	S 6010B	8/26/98	8/27/98	RR	4799	5122	2.0
Manganese		15	mg/Kg	S 6010B	8/26/98	9/1/98	RR	4799	5182	1.0
Zinc		7.2	mg/Kg	S 6010B	8/26/98	9/1/98	RR	4799	5182	2.0
Aluminum		3,100	mg/Kg	S 6010B	8/26/98	9/1/98	RR	4799	5122	10
Boron		<10	mg/Kg	S 6010B	8/26/98	9/1/98	RR	4799	5182	10
Cobalt		4.3	mg/Kg	S 6010B	8/26/98	9/1/98	RR	4799	5182	0.50
Molybdenum		2.4	mg/Kg	S 6010B	8/26/98	9/1/98	RR	4799	5182	1.0
Nickel		4.3	mg/Kg	S 6010B	8/26/98	9/1/98	RR	4799	5182	0.50
Cyanide		<0.01	mg/Kg	A 4500 CN,CE		8/20/98	SA		5028	0.01
Fluoride		2.9	mg/Kg	E 300.0		8/25/98	JS		5096	0.2
Nitrate		1.3	mg/Kg	E 300.0		8/25/98	JS		5096	0.2
Chloride		85	mg/Kg	E 300.0		8/25/98	JS		5096	1.0
Sulfate		92	mg/Kg	E 300.0		8/25/98	JS		5096	1.0
TDS		530	mg/Kg	E 160.1		9/2/98	RS		5195	---
pH		8.7	s.u.	E 150.1		8/14/98			4890	---
TRPHC		<10.0	mg/Kg	S 418.1	8/21/98	8/22/98	SR	4743	5045	10.0
Total Phenol		3.5	mg/Kg	SM 5530 A,D		8/19/98	RC		5015	0.25
Total Radium		4.13	pCi/gm	E 901.1M		8/22/98	DS	---	---	---

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 9-30-98
Page # 7

Project Number: 19349
Project Name: Grimes Tank Battery
Project Location: Hobbs, NM

Order ID Number: 9808000272
Sample Number: 104949

Field Code: MW-8 63-65'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<125	ug/Kg	S-8260B		8/24/98	AG		5082	125
Acrylonitrile		<125	ug/Kg	S-8260B		8/24/98	AG		5082	125
Benzene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Carbon tetrachloride		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Chlorobenzene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
1,2-dichloroethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
1,1,2,2-tetrachloroethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
1,1,1-trichloroethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
1,1,2-trichloroethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
1,1,2-trichloroethylene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Chloroform		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Dichlorobenzene		<50	ug/Kg	S-8260B		8/24/98	AG		5082	2
1,1-dichloroethylene		<50	ug/Kg	S-8260B		8/24/98	AG		5082	50
Dichloropropenes		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Ethylbenzene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Bromodichloromethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Bromomethane		<125	ug/Kg	S-8260B		8/24/98	AG		5082	125
Chloromethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Dichlorodifluoromethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Dichloromethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Trichlorofluoromethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Tetrachloroethylene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Toluene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Trichloroethylene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Vinyl chloride		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
m,p-xylene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
o-xylene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
1,1-dichloroethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Ethylene dibromide		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
cis-1,2-dichloroethylene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
trans-1,2-dichloroethylene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Methylene chloride		<125	ug/Kg	S-8260B		8/24/98	AG		5082	125
Surr. Dibromofluoromethane		116	%	S-8260B		8/24/98	AG		5082	72-130
Surr. Toluene-d8		102	%	S-8260B		8/24/98	AG		5082	77-127
Surr. 4-Bromofluorobenzene		116	%	S-8260B		8/24/98	AG		5082	72-131
Benzidine		<2.5	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25

Project Number: 19349
 Project Name: Grimes Tank Battery
 Project Location: Hobbs, NM

Date: 9-30-98
 Page # 8
 Order ID Number: 9808000272
 Sample Number: 104949

Field Code: MW-8 63-65'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
Isophorone		<1.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
2,4-dinitro-o-cresol		<1.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	1.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	1.25
i-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	1.25
Phenol		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
Anthracene		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
Fluorene		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
Pyrene		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
1-methylnaphthalene		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
2-methylnaphthalene		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	8/18/98	9/1/98	JG	4730	5188	0.25
Surr. 2-Fluorophenol		54	%	S-8270C	8/18/98	9/1/98	JG	4730	5188	25-121
Surr. Phenol-d6		64	%	S-8270C	8/18/98	9/1/98	JG	4730	5188	24-113
Surr. Nitrobenzene-d5		55	%	S-8270C	8/18/98	9/1/98	JG	4730	5188	23-120
Surr. 2-Fluorobiphenyl		65	%	S-8270C	8/18/98	9/1/98	JG	4730	5188	30-115
Surr. 2,4,6-Tribromophenol		70	%	S-8270C	8/18/98	9/1/98	JG	4730	5188	19-122
Surr. Terphenyl-d14		75	%	S-8270C	8/18/98	9/1/98	JG	4730	5188	28-137

Project Number: 19349
 Project Name: Grimes Tank Battery
 Project Location: Hobbs, NM

Date: 9-30-98
 Page # 9
 Order ID Number: 9808000272
 Sample Number: 104949

Field Code: MW-8 63-65'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	8/18/98	9/23/98	SH	---	---	50
Chlordane		<50	ug/Kg	S-8080	8/18/98	9/23/98	SH	---	---	50
DDT		<50	ug/Kg	S-8080	8/18/98	9/23/98	SH	---	---	50
Dieldrin		<50	ug/Kg	S-8080	8/18/98	9/23/98	SH	---	---	50
Endosulfan		<50	ug/Kg	S-8080	8/18/98	9/23/98	SH	---	---	50
Endrin		<50	ug/Kg	S-8080	8/18/98	9/23/98	SH	---	---	50
Heptachlor		<50	ug/Kg	S-8080	8/18/98	9/23/98	SH	---	---	50
PCB's		<0.1	mg/Kg	S 8082	8/20/98	8/20/98	RC	4741	5026	0.1
Arsenic		<0.50	mg/Kg	S 6010B	8/26/98	9/1/98	RR	4799	5182	0.50
Barium		13	mg/Kg	S 6010B	8/26/98	9/1/98	RR	4799	5182	0.50
Cadmium		<0.10	mg/Kg	S 6010B	8/26/98	9/1/98	RR	4799	5182	0.10
Chromium		3.4	mg/Kg	S 6010B	8/26/98	9/1/98	RR	4799	5182	0.50
Lead		<0.50	mg/Kg	S 6010B	8/26/98	9/1/98	RR	4799	5182	0.50
Total Mercury		<0.10	mg/Kg	S 7471	8/16/98	8/18/98	MS	4745	4952	0.10
Selenium		<0.50	mg/Kg	S 6010B	8/26/98	9/1/98	RR	4799	5182	0.50
Silver		<0.50	mg/Kg	S 6010B	8/26/98	9/1/98	RR	4799	5182	0.50
Uranium		<2.0	mg/Kg	S 6010B	8/26/98	9/1/98	RR	4799	5182	2.0
Copper		1.5	mg/Kg	S 6010B	8/26/98	9/1/98	RR	4799	5182	1.0
Iron		3,200	mg/Kg	S 6010B	8/26/98	8/27/98	RR	4799	5122	2.0
Manganese		25	mg/Kg	S 6010B	8/26/98	9/1/98	RR	4799	5182	1.0
Zinc		6.3	mg/Kg	S 6010B	8/26/98	9/1/98	RR	4799	5182	2.0
Aluminum		2,700	mg/Kg	S 6010B	8/26/98	9/1/98	RR	4799	5122	10
Boron		<10	mg/Kg	S 6010B	8/26/98	9/1/98	RR	4799	5182	10
Cobalt		4.1	mg/Kg	S 6010B	8/26/98	9/1/98	RR	4799	5182	0.50
Molybdenum		1.6	mg/Kg	S 6010B	8/26/98	9/1/98	RR	4799	5182	1.0
Nickel		4.2	mg/Kg	S 6010B	8/26/98	9/1/98	RR	4799	5182	0.50
Cyanide		<0.01	mg/Kg	4500 CN,CE		8/20/98	SA		5028	0.01
Fluoride		1.0	mg/Kg	E 300.0		8/25/98	JS		5096	0.2
Nitrate		1.2	mg/Kg	E 300.0		8/25/98	JS		5096	0.2
Chloride		18	mg/Kg	E 300.0		8/25/98	JS		5096	1.0
Sulfate		4.9	mg/Kg	E 300.0		8/25/98	JS		5096	1.0
TDS		170	mg/Kg	E 160.1		9/2/98	RS		5195	---
pH		9.1	s.u.	E 150.1		8/14/98	SA		4890	---
TRPHC		<10.0	mg/Kg	S 418.1	8/21/98	8/22/98	SR	4743	5045	10.0
Total Phenol		1.5	mg/Kg	SM 5530 A,D		8/19/98	RC		5015	0.25
Total Radium		6.14	pCi/gm	E 901.1M		8/22/98	DS	---	---	---

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-1-98
Page # 4

Project Number: 19349
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9809000027
Sample Number: 106457

Field Code: GMW-9 8-10'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<125	ug/Kg	S-8260B		9/8/98	AG		5230	125
Acrylonitrile		<125	ug/Kg	S-8260B		9/8/98	AG		5230	125
Benzene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Carbon tetrachloride		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Chlorobenzene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,2-dichloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1,2,2-tetrachloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1,1-trichloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1,2-trichloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1,2-trichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Chloroform		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Dichlorobenzene		<50	ug/Kg	S-8260B		9/8/98	AG		5230	50
1,1-dichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Dichloropropenes		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Ethylbenzene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Bromodichloromethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Bromomethane		<125	ug/Kg	S-8260B		9/8/98	AG		5230	125
Chloromethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Dichlorodifluoromethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Dichloromethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Trichlorofluoromethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Tetrachloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Toluene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Trichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Vinyl chloride		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
m,p-xylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
o-xylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1-dichloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Ethylene dibromide		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
cis-1,2-dichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
trans-1,2-dichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Methylene chloride		<125	ug/Kg	S-8260B		9/8/98	AG		5230	125
Surr. Dibromofluoromethane		84	%	S-8260B		9/8/98	AG		5230	71-132
Surr. Toluene-d8		81	%	S-8260B		9/8/98	AG		5230	82-124
Surr. 4-Bromofluorobenzene		86	%	S-8260B		9/8/98	AG		5230	76-126
Benzidine		<12.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	12.5
Hexachlorobenzene		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
Pentachlorobenzene		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
1,2,4,5-tetrachlorobenzene		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25

Corrected *

Date: 10-1-98

Page # 5

Order ID Number: 9809000027

Sample Number: 106457

Project Number: 19349

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Field Code: GMW-9 8-10'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
2,4-dichlorophenol		<6.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	6.25
2,4,5-trichlorophenol		<6.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	6.25
2,4,6-trichlorophenol		<6.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	6.25
bis (2-chloroethyl) ether		<6.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	6.25
bis (2-chloroisopropyl) ether		<6.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	6.25
bis (chloromethyl) ether		<6.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	6.25
3,3-dichlorobenzidine		<6.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	6.25
2,4-dinitrotoluene		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
Diphenylhydrazine		<6.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	6.25
Hexachlorobutadiene		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
Hexachlorocyclopentadiene		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
Isophorone		<6.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	6.25
Nitrobenzene		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
2,4-dinitro-o-cresol		<6.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	6.25
2,4-dinitrophenols		<6.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	6.25
n-nitrosodiethylamine		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
N-nitrosodimethylamine		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
N-nitrosodibutylamine		<6.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	6.25
N-nitrosodiphenylamine		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
N-nitrosopyrrolidine		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
Pentachlorophenol		<6.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	6.25
Dibutyl phthalate		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
di-2-ethylhexyl phthalate		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
Diethyl phthalate		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
Dimethyl phthalate		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
Anthracene		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
3,4-benzofluoranthene		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
Benzo(k)fluoranthene		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
Fluoranthene		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
Fluorene		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
Phenanthrene		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
Pyrene		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
Naphthalene		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
1-methylnaphthalene		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
2-methylnaphthalene		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
Benzo-a-pyrene		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
Phenol		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
Surr. 2-Fluorophenol		77	%	S-8270C	9/18/98	9/19/98	DG	5101	5431	25-121
Surr. Phenol-d6		97	%	S-8270C	9/18/98	9/19/98	DG	5101	5431	24-113
Surr. Nitroobenzene-d5		71	%	S-8270C	9/18/98	9/19/98	DG	5101	5431	23-120
Surr. 2-Fluorobiphenyl		118	%	S-8270C	9/18/98	9/19/98	DG	5101	5431	30-115
Surr. 2,4,6-Tribromophenol		76	%	S-8270C	9/18/98	9/19/98	DG	5101	5431	19-122
Surr. Terphenyl-d14		104	%	S-8270C	9/18/98	9/19/98	DG	5101	5431	28-137

* Corrected - Added Phenol result

Corrected *

Date: 10-1-98

Page # 6

Order ID Number: 9809000027

Sample Number: 106457

Project Number: 19349

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Field Code: GMW-9 8-10'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
Chlordane		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
DDT		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
Endrin		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	10/1/98	10/1/98	RC	521	5602	0.1
Arsenic		<0.50	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5001	5340	0.50
Barium		230	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5001	5340	0.50
Cadmium		0.12	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5001	5340	0.10
Chromium		6.1	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5001	5340	0.50
Lead		2.4	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5001	5340	0.50
Total Mercury		<0.10	mg/Kg	S 7471	9/3/98	9/4/98	MS	4877	5201	0.10
Selenium		<0.50	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5001	5340	0.50
Silver		<0.50	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5001	5340	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5001	5340	2.0
Copper		1.3	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5001	5340	1.0
Iron		4,300	mg/Kg	S 6010B	9/16/98	9/28/98	RR	5001	5499	5.00
Manganese		37	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5001	5340	1.0
Zinc		12	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5001	5340	2.0
Aluminum		7,100	mg/Kg	S 6010B	9/16/98	9/28/98	RR	5001	5499	5.00
Boron		15	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5001	5340	10
Cobalt		7.1	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5001	5340	0.50
Molybdenum		2.1	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5001	5340	1.0
Nickel		6.8	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5001	5340	0.50
Cyanide		<0.01	mg/Kg	SM 4500 CN,CE		9/8/98	SA		5240	0.01
Fluoride		9.9	mg/Kg	E 300.0		9/21/98	JS		5491	0.2
Nitrate		1.7	mg/Kg	E 300.0		9/21/98	JS		5491	0.2
Chloride		16	mg/Kg	E 300.0		9/21/98	JS		5491	1.0
Sulfate		140	mg/Kg	E 300.0		9/21/98	JS		5491	2.0
TDS		880	mg/Kg	E 160.1		9/19/98	RS		5418	---
pH		8.1	s.u.	E 150.1		9/2/98	SA		5196	---
TRPHC		11,900	mg/Kg	S 418.1	9/9/98	9/10/98	SR	4915	5270	10.0
Total Radium		14.47	pCi/gm	E 901.1M		9/7/98	DS	---	---	---
Total Phenol		2.4	mg/Kg	SM5530 A,D		10/2/98	RC			0.25

* Corrected - Added Total Phenol result.



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ARS Tracking Number:	ARS-98-0888	P.O. Number:	
Client I.D.:	Sample No. 106457	ARS Sample I.D.:	ARS-98-3240
Date Sampled:	8/31/98	Date Received:	9/4/98
Time Sampled:	N/A	Time Received:	0915
Type of Sample:	Soil	Date of Report:	9/8/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	1.75	1.49	pCi/gm	0.065	0.055	Bq/gm	EPA 901.1M	9/7/98 1151	SW
Ra-228	0.56	0.26	pCi/gm	0.021	0.010	Bq/gm	EPA 901.1M	9/7/98 1151	SW
Pb-210	2.34	2.24	pCi/gm	0.087	0.083	Bq/gm	EPA 901.1M	9/7/98 1151	SW
Total Activity	14.47	N/A	pCi/gm	0.535	N/A	Bq/gm	EPA 901.1M	9/7/98 1151	SW

Notes:


Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-1-98
Page # 7

Project Number: 19349
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9809000027
Sample Number: 106458

Field Code: GMW-9 63-65'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<125	ug/Kg	S-8260B		9/8/98	AG		5230	125
Acrylonitrile		<125	ug/Kg	S-8260B		9/8/98	AG		5230	125
Benzene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Carbon tetrachloride		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Chlorobenzene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,2-dichloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1,2,2-tetrachloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1,1-trichloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1,2-trichloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1,2-trichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Chloroform		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Dichlorobenzene		<50	ug/Kg	S-8260B		9/8/98	AG		5230	50
1,1-dichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Dichloropropenes		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Ethylbenzene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Bromodichloromethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Bromomethane		<125	ug/Kg	S-8260B		9/8/98	AG		5230	125
Chloromethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Dichlorodifluoromethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Dichloromethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Trichlorofluoromethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Tetrachloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Toluene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Trichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Vinyl chloride		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
m,p-xylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
o-xylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1-dichloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Ethylene dibromide		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
cis-1,2-dichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
trans-1,2-dichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Methylene chloride		<125	ug/Kg	S-8260B		9/8/98	AG		5230	125
Surr. Dibromofluoromethane		87	%	S-8260B		9/8/98	AG		5230	71-132
Surr. Toluene-d8		81	%	S-8260B		9/8/98	AG		5230	82-124
Surr. 4-Bromofluorobenzene		92	%	S-8260B		9/8/98	AG		5230	76-126
Benzidine		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25

Corrected *

Date: 10-1-98

Page # 8

Order ID Number: 9809000027

Sample Number: 106458

Project Number: 19349

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Field Code: GMW-9 63-65'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
Isophorone		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
2,4-dinitro-o-cresol		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
n-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
Anthracene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
Fluorene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
Pyrene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
1-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
2-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
Phenol		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
Surr. 2-Fluorophenol		59	%	S-8270C	9/18/98	9/19/98	DG	5101	5431	25-121
Surr. Phenol-d6		66	%	S-8270C	9/18/98	9/19/98	DG	5101	5431	24-113
Surr. Nitrobenzene-d5		60	%	S-8270C	9/18/98	9/19/98	DG	5101	5431	23-120
Surr. 2-Fluorobiphenyl		76	%	S-8270C	9/18/98	9/19/98	DG	5101	5431	30-115
Surr. 2,4,6-Tribromophenol		65	%	S-8270C	9/18/98	9/19/98	DG	5101	5431	19-122
Surr. Terphenyl-d14		73	%	S-8270C	9/18/98	9/19/98	DG	5101	5431	28-137

* Corrected - Added Phenol result.

Corrected *

Date: 10-1-98

Page # 9

Order ID Number: 9809000027

Sample Number: 106458

Project Number: 19349

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Field Code: GMW-9 63-65'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
Chlordane		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
DDT		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
Endrin		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	10/1/98	10/1/98	RC	521	5602	0.1
Arsenic		<0.50	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5001	5340	0.50
Barium		15	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5001	5340	0.50
Cadmium		<0.10	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5001	5340	0.10
Chromium		2.4	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5001	5340	0.50
Lead		1.2	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5001	5340	0.50
Total Mercury		<0.10	mg/Kg	S 7471	9/3/98	9/4/98	MS	4877	5201	0.10
Selenium		<0.50	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5001	5340	0.50
Silver		<0.50	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5001	5340	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5001	5340	2.0
Copper		<1.0	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5001	5340	1.0
Iron		2,000	mg/Kg	S 6010B	9/16/98	9/28/98	RR	5001	5499	5.00
Manganese		19	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5001	5340	1.0
Zinc		4.6	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5001	5340	2.0
Aluminum		1,630	mg/Kg	S 6010B	9/16/98	9/28/98	RR	5001	5499	5.00
Boron		<10	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5001	5340	10
Cobalt		2.5	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5001	5340	0.50
Molybdenum		<1.0	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5001	5340	1.0
Nickel		2.2	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5001	5340	0.50
Cyanide		<0.01	mg/Kg	SM 4500 CN,CE		9/8/98	SA		5240	0.01
Fluoride		1.2	mg/Kg	E 300.0		9/21/98	JS		5492	0.2
Nitrate		1.7	mg/Kg	E 300.0		9/21/98	JS		5492	0.2
Chloride		25	mg/Kg	E 300.0		9/21/98	JS		5492	1.0
Sulfate		7.2	mg/Kg	E 300.0		9/21/98	JS		5492	1.0
TDS		150	mg/Kg	E 160.1		9/20/98	RS		5435	---
pH		8.9	s.u.	E 150.1		9/2/98	SA		5196	7.0
TRPHC		206	mg/Kg	S 418.1	9/9/98	9/10/98	SR	4915	5270	10.0
Total Radium		5.84	pCi/gm	E 901.1M		9/7/98	DS	---	---	---
Total Phenol		3.8	mg/Kg	SM5530 A,D		10/2/98	RC			0.25

* Corrected - Added Total Phenol result.



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ARS Tracking Number: ARS-98-0888 P.O. Number:
 Client I.D.: Sample No. 106458 ARS Sample I.D.: ARS-98-3241
 Date Sampled: 8/31/98 Date Received: 9/4/98
 Time Sampled: N/A Time Received: 0915
 Type of Sample: Soil Date of Report: 9/8/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	<0.76	N/A	pCi/gm	<0.028	N/A	Bq/gm	EPA 901.1M	9/7/98 1222	SW
Ra-228	<0.08	N/A	pCi/gm	<0.003	N/A	Bq/gm	EPA 901.1M	9/7/98 1222	SW
Pb-210	<0.95	N/A	pCi/gm	<0.035	N/A	Bq/gm	EPA 901.1M	9/7/98 1222	SW
Total Activity	5.84	N/A	pCi/gm	0.216	N/A	Bq/gm	EPA 901.1M	9/7/98 1222	SW

Notes:

Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-1-98
Page # 10

Project Number: 19349
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9809000027
Sample Number: 106459

Field Code: GMW-9D 63-65'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<125	ug/Kg	S-8260B		9/8/98	AG		5230	125
Acrylonitrile		<125	ug/Kg	S-8260B		9/8/98	AG		5230	125
Benzene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Carbon tetrachloride		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Chlorobenzene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,2-dichloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1,2,2-tetrachloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1,1-trichloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1,2-trichloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1,2-trichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Chloroform		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Dichlorobenzene		<50	ug/Kg	S-8260B		9/8/98	AG		5230	50
1,1-dichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Dichloropropenes		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Ethylbenzene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Bromodichloromethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Bromomethane		<125	ug/Kg	S-8260B		9/8/98	AG		5230	125
Chloromethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Dichlorodifluoromethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Dichloromethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Trichlorofluoromethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Tetrachloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Toluene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Trichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Vinyl chloride		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
m,p-xylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
o-xylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1-dichloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Ethylene dibromide		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
cis-1,2-dichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
trans-1,2-dichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Methylene chloride		<125	ug/Kg	S-8260B		9/8/98	AG		5230	125
Surr. Dibromofluoromethane		80	%	S-8260B		9/8/98	AG		5230	71-132
Surr. Toluene-d8		83	%	S-8260B		9/8/98	AG		5230	82-124
Surr. 4-Bromofluorobenzene		83	%	S-8260B		9/8/98	AG		5230	76-126
Benzidine		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25

Corrected *

Date: 10-1-98

Page # 11

Order ID Number: 9809000027

Sample Number: 106459

Project Number: 19349

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Field Code: GMW-9D 63-65'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
Isophorone		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
2,4-dinitro-o-cresol		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
n-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	1.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
Anthracene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
Fluorene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
Pyrene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
1-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
2-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
Phenol		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5101	5431	0.25
Surr. 2-Fluorophenol		65	%	S-8270C	9/18/98	9/19/98	DG	5101	5431	25-121
Surr. Phenol-d6		73	%	S-8270C	9/18/98	9/19/98	DG	5101	5431	24-113
Surr. Nitroobenzene-d5		62	%	S-8270C	9/18/98	9/19/98	DG	5101	5431	23-120
Surr. 2-Fluorobiphenyl		82	%	S-8270C	9/18/98	9/19/98	DG	5101	5431	30-115
Surr. 2,4,6-Tribromophenol		60	%	S-8270C	9/18/98	9/19/98	DG	5101	5431	19-122
Surr. Terphenyl-d14		72	%	S-8270C	9/18/98	9/19/98	DG	5101	5431	28-137

Corrected - Added Phenol result.

Corrected *

Date: 10-1-98

Page # 12

Order ID Number: 9809000027

Sample Number: 106459

Project Number: 19349

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Field Code: GMW-9D 63-65'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
Chlordane		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
DDT		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
Endrin		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	10/1/98	10/1/98	RC	521	5602	0.1
Arsenic		0.59	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5001	5340	0.50
Barium		19	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5001	5340	0.50
Cadmium		0.21	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5001	5340	0.10
Chromium		4.0	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5001	5340	0.50
Lead		1.2	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5001	5340	0.50
Total Mercury		<0.10	mg/Kg	S 7471	9/3/98	9/4/98	MS	4877	5201	0.10
Selenium		<0.50	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5001	5340	0.50
Silver		<0.50	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5001	5340	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5001	5340	2.0
Copper		1.0	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5001	5340	1.0
Iron		2,300	mg/Kg	S 6010B	9/16/98	9/28/98	RR	5001	5499	5.00
Manganese		23	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5001	5340	1.0
Zinc		5.1	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5001	5340	2.0
Aluminum		1,900	mg/Kg	S 6010B	9/16/98	9/28/98	RR	5001	5499	5.00
Boron		<10	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5001	5340	10
Cobalt		2.7	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5001	5340	0.50
Molybdenum		<1.0	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5001	5340	1.0
Nickel		2.4	mg/Kg	S 6010B	9/16/98	9/16/98	RR	5001	5340	0.50
Cyanide		<0.01	mg/Kg	SM 4500 CN,CE		9/8/98	SA		5240	0.01
Fluoride		1.3	mg/Kg	E 300.0		9/21/98	JS		5492	0.2
Nitrate		<0.4	mg/Kg	E 300.0		9/21/98	JS		5492	0.4
Chloride		21	mg/Kg	E 300.0		9/21/98	JS		5492	1.0
Sulfate		9.8	mg/Kg	E 300.0		9/21/98	JS		5492	1.0
TDS		252	mg/Kg	E 160.1		9/20/98	RS		5435	---
pH		8.7	s.u.	E 150.1		9/2/98	SA		5196	7.0
TRPHC		688	mg/Kg	S 418.1	9/9/98	9/10/98	SR	4915	5270	10.0
Total Radium		4.92	pCi/gm	E 901.1M		9/7/98	DS	---	---	---
Total Phenol		1.8	mg/Kg	SM5530 A,D		10/2/98	RC			0.25

* Corrected - Added Total Phenol result.



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ARS Tracking Number: ARS-98-0888 P.O. Number:
 Client I.D.: Sample No. 106459 ARS Sample I.D.: ARS-98-3242
 Date Sampled: 8/31/98 Date Received: 9/4/98
 Time Sampled: N/A Time Received: 0915
 Type of Sample: Soil Date of Report: 9/8/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	<0.62	N/A	pCi/gm	<0.023	N/A	Bq/gm	EPA 901.1M	9/7/98 1254	SW
Ra-228	<0.08	N/A	pCi/gm	<0.003	N/A	Bq/gm	EPA 901.1M	9/7/98 1254	SW
Pb-210	<0.83	N/A	pCi/gm	<0.031	N/A	Bq/gm	EPA 901.1M	9/7/98 1254	SW
Total Activity	4.92	N/A	pCi/gm	0.182	N/A	Bq/gm	EPA 901.1M	9/7/98 1254	SW

Notes:

Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-1-98
Page # 4

Project Number: 19349
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000598
Sample Number: 106342

Field Code: GMW-10 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<125	ug/Kg	S-8260B		9/8/98	AG		5230	125
Acrylonitrile		<125	ug/Kg	S-8260B		9/8/98	AG		5230	125
Benzene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Carbon tetrachloride		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Chlorobenzene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,2-dichloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1,2,2-tetrachloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1,1-trichloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1,2-trichloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1,2-trichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Chloroform		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Dichlorobenzene		<50	ug/Kg	S-8260B		9/8/98	AG		5230	50
1,1-dichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Dichloropropenes		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Ethylbenzene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Bromodichloromethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Bromomethane		<125	ug/Kg	S-8260B		9/8/98	AG		5230	125
Chloromethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Dichlorodifluoromethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Dichloromethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Trichlorofluorometane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Tetrachloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Toluene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Trichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Vinyl chloride		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
m,p-xylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
o-xylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1-dichloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Ethylene dibromide		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
cis-1,2-dichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
trans-1,2-dichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Methylene chloride		<125	ug/Kg	S-8260B		9/8/98	AG		5230	125
Surr. Dibromofluoromethane		85	%	S-8260B		9/8/98	AG		5230	71-132
Surr. Toluene-d8		85	%	S-8260B		9/8/98	AG		5230	82-124
Surr. 4-Bromofluorobenzene		81	%	S-8260B		9/8/98	AG		5230	76-126
Benzidine		<125	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	125
Hexachlorobenzene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5

Corrected *

Date: 10-1-98

Project Number: 19349

Page # 5

Project Name: Shell Grimes

Order ID Number: 9808000598

Project Location: Grimes Battery, Hobbs, NM

Sample Number: 106342

Field Code: GMW-10 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Pentachlorobenzene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
1,2,4,5-tetrachlorobenzene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Hexachloroethane		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
2,4-dichlorophenol		<62.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	62.5
2,4,5-trichlorophenol		<62.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	62.5
2,4,6-trichlorophenol		<62.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	62.5
bis (2-chloroethyl) ether		<62.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	62.5
bis (2-chloroisopropyl) ether		<62.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	62.5
bis (chloromethyl) ether		<62.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	62.5
3,3-dichlorobenzidine		<62.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	62.5
2,4-dinitrotoluene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Diphenylhydrazine		<62.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	62.5
Hexachlorobutadiene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Hexachlorocyclopentadiene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Isophorone		<62.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	62.5
Nitrobenzene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
2,4-dinitro-o-cresol		<62.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	62.5
2,4-dinitrophenols		<62.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	62.5
m-nitrosodiethylamine		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
N-nitrosodimethylamine		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
N-nitrosodibutylamine		<62.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	62.5
N-nitrosodiphenylamine		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
N-nitrosopyrrolidine		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Pentachlorophenol		<62.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	62.5
Dibutyl phthalate		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
di-2-ethylhexyl phthalate		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Diethyl phthalate		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Dimethyl phthalate		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Anthracene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
3,4-benzofluoranthene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Benzo(k)fluoranthene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Fluoranthene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Fluorene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Phenanthrene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Pyrene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Naphthalene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
1-methylnaphthalene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
2-methylnaphthalene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Benzo-a-pyrene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Phenol		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
monomethylnaphthalenes		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Surr. 2-Fluorophenol		56	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	25-121
Surr. Phenol-d6		40	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	24-113

Corrected - Added Phenol result.

Project Number: 19349
 Project Name: Shell Grimes
 Project Location: Grimes Battery, Hobbs, NM

Date: 10-1-98
 Page # 6
 Order ID Number: 9808000598
 Sample Number: 106342

Field Code: GMW-10 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Surr. Nitroobenzene-d5		72	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	23-120
Surr. 2-Fluorobiphenyl		69	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	30-115
Surr. 2,4,6-Tribromophenol		39	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	19-122
Surr. Terphenyl-d14		82	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	28-137
Aldrin		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
Chlordane		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
DDT		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
Endrin		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	9/15/98	9/18/98	RC	5044	5401	0.1
Arsenic		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	0.50
Barium		618	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	0.50
Cadmium		0.5	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	0.10
Chromium		3.4	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	0.50
Lead		1.7	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	0.50
Total Mercury		<0.10	mg/Kg	S 7471	8/31/98	9/1/98	MS	4826	5180	0.10
Selenium		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	0.50
Silver		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	2.0
Copper		1.6	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	1.0
Iron		2,200	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5050	5376	10
Manganese		20	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	1.0
Zinc		6.8	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	2.0
Aluminum		4,000	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5050	5376	10
Boron		<10	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	10
Cobalt		5.9	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	0.50
Molybdenum		1.6	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	1.0
Nickel		6	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	0.50
Cyanide		<0.01	mg/Kg	Sm 4500 CN,CE		9/3/98	SA		5200	0.01
Fluoride		9.5	mg/Kg	E 300.0		9/21/98	JS		5484	0.2
Nitrate		8.6	mg/Kg	E 300.0		9/21/98	JS		5484	0.2
Chloride		27	mg/Kg	E 300.0		9/21/98	JS		5484	1.0
Sulfate		180	mg/Kg	E 300.0		9/21/98	JS		5484	2.0
TDS		900	mg/Kg	E 160.1		9/19/98	RS		5418	---
pH		7.9	s.u.	E 150.1		8/31/98	SA		5170	---
TRPHC		4,180	mg/Kg	S 418.1	8/27/98	8/30/98	SR	4810	5168	10.0
Total Phenols		5.1	mg/Kg	SM 5530 A,D		9/16/98	RC		5355	0.25
Total Radium		3.08	pCi/gm	E 901.1M		9/7/98	DS	---	---	---



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ARS Tracking Number: ARS-98-0888 P.O. Number:
Client I.D.: Sample No. 106342 ARS Sample I.D.: ARS-98-3235
Date Sampled: 8/27/98 Date Received: 9/4/98
Time Sampled: N/A Time Received: 0915
Type of Sample: Soil Date of Report: 9/8/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	<0.59	N/A	pCi/gm	<0.022	N/A	Bq/gm	EPA 901.1M	9/6/98 1158	SW
Ra-228	0.29	0.15	pCi/gm	0.011	0.006	Bq/gm	EPA 901.1M	9/6/98 1158	SW
Pb-210	1.50	1.25	pCi/gm	0.055	0.046	Bq/gm	EPA 901.1M	9/6/98 1158	SW
Total Activity	3.08	N/A	pCi/gm	0.114	N/A	Bq/gm	EPA 901.1M	9/6/98 1158	SW

Notes:


Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

38

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 ilip Services Corp.
 04 IH 20 West
 dland, TX 79706

Date: 10-1-98
 Page # 7

ject Number: 19349
 ject Name: Shell Grimes
 ject Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000598
 Sample Number: 106343

ng

Id Code: GMW-10 63-65'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
olein		<125	ug/Kg	S-8260B		9/8/98			5230	125
ylonitrile		<125	ug/Kg	S-8260B		9/8/98			5230	125
zene		<25	ug/Kg	S-8260B		9/8/98			5230	25
arbon tetrachloride		<25	ug/Kg	S-8260B		9/8/98			5230	25
lorobenzene		<25	ug/Kg	S-8260B		9/8/98			5230	25
-dichloroethane		<25	ug/Kg	S-8260B		9/8/98			5230	25
,2,2-tetrachloroethane		<25	ug/Kg	S-8260B		9/8/98			5230	25
,1-trichloroethane		<25	ug/Kg	S-8260B		9/8/98			5230	25
,2-trichloroethane		<25	ug/Kg	S-8260B		9/8/98			5230	25
,2-trichloroethylene		<25	ug/Kg	S-8260B		9/8/98			5230	25
loroform		<25	ug/Kg	S-8260B		9/8/98			5230	25
chlorobenzene		<50	ug/Kg	S-8260B		9/8/98			5230	50
ichloroethylene		<25	ug/Kg	S-8260B		9/8/98			5230	25
loropropenes		<25	ug/Kg	S-8260B		9/8/98			5230	25
ylbenzene		<25	ug/Kg	S-8260B		9/8/98			5230	25
omodichloromethane		<25	ug/Kg	S-8260B		9/8/98			5230	25
omomethane		<125	ug/Kg	S-8260B		9/8/98			5230	125
loromethane		<25	ug/Kg	S-8260B		9/8/98			5230	25
chlorodifluoromethane		<25	ug/Kg	S-8260B		9/8/98			5230	25
chloromethane		<25	ug/Kg	S-8260B		9/8/98			5230	25
chlorofluorometane		<25	ug/Kg	S-8260B		9/8/98			5230	25
trachloroethylene		<25	ug/Kg	S-8260B		9/8/98			5230	25
luene		<25	ug/Kg	S-8260B		9/8/98			5230	25
chloroethylene		<25	ug/Kg	S-8260B		9/8/98			5230	25
nyl chloride		<25	ug/Kg	S-8260B		9/8/98			5230	25
p-xylene		<25	ug/Kg	S-8260B		9/8/98			5230	25
xylene		<25	ug/Kg	S-8260B		9/8/98			5230	25
1-dichloroethane		<25	ug/Kg	S-8260B		9/8/98			5230	25
nylene dibromide		<25	ug/Kg	S-8260B		9/8/98			5230	25
s-1,2-dichlorethylene		<25	ug/Kg	S-8260B		9/8/98			5230	25
ins-1,2-dichloroethylene		<25	ug/Kg	S-8260B		9/8/98			5230	25
ethylene chloride		<125	ug/Kg	S-8260B		9/8/98			5230	125
irr. Dibromofluoromethane		81	%	S-8260B		9/8/98			5230	71-132
irr. Toluene-d8		83	%	S-8260B		9/8/98			5230	82-124
irr. 4-Bromofluorobenzene		80	%	S-8260B		9/8/98			5230	76-126
enzidine		<2.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	2.5
exachlorobenzene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25

Corrected *

Date: 10-1-98

Page # 8

Order ID Number: 9808000598

Sample Number: 106343

Project Number: 19349

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Field Code: GMW-10 63-65'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Hexachloroethane		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Isophorone		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
2,4-dinitro-o-cresol		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
N-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Anthracene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Fluorene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Pyrene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
1-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
2-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Phenol		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Surr. 2-Fluorophenol		44	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	25-121
Surr. Phenol-d6		51	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	24-113

Corrected - Added Phenol result

Project Number: 19349
 Project Name: Shell Grimes
 Project Location: Grimes Battery, Hobbs, NM

Date: 10-1-98
 Page # 9
 Order ID Number: 9808000598
 Sample Number: 106343

Field Code: GMW-10 63-65'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Surr. Nitroobenzene-d5		48	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	23-120
Surr. 2-Fluorobiphenyl		60	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	30-115
Surr. 2,4,6-Tribromophenol		58	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	19-122
Surr. Terphenyl-d14		68	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	28-137
Aldrin		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
Chlordane		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
DDT		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
Endrin		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S-8080	9/5/98	9/21/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	9/15/98	9/18/98	RC	5044	5401	0.1
Arsenic		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	0.50
Barium		17	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	0.50
Cadmium		0.42	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	0.10
Chromium		3.6	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	0.50
Lead		1.5	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	0.50
Total Mercury		<0.10	mg/Kg	S 7471	8/31/98	9/1/98	MS	4826	5180	0.10
Selenium		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	0.50
Silver		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	2.0
Copper		2.1	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	1.0
Iron		2,300	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5050	5376	10
Manganese		22	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	1.0
Zinc		6	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	2.0
Aluminum		2,300	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5050	5376	10
Boron		<10	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	10
Cobalt		2.7	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	0.50
Molybdenum		1.3	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	1.0
Nickel		2	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5050	5358	0.50
Cyanide		<0.01	mg/Kg	Sm 4500 CN,CE		9/3/98	SA		5200	0.01
Fluoride		1.2	mg/Kg	E 300.0		9/21/98	JS		5484	0.2
Nitrate		1.8	mg/Kg	E 300.0		9/21/98	JS		5484	0.2
Chloride		20	mg/Kg	E 300.0		9/21/98	JS		5484	1.0
Sulfate		73	mg/Kg	E 300.0		9/21/98	JS		5484	1.0
TDS		470	mg/Kg	E 160.1		9/19/98	RS		5418	---
pH		8.7	s.u.	E 150.1		8/31/98	SA		5170	---
TRPHC		<10.0	mg/Kg	S 418.1	8/27/98	8/30/98	SR	4810	5168	10.0
Total Phenols		23.4	mg/Kg	SM 5530 A,D		9/16/98	RC		5355	0.25
Total Radium		7.04	pCi/gm	E 901.1M		9/7/98	DS	---	---	---



ARS Tracking Number: ARS-98-0888 P.O. Number:
Client I.D.: Sample No. 106343 ARS Sample I.D.: ARS-98-3236
Date Sampled: 8/27/98 Date Received: 9/4/98
Time Sampled: N/A Time Received: 0915
Type of Sample: Soil Date of Report: 9/8/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	<0.50	N/A	pCi/gm	<0.019	N/A	Bq/gm	EPA 901.1M	9/6/98 1243	SW
Ra-228	0.29	0.11	pCi/gm	0.011	0.004	Bq/gm	EPA 901.1M	9/6/98 1243	SW
Pb-210	<0.61	N/A	pCi/gm	<0.023	N/A	Bq/gm	EPA 901.1M	9/6/98 1243	SW
Total Activity	7.04	N/A	pCi/gm	0.260	N/A	Bq/gm	EPA 901.1M	9/6/98 1243	SW

Notes:


Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-1-98

Page # 10

Project Number: 19349
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000598

Sample Number: 106344

Field Code: ~~GCB-7-33-35~~ Gmw 10-D 63-65¹

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<125	ug/Kg	S-8260B		9/8/98			5230	125
Acrylonitrile		<125	ug/Kg	S-8260B		9/8/98			5230	125
Benzene		<25	ug/Kg	S-8260B		9/8/98			5230	25
Carbon tetrachloride		<25	ug/Kg	S-8260B		9/8/98			5230	25
Chlorobenzene		<25	ug/Kg	S-8260B		9/8/98			5230	25
1,2-dichloroethane		<25	ug/Kg	S-8260B		9/8/98			5230	25
1,1,2,2-tetrachloroethane		<25	ug/Kg	S-8260B		9/8/98			5230	25
1,1,1-trichloroethane		<25	ug/Kg	S-8260B		9/8/98			5230	25
1,1,2-trichloroethane		<25	ug/Kg	S-8260B		9/8/98			5230	25
1,1,2-trichloroethylene		<25	ug/Kg	S-8260B		9/8/98			5230	25
Chloroform		<25	ug/Kg	S-8260B		9/8/98			5230	25
Dichlorobenzene		<50	ug/Kg	S-8260B		9/8/98			5230	50
1,1-dichloroethylene		<25	ug/Kg	S-8260B		9/8/98			5230	25
Dichloropropenes		<25	ug/Kg	S-8260B		9/8/98			5230	25
Ethylbenzene		<25	ug/Kg	S-8260B		9/8/98			5230	25
Bromodichloromethane		<25	ug/Kg	S-8260B		9/8/98			5230	25
Bromomethane		<125	ug/Kg	S-8260B		9/8/98			5230	125
Chloromethane		<25	ug/Kg	S-8260B		9/8/98			5230	25
Dichlorodifluoromethane		<25	ug/Kg	S-8260B		9/8/98			5230	25
Dichloromethane		<25	ug/Kg	S-8260B		9/8/98			5230	25
Trichlorofluoromethane		<25	ug/Kg	S-8260B		9/8/98			5230	25
Tetrachloroethylene		<25	ug/Kg	S-8260B		9/8/98			5230	25
Toluene		<25	ug/Kg	S-8260B		9/8/98			5230	25
Trichloroethylene		<25	ug/Kg	S-8260B		9/8/98			5230	25
Vinyl chloride		<25	ug/Kg	S-8260B		9/8/98			5230	25
m,p-xylene		<25	ug/Kg	S-8260B		9/8/98			5230	25
o-xylene		<25	ug/Kg	S-8260B		9/8/98			5230	25
1,1-dichloroethane		<25	ug/Kg	S-8260B		9/8/98			5230	25
Ethylene dibromide		<25	ug/Kg	S-8260B		9/8/98			5230	25
cis-1,2-dichloroethylene		<25	ug/Kg	S-8260B		9/8/98			5230	25
trans-1,2-dichloroethylene		<25	ug/Kg	S-8260B		9/8/98			5230	25
Methylene chloride		<125	ug/Kg	S-8260B		9/8/98			5230	125
Surr. Dibromofluoromethane		84	%	S-8260B		9/8/98			5230	71-132
Surr. Toluene-d8		83	%	S-8260B		9/8/98			5230	82-124
Surr. 4-Bromofluorobenzene		85	%	S-8260B		9/8/98			5230	76-126
Benzidine		<2.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-6-98
Page # 4

Project Number: 19350
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000469
Sample Number: 105955

Field Code: TSB-1 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<170	ug/Kg	S-8260B		9/3/98	AG		5205	<170
Acrylonitrile		<170	ug/Kg	S-8260B		9/3/98	AG		5205	<170
Benzene		<34	ug/Kg	S-8260B		9/3/98	AG		5205	34
Carbon tetrachloride		<34	ug/Kg	S-8260B		9/3/98	AG		5205	34
Chlorobenzene		<34	ug/Kg	S-8260B		9/3/98	AG		5205	34
1,2-dichloroethane		<34	ug/Kg	S-8260B		9/3/98	AG		5205	34
1,1,2,2-tetrachloroethane		<34	ug/Kg	S-8260B		9/3/98	AG		5205	34
1,1,1-trichloroethane		<34	ug/Kg	S-8260B		9/3/98	AG		5205	34
1,1,2-trichloroethane		<34	ug/Kg	S-8260B		9/3/98	AG		5205	34
1,1,2-trichloroethylene		<34	ug/Kg	S-8260B		9/3/98	AG		5205	34
Chloroform		<34	ug/Kg	S-8260B		9/3/98	AG		5205	34
Dichlorobenzene		<68	ug/Kg	S-8260B		9/3/98	AG		5205	68
1,1-dichloroethylene		<34	ug/Kg	S-8260B		9/3/98	AG		5205	34
Dichloropropenes		<34	ug/Kg	S-8260B		9/3/98	AG		5205	34
Ethylbenzene		<34	ug/Kg	S-8260B		9/3/98	AG		5205	34
Bromodichloromethane		<34	ug/Kg	S-8260B		9/3/98	AG		5205	34
Bromomethane		<170	ug/Kg	S-8260B		9/3/98	AG		5205	<170
Chloromethane		<34	ug/Kg	S-8260B		9/3/98	AG		5205	34
Dichlorodifluoromethane		<34	ug/Kg	S-8260B		9/3/98	AG		5205	34
Dichloromethane		<34	ug/Kg	S-8260B		9/3/98	AG		5205	34
Trichlorofluoromethane		<34	ug/Kg	S-8260B		9/3/98	AG		5205	34
Tetrachloroethylene		<34	ug/Kg	S-8260B		9/3/98	AG		5205	34
Toluene		<34	ug/Kg	S-8260B		9/3/98	AG		5205	34
Trichloroethylene		<34	ug/Kg	S-8260B		9/3/98	AG		5205	34
Vinyl chloride		<34	ug/Kg	S-8260B		9/3/98	AG		5205	34
m,p-xylene		<34	ug/Kg	S-8260B		9/3/98	AG		5205	34
o-xylene		<34	ug/Kg	S-8260B		9/3/98	AG		5205	34
1,1-dichloroethane		<34	ug/Kg	S-8260B		9/3/98	AG		5205	34
Ethylene dibromide		<34	ug/Kg	S-8260B		9/3/98	AG		5205	34
cis-1,2-dichloroethylene		<34	ug/Kg	S-8260B		9/3/98	AG		5205	34
trans-1,2-dichloroethylene		<34	ug/Kg	S-8260B		9/3/98	AG		5205	34
Methylene chloride		<170	ug/Kg	S-8260B		9/3/98	AG		5205	<170
Surr. Dibromofluoromethane		103	%	S-8260B		9/3/98	AG		5205	72-130
Surr. Toluene-d8		94	%	S-8260B		9/3/98	AG		5205	77-127
Surr. 4-Bromofluorobenzene		102	%	S-8260B		9/3/98	AG		5205	72-131
Benzidine		<250	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	250
Hexachlorobenzene		<25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	25
Pentachlorobenzene		<25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	25
1,2,4,5-tetrachlorobenzene		<25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	25

Corrected *

Date: 10-6-98

Page # 5

Order ID Number: 9808000469

Sample Number: 105955

Project Number: 19350

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Field Code: TSB-1 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	25
2,4-dichlorophenol		<125	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	125
2,4,5-trichlorophenol		<125	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	125
2,4,6-trichlorophenol		<125	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	125
bis (2-chloroethyl) ether		<125	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	125
bis (2-chloroisopropyl) ether		<125	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	125
bis (chloromethyl) ether		<125	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	125
3,3-dichlorobenzidine		<125	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	125
2,4-dinitrotoluene		<25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	25
Diphenylhydrazine		<125	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	125
Hexachlorobutadiene		<25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	25
Hexachlorocyclopentadiene		<25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	25
Isophorone		<125	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	125
Nitrobenzene		<25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	25
2,4-dinitro-o-cresol		<125	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	125
2,4-dinitrophenols		<125	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	125
n-nitrosodiethylamine		<25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	25
N-nitrosodimethylamine		<25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	25
N-nitrosodibutylamine		<125	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	125
N-nitrosodiphenylamine		<25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	25
N-nitrosopyrrolidine		<25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	25
Pentachlorophenol		<125	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	125
Dibutyl phthalate		<25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	25
di-2-ethylhexyl phthalate		<25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	25
Diethyl phthalate		<25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	25
Dimethyl phthalate		<25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	25
Anthracene		<25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	25
3,4-benzofluoranthene		<25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	25
Benzo(k)fluoranthene		<25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	25
Fluoranthene		<25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	25
Fluorene		<25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	25
Phenanthrene		<25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	25
Pyrene		<25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	25
Naphthalene		<25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	25
1-methylnaphthalene		<25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	25
2-methylnaphthalene		<25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	25
Benzo-a-pyrene		<25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	25
Phenol		<25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	25
Surr. 2-Fluorophenol	ESR	126	%	S-8270C	8/31/98	9/11/98	DG	4828	5283	25-121
Surr. Phenol-d6		89	%	S 8270C	8/31/98	9/11/98	DG	4828	5283	24-113
Surr. Nitroobenzene-d5	ESR	125	%	S 8270C	8/31/98	9/11/98	DG	4828	5283	23-120
Surr. 2-Fluorobiphenyl	ESR	269	%	S 8270C	8/31/98	9/11/98	DG	4828	5283	30-115
Surr. 2,4,6-Tribromophenol		39	%	S 8270C	8/31/98	9/11/98	DG	4828	5283	19-122
Surr. Terphenyl-d14	ESR	213	%	S 8270C	8/31/98	9/11/98	DG	4828	5283	28-137

Corrected - Added Phenol result.

Date: 10-6-98

Page # 6

Order ID Number: 9808000469

Sample Number: 105955

Project Number: 19350

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Field Code: TSB-1 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	8/26/98	10/2/98	SH	---	---	50
Chlordane		<50	ug/Kg	S-8080	8/26/98	10/2/98	SH	---	---	50
DDT		<50	ug/Kg	S-8080	8/26/98	10/2/98	SH	---	---	50
Dieldrin		<50	ug/Kg	S-8080	8/26/98	10/2/98	SH	---	---	50
Endosulfan		<50	ug/Kg	S-8080	8/26/98	10/2/98	SH	---	---	50
Endrin		<50	ug/Kg	S-8080	8/26/98	10/2/98	SH	---	---	50
Heptachlor		<50	ug/Kg	S-8080	8/26/98	10/2/98	SH	---	---	50
PCB's		<0.1	mg/Kg	S 8082	8/26/98	8/26/98	RC	4796	5112	0.1
Arsenic		<0.50	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Barium		90	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Cadmium		0.32	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.10
Chromium		8.6	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Lead		5.5	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Total Mercury		<0.10	mg/Kg	S 7471	8/24/98	8/25/98	MS	4765	5101	0.10
Selenium		0.57	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Silver		<0.50	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	2.0
Copper		5.4	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	1.0
Iron		7,000	mg/Kg	S 6010B	9/1/98	9/17/98	RR	4848	5372	10
Manganese		77	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	1.0
Zinc		34	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	2.0
Aluminum		10,000	mg/Kg	S 6010B	9/1/98	9/17/98	RR	4848	5372	10
Boron		17	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	10.0
Cobalt		7.8	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Molybdenum		2.9	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	1.0
Nickel		8.6	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Cyanide		<0.01	mg/Kg	SM 4500 CN,CE		8/27/98	SA		5128	0.01
Fluoride		1.6	mg/Kg	E 300.0		9/3/98	JS		5197	0.4
Nitrate		2.1	mg/Kg	E 300.0		9/3/98	JS		5197	0.4
Chloride		30	mg/Kg	E 300.0		9/3/98	JS		5197	2.0
Sulfate		70	mg/Kg	E 300.0		9/3/98	JS		5197	2.0
TDS		6,900	mg/Kg	E 160.1		9/16/98	RS		5364	---
pH		8.1	s.u.	E 150.1		8/25/98	SA		5104	---
Total Phenols		6.25	mg/kg	SM 5530 A,D		8/26/98	RC		5109	0.25
Total Radium		8.4	pCi/gm	E 901.1M		8/18/98	DS	---	---	---
TRPHC		10,200	mg/Kg	S 418.1	8/27/98	8/30/98	SR	4810	5168	10.0

ESR Elevated Surrogate Recovery due to matrix.



1726 Wooddale Court • Baton Rouge, Louisiana 70806

1 (800) 401-4277 • Fax (504) 927-6822

American Radiation Services, Inc.

Laboratory Analysis Report

Prepared For:

**Trace Analysis, Inc.
Nell Green
6701 Aberdeen Ave. Ste 9
Lubbock, TX 79424
Phone: 806-794-1296
Fax: 806-794-1298**



Quality Assurance Review



**Danny L. Coleman
Laboratory Manager**

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.



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1 (800) 401-4277 • Fax (504) 927-6822

ARS Tracking Number: ARS-98-0867 P.O. Number: Verbal
 Client I.D.: 105955 TSB 12-31 ARS Sample I.D.: ARS-98-3156
 Date Sampled: 8/20/98 Date Received: 8/26/98
 Time Sampled: N/A Time Received: 1157
 Type of Sample: Solid Date of Report: 9/6/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	<0.82	N/A	pCi/gm	<0.030	N/A	Bq/gm	EPA 901.1M	9/5/98 1522	sw
Ra-228	0.51	0.23	pCi/gm	0.019	0.009	Bq/gm	EPA 901.1M	9/5/98 1522	sw
Pb-210	<0.94	N/A	pCi/gm	<0.035	N/A	Bq/gm	EPA 901.1M	9/5/98 1522	sw
Total Activity	8.40	N/A	pCi/gm	0.311	N/A	Bq/gm	EPA 901.1M	9/5/98 1522	sw

Notes:

Quality Assurance Review

Notes: American Radiation Services, Inc. assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-6-98
Page # 7

Project Number: 19350
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000469
Sample Number: 105956

Field Code: TSB-1 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<2,090	ug/Kg	S-8260B		9/3/98	AG		5205	2090
Acrylonitrile		<2,090	ug/Kg	S-8260B		9/3/98	AG		5205	2090
Benzene		<418	ug/Kg	S-8260B		9/3/98	AG		5205	418
Carbon tetrachloride		<418	ug/Kg	S-8260B		9/3/98	AG		5205	418
Chlorobenzene		<418	ug/Kg	S-8260B		9/3/98	AG		5205	418
1,2-dichloroethane		<418	ug/Kg	S-8260B		9/3/98	AG		5205	418
1,1,2,2-tetrachloroethane		<418	ug/Kg	S-8260B		9/3/98	AG		5205	418
1,1,1-trichloroethane		<418	ug/Kg	S-8260B		9/3/98	AG		5205	418
1,1,2-trichloroethane		<418	ug/Kg	S-8260B		9/3/98	AG		5205	418
1,1,2-trichloroethylene		<418	ug/Kg	S-8260B		9/3/98	AG		5205	418
Chloroform		<418	ug/Kg	S-8260B		9/3/98	AG		5205	418
Dichlorobenzene		<936	ug/Kg	S-8260B		9/3/98	AG		5205	936
1,1-dichloroethylene		<418	ug/Kg	S-8260B		9/3/98	AG		5205	418
Dichloropropenes		<418	ug/Kg	S-8260B		9/3/98	AG		5205	418
Ethylbenzene		11,100	ug/Kg	S-8260B		9/3/98	AG		5205	418
Bromodichloromethane		<418	ug/Kg	S-8260B		9/3/98	AG		5205	418
Bromomethane		<2,090	ug/Kg	S-8260B		9/3/98	AG		5205	2090
Chloromethane		<418	ug/Kg	S-8260B		9/3/98	AG		5205	418
Dichlorodifluoromethane		<418	ug/Kg	S-8260B		9/3/98	AG		5205	418
Dichloromethane		<418	ug/Kg	S-8260B		9/3/98	AG		5205	418
Trichlorofluoromethane		<418	ug/Kg	S-8260B		9/3/98	AG		5205	418
Tetrachloroethylene		<418	ug/Kg	S-8260B		9/3/98	AG		5205	418
Toluene		<418	ug/Kg	S-8260B		9/3/98	AG		5205	418
Trichloroethylene		<418	ug/Kg	S-8260B		9/3/98	AG		5205	418
Vinyl chloride		<418	ug/Kg	S-8260B		9/3/98	AG		5205	418
m,p-xylene		<418	ug/Kg	S-8260B		9/3/98	AG		5205	418
o-xylene		1,900	ug/Kg	S-8260B		9/3/98	AG		5205	418
1,1-dichloroethane		<418	ug/Kg	S-8260B		9/3/98	AG		5205	418
Ethylene dibromide		<418	ug/Kg	S-8260B		9/3/98	AG		5205	418
cis-1,2-dichloroethylene		<418	ug/Kg	S-8260B		9/3/98	AG		5205	418
trans-1,2-dichloroethylene		<418	ug/Kg	S-8260B		9/3/98	AG		5205	418
Methylene chloride		<2,090	ug/Kg	S-8260B		9/3/98	AG		5205	2090
Surr. Dibromofluoromethane		106	%	S-8260B		9/3/98	AG		5205	72-130
Surr. Toluene-d8		101	%	S-8260B		9/3/98	AG		5205	77-127
Surr. 4-Bromofluorobenzene		114	%	S-8260B		9/3/98	AG		5205	72-131
Benzidine		<2.5	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	0.25

Corrected *

Date: 10-6-98

Page # 8

Order ID Number: 9808000469

Sample Number: 105956

Project Number: 19350

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Field Code: TSB-1 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<0.25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	0.25
Isophorone		<1.25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	0.25
2,4-dinitro-o-cresol		<1.25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	1.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	1.25
n-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	1.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	0.25
Anthracene		<0.25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	0.25
Fluorene		<0.25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	0.25
Pyrene		<0.25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	0.25
1-methylnaphthalene		20.0	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	0.25
2-methylnaphthalene		17.9	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	0.25
Phenol		<0.25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	0.25
Surr. 2-Fluorophenol		58	%	S 8270C	8/31/98	9/11/98	DG	4828	5283	25-121
Surr. Phenol-d6		65	%	S 8270C	8/31/98	9/11/98	DG	4828	5283	24-113
Surr. Nitroobenzene-d5		56	%	S 8270C	8/31/98	9/11/98	DG	4828	5283	23-120
Surr. 2-Fluorobiphenyl		67	%	S 8270C	8/31/98	9/11/98	DG	4828	5283	30-115
Surr. 2,4,6-Tribromophenol		42	%	S 8270C	8/31/98	9/11/98	DG	4828	5283	19-122
Surr. Terphenyl-d14		71	%	S 8270C	8/31/98	9/11/98	DG	4828	5283	28-137

Corrected - Added Phenol result.

Project Number: 19350
 Project Name: Shell Grimes
 Project Location: Grimes Battery, Hobbs, NM

Date: 10-6-98
 Page # 9
 Order ID Number: 9808000469
 Sample Number: 105956

Field Code: TSB-1 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	8/26/98	10/2/98	SH	---	---	50
Chlordane		<50	ug/Kg	S-8080	8/26/98	10/2/98	SH	---	---	50
DDT		<50	ug/Kg	S-8080	8/26/98	10/2/98	SH	---	---	50
Dieldrin		<50	ug/Kg	S-8080	8/26/98	10/2/98	SH	---	---	50
Endosulfan		<50	ug/Kg	S-8080	8/26/98	10/2/98	SH	---	---	50
Endrin		<50	ug/Kg	S-8080	8/26/98	10/2/98	SH	---	---	50
Heptachlor		<50	ug/Kg	S-8080	8/26/98	10/2/98	SH	---	---	50
PCB's		<1.0	mg/Kg	S 8082	8/26/98	9/3/98	RC	4795	5204	1.0
Arsenic		2.2	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Barium		105	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Cadmium		0.23	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.10
Chromium		6.0	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Lead		3.9	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Total Mercury		<0.10	mg/Kg	S 7471	8/24/98	8/25/98	MS	4765	5101	0.10
Selenium		<0.50	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Silver		<0.50	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	2.0
Copper		3.3	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	1.0
Iron		4,800	mg/Kg	S 6010B	9/1/98	9/17/98	RR	4848	5372	10
Manganese		64	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	1.0
Zinc		14	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	2.0
Aluminum		6,900	mg/Kg	S 6010B	9/1/98	9/17/98	RR	4848	5372	10
Boron		12	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	10.0
Cobalt		7.1	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Molybdenum		2.0	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	1.0
Nickel		7.9	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Cyanide		<0.01	mg/Kg	SM 4500 CN,CE		8/27/98	SA		5128	0.01
Fluoride		3.5	mg/Kg	E 300.0		9/3/98	JS		5197	0.4
Nitrate		3.6	mg/Kg	E 300.0		9/3/98	JS		5197	0.4
Chloride		29	mg/Kg	E 300.0		9/3/98	JS		5197	2.0
Sulfate		14	mg/Kg	E 300.0		9/3/98	JS		5197	2.0
TDS		280	mg/Kg	E 160.1		9/16/98	RS		5364	---
pH		8.4	s.u.	E 150.1		8/25/98	SA		5104	---
Total Phenols		4.25	mg/kg	SM 5530 A,D		8/26/98	RC		5109	0.25
Total Radium		3.29	pCi/gm	E 901.1M		8/18/98	DS	---	---	---
TRPHC		37,100	mg/Kg	S 418.1	8/27/98	8/30/98	SR	4810	5168	10.0



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ARS Tracking Number:	ARS-98-0867	P.O. Number:	Verbal
Client I.D.:	105956	ARS Sample I.D.:	ARS-98-3157
Date Sampled:	8/20/98	Date Received:	8/26/98
Time Sampled:	N/A	Time Received	1157
Type of Sample:	Solid	Date of Report	9/6/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	<0.95	N/A	pCi/gm	<0.035	N/A	Bq/gm	EPA 901.1M	9/5/98 1633	sw
Ra-228	<0.11	N/A	pCi/gm	<0.004	N/A	Bq/gm	EPA 901.1M	9/5/98 1633	sw
Pb-210	<1.15	N/A	pCi/gm	<0.043	N/A	Bq/gm	EPA 901.1M	9/5/98 1633	sw
Total Activity	3.29	N/A	pCi/gm	0.122	N/A	Bq/gm	EPA 901.1M	9/5/98 1633	sw

Notes:


Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-6-98
Page # 10

Project Number: 19350
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000469
Sample Number: 105957

Field Code: TSB-1 8-10'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<255	ug/Kg	S-8260B		9/3/98	AG		5205	255
Acrylonitrile		<255	ug/Kg	S-8260B		9/3/98	AG		5205	255
Benzene		<51	ug/Kg	S-8260B		9/3/98	AG		5205	51
Carbon tetrachloride		<51	ug/Kg	S-8260B		9/3/98	AG		5205	51
Chlorobenzene		<51	ug/Kg	S-8260B		9/3/98	AG		5205	51
1,2-dichloroethane		<51	ug/Kg	S-8260B		9/3/98	AG		5205	51
1,1,2,2-tetrachloroethane		<51	ug/Kg	S-8260B		9/3/98	AG		5205	51
1,1,1-trichloroethane		<51	ug/Kg	S-8260B		9/3/98	AG		5205	51
1,1,2-trichloroethane		<51	ug/Kg	S-8260B		9/3/98	AG		5205	51
1,1,2-trichloroethylene		<51	ug/Kg	S-8260B		9/3/98	AG		5205	51
Chloroform		<51	ug/Kg	S-8260B		9/3/98	AG		5205	51
Dichlorobenzene		<102	ug/Kg	S-8260B		9/3/98	AG		5205	102
1,1-dichloroethylene		<51	ug/Kg	S-8260B		9/3/98	AG		5205	51
Dichloropropenes		<51	ug/Kg	S-8260B		9/3/98	AG		5205	51
Ethylbenzene		<51	ug/Kg	S-8260B		9/3/98	AG		5205	51
Bromodichloromethane		<51	ug/Kg	S-8260B		9/3/98	AG		5205	51
Bromomethane		<255	ug/Kg	S-8260B		9/3/98	AG		5205	255
Chloromethane		<51	ug/Kg	S-8260B		9/3/98	AG		5205	51
Dichlorodifluoromethane		<51	ug/Kg	S-8260B		9/3/98	AG		5205	51
Dichloromethane		<51	ug/Kg	S-8260B		9/3/98	AG		5205	51
Trichlorofluoromethane		<51	ug/Kg	S-8260B		9/3/98	AG		5205	51
Tetrachloroethylene		<51	ug/Kg	S-8260B		9/3/98	AG		5205	51
Toluene		<51	ug/Kg	S-8260B		9/3/98	AG		5205	51
Trichloroethylene		<51	ug/Kg	S-8260B		9/3/98	AG		5205	51
Vinyl chloride		<51	ug/Kg	S-8260B		9/3/98	AG		5205	51
m,p-xylene		<51	ug/Kg	S-8260B		9/3/98	AG		5205	51
o-xylene		<51	ug/Kg	S-8260B		9/3/98	AG		5205	51
1,1-dichloroethane		<51	ug/Kg	S-8260B		9/3/98	AG		5205	51
Ethylene dibromide		<51	ug/Kg	S-8260B		9/3/98	AG		5205	51
cis-1,2-dichloroethylene		<51	ug/Kg	S-8260B		9/3/98	AG		5205	51
trans-1,2-dichloroethylene		<51	ug/Kg	S-8260B		9/3/98	AG		5205	51
Methylene chloride		<255	ug/Kg	S-8260B		9/3/98	AG		5205	255
Surr. Dibromofluoromethane		106	%	S-8260B		9/3/98	AG		5205	72-130
Surr. Toluene-d8		93	%	S-8260B		9/3/98	AG		5205	77-127
Surr. 4-Bromofluorobenzene		101	%	S-8260B		9/3/98	AG		5205	72-131
Benzidine		<25	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	25
Hexachlorobenzene		<2.5	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	2.5

Corrected *

Date: 10-6-98

Page # 11

Order ID Number: 9808000469

Sample Number: 105957

Project Number: 19350

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Field Code: TSB-1 8-10'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Pentachlorobenzene		<2.5	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	2.5
1,2,4,5-tetrachlorobenzene		<2.5	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	2.5
Hexachloroethane		<2.5	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	2.5
2,4-dichlorophenol		<12.5	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	12.5
2,4,5-trichlorophenol		<12.5	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	12.5
2,4,6-trichlorophenol		<12.5	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	12.5
bis (2-chloroethyl) ether		<12.5	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	12.5
bis (2-chloroisopropyl) ether		<12.5	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	12.5
bis (chloromethyl) ether		<12.5	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	12.5
3,3-dichlorobenzidine		<12.5	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	12.5
2,4-dinitrotoluene		<2.5	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	2.5
Diphenylhydrazine		<12.5	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	12.5
Hexachlorobutadiene		<2.5	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	2.5
Hexachlorocyclopentadiene		<2.5	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	2.5
Isophorone		<12.5	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	12.5
Nitrobenzene		<2.5	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	2.5
2,4-dinitro-o-cresol		<12.5	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	12.5
2,4-dinitrophenols		<12.5	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	12.5
n-nitrosodiethylamine		<2.5	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	2.5
N-nitrosodimethylamine		<2.5	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	2.5
N-nitrosodibutylamine		<12.5	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	12.5
N-nitrosodiphenylamine		<2.5	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	2.5
N-nitrosopyrrolidine		<2.5	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	2.5
Pentachlorophenol		<12.5	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	12.5
Dibutyl phthalate		<2.5	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	2.5
di-2-ethylhexyl phthalate		<2.5	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	2.5
Diethyl phthalate		<2.5	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	2.5
Dimethyl phthalate		<2.5	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	2.5
Anthracene		<2.5	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	2.5
3,4-benzofluoranthene		<2.5	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	2.5
Benzo(k)fluoranthene		<2.5	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	2.5
Fluoranthene		<2.5	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	2.5
Fluorene		<2.5	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	2.5
Phenanthrene		<2.5	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	2.5
Pyrene		<2.5	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	2.5
Naphthalene		<2.5	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	2.5
1-methylnaphthalene		<2.5	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	2.5
2-methylnaphthalene		<2.5	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	2.5
Benzo-a-pyrene		<2.5	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	2.5
Phenol		<2.5	mg/Kg	S-8270C	8/31/98	9/11/98	DG	4828	5283	2.5
Surr. 2-Fluorophenol		39	%	S 8270C	8/31/98	9/11/98	DG	4828	5283	25-121
Surr. Phenol-d6		60	%	S 8270C	8/31/98	9/11/98	DG	4828	5283	24-113

* Corrected - Added Phenol result.

Project Number: 19350
 Project Name: Shell Grimes
 Project Location: Grimes Battery, Hobbs, NM

Date: 10-6-98
 Page # 12
 Order ID Number: 9808000469
 Sample Number: 105957

Field Code: TSB-1 8-10'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Surr. Nitroobenzene-d5		78	%	S 8270C	8/31/98	9/11/98	DG	4828	5283	23-120
Surr. 2-Fluorobiphenyl		112	%	S 8270C	8/31/98	9/11/98	DG	4828	5283	30-115
Surr. 2,4,6-Tribromophenol		48	%	S 8270C	8/31/98	9/11/98	DG	4828	5283	19-122
Surr. Terphenyl-d14		98	%	S 8270C	8/31/98	9/11/98	DG	4828	5283	28-137
Aldrin		<50	ug/Kg	S-8080	8/26/98	10/2/98	SH	---	---	50
Chlordane		<50	ug/Kg	S-8080	8/26/98	10/2/98	SH	---	---	50
DDT		<50	ug/Kg	S-8080	8/26/98	10/2/98	SH	---	---	50
Dieldrin		<50	ug/Kg	S-8080	8/26/98	10/2/98	SH	---	---	50
Endosulfan		<50	ug/Kg	S-8080	8/26/98	10/2/98	SH	---	---	50
Endrin		<50	ug/Kg	S-8080	8/26/98	10/2/98	SH	---	---	50
Heptachlor		<50	ug/Kg	S-8080	8/26/98	10/2/98	SH	---	---	50
PCB's		<0.1	mg/Kg	S 8082	8/26/98	8/26/98	RC	4796	5112	0.1
Arsenic		2.9	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Barium		439	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Cadmium		0.15	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.10
Chromium		2.7	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Lead		1.2	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Total Mercury		<0.10	mg/Kg	S 7471	8/24/98	8/25/98	MS	4765	5101	0.10
Selenium		<0.50	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Silver		<0.50	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	2.0
Copper		4.2	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	1.0
Iron		1,860	mg/Kg	S 6010B	9/1/98	9/17/98	RR	4848	5372	10
Manganese		29	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	1.0
Zinc		5.0	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	2.0
Aluminum		3,600	mg/Kg	S 6010B	9/1/98	9/17/98	RR	4848	5372	10
Boron		10	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	10.0
Cobalt		5.2	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Molybdenum		1.6	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	1.0
Nickel		<0.50	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Cyanide		<0.01	mg/Kg	SM 4500 CN,CE		8/27/98	SA		5128	0.01
Fluoride		7.3	mg/Kg	E 300.0		9/3/98	JS		5198	0.2
Nitrate		1.8	mg/Kg	E 300.0		9/3/98	JS		5198	0.2
Chloride		26	mg/Kg	E 300.0		9/3/98	JS		5198	1.0
Sulfate		7.0	mg/Kg	E 300.0		9/3/98	JS		5198	1.0
TDS		830	mg/Kg	E 160.1		9/16/98	RS		5364	---
pH		8.6	s.u.	E 150.1		8/25/98	SA		5104	---
Total Phenols		5.5	mg/kg	SM 5530 A,D		8/26/98	RC		5109	0.25
Total Radium		2.95	pCi/gm	E 901.1M		8/18/98	DS	---	---	---
TRPHC		7,790	mg/Kg	S 418.1	8/27/98	8/30/98	SR	4810	5168	10.0



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ARS Tracking Number:	ARS-98-0867	P.O. Number:	Verbal
Client I.D.:	105957	ARS Sample I.D.:	ARS-98-3158
Date Sampled:	8/20/98	Date Received:	8/26/98
Time Sampled:	N/A	Time Received	1157
Type of Sample:	Solid	Date of Report	9/6/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	<0.95	N/A	pCi/gm	<0.035	N/A	Bq/gm	EPA 901.1M	9/5/98 1708	mk
Ra-228	<0.17	N/A	pCi/gm	<0.006	N/A	Bq/gm	EPA 901.1M	9/5/98 1708	mk
Pb-210	2.00	1.65	pCi/gm	0.074	0.061	Bq/gm	EPA 901.1M	9/5/98 1708	mk
Total Activity	2.95	N/A	pCi/gm	0.109	N/A	Bq/gm	EPA 901.1M	9/5/98 1708	mk

Notes:

Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-6-98
Page # 22

Project Number: 19350
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000469
Sample Number: 105961

Field Code: TSB-1 43-45'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
MTBE		<0.050	mg/Kg	S 8021B		9/30/98	CS		---	0.05
Benzene		<0.050	mg/Kg	S 8021B		9/30/98	AG		---	0.05
Toluene		<0.050	mg/Kg	S 8021B		9/30/98	AG		---	0.05
Ethylbenzene		<0.050	mg/Kg	S 8021B		9/30/98	AG		---	0.05
m,p,o-xylene		<0.050	mg/Kg	S 8021B		9/30/98	AG		---	0.05
TRPHC		17.4	mg/Kg	S 418.1	8/27/98	8/30/98	SR	4810	5168	10.0

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-6-98
Page # 13

Project Number: 19350
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000469
Sample Number: 105958

Field Code: TSB2 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<205	ug/Kg	S-8260B		9/3/98	AG		5205	205
Acrylonitrile		<205	ug/Kg	S-8260B		9/3/98	AG		5205	205
Benzene		<41	ug/Kg	S-8260B		9/3/98	AG		5205	41
Carbon tetrachloride		<41	ug/Kg	S-8260B		9/3/98	AG		5205	41
Chlorobenzene		<41	ug/Kg	S-8260B		9/3/98	AG		5205	41
1,2-dichloroethane		<41	ug/Kg	S-8260B		9/3/98	AG		5205	41
1,1,2,2-tetrachloroethane		<41	ug/Kg	S-8260B		9/3/98	AG		5205	41
1,1,1-trichloroethane		<41	ug/Kg	S-8260B		9/3/98	AG		5205	41
1,1,2-trichloroethane		<41	ug/Kg	S-8260B		9/3/98	AG		5205	41
1,1,2-trichloroethylene		<41	ug/Kg	S-8260B		9/3/98	AG		5205	41
Chloroform		<41	ug/Kg	S-8260B		9/3/98	AG		5205	41
Dichlorobenzene		<82	ug/Kg	S-8260B		9/3/98	AG		5205	82
1,1-dichloroethylene		<41	ug/Kg	S-8260B		9/3/98	AG		5205	41
Dichloropropenes		<41	ug/Kg	S-8260B		9/3/98	AG		5205	41
Ethylbenzene		<41	ug/Kg	S-8260B		9/3/98	AG		5205	41
Bromodichloromethane		<41	ug/Kg	S-8260B		9/3/98	AG		5205	41
Bromomethane		<205	ug/Kg	S-8260B		9/3/98	AG		5205	205
Chloromethane		<41	ug/Kg	S-8260B		9/3/98	AG		5205	41
Dichlorodifluoromethane		<41	ug/Kg	S-8260B		9/3/98	AG		5205	41
Dichloromethane		<41	ug/Kg	S-8260B		9/3/98	AG		5205	41
Trichlorofluorometane		<41	ug/Kg	S-8260B		9/3/98	AG		5205	41
Tetrachloroethylene		<41	ug/Kg	S-8260B		9/3/98	AG		5205	41
Toluene		<41	ug/Kg	S-8260B		9/3/98	AG		5205	41
Trichloroethylene		<41	ug/Kg	S-8260B		9/3/98	AG		5205	41
Vinyl chloride		<41	ug/Kg	S-8260B		9/3/98	AG		5205	41
m,p-xylene		<41	ug/Kg	S-8260B		9/3/98	AG		5205	41
o-xylene		<41	ug/Kg	S-8260B		9/3/98	AG		5205	41
1,1-dichloroethane		<41	ug/Kg	S-8260B		9/3/98	AG		5205	41
Ethylene dibromide		<41	ug/Kg	S-8260B		9/3/98	AG		5205	41
cis-1,2-dichloroethylene		<41	ug/Kg	S-8260B		9/3/98	AG		5205	41
trans-1,2-dichloroethylene		<41	ug/Kg	S-8260B		9/3/98	AG		5205	41
Methylene chloride		<205	ug/Kg	S-8260B		9/3/98	AG		5205	205
Surr. Dibromofluoromethane		106	%	S-8260B		9/3/98	AG		5205	86-118
Surr. Toluene-d8		92	%	S-8260B		9/3/98	AG		5205	88-110
Surr. 4-Bromofluorobenzene		98	%	S-8260B		9/3/98	AG		5205	86-115
Benzidine		<2.5	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25

Corrected *

Date: 10-6-98

Project Number: 19350

Page # 14

Project Name: Shell Grimes

Order ID Number: 9808000469

Project Location: Grimes Battery, Hobbs, NM

Sample Number: 105958

Field Code: TSB2 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Hexachloroethane		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Isophorone		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
2,4-dinitro-o-cresol		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
n-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Anthracene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Fluorene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Pyrene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
1-methylnaphthalene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
2-methylnaphthalene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Phenol		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Surr. 2-Fluorophenol		42	%	S-8270C	8/31/98	9/10/98	DG	4829	5276	25-121
Surr. Phenol-d6		51	%	S-8270C	8/31/98	9/10/98	DG	4829	5276	24-113
Surr. Nitrobenzene-d5		44	%	S-8270C	8/31/98	9/10/98	DG	4829	5276	23-120

* Corrected - Added Phenol result.

Project Number: 19350
 Project Name: Shell Grimes
 Project Location: Grimes Battery, Hobbs, NM

Date: 10-6-98
 Page # 15
 Order ID Number: 9808000469
 Sample Number: 105958

Field Code: TSB2 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Surr. 2-Fluorobiphenyl		53	%	S-8270C	8/31/98	9/10/98	DG	4829	5276	30-115
Surr. 2,4,6-Tribromophenol		42	%	S-8270C	8/31/98	9/10/98	DG	4829	5276	19-122
Surr. Terphenyl-d14		63	%	S-8270C	8/31/98	9/10/98	DG	4829	5276	28-137
Aldrin		<50	ug/Kg	S-8080	8/26/98	10/2/98	SH	---	---	50
Chlordane		<50	ug/Kg	S-8080	8/26/98	10/2/98	SH	---	---	50
DDT		<50	ug/Kg	S-8080	8/26/98	10/2/98	SH	---	---	50
Dieldrin		<50	ug/Kg	S-8080	8/26/98	10/2/98	SH	---	---	50
Endosulfan		<50	ug/Kg	S-8080	8/26/98	10/2/98	SH	---	---	50
Endrin		<50	ug/Kg	S-8080	8/26/98	10/2/98	SH	---	---	50
Heptachlor		<50	ug/Kg	S-8080	8/26/98	10/2/98	SH	---	---	50
PCB's		<0.1	mg/Kg	S 8082	8/26/98	8/26/98	RC	4796	5112	0.1
Arsenic		<0.50	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Barium		82	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Cadmium		0.35	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.10
Chromium		9.2	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Lead		5.6	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Total Mercury		<0.10	mg/Kg	S 7471	8/24/98	8/25/98	MS	4765	5101	0.10
Selenium		<0.50	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Silver		<0.50	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	2.0
Copper		5.4	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	1.0
Iron		8,200	mg/Kg	S 6010B	9/1/98	9/17/98	RR	4848	5372	10
Manganese		126	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	1.0
Zinc		21	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	2.0
Aluminum		10,000	mg/Kg	S 6010B	9/1/98	9/17/98	RR	4848	5372	10
Boron		17	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	10.0
Cobalt		8.3	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Molybdenum		2.5	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Nickel		8.3	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Cyanide		<0.01	mg/Kg	SM 4500 CN,CE		8/27/98	SA		5128	0.01
Fluoride		4.6	mg/Kg	E 300.0		9/3/98			5198	0.2
Nitrate		2.3	mg/Kg	E 300.0		9/3/98			5198	0.2
Chloride		26	mg/Kg	E 300.0		9/3/98			5198	1.0
Sulfate		29	mg/Kg	E 300.0		9/3/98			5198	1.0
TDS		1,400	mg/Kg	E 160.1		9/16/98	RS		5364	---
pH		8.2	s.u.	E 150.1		8/25/98	SA		5104	---
Total Phenols		4.25	mg/kg	SM 5530 A,D		8/26/98	RC		5110	0.25
Total Radium		12.03	pCi/gm	E 901.1M		8/18/98	DS	---	---	---
TRPHC		12	mg/Kg	S 418.1	8/27/98	8/30/98	SR	4810	5168	10.0



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ARS Tracking Number: ARS-98-0867

P.O. Number: Verbal

Client LD.: 105958

ARS Sample LD.: ARS-98-3159

Date Sampled: 8/20/98

Date Received: 8/26/98

Time Sampled: N/A

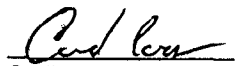
Time Received: 1157

Type of Sample: Solid

Date of Report: 9/6/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	<1.09	N/A	pCi/gm	<0.040	N/A	Bq/gm	EPA 901.1M	8/29/98 1441	mk
Ra-228	<0.24	N/A	pCi/gm	<0.009	N/A	Bq/gm	EPA 901.1M	8/29/98 1441	mk
Pb-210	<1.34	N/A	pCi/gm	<0.050	N/A	Bq/gm	EPA 901.1M	8/29/98 1441	mk
Total Activity	12.03	N/A	pCi/gm	0.445	N/A	Bq/gm	EPA 901.1M	8/29/98 1441	mk

Notes:


Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-6-98
Page # 16

Project Number: 19350
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000469
Sample Number: 105959

Field Code: TSB-2 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<265	ug/Kg	S-8260B		9/3/98	AG		5205	265
Acrylonitrile		<265	ug/Kg	S-8260B		9/3/98	AG		5205	265
Benzene		<53	ug/Kg	S-8260B		9/3/98	AG		5205	53
Carbon tetrachloride		<53	ug/Kg	S-8260B		9/3/98	AG		5205	53
Chlorobenzene		<53	ug/Kg	S-8260B		9/3/98	AG		5205	53
1,2-dichloroethane		<53	ug/Kg	S-8260B		9/3/98	AG		5205	53
1,1,2,2-tetrachloroethane		<53	ug/Kg	S-8260B		9/3/98	AG		5205	53
1,1,1-trichloroethane		<53	ug/Kg	S-8260B		9/3/98	AG		5205	53
1,1,2-trichloroethane		<53	ug/Kg	S-8260B		9/3/98	AG		5205	53
1,1,2-trichloroethylene		<53	ug/Kg	S-8260B		9/3/98	AG		5205	53
Chloroform		<53	ug/Kg	S-8260B		9/3/98	AG		5205	53
Dichlorobenzene		<106	ug/Kg	S-8260B		9/3/98	AG		5205	106
1,1-dichloroethylene		<53	ug/Kg	S-8260B		9/3/98	AG		5205	53
Dichloropropenes		<53	ug/Kg	S-8260B		9/3/98	AG		5205	53
Ethylbenzene		<53	ug/Kg	S-8260B		9/3/98	AG		5205	53
Bromodichloromethane		<53	ug/Kg	S-8260B		9/3/98	AG		5205	53
Bromomethane		<265	ug/Kg	S-8260B		9/3/98	AG		5205	265
Chloromethane		<53	ug/Kg	S-8260B		9/3/98	AG		5205	53
Dichlorodifluoromethane		<53	ug/Kg	S-8260B		9/3/98	AG		5205	53
Dichloromethane		<53	ug/Kg	S-8260B		9/3/98	AG		5205	53
Trichlorofluoromethane		<53	ug/Kg	S-8260B		9/3/98	AG		5205	53
Tetrachloroethylene		<53	ug/Kg	S-8260B		9/3/98	AG		5205	53
Toluene		<53	ug/Kg	S-8260B		9/3/98	AG		5205	53
Trichloroethylene		<53	ug/Kg	S-8260B		9/3/98	AG		5205	53
Vinyl chloride		<53	ug/Kg	S-8260B		9/3/98	AG		5205	53
m,p-xylene		<53	ug/Kg	S-8260B		9/3/98	AG		5205	53
o-xylene		<53	ug/Kg	S-8260B		9/3/98	AG		5205	53
1,1-dichloroethane		<53	ug/Kg	S-8260B		9/3/98	AG		5205	53
Ethylene dibromide		<53	ug/Kg	S-8260B		9/3/98	AG		5205	53
cis-1,2-dichloroethylene		<53	ug/Kg	S-8260B		9/3/98	AG		5205	53
trans-1,2-dichloroethylene		<53	ug/Kg	S-8260B		9/3/98	AG		5205	53
Methylene chloride		<265	ug/Kg	S-8260B		9/3/98	AG		5205	265
Surr. Dibromofluoromethane		105	%	S-8260B		9/3/98	AG		5205	86-118
Surr. Toluene-d8		95	%	S-8260B		9/3/98	AG		5205	88-110
Surr. 4-Bromofluorobenzene		99	%	S-8260B		9/3/98	AG		5205	86-115
Benzidine		<2.5	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25

Corrected *

Date: 10-6-98

Page # 17

Order ID Number: 9808000469

Sample Number: 105959

Project Number: 19350

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Field Code: TSB-2 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Isophorone		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
2,4-dinitro-o-cresol		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
n-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Anthracene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Fluorene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Pyrene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
1-methylnaphthalene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
2-methylnaphthalene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Phenol		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Surr. 2-Fluorophenol		49	%	S-8270C	8/31/98	9/10/98	DG	4829	5276	25-121
Surr. Phenol-d6		61	%	S-8270C	8/31/98	9/10/98	DG	4829	5276	24-113
Surr. Nitroobenzene-d5		50	%	S-8270C	8/31/98	9/10/98	DG	4829	5276	23-120
Surr. 2-Fluorobiphenyl		59	%	S-8270C	8/31/98	9/10/98	DG	4829	5276	30-115
Surr. 2,4,6-Tribromophenol		49	%	S-8270C	8/31/98	9/10/98	DG	4829	5276	19-122
Surr. Terphenyl-d14		65	%	S-8270C	8/31/98	9/10/98	DG	4829	5276	28-137
Aldrin		<50	ug/Kg	S-8080	9/17/98	10/3/98	SH	---	---	50
Chlordane		<50	ug/Kg	S-8080	9/17/98	10/3/98	SH	---	---	50

* Corrected - Added Phenol result.

Project Number: 19350
 Project Name: Shell Grimes
 Project Location: Grimes Battery, Hobbs, NM

Date: 10-6-98
 Page # 18
 Order ID Number: 9808000469
 Sample Number: 105959

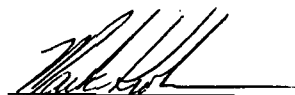
Field Code: TSB-2 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
DDT		<50	ug/Kg	S-8080	9/17/98	10/3/98	SH	---	---	50
Dieldrin		<50	ug/Kg	S-8080	9/17/98	10/3/98	SH	---	---	50
Endosulfan		<50	ug/Kg	S-8080	9/17/98	10/3/98	SH	---	---	50
Endrin		<50	ug/Kg	S-8080	9/17/98	10/3/98	SH	---	---	50
Heptachlor		<50	ug/Kg	S-8080	9/17/98	10/3/98	SH	---	---	50
PCB's		<0.1	mg/Kg	S 8082	8/26/98	8/26/98	RC	4796	5112	0.1
Arsenic		<0.50	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Barium		93	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Cadmium		0.33	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.10
Chromium		9.2	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Lead		7.9	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Total Mercury		<0.10	mg/Kg	S 7471	8/24/98	8/25/98	MS	4765	5101	0.10
Selenium		<0.50	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Silver		<0.50	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	2.0
Copper		5.3	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	1.0
Iron		8,200	mg/Kg	S 6010B	9/1/98	9/17/98	RR	4848	5372	10
Manganese		143	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	1.0
Zinc		23	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	2.0
Aluminum		10,000	mg/Kg	S 6010B	9/1/98	9/17/98	RR	4848	5372	10
Boron		17	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	10.0
Cobalt		8.0	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Molybdenum		2.4	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Nickel		8.4	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Cyanide		<0.01	mg/Kg	SM 4500 CN,CE		8/27/98	SA		5128	0.01
Fluoride		4.9	mg/Kg	E 300.0		9/3/98	JS		5198	0.2
Nitrate		2.3	mg/Kg	E 300.0		9/3/98	JS		5198	0.2
Chloride		23	mg/Kg	E 300.0		9/3/98	JS		5198	1.0
Sulfate		42	mg/Kg	E 300.0		9/3/98	JS		5198	1.0
TDS		1,500	mg/Kg	E 160.1		9/16/98	RS		5364	---
pH		8.2	s.u.	E 150.1		8/25/98	SA		5104	---
Total Phenols		1.75	mg/kg	SM 5530 A,D		8/26/98	RC		5110	0.25
Total Radium		30.66	pCi/gm	E 901.1M		8/18/98	DS	---	---	---
TRPHC		<10.0	mg/Kg	S 418.1	8/27/98	8/30/98	SR	4810	5168	10.0

ARS Tracking Number:	ARS-98-0867	P.O. Number:	Verbal
Client I.D.:	105959	ARS Sample I.D.:	ARS-98-3160
Date Sampled:	8/20/98	Date Received:	8/26/98
Time Sampled:	N/A	Time Received	1157
Type of Sample:	Solid	Date of Report	9/15/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	1.99	1.66	pCi/gm	0.074	0.061	Bq/gm	EPA 901.1M	8/27/98 1453	kh
Ra-228	0.63	0.25	pCi/gm	0.023	0.009	Bq/gm	EPA 901.1M	8/27/98 1453	kh
Pb-210	<0.98	N/A	pCi/gm	<0.036	N/A	Bq/gm	EPA 901.1M	8/27/98 1453	kh
Total Activity	30.66	N/A	pCi/gm	1.134	N/A	Bq/gm	EPA 901.1M	8/27/98 1453	kh

Notes:


 Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-6-98
Page # 19

Project Number: 19350
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000469
Sample Number: 105960

Field Code: TSB-2 18-20'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<330	ug/Kg	S-8260B		9/3/98	AG		5205	330
Acrylonitrile		<330	ug/Kg	S-8260B		9/3/98	AG		5205	330
Benzene		<66	ug/Kg	S-8260B		9/3/98	AG		5205	66
Carbon tetrachloride		<66	ug/Kg	S-8260B		9/3/98	AG		5205	66
Chlorobenzene		<66	ug/Kg	S-8260B		9/3/98	AG		5205	66
1,2-dichloroethane		<66	ug/Kg	S-8260B		9/3/98	AG		5205	66
1,1,2,2-tetrachloroethane		<66	ug/Kg	S-8260B		9/3/98	AG		5205	66
1,1,1-trichloroethane		<66	ug/Kg	S-8260B		9/3/98	AG		5205	66
1,1,2-trichloroethane		<66	ug/Kg	S-8260B		9/3/98	AG		5205	66
1,1,2-trichloroethylene		<66	ug/Kg	S-8260B		9/3/98	AG		5205	66
Chloroform		<66	ug/Kg	S-8260B		9/3/98	AG		5205	66
Dichlorobenzene		<132	ug/Kg	S-8260B		9/3/98	AG		5205	132
1,1-dichloroethylene		<66	ug/Kg	S-8260B		9/3/98	AG		5205	66
Dichloropropenes		<66	ug/Kg	S-8260B		9/3/98	AG		5205	66
Ethylbenzene		<66	ug/Kg	S-8260B		9/3/98	AG		5205	66
Bromodichloromethane		<66	ug/Kg	S-8260B		9/3/98	AG		5205	66
Bromomethane		<330	ug/Kg	S-8260B		9/3/98	AG		5205	330
Chloromethane		<66	ug/Kg	S-8260B		9/3/98	AG		5205	66
Dichlorodifluoromethane		<66	ug/Kg	S-8260B		9/3/98	AG		5205	66
Dichloromethane		<66	ug/Kg	S-8260B		9/3/98	AG		5205	66
Trichlorofluoromethane		<66	ug/Kg	S-8260B		9/3/98	AG		5205	66
Tetrachloroethylene		<66	ug/Kg	S-8260B		9/3/98	AG		5205	66
Toluene		<66	ug/Kg	S-8260B		9/3/98	AG		5205	66
Trichloroethylene		<66	ug/Kg	S-8260B		9/3/98	AG		5205	66
Vinyl chloride		<66	ug/Kg	S-8260B		9/3/98	AG		5205	66
m,p-xylene		<66	ug/Kg	S-8260B		9/3/98	AG		5205	66
o-xylene		<66	ug/Kg	S-8260B		9/3/98	AG		5205	66
1,1-dichloroethane		<66	ug/Kg	S-8260B		9/3/98	AG		5205	66
Ethylene dibromide		<66	ug/Kg	S-8260B		9/3/98	AG		5205	66
cis-1,2-dichloroethylene		<66	ug/Kg	S-8260B		9/3/98	AG		5205	66
trans-1,2-dichloroethylene		<66	ug/Kg	S-8260B		9/3/98	AG		5205	66
Methylene chloride		<330	ug/Kg	S-8260B		9/3/98	AG		5205	330
Surr. Dibromofluoromethane		106	%	S-8260B		9/3/98	AG		5205	86-118
Surr. Toluene-d8		95	%	S-8260B		9/3/98	AG		5205	88-110
Surr. 4-Bromofluorobenzene		101	%	S-8260B		9/3/98	AG		5205	86-115
Benzidine		<2.5	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25

Corrected *

Date: 10-6-98

Page # 20

Order ID Number: 9808000469

Sample Number: 105960

Project Number: 19350

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Field Code: TSB-2 18-20'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Isophorone		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
2,4-dinitro-o-cresol		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
n-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Anthracene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Fluorene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Pyrene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
1-methylnaphthalene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
2-methylnaphthalene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Phenol		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Surr. 2-Fluorophenol		56	%	S-8270C	8/31/98	9/10/98	DG	4829	5276	25-121
Surr. Phenol-d6		67	%	S-8270C	8/31/98	9/10/98	DG	4829	5276	24-113
Surr. Nitrobenzene-d5		54	%	S-8270C	8/31/98	9/10/98	DG	4829	5276	23-120
Surr. 2-Fluorobiphenyl		67	%	S-8270C	8/31/98	9/10/98	DG	4829	5276	30-115
Surr. 2,4,6-Tribromophenol		49	%	S-8270C	8/31/98	9/10/98	DG	4829	5276	19-122
Surr. Terphenyl-d14		67	%	S-8270C	8/31/98	9/10/98	DG	4829	5276	28-137

Corrected - Added Phenol result

Project Number: 19350
 Project Name: Shell Grimes
 Project Location: Grimes Battery, Hobbs, NM

Date: 10-6-98
 Page # 21
 Order ID Number: 9808000469
 Sample Number: 105960

Field Code: TSB-2 18-20'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	9/17/98	10/3/98	SH	---	---	50
Chlordane		<50	ug/Kg	S-8080	9/17/98	10/3/98	SH	---	---	50
DDT		<50	ug/Kg	S-8080	9/17/98	10/3/98	SH	---	---	50
Dieldrin		<50	ug/Kg	S-8080	9/17/98	10/3/98	SH	---	---	50
Endosulfan		<50	ug/Kg	S-8080	9/17/98	10/3/98	SH	---	---	50
Endrin		<50	ug/Kg	S-8080	9/17/98	10/3/98	SH	---	---	50
Heptachlor		<50	ug/Kg	S-8080	9/17/98	10/3/98	SH	---	---	50
PCB's		<0.1	mg/Kg	S 8082	8/26/98	8/26/98	RC	4796	5112	0.1
Arsenic		2.5	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Barium		80	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Cadmium		0.26	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.10
Chromium		6.1	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Lead		18	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Total Mercury		<0.10	mg/Kg	S 7471	8/24/98	8/25/98	MS	4765	5101	0.10
Selenium		<0.50	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Silver		<0.50	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	2.0
Copper		3.5	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	1.0
Iron		4,900	mg/Kg	S 6010B	9/1/98	9/17/98	RR	4848	5372	10
Manganese		65	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	1.0
Zinc		13	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	2.0
Aluminum		7,500	mg/Kg	S 6010B	9/1/98	9/17/98	RR	4848	5372	10
Boron		14	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	10.0
Cobalt		6.5	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Molybdenum		2	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	1.0
Nickel		6.8	mg/Kg	S 6010B	9/10/98	9/15/98	RR	4920	5328	0.50
Cyanide		<0.01	mg/Kg	SM 4500 CN,CE		8/27/98	SA		5128	0.01
Fluoride		4.4	mg/Kg	E 300.0		9/3/98	JS		5199	0.2
Nitrate		3.1	mg/Kg	E 300.0		9/3/98	JS		5199	0.2
Chloride		27	mg/Kg	E 300.0		9/3/98	JS		5199	1.0
Sulfate		57	mg/Kg	E 300.0		9/3/98	JS		5199	1.0
TDS		300	mg/Kg	E 160.1		9/16/98	RS		5364	---
pH		8.6	s.u.	E 150.1		8/25/98	SA		5104	---
Total Phenols		3.0	mg/kg	SM 5530 A,D		8/26/98	RC		5110	0.25
Total Radium		5.81	pCi/gm	E 901.1M		8/18/98	DS	---	---	---
TRPHC		<10.0	mg/Kg	S 418.1	8/27/98	8/30/98	SR	4810	5168	10.0

ARS Tracking Number:	ARS-98-0867	P.O. Number:	Verbal
Client LD.:	105960	ARS Sample LD.:	ARS-98-3161
Date Sampled:	8/20/98	Date Received:	8/26/98
Time Sampled:	N/A	Time Received	1157
Type of Sample:	Solid	Date of Report	9/6/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	2.69	1.97	pCi/gm	0.100	0.073	Bq/gm	EPA 901.1M	8/29/98 1515	mk
Ra-228	0.73	0.32	pCi/gm	0.027	0.012	Bq/gm	EPA 901.1M	8/29/98 1515	mk
Pb-210	<1.09	N/A	pCi/gm	<0.040	N/A	Bq/gm	EPA 901.1M	8/29/98 1515	mk
Total Activity	5.81	N/A	pCi/gm	0.215	N/A	Bq/gm	EPA 901.1M	8/29/98 1515	mk

Notes:


 Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-9-98
Page # 4

Project Number: 19350
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000544
Sample Number: 106196

Field Code: TSB-3 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<435	ug/Kg	S-8260B		9/6/98	AG		5207	435
Acrylonitrile		<435	ug/Kg	S-8260B		9/6/98	AG		5207	435
Benzene		<87	ug/Kg	S-8260B		9/6/98	AG		5207	87
Carbon tetrachloride		<87	ug/Kg	S-8260B		9/6/98	AG		5207	87
Chlorobenzene		<87	ug/Kg	S-8260B		9/6/98	AG		5207	87
1,2-dichloroethane		<87	ug/Kg	S-8260B		9/6/98	AG		5207	87
1,1,2,2-tetrachloroethane		<87	ug/Kg	S-8260B		9/6/98	AG		5207	87
1,1,1-trichloroethane		<87	ug/Kg	S-8260B		9/6/98	AG		5207	87
1,1,2-trichloroethane		<87	ug/Kg	S-8260B		9/6/98	AG		5207	87
1,1,2-trichloroethylene		<87	ug/Kg	S-8260B		9/6/98	AG		5207	87
Chloroform		<87	ug/Kg	S-8260B		9/6/98	AG		5207	87
Dichlorobenzene		<174	ug/Kg	S-8260B		9/6/98	AG		5207	174
1,1-dichloroethylene		<87	ug/Kg	S-8260B		9/6/98	AG		5207	87
Dichloropropenes		<87	ug/Kg	S-8260B		9/6/98	AG		5207	87
Ethylbenzene		<87	ug/Kg	S-8260B		9/6/98	AG		5207	87
Bromodichloromethane		<87	ug/Kg	S-8260B		9/6/98	AG		5207	87
Bromomethane		<435	ug/Kg	S-8260B		9/6/98	AG		5207	435
Chloromethane		<87	ug/Kg	S-8260B		9/6/98	AG		5207	87
Dichlorodifluoromethane		<87	ug/Kg	S-8260B		9/6/98	AG		5207	87
Dichloromethane		<87	ug/Kg	S-8260B		9/6/98	AG		5207	87
Trichlorofluoromethane		<87	ug/Kg	S-8260B		9/6/98	AG		5207	87
Tetrachloroethylene		<87	ug/Kg	S-8260B		9/6/98	AG		5207	87
Toluene		<87	ug/Kg	S-8260B		9/6/98	AG		5207	87
Trichloroethylene		<87	ug/Kg	S-8260B		9/6/98	AG		5207	87
Vinyl chloride		<87	ug/Kg	S-8260B		9/6/98	AG		5207	87
m,p-xylene		<87	ug/Kg	S-8260B		9/6/98	AG		5207	87
o-xylene		<87	ug/Kg	S-8260B		9/6/98	AG		5207	87
1,1-dichloroethane		<87	ug/Kg	S-8260B		9/6/98	AG		5207	87
Ethylene dibromide		<87	ug/Kg	S-8260B		9/6/98	AG		5207	87
cis-1,2-dichloroethylene		<87	ug/Kg	S-8260B		9/6/98	AG		5207	87
trans-1,2-dichloroethylene		<87	ug/Kg	S-8260B		9/6/98	AG		5207	87
Methylene chloride		<435	ug/Kg	S-8260B		9/6/98	AG		5207	435
Surr. Dibromofluoromethane		105	%	S-8260B		9/6/98	AG		5207	72-130
Surr. Toluene-d8		86	%	S-8260B		9/6/98	AG		5207	77-127
Surr. 4-Bromofluorobenzene		91	%	S-8260B		9/6/98	AG		5207	72-131
Benzidine		<2.5	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25

Corrected *

Date: 10-9-98

Page # 5

Order ID Number: 9808000544

Sample Number: 106196

Project Number: 19350

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Field Code: TSB-3 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Isophorone		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
2,4-dinitro-o-cresol		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
n-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Anthracene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Fluorene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Pyrene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
1-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
2-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Phenol		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Surr. 2-Fluorophenol		70	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	25-121
Surr. Phenol-d6		73	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	24-113
Surr. Nitrobenzene-d5		69	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	23-120
Surr. 2-Fluorobiphenyl		90	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	30-115
Surr. 2,4,6-Tribromophenol		60	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	19-122
Surr. Terphenyl-d14		79	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	28-137

* Corrected - Added Phenol result.

Project Number: 19350
 Project Name: Shell Grimes
 Project Location: Grimes Battery, Hobbs, NM

Date: 10-9-98
 Page # 6
 Order ID Number: 9808000544
 Sample Number: 106196

Field Code: TSB-3 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin	**	<50	ug/Kg	S-8081A	10/2/98	10/9/98	KC	---	---	50
Chlordane	**	<75	ug/Kg	S-8081A	10/2/98	10/9/98	KC	---	---	50
DDT	**	<50	ug/Kg	S-8081A	10/2/98	10/9/98	KC	---	---	50
Dieldrin	**	<50	ug/Kg	S-8081A	10/2/98	10/9/98	KC	---	---	50
Endosulfan	**	<50	ug/Kg	S-8081A	10/2/98	10/9/98	KC	---	---	50
Endrin	**	<50	ug/Kg	S-8081A	10/2/98	10/9/98	KC	---	---	50
Heptachlor	**	<50	ug/Kg	S-8081A	10/2/98	10/9/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	9/8/98	9/9/98	RC	4911	5263	0.1
Arsenic		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Barium		109	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Cadmium		0.23	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.10
Chromium		1.9	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Lead		1.3	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Total Mercury		<0.10	mg/Kg	S 7471	8/27/98	9/1/98	SA		5185	0.01
Selenium		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Silver		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	2.0
Copper		2.1	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	1.0
Iron		1,300	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5041	5374	10
Manganese		9.6	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	1.0
Zinc		3.9	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	2.0
Aluminum		2,200	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5041	5374	10
Boron		<10	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	10
Cobalt		3.5	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Molybdenum		<1.0	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	1.0
Nickel		4.3	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Cyanide		<0.01	mg/Kg	SM 4500 C,E		9/1/98	SA		5185	0.01
Fluoride		1.4	mg/Kg	E 300.0		9/21/98	JS		5481	0.2
Nitrate		7.6	mg/Kg	E 300.0		9/21/98	JS		5481	0.2
Chloride		200	mg/Kg	E 300.0		9/21/98	JS		5481	5.0
Sulfate		150	mg/Kg	E 300.0		9/21/98	JS		5481	2.0
TDS		630	mg/Kg	E 160.1		9/19/98	RS		5417	---
pH		7.7	s.u.	E 150.1		8/28/98	SA		5154	7.1
TRPHC		<10.0	mg/Kg	S 418.1	8/27/98	8/29/98	SR	4810	5168	10.0
Total Phenols		<0.25	mg/Kg	M 5530 A,D		9/16/98	RC		5357	0.25
Total Radium		1.31	pCi/g	E 901.1M		10/1/98	DS	---	---	---

** NOTE: Samples extracted past holding times. Middle and closing CCVs were out of acceptance criteria, biased high. Relative Percent Difference between MS and MSD out of acceptance criteria.

Analytical Results Report

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Midland, TX 79706

Date: 10-9-98
Page # 7

Project Number: 19350
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000544
Sample Number: 106197

Field Code: TSB-3 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<175	ug/Kg	S-8260B		9/6/98	AG		5207	175
Acrylonitrile		<175	ug/Kg	S-8260B		9/6/98	AG		5207	175
Benzene		<35	ug/Kg	S-8260B		9/6/98	AG		5207	35
Carbon tetrachloride		<35	ug/Kg	S-8260B		9/6/98	AG		5207	35
Chlorobenzene		<35	ug/Kg	S-8260B		9/6/98	AG		5207	35
1,2-dichloroethane		<35	ug/Kg	S-8260B		9/6/98	AG		5207	35
1,1,2,2-tetrachloroethane		<35	ug/Kg	S-8260B		9/6/98	AG		5207	35
1,1,1-trichloroethane		<35	ug/Kg	S-8260B		9/6/98	AG		5207	35
1,1,2-trichloroethane		<35	ug/Kg	S-8260B		9/6/98	AG		5207	35
1,1,2-trichloroethylene		<35	ug/Kg	S-8260B		9/6/98	AG		5207	35
Chloroform		<35	ug/Kg	S-8260B		9/6/98	AG		5207	35
Dichlorobenzene		<70	ug/Kg	S-8260B		9/6/98	AG		5207	70
1,1-dichloroethylene		<35	ug/Kg	S-8260B		9/6/98	AG		5207	35
Dichloropropenes		<35	ug/Kg	S-8260B		9/6/98	AG		5207	35
Ethylbenzene		<35	ug/Kg	S-8260B		9/6/98	AG		5207	35
Bromodichloromethane		<35	ug/Kg	S-8260B		9/6/98	AG		5207	35
Bromomethane		<175	ug/Kg	S-8260B		9/6/98	AG		5207	175
Chloromethane		<35	ug/Kg	S-8260B		9/6/98	AG		5207	35
Dichlorodifluoromethane		<35	ug/Kg	S-8260B		9/6/98	AG		5207	35
Dichloromethane		<35	ug/Kg	S-8260B		9/6/98	AG		5207	35
Trichlorofluoromethane		<35	ug/Kg	S-8260B		9/6/98	AG		5207	35
Tetrachloroethylene		<35	ug/Kg	S-8260B		9/6/98	AG		5207	35
Toluene		<35	ug/Kg	S-8260B		9/6/98	AG		5207	35
Trichloroethylene		<35	ug/Kg	S-8260B		9/6/98	AG		5207	35
Vinyl chloride		<35	ug/Kg	S-8260B		9/6/98	AG		5207	35
m,p-xylene		<35	ug/Kg	S-8260B		9/6/98	AG		5207	35
o-xylene		<35	ug/Kg	S-8260B		9/6/98	AG		5207	35
1,1-dichloroethane		<35	ug/Kg	S-8260B		9/6/98	AG		5207	35
Ethylene dibromide		<35	ug/Kg	S-8260B		9/6/98	AG		5207	35
cis-1,2-dichloroethylene		<35	ug/Kg	S-8260B		9/6/98	AG		5207	35
trans-1,2-dichloroethylene		<35	ug/Kg	S-8260B		9/6/98	AG		5207	35
Methylene chloride		<175	ug/Kg	S-8260B		9/6/98	AG		5207	175
Surr. Dibromofluoromethane		104	%	S-8260B		9/6/98	AG		5207	86-118
Surr. Toluene-d8		86	%	S-8260B		9/6/98	AG		5207	88-110
Surr. 4-Bromofluorobenzene		91	%	S-8260B		9/6/98	AG		5207	86-115
Benzidine		<2.5	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25

Corrected *

Date: 10-9-98

Page # 8

Order ID Number: 9808000544

Sample Number: 106197

Project Number: 19350

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Field Code: TSB-3 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Isophorone		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
2,4-dinitro-o-cresol		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
n-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Anthracene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Fluorene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Pyrene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
1-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
2-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Phenol		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Surr. 2-Fluorophenol		26	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	25-121
Surr. Phenol-d6		73	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	24-113
Surr. Nitrobenzene-d5		68	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	23-120
Surr. 2-Fluorobiphenyl		88	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	30-115
Surr. 2,4,6-Tribromophenol		63	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	19-122
Surr. Terphenyl-d14		87	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	28-137

* Corrected - Added Phenol result.

Project Number: 19350
 Project Name: Shell Grimes
 Project Location: Grimes Battery, Hobbs, NM

Date: 10-9-98
 Page # 9
 Order ID Number: 9808000544
 Sample Number: 106197

Field Code: TSB-3 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin	**	<50	ug/Kg	S-8081A	10/2/98	10/9/98	KC	---	---	50
Chlordane	**	<75	ug/Kg	S-8081A	10/2/98	10/9/98	KC	---	---	50
DDT	**	<50	ug/Kg	S-8081A	10/2/98	10/9/98	KC	---	---	50
Dieldrin	**	<50	ug/Kg	S-8081A	10/2/98	10/9/98	KC	---	---	50
Endosulfan	**	<50	ug/Kg	S-8081A	10/2/98	10/9/98	KC	---	---	50
Endrin	**	<50	ug/Kg	S-8081A	10/2/98	10/9/98	KC	---	---	50
Heptachlor	**	<50	ug/Kg	S-8081A	10/2/98	10/9/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	9/8/98	9/9/98	RC	4911	5263	0.1
Arsenic		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Barium		315	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Cadmium		0.14	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.10
Chromium		4	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Lead		1.6	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Total Mercury		<0.10	mg/Kg	S 7471	8/27/98	9/1/98	SA		5185	0.01
Selenium		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Silver		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	2.0
Copper		3.9	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	1.0
Iron		2,600	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5041	5374	10
Manganese		25	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	1.0
Zinc		6.6	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	2.0
Aluminum		5,200	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5041	5374	10
Boron		12	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	10
Cobalt		5.2	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Molybdenum		3.7	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	1.0
Nickel		8.2	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Cyanide		<0.01	mg/Kg	m 4500 CN,CE		9/1/98	SA		5185	0.01
Fluoride		2.8	mg/Kg	E 300.0		9/21/98	JS		5481	0.2
Nitrate		6.9	mg/Kg	E 300.0		9/21/98	JS		5481	0.2
Chloride		170	mg/Kg	E 300.0		9/21/98	JS		5481	2.0
Sulfate		98	mg/Kg	E 300.0		9/21/98	JS		5481	1.0
TDS		400	mg/Kg			9/19/98	RS		5417	---
pH		8.3	s.u.	E 150.1		8/28/98	SA		5154	7.1
TRPHC		11.7	mg/Kg	S 418.1	8/27/98	8/29/98	SR	4810	5168	10.0
Total Phenols		0.99	mg/Kg	M 5530 A,D		9/16/98	RC		5357	0.25
Total Radium		2.81	pCi/g	E 901.1M		10/1/98	DS	---	---	---

** NOTE: Samples extracted past holding times. Middle and closing CCVs were out of acceptance criteria, biased high. Relative Percent Difference between MS and MSD out of acceptance criteria.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-9-98

Page # 10

Project Number: 19350
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000544

Sample Number: 106198

Field Code: TSB-3 18-20'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<125	ug/Kg	S-8260B		9/8/98	AG		5230	125
Acrylonitrile		<125	ug/Kg	S-8260B		9/8/98	AG		5230	125
Benzene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Carbon tetrachloride		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Chlorobenzene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,2-dichloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1,2,2-tetrachloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1,1-trichloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1,2-trichloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1,2-trichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Chloroform		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Dichlorobenzene		<50	ug/Kg	S-8260B		9/8/98	AG		5230	50
1,1-dichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Dichloropropenes		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Ethylbenzene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Bromodichloromethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Bromomethane		<125	ug/Kg	S-8260B		9/8/98	AG		5230	125
Chloromethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Dichlorodifluoromethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Dichloromethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Trichlorofluoromethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Tetrachloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Toluene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Trichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Vinyl chloride		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
m,p-xylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
o-xylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1-dichloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Ethylene dibromide		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
cis-1,2-dichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
trans-1,2-dichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Methylene chloride		<125	ug/Kg	S-8260B		9/8/98	AG		5230	125
Surr. Dibromofluoromethane		115	%	S-8260B		9/8/98	AG		5230	86-118
Surr. Toluene-d8		85	%	S-8260B		9/8/98	AG		5230	88-110
Surr. 4-Bromofluorobenzene		97	%	S-8260B		9/8/98	AG		5230	86-115
Benzidine		<2.5	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25

Corrected *

Date: 10-9-98

Page # 11

Order ID Number: 9808000544

Sample Number: 106198

Project Number: 19350

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Field Code: TSB-3 18-20'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Isophorone		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
2,4-dinitro-o-cresol		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
n-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Anthracene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Fluorene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Pyrene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
1-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
2-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Phenol		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Surr. 2-Fluorophenol		74	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	25-121
Surr. Phenol-d6		75	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	24-113
Surr. Nitrobenzene-d5		71	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	23-120
Surr. 2-Fluorobiphenyl		91	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	30-115
Surr. 2,4,6-Tribromophenol		63	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	19-122
Surr. Terphenyl-d14		80	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	28-137

* Corrected - Added Phenol result.

Project Number: 19350
 Project Name: Shell Grimes
 Project Location: Grimes Battery, Hobbs, NM

Date: 10-9-98
 Page # 12
 Order ID Number: 9808000544
 Sample Number: 106198

Field Code: TSB-3 18-20'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin	**	<50	ug/Kg	S-8081A	10/2/98	10/9/98	KC	---	---	50
Chlordane	**	<75	ug/Kg	S-8081A	10/2/98	10/9/98	KC	---	---	50
DDT	**	<50	ug/Kg	S-8081A	10/2/98	10/9/98	KC	---	---	50
Dieldrin	**	<50	ug/Kg	S-8081A	10/2/98	10/9/98	KC	---	---	50
Endosulfan	**	<50	ug/Kg	S-8081A	10/2/98	10/9/98	KC	---	---	50
Endrin	**	<50	ug/Kg	S-8081A	10/2/98	10/9/98	KC	---	---	50
Heptachlor	**	<50	ug/Kg	S-8081A	10/2/98	10/9/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	9/8/98	9/9/98	RC	4911	5263	0.1
Arsenic		1.4	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Barium		286	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Cadmium		0.15	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.10
Chromium		2.7	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Lead		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Total Mercury		<0.10	mg/Kg	S 7471	8/27/98	9/1/98	SA		5185	0.01
Selenium		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Silver		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	2.0
Copper		2.7	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	1.0
Iron		1,900	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5041	5374	10
Manganese		21	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	1.0
Zinc		5.1	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	2.0
Aluminum		3,300	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5041	5374	10
Boron		<10	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	10
Cobalt		4	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Molybdenum		1.5	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	1.0
Nickel		3.4	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Cyanide		<0.01	mg/L	335.2		9/1/98	SA		5185	0.01
Fluoride		4.1	mg/Kg	E 300.0		9/21/98	JS		5482	0.2
Nitrate		2.1	mg/Kg	E 300.0		9/21/98	JS		5482	0.2
Chloride		180	mg/Kg	E 300.0		9/21/98	JS		5482	2.0
Sulfate		110	mg/Kg	E 300.0		9/21/98	JS		5482	2.0
TDS		540	mg/Kg			9/19/98	RS		5417	---
pH		8.7	s.u.	E 150.1		8/28/98	SA		5154	7.1
TRPHC		<10.0	mg/Kg	S 418.1	8/27/98	8/29/98	SR	4810	5168	10.0
Total Phenols		<0.25	mg/Kg	M 5530 A,D		10/1/98	RC		5357	0.25
Total Radium		9.63	pCi/g	E 901.1M			DS	---	---	---

** NOTE: Samples extracted past holding times. Middle and closing CCVs were out of acceptance criteria, biased high. Relative Percent Difference between MS and MSD out of acceptance criteria.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-6-98
Page # 4

Project Number: 19350
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000510
Sample Number: 106091

Field Code: TSB-4 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<225	ug/Kg	S-8260B		9/3/98	AG		5206	225
Acrylonitrile		<225	ug/Kg	S-8260B		9/3/98	AG		5206	225
Benzene		<45	ug/Kg	S-8260B		9/3/98	AG		5206	45
Carbon tetrachloride		<45	ug/Kg	S-8260B		9/3/98	AG		5206	45
Chlorobenzene		<45	ug/Kg	S-8260B		9/3/98	AG		5206	45
1,2-dichloroethane		<45	ug/Kg	S-8260B		9/3/98	AG		5206	45
1,1,2,2-tetrachloroethane		<45	ug/Kg	S-8260B		9/3/98	AG		5206	45
1,1,1-trichloroethane		<45	ug/Kg	S-8260B		9/3/98	AG		5206	45
1,1,2-trichloroethane		<45	ug/Kg	S-8260B		9/3/98	AG		5206	45
1,1,2-trichloroethylene		<45	ug/Kg	S-8260B		9/3/98	AG		5206	45
Chloroform		<45	ug/Kg	S-8260B		9/3/98	AG		5206	45
Dichlorobenzene		<90	ug/Kg	S-8260B		9/3/98	AG		5206	90
1,1-dichloroethylene		<45	ug/Kg	S-8260B		9/3/98	AG		5206	45
Dichloropropenes		<45	ug/Kg	S-8260B		9/3/98	AG		5206	45
Ethylbenzene		<45	ug/Kg	S-8260B		9/3/98	AG		5206	45
Bromodichloromethane		<45	ug/Kg	S-8260B		9/3/98	AG		5206	45
Bromomethane		<225	ug/Kg	S-8260B		9/3/98	AG		5206	225
Chloromethane		<45	ug/Kg	S-8260B		9/3/98	AG		5206	45
Dichlorodifluoromethane		<45	ug/Kg	S-8260B		9/3/98	AG		5206	45
Dichloromethane		<45	ug/Kg	S-8260B		9/3/98	AG		5206	45
Trichlorofluoromethane		<45	ug/Kg	S-8260B		9/3/98	AG		5206	45
Tetrachloroethylene		<45	ug/Kg	S-8260B		9/3/98	AG		5206	45
Toluene		<45	ug/Kg	S-8260B		9/3/98	AG		5206	45
Trichloroethylene		<45	ug/Kg	S-8260B		9/3/98	AG		5206	45
Vinyl chloride		<45	ug/Kg	S-8260B		9/3/98	AG		5206	45
m,p-xylene		63	ug/Kg	S-8260B		9/3/98	AG		5206	45
o-xylene		<45	ug/Kg	S-8260B		9/3/98	AG		5206	45
1,1-dichloroethane		<45	ug/Kg	S-8260B		9/3/98	AG		5206	45
Ethylene dibromide		<45	ug/Kg	S-8260B		9/3/98	AG		5206	45
cis-1,2-dichloroethylene		<45	ug/Kg	S-8260B		9/3/98	AG		5206	45
trans-1,2-dichloroethylene		<45	ug/Kg	S-8260B		9/3/98	AG		5206	45
Methylene chloride		<225	ug/Kg	S-8260B		9/3/98	AG		5206	225
Surr. Dibromofluoromethane		105	%	S-8260B		9/3/98	AG		5206	72-130
Surr. Toluene-d8		89	%	S-8260B		9/3/98	AG		5206	77-127
Surr. 4-Bromofluorobenzene		94	%	S-8260B		9/3/98	AG		5206	72-131
Benzidine		<2.5	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25

Corrected *

Date: 10-6-98

Page # 5

Order ID Number: 9808000510

Sample Number: 106091

Project Number: 19350

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Field Code: TSB-4 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Isophorone		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
2,4-dinitro-o-cresol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
n-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
n-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Anthracene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Fluorene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Pyrene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
1-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
2-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Phenol		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Surr. 2-Fluorophenol		54	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	25-121
Surr. Phenol-d6		57	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	24-113
Surr. Nitroobenzene-d5		55	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	23-120
Surr. 2-Fluorobiphenyl		60	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	30-115
Surr. 2,4,6-Tribromophenol		53	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	19-122
Surr. Terphenyl-d14		79	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	28-137

Corrected - Added Phenol result.

Project Number: 19350
 Project Name: Shell Grimes
 Project Location: Grimes Battery, Hobbs, NM

Date: 10-6-98
 Page # 6
 Order ID Number: 9808000510
 Sample Number: 106091

Field Code: TSB-4 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
Chlordane		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
DDT		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
Endrin		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	9/8/98	9/9/98	RC	4910	5262	0.1
Arsenic		3.5	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Barium		470	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Cadmium		0.13	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.10
Chromium		6.7	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Lead		2.8	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Total Mercury		<0.1	mg/Kg	S 7471	8/27/98	8/28/98	MS	4804	5149	0.1
Selenium		1.3	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Silver		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	2.0
Copper		2.9	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	1.0
Iron		5,100	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5040	5373	10
Manganese		45	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	1.0
Zinc		17	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	2.0
Aluminum		8,700	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5040	5373	10
Boron		16	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	10
Cobalt		8.1	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Molybdenum		2.2	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	1.0
Nickel		8.3	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Cyanide		<0.01	mg/Kg	SM 4500 C,E		9/1/98	SA		5186	0.01
Fluoride		8.4	mg/Kg	E 300.0		9/19/98	JS		5421	0.2
Nitrate		2.5	mg/Kg	E 300.0		9/19/98	JS		5421	0.2
Chloride		120	mg/Kg	E 300.0		9/19/98	JS		5421	2.0
Sulfate		140	mg/Kg	E 300.0		9/19/98	JS		5421	2.0
TDS		620	mg/Kg	E 160.1		9/18/98	RS		5400	---
pH		8.2	s.u.	E 150.1		8/27/98	SA		5134	---
TRPHC		52.3	mg/Kg	S 418.1	8/27/98	8/29/98	SR	4809	5160	10
Total Phenols		<0.25	mg/Kg	SM 5530 A,D		9/16/98	RC	5356	0.01	0.25
Total Radium		4.39	pCi/gm	E 901.1M		9/4/98	DS	---	---	---



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ARS Tracking Number: ARS-98-0872 P.O. Number:
 Client I.D.: Sample No. 106091 ARS Sample I.D.: ARS-98-3178
 Date Sampled: 8/24/98 Date Received: 8/27/98
 Time Sampled: N/A Time Received: 1051
 Type of Sample: Soil Date of Report: 9/8/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	2.21	1.45	pCi/gm	0.082	0.054	Bq/gm	EPA 901.1M	9/4/98 1033	KH
Ra-228	0.40	0.19	pCi/gm	0.015	0.007	Bq/gm	EPA 901.1M	9/4/98 1033	KH
Pb-210	<0.95	N/A	pCi/gm	<0.035	N/A	Bq/gm	EPA 901.1M	9/4/98 1033	KH
Total Activity	4.39	N/A	pCi/gm	0.162	N/A	Bq/gm	EPA 901.1M	9/4/98 1033	KH

Notes:

Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-6-98
Page # 7

Project Number: 19350
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000510
Sample Number: 106092

Field Code: TSB-4 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<505	ug/Kg	S-8260B		9/3/98	AG		5206	505
Acrylonitrile		<505	ug/Kg	S-8260B		9/3/98	AG		5206	505
Benzene		<101	ug/Kg	S-8260B		9/3/98	AG		5206	101
Carbon tetrachloride		<101	ug/Kg	S-8260B		9/3/98	AG		5206	101
Chlorobenzene		<101	ug/Kg	S-8260B		9/3/98	AG		5206	101
1,2-dichloroethane		<101	ug/Kg	S-8260B		9/3/98	AG		5206	101
1,1,2,2-tetrachloroethane		<101	ug/Kg	S-8260B		9/3/98	AG		5206	101
1,1,1-trichloroethane		<101	ug/Kg	S-8260B		9/3/98	AG		5206	101
1,1,2-trichloroethane		<101	ug/Kg	S-8260B		9/3/98	AG		5206	101
1,1,2-trichloroethylene		<101	ug/Kg	S-8260B		9/3/98	AG		5206	101
Chloroform		<101	ug/Kg	S-8260B		9/3/98	AG		5206	101
Dichlorobenzene		<202	ug/Kg	S-8260B		9/3/98	AG		5206	202
1,1-dichloroethylene		<101	ug/Kg	S-8260B		9/3/98	AG		5206	101
Dichloropropenes		<101	ug/Kg	S-8260B		9/3/98	AG		5206	101
Ethylbenzene		<101	ug/Kg	S-8260B		9/3/98	AG		5206	101
Bromodichloromethane		<101	ug/Kg	S-8260B		9/3/98	AG		5206	101
Bromomethane		<505	ug/Kg	S-8260B		9/3/98	AG		5206	505
Chloromethane		<101	ug/Kg	S-8260B		9/3/98	AG		5206	101
Dichlorodifluoromethane		<101	ug/Kg	S-8260B		9/3/98	AG		5206	101
Dichloromethane		<101	ug/Kg	S-8260B		9/3/98	AG		5206	101
Trichlorofluoromethane		<101	ug/Kg	S-8260B		9/3/98	AG		5206	101
Tetrachloroethylene		<101	ug/Kg	S-8260B		9/3/98	AG		5206	101
Toluene		270	ug/Kg	S-8260B		9/3/98	AG		5206	101
Trichloroethylene		<101	ug/Kg	S-8260B		9/3/98	AG		5206	101
Vinyl chloride		<101	ug/Kg	S-8260B		9/3/98	AG		5206	101
m,p-xylene		<101	ug/Kg	S-8260B		9/3/98	AG		5206	101
o-xylene		<101	ug/Kg	S-8260B		9/3/98	AG		5206	101
1,1-dichloroethane		<101	ug/Kg	S-8260B		9/3/98	AG		5206	101
Ethylene dibromide		<101	ug/Kg	S-8260B		9/3/98	AG		5206	101
cis-1,2-dichloroethylene		<101	ug/Kg	S-8260B		9/3/98	AG		5206	101
trans-1,2-dichloroethylene		<101	ug/Kg	S-8260B		9/3/98	AG		5206	101
Methylene chloride		<505	ug/Kg	S-8260B		9/3/98	AG		5206	505
Surr. Dibromofluoromethane		105	%	S-8260B		9/3/98	AG		5206	86-118
Surr. Toluene-d8		89	%	S-8260B		9/3/98	AG		5206	88-110
Surr. 4-Bromofluorobenzene		93	%	S-8260B		9/3/98	AG		5206	86-115
Benzidine		<2.5	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25

Corrected *

Date: 10-6-98

Page # 8

Order ID Number: 9808000510

Sample Number: 106092

Project Number: 19350

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Field Code: TSB-4 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Isophorone		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
2,4-dinitro-o-cresol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
n-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Anthracene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Fluorene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Pyrene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
1-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
2-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Phenol		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Surr. 2-Fluorophenol		74	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	25-121
Surr. Phenol-d6		74	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	24-113
Surr. Nitroobenzene-d5		71	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	23-120
Surr. 2-Fluorobiphenyl		76	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	30-115
Surr. 2,4,6-Tribromophenol		61	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	19-122
Surr. Terphenyl-d14		85	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	28-137

Corrected - Added Phenol result.

Project Number: 19350
 Project Name: Shell Grimes
 Project Location: Grimes Battery, Hobbs, NM

Date: 10-6-98
 Page # 9
 Order ID Number: 9808000510
 Sample Number: 106092

Field Code: TSB-4 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
Chlordane		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
DDT		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
Endrin		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	9/8/98	9/9/98	RC	4910	5262	0.1
Arsenic		5.1	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Barium		640	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Cadmium		0.25	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.10
Chromium		9.8	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Lead		5.5	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Total Mercury		<0.1	mg/Kg	S 7471	8/27/98	8/28/98	MS	4804	5149	0.1
Selenium		2.3	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Silver		6.2	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	2.0
Copper		3.2	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	1.0
Iron		7,500	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5040	5373	10
Manganese		41	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	1.0
Zinc		17	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	2.0
Aluminum		14,000	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5040	5373	10
Boron		22	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	10
Cobalt		8.2	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Molybdenum		3.1	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	1.0
Nickel		8.7	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Cyanide		<0.01	mg/Kg	SM 4500 C,E		9/1/98	SA		5186	0.01
Fluoride		11	mg/Kg	E 300.0		9/19/98	JS		5421	0.2
Nitrate		<0.4	mg/Kg	E 300.0		9/19/98	JS		5421	0.4
Chloride		26	mg/Kg	E 300.0		9/19/98	JS		5421	1.0
Sulfate		140	mg/Kg	E 300.0		9/19/98	JS		5421	2.0
TDS		570	mg/Kg	E 160.1		9/18/98	RS		5400	---
pH		8.3	s.u.	E 150.1		8/27/98	SA		5134	---
TRPHC		<10	mg/Kg	S 418.1	8/27/98	8/29/98	SR	4809	5160	10
Total Phenols		<0.25	mg/Kg	SM 5530 A,D		9/16/98	RC	5356	0.01	0.25
Total Radium		11.53	pCi/gm	E 901.1M		9/4/98	DS	---	---	---



1726 Wooddale Court • Baton Rouge, Louisiana 70806

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ARS Tracking Number: ARS-98-0872

P.O. Number:

Client I.D.: Sample No. 106092

ARS Sample I.D.: ARS-98-3179

Date Sampled: 8/24/98

Date Received: 8/27/98

Time Sampled: N/A

Time Received: 1051

Type of Sample: Soil

Date of Report: 9/8/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	1.66	1.55	pCi/gm	0.061	0.057	Bq/gm	EPA 901.1M	9/4/98 1105	KH
Ra-228	0.48	0.23	pCi/gm	0.018	0.009	Bq/gm	EPA 901.1M	9/4/98 1105	KH
Pb-210	<0.90	N/A	pCi/gm	<0.033	N/A	Bq/gm	EPA 901.1M	9/4/98 1105	KH
Total Activity	11.53	N/A	pCi/gm	0.427	N/A	Bq/gm	EPA 901.1M	9/4/98 1105	KH

Notes:

Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-6-98
Page # 10

Project Number: 19350
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000510
Sample Number: 106093

Field Code: TSB-4 18-20'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<140	ug/Kg	S-8260B		9/3/98	AG		5206	140
Acrylonitrile		<140	ug/Kg	S-8260B		9/3/98	AG		5206	140
Benzene		<28	ug/Kg	S-8260B		9/3/98	AG		5206	28
Carbon tetrachloride		<28	ug/Kg	S-8260B		9/3/98	AG		5206	28
Chlorobenzene		<28	ug/Kg	S-8260B		9/3/98	AG		5206	28
1,2-dichloroethane		<28	ug/Kg	S-8260B		9/3/98	AG		5206	28
1,1,2,2-tetrachloroethane		<28	ug/Kg	S-8260B		9/3/98	AG		5206	28
1,1,1-trichloroethane		<28	ug/Kg	S-8260B		9/3/98	AG		5206	28
1,1,2-trichloroethane		<28	ug/Kg	S-8260B		9/3/98	AG		5206	28
1,1,2-trichloroethylene		<28	ug/Kg	S-8260B		9/3/98	AG		5206	28
Chloroform		<28	ug/Kg	S-8260B		9/3/98	AG		5206	28
Dichlorobenzene		<56	ug/Kg	S-8260B		9/3/98	AG		5206	56
1,1-dichloroethylene		<28	ug/Kg	S-8260B		9/3/98	AG		5206	28
Dichloropropenes		<28	ug/Kg	S-8260B		9/3/98	AG		5206	28
Ethylbenzene		<28	ug/Kg	S-8260B		9/3/98	AG		5206	28
Bromodichloromethane		<28	ug/Kg	S-8260B		9/3/98	AG		5206	28
Bromomethane		<140	ug/Kg	S-8260B		9/3/98	AG		5206	140
Chloromethane		<28	ug/Kg	S-8260B		9/3/98	AG		5206	28
Dichlorodifluoromethane		<28	ug/Kg	S-8260B		9/3/98	AG		5206	28
Dichloromethane		<28	ug/Kg	S-8260B		9/3/98	AG		5206	28
Trichlorofluoromethane		<28	ug/Kg	S-8260B		9/3/98	AG		5206	28
Tetrachloroethylene		<28	ug/Kg	S-8260B		9/3/98	AG		5206	28
Toluene		<28	ug/Kg	S-8260B		9/3/98	AG		5206	28
Trichloroethylene		<28	ug/Kg	S-8260B		9/3/98	AG		5206	28
Vinyl chloride		<28	ug/Kg	S-8260B		9/3/98	AG		5206	28
m,p-xylene		<28	ug/Kg	S-8260B		9/3/98	AG		5206	28
o-xylene		<28	ug/Kg	S-8260B		9/3/98	AG		5206	28
1,1-dichloroethane		<28	ug/Kg	S-8260B		9/3/98	AG		5206	28
Ethylene dibromide		<28	ug/Kg	S-8260B		9/3/98	AG		5206	28
cis-1,2-dichloroethylene		<28	ug/Kg	S-8260B		9/3/98	AG		5206	28
trans-1,2-dichloroethylene		<28	ug/Kg	S-8260B		9/3/98	AG		5206	28
Methylene chloride		<140	ug/Kg	S-8260B		9/3/98	AG		5206	140
Surr. Dibromofluoromethane		102	%	S-8260B		9/3/98	AG		5206	86-118
Surr. Toluene-d8		90	%	S-8260B		9/3/98	AG		5206	88-110
Surr. 4-Bromofluorobenzene		94	%	S-8260B		9/3/98	AG		5206	86-115
Benzidine		<2.5	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25

Corrected *

Date: 10-6-98

Page # 11

Order ID Number: 9808000510

Sample Number: 106093

Project Number: 19350

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Field Code: TSB-4 18-20'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Isophorone		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
2,4-dinitro-o-cresol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
n-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Anthracene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Fluorene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Pyrene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
1-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
2-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Phenol		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Surr. 2-Fluorophenol		75	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	25-121
Surr. Phenol-d6		79	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	24-113
Surr. Nitroobenzene-d5		78	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	23-120
Surr. 2-Fluorobiphenyl		80	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	30-115
Surr. 2,4,6-Tribromophenol		66	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	19-122
Surr. Terphenyl-d14		93	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	28-137

* Corrected - Added Phenol result.

Project Number: 19350
 Project Name: Shell Grimes
 Project Location: Grimes Battery, Hobbs, NM

Date: 10-6-98
 Page # 12
 Order ID Number: 9808000510
 Sample Number: 106093

Field Code: TSB-4 18-20'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
Chlordane		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
DDT		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
Endrin		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	9/8/98	9/9/98	RC	4910	5262	0.1
Arsenic		5.3	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Barium		340	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Cadmium		0.23	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.10
Chromium		2.6	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Lead		2.3	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Total Mercury		<0.1	mg/Kg	S 7471	8/27/98	8/28/98	MS	4804	5149	0.1
Selenium		1.4	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Silver		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	2.0
Copper		3.5	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	1.0
Iron		1,700	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5040	5373	10
Manganese		26	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	1.0
Zinc		5	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	2.0
Aluminum		3,000	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5040	5373	10
Boron		<10	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	10
Cobalt		4.6	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Molybdenum		1.5	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	1.0
Nickel		26	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Cyanide		<0.01	mg/Kg	SM 4500 C,E		9/1/98	SA		5186	0.01
Fluoride		5	mg/Kg	E 300.0		9/19/98	JS		5421	0.2
Nitrate		2.1	mg/Kg	E 300.0		9/19/98	JS		5421	0.2
Chloride		38	mg/Kg	E 300.0		9/19/98	JS		5421	1.0
Sulfate		180	mg/Kg	E 300.0		9/19/98	JS		5421	2.0
TDS		500	mg/Kg	E 160.1		9/18/98	RS		5400	---
pH		8.5	s.u.	E 150.1		8/27/98	SA		5134	---
TRPHC		<10	mg/Kg	S 418.1	8/27/98	8/29/98	SR	4809	5160	10
Total Phenols		<0.25	mg/Kg	SM 5530 A,D		9/16/98	RC	5356	0.01	0.25
Total Radium		3.95	pCi/gm	E 901.1M		9/3/98	DS	---	---	---



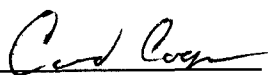
1726 Wooddale Court • Baton Rouge, Louisiana 70806

1 (800) 401-4277 • Fax (504) 927-6822

ARS Tracking Number: ARS-98-0872 P.O. Number:
 Client I.D.: Sample No. 106093 ARS Sample I.D.: ARS-98-3180
 Date Sampled: 8/24/98 Date Received: 8/27/98
 Time Sampled: N/A Time Received: 1051
 Type of Sample: Soil Date of Report: 9/8/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	2.16	1.92	pCi/gm	0.080	0.071	Bq/gm	EPA 901.1M	9/3/98 1156	KH
Ra-228	<0.12	N/A	pCi/gm	<0.004	N/A	Bq/gm	EPA 901.1M	9/3/98 1156	KH
Pb-210	<1.08	N/A	pCi/gm	<0.040	N/A	Bq/gm	EPA 901.1M	9/3/98 1156	KH
Total Activity	3.95	N/A	pCi/gm	0.146	N/A	Bq/gm	EPA 901.1M	9/3/98 1156	KH

Notes:


 Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-6-98
Page # 13

Project Number: 19350
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000510
Sample Number: 106094

Field Code: TSB-5 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<170	ug/Kg	S-8260B		9/3/98	AG		5206	170
Acrylonitrile		<170	ug/Kg	S-8260B		9/3/98	AG		5206	170
Benzene		<34	ug/Kg	S-8260B		9/3/98	AG		5206	34
Carbon tetrachloride		<34	ug/Kg	S-8260B		9/3/98	AG		5206	34
Chlorobenzene		<34	ug/Kg	S-8260B		9/3/98	AG		5206	34
1,2-dichloroethane		<34	ug/Kg	S-8260B		9/3/98	AG		5206	34
1,1,2,2-tetrachloroethane		<34	ug/Kg	S-8260B		9/3/98	AG		5206	34
1,1,1-trichloroethane		<34	ug/Kg	S-8260B		9/3/98	AG		5206	34
1,1,2-trichloroethane		<34	ug/Kg	S-8260B		9/3/98	AG		5206	34
1,1,2-trichloroethylene		<34	ug/Kg	S-8260B		9/3/98	AG		5206	34
Chloroform		<34	ug/Kg	S-8260B		9/3/98	AG		5206	34
Dichlorobenzene		<68	ug/Kg	S-8260B		9/3/98	AG		5206	68
1,1-dichloroethylene		<34	ug/Kg	S-8260B		9/3/98	AG		5206	34
Dichloropropenes		<34	ug/Kg	S-8260B		9/3/98	AG		5206	34
Ethylbenzene		<34	ug/Kg	S-8260B		9/3/98	AG		5206	34
Bromodichloromethane		<34	ug/Kg	S-8260B		9/3/98	AG		5206	34
Bromomethane		<170	ug/Kg	S-8260B		9/3/98	AG		5206	170
Chloromethane		<34	ug/Kg	S-8260B		9/3/98	AG		5206	34
Dichlorodifluoromethane		<34	ug/Kg	S-8260B		9/3/98	AG		5206	34
Dichloromethane		<34	ug/Kg	S-8260B		9/3/98	AG		5206	34
Trichlorofluoromethane		<34	ug/Kg	S-8260B		9/3/98	AG		5206	34
Tetrachloroethylene		<34	ug/Kg	S-8260B		9/3/98	AG		5206	34
Toluene		<34	ug/Kg	S-8260B		9/3/98	AG		5206	34
Trichloroethylene		<34	ug/Kg	S-8260B		9/3/98	AG		5206	34
Vinyl chloride		<34	ug/Kg	S-8260B		9/3/98	AG		5206	34
m,p-xylene		<34	ug/Kg	S-8260B		9/3/98	AG		5206	34
o-xylene		<34	ug/Kg	S-8260B		9/3/98	AG		5206	34
1,1-dichloroethane		<34	ug/Kg	S-8260B		9/3/98	AG		5206	34
Ethylene dibromide		<34	ug/Kg	S-8260B		9/3/98	AG		5206	34
cis-1,2-dichloroethylene		<34	ug/Kg	S-8260B		9/3/98	AG		5206	34
trans-1,2-dichloroethylene		<34	ug/Kg	S-8260B		9/3/98	AG		5206	34
Methylene chloride		<170	ug/Kg	S-8260B		9/3/98	AG		5206	170
Surr. Dibromofluoromethane		104	%	S-8260B		9/3/98	AG		5206	86-118
Surr. Toluene-d8		89	%	S-8260B		9/3/98	AG		5206	88-110
Surr. 4-Bromofluorobenzene		94	%	S-8260B		9/3/98	AG		5206	86-115
Benzidine		<2.5	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25

Corrected *

Date: 10-6-98

Page # 14

Order ID Number: 9808000510

Sample Number: 106094

Project Number: 19350

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Field Code: TSB-5 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Isophorone		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
2,4-dinitro-o-cresol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
n-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Anthracene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Fluorene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Pyrene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
1-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
2-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Phenol		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Surr. 2-Fluorophenol		63	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	25-121
Surr. Phenol-d6		65	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	24-113
Surr. Nitroobenzene-d5		65	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	23-120
Surr. 2-Fluorobiphenyl		69	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	30-115
Surr. 2,4,6-Tribromophenol		56	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	19-122
Surr. Terphenyl-d14		79	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	28-137

* Corrected - Added Phenol result.

Project Number: 19350
 Project Name: Shell Grimes
 Project Location: Grimes Battery, Hobbs, NM

Date: 10-6-98
 Page # 15
 Order ID Number: 9808000510
 Sample Number: 106094

Field Code: TSB-5 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
Chlordane		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
DDT		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
Endrin		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	9/8/98	9/9/98	RC	4910	5262	0.1
Arsenic		7.3	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Barium		184	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Cadmium		0.3	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.10
Chromium		4.8	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Lead		3.5	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Total Mercury		<0.1	mg/Kg	S 7471	8/27/98	8/28/98	MS	4804	5149	0.1
Selenium		3.4	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Silver		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	2.0
Copper		2.9	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	1.0
Iron		3,500	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5040	5373	10
Manganese		37	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	1.0
Zinc		9	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	2.0
Aluminum		5,700	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5040	5373	10
Boron		10	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	10
Cobalt		5	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Molybdenum		1.7	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	1.0
Nickel		5.8	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Cyanide		<0.01	mg/Kg	SM 4500 C,E		9/1/98	SA		5186	0.01
Fluoride		2.8	mg/Kg	E 300.0		9/19/98	JS		5421	0.2
Nitrate		1.7	mg/Kg	E 300.0		9/19/98	JS		5421	0.2
Chloride		360	mg/Kg	E 300.0		9/19/98	JS		5421	5.0
Sulfate		330	mg/Kg	E 300.0		9/19/98	JS		5421	5.0
TDS		1,400	mg/Kg	E 160.1		9/18/98	RS		5400	---
pH		8.1	s.u.	E 150.1		8/27/98	SA		5134	---
TRPHC		<10	mg/Kg	S 418.1	8/27/98	8/29/98	SR	4809	5160	10
Total Phenols		<0.25	mg/Kg	SM 5530 A,D		9/16/98	RC	5356	0.01	0.25
Total Radium		2.32	pCi/gm	E 901.1M		9/4/98	DS	---	---	---

ARS Tracking Number:	ARS-98-0872	P.O. Number:	
Client I.D.:	Sample No. 106094	ARS Sample I.D.:	ARS-98-3181
Date Sampled:	8/24/98	Date Received:	8/27/98
Time Sampled:	N/A	Time Received:	1051
Type of Sample:	Soil	Date of Report:	9/8/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	<0.57	N/A	pCi/gm	<0.021	N/A	Bq/gm	EPA 901.1M	9/4/98 1136	KH
Ra-228	<0.06	N/A	pCi/gm	<0.002	N/A	Bq/gm	EPA 901.1M	9/4/98 1136	KH
Pb-210	<0.79	N/A	pCi/gm	<0.029	N/A	Bq/gm	EPA 901.1M	9/4/98 1136	KH
Total Activity	2.32	N/A	pCi/gm	0.086	N/A	Bq/gm	EPA 901.1M	9/4/98 1136	KH

Notes:


Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-6-98
Page # 16

Project Number: 19350
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000510
Sample Number: 106095

5 3-5'2 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<300	ug/Kg	S-8260B		9/6/98	AG		5207	300
Acrylonitrile		<300	ug/Kg	S-8260B		9/6/98	AG		5207	300
Benzene		<60	ug/Kg	S-8260B		9/6/98	AG		5207	60
Carbon tetrachloride		<60	ug/Kg	S-8260B		9/6/98	AG		5207	60
Chlorobenzene		<60	ug/Kg	S-8260B		9/6/98	AG		5207	60
1,2-dichloroethane		<60	ug/Kg	S-8260B		9/6/98	AG		5207	60
1,1,2,2-tetrachloroethane		<60	ug/Kg	S-8260B		9/6/98	AG		5207	60
1,1,1-trichloroethane		<60	ug/Kg	S-8260B		9/6/98	AG		5207	60
1,1,2-trichloroethane		<60	ug/Kg	S-8260B		9/6/98	AG		5207	60
1,1,2-trichloroethylene		<60	ug/Kg	S-8260B		9/6/98	AG		5207	60
Chloroform		<60	ug/Kg	S-8260B		9/6/98	AG		5207	60
Dichlorobenzene		<120	ug/Kg	S-8260B		9/6/98	AG		5207	120
1,1-dichloroethylene		<60	ug/Kg	S-8260B		9/6/98	AG		5207	60
Dichloropropenes		<60	ug/Kg	S-8260B		9/6/98	AG		5207	60
Ethylbenzene		<60	ug/Kg	S-8260B		9/6/98	AG		5207	60
Bromodichloromethane		<60	ug/Kg	S-8260B		9/6/98	AG		5207	60
Bromomethane		<300	ug/Kg	S-8260B		9/6/98	AG		5207	300
Chloromethane		<60	ug/Kg	S-8260B		9/6/98	AG		5207	60
Dichlorodifluoromethane		<60	ug/Kg	S-8260B		9/6/98	AG		5207	60
Dichloromethane		<60	ug/Kg	S-8260B		9/6/98	AG		5207	60
Trichlorofluoromethane		<60	ug/Kg	S-8260B		9/6/98	AG		5207	60
Tetrachloroethylene		<60	ug/Kg	S-8260B		9/6/98	AG		5207	60
Toluene		<60	ug/Kg	S-8260B		9/6/98	AG		5207	60
Trichloroethylene		<60	ug/Kg	S-8260B		9/6/98	AG		5207	60
Vinyl chloride		<60	ug/Kg	S-8260B		9/6/98	AG		5207	60
m,p-xylene		<60	ug/Kg	S-8260B		9/6/98	AG		5207	60
o-xylene		<60	ug/Kg	S-8260B		9/6/98	AG		5207	60
1,1-dichloroethane		<60	ug/Kg	S-8260B		9/6/98	AG		5207	60
Ethylene dibromide		<60	ug/Kg	S-8260B		9/6/98	AG		5207	60
cis-1,2-dichloroethylene		<60	ug/Kg	S-8260B		9/6/98	AG		5207	60
trans-1,2-dichloroethylene		<60	ug/Kg	S-8260B		9/6/98	AG		5207	60
Methylene chloride		<300	ug/Kg	S-8260B		9/6/98	AG		5207	300
Surr. Dibromofluoromethane		101	%	S-8260B		9/6/98	AG		5207	86-118
Surr. Toluene-d8		88	%	S-8260B		9/6/98	AG		5207	88-110
Surr. 4-Bromofluorobenzene		94	%	S-8260B		9/6/98	AG		5207	86-115
Benzidine		<2.5	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25

Corrected *

Date: 10-6-98

Page # 17

Order ID Number: 9808000510

Sample Number: 106095

Project Number: 19350

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

5 3-5'2 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Isophorone		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
2,4-dinitro-o-cresol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
n-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Anthracene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Fluorene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Pyrene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
1-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
2-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Phenol		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Surr. 2-Fluorophenol		68	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	25-121
Surr. Phenol-d6		69	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	24-113
Surr. Nitrobenzene-d5		66	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	23-120
Surr. 2-Fluorobiphenyl		73	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	30-115
Surr. 2,4,6-Tribromophenol		61	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	19-122
Surr. Terphenyl-d14		86	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	28-137

* Corrected - Added Phenol result.

Project Number: 19350
 Project Name: Shell Grimes
 Project Location: Grimes Battery, Hobbs, NM

Date: 10-6-98
 Page # 18
 Order ID Number: 9808000510
 Sample Number: 106095

5 3-5'2 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
Chlordane		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
DDT		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
Endrin		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	9/8/98	9/9/98	RC	4910	5262	0.1
Arsenic		3.6	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Barium		165	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Cadmium		0.22	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.10
Chromium		5.3	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Lead		2.8	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Total Mercury		<0.1	mg/Kg	S 7471	8/27/98	8/28/98	MS	4804	5149	0.1
Selenium		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Silver		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	2.0
Copper		2.5	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	1.0
Iron		3,600	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5040	5373	10
Manganese		37	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	1.0
Zinc		9.2	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	2.0
Aluminum		6,000	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5040	5373	10
Boron		11	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	10
Cobalt		6.4	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Molybdenum		1.8	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	1.0
Nickel		6.2	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Cyanide		<0.01	mg/Kg	SM 4500 C,E		9/1/98	SA		5186	0.01
Fluoride		3.5	mg/Kg	E 300.0		9/19/98	JS		5422	0.2
Nitrate		1.7	mg/Kg	E 300.0		9/19/98	JS		5422	0.2
Chloride		290	mg/Kg	E 300.0		9/19/98	JS		5422	5.0
Sulfate		370	mg/Kg	E 300.0		9/19/98	JS		5422	5.0
TDS		1,100	mg/Kg	E 160.1		9/18/98	RS		5400	---
pH		8.2	s.u.	E 150.1		8/27/98	SA		5134	---
TRPHC		<10	mg/Kg	S 418.1	8/27/98	8/29/98	SR	4809	5160	10
Total Phenols		<0.25	mg/Kg	SM 5530 A,D		9/16/98	RC	5356	0.01	0.25
Total Radium		5.24	pCi/gm	E 901.1M		9/4/98	DS	---	---	---



1726 Wooddale Court • Baton Rouge, Louisiana 70806

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ARS Tracking Number: ARS-98-0872 P.O. Number:
Client I.D.: Sample No. 106095 ARS Sample I.D.: ARS-98-3182
Date Sampled: 8/24/98 Date Received: 8/27/98
Time Sampled: N/A Time Received: 1051
Type of Sample: Soil Date of Report: 9/8/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	<0.77	N/A	pCi/gm	<0.028	N/A	Bq/gm	EPA 901.1M	9/4/98 1403	KH
Ra-228	0.30	0.16	pCi/gm	0.011	0.006	Bq/gm	EPA 901.1M	9/4/98 1403	KH
Pb-210	<0.90	N/A	pCi/gm	<0.033	N/A	Bq/gm	EPA 901.1M	9/4/98 1403	KH
Total Activity	5.24	N/A	pCi/gm	0.194	N/A	Bq/gm	EPA 901.1M	9/4/98 1403	KH

Notes:


Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-6-98
Page # 19

Project Number: 19350
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000510
Sample Number: 106096

Field Code: TSB-5 18-20'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<270	ug/Kg	S-8260B		9/6/98	AG		5207	270
Acrylonitrile		<270	ug/Kg	S-8260B		9/6/98	AG		5207	270
Benzene		<54	ug/Kg	S-8260B		9/6/98	AG		5207	54
Carbon tetrachloride		<54	ug/Kg	S-8260B		9/6/98	AG		5207	54
Chlorobenzene		<54	ug/Kg	S-8260B		9/6/98	AG		5207	54
1,2-dichloroethane		<54	ug/Kg	S-8260B		9/6/98	AG		5207	54
1,1,2,2-tetrachloroethane		<54	ug/Kg	S-8260B		9/6/98	AG		5207	54
1,1,1-trichloroethane		<54	ug/Kg	S-8260B		9/6/98	AG		5207	54
1,1,2-trichloroethane		<54	ug/Kg	S-8260B		9/6/98	AG		5207	54
1,1,2-trichloroethylene		<54	ug/Kg	S-8260B		9/6/98	AG		5207	54
Chloroform		<54	ug/Kg	S-8260B		9/6/98	AG		5207	54
Dichlorobenzene		<108	ug/Kg	S-8260B		9/6/98	AG		5207	108
1,1-dichloroethylene		<54	ug/Kg	S-8260B		9/6/98	AG		5207	54
Dichloropropenes		<54	ug/Kg	S-8260B		9/6/98	AG		5207	54
Ethylbenzene		<54	ug/Kg	S-8260B		9/6/98	AG		5207	54
Bromodichloromethane		<54	ug/Kg	S-8260B		9/6/98	AG		5207	54
Bromomethane		<270	ug/Kg	S-8260B		9/6/98	AG		5207	270
Chloromethane		<54	ug/Kg	S-8260B		9/6/98	AG		5207	54
Dichlorodifluoromethane		<54	ug/Kg	S-8260B		9/6/98	AG		5207	54
Dichloromethane		<54	ug/Kg	S-8260B		9/6/98	AG		5207	54
Trichlorofluoromethane		<54	ug/Kg	S-8260B		9/6/98	AG		5207	54
Tetrachloroethylene		<54	ug/Kg	S-8260B		9/6/98	AG		5207	54
Toluene		<54	ug/Kg	S-8260B		9/6/98	AG		5207	54
Trichloroethylene		<54	ug/Kg	S-8260B		9/6/98	AG		5207	54
Vinyl chloride		<54	ug/Kg	S-8260B		9/6/98	AG		5207	54
m,p-xylene		<54	ug/Kg	S-8260B		9/6/98	AG		5207	54
o-xylene		<54	ug/Kg	S-8260B		9/6/98	AG		5207	54
1,1-dichloroethane		<54	ug/Kg	S-8260B		9/6/98	AG		5207	54
Ethylene dibromide		<54	ug/Kg	S-8260B		9/6/98	AG		5207	54
cis-1,2-dichloroethylene		<54	ug/Kg	S-8260B		9/6/98	AG		5207	54
trans-1,2-dichloroethylene		<54	ug/Kg	S-8260B		9/6/98	AG		5207	54
Methylene chloride		<270	ug/Kg	S-8260B		9/6/98	AG		5207	270
Surr. Dibromofluoromethane		102	%	S-8260B		9/6/98	AG		5207	86-118
Surr. Toluene-d8		88	%	S-8260B		9/6/98	AG		5207	88-110
Surr. 4-Bromofluorobenzene		94	%	S-8260B		9/6/98	AG		5207	86-115
Benzidine		<2.5	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25

Corrected *

Date: 10-6-98

Page # 20

Order ID Number: 9808000510

Sample Number: 106096

Project Number: 19350

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Field Code: TSB-5 18-20'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Isophorone		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
2,4-dinitro-o-cresol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
n-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Anthracene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Fluorene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Pyrene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
1-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
2-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Phenol		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Surr. 2-Fluorophenol		64	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	25-121
Surr. Phenol-d6		66	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	24-113
Surr. Nitrobenzene-d5		65	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	23-120
Surr. 2-Fluorobiphenyl		70	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	30-115
Surr. 2,4,6-Tribromophenol		59	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	19-122
Surr. Terphenyl-d14		79	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	28-137

* Corrected - Added Phenol result.

Project Number: 19350
 Project Name: Shell Grimes
 Project Location: Grimes Battery, Hobbs, NM

Date: 10-6-98
 Page # 21
 Order ID Number: 9808000510
 Sample Number: 106096

Field Code: TSB-5 18-20'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
Chlordane		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
DDT		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
Endrin		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	9/8/98	9/9/98	RC	4910	5262	0.1
Arsenic		3.3	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Barium		45	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Cadmium		0.18	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.10
Chromium		2.2	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Lead		1.1	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Total Mercury		<0.1	mg/Kg	S 7471	8/27/98	8/28/98	MS	4804	5149	0.1
Selenium		0.6	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Silver		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	2.0
Copper		5.3	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	1.0
Iron		1,200	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5040	5373	10
Manganese		21	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	1.0
Zinc		4.1	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	2.0
Aluminum		2,000	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5040	5373	10
Boron		<10	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	10
Cobalt		4.1	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Molybdenum		1.7	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	1.0
Nickel		4.1	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Cyanide		<0.01	mg/Kg	SM 4500 C,E		9/1/98	SA		5186	0.01
Fluoride		3.8	mg/Kg	E 300.0		9/19/98	JS		5422	0.2
Nitrate		1.7	mg/Kg	E 300.0		9/19/98	JS		5422	0.2
Chloride		110	mg/Kg	E 300.0		9/19/98	JS		5422	5.0
Sulfate		290	mg/Kg	E 300.0		9/19/98	JS		5422	5.0
TDS		710	mg/Kg	E 160.1		9/18/98	RS		5400	---
pH		8.5	s.u.	E 150.1		8/27/98	SA		5134	---
TRPHC		102	mg/Kg	S 418.1	8/27/98	8/29/98	SR	4809	5160	10
Total Phenols		<0.25	mg/Kg	SM 5530 A,D		9/16/98	RC	5356	0.01	0.25
Total Radium		6.17	pCi/gm	E 901.1M		9/4/98	DS	---	---	---



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ARS Tracking Number: ARS-98-0872

P.O. Number:

Client I.D.: Sample No. 106096

ARS Sample I.D.: ARS-98-3183

Date Sampled: 8/24/98

Date Received: 8/27/98

Time Sampled: N/A

Time Received: 1051

Type of Sample: Soil

Date of Report: 9/15/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	1.97	1.85	pCi/gm	0.073	0.068	Bq/gm	EPA 901.1M	9/4/98 1435	KH
Ra-228	<0.19	N/A	pCi/gm	<0.007	N/A	Bq/gm	EPA 901.1M	9/4/98 1435	KH
Pb-210	2.42	2.06	pCi/gm	0.090	0.076	Bq/gm	EPA 901.1M	9/4/98 1435	KH
Total Activity	6.17	N/A	pCi/gm	0.228	N/A	Bq/gm	EPA 901.1M	9/4/98 1435	KH

Notes:

Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-6-98
Page # 18

Project Number: 19350
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000488
Sample Number: 106034

Field Code: TSB-6 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<305	ug/Kg	S-8260B		9/3/98	AG		5206	305
Acrylonitrile		<305	ug/Kg	S-8260B		9/3/98	AG		5206	305
Benzene		<61	ug/Kg	S-8260B		9/3/98	AG		5206	61
Carbon tetrachloride		<61	ug/Kg	S-8260B		9/3/98	AG		5206	61
Chlorobenzene		<61	ug/Kg	S-8260B		9/3/98	AG		5206	61
1,2-dichloroethane		<61	ug/Kg	S-8260B		9/3/98	AG		5206	61
1,1,2,2-tetrachloroethane		<61	ug/Kg	S-8260B		9/3/98	AG		5206	61
1,1,1-trichloroethane		<61	ug/Kg	S-8260B		9/3/98	AG		5206	61
1,1,2-trichloroethane		<61	ug/Kg	S-8260B		9/3/98	AG		5206	61
1,1,2-trichloroethylene		<61	ug/Kg	S-8260B		9/3/98	AG		5206	61
Chloroform		<61	ug/Kg	S-8260B		9/3/98	AG		5206	61
Dichlorobenzene		<122	ug/Kg	S-8260B		9/3/98	AG		5206	122
1,1-dichloroethylene		<61	ug/Kg	S-8260B		9/3/98	AG		5206	61
Dichloropropenes		<61	ug/Kg	S-8260B		9/3/98	AG		5206	61
Ethylbenzene		<61	ug/Kg	S-8260B		9/3/98	AG		5206	61
Bromodichloromethane		<61	ug/Kg	S-8260B		9/3/98	AG		5206	61
Bromomethane		<305	ug/Kg	S-8260B		9/3/98	AG		5206	305
Chloromethane		<61	ug/Kg	S-8260B		9/3/98	AG		5206	61
Dichlorodifluoromethane		<61	ug/Kg	S-8260B		9/3/98	AG		5206	61
Dichloromethane		<61	ug/Kg	S-8260B		9/3/98	AG		5206	61
Trichlorofluoromethane		<61	ug/Kg	S-8260B		9/3/98	AG		5206	61
Tetrachloroethylene		<61	ug/Kg	S-8260B		9/3/98	AG		5206	61
Toluene		<61	ug/Kg	S-8260B		9/3/98	AG		5206	61
Trichloroethylene		<61	ug/Kg	S-8260B		9/3/98	AG		5206	61
Vinyl chloride		<61	ug/Kg	S-8260B		9/3/98	AG		5206	61
m,p-xylene		<61	ug/Kg	S-8260B		9/3/98	AG		5206	61
o-xylene		<61	ug/Kg	S-8260B		9/3/98	AG		5206	61
1,1-dichloroethane		<61	ug/Kg	S-8260B		9/3/98	AG		5206	61
Ethylene dibromide		<61	ug/Kg	S-8260B		9/3/98	AG		5206	61
cis-1,2-dichloroethylene		<61	ug/Kg	S-8260B		9/3/98	AG		5206	61
trans-1,2-dichloroethylene		<61	ug/Kg	S-8260B		9/3/98	AG		5206	61
Methylene chloride		<305	ug/Kg	S-8260B		9/3/98	AG		5206	305
Surr. Dibromofluoromethane		108	%	S-8260B		9/3/98	AG		5206	72-130
Surr. Toluene-d8		91	%	S-8260B		9/3/98	AG		5206	77-127
Surr. 4-Bromofluorobenzene		95	%	S-8260B		9/3/98	AG		5206	72-131
Benzidine		<125	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	125
Hexachlorobenzene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Pentachlorobenzene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
1,2,4,5-tetrachlorobenzene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5

Corrected *

Date: 10-6-98

Page # 19

Project Number: 19350

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000488

Sample Number: 106034

Field Code: TSB-6 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
2,4-dichlorophenol		<62.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	62.5
2,4,5-trichlorophenol		<62.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	62.5
2,4,6-trichlorophenol		<62.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	62.5
bis (2-chloroethyl) ether		<62.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	62.5
bis (2-chloroisopropyl) ether		<62.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	62.5
bis (chloromethyl) ether		<62.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	62.5
3,3-dichlorobenzidine		<62.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	62.5
2,4-dinitrotoluene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Diphenylhydrazine		<62.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	62.5
Hexachlorobutadiene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Hexachlorocyclopentadiene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Isophorone		<62.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	62.5
Nitrobenzene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
2,4-dinitro-o-cresol		<62.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	62.5
2,4-dinitrophenols		<62.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	62.5
n-nitrosodiethylamine		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
N-nitrosodimethylamine		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
N-nitrosodibutylamine		<62.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	62.5
N-nitrosodiphenylamine		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
N-nitrosopyrrolidine		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Pentachlorophenol		<62.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	62.5
Dibutyl phthalate		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
di-2-ethylhexyl phthalate		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Diethyl phthalate		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Dimethyl phthalate		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Anthracene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
3,4-benzofluoranthene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Benzo(k)fluoranthene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Fluoranthene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Fluorene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Phenanthrene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Pyrene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Naphthalene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
1-methylnaphthalene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
2-methylnaphthalene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Benzo-a-pyrene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Phenol		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Surr. 2-Fluorophenol		65	%	S-8270C	9/8/98	9/18/98	JG	4916	5412	25-121
Surr. Phenol-d6		64	%	S-8270C	9/8/98	9/18/98	JG	4916	5412	24-113
Surr. Nitroobenzene-d5		84	%	S-8270C	9/8/98	9/18/98	JG	4916	5412	23-120
Surr. 2-Fluorobiphenyl		81	%	S-8270C	9/8/98	9/18/98	JG	4916	5412	30-115
Surr. 2,4,6-Tribromophenol		39	%	S-8270C	9/8/98	9/18/98	JG	4916	5412	19-122
Surr. Terphenyl-d14		115	%	S-8270C	9/8/98	9/18/98	JG	4916	5412	28-137

Corrected - Added Phenol result.

Date: 10-6-98

Page # 20

Project Number: 19350
 Project Name: Shell Grimes
 Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000488
 Sample Number: 106034

Field Code: TSB-6 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8270C	8/29/98	9/22/98	KC	---	---	50
Chlordane		<50	ug/Kg	S-8270C	8/29/98	9/22/98	KC	---	---	50
DDT		<50	ug/Kg	S-8270C	8/29/98	9/22/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S-8270C	8/29/98	9/22/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S-8270C	8/29/98	9/22/98	KC	---	---	50
Endrin		<50	ug/Kg	S-8270C	8/29/98	9/22/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S-8270C	8/29/98	9/22/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	8/26/98	8/26/98	RC	4796	5112	0.1
Arsenic		<0.50	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Barium		970	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Cadmium		0.52	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.10
Chromium		244	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Lead		92	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Total Mercury		<0.10	mg/Kg	S 7471A	8/27/98	8/28/98	MS	4804	5149	0.10
Selenium		<0.50	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Silver		<0.50	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	2.0
Copper		5.9	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	1.0
Iron		12,000	mg/Kg	S 6010B	9/11/98	9/17/98	RR	4922	5373	10
Manganese		79	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	1.0
Zinc		350	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	2.0
Aluminum		4,300	mg/Kg	S 6010B	9/11/98	9/17/98	RR	4922	5373	10
Boron		26	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	10
Cobalt		11	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Molybdenum		2.9	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	1.0
Nickel		<0.01	mg/Kg	S 6010B	9/11/98	9/15/98	SA	4922	5340	0.01
Cyanide		<0.25	mg/Kg	4500 CN,CE		8/27/98	RC		5128	0.25
Fluoride		5	mg/Kg	E 300.0		9/19/98	JS		5419	0.2
Nitrate		1.8	mg/Kg	E 300.0		9/19/98	JS		5419	0.2
Chloride		34	mg/Kg	E 300.0		9/19/98	JS		5419	1.0
Sulfate		82	mg/Kg	E 300.0		9/19/98	JS		5419	1.0
TDS		420	mg/Kg	E 160.1		9/17/98	RS		5371	---
pH		8.4	s.u.	E 150.1		8/26/98	SA		5113	---
TRPHC		86.8	mg/Kg	S 418.1	8/27/98	8/30/98	SR	4810	5168	10.0
Total Phenols		<0.25	mg/Kg	3M 5530 A,D		8/26/98	RC		5114	0.25
Total Radium		3.01	pCi/gm	E 901.1M			DS	---	---	---



1726 Wooddale Court • Baton Rouge, Louisiana 70806

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ARS Tracking Number: ARS-98-0872 P.O. Number:
 Client I.D.: Sample No. 106034 ARS Sample I.D.: ARS-98-3173
 Date Sampled: 8/21/98 Date Received: 8/27/98
 Time Sampled: N/A Time Received: 1051
 Type of Sample: Soil Date of Report: 9/8/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	1.61	1.39	pCi/gm	0.060	0.051	Bq/gm	EPA 901.1M	9/4/98 0827	KH
Ra-228	<0.15	N/A	pCi/gm	<0.006	N/A	Bq/gm	EPA 901.1M	9/4/98 0827	KH
Pb-210	<0.81	N/A	pCi/gm	<0.030	N/A	Bq/gm	EPA 901.1M	9/4/98 0827	KH
Total Activity	3.01	N/A	pCi/gm	0.111	N/A	Bq/gm	EPA 901.1M	9/4/98 0827	KH

Notes:

Cod Cogn
 Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-6-98
Page # 21

Project Number: 19350
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000488
Sample Number: 106035

Field Code: TSB-6 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<340	ug/Kg	S-8260B		9/3/98	AG		5206	340
Acrylonitrile		<340	ug/Kg	S-8260B		9/3/98	AG		5206	340
Benzene		<68	ug/Kg	S-8260B		9/3/98	AG		5206	68
Carbon tetrachloride		<68	ug/Kg	S-8260B		9/3/98	AG		5206	68
Chlorobenzene		<68	ug/Kg	S-8260B		9/3/98	AG		5206	68
1,2-dichloroethane		<68	ug/Kg	S-8260B		9/3/98	AG		5206	68
1,1,2,2-tetrachloroethane		<68	ug/Kg	S-8260B		9/3/98	AG		5206	68
1,1,1-trichloroethane		<68	ug/Kg	S-8260B		9/3/98	AG		5206	68
1,1,2-trichloroethane		<68	ug/Kg	S-8260B		9/3/98	AG		5206	68
1,1,2-trichloroethylene		<68	ug/Kg	S-8260B		9/3/98	AG		5206	68
Chloroform		<68	ug/Kg	S-8260B		9/3/98	AG		5206	68
Dichlorobenzene		<136	ug/Kg	S-8260B		9/3/98	AG		5206	136
1,1-dichloroethylene		<68	ug/Kg	S-8260B		9/3/98	AG		5206	68
Dichloropropenes		<68	ug/Kg	S-8260B		9/3/98	AG		5206	68
Ethylbenzene		<68	ug/Kg	S-8260B		9/3/98	AG		5206	68
Bromodichloromethane		<68	ug/Kg	S-8260B		9/3/98	AG		5206	68
Bromomethane		<340	ug/Kg	S-8260B		9/3/98	AG		5206	340
Chloromethane		<68	ug/Kg	S-8260B		9/3/98	AG		5206	68
Dichlorodifluoromethane		<68	ug/Kg	S-8260B		9/3/98	AG		5206	68
Dichloromethane		<68	ug/Kg	S-8260B		9/3/98	AG		5206	68
Trichlorofluorometane		<68	ug/Kg	S-8260B		9/3/98	AG		5206	68
Tetrachloroethylene		<68	ug/Kg	S-8260B		9/3/98	AG		5206	68
Toluene		<68	ug/Kg	S-8260B		9/3/98	AG		5206	68
Trichloroethylene		<68	ug/Kg	S-8260B		9/3/98	AG		5206	68
Vinyl chloride		<68	ug/Kg	S-8260B		9/3/98	AG		5206	68
m,p-xylene		<68	ug/Kg	S-8260B		9/3/98	AG		5206	68
o-xylene		<68	ug/Kg	S-8260B		9/3/98	AG		5206	68
1,1-dichloroethane		<68	ug/Kg	S-8260B		9/3/98	AG		5206	68
Ethylene dibromide		<68	ug/Kg	S-8260B		9/3/98	AG		5206	68
cis-1,2-dichloroethylene		<68	ug/Kg	S-8260B		9/3/98	AG		5206	68
trans-1,2-dichloroethylene		<68	ug/Kg	S-8260B		9/3/98	AG		5206	68
Methylene chloride		<340	ug/Kg	S-8260B		9/3/98	AG		5206	340
Surr. Dibromofluoromethane		105	%	S-8260B		9/3/98	AG		5206	72-130
Surr. Toluene-d8		92	%	S-8260B		9/3/98	AG		5206	77-127
Surr. 4-Bromofluorobenzene		96	%	S-8260B		9/3/98	AG		5206	72-131
Benzidine		<25	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	25
Hexachlorobenzene		<2.5	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	2.5
Pentachlorobenzene		<2.5	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	2.5
1,2,4,5-tetrachlorobenzene		<2.5	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	2.5

Corrected *

Date: 10-6-98

Page # 22

Project Number: 19350

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000488

Sample Number: 106035

Field Code: TSB-6 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<2.5	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	2.5
2,4-dichlorophenol		<12.5	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	12.5
2,4,5-trichlorophenol		<12.5	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	12.5
2,4,6-trichlorophenol		<12.5	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	12.5
bis (2-chloroethyl) ether		<12.5	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	12.5
bis (2-chloroisopropyl) ether		<12.5	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	12.5
bis (chloromethyl) ether		<12.5	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	12.5
3,3-dichlorobenzidine		<12.5	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	12.5
2,4-dinitrotoluene		<2.5	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	2.5
Diphenylhydrazine		<12.5	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	12.5
Hexachlorobutadiene		<2.5	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	2.5
Hexachlorocyclopentadiene		<2.5	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	2.5
Isophorone		<12.5	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	12.5
Nitrobenzene		<2.5	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	2.5
2,4-dinitro-o-cresol		<12.5	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	12.5
2,4-dinitrophenols		<12.5	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	12.5
n-nitrosodiethylamine		<2.5	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	2.5
N-nitrosodimethylamine		<2.5	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	2.5
N-nitrosodibutylamine		<12.5	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	12.5
N-nitrosodiphenylamine		<2.5	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	2.5
N-nitrosopyrrolidine		<2.5	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	2.5
Pentachlorophenol		<12.5	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	12.5
Dibutyl phthalate		<2.5	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	2.5
di-2-ethylhexyl phthalate		<2.5	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	2.5
Diethyl phthalate		<2.5	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	2.5
Dimethyl phthalate		<2.5	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	2.5
Anthracene		<2.5	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	2.5
3,4-benzofluoranthene		<2.5	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	2.5
Benzo(k)fluoranthene		<2.5	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	2.5
Fluoranthene		<2.5	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	2.5
Fluorene		<2.5	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	2.5
Phenanthrene		<2.5	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	2.5
Pyrene		<2.5	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	2.5
Naphthalene		<2.5	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	2.5
1-methylnaphthalene		<2.5	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	2.5
2-methylnaphthalene		<2.5	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	2.5
Benzo-a-pyrene		<2.5	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	2.5
Phenol		<2.5	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	2.5
Surr. 2-Fluorophenol		61	%	S-8270C	9/8/98	9/16/98	DG	4915	5362	25-121
Surr. Phenol-d6		63	%	S-8270C	9/8/98	9/16/98	DG	4915	5362	24-113
Surr. Nitroobenzene-d5		63	%	S-8270C	9/8/98	9/16/98	DG	4915	5362	23-120
Surr. 2-Fluorobiphenyl		71	%	S-8270C	9/8/98	9/16/98	DG	4915	5362	30-115
Surr. 2,4,6-Tribromophenol		57	%	S-8270C	9/8/98	9/16/98	DG	4915	5362	19-122
Surr. Terphenyl-d14		86	%	S-8270C	9/8/98	9/16/98	DG	4915	5362	28-137

* Corrected - Added Phenol result.

Date: 10-6-98

Page # 23

Project Number: 19350
 Project Name: Shell Grimes
 Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000488
 Sample Number: 106035

Field Code: TSB-6 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8270C	8/29/98	9/22/98	KC	---	---	50
Chlordane		<50	ug/Kg	S-8270C	8/29/98	9/22/98	KC	---	---	50
DDT		<50	ug/Kg	S-8270C	8/29/98	9/22/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S-8270C	8/29/98	9/22/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S-8270C	8/29/98	9/22/98	KC	---	---	50
Endrin		<50	ug/Kg	S-8270C	8/29/98	9/22/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S-8270C	8/29/98	9/22/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	8/26/98	8/26/98	RC	4796	5112	0.1
Arsenic		<0.50	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Barium		242	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Cadmium		0.36	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.10
Chromium		4.4	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Lead		7.3	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Total Mercury		<0.10	mg/Kg	S 7471A	8/27/98	8/28/98	MS	4804	5149	0.10
Selenium		<0.50	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Silver		<0.50	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	2.0
Copper		1.8	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	1.0
Iron		3,100	mg/Kg	S 6010B	9/11/98	9/17/98	RR	4922	5373	10
Manganese		27	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	1.0
Zinc		9.7	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	2.0
Aluminum		4,900	mg/Kg	S 6010B	9/11/98	9/17/98	RR	4922	5373	10
Boron		11	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	10
Cobalt		6.1	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Molybdenum		1.8	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	1.0
Nickel		<0.01	mg/Kg	S 6010B	9/11/98	9/15/98	SA	4922	5340	0.01
Cyanide		<0.25	mg/Kg	4500 CN,CE		8/27/98	RC		5128	0.25
Fluoride		5.7	mg/Kg	E 300.0		9/19/98	JS		5419	0.2
Nitrate		1.9	mg/Kg	E 300.0		9/19/98	JS		5419	0.2
Chloride		37	mg/Kg	E 300.0		9/19/98	JS		5419	1.0
Sulfate		95	mg/Kg	E 300.0		9/19/98	JS		5419	1.0
TDS		510	mg/Kg	E 160.1		9/17/98	RS		5371	---
pH		8.4	s.u.	E 150.1		8/26/98	SA		5113	---
TRPHC		4,490	mg/Kg	S 418.1	8/27/98	8/30/98	SR	4810	5168	10.0
Total Phenols		<0.25	mg/Kg	3M 5530 A,D		8/26/98	RC		5114	0.25
Total Radium		3.09	pCi/gm	E 901.1M			DS	---	---	---



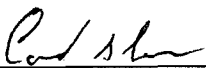
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ARS Tracking Number: ARS-98-0872 P.O. Number:
 Client I.D.: Sample No. 106035 ARS Sample I.D.: ARS-98-3174
 Date Sampled: 8/21/98 Date Received: 8/27/98
 Time Sampled: N/A Time Received: 1051
 Type of Sample: Soil Date of Report: 9/8/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	<0.96	N/A	pCi/gm	<0.036	N/A	Bq/gm	EPA 901.1M	9/3/98 1021	KH
Ra-228	0.81	0.38	pCi/gm	0.030	0.014	Bq/gm	EPA 901.1M	9/3/98 1021	KH
Pb-210	<1.07	N/A	pCi/gm	<0.040	N/A	Bq/gm	EPA 901.1M	9/3/98 1021	KH
Total Activity	3.09	N/A	pCi/gm	0.114	N/A	Bq/gm	EPA 901.1M	9/3/98 1021	KH

Notes:


 Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-6-98
Page # 15

Project Number: 19350
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000488
Sample Number: 106033

Field Code: TSB-6 18-20'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<290	ug/Kg	S-8260B		9/3/98	AG		5206	290
Acrylonitrile		<290	ug/Kg	S-8260B		9/3/98	AG		5206	290
Benzene		<58	ug/Kg	S-8260B		9/3/98	AG		5206	58
Carbon tetrachloride		<58	ug/Kg	S-8260B		9/3/98	AG		5206	58
Chlorobenzene		<58	ug/Kg	S-8260B		9/3/98	AG		5206	58
1,2-dichloroethane		<58	ug/Kg	S-8260B		9/3/98	AG		5206	58
1,1,2,2-tetrachloroethane		<58	ug/Kg	S-8260B		9/3/98	AG		5206	58
1,1,1-trichloroethane		<58	ug/Kg	S-8260B		9/3/98	AG		5206	58
1,1,2-trichloroethane		<58	ug/Kg	S-8260B		9/3/98	AG		5206	58
1,1,2-trichloroethylene		<58	ug/Kg	S-8260B		9/3/98	AG		5206	58
Chloroform		<58	ug/Kg	S-8260B		9/3/98	AG		5206	58
Dichlorobenzene		<116	ug/Kg	S-8260B		9/3/98	AG		5206	116
1,1-dichloroethylene		<58	ug/Kg	S-8260B		9/3/98	AG		5206	58
Dichloropropenes		<58	ug/Kg	S-8260B		9/3/98	AG		5206	58
Ethylbenzene		<58	ug/Kg	S-8260B		9/3/98	AG		5206	58
Bromodichloromethane		<58	ug/Kg	S-8260B		9/3/98	AG		5206	58
Bromomethane		<290	ug/Kg	S-8260B		9/3/98	AG		5206	290
Chloromethane		<58	ug/Kg	S-8260B		9/3/98	AG		5206	58
Dichlorodifluoromethane		<58	ug/Kg	S-8260B		9/3/98	AG		5206	58
Dichloromethane		<58	ug/Kg	S-8260B		9/3/98	AG		5206	58
Trichlorofluoromethane		<58	ug/Kg	S-8260B		9/3/98	AG		5206	58
Tetrachloroethylene		<58	ug/Kg	S-8260B		9/3/98	AG		5206	58
Toluene		<58	ug/Kg	S-8260B		9/3/98	AG		5206	58
Trichloroethylene		<58	ug/Kg	S-8260B		9/3/98	AG		5206	58
Vinyl chloride		<58	ug/Kg	S-8260B		9/3/98	AG		5206	58
m,p-xylene		72	ug/Kg	S-8260B		9/3/98	AG		5206	58
o-xylene		<58	ug/Kg	S-8260B		9/3/98	AG		5206	58
1,1-dichloroethane		<58	ug/Kg	S-8260B		9/3/98	AG		5206	58
Ethylene dibromide		<58	ug/Kg	S-8260B		9/3/98	AG		5206	58
cis-1,2-dichloroethylene		<58	ug/Kg	S-8260B		9/3/98	AG		5206	58
trans-1,2-dichloroethylene		<58	ug/Kg	S-8260B		9/3/98	AG		5206	58
Methylene chloride		<290	ug/Kg	S-8260B		9/3/98	AG		5206	290
Surr. Dibromofluoromethane		106	%	S-8260B		9/3/98	AG		5206	72-130
Surr. Toluene-d8		87	%	S-8260B		9/3/98	AG		5206	77-127
Surr. 4-Bromofluorobenzene		93	%	S-8260B		9/3/98	AG		5206	72-131
Benzidine		<2.5	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	0.25

Corrected *

Date: 10-6-98

Page # 16

Project Number: 19350

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000488

Sample Number: 106033

Field Code: TSB-6 18-20'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<0.25	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	0.25
Isophorone		<1.25	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	0.25
2,4-dinitro-o-cresol		<1.25	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	1.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	1.25
n-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	1.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	0.25
Anthracene		<0.25	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	0.25
Fluorene		<0.25	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	0.25
Pyrene		<0.25	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	0.25
1-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	0.25
2-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	0.25
Phenol		<0.25	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	0.25
Surr. 2-Fluorophenol		72	%	S-8270C	9/8/98	9/16/98	DG	4915	5362	25-121
Surr. Phenol-d6		80	%	S-8270C	9/8/98	9/16/98	DG	4915	5362	24-113
Surr. Nitroobenzene-d5		78	%	S-8270C	9/8/98	9/16/98	DG	4915	5362	23-120
Surr. 2-Fluorobiphenyl		82	%	S-8270C	9/8/98	9/16/98	DG	4915	5362	30-115
Surr. 2,4,6-Tribromophenol		72	%	S-8270C	9/8/98	9/16/98	DG	4915	5362	19-122
Surr. Terphenyl-d14		89	%	S-8270C	9/8/98	9/16/98	DG	4915	5362	28-137

Corrected - Added Phenol result.

Date: 10-6-98

Page # 17

Project Number: 19350
 Project Name: Shell Grimes
 Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000488
 Sample Number: 106033

Field Code: TSB-6 18-20'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8270C	8/29/98	9/22/98	KC	---	---	50
Chlordane		<50	ug/Kg	S-8270C	8/29/98	9/22/98	KC	---	---	50
DDT		<50	ug/Kg	S-8270C	8/29/98	9/22/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S-8270C	8/29/98	9/22/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S-8270C	8/29/98	9/22/98	KC	---	---	50
Endrin		<50	ug/Kg	S-8270C	8/29/98	9/22/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S-8270C	8/29/98	9/22/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	8/26/98	8/26/98	RC	4796	5112	0.1
Arsenic		1.9	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Barium		58	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Cadmium		0.39	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.10
Chromium		2.2	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Lead		1.8	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Total Mercury		<0.10	mg/Kg	S 7471A	8/27/98	8/28/98	MS	4804	5149	0.10
Selenium		1.1	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Silver		<0.50	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	2.0
Copper		3	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	1.0
Iron		1,000	mg/Kg	S 6010B	9/11/98	9/17/98	RR	4922	5373	10
Manganese		15	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	1.0
Zinc		3.5	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	2.0
Aluminum		1,500	mg/Kg	S 6010B	9/11/98	9/17/98	RR	4922	5373	10
Boron		<10	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	10
Cobalt		4.2	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Molybdenum		1.5	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	1.0
Nickel		<0.01	mg/Kg	S 6010B	9/11/98	9/15/98	SA	4922	5340	0.01
Cyanide		<0.25	mg/Kg	4500 CN,CE		8/27/98	RC		5128	0.25
Fluoride		3.1	mg/Kg	E 300.0		9/19/98	JS		5419	0.2
Nitrate		2.2	mg/Kg	E 300.0		9/19/98	JS		5419	0.2
Chloride		51	mg/Kg	E 300.0		9/19/98	JS		5419	1.0
Sulfate		170	mg/Kg	E 300.0		9/19/98	JS		5419	2.0
TDS		350	mg/Kg	E 160.1		9/17/98	RS		5371	---
pH		8.5	s.u.	E 150.1		8/26/98	SA		5113	---
TRPHC		<10.0	mg/Kg	S 418.1	8/27/98	8/30/98	SR	4810	5168	10.0
Total Phenols		2.3	mg/Kg	5M 5530 A,D		8/26/98	RC		5114	0.25
Total Radium		1.00	pCi/gm	E 901.1M		9/3/98	DS	---	---	---



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ARS Tracking Number: ARS-98-0872

P.O. Number:

Client I.D.: Sample No. 106033

ARS Sample I.D.: ARS-98-3172

Date Sampled: 8/21/98

Date Received: 8/27/98

Time Sampled: N/A

Time Received: 1051

Type of Sample: Soil

Date of Report: 9/8/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	<0.84	N/A	pCi/gm	<0.031	N/A	Bq/gm	EPA 901.1M	9/3/98 1718	KH
Ra-228	<0.13	N/A	pCi/gm	<0.005	N/A	Bq/gm	EPA 901.1M	9/3/98 1718	KH
Pb-210	<0.90	N/A	pCi/gm	<0.033	N/A	Bq/gm	EPA 901.1M	9/3/98 1718	KH
Total Activity	1.00	N/A	pCi/gm	0.037	N/A	Bq/gm	EPA 901.1M	9/3/98 1718	KH

Notes:

Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report
Corrected *

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 11-4-98
Page # 24

Project Number: 19350
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000488
Sample Number: 106036

Field Code: TSB-7 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<1160	ug/Kg	S-8260B		9/3/98	AG		5206	1160
Acrylonitrile		<1160	ug/Kg	S-8260B		9/3/98	AG		5206	1160
Benzene		<232	ug/Kg	S-8260B		9/3/98	AG		5206	232
Carbon tetrachloride		<232	ug/Kg	S-8260B		9/3/98	AG		5206	232
Chlorobenzene		<232	ug/Kg	S-8260B		9/3/98	AG		5206	232
1,2-dichloroethane		<232	ug/Kg	S-8260B		9/3/98	AG		5206	232
1,1,2,2-tetrachloroethane		<232	ug/Kg	S-8260B		9/3/98	AG		5206	232
1,1,1-trichloroethane		<232	ug/Kg	S-8260B		9/3/98	AG		5206	232
1,1,2-trichloroethane		<232	ug/Kg	S-8260B		9/3/98	AG		5206	232
1,1,2-trichloroethylene		<232	ug/Kg	S-8260B		9/3/98	AG		5206	232
Chloroform		<232	ug/Kg	S-8260B		9/3/98	AG		5206	232
Dichlorobenzene		<464	ug/Kg	S-8260B		9/3/98	AG		5206	464
1,1-dichloroethylene		<232	ug/Kg	S-8260B		9/3/98	AG		5206	232
Dichloropropenes		<232	ug/Kg	S-8260B		9/3/98	AG		5206	232
Ethylbenzene		5,700	ug/Kg	S-8260B		9/3/98	AG		5206	232
Bromodichloromethane		<232	ug/Kg	S-8260B		9/3/98	AG		5206	232
Bromomethane		<1160	ug/Kg	S-8260B		9/3/98	AG		5206	1160
Chloromethane		<232	ug/Kg	S-8260B		9/3/98	AG		5206	232
Dichlorodifluoromethane		<232	ug/Kg	S-8260B		9/3/98	AG		5206	232
Dichloromethane		<232	ug/Kg	S-8260B		9/3/98	AG		5206	232
Trichlorofluoromethane		<232	ug/Kg	S-8260B		9/3/98	AG		5206	232
Tetrachloroethylene		<232	ug/Kg	S-8260B		9/3/98	AG		5206	232
Toluene		<232	ug/Kg	S-8260B		9/3/98	AG		5206	232
Trichloroethylene		<232	ug/Kg	S-8260B		9/3/98	AG		5206	232
Vinyl chloride		<232	ug/Kg	S-8260B		9/3/98	AG		5206	232
m,p-xylene		15,000	ug/Kg	S-8260B		9/3/98	AG		5206	232
o-xylene		660	ug/Kg	S-8260B		9/3/98	AG		5206	232
1,1-dichloroethane		<232	ug/Kg	S-8260B		9/3/98	AG		5206	232
Ethylene dibromide		<232	ug/Kg	S-8260B		9/3/98	AG		5206	232
cis-1,2-dichloroethylene		<232	ug/Kg	S-8260B		9/3/98	AG		5206	232
trans-1,2-dichloroethylene		<232	ug/Kg	S-8260B		9/3/98	AG		5206	232
Methylene chloride		<1160	ug/Kg	S-8260B		9/3/98	AG		5206	1160
Surr. Dibromofluoromethane		110	%	S-8260B		9/3/98	AG		5206	
Surr. Toluene-d8		98	%	S-8260B		9/3/98	AG		5206	
Surr. 4-Bromofluorobenzene		108	%	S-8260B		9/3/98	AG		5206	
Benzidine		<50	mg/Kg	S-8270C	9/8/98	9/22/98	JG	4911	5502	50
Hexachlorobenzene		<5	mg/Kg	S-8270C	9/8/98	9/22/98	JG	4911	5502	5
Pentachlorobenzene		<5	mg/Kg	S-8270C	9/8/98	9/22/98	JG	4911	5502	5
1,2,4,5-tetrachlorobenzene		<5	mg/Kg	S-8270C	9/8/98	9/22/98	JG	4911	5502	5

Corrected benzidine misidentification to <50 mg/kg.

Corrected *

Date: 10-6-98

Page # 25

Project Number: 19350

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000488

Sample Number: 106036

Field Code: TSB-7 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<5	mg/Kg	S-8270C	9/8/98	9/22/98	JG	4911	5502	5
2,4-dichlorophenol		<25	mg/Kg	S-8270C	9/8/98	9/22/98	JG	4911	5502	25
2,4,5-trichlorophenol		<25	mg/Kg	S-8270C	9/8/98	9/22/98	JG	4911	5502	25
2,4,6-trichlorophenol		<25	mg/Kg	S-8270C	9/8/98	9/22/98	JG	4911	5502	25
bis (2-chloroethyl) ether		<25	mg/Kg	S-8270C	9/8/98	9/22/98	JG	4911	5502	25
bis (2-chloroisopropyl) ether		<25	mg/Kg	S-8270C	9/8/98	9/22/98	JG	4911	5502	25
bis (chloromethyl) ether		<25	mg/Kg	S-8270C	9/8/98	9/22/98	JG	4911	5502	25
3,3-dichlorobenzidine		<25	mg/Kg	S-8270C	9/8/98	9/22/98	JG	4911	5502	25
2,4-dinitrotoluene		<5	mg/Kg	S-8270C	9/8/98	9/22/98	JG	4911	5502	5
Diphenylhydrazine		<25	mg/Kg	S-8270C	9/8/98	9/22/98	JG	4911	5502	25
Hexachlorobutadiene		<5	mg/Kg	S-8270C	9/8/98	9/22/98	JG	4911	5502	5
Hexachlorocyclopentadiene		<5	mg/Kg	S-8270C	9/8/98	9/22/98	JG	4911	5502	5
Isophorone		<25	mg/Kg	S-8270C	9/8/98	9/22/98	JG	4911	5502	25
Nitrobenzene		<5	mg/Kg	S-8270C	9/8/98	9/22/98	JG	4911	5502	5
2,4-dinitro-o-cresol		<25	mg/Kg	S-8270C	9/8/98	9/22/98	JG	4911	5502	25
2,4-dinitrophenols		<25	mg/Kg	S-8270C	9/8/98	9/22/98	JG	4911	5502	25
n-nitrosodiethylamine		<5	mg/Kg	S-8270C	9/8/98	9/22/98	JG	4911	5502	5
N-nitrosodimethylamine		<5	mg/Kg	S-8270C	9/8/98	9/22/98	JG	4911	5502	5
N-nitrosodibutylamine		<25	mg/Kg	S-8270C	9/8/98	9/22/98	JG	4911	5502	25
N-nitrosodiphenylamine		<5	mg/Kg	S-8270C	9/8/98	9/22/98	JG	4911	5502	5
N-nitrosopyrrolidine		<5	mg/Kg	S-8270C	9/8/98	9/22/98	JG	4911	5502	5
Pentachlorophenol		<25	mg/Kg	S-8270C	9/8/98	9/22/98	JG	4911	5502	25
Dibutyl phthalate		<5	mg/Kg	S-8270C	9/8/98	9/22/98	JG	4911	5502	5
di-2-ethylhexyl phthalate		<5	mg/Kg	S-8270C	9/8/98	9/22/98	JG	4911	5502	5
Diethyl phthalate		<5	mg/Kg	S-8270C	9/8/98	9/22/98	JG	4911	5502	5
Dimethyl phthalate		<5	mg/Kg	S-8270C	9/8/98	9/22/98	JG	4911	5502	5
Anthracene		<5	mg/Kg	S-8270C	9/8/98	9/22/98	JG	4911	5502	5
3,4-benzofluoranthene		<5	mg/Kg	S-8270C	9/8/98	9/22/98	JG	4911	5502	5
Benzo(k)fluoranthene		<5	mg/Kg	S-8270C	9/8/98	9/22/98	JG	4911	5502	5
Fluoranthene		<5	mg/Kg	S-8270C	9/8/98	9/22/98	JG	4911	5502	5
Fluorene		<5	mg/Kg	S-8270C	9/8/98	9/22/98	JG	4911	5502	5
Phenanthrene		<5	mg/Kg	S-8270C	9/8/98	9/22/98	JG	4911	5502	5
Pyrene		<2.5	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	2.5
Naphthalene		<2.5	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	2.5
1-methylnaphthalene		<2.5	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	2.5
2-methylnaphthalene		<2.5	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	2.5
Benzo-a-pyrene		<2.5	mg/Kg	S-8270C	9/8/98	9/16/98	DG	4915	5362	2.5
Phenol		<2.5	mg/Kg	S 8270C	9/8/98	9/16/98	DG	4915	5362	2.5
Surr. 2-Fluorophenol	LSR	7.4	%	S 8270C	9/8/98	9/22/98	JG	4911	5502	25-121
Surr. Phenol-d6	LSR	8.2	%	S 8270C	9/8/98	9/22/98	JG	4911	5502	24-113
Surr. Nitrobenzene-d5	LSR	7.6	%	S 8270C	9/8/98	9/22/98	JG	4911	5502	23-120
Surr. 2-Fluorobiphenyl	LSR	14	%	S 8270C	9/8/98	9/22/98	JG	4911	5502	30-115
Surr. 2,4,6-Tribromophenol	LSR	7.4	%	S 8270C	9/8/98	9/22/98	JG	4911	5502	19-122
Surr. Terphenyl-d14	LSR	19	%	S 8270C	9/8/98	9/22/98	JG	4911	5502	28-137

Corrected - Added Phenol result.

Date: 10-6-98

Page # 26

Project Number: 19350
 Project Name: Shell Grimes
 Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000488
 Sample Number: 106036

Field Code: TSB-7 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	8/29/98	9/22/98	KC	---	---	50
Chlordane		<50	ug/Kg	S-8080	8/29/98	9/22/98	KC	---	---	50
DDT		<50	ug/Kg	S-8080	8/29/98	9/22/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S-8080	8/29/98	9/22/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S-8080	8/29/98	9/22/98	KC	---	---	50
Endrin		<50	ug/Kg	S-8080	8/29/98	9/22/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S-8080	8/29/98	9/22/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	8/26/98	8/26/98	RC	4796	5112	0.1
Arsenic		2.2	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Barium		194	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Cadmium		0.3	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.10
Chromium		3.7	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Lead		1.7	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Total Mercury		<0.10	mg/Kg	S 7471A	8/27/98	8/28/98	MS	4804	5149	0.10
Selenium		<0.01	mg/Kg	S 6010B	9/11/98	9/15/98	SA	4922	5340	0.01
Silver		<0.50	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	2.0
Copper		1.7	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	1.0
Iron		2,600	mg/Kg	S 6010B	9/11/98	9/17/98	RR	4922	5373	10
Manganese		24	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	1.0
Zinc		6.4	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	2.0
Aluminum		4,200	mg/Kg	S 6010B	9/11/98	9/17/98	RR	4922	5373	10
Boron		15	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	10
Cobalt		6.2	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Molybdenum		1.6	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	1.0
Nickel		6.5	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Cyanide		<0.25	mg/Kg	4500 CN,CE		8/27/98	RC		5128	0.25
Fluoride		1.1	mg/Kg	E 300.0		9/19/98	JS		5419	0.2
Nitrate		2.3	mg/Kg	E 300.0		9/19/98	JS		5419	0.2
Chloride		320	mg/Kg	E 300.0		9/19/98	JS		5419	5.0
Sulfate		140	mg/Kg	E 300.0		9/19/98	JS		5419	2.0
TDS		1,000	mg/Kg			9/17/98	RS		5371	---
pH		9.3	s.u.	E 150.1						
TRPHC		20,000	mg/Kg	S 418.1	8/27/98	8/30/98	SR	4810	5168	10.0
Total Phenols		4.8	mg/Kg	3M 5530 A,D		8/26/98	RC		5114	0.25
Total Radium		11.06	pCi/gm	E 901.1M			DS	---	---	---

LSR Low surrogate recovery due to matrix.

ARS Tracking Number:	ARS-98-0872	P.O. Number:	
Client I.D.:	Sample No. 106036	ARS Sample I.D.:	ARS-98-3175
Date Sampled:	8/21/98	Date Received:	8/27/98
Time Sampled:	N/A	Time Received:	1051
Type of Sample:	Soil	Date of Report:	9/8/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	<1.07	N/A	pCi/gm	<0.040	N/A	Bq/gm	EPA 901.1M	9/4/98 1001	KH
Ra-228	<0.17	N/A	pCi/gm	<0.006	N/A	Bq/gm	EPA 901.1M	9/4/98 1001	KH
Pb-210	2.52	2.01	pCi/gm	0.093	0.074	Bq/gm	EPA 901.1M	9/4/98 1001	KH
Total Activity	11.06	N/A	pCi/gm	0.409	N/A	Bq/gm	EPA 901.1M	9/4/98 1001	KH

Notes:


 Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report
Corrected *

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 11-4-98
Page # 27

Project Number: 19350
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000488
Sample Number: 106037

Field Code: TSB-7 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<1260	ug/Kg	S-8260B		9/3/98	AG		5206	1260
Acrylonitrile		<1260	ug/Kg	S-8260B		9/3/98	AG		5206	1260
Benzene		<252	ug/Kg	S-8260B		9/3/98	AG		5206	252
Carbon tetrachloride		<252	ug/Kg	S-8260B		9/3/98	AG		5206	252
Chlorobenzene		<252	ug/Kg	S-8260B		9/3/98	AG		5206	252
1,2-dichloroethane		<252	ug/Kg	S-8260B		9/3/98	AG		5206	252
1,1,2,2-tetrachloroethane		<252	ug/Kg	S-8260B		9/3/98	AG		5206	252
1,1,1-trichloroethane		<252	ug/Kg	S-8260B		9/3/98	AG		5206	252
1,1,2-trichloroethane		<252	ug/Kg	S-8260B		9/3/98	AG		5206	252
1,1,2-trichloroethylene		<252	ug/Kg	S-8260B		9/3/98	AG		5206	252
Chloroform		<252	ug/Kg	S-8260B		9/3/98	AG		5206	252
Dichlorobenzene		<504	ug/Kg	S-8260B		9/3/98	AG		5206	504
1,1-dichloroethylene		<252	ug/Kg	S-8260B		9/3/98	AG		5206	252
Dichloropropenes		<252	ug/Kg	S-8260B		9/3/98	AG		5206	252
Ethylbenzene		9,900	ug/Kg	S-8260B		9/3/98	AG		5206	252
Bromodichloromethane		<252	ug/Kg	S-8260B		9/3/98	AG		5206	252
Bromomethane		<1260	ug/Kg	S-8260B		9/3/98	AG		5206	1260
Chloromethane		<252	ug/Kg	S-8260B		9/3/98	AG		5206	252
Dichlorodifluoromethane		<252	ug/Kg	S-8260B		9/3/98	AG		5206	252
Dichloromethane		<252	ug/Kg	S-8260B		9/3/98	AG		5206	252
Trichlorofluorometane		<252	ug/Kg	S-8260B		9/3/98	AG		5206	252
Tetrachloroethylene		<252	ug/Kg	S-8260B		9/3/98	AG		5206	252
Toluene		<252	ug/Kg	S-8260B		9/3/98	AG		5206	252
Trichloroethylene		<252	ug/Kg	S-8260B		9/3/98	AG		5206	252
Vinyl chloride		<252	ug/Kg	S-8260B		9/3/98	AG		5206	252
m,p-xylene		41,000	ug/Kg	S-8260B		9/3/98	AG		5206	252
o-xylene		<252	ug/Kg	S-8260B		9/3/98	AG		5206	252
1,1-dichloroethane		<252	ug/Kg	S-8260B		9/3/98	AG		5206	252
Ethylene dibromide		<252	ug/Kg	S-8260B		9/3/98	AG		5206	252
cis-1,2-dichloroethylene		<252	ug/Kg	S-8260B		9/3/98	AG		5206	252
trans-1,2-dichloroethylene		<252	ug/Kg	S-8260B		9/3/98	AG		5206	252
Methylene chloride		<1260	ug/Kg	S-8260B		9/3/98	AG		5206	1260
Surr. Dibromofluoromethane		112	%	S-8260B		9/3/98	AG		5206	86-118
Surr. Toluene-d8		105	%	S-8260B		9/3/98	AG		5206	88-110
Surr. 4-Bromofluorobenzene		114	%	S-8260B		9/3/98	AG		5206	86-115
Benzidine		<50	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Hexachlorobenzene		<5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	5
Pentachlorobenzene		<5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	5
1,2,4,5-tetrachlorobenzene		<5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	5

Corrected benzidine misidentification to <50 mg/kg.

Corrected *

Date: 10-6-98

Page # 28

Project Number: 19350

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000488

Sample Number: 106037

Field Code: TSB-7 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	5
2,4-dichlorophenol		<6.25	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	6.25
2,4,5-trichlorophenol		<6.25	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	6.25
2,4,6-trichlorophenol		<6.25	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	6.25
bis (2-chloroethyl) ether		<6.25	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	6.25
bis (2-chloroisopropyl) ether		<6.25	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	6.25
bis (chloromethyl) ether		<6.25	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	6.25
3,3-dichlorobenzidine		<6.25	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	6.25
2,4-dinitrotoluene		<5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	5
Diphenylhydrazine		<6.25	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	6.25
Hexachlorobutadiene		<5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	5
Hexachlorocyclopentadiene		<5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	5
Isophorone		<6.25	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	6.25
Nitrobenzene		<5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	5
2,4-dinitro-o-cresol		<6.25	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	6.25
2,4-dinitrophenols		<6.25	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	6.25
n-nitrosodiethylamine		<5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	5
N-nitrosodimethylamine		<5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	5
N-nitrosodibutylamine		<6.25	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	6.25
N-nitrosodiphenylamine		<5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	5
N-nitrosopyrrolidine		<5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	5
Pentachlorophenol		<6.25	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	6.25
Dibutyl phthalate		<5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	5
di-2-ethylhexyl phthalate		<5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	5
Diethyl phthalate		<5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	5
Dimethyl phthalate		<5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	5
Anthracene		<5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	5
3,4-benzofluoranthene		<5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	5
Benzo(k)fluoranthene		<5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	5
Fluoranthene		<5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	5
Fluorene		<5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	5
Phenanthrene		<5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	5
Pyrene		<5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	5
Naphthalene		<5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	5
1-methylnaphthalene		<5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	5
2-methylnaphthalene		<5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	5
Benzo-a-pyrene		<5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	5
Phenol		<5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	5
Surr. 2-Fluorophenol		53	%	S-8270C	9/8/98	9/18/98	JG	4916	5412	25-121
Surr. Phenol-d6		61	%	S-8270C	9/8/98	9/18/98	JG	4916	5412	24-113
Surr. Nitroobenzene-d5		72	%	S-8270C	9/8/98	9/18/98	JG	4916	5412	23-120
Surr. 2-Fluorobiphenyl		77	%	S-8270C	9/8/98	9/18/98	JG	4916	5412	30-115
Surr. 2,4,6-Tribromophenol		42	%	S-8270C	9/8/98	9/18/98	JG	4916	5412	19-122
Surr. Terphenyl-d14		99	%	S-8270C	9/8/98	9/18/98	JG	4916	5412	28-137

Corrected - Added Phenol result.

Date: 10-6-98

Page # 29

Order ID Number: 9808000488

Sample Number: 106037

Project Number: 19350

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Field Code: TSB-7 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S 8080	8/29/98	9/22/98	KC	---	---	50
Chlordane		<50	ug/Kg	S 8080	8/29/98	9/22/98	KC	---	---	50
DDT		<50	ug/Kg	S 8080	8/29/98	9/22/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S 8080	8/29/98	9/22/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S 8080	8/29/98	9/22/98	KC	---	---	50
Endrin		<50	ug/Kg	S 8080	8/29/98	9/22/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S 8080	8/29/98	9/22/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	8/26/98	8/26/98	RC	4796	5112	0.1
Arsenic		2	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Barium		600	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Cadmium		0.35	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.10
Chromium		2.8	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Lead		1.8	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Total Mercury		<0.10	mg/Kg	S 7471A	8/27/98	8/28/98	MS	4804	5149	0.10
Selenium		<0.50	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Silver		<0.50	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	2.0
Copper		3.4	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	1.0
Iron		1,600	mg/Kg	S 6010B	9/11/98	9/17/98	RR	4922	5373	10
Manganese		16	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	1.0
Zinc		4.5	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	2.0
Aluminum		3,200	mg/Kg	S 6010B	9/11/98	9/17/98	RR	4922	5373	10
Boron		13	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	10
Cobalt		5.6	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Molybdenum		2.1	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	1.0
Nickel		<0.01	mg/Kg	S 6010B	9/11/98	9/15/98	SA	4922	5340	0.01
Cyanide		<0.25	mg/Kg	4500 CN,CE		8/27/98	RC		5128	0.25
Fluoride		8.5	mg/Kg	E 300.0		9/19/98	JS		5420	0.2
Nitrate		<0.2	mg/Kg	E 300.0		9/19/98	JS		5420	0.2
Chloride		760	mg/Kg	E 300.0		9/19/98	JS		5420	2.0
Sulfate		74	mg/Kg	E 300.0		9/19/98	JS		5420	10.0
TDS		2,100	mg/Kg			9/17/98	RS		5371	---
pH		9.1	s.u.	E 150.1		8/26/98	SA		5113	---
TRPHC		22,900	mg/Kg	S 418.1	8/27/98	8/30/98	SR	4810	5168	10.0
Total Phenols		4.3	mg/Kg	M 5530 A,D		8/26/98	RC		5114	0.25
Total Radium		1.01	pCi/gm	E 901.1M			DS	---	---	---



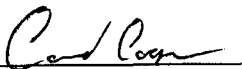
1726 Wooddale Court • Baton Rouge, Louisiana 70806

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ARS Tracking Number: ARS-98-0872 P.O. Number:
Client I.D.: Sample No. 106037 ARS Sample I.D.: ARS-98-3176
Date Sampled: 8/21/98 Date Received: 8/27/98
Time Sampled: N/A Time Received: 1051
Type of Sample: Soil Date of Report: 9/8/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	<0.85	N/A	pCi/gm	<0.031	N/A	Bq/gm	EPA 901.1M	9/3/98 1052	KH
Ra-228	<0.12	N/A	pCi/gm	<0.004	N/A	Bq/gm	EPA 901.1M	9/3/98 1052	KH
Pb-210	<0.91	N/A	pCi/gm	<0.034	N/A	Bq/gm	EPA 901.1M	9/3/98 1052	KH
Total Activity	1.01	N/A	pCi/gm	0.037	N/A	Bq/gm	EPA 901.1M	9/3/98 1052	KH

Notes:


Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report
Corrected *

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 11-4-98
Page # 30

Project Number: 19350
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000488
Sample Number: 106038

Field Code: TSB-7 8-10'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<390	ug/Kg	S-8260B		9/3/98	AG		5206	390
Acrylonitrile		<390	ug/Kg	S-8260B		9/3/98	AG		5206	390
Benzene		<78	ug/Kg	S-8260B		9/3/98	AG		5206	78
Carbon tetrachloride		<78	ug/Kg	S-8260B		9/3/98	AG		5206	78
Chlorobenzene		<78	ug/Kg	S-8260B		9/3/98	AG		5206	78
1,2-dichloroethane		<78	ug/Kg	S-8260B		9/3/98	AG		5206	78
1,1,2,2-tetrachloroethane		<78	ug/Kg	S-8260B		9/3/98	AG		5206	78
1,1,1-trichloroethane		<78	ug/Kg	S-8260B		9/3/98	AG		5206	78
1,1,2-trichloroethane		<78	ug/Kg	S-8260B		9/3/98	AG		5206	78
1,1,2-trichloroethylene		<78	ug/Kg	S-8260B		9/3/98	AG		5206	78
Chloroform		<78	ug/Kg	S-8260B		9/3/98	AG		5206	78
Dichlorobenzene		<156	ug/Kg	S-8260B		9/3/98	AG		5206	156
1,1-dichloroethylene		<78	ug/Kg	S-8260B		9/3/98	AG		5206	78
Dichloropropenes		<78	ug/Kg	S-8260B		9/3/98	AG		5206	78
Ethylbenzene		<78	ug/Kg	S-8260B		9/3/98	AG		5206	78
Bromodichloromethane		<78	ug/Kg	S-8260B		9/3/98	AG		5206	78
Bromomethane		<390	ug/Kg	S-8260B		9/3/98	AG		5206	390
Chloromethane		<78	ug/Kg	S-8260B		9/3/98	AG		5206	78
Dichlorodifluoromethane		<78	ug/Kg	S-8260B		9/3/98	AG		5206	78
Dichloromethane		<78	ug/Kg	S-8260B		9/3/98	AG		5206	78
Trichlorofluorometane		<78	ug/Kg	S-8260B		9/3/98	AG		5206	78
Tetrachloroethylene		<78	ug/Kg	S-8260B		9/3/98	AG		5206	78
Toluene		<78	ug/Kg	S-8260B		9/3/98	AG		5206	78
Trichloroethylene		<78	ug/Kg	S-8260B		9/3/98	AG		5206	78
Vinyl chloride		<78	ug/Kg	S-8260B		9/3/98	AG		5206	78
m,p-xylene		<78	ug/Kg	S-8260B		9/3/98	AG		5206	78
o-xylene		<78	ug/Kg	S-8260B		9/3/98	AG		5206	78
1,1-dichloroethane		<78	ug/Kg	S-8260B		9/3/98	AG		5206	78
Ethylene dibromide		<78	ug/Kg	S-8260B		9/3/98	AG		5206	78
cis-1,2-dichloroethylene		<78	ug/Kg	S-8260B		9/3/98	AG		5206	78
trans-1,2-dichloroethylene		<78	ug/Kg	S-8260B		9/3/98	AG		5206	78
Methylene chloride		<390	ug/Kg	S-8260B		9/3/98	AG		5206	390
Surr. Dibromofluoromethane		107	%	S-8260B		9/3/98	AG		5206	86-118
Surr. Toluene-d8		93	%	S-8260B		9/3/98	AG		5206	88-110
Surr. 4-Bromofluorobenzene		98	%	S-8260B		9/3/98	AG		5206	86-115
Benzidine		<250	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	250
Hexachlorobenzene		<25	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	25
Pentachlorobenzene		<25	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	25
1,2,4,5-tetrachlorobenzene		<25	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	25

Corrected benzidine misidentification to <250 mg/kg.

Corrected *

Date: 10-6-98

Page # 31

Project Number: 19350

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000488

Sample Number: 106038

Field Code: TSB-7 8-10'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<25	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	25
2,4-dichlorophenol		<125	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	125
2,4,5-trichlorophenol		<125	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	125
2,4,6-trichlorophenol		<125	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	125
bis (2-chloroethyl) ether		<125	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	125
bis (2-chloroisopropyl) ether		<125	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	125
bis (chloromethyl) ether		<125	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	125
3,3-dichlorobenzidine		<125	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	125
2,4-dinitrotoluene		<25	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	25
Diphenylhydrazine		<125	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	125
Hexachlorobutadiene		<25	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	25
Hexachlorocyclopentadiene		<25	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	25
Isophorone		<125	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	125
Nitrobenzene		<25	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	25
2,4-dinitro-o-cresol		<125	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	125
2,4-dinitrophenols		<125	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	125
n-nitrosodiethylamine		<25	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	25
N-nitrosodimethylamine		<25	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	25
N-nitrosodibutylamine		<125	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	125
N-nitrosodiphenylamine		<25	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	25
N-nitrosopyrrolidine		<25	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	25
Pentachlorophenol		<125	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	125
Dibutyl phthalate		<25	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	25
di-2-ethylhexyl phthalate		<25	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	25
Diethyl phthalate		<25	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	25
Dimethyl phthalate		<25	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	25
Anthracene		<25	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	25
3,4-benzofluoranthene		<25	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	25
Benzo(k)fluoranthene		<25	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	25
Fluoranthene		<25	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	25
Fluorene		<25	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	25
Phenanthrene		<25	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	25
Pyrene		<25	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	25
Naphthalene		<25	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	25
1-methylnaphthalene		<25	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	25
2-methylnaphthalene		<25	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	25
Benzo-a-pyrene		<25	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	25
Phenol		<25	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	25
monomethylnaphthalenes		<25	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	25
Surr. 2-Fluorophenol		59	%	S-8270C	9/8/98	9/18/98	JG	4916	5412	25-121
Surr. Phenol-d6		66	%	S-8270C	9/8/98	9/18/98	JG	4916	5412	24-113
Surr. Nitrobenzene-d5		74	%	S-8270C	9/8/98	9/18/98	JG	4916	5412	23-120
Surr. 2-Fluorobiphenyl		81	%	S-8270C	9/8/98	9/18/98	JG	4916	5412	30-115
Surr. 2,4,6-Tribromophenol		46	%	S-8270C	9/8/98	9/18/98	JG	4916	5412	19-122
Surr. Terphenyl-d14		100	%	S-8270C	9/8/98	9/18/98	JG	4916	5412	28-137

Corrected - Added Phenol result.

Date: 10-6-98

Page # 32

Project Number: 19350
 Project Name: Shell Grimes
 Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000488
 Sample Number: 106038

Field Code: TSB-7 8-10'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S 8080	8/29/98	9/22/98	KC	---	---	50
Chlordane		<50	ug/Kg	S 8080	8/29/98	9/22/98	KC	---	---	50
DDT		<50	ug/Kg	S 8080	8/29/98	9/22/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S 8080	8/29/98	9/22/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S 8080	8/29/98	9/22/98	KC	---	---	50
Endrin		<50	ug/Kg	S 8080	8/29/98	9/22/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S 8080	8/29/98	9/22/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	8/26/98	8/26/98	RC	4796	5112	0.1
Arsenic		2.0	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Barium		277	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Cadmium		0.32	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.10
Chromium		5.9	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Lead		2.4	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Total Mercury		<0.10	mg/Kg	S 7471A	8/27/98	8/28/98	MS	4804	5149	0.10
Selenium		<0.50	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Silver		<0.50	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	2.0
Copper		2.5	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	1.0
Iron		3,900	mg/Kg	S 6010B	9/11/98	9/17/98	RR	4922	5373	10
Manganese		28	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	1.0
Zinc		8.3	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	2.0
Aluminum		6,600	mg/Kg	S 6010B	9/11/98	9/17/98	RR	4922	5373	10
Boron		17	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	10
Cobalt		6.3	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Molybdenum		2.3	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	1.0
Nickel		<0.01	mg/Kg	S 6010B	9/11/98	9/15/98	SA	4922	5340	0.01
Cyanide		<0.25	mg/Kg	4500 CN,CE		8/27/98	RC		5128	0.25
Fluoride		4.2	mg/Kg	E 300.0		9/19/98	JS		5420	0.4
Nitrate		<0.2	mg/Kg	E 300.0		9/19/98	JS		5420	0.2
Chloride		990	mg/Kg	E 300.0		9/19/98	JS		5420	10.0
Sulfate		18	mg/Kg	E 300.0		9/19/98	JS		5420	1.0
TDS		1,800	mg/Kg	E 160.1		9/17/98	RS		5371	---
pH		8.9	s.u.	E 150.1		8/26/98	SA		5113	---
TRPHC		139	mg/Kg	S 418.1	8/27/98	8/30/98	SR	4810	5168	10.0
Total Phenols		3.8	mg/Kg	5M 5530 A,D		8/26/98	RC		5114	0.25
Total Radium		3.76	pCi/gm	E 901.1M			DS	---	---	---



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ARS Tracking Number: ARS-98-0872

P.O. Number:

Client I.D.: Sample No. 106038

ARS Sample I.D.: ARS-98-3177

Date Sampled: 8/21/98

Date Received: 8/27/98

Time Sampled: N/A

Time Received: 1051

Type of Sample: Soil

Date of Report: 9/8/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	1.67	1.14	pCi/gm	0.062	0.042	Bq/gm	EPA 901.1M	9/3/98 1125	KH
Ra-228	<0.14	N/A	pCi/gm	<0.005	N/A	Bq/gm	EPA 901.1M	9/3/98 1125	KH
Pb-210	<0.86	N/A	pCi/gm	<0.032	N/A	Bq/gm	EPA 901.1M	9/3/98 1125	KH
Total Activity	3.76	N/A	pCi/gm	0.139	N/A	Bq/gm	EPA 901.1M	9/3/98 1125	KH

Notes:

Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 9-30-98
Page # 4

Project Number: 19350
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000488
Sample Number: 106028

Field Code: TSB-7 28-30'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
MTBE		<0.050	mg/Kg	E 8021B		8/20/98	CS		5031	0.050
Benzene		<0.050	mg/Kg	E 8021B		8/20/98	CS		5031	0.050
Toluene		<0.050	mg/Kg	E 8021B		8/20/98	CS		5031	0.050
Ethylbenzene		<0.050	mg/Kg	E 8021B		8/20/98	CS		5031	0.050
m,p,o-xylene		<0.050	mg/Kg	E 8021B		8/20/98	CS		5031	0.050
TRPHC		<10.0	mg/Kg	S 418.1	8/27/98	8/30/98	SR	4810	5168	10.0

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 9-29-98
Page # 4

Project Number: 19350
Project Name: Shell Tasker Road
Project Location: Hobbs, NM

Order ID Number: 9808000380
Sample Number: 105408

Field Code: TSB-8 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<6750	ug/Kg	S-8260B		9/6/98	AG		5207	6750
Acrylonitrile		<6750	ug/Kg	S-8260B		9/6/98	AG		5207	6750
Benzene		<1350	ug/Kg	S-8260B		9/6/98	AG		5207	1350
Carbon tetrachloride		<1350	ug/Kg	S-8260B		9/6/98	AG		5207	1350
Chlorobenzene		<1350	ug/Kg	S-8260B		9/6/98	AG		5207	1350
1,2-dichloroethane		<1350	ug/Kg	S-8260B		9/6/98	AG		5207	1350
1,1,2,2-tetrachloroethane		<1350	ug/Kg	S-8260B		9/6/98	AG		5207	1350
1,1,1-trichloroethane		<1350	ug/Kg	S-8260B		9/6/98	AG		5207	1350
1,1,2-trichloroethane		<1350	ug/Kg	S-8260B		9/6/98	AG		5207	1350
1,1,2-trichloroethylene		<1350	ug/Kg	S-8260B		9/6/98	AG		5207	1350
Chloroform		<1350	ug/Kg	S-8260B		9/6/98	AG		5207	1350
Dichlorobenzene		<2700	ug/Kg	S-8260B		9/6/98	AG		5207	2700
1,1-dichloroethylene		<1350	ug/Kg	S-8260B		9/6/98	AG		5207	1350
Dichloropropenes		<1350	ug/Kg	S-8260B		9/6/98	AG		5207	1350
Ethylbenzene		17,000	ug/Kg	S-8260B		9/6/98	AG		5207	1350
Bromodichloromethane		<1350	ug/Kg	S-8260B		9/6/98	AG		5207	1350
Bromomethane		<6750	ug/Kg	S-8260B		9/6/98	AG		5207	6750
Chloromethane		<1350	ug/Kg	S-8260B		9/6/98	AG		5207	1350
Dichlorodifluoromethane		<1350	ug/Kg	S-8260B		9/6/98	AG		5207	1350
Dichloromethane		<1350	ug/Kg	S-8260B		9/6/98	AG		5207	1350
Trichlorofluoromethane		<1350	ug/Kg	S-8260B		9/6/98	AG		5207	1350
Tetrachloroethylene		<1350	ug/Kg	S-8260B		9/6/98	AG		5207	1350
Toluene		<1350	ug/Kg	S-8260B		9/6/98	AG		5207	1350
Trichloroethylene		<1350	ug/Kg	S-8260B		9/6/98	AG		5207	1350
Vinyl chloride		<1350	ug/Kg	S-8260B		9/6/98	AG		5207	1350
m,p-xylene		<1350	ug/Kg	S-8260B		9/6/98	AG		5207	1350
o-xylene		5,600	ug/Kg	S-8260B		9/6/98	AG		5207	1350
1,1-dichloroethane		<1350	ug/Kg	S-8260B		9/6/98	AG		5207	1350
Ethylene dibromide		<1350	ug/Kg	S-8260B		9/6/98	AG		5207	1350
cis-1,2-dichloroethylene		<1350	ug/Kg	S-8260B		9/6/98	AG		5207	1350
trans-1,2-dichloroethylene		<1350	ug/Kg	S-8260B		9/6/98	AG		5207	1350
Methylene chloride		<6750	ug/Kg	S-8260B		9/6/98	AG		5207	6750
Surr. Dibromofluoromethane		108	%	S-8260B		9/6/98	AG		5207	72-130
Surr. Toluene-d8		91	%	S-8260B		9/6/98	AG		5207	77-127
Surr. 4-Bromofluorobenzene		99	%	S-8260B		9/6/98	AG		5207	72-131
Benzidine		<25	mg/Kg	S-8270C	9/8/98	9/18/98	DG	4916	5412	25
Hexachlorobenzene		<2.5	mg/Kg	S-8270C	9/8/98	9/18/98	DG	4916	5412	2.5
Pentachlorobenzene		<2.5	mg/Kg	S-8270C	9/8/98	9/18/98	DG	4916	5412	2.5
1,2,4,5-tetrachlorobenzene		<2.5	mg/Kg	S-8270C	9/8/98	9/18/98	DG	4916	5412	2.5

Project Number: 19350
Project Name: Shell Tasker Road
Project Location: Hobbs, NM

Field Code: TSB-8 2-3'

Date: 9-29-98
Page # 5
Order ID Number: 9808000380
Sample Number: 105408

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<2.5	mg/Kg	S-8270C	9/8/98	9/18/98	DG	4916	5412	2.5
2,4-dichlorophenol		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	DG	4916	5412	12.5
2,4,5-trichlorophenol		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	DG	4916	5412	12.5
2,4,6-trichlorophenol		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	DG	4916	5412	12.5
bis (2-chloroethyl) ether		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	DG	4916	5412	12.5
bis (2-chloroisopropyl) ether		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	DG	4916	5412	12.5
bis (chloromethyl) ether		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	DG	4916	5412	12.5
3,3-dichlorobenzidine		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	DG	4916	5412	12.5
2,4-dinitrotoluene		<2.5	mg/Kg	S-8270C	9/8/98	9/18/98	DG	4916	5412	2.5
Diphenylhydrazine		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	DG	4916	5412	12.5
Hexachlorobutadiene		<2.5	mg/Kg	S-8270C	9/8/98	9/18/98	DG	4916	5412	2.5
Hexachlorocyclopentadiene		<2.5	mg/Kg	S-8270C	9/8/98	9/18/98	DG	4916	5412	2.5
Isophorone		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	DG	4916	5412	12.5
Nitrobenzene		<2.5	mg/Kg	S-8270C	9/8/98	9/18/98	DG	4916	5412	2.5
2,4-dinitro-o-cresol		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	DG	4916	5412	12.5
2,4-dinitrophenols		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	DG	4916	5412	12.5
n-nitrosodiethylamine		<2.5	mg/Kg	S-8270C	9/8/98	9/18/98	DG	4916	5412	2.5
N-nitrosodimethylamine		<2.5	mg/Kg	S-8270C	9/8/98	9/18/98	DG	4916	5412	2.5
N-nitrosodibutylamine		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	DG	4916	5412	12.5
N-nitrosodiphenylamine		<2.5	mg/Kg	S-8270C	9/8/98	9/18/98	DG	4916	5412	2.5
N-nitrosopyrrolidine		<2.5	mg/Kg	S-8270C	9/8/98	9/18/98	DG	4916	5412	2.5
Pentachlorophenol		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	DG	4916	5412	12.5
Dibutyl phthalate		<2.5	mg/Kg	S-8270C	9/8/98	9/18/98	DG	4916	5412	2.5
di-2-ethylhexyl phthalate		<2.5	mg/Kg	S-8270C	9/8/98	9/18/98	DG	4916	5412	2.5
Diethyl phthalate		<2.5	mg/Kg	S-8270C	9/8/98	9/18/98	DG	4916	5412	2.5
Dimethyl phthalate		<2.5	mg/Kg	S-8270C	9/8/98	9/18/98	DG	4916	5412	2.5
Anthracene		<2.5	mg/Kg	S-8270C	9/8/98	9/18/98	DG	4916	5412	2.5
3,4-benzofluoranthene		<2.5	mg/Kg	S-8270C	9/8/98	9/18/98	DG	4916	5412	2.5
Benzo(k)fluoranthene		<2.5	mg/Kg	S-8270C	9/8/98	9/18/98	DG	4916	5412	2.5
Fluoranthene		<2.5	mg/Kg	S-8270C	9/8/98	9/18/98	DG	4916	5412	2.5
Fluorene		<2.5	mg/Kg	S-8270C	9/8/98	9/18/98	DG	4916	5412	2.5
Phenanthrene		<2.5	mg/Kg	S-8270C	9/8/98	9/18/98	DG	4916	5412	2.5
Pyrene		<2.5	mg/Kg	S-8270C	9/8/98	9/18/98	DG	4916	5412	2.5
Naphthalene		<2.5	mg/Kg	S-8270C	9/8/98	9/18/98	DG	4916	5412	2.5
1-methylnaphthalene		<2.5	mg/Kg	S-8270C	9/8/98	9/18/98	DG	4916	5412	2.5
2-methylnaphthalene		<2.5	mg/Kg	S-8270C	9/8/98	9/18/98	DG	4916	5412	2.5
Benzo-a-pyrene		<2.5	mg/Kg	S-8270C	9/8/98	9/18/98	DG	4916	5412	2.5
Surr. 2-Fluorophenol	LSR	5.4	mg/Kg	S-8270C	9/8/98	9/18/98	DG	4916	5412	25-121
Surr. Phenol-d6	LSR	4.7	mg/Kg	S-8270C	9/8/98	9/18/98	DG	4916	5412	24-113
Surr. Nitroobenzene-d5	LSR	7.1	mg/Kg	S-8270C	9/8/98	9/18/98	DG	4916	5412	23-120
Surr. 2-Fluorobiphenyl	LSR	7.1	mg/Kg	S-8270C	9/8/98	9/18/98	DG	4916	5412	30-115
Surr. 2,4,6-Tribromophenol	LSR	4.2	mg/Kg	S-8270C	9/8/98	9/18/98	DG	4916	5412	19-122
Surr. Terphenyl-d14	LSR	12	mg/Kg	S-8270C	9/8/98	9/18/98	DG	4916	5412	28-137
Aldrin	ERL	<500	ug/Kg	S-8080	8/25/98	9/27/98	---	---	---	50
Chlordane	ERL	<500	ug/Kg	S-8080	8/25/98	9/27/98	---	---	---	50

Project Number: 19350
 Project Name: Shell Tasker Road
 Project Location: Hobbs, NM

Date: 9-29-98
 Page # 6
 Order ID Number: 9808000380
 Sample Number: 105408

Field Code: TSB-8 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
DDT	ERL	<500	ug/Kg	S-8080	8/25/98	9/27/98		---	---	50
Dieldrin	ERL	<500	ug/Kg	S-8080	8/25/98	9/27/98		---	---	50
Endosulfan	ERL	<500	ug/Kg	S-8080	8/25/98	9/27/98		---	---	50
Endrin	ERL	<500	ug/Kg	S-8080	8/25/98	9/27/98		---	---	50
Heptachlor	ERL	<500	ug/Kg	S-8080	8/25/98	9/27/98		---	---	50
PCB's		<1.0	mg/Kg	S 8082	8/26/98	9/3/98	RC	4795	5206	1.0
Arsenic		<0.50	mg/Kg	6010	8/26/98	8/27/98	RR	4797	5120	0.50
Barium		240	mg/Kg	6010	8/26/98	8/27/98	RR	4797	5120	0.50
Cadmium		<0.10	mg/Kg	6010	8/26/98	8/27/98	RR	4797	5120	0.10
Chromium		2.5	mg/Kg	6010	8/26/98	8/27/98	RR	4797	5120	0.50
Lead		0.77	mg/Kg	6010	8/26/98	8/27/98	RR	4797	5120	0.50
Total Mercury		<0.10	mg/Kg	S 7471	8/24/98	8/25/98	MS	4765	5101	<0.10
Selenium		<0.50	mg/Kg	6010	8/26/98	8/27/98	RR	4797	5120	0.50
Silver		<0.50	mg/Kg	6010	8/26/98	8/27/98	RR	4797	5120	0.50
Uranium		<2.0	mg/Kg	6010	8/26/98	8/27/98	RR	4797	5120	2.0
Copper		1.2	mg/Kg	6010	8/26/98	8/27/98	RR	4797	5120	0.50
Iron		1700	mg/Kg	6010	8/26/98	8/27/98	RR	4797	5120	2.0
Manganese		17	mg/Kg	6010	8/26/98	8/27/98	RR	4797	5120	1.0
Zinc		5.5	mg/Kg	6010	8/26/98	8/27/98	RR	4797	5120	2.0
Aluminum		2900	mg/Kg	6010	8/26/98	8/27/98	RR	4797	5120	10
Boron		<10	mg/Kg	6010	8/26/98	8/27/98	RR	4797	5120	10
Cobalt		4.5	mg/Kg	6010	8/26/98	8/27/98	RR	4797	5120	0.50
Molybdenum		1.3	mg/Kg	6010	8/26/98	8/27/98	RR	4797	5120	1.0
Nickel		4.5	mg/Kg	6010	8/26/98	8/27/98	RR	4797	5120	0.50
Cyanide		<0.01	mg/Kg	SM 4500 CN,CE		8/20/98	SA		5029	0.01
Fluoride		1.9	mg/Kg	E 300.0		8/27/98	JS		5126	
Nitrate		4.3	mg/Kg	E 300.0		8/27/98	JS		5126	
Chloride		120	mg/Kg	E 300.0		8/27/98	JS		5126	
Sulfate		720	mg/Kg	E 300.0		8/27/98	JS		5126	
TDS		4,000	mg/Kg	E 160.1		9/16/98	RS		5364	---
pH		9.5	s.u.	E 150.1	8/24/98	8/25/98	SA		5089	7.0
Total Phenols		0.07	mg/kg	SM 55430 A,D		8/26/98	RC		5110	0.01
TRPHC		60,300	mg/kg	S 418.1	8/21/98	8/22/98	SR	4743	5045	10.0
Total Radium		4.33	pCi/gm	E 901.1M		8/18/98	DS	---	---	---

LSR Low surrogate recovery due to matrix.
 ERL Elevated reporting limit due to matrix.



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ARS Tracking Number: ARS-98-0843 P.O. Number: Project #19349
 Client I.D.: 105408 1588 2-3' ARS Sample I.D.: ARS-98-3089
 Date Sampled: 08/17/98 Date Received: 08/20/98
 Time Sampled: N/A Time Received: 1510
 Type of Sample: Solid Date of Report: 8/25/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	<0.84	N/A	pCi/gm	<0.031	N/A	Bq/gm	EPA 901.1M	8/23/98 1112	MK
Ra-228	<0.14	N/A	pCi/gm	<0.005	N/A	Bq/gm	EPA 901.1M	8/23/98 1112	MK
Pb-210	<0.93	N/A	pCi/gm	<0.034	N/A	Bq/gm	EPA 901.1M	8/23/98 1112	MK
Total Activity	4.33	N/A	pCi/gm	0.160	N/A	Bq/gm	EPA 901.1M	8/23/98 1112	MK

Notes:


 Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-1-98
Page # 10

Project Number: 19349
Project Name: Shell Grimes
Project Location: Hobbs, NM

Order ID Number: 9808000167
Sample Number: 107006

Sample Description: TSB-8 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<12,400	ug/Kg	S-8260B		9/9/98	AG		5264	12,400
Acrylonitrile		<12,400	ug/Kg	S-8260B		9/9/98	AG		5264	12,400
Benzene		<2,480	ug/Kg	S-8260B		9/9/98	AG		5264	2,480
Carbon tetrachloride		<2,480	ug/Kg	S-8260B		9/9/98	AG		5264	2,480
Chlorobenzene		<2,480	ug/Kg	S-8260B		9/9/98	AG		5264	2,480
1,2-dichloroethane		<2,480	ug/Kg	S-8260B		9/9/98	AG		5264	2,480
1,1,2,2-tetrachloroethane		<2,480	ug/Kg	S-8260B		9/9/98	AG		5264	2,480
1,1,1-trichloroethane		<2,480	ug/Kg	S-8260B		9/9/98	AG		5264	2,480
1,1,2-trichloroethane		<2,480	ug/Kg	S-8260B		9/9/98	AG		5264	2,480
1,1,2-trichloroethylene		<2,480	ug/Kg	S-8260B		9/9/98	AG		5264	2,480
Chloroform		<2,480	ug/Kg	S-8260B		9/9/98	AG		5264	2,480
Dichlorobenzene		<4,960	ug/Kg	S-8260B		9/9/98	AG		5264	4,960
1,1-dichloroethylene		<2,480	ug/Kg	S-8260B		9/9/98	AG		5264	2,480
Dichloropropenes		<2,480	ug/Kg	S-8260B		9/9/98	AG		5264	2,480
Ethylbenzene		12,000	ug/Kg	S-8260B		9/9/98	AG		5264	2,480
Bromodichloromethane		<2,480	ug/Kg	S-8260B		9/9/98	AG		5264	2,480
Bromomethane		<12,400	ug/Kg	S-8260B		9/9/98	AG		5264	12,400
Chloromethane		<2,480	ug/Kg	S-8260B		9/9/98	AG		5264	2,480
Dichlorodifluoromethane		<2,480	ug/Kg	S-8260B		9/9/98	AG		5264	2,480
Dichloromethane		<2,480	ug/Kg	S-8260B		9/9/98	AG		5264	2,480
Trichlorofluoromethane		<2,480	ug/Kg	S-8260B		9/9/98	AG		5264	2,480
Tetrachloroethylene		<2,480	ug/Kg	S-8260B		9/9/98	AG		5264	2,480
Toluene		<2,480	ug/Kg	S-8260B		9/9/98	AG		5264	2,480
Trichloroethylene		<2,480	ug/Kg	S-8260B		9/9/98	AG		5264	2,480
Vinyl chloride		<2,480	ug/Kg	S-8260B		9/9/98	AG		5264	2,480
m,p-xylene		36,000	ug/Kg	S-8260B		9/9/98	AG		5264	2,480
o-xylene		<2,480	ug/Kg	S-8260B		9/9/98	AG		5264	2,480
1,1-dichloroethane		<2,480	ug/Kg	S-8260B		9/9/98	AG		5264	2,480
Ethylene dibromide		<2,480	ug/Kg	S-8260B		9/9/98	AG		5264	2,480
cis-1,2-dichloroethylene		<2,480	ug/Kg	S-8260B		9/9/98	AG		5264	2,480
trans-1,2-dichloroethylene		<2,480	ug/Kg	S-8260B		9/9/98	AG		5264	2,480
Methylene chloride		<12,400	ug/Kg	S-8260B		9/9/98	AG		5264	12,400
Dibromofluoromethane		85	%	S-8260B		9/9/98	AG		5264	71-132
Toluene-d8		86	%	S-8260B		9/9/98	AG		5264	82-124
4-Bromofluorobenzene		85	%	S-8260B		9/9/98	AG		5264	76-126
Benzidine		<25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	25
Hexachlorobenzene		<2.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	2.5
Pentachlorobenzene		<2.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	2.5
1,2,4,5-tetrachlorobenzene		<2.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	2.5

Date: 10-1-98
Page # 11
Order ID Number: 9808000167
Sample Number: 107006

Project Number: 19349
Project Name: Shell Grimes
Project Location: Hobbs, NM

Sample Description: TSB-8 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<2.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	2.5
2,4-dichlorophenol		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
2,4,5-trichlorophenol		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
2,4,6-trichlorophenol		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
bis (2-chloroethyl) ether		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
bis (2-chloroisopropyl) ether		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
bis (chloromethyl) ether		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
3,3-dichlorobenzidine		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
2,4-dinitrotoluene		<2.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	2.5
Diphenylhydrazine		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Hexachlorobutadiene		<2.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	2.5
Hexachlorocyclopentadiene		<2.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	2.5
Isophorone		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Nitrobenzene		<2.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	2.5
2,4-dinitro-o-cresol		<2.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	2.5
2,4-dinitrophenols		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
i-nitrosodiethylamine		<2.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	2.5
N-nitrosodimethylamine		<2.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	2.5
N-nitrosodibutylamine		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
N-nitrosodiphenylamine		<2.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	2.5
N-nitrosopyrrolidine		<2.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	2.5
Pentachlorophenol		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Phenol		<2.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	2.5
Dibutyl phthalate		<2.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	2.5
di-2-ethylhexyl phthalate		<2.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	2.5
Diethyl phthalate		<2.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	2.5
Dimethyl phthalate		<2.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	2.5
Anthracene		<2.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	2.5
3,4-benzofluoranthene		<2.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	2.5
Benzo(k)fluoranthene		<2.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	2.5
Fluoranthene		<2.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	2.5
Fluorene		<2.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	2.5
Phenanthrene		<2.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	2.5
Pyrene		<2.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	2.5
Naphthalene		<2.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	2.5
1-methylnaphthalene		5.0	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	2.5
2-methylnaphthalene		4.9	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	2.5
Benzo-a-pyrene		<2.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	2.5
Surr. 2-Fluorophenol	LSR	9	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	25-121
Surr. Phenol-d6	LSR	16	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	24-113
Surr. Nitroobenzene-d5		39	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	23-120
Surr. 2-Fluorobiphenyl	LSR	20	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	30-115
Surr. 2,4,6-Tribromophenol	LSR	5	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	19-122
Surr. Terphenyl-d14	LSR	12	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	28-137

Project Number: 19349
 Project Name: Shell Grimes
 Project Location: Hobbs, NM

Date: 10-1-98
 Page # 12
 Order ID Number: 9808000167
 Sample Number: 107006

Sample Description: TSB-8 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Chlordane		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
DDT		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Endrin		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	9/18/98	9/18/98	RC	5044	5401	0.1
Arsenic		1.4	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Barium		127	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Cadmium		0.19	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.10
Chromium		5.8	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Lead		4.1	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Total Mercury		<0.10	mg/Kg	E 7471 A	9/9/98	9/10/98	MS	4917	5275	0.10
Selenium		1.4	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Silver		0.87	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Uranium		<2.0	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	2.0
Copper		4.1	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	1.0
Iron		5,300	mg/Kg	E 6010B	9/17/98	9/20/98	RR	5090	5461	10
Manganese		69	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	1.0
Zinc		13	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	2.0
Aluminum		6,200	mg/Kg	E 6010B	9/17/98	9/20/98	RR	5090	5461	10
Boron		23	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	10
Cobalt		7.9	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Molybdenum		2.1	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	1.0
Nickel		8	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Cyanide		<0.010	mg/Kg	SM 4500 CN,CE		9/15/98	SA		5330	0.01
Fluoride		6.6	mg/Kg	E 300.0		9/21/98	JS		5489	0.2
Nitrate		3.8	mg/Kg	E 300.0		9/21/98	JS		5489	0.2
Chloride		560	mg/Kg	E 300.0		9/21/98	JS		5489	10.0
Sulfate		71	mg/Kg	E 300.0		9/21/98	JS		5489	1.0
TDS		10,000	mg/Kg	E 160.1		9/21/98	RS		5449	---
pH		9.4	s.u.	E 150.1		9/10/98	SA		5271	---
TRPHC		67,000	mg/Kg	S 418.1	9/15/98	9/15/98	SR	4988	5324	10.0
Total Phenols		7.7	mg/Kg	SM 5530 A,D		9/20/98	RC		5450	0.25
Total Radium		8.48	pCi/gm	E 901.1M		9/15/98	DS	---	---	---

LSR Low surrogate recovery due to matrix.



1726 Wooddale Court • Baton Rouge, Louisiana 70806

1 (800) 401-4277 • Fax (504) 927-6822

ARS Tracking Number: ARS-98-0914

P.O. Number:

Client I.D.: 107006

ARS Sample I.D.: ARS-98-3346

Date Sampled: 9/4/98

Date Received: 9/11/98

Time Sampled: N/A

Time Received: 1000

Type of Sample: Solid

Date of Report: 9/15/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	<0.90	N/A	pCi/gm	<0.033	N/A	Bq/gm	EPA 901.1M	9/15/98 1047	kh
Ra-228	<0.10	N/A	pCi/gm	<0.004	N/A	Bq/gm	EPA 901.1M	9/15/98 1047	kh
Pb-210	<0.98	N/A	pCi/gm	<0.036	N/A	Bq/gm	EPA 901.1M	9/15/98 1047	kh
Total Activity	8.48	N/A	pCi/gm	0.314	N/A	Bq/gm	EPA 901.1M	9/15/98 1047	kh

Notes:

Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-1-98
Page # 13

Project Number: 19349
Project Name: Shell Grimes
Project Location: Hobbs, NM

Order ID Number: 9808000167
Sample Number: 107007

Sample Description: TSB-8D 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<6,250	ug/Kg	S-8260B		9/9/98	AG		5264	6,250
Acrylonitrile		<6,250	ug/Kg	S-8260B		9/9/98	AG		5264	6,250
Benzene		<1,250	ug/Kg	S-8260B		9/9/98	AG		5264	1,250
Carbon tetrachloride		<1,250	ug/Kg	S-8260B		9/9/98	AG		5264	1,250
Chlorobenzene		<1,250	ug/Kg	S-8260B		9/9/98	AG		5264	1,250
1,2-dichloroethane		<1,250	ug/Kg	S-8260B		9/9/98	AG		5264	1,250
1,1,2,2-tetrachloroethane		<1,250	ug/Kg	S-8260B		9/9/98	AG		5264	1,250
1,1,1-trichloroethane		<1,250	ug/Kg	S-8260B		9/9/98	AG		5264	1,250
1,1,2-trichloroethane		<1,250	ug/Kg	S-8260B		9/9/98	AG		5264	1,250
1,1,2-trichloroethylene		<1,250	ug/Kg	S-8260B		9/9/98	AG		5264	1,250
Chloroform		<1,250	ug/Kg	S-8260B		9/9/98	AG		5264	1,250
Dichlorobenzene		<2,500	ug/Kg	S-8260B		9/9/98	AG		5264	2,500
1,1-dichloroethylene		<1,250	ug/Kg	S-8260B		9/9/98	AG		5264	1,250
Dichloropropenes		<1,250	ug/Kg	S-8260B		9/9/98	AG		5264	1,250
Ethylbenzene		12,000	ug/Kg	S-8260B		9/9/98	AG		5264	1,250
Bromodichloromethane		<1,250	ug/Kg	S-8260B		9/9/98	AG		5264	1,250
Bromomethane		<6,250	ug/Kg	S-8260B		9/9/98	AG		5264	6,250
Chloromethane		<1,250	ug/Kg	S-8260B		9/9/98	AG		5264	1,250
Dichlorodifluoromethane		<1,250	ug/Kg	S-8260B		9/9/98	AG		5264	1,250
Dichloromethane		<1,250	ug/Kg	S-8260B		9/9/98	AG		5264	1,250
Trichlorofluoromethane		<1,250	ug/Kg	S-8260B		9/9/98	AG		5264	1,250
Tetrachloroethylene		<1,250	ug/Kg	S-8260B		9/9/98	AG		5264	1,250
Toluene		<1,250	ug/Kg	S-8260B		9/9/98	AG		5264	1,250
Trichloroethylene		<1,250	ug/Kg	S-8260B		9/9/98	AG		5264	1,250
Vinyl chloride		<1,250	ug/Kg	S-8260B		9/9/98	AG		5264	1,250
m,p-xylene		40,000	ug/Kg	S-8260B		9/9/98	AG		5264	1,250
o-xylene		<1,250	ug/Kg	S-8260B		9/9/98	AG		5264	1,250
1,1-dichloroethane		<1,250	ug/Kg	S-8260B		9/9/98	AG		5264	1,250
Ethylene dibromide		<1,250	ug/Kg	S-8260B		9/9/98	AG		5264	1,250
cis-1,2-dichloroethylene		<1,250	ug/Kg	S-8260B		9/9/98	AG		5264	1,250
trans-1,2-dichloroethylene		<1,250	ug/Kg	S-8260B		9/9/98	AG		5264	1,250
Methylene chloride		<6,250	ug/Kg	S-8260B		9/9/98	AG		5264	6,250
Dibromofluoromethane		81	%	S-8260B		9/9/98	AG		5264	71-132
Toluene-d8		88	%	S-8260B		9/9/98	AG		5264	82-124
4-Bromofluorobenzene		88	%	S-8260B		9/9/98	AG		5264	76-126
Benzidine		<125	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	125
Hexachlorobenzene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Pentachlorobenzene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
1,2,4,5-tetrachlorobenzene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5

Project Number: 19349
Project Name: Shell Grimes
Project Location: Hobbs, NM

Date: 10-1-98
Page # 14
Order ID Number: 9808000167
Sample Number: 107007

Sample Description: TSB-8D 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
2,4-dichlorophenol		<62.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	62.5
2,4,5-trichlorophenol		<62.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	62.5
2,4,6-trichlorophenol		<62.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	62.5
bis (2-chloroethyl) ether		<62.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	62.5
bis (2-chloroisopropyl) ether		<62.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	62.5
bis (chloromethyl) ether		<62.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	62.5
3,3-dichlorobenzidine		<62.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	62.5
2,4-dinitrotoluene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Diphenylhydrazine		<62.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	62.5
Hexachlorobutadiene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Hexachlorocyclopentadiene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Isophorone		<62.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	62.5
Nitrobenzene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
2,4-dinitro-o-cresol		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
2,4-dinitrophenols		<62.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	62.5
i-nitrosodiethylamine		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
N-nitrosodimethylamine		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
N-nitrosodibutylamine		<62.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	62.5
N-nitrosodiphenylamine		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
N-nitrosopyrrolidine		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Pentachlorophenol		<62.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	62.5
Phenol		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Dibutyl phthalate		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
di-2-ethylhexyl phthalate		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Diethyl phthalate		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Dimethyl phthalate		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Anthracene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
3,4-benzofluoranthene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Benzo(k)fluoranthene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Fluoranthene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Fluorene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Phenanthrene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Pyrene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Naphthalene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
1-methylnaphthalene		33	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
2-methylnaphthalene		35	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Benzo-a-pyrene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Surr. 2-Fluorophenol		49	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	25-121
Surr. Phenol-d6		29	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	24-113
Surr. Nitrobenzene-d5		80	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	23-120
Surr. 2-Fluorobiphenyl		98	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	30-115
Surr. 2,4,6-Tribromophenol		48	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	19-122
Surr. Terphenyl-d14		87	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	28-137

Project Number: 19349
 Project Name: Shell Grimes
 Project Location: Hobbs, NM

Date: 10-1-98
 Page # 15
 Order ID Number: 9808000167
 Sample Number: 107007

Sample Description: TSB-8D 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Chlordane		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
DDT		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Endrin		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	9/18/98	9/18/98	RC	5044	5401	0.1
Arsenic		2.3	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Barium		160	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Cadmium		<0.10	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.10
Chromium		4.7	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Lead		2.7	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Total Mercury		<0.10	mg/Kg	E 7471 A	9/9/98	9/10/98	MS	4917	5275	0.10
Selenium		1.4	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Silver		<0.50	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Uranium		<2.0	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	2.0
Copper		3.1	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	1.0
Iron		4,000	mg/Kg	E 6010B	9/17/98	9/20/98	RR	5090	5461	10
Manganese		59	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	1.0
Zinc		11	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	2.0
Aluminum		4,900	mg/Kg	E 6010B	9/17/98	9/20/98	RR	5090	5461	10
Boron		16	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	10
Cobalt		7	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Molybdenum		1.8	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	1.0
Nickel		7.2	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Cyanide		<0.010	mg/Kg	SM 4500 CN,CE		9/15/98	SA		5330	0.01
Fluoride		8.1	mg/Kg	E 300.0		9/21/98	JS		5489	0.2
Nitrate		6	mg/Kg	E 300.0		9/21/98	JS		5489	0.2
Chloride		660	mg/Kg	E 300.0		9/21/98	JS		5489	25.0
Sulfate		180	mg/Kg	E 300.0		9/21/98	JS		5489	2.0
TDS		9,600	mg/Kg	E 160.1		9/21/98	RS		5449	---
pH		7.8	s.u.	E 150.1		9/10/98	SA		5271	---
TRPHC		21,300	mg/Kg	S 418.1	9/15/98	9/15/98	SR	4988	5324	10.0
Total Phenols		6.2	mg/Kg	SM 5530 A,D		9/20/98	RC		5450	0.25
Total Radium		6.23	pCi/gm	E 901.1M		9/15/98	DS	---	---	---

ARS Tracking Number: ARS-98-0914

P.O. Number:

Client I.D.: 107007

ARS Sample I.D.: ARS-98-3347

Date Sampled: 9/4/98

Date Received: 9/11/98

Time Sampled: N/A

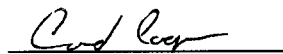
Time Received: 1000

Type of Sample: Solid

Date of Report: 9/15/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	1.95	1.43	pCi/gm	0.072	0.053	Bq/gm	EPA 901.1M	9/15/98 1119	kh
Ra-228	<0.10	N/A	pCi/gm	<0.004	N/A	Bq/gm	EPA 901.1M	9/15/98 1119	kh
Pb-210	<0.79	N/A	pCi/gm	<0.029	N/A	Bq/gm	EPA 901.1M	9/15/98 1119	kh
Total Activity	6.23	N/A	pCi/gm	0.230	N/A	Bq/gm	EPA 901.1M	9/15/98 1119	kh

Notes:


 Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-1-98
Page # 16

Project Number: 19349
Project Name: Shell Grimes
Project Location: Hobbs, NM

Order ID Number: 9808000167
Sample Number: 107008

Sample Description: TSB-8 8-10'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<520	ug/Kg	S-8260B		9/9/98	AG		5264	520
Acrylonitrile		<520	ug/Kg	S-8260B		9/9/98	AG		5264	520
Benzene		<104	ug/Kg	S-8260B		9/9/98	AG		5264	104
Carbon tetrachloride		<104	ug/Kg	S-8260B		9/9/98	AG		5264	104
Chlorobenzene		<104	ug/Kg	S-8260B		9/9/98	AG		5264	104
1,2-dichloroethane		<104	ug/Kg	S-8260B		9/9/98	AG		5264	104
1,1,2,2-tetrachloroethane		<104	ug/Kg	S-8260B		9/9/98	AG		5264	104
1,1,1-trichloroethane		<104	ug/Kg	S-8260B		9/9/98	AG		5264	104
1,1,2-trichloroethane		<104	ug/Kg	S-8260B		9/9/98	AG		5264	104
1,1,2-trichloroethylene		<104	ug/Kg	S-8260B		9/9/98	AG		5264	104
Chloroform		<104	ug/Kg	S-8260B		9/9/98	AG		5264	104
Dichlorobenzene		<208	ug/Kg	S-8260B		9/9/98	AG		5264	208
1,1-dichloroethylene		<104	ug/Kg	S-8260B		9/9/98	AG		5264	104
Dichloropropenes		<104	ug/Kg	S-8260B		9/9/98	AG		5264	104
Ethylbenzene		2,500	ug/Kg	S-8260B		9/9/98	AG		5264	104
Bromodichloromethane		<104	ug/Kg	S-8260B		9/9/98	AG		5264	104
Bromomethane		<520	ug/Kg	S-8260B		9/9/98	AG		5264	520
Chloromethane		<104	ug/Kg	S-8260B		9/9/98	AG		5264	104
Dichlorodifluoromethane		<104	ug/Kg	S-8260B		9/9/98	AG		5264	104
Dichloromethane		<104	ug/Kg	S-8260B		9/9/98	AG		5264	104
Trichlorofluoromethane		<104	ug/Kg	S-8260B		9/9/98	AG		5264	104
Tetrachloroethylene		<104	ug/Kg	S-8260B		9/9/98	AG		5264	104
Toluene		<104	ug/Kg	S-8260B		9/9/98	AG		5264	104
Trichloroethylene		<104	ug/Kg	S-8260B		9/9/98	AG		5264	104
Vinyl chloride		<104	ug/Kg	S-8260B		9/9/98	AG		5264	104
m,p-xylene		9,800	ug/Kg	S-8260B		9/9/98	AG		5264	104
o-xylene		<104	ug/Kg	S-8260B		9/9/98	AG		5264	104
1,1-dichloroethane		<104	ug/Kg	S-8260B		9/9/98	AG		5264	104
Ethylene dibromide		<104	ug/Kg	S-8260B		9/9/98	AG		5264	104
cis-1,2-dichloroethylene		<104	ug/Kg	S-8260B		9/9/98	AG		5264	104
trans-1,2-dichloroethylene		<104	ug/Kg	S-8260B		9/9/98	AG		5264	104
Methylene chloride		<520	ug/Kg	S-8260B		9/9/98	AG		5264	520
Dibromofluoromethane		87	%	S-8260B		9/9/98	AG		5264	71-132
Toluene-d8		88	%	S-8260B		9/9/98	AG		5264	82-124
4-Bromofluorobenzene		91	%	S-8260B		9/9/98	AG		5264	76-126
Benzidine		<125	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	125
Hexachlorobenzene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Pentachlorobenzene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
1,2,4,5-tetrachlorobenzene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5

Date: 10-1-98
Page # 17
Order ID Number: 9808000167
Sample Number: 107008

Project Number: 19349
Project Name: Shell Grimes
Project Location: Hobbs, NM

Sample Description: TSB-8 8-10'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
2,4-dichlorophenol		<62.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	62.5
2,4,5-trichlorophenol		<62.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	62.5
2,4,6-trichlorophenol		<62.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	62.5
bis (2-chloroethyl) ether		<62.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	62.5
bis (2-chloroisopropyl) ether		<62.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	62.5
bis (chloromethyl) ether		<62.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	62.5
3,3-dichlorobenzidine		<62.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	62.5
2,4-dinitrotoluene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Diphenylhydrazine		<62.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	62.5
Hexachlorobutadiene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Hexachlorocyclopentadiene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Isophorone		<62.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	62.5
Nitrobenzene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
2,4-dinitro-o-cresol		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
2,4-dinitrophenols		<62.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	62.5
i-nitrosodiethylamine		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
N-nitrosodimethylamine		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
N-nitrosodibutylamine		<62.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	62.5
N-nitrosodiphenylamine		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
N-nitrosopyrrolidine		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Pentachlorophenol		<62.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	62.5
Phenol		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Dibutyl phthalate		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
di-2-ethylhexyl phthalate		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Diethyl phthalate		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Dimethyl phthalate		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Anthracene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
3,4-benzofluoranthene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Benzo(k)fluoranthene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Fluoranthene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Fluorene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Phenanthrene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Pyrene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Naphthalene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
1-methylnaphthalene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
2-methylnaphthalene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Benzo-a-pyrene		<12.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	12.5
Surr. 2-Fluorophenol		76	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	25-121
Surr. Phenol-d6		50	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	24-113
Surr. Nitroobenzene-d5		100	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	23-120
Surr. 2-Fluorobiphenyl		98	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	30-115
Surr. 2,4,6-Tribromophenol		26	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	19-122
Surr. Terphenyl-d14		88	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	28-137

Project Number: 19349
 Project Name: Shell Grimes
 Project Location: Hobbs, NM

Date: 10-1-98
 Page # 18
 Order ID Number: 9808000167
 Sample Number: 107008

Sample Description: TSB-8 8-10'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Chlordane		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
DDT		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Endrin		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	9/18/98	9/18/98	RC	5044	5401	0.1
Arsenic		<0.50	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Barium		99	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Cadmium		<0.10	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.10
Chromium		7.3	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Lead		3.4	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Total Mercury		<0.10	mg/Kg	E 7471 A	9/9/98	9/10/98	MS	4917	5275	0.10
Selenium		<0.50	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Silver		<0.50	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Uranium		<2.0	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	2.0
Copper		2.1	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	1.0
Iron		6,000	mg/Kg	E 6010B	9/17/98	9/20/98	RR	5090	5461	10
Manganese		58	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	1.0
Zinc		14	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	2.0
Aluminum		7,700	mg/Kg	E 6010B	9/17/98	9/20/98	RR	5090	5461	10
Boron		21	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	10
Cobalt		8.2	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Molybdenum		2.2	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	1.0
Nickel		8.8	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Cyanide		<0.010	mg/Kg	SM 4500 CN,CE		9/15/98	SA		5330	0.01
Fluoride		17	mg/Kg	E 300.0		9/21/98	JS		5490	0.2
Nitrate		1.7	mg/Kg	E 300.0		9/21/98	JS		5490	0.2
Chloride		1,900	mg/Kg	E 300.0		9/21/98	JS		5490	25.0
Sulfate		19	mg/Kg	E 300.0		9/21/98	JS		5490	1.0
TDS		3,200	mg/Kg	E 160.1		9/21/98	RS		5449	---
pH		8.6	s.u.	E 150.1		9/10/98	SA		5271	---
TRPHC		15.6	mg/Kg	S 418.1	9/15/98	9/15/98	SR	4988	5324	10.0
Total Phenols		2.8	mg/Kg	SM 5530 A,D		9/20/98	RC		5450	0.25
Total Radium		6.23	pCi/gm	E 901.1M		9/15/98	DS	---	---	---

ARS Tracking Number: ARS-98-0914

P.O. Number:

Client I.D.: 107008

ARS Sample I.D.: ARS-98-3348

Date Sampled: 9/4/98

Date Received: 9/11/98

Time Sampled: N/A

Time Received: 1000

Type of Sample: Solid

Date of Report: 9/15/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	<0.96	N/A	pCi/gm	<0.036	N/A	Bq/gm	EPA 901.1M	9/15/98 1151	kh
Ra-228	0.43	0.24	pCi/gm	0.016	0.009	Bq/gm	EPA 901.1M	9/15/98 1151	kh
Pb-210	<1.39	N/A	pCi/gm	<0.051	N/A	Bq/gm	EPA 901.1M	9/15/98 1151	kh
Total Activity	10.25	N/A	pCi/gm	0.379	N/A	Bq/gm	EPA 901.1M	9/15/98 1151	kh

Notes:



Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-1-98
Page # 19

Project Number: 19349
Project Name: Shell Grimes
Project Location: Hobbs, NM

Order ID Number: 9808000167
Sample Number: 107009

Sample Description: TSB-8 40-42'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<400	ug/Kg	S-8260B		9/20/98	AG		5461	400
Acrylonitrile		<400	ug/Kg	S-8260B		9/20/98	AG		5461	400
Benzene		<80	ug/Kg	S-8260B		9/20/98	AG		5461	80
Carbon tetrachloride		<80	ug/Kg	S-8260B		9/20/98	AG		5461	80
Chlorobenzene		<80	ug/Kg	S-8260B		9/20/98	AG		5461	80
1,2-dichloroethane		<80	ug/Kg	S-8260B		9/20/98	AG		5461	80
1,1,2,2-tetrachloroethane		<80	ug/Kg	S-8260B		9/20/98	AG		5461	80
1,1,1-trichloroethane		<80	ug/Kg	S-8260B		9/20/98	AG		5461	80
1,1,2-trichloroethane		<80	ug/Kg	S-8260B		9/20/98	AG		5461	80
1,1,2-trichloroethylene		<80	ug/Kg	S-8260B		9/20/98	AG		5461	80
Chloroform		<80	ug/Kg	S-8260B		9/20/98	AG		5461	80
Dichlorobenzene		<160	ug/Kg	S-8260B		9/20/98	AG		5461	160
1,1-dichloroethylene		<80	ug/Kg	S-8260B		9/20/98	AG		5461	80
Dichloropropenes		<80	ug/Kg	S-8260B		9/20/98	AG		5461	80
Ethylbenzene		<80	ug/Kg	S-8260B		9/20/98	AG		5461	80
Bromodichloromethane		<80	ug/Kg	S-8260B		9/20/98	AG		5461	80
Bromomethane		6,600	ug/Kg	S-8260B		9/20/98	AG		5461	400
Chloromethane		4,800	ug/Kg	S-8260B		9/20/98	AG		5461	80
Dichlorodifluoromethane		<80	ug/Kg	S-8260B		9/20/98	AG		5461	80
Dichloromethane		<80	ug/Kg	S-8260B		9/20/98	AG		5461	80
Trichlorofluoromethane		<80	ug/Kg	S-8260B		9/20/98	AG		5461	80
Tetrachloroethylene		<80	ug/Kg	S-8260B		9/20/98	AG		5461	80
Toluene		<80	ug/Kg	S-8260B		9/20/98	AG		5461	80
Trichloroethylene		<80	ug/Kg	S-8260B		9/20/98	AG		5461	80
Vinyl chloride		<80	ug/Kg	S-8260B		9/20/98	AG		5461	80
m,p-xylene		<80	ug/Kg	S-8260B		9/20/98	AG		5461	80
o-xylene		<80	ug/Kg	S-8260B		9/20/98	AG		5461	80
1,1-dichloroethane		<80	ug/Kg	S-8260B		9/20/98	AG		5461	80
Ethylene dibromide		<80	ug/Kg	S-8260B		9/20/98	AG		5461	80
cis-1,2-dichloroethylene		<80	ug/Kg	S-8260B		9/20/98	AG		5461	80
trans-1,2-dichloroethylene		<80	ug/Kg	S-8260B		9/20/98	AG		5461	80
Methylene chloride		<400	ug/Kg	S-8260B		9/20/98	AG		5461	400
Dibromofluoromethane		96	%	S-8260B		9/20/98	AG		5461	71-132
Toluene-d8		102	%	S-8260B		9/20/98	AG		5461	82-124
4-Bromofluorobenzene		101	%	S-8260B		9/20/98	AG		5461	76-126
Benzidine		<2.5	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25

Date: 10-1-98

Page # 20

Order ID Number: 9808000167

Sample Number: 107009

Project Number: 19349
 Project Name: Shell Grimes
 Project Location: Hobbs, NM

Sample Description: TSB-8 40-42'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Isophorone		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
2,4-dinitro-o-cresol		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
i-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	1.25
Phenol		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Anthracene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Fluorene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Pyrene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
1-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
2-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	9/14/98	9/18/98	DG	5030	5410	0.25
Surr. 2-Fluorophenol		28	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	25-121
Surr. Phenol-d6		28	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	24-113
Surr. Nitroobenzene-d5		25	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	23-120
Surr. 2-Fluorobiphenyl		32	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	30-115
Surr. 2,4,6-Tribromophenol		28	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	19-122
Surr. Terphenyl-d14		47	%	S-8270C	9/14/98	9/18/98	DG	5030	5410	28-137

Date: 10-1-98

Page # 21

Project Number: 19349
 Project Name: Shell Grimes
 Project Location: Hobbs, NM

Order ID Number: 9808000167
 Sample Number: 107009

Sample Description: TSB-8 40-42'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Chlordane		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
DDT		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Endrin		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	9/15/98	9/18/98	RC	5044	5401	0.1
Arsenic		1.6	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Barium		730	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Cadmium		0.22	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.10
Chromium		6.3	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Lead		3.2	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Total Mercury		<0.10	mg/Kg	E 7471 A	9/9/98	9/10/98	MS	4917	5275	0.10
Selenium		1.6	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Silver		0.94	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Uranium		<1.0	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	1.0
Copper		2.6	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	1.0
Iron		2,500	mg/Kg	E 6010B	9/17/98	9/20/98	RR	5090	5461	10
Manganese		44	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	1.0
Zinc		12	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	2.0
Aluminum		2,100	mg/Kg	E 6010B	9/17/98	9/20/98	RR	5090	5461	10
Boron		16	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	10
Cobalt		8.7	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Molybdenum		2.6	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	1.0
Nickel		11	mg/Kg	E 6010B	9/17/98	9/18/98	RR	5090	5402	0.50
Cyanide		<0.010	mg/Kg	M 4500 CN,CE		9/15/98	SA		5330	0.01
Fluoride		1.5	mg/Kg	E 300.0		9/21/98	JS		5490	0.2
Nitrate		1.7	mg/Kg	E 300.0		9/21/98	JS		5490	0.2
Chloride		550	mg/Kg	E 300.0		9/21/98	JS		5491	10.0
Sulfate		62	mg/Kg	E 300.0		9/21/98	JS		5490	1.0
TDS		1,000	mg/Kg	E 160.1		9/21/98	RS		5449	---
pH		8.4	s.u.	E 150.1		9/10/98	SA		5271	---
TRPHC		15.6	mg/Kg	S 418.1	9/15/98	9/15/98	SR	4988	5324	10.0
Total Phenols		0.64	mg/Kg	SM 5530 A,D		9/20/98	RC		5450	0.25
Total Radium		19.93	pCi/gm	E 901.1M		9/15/98	DS	---	---	---

ARS Tracking Number: ARS-98-0914

P.O. Number:

Client I.D.: 107009

ARS Sample I.D.: ARS-98-3349

Date Sampled: 9/4/98

Date Received: 9/11/98

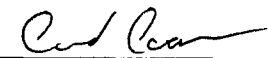
Time Sampled: N/A

Time Received: 1000

Type of Sample: Solid

Date of Report: 9/15/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	4.36	1.85	pCi/gm	0.161	0.068	Bq/gm	EPA 901.1M	9/15/98 1253	kh
Ra-228	0.43	0.22	pCi/gm	0.016	0.008	Bq/gm	EPA 901.1M	9/15/98 1253	kh
Pb-210	4.13	1.72	pCi/gm	0.153	0.064	Bq/gm	EPA 901.1M	9/15/98 1253	kh
Total Activity	19.93	N/A	pCi/gm	0.737	N/A	Bq/gm	EPA 901.1M	9/15/98 1253	kh
Notes:									


 Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-6-98
Page # 22

Project Number: 19350
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000510
Sample Number: 106097

Field Code: TSB-9 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<345	ug/Kg	S-8260B		9/6/98	AG		5207	345
Acrylonitrile		<345	ug/Kg	S-8260B		9/6/98	AG		5207	345
Benzene		<69	ug/Kg	S-8260B		9/6/98	AG		5207	69
Carbon tetrachloride		<69	ug/Kg	S-8260B		9/6/98	AG		5207	69
Chlorobenzene		<69	ug/Kg	S-8260B		9/6/98	AG		5207	69
1,2-dichloroethane		<69	ug/Kg	S-8260B		9/6/98	AG		5207	69
1,1,2,2-tetrachloroethane		<69	ug/Kg	S-8260B		9/6/98	AG		5207	69
1,1,1-trichloroethane		<69	ug/Kg	S-8260B		9/6/98	AG		5207	69
1,1,2-trichloroethane		<69	ug/Kg	S-8260B		9/6/98	AG		5207	69
1,1,2-trichloroethylene		<69	ug/Kg	S-8260B		9/6/98	AG		5207	69
Chloroform		<69	ug/Kg	S-8260B		9/6/98	AG		5207	69
Dichlorobenzene		<138	ug/Kg	S-8260B		9/6/98	AG		5207	138
1,1-dichloroethylene		<69	ug/Kg	S-8260B		9/6/98	AG		5207	69
Dichloropropenes		<69	ug/Kg	S-8260B		9/6/98	AG		5207	69
Ethylbenzene		<69	ug/Kg	S-8260B		9/6/98	AG		5207	69
Bromodichloromethane		<69	ug/Kg	S-8260B		9/6/98	AG		5207	69
Bromomethane		<345	ug/Kg	S-8260B		9/6/98	AG		5207	345
Chloromethane		<69	ug/Kg	S-8260B		9/6/98	AG		5207	69
Dichlorodifluoromethane		<69	ug/Kg	S-8260B		9/6/98	AG		5207	69
Dichloromethane		<69	ug/Kg	S-8260B		9/6/98	AG		5207	69
Trichlorofluoromethane		<69	ug/Kg	S-8260B		9/6/98	AG		5207	69
Tetrachloroethylene		<69	ug/Kg	S-8260B		9/6/98	AG		5207	69
Toluene		<69	ug/Kg	S-8260B		9/6/98	AG		5207	69
Trichloroethylene		<69	ug/Kg	S-8260B		9/6/98	AG		5207	69
Vinyl chloride		<69	ug/Kg	S-8260B		9/6/98	AG		5207	69
m,p-xylene		<69	ug/Kg	S-8260B		9/6/98	AG		5207	69
o-xylene		<69	ug/Kg	S-8260B		9/6/98	AG		5207	69
1,1-dichloroethane		<69	ug/Kg	S-8260B		9/6/98	AG		5207	69
Ethylene dibromide		<69	ug/Kg	S-8260B		9/6/98	AG		5207	69
cis-1,2-dichloroethylene		<69	ug/Kg	S-8260B		9/6/98	AG		5207	69
trans-1,2-dichloroethylene		<69	ug/Kg	S-8260B		9/6/98	AG		5207	69
Methylene chloride		<345	ug/Kg	S-8260B		9/6/98	AG		5207	345
Surr. Dibromofluoromethane		100	%	S-8260B		9/6/98	AG		5207	86-118
Surr. Toluene-d8		87	%	S-8260B		9/6/98	AG		5207	88-110
Surr. 4-Bromofluorobenzene		93	%	S-8260B		9/6/98	AG		5207	86-115
Benzidine		<2.5	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25

Corrected *

Date: 10-6-98

Page # 23

Order ID Number: 9808000510

Sample Number: 106097

Project Number: 19350

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Field Code: TSB-9 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Isophorone		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
2,4-dinitro-o-cresol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
n-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Anthracene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Fluorene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Pyrene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
1-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
2-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Phenol		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Surr. 2-Fluorophenol		65	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	25-121
Surr. Phenol-d6		68	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	24-113
Surr. Nitrobenzene-d5		66	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	23-120
Surr. 2-Fluorobiphenyl		71	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	30-115
Surr. 2,4,6-Tribromophenol		61	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	19-122
Surr. Terphenyl-d14		83	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	28-137

Corrected - Added Phenol result

Project Number: 19350
 Project Name: Shell Grimes
 Project Location: Grimes Battery, Hobbs, NM

Date: 10-6-98
 Page # 24
 Order ID Number: 9808000510
 Sample Number: 106097

Field Code: TSB-9 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
Chlordane		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
DDT		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
Endrin		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	9/8/98	9/9/98	RC	4910	5262	0.1
Arsenic		1.6	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Barium		230	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Cadmium		0.15	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.10
Chromium		4.2	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Lead		2.1	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Total Mercury		<0.1	mg/Kg	S 7471	8/27/98	8/28/98	MS	4804	5149	0.1
Selenium		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Silver		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	2.0
Copper		4.4	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	1.0
Iron		2,800	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5040	5373	10
Manganese		35	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	1.0
Zinc		9.6	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	2.0
Aluminum		4,900	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5040	5373	10
Boron		12	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	10
Cobalt		6.4	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Molybdenum		1.8	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	1.0
Nickel		6	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Cyanide		<0.01	mg/Kg	SM 4500 C,E		9/1/98	SA		5186	0.01
Fluoride		1	mg/Kg	E 300.0		9/19/98	JS		5422	0.2
Nitrate		3.8	mg/Kg	E 300.0		9/19/98	JS		5422	0.2
Chloride		22	mg/Kg	E 300.0		9/19/98	JS		5422	1.0
Sulfate		18	mg/Kg	E 300.0		9/19/98	JS		5422	1.0
TDS		400	mg/Kg	E 160.1		9/18/98	RS		5400	---
pH		8.4	s.u.	E 150.1		8/27/98	SA		5134	---
TRPHC		97.2	mg/Kg	S 418.1	8/27/98	8/29/98	SR	4809	5160	10
Total Phenols		<0.25	mg/Kg	SM 5530 A,D		9/16/98	RC	5356	0.01	0.25
Total Radium		0.66	pCi/gm	E 901.1M		9/4/98	DS	---	---	---



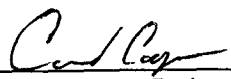
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ARS Tracking Number: ARS-98-0872 P.O. Number:
 Client I.D.: Sample No. 106097 ARS Sample I.D.: ARS-98-3184
 Date Sampled: 8/24/98 Date Received: 8/27/98
 Time Sampled: N/A Time Received: 1051
 Type of Sample: Soil Date of Report: 9/8/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	<0.84	N/A	pCi/gm	<0.031	N/A	Bq/gm	EPA 901.1M	9/4/98 1507	KH
Ra-228	<0.08	N/A	pCi/gm	<0.003	N/A	Bq/gm	EPA 901.1M	9/4/98 1507	KH
Pb-210	<0.92	N/A	pCi/gm	<0.034	N/A	Bq/gm	EPA 901.1M	9/4/98 1507	KH
Total Activity	0.66	N/A	pCi/gm	0.024	N/A	Bq/gm	EPA 901.1M	9/4/98 1507	KH

Notes:


 Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-6-98
Page # 25

Project Number: 19350
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000510
Sample Number: 106098

Field Code: TSB-9 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<185	ug/Kg	S-8260B		9/6/98	AG		5207	185
Acrylonitrile		<185	ug/Kg	S-8260B		9/6/98	AG		5207	185
Benzene		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
Carbon tetrachloride		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
Chlorobenzene		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
1,2-dichloroethane		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
1,1,2,2-tetrachloroethane		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
1,1,1-trichloroethane		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
1,1,2-trichloroethane		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
1,1,2-trichloroethylene		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
Chloroform		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
Dichlorobenzene		<74	ug/Kg	S-8260B		9/6/98	AG		5207	74
1,1-dichloroethylene		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
Dichloropropenes		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
Ethylbenzene		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
Bromodichloromethane		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
Bromomethane		<185	ug/Kg	S-8260B		9/6/98	AG		5207	185
Chloromethane		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
Dichlorodifluoromethane		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
Dichloromethane		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
Trichlorofluoromethane		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
Tetrachloroethylene		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
Toluene		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
Trichloroethylene		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
Vinyl chloride		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
m,p-xylene		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
o-xylene		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
1,1-dichloroethane		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
Ethylene dibromide		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
cis-1,2-dichloroethylene		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
trans-1,2-dichloroethylene		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
Methylene chloride		<185	ug/Kg	S-8260B		9/6/98	AG		5207	185
Surr. Dibromofluoromethane		111	%	S-8260B		9/6/98	AG		5207	86-118
Surr. Toluene-d8		88	%	S-8260B		9/6/98	AG		5207	88-110
Surr. 4-Bromofluorobenzene		98	%	S-8260B		9/6/98	AG		5207	86-115
Benzidine		<2.5	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25

Corrected *

Date: 10-6-98

Page # 26

Order ID Number: 9808000510

Sample Number: 106098

Project Number: 19350

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Field Code: TSB-9 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Isophorone		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
2,4-dinitro-o-cresol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
n-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Anthracene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Fluorene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Pyrene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
1-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
2-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Phenol		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Surr. 2-Fluorophenol		58	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	25-121
Surr. Phenol-d6		61	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	24-113
Surr. Nitrobenzene-d5		59	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	23-120
Surr. 2-Fluorobiphenyl		65	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	30-115
Surr. 2,4,6-Tribromophenol		53	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	19-122
Surr. Terphenyl-d14		71	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	28-137

Corrected - Added Phenol result.

Project Number: 19350
 Project Name: Shell Grimes
 Project Location: Grimes Battery, Hobbs, NM

Date: 10-6-98
 Page # 27
 Order ID Number: 9808000510
 Sample Number: 106098

Field Code: TSB-9 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
Chlordane		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
DDT		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
Endrin		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	9/8/98	9/9/98	RC	4910	5262	0.1
Arsenic		1.4	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Barium		161	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Cadmium		0.12	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.10
Chromium		2.8	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Lead		1.8	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Total Mercury		<0.1	mg/Kg	S 7471	8/27/98	8/28/98	MS	4804	5149	0.1
Selenium		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Silver		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	2.0
Copper		2.1	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	1.0
Iron		1,800	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5040	5373	10
Manganese		15	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	1.0
Zinc		7.1	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	2.0
Aluminum		3,600	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5040	5373	10
Boron		<10	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	10
Cobalt		4.6	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Molybdenum		1.5	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	1.0
Nickel		4.8	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Cyanide		<0.01	mg/Kg	SM 4500 C,E		9/1/98	SA		5186	0.01
Fluoride		11	mg/Kg	E 300.0		9/19/98	JS		5422	0.2
Nitrate		1.8	mg/Kg	E 300.0		9/19/98	JS		5422	0.2
Chloride		18	mg/Kg	E 300.0		9/19/98	JS		5422	1.0
Sulfate		170	mg/Kg	E 300.0		9/19/98	JS		5422	2.0
TDS		440	mg/Kg	E160.1		9/18/98	RS		5400	---
pH		8.5	s.u.	E 150.1		8/27/98	SA		5134	---
TRPHC		<10	mg/Kg	S 418.1	8/27/98	8/29/98	SR	4809	5160	10
Total Phenols		<0.25	mg/Kg	SM 5530 A,D		9/16/98	RC	5356	0.01	0.25
Total Radium		1.19	pCi/gm	E 901.1M		9/3/98	DS	---	---	---

ARS Tracking Number:	ARS-98-0872	P.O. Number:	
Client I.D.:	Sample No. 106098	ARS Sample I.D.:	ARS-98-3185
Date Sampled:	8/24/98	Date Received:	8/27/98
Time Sampled:	N/A	Time Received:	1051
Type of Sample:	Soil	Date of Report:	9/8/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	<0.71	N/A	pCi/gm	<0.026	N/A	Bq/gm	EPA 901.1M	9/3/98 1242	KH
Ra-228	<0.08	N/A	pCi/gm	<0.003	N/A	Bq/gm	EPA 901.1M	9/3/98 1242	KH
Pb-210	<0.84	N/A	pCi/gm	<0.031	N/A	Bq/gm	EPA 901.1M	9/3/98 1242	KH
Total Activity	1.19	N/A	pCi/gm	0.044	N/A	Bq/gm	EPA 901.1M	9/3/98 1242	KH

Notes:



Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-6-98
Page # 28

Project Number: 19350
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000510
Sample Number: 106099

Field Code: TSB-9 18-20'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<645	ug/Kg	S-8260B		9/6/98	AG		5207	645
Acrylonitrile		<645	ug/Kg	S-8260B		9/6/98	AG		5207	645
Benzene		<129	ug/Kg	S-8260B		9/6/98	AG		5207	129
Carbon tetrachloride		<129	ug/Kg	S-8260B		9/6/98	AG		5207	129
Chlorobenzene		<129	ug/Kg	S-8260B		9/6/98	AG		5207	129
1,2-dichloroethane		<129	ug/Kg	S-8260B		9/6/98	AG		5207	129
1,1,2,2-tetrachloroethane		<129	ug/Kg	S-8260B		9/6/98	AG		5207	129
1,1,1-trichloroethane		<129	ug/Kg	S-8260B		9/6/98	AG		5207	129
1,1,2-trichloroethane		<129	ug/Kg	S-8260B		9/6/98	AG		5207	129
1,1,2-trichloroethylene		<129	ug/Kg	S-8260B		9/6/98	AG		5207	129
Chloroform		<129	ug/Kg	S-8260B		9/6/98	AG		5207	129
Dichlorobenzene		<258	ug/Kg	S-8260B		9/6/98	AG		5207	258
1,1-dichloroethylene		<129	ug/Kg	S-8260B		9/6/98	AG		5207	129
Dichloropropenes		<129	ug/Kg	S-8260B		9/6/98	AG		5207	129
Ethylbenzene		<129	ug/Kg	S-8260B		9/6/98	AG		5207	129
Bromodichloromethane		<129	ug/Kg	S-8260B		9/6/98	AG		5207	129
Bromomethane		<645	ug/Kg	S-8260B		9/6/98	AG		5207	645
Chloromethane		<129	ug/Kg	S-8260B		9/6/98	AG		5207	129
Dichlorodifluoromethane		<129	ug/Kg	S-8260B		9/6/98	AG		5207	129
Dichloromethane		<129	ug/Kg	S-8260B		9/6/98	AG		5207	129
Trichlorofluoromethane		<129	ug/Kg	S-8260B		9/6/98	AG		5207	129
Tetrachloroethylene		<129	ug/Kg	S-8260B		9/6/98	AG		5207	129
Toluene		<129	ug/Kg	S-8260B		9/6/98	AG		5207	129
Trichloroethylene		<129	ug/Kg	S-8260B		9/6/98	AG		5207	129
Vinyl chloride		<129	ug/Kg	S-8260B		9/6/98	AG		5207	129
m,p-xylene		<129	ug/Kg	S-8260B		9/6/98	AG		5207	129
o-xylene		<129	ug/Kg	S-8260B		9/6/98	AG		5207	129
1,1-dichloroethane		<129	ug/Kg	S-8260B		9/6/98	AG		5207	129
Ethylene dibromide		<129	ug/Kg	S-8260B		9/6/98	AG		5207	129
cis-1,2-dichloroethylene		<129	ug/Kg	S-8260B		9/6/98	AG		5207	129
trans-1,2-dichloroethylene		<129	ug/Kg	S-8260B		9/6/98	AG		5207	129
Methylene chloride		<645	ug/Kg	S-8260B		9/6/98	AG		5207	645
Surr. Dibromofluoromethane		109	%	S-8260B		9/6/98	AG		5207	86-118
Surr. Toluene-d8		88	%	S-8260B		9/6/98	AG		5207	88-110
Surr. 4-Bromofluorobenzene		97	%	S-8260B		9/6/98	AG		5207	86-115
Benzidine		<2.5	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25

Corrected *

Date: 10-6-98

Page # 29

Order ID Number: 9808000510

Sample Number: 106099

Project Number: 19350

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Field Code: TSB-9 18-20'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Isophorone		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
2,4-dinitro-o-cresol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
n-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Anthracene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Fluorene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Pyrene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
1-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
2-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Phenol		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Surr. 2-Fluorophenol		62	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	25-121
Surr. Phenol-d6		64	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	24-113
Surr. Nitrobenzene-d5		65	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	23-120
Surr. 2-Fluorobiphenyl		69	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	30-115
Surr. 2,4,6-Tribromophenol		57	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	19-122
Surr. Terphenyl-d14		79	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	28-137

* Corrected - Added Phenol result.

Project Number: 19350
 Project Name: Shell Grimes
 Project Location: Grimes Battery, Hobbs, NM

Date: 10-6-98
 Page # 30
 Order ID Number: 9808000510
 Sample Number: 106099

Field Code: TSB-9 18-20'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
Chlordane		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
DDT		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
Endrin		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S-8080	10/15/98	10/15/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	9/8/98	9/9/98	RC	4910	5262	0.1
Arsenic		3.8	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Barium		146	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Cadmium		0.19	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.10
Chromium		2.8	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Lead		1.8	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Total Mercury		<0.1	mg/Kg	S 7471	8/27/98	8/28/98	MS	4804	5149	0.1
Selenium		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Silver		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	2.0
Copper		4.3	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	1.0
Iron		1,800	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5040	5373	10
Manganese		23	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	1.0
Zinc		7.6	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	2.0
Aluminum		3,300	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5040	5373	10
Boron		<10	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	10
Cobalt		4	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Molybdenum		1.6	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	1.0
Nickel		4.1	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Cyanide		<0.01	mg/Kg	SM 4500 C,E		9/1/98	SA		5186	0.01
Fluoride		3.8	mg/Kg	E 300.0		9/19/98	JS		5423	0.4
Nitrate		<0.2	mg/Kg	E 300.0		9/19/98	JS		5423	0.2
Chloride		260	mg/Kg	E 300.0		9/19/98	JS		5423	5.0
Sulfate		270	mg/Kg	E 300.0		9/19/98	JS		5423	5.0
TDS		850	mg/Kg	E 160.1		9/19/98	RS		5417	---
pH		8.4	s.u.	E 150.1		8/27/98	SA		5134	---
TRPHC		117	mg/Kg	S 418.1	8/27/98	8/29/98	SR	4809	5160	10
Total Phenols		<0.25	mg/Kg	SM 5530 A,D		9/16/98	RC	5356	0.01	0.25
Total Radium		7.38	pCi/gm	E 901.1M		9/4/98	DS	---	---	---



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ARS Tracking Number: ARS-98-0872 P.O. Number:
 Client I.D.: Sample No. 106099 ARS Sample I.D.: ARS-98-3186
 Date Sampled: 8/24/98 Date Received: 8/27/98
 Time Sampled: N/A Time Received: 1051
 Type of Sample: Soil Date of Report: 9/8/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	2.29	1.39	pCi/gm	0.085	0.051	Bq/gm	EPA 901.1M	9/4/98 1539	KH
Ra-228	0.35	0.18	pCi/gm	0.013	0.007	Bq/gm	EPA 901.1M	9/4/98 1539	KH
Pb-210	2.51	2.07	pCi/gm	0.093	0.077	Bq/gm	EPA 901.1M	9/4/98 1539	KH
Total Activity	7.38	N/A	pCi/gm	0.273	N/A	Bq/gm	EPA 901.1M	9/4/98 1539	KH

Notes:


 Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report
Corrected *

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 11-4-98
Page # 5

Project Number: 19350
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000488
Sample Number: 106029

Field Code: TSB-10 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<3150	ug/Kg	S-8260B		9/3/98	AG		5205	3150
Acrylonitrile		<3150	ug/Kg	S-8260B		9/3/98	AG		5205	3150
Benzene		<630	ug/Kg	S-8260B		9/3/98	AG		5205	630
Carbon tetrachloride		<630	ug/Kg	S-8260B		9/3/98	AG		5205	630
Chlorobenzene		<630	ug/Kg	S-8260B		9/3/98	AG		5205	630
1,2-dichloroethane		<630	ug/Kg	S-8260B		9/3/98	AG		5205	630
1,1,2,2-tetrachloroethane		<630	ug/Kg	S-8260B		9/3/98	AG		5205	630
1,1,1-trichloroethane		<630	ug/Kg	S-8260B		9/3/98	AG		5205	630
1,1,2-trichloroethane		<630	ug/Kg	S-8260B		9/3/98	AG		5205	630
1,1,2-trichloroethylene		<630	ug/Kg	S-8260B		9/3/98	AG		5205	630
Chloroform		<630	ug/Kg	S-8260B		9/3/98	AG		5205	630
Dichlorobenzene		<1260	ug/Kg	S-8260B		9/3/98	AG		5205	1260
1,1-dichloroethylene		<630	ug/Kg	S-8260B		9/3/98	AG		5205	630
Dichloropropenes		<630	ug/Kg	S-8260B		9/3/98	AG		5205	630
Ethylbenzene		<630	ug/Kg	S-8260B		9/3/98	AG		5205	630
Bromodichloromethane		<630	ug/Kg	S-8260B		9/3/98	AG		5205	630
Bromomethane		<3150	ug/Kg	S-8260B		9/3/98	AG		5205	3150
Chloromethane		<630	ug/Kg	S-8260B		9/3/98	AG		5205	630
Dichlorodifluoromethane		<630	ug/Kg	S-8260B		9/3/98	AG		5205	630
Dichloromethane		<630	ug/Kg	S-8260B		9/3/98	AG		5205	630
Trichlorofluoromethane		<630	ug/Kg	S-8260B		9/3/98	AG		5205	630
Tetrachloroethylene		<630	ug/Kg	S-8260B		9/3/98	AG		5205	630
Toluene		<630	ug/Kg	S-8260B		9/3/98	AG		5205	630
Trichloroethylene		<630	ug/Kg	S-8260B		9/3/98	AG		5205	630
Vinyl chloride		<630	ug/Kg	S-8260B		9/3/98	AG		5205	630
m,p-xylene		<630	ug/Kg	S-8260B		9/3/98	AG		5205	630
o-xylene		<630	ug/Kg	S-8260B		9/3/98	AG		5205	630
1,1-dichloroethane		<630	ug/Kg	S-8260B		9/3/98	AG		5205	630
Ethylene dibromide		<630	ug/Kg	S-8260B		9/3/98	AG		5205	630
cis-1,2-dichloroethylene		<630	ug/Kg	S-8260B		9/3/98	AG		5205	630
trans-1,2-dichloroethylene		<630	ug/Kg	S-8260B		9/3/98	AG		5205	630
Methylene chloride		<3150	ug/Kg	S-8260B		9/3/98	AG		5205	3150
Surr. Dibromofluoromethane		110	%	S-8260B		9/3/98	AG		5205	71-132
Surr. Toluene-d8		97	%	S-8260B		9/3/98	AG		5205	82-124
Surr. 4-Bromofluorobenzene		110	%	S-8260B		9/3/98	AG		5205	76-126
Benzidine		<125	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	125
Hexachlorobenzene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Pentachlorobenzene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
1,2,4,5-tetrachlorobenzene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5

Corrected Benzidine misidentification to <125 mg/kg.

Corrected *

Date: 10-6-98

Page # 6

Project Number: 19350

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000488

Sample Number: 106029

Field Code: TSB-10 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
2,4-dichlorophenol		<62.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	62.5
2,4,5-trichlorophenol		<62.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	62.5
2,4,6-trichlorophenol		<62.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	62.5
bis (2-chloroethyl) ether		<62.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	62.5
bis (2-chloroisopropyl) ether		<62.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	62.5
bis (chloromethyl) ether		<62.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	62.5
3,3-dichlorobenzidine		<62.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	62.5
2,4-dinitrotoluene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Diphenylhydrazine		<62.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	62.5
Hexachlorobutadiene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Hexachlorocyclopentadiene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Isophorone		<62.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	62.5
Nitrobenzene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
2,4-dinitro-o-cresol		<62.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	62.5
2,4-dinitrophenols		<62.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	62.5
n-nitrosodiethylamine		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
N-nitrosodimethylamine		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
N-nitrosodibutylamine		<62.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	62.5
N-nitrosodiphenylamine		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
N-nitrosopyrrolidine		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Pentachlorophenol		<62.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	62.5
Dibutyl phthalate		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
di-2-ethylhexyl phthalate		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Diethyl phthalate		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Dimethyl phthalate		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Anthracene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
3,4-benzofluoranthene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Benzo(k)fluoranthene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Fluoranthene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Fluorene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Phenanthrene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Pyrene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Naphthalene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
1-methylnaphthalene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
2-methylnaphthalene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Benzo-a-pyrene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Phenol		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Surr. 2-Fluorophenol		56	%	S-8270C	9/8/98	9/18/98	JG	4916	5412	25-121
Surr. Phenol-d6		54	%	S-8270C	9/8/98	9/18/98	JG	4916	5412	24-113
Surr. Nitrobenzene-d5		64	%	S-8270C	9/8/98	9/18/98	JG	4916	5412	23-120
Surr. 2-Fluorobiphenyl		79	%	S-8270C	9/8/98	9/18/98	JG	4916	5412	30-115
Surr. 2,4,6-Tribromophenol		60	%	S-8270C	9/8/98	9/18/98	JG	4916	5412	19-122
Surr. Terphenyl-d14		114	%	S-8270C	9/8/98	9/18/98	JG	4916	5412	28-137

Corrected - Added Phenol result.

Date: 10-6-98

Page # 7

Project Number: 19350

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000488

Sample Number: 106029

Field Code: TSB-10 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	8/29/98	9/22/98	KC	---	---	50
Chlordane		<50	ug/Kg	S-8080	8/29/98	9/22/98	KC	---	---	50
DDT		<50	ug/Kg	S-8080	8/29/98	9/22/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S-8080	8/29/98	9/22/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S-8080	8/29/98	9/22/98	KC	---	---	50
Endrin		<50	ug/Kg	S-8080	8/29/98	9/22/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S-8080	8/29/98	9/22/98	KC	---	---	50
PCB's		<1.0	mg/Kg	S 8082	8/26/98	9/3/98	RC	4795	5204	1.0
Arsenic		1.5	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Barium		125	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Cadmium		0.53	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.10
Chromium		8.0	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Lead		10	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Total Mercury		<0.10	mg/Kg	S 7471A	8/27/98	8/28/98	MS	4804	5149	0.10
Selenium		<0.50	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Silver		<0.50	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	2.0
Copper		8.4	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	1.0
Iron		7,300	mg/Kg	S 6010B	9/11/98	9/17/98	RR	4922	5373	10
Manganese		139	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	1.0
Zinc		68	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	2.0
Aluminum		7,700	mg/Kg	S 6010B	9/11/98	9/17/98	RR	4922	5373	10
Boron		19	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	10
Cobalt		7.7	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Molybdenum		2.8	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	1.0
Nickel		16	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Cyanide		<0.01	mg/Kg	4500 CN,CE		8/27/98	SA		5128	0.01
Fluoride		1.4	mg/Kg	E 300.0		9/2/98	JS		5192	0.2
Nitrate		1.9	mg/Kg	E 300.0		9/2/98	JS		5192	0.2
Chloride		70	mg/Kg	E 300.0		9/2/98	JS		5192	1.0
Sulfate		420	mg/Kg	E 300.0		9/19/98	JS		5420	1.0
TDS		2,100	mg/Kg	E 160.1		9/16/98	JS		5364	---
pH		8.8	s.u.	E 150.1		8/26/98	SA		5113	---
TRPHC		18,500	mg/Kg	S 418.1	8/27/98	8/30/98	SR	4810	5168	10.0
Total Phenols		3.5	mg/Kg	M 5530 A,D		8/26/98	RC		5114	0.25
Total Radium		3.28	pCi/gm	E 901.1M		9/3/98	DS	---	---	---

ARS Tracking Number:	ARS-98-0872	P.O. Number:	
Client I.D.:	Sample No. 106029	ARS Sample I.D.:	ARS-98-3169
Date Sampled:	8/21/98	Date Received:	8/27/98
Time Sampled:	N/A	Time Received:	1051
Type of Sample:	Soil	Date of Report:	9/8/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	<1.02	N/A	pCi/gm	<0.038	N/A	Bq/gm	EPA 901.1M	9/3/98 1503	KH
Ra-228	<0.17	N/A	pCi/gm	<0.006	N/A	Bq/gm	EPA 901.1M	9/3/98 1503	KH
Pb-210	<1.16	N/A	pCi/gm	<0.043	N/A	Bq/gm	EPA 901.1M	9/3/98 1503	KH
Total Activity	3.28	N/A	pCi/gm	0.121	N/A	Bq/gm	EPA 901.1M	9/3/98 1503	KH

Notes:


Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Project Number: 19350
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Field Code: TSB-10 3-5'

[illegible]

Corrected *

Date: 10-6-98

Page # 9

Project Number: 19350

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000488

Sample Number: 106030

Field Code: TSB-10 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<12.5	mg/Kg	S-8270C	9/8/98	9/21/98	JG	4916	5480	12.5
2,4-dichlorophenol		<62.5	mg/Kg	S-8270C	9/8/98	9/21/98	JG	4916	5480	62.5
2,4,5-trichlorophenol		<62.5	mg/Kg	S-8270C	9/8/98	9/21/98	JG	4916	5480	62.5
2,4,6-trichlorophenol		<62.5	mg/Kg	S-8270C	9/8/98	9/21/98	JG	4916	5480	62.5
bis (2-chloroethyl) ether		<62.5	mg/Kg	S-8270C	9/8/98	9/21/98	JG	4916	5480	62.5
bis (2-chloroisopropyl) ether		<62.5	mg/Kg	S-8270C	9/8/98	9/21/98	JG	4916	5480	62.5
bis (chloromethyl) ether		<62.5	mg/Kg	S-8270C	9/8/98	9/21/98	JG	4916	5480	62.5
3,3-dichlorobenzidine		<62.5	mg/Kg	S-8270C	9/8/98	9/21/98	JG	4916	5480	62.5
2,4-dinitrotoluene		<12.5	mg/Kg	S-8270C	9/8/98	9/21/98	JG	4916	5480	12.5
Diphenylhydrazine		<62.5	mg/Kg	S-8270C	9/8/98	9/21/98	JG	4916	5480	62.5
Hexachlorobutadiene		<12.5	mg/Kg	S-8270C	9/8/98	9/21/98	JG	4916	5480	12.5
Hexachlorocyclopentadiene		<12.5	mg/Kg	S-8270C	9/8/98	9/21/98	JG	4916	5480	12.5
Isophorone		<62.5	mg/Kg	S-8270C	9/8/98	9/21/98	JG	4916	5480	62.5
Nitrobenzene		<12.5	mg/Kg	S-8270C	9/8/98	9/21/98	JG	4916	5480	12.5
2,4-dinitro-o-cresol		<62.5	mg/Kg	S-8270C	9/8/98	9/21/98	JG	4916	5480	62.5
2,4-dinitrophenols		<62.5	mg/Kg	S-8270C	9/8/98	9/21/98	JG	4916	5480	62.5
n-nitrosodiethylamine		<12.5	mg/Kg	S-8270C	9/8/98	9/21/98	JG	4916	5480	12.5
N-nitrosodimethylamine		<12.5	mg/Kg	S-8270C	9/8/98	9/21/98	JG	4916	5480	12.5
N-nitrosodibutylamine		<62.5	mg/Kg	S-8270C	9/8/98	9/21/98	JG	4916	5480	62.5
N-nitrosodiphenylamine		<12.5	mg/Kg	S-8270C	9/8/98	9/21/98	JG	4916	5480	12.5
N-nitrosopyrrolidine		<12.5	mg/Kg	S-8270C	9/8/98	9/21/98	JG	4916	5480	12.5
Pentachlorophenol		<62.5	mg/Kg	S-8270C	9/8/98	9/21/98	JG	4916	5480	62.5
Dibutyl phthalate		<12.5	mg/Kg	S-8270C	9/8/98	9/21/98	JG	4916	5480	12.5
di-2-ethylhexyl phthalate		<12.5	mg/Kg	S-8270C	9/8/98	9/21/98	JG	4916	5480	12.5
Diethyl phthalate		<12.5	mg/Kg	S-8270C	9/8/98	9/21/98	JG	4916	5480	12.5
Dimethyl phthalate		<12.5	mg/Kg	S-8270C	9/8/98	9/21/98	JG	4916	5480	12.5
Anthracene		<12.5	mg/Kg	S-8270C	9/8/98	9/21/98	JG	4916	5480	12.5
3,4-benzofluoranthene		<12.5	mg/Kg	S-8270C	9/8/98	9/21/98	JG	4916	5480	12.5
Benzo(k)fluoranthene		<12.5	mg/Kg	S-8270C	9/8/98	9/21/98	JG	4916	5480	12.5
Fluoranthene		<12.5	mg/Kg	S-8270C	9/8/98	9/21/98	JG	4916	5480	12.5
Fluorene		<12.5	mg/Kg	S-8270C	9/8/98	9/21/98	JG	4916	5480	12.5
Phenanthrene		<12.5	mg/Kg	S-8270C	9/8/98	9/21/98	JG	4916	5480	12.5
Pyrene		<12.5	mg/Kg	S-8270C	9/8/98	9/21/98	JG	4916	5480	12.5
Naphthalene		<12.5	mg/Kg	S-8270C	9/8/98	9/21/98	JG	4916	5480	12.5
1-methylnaphthalene		<12.5	mg/Kg	S-8270C	9/8/98	9/21/98	JG	4916	5480	12.5
2-methylnaphthalene		<12.5	mg/Kg	S-8270C	9/8/98	9/21/98	JG	4916	5480	12.5
Benzo-a-pyrene		<12.5	mg/Kg	S-8270C	9/8/98	9/21/98	JG	4916	5480	12.5
Phenol		<12.5	mg/Kg	S-8270C	9/8/98	9/21/98	JG	4916	5480	12.5
Surr. 2-Fluorophenol		43	%	S-8270C	9/8/98	9/21/98	JG	4916	5480	25-121
Surr. Phenol-d6		41	%	S-8270C	9/8/98	9/21/98	JG	4916	5480	24-113
Surr. Nitroobenzene-d5		49	%	S-8270C	9/8/98	9/21/98	JG	4916	5480	23-120
Surr. 2-Fluorobiphenyl		62	%	S-8270C	9/8/98	9/21/98	JG	4916	5480	30-115
Surr. 2,4,6-Tribromophenol		40	%	S-8270C	9/8/98	9/21/98	JG	4916	5480	19-122
Surr. Terphenyl-d14		68	%	S-8270C	9/8/98	9/21/98	JG	4916	5480	19-122

Corrected - Added Phenol result.

Date: 10-6-98

Page # 10

Project Number: 19350

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000488

Sample Number: 106030

Field Code: TSB-10 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8270C	8/29/98	9/22/98	KC	---	---	50
Chlordane		<50	ug/Kg	S-8270C	8/29/98	9/22/98	KC	---	---	50
DDT		<50	ug/Kg	S-8270C	8/29/98	9/22/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S-8270C	8/29/98	9/22/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S-8270C	8/29/98	9/22/98	KC	---	---	50
Endrin		<50	ug/Kg	S-8270C	8/29/98	9/22/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S-8270C	8/29/98	9/22/98	KC	---	---	50
PCB's		<1.0	mg/Kg	S 8082	8/26/98	9/3/98	RC	4795	5204	1.0
Arsenic		<0.50	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Barium		127	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Cadmium		0.37	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.10
Chromium		4.8	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Lead		1.8	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Total Mercury		<0.10	mg/Kg	S 7471A	8/27/98	8/28/98	MS	4804	5149	0.10
Selenium		<0.50	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Silver		<0.50	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	2.0
Copper		1.8	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	1.0
Iron		3,400	mg/Kg	S 6010B	9/11/98	9/17/98	RR	4922	5373	10
Manganese		31	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	1.0
Zinc		7.6	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	2.0
Aluminum		5,700	mg/Kg	S 6010B	9/11/98	9/17/98	RR	4922	5373	10
Boron		13	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	10
Cobalt		6.1	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Molybdenum		2.2	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	1.0
Nickel		<0.01	mg/Kg	S 6010B	9/11/98	9/15/98	SA	4922	5340	0.01
Cyanide		<0.25	mg/Kg	4500 CN,CE		8/27/98	RC		5128	0.25
Fluoride		11	mg/Kg	E 300.0		9/3/98	JS		5199	0.2
Nitrate		3.8	mg/Kg	E 300.0		9/3/98	JS		5199	0.2
Chloride		52	mg/Kg	E 300.0		9/3/98	JS		5199	1.0
Sulfate		42	mg/Kg	E 300.0		9/3/98	JS		5199	1.0
TDS		3,000	mg/Kg	E 160.1		9/17/98	RS		5371	---
pH		9.4	s.u.	E 150.1		8/26/98	SA		5113	---
TRPHC		16,000	mg/Kg	S 418.1	8/27/98	8/30/98	SR	4810	5168	10.0
Total Phenols		22.8	mg/Kg	M 5530 A,D		8/26/98	RC		5114	0.25
Total Radium		4.75	pCi/gm	E 901.1M			DS	---	---	---

ARS Tracking Number:	ARS-98-0872	P.O. Number:	
Client I.D.:	Sample No. 106030	ARS Sample I.D.:	ARS-98-3170
Date Sampled:	8/21/98	Date Received:	8/27/98
Time Sampled:	N/A	Time Received:	1051
Type of Sample:	Soil	Date of Report:	9/8/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	1.72	1.47	pCi/gm	0.064	0.054	Bq/gm	EPA 901.1M	9/3/98 1607	KH
Ra-228	<0.09	N/A	pCi/gm	<0.003	N/A	Bq/gm	EPA 901.1M	9/3/98 1607	KH
Pb-210	2.21	1.97	pCi/gm	0.082	0.073	Bq/gm	EPA 901.1M	9/3/98 1607	KH
Total Activity	4.75	N/A	pCi/gm	0.176	N/A	Bq/gm	EPA 901.1M	9/3/98 1607	KH

Notes:


Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Jeff Kindley / Sharon Hall
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7904 IH 20 West
Midland, TX 79706

Page # 11

Order ID Number: 9808000488
Sample Number: 106031

[illegible]

Corrected *

Date: 10-6-98

Page # 12

Project Number: 19350

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000488

Sample Number: 106031

Field Code: TSB-10 8-10'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
2,4-dichlorophenol		<62.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	62.5
2,4,5-trichlorophenol		<62.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	62.5
2,4,6-trichlorophenol		<62.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	62.5
bis (2-chloroethyl) ether		<62.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	62.5
bis (2-chloroisopropyl) ether		<62.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	62.5
bis (chloromethyl) ether		<62.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	62.5
3,3-dichlorobenzidine		<62.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	62.5
2,4-dinitrotoluene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Diphenylhydrazine		<62.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	62.5
Hexachlorobutadiene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Hexachlorocyclopentadiene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Isophorone		<62.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	62.5
Nitrobenzene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
2,4-dinitro-o-cresol		<62.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	62.5
2,4-dinitrophenols		<62.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	62.5
n-nitrosodiethylamine		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
N-nitrosodimethylamine		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
N-nitrosodibutylamine		<62.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	62.5
N-nitrosodiphenylamine		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
N-nitrosopyrrolidine		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Pentachlorophenol		<62.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	62.5
Dibutyl phthalate		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
di-2-ethylhexyl phthalate		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Diethyl phthalate		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Dimethyl phthalate		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Anthracene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
3,4-benzofluoranthene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Benzo(k)fluoranthene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Fluoranthene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Fluorene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Phenanthrene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Pyrene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Naphthalene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
1-methylnaphthalene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
2-methylnaphthalene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Benzo-a-pyrene		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Phenol		<12.5	mg/Kg	S-8270C	9/8/98	9/18/98	JG	4916	5412	12.5
Surr. 2-Fluorophenol		41	%	S-8270C	9/8/98	9/18/98	JG	4916	5412	25-121
Surr. Phenol-d6		36	%	S-8270C	9/8/98	9/18/98	JG	4916	5412	24-113
Surr. Nitroobenzene-d5		59	%	S-8270C	9/8/98	9/18/98	JG	4916	5412	23-120
Surr. 2-Fluorobiphenyl		63	%	S-8270C	9/8/98	9/18/98	JG	4916	5412	30-115
Surr. 2,4,6-Tribromophenol		24	%	S-8270C	9/8/98	9/18/98	JG	4916	5412	19-122
Surr. Terphenyl-d14		78	%	S-8270C	9/8/98	9/18/98	JG	4916	5412	19-122

Corrected - Added Phenol result.

Date: 10-6-98

Page # 13

Project Number: 19350

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000488

Sample Number: 106031

Field Code: TSB-10 8-10'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8270C	8/29/98	9/22/98	KC	---	---	50
Chlordane		<50	ug/Kg	S-8270C	8/29/98	9/22/98	KC	---	---	50
DDT		<50	ug/Kg	S-8270C	8/29/98	9/22/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S-8270C	8/29/98	9/22/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S-8270C	8/29/98	9/22/98	KC	---	---	50
Endrin		<50	ug/Kg	S-8270C	8/29/98	9/22/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S-8270C	8/29/98	9/22/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	8/26/98	8/26/98	RC	4796	5112	0.1
Arsenic		<0.50	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Barium		146	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Cadmium		0.46	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.10
Chromium		6.9	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Lead		3.0	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Total Mercury		<0.10	mg/Kg	S 7471A	8/27/98	8/28/98	MS	4804	5149	0.10
Selenium		<0.50	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Silver		<0.50	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	2.0
Copper		1.9	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	1.0
Iron		5,100	mg/Kg	S 6010B	9/11/98	9/17/98	RR	4922	5373	10
Manganese		37	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	1.0
Zinc		15	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	2.0
Aluminum		8,800	mg/Kg	S 6010B	9/11/98	9/17/98	RR	4922	5373	10
Boron		19	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	10
Cobalt		7.8	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	0.50
Molybdenum		2.9	mg/Kg	S 6010B	9/11/98	9/15/98	RR	4922	5340	1.0
Nickel		<0.01	mg/Kg	S 6010B	9/11/98	9/15/98	SA	4922	5340	0.01
Cyanide		<0.25	mg/Kg	4500 CN,CE		8/27/98	RC		5128	0.25
Fluoride		16	mg/Kg	E 300.0		9/3/98	JS		5199	0.2
Nitrate		3.8	mg/Kg	E 300.0		9/3/98	JS		5199	0.2
Chloride		66	mg/Kg	E 300.0		9/3/98	JS		5199	1.0
Sulfate		12	mg/Kg	E 300.0		9/3/98	JS		5199	1.0
TDS		2,500	mg/Kg	E 160.1		9/17/98	RS		5371	---
pH		9.0	s.u.	E 150.1		8/26/98	SA		5113	---
TRPHC		5,580	mg/Kg	S 418.1	8/27/98	8/30/98	SR	4810	5168	10.0
Total Phenols		4.3	mg/Kg	3M 5530 A,D		8/26/98	RC		5114	0.25
Total Radium		9.37	pCi/gm	E 901.1M			DS	---	---	---

ARS Tracking Number:	ARS-98-0872	P.O. Number:	
Client I.D.:	Sample No. 106031	ARS Sample I.D.:	ARS-98-3171
Date Sampled:	8/21/98	Date Received:	8/27/98
Time Sampled:	N/A	Time Received:	1051
Type of Sample:	Soil	Date of Report:	9/8/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	2.11	1.48	pCi/gm	0.078	0.055	Bq/gm	EPA 901.1M	9/3/98 1646	KH
Ra-228	0.65	0.25	pCi/gm	0.024	0.009	Bq/gm	EPA 901.1M	9/3/98 1646	KH
Pb-210	<0.96	N/A	pCi/gm	<0.036	N/A	Bq/gm	EPA 901.1M	9/3/98 1646	KH
Total Activity	9.37	N/A	pCi/gm	0.347	N/A	Bq/gm	EPA 901.1M	9/3/98 1646	KH

Notes:


 Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
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7904 IH 20 West
Midland, TX 79706

Date: 10-6-98
Page # 14

Project Number: 19350
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000488
Sample Number: 106032

Field Code: TSB-10 28-31'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
MTBE		<0.050	mg/Kg	E 8021B		8/20/98	CS		5031	0.050
Benzene		<0.050	mg/Kg	E 8021B		8/20/98	CS		5031	0.050
Toluene		<0.050	mg/Kg	E 8021B		8/20/98	CS		5031	0.050
Ethylbenzene		<0.050	mg/Kg	E 8021B		8/20/98	CS		5031	0.050
m,p,o-xylene		<0.050	mg/Kg	E 8021B		8/20/98	CS		5031	0.050
TRPHC		<10.0	mg/Kg	S 418.1	8/27/98	8/30/98	SR	4810	5168	10.0

Analytical Results Report

Jeff Kindley / Sharon Hall
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7904 IH 20 West
Midland, TX 79706

Date: 10-6-98
Page # 31

Project Number: 19350
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000510
Sample Number: 106100

Field Code: TSB-11 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<515	ug/Kg	S-8260B		9/6/98	AG		5207	515
Acrylonitrile		<515	ug/Kg	S-8260B		9/6/98	AG		5207	515
Benzene		<103	ug/Kg	S-8260B		9/6/98	AG		5207	103
Carbon tetrachloride		<103	ug/Kg	S-8260B		9/6/98	AG		5207	103
Chlorobenzene		<103	ug/Kg	S-8260B		9/6/98	AG		5207	103
1,2-dichloroethane		<103	ug/Kg	S-8260B		9/6/98	AG		5207	103
1,1,2,2-tetrachloroethane		<103	ug/Kg	S-8260B		9/6/98	AG		5207	103
1,1,1-trichloroethane		<103	ug/Kg	S-8260B		9/6/98	AG		5207	103
1,1,2-trichloroethane		<103	ug/Kg	S-8260B		9/6/98	AG		5207	103
1,1,2-trichloroethylene		<103	ug/Kg	S-8260B		9/6/98	AG		5207	103
Chloroform		<103	ug/Kg	S-8260B		9/6/98	AG		5207	103
Dichlorobenzene		<206	ug/Kg	S-8260B		9/6/98	AG		5207	206
1,1-dichloroethylene		<103	ug/Kg	S-8260B		9/6/98	AG		5207	103
Dichloropropenes		<103	ug/Kg	S-8260B		9/6/98	AG		5207	103
Ethylbenzene		<103	ug/Kg	S-8260B		9/6/98	AG		5207	103
Bromodichloromethane		<103	ug/Kg	S-8260B		9/6/98	AG		5207	103
Bromomethane		<515	ug/Kg	S-8260B		9/6/98	AG		5207	515
Chloromethane		<103	ug/Kg	S-8260B		9/6/98	AG		5207	103
Dichlorodifluoromethane		<103	ug/Kg	S-8260B		9/6/98	AG		5207	103
Dichloromethane		<103	ug/Kg	S-8260B		9/6/98	AG		5207	103
Trichlorofluoromethane		<103	ug/Kg	S-8260B		9/6/98	AG		5207	103
Tetrachloroethylene		<103	ug/Kg	S-8260B		9/6/98	AG		5207	103
Toluene		<103	ug/Kg	S-8260B		9/6/98	AG		5207	103
Trichloroethylene		<103	ug/Kg	S-8260B		9/6/98	AG		5207	103
Vinyl chloride		<103	ug/Kg	S-8260B		9/6/98	AG		5207	103
m,p-xylene		<103	ug/Kg	S-8260B		9/6/98	AG		5207	103
o-xylene		<103	ug/Kg	S-8260B		9/6/98	AG		5207	103
1,1-dichloroethane		<103	ug/Kg	S-8260B		9/6/98	AG		5207	103
Ethylene dibromide		<103	ug/Kg	S-8260B		9/6/98	AG		5207	103
cis-1,2-dichloroethylene		<103	ug/Kg	S-8260B		9/6/98	AG		5207	103
trans-1,2-dichloroethylene		<103	ug/Kg	S-8260B		9/6/98	AG		5207	103
Methylene chloride		<515	ug/Kg	S-8260B		9/6/98	AG		5207	515
Surr. Dibromofluoromethane		106	%	S-8260B		9/6/98	AG		5207	86-118
Surr. Toluene-d8		96	%	S-8260B		9/6/98	AG		5207	88-110
Surr. 4-Bromofluorobenzene		96	%	S-8260B		9/6/98	AG		5207	86-115
Benzidine		<12.5	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	12.5
Hexachlorobenzene		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
Pentachlorobenzene		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
1,2,4,5-tetrachlorobenzene		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25

Corrected *

Date: 10-6-98

Page # 32

Order ID Number: 9808000510

Sample Number: 106100

Project Number: 19350

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Field Code: TSB-11 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
2,4-dichlorophenol		<6.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	6.25
2,4,5-trichlorophenol		<6.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	6.25
2,4,6-trichlorophenol		<6.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	6.25
bis (2-chloroethyl) ether		<6.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	6.25
bis (2-chloroisopropyl) ether		<6.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	6.25
bis (chloromethyl) ether		<6.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	6.25
3,3-dichlorobenzidine		<6.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	6.25
2,4-dinitrotoluene		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
Diphenylhydrazine		<6.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	6.25
Hexachlorobutadiene		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
Hexachlorocyclopentadiene		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
Isophorone		<6.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	6.25
Nitrobenzene		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
2,4-dinitro-o-cresol		<6.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	6.25
2,4-dinitrophenols		<6.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	6.25
n-nitrosodiethylamine		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
N-nitrosodimethylamine		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
N-nitrosodibutylamine		<6.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	6.25
N-nitrosodiphenylamine		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
N-nitrosopyrrolidine		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
Pentachlorophenol		<6.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	6.25
Dibutyl phthalate		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
di-2-ethylhexyl phthalate		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
Diethyl phthalate		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
Dimethyl phthalate		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
Anthracene		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
3,4-benzofluoranthene		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
Benzo(k)fluoranthene		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
Fluoranthene		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
Fluorene		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
Phenanthrene		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
Pyrene		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
Naphthalene		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
1-methylnaphthalene		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
2-methylnaphthalene		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
Benzo-a-pyrene		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
Phenol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
Surr. 2-Fluorophenol		53	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	25-121
Surr. Phenol-d6		53	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	24-113
Surr. Nitroobenzene-d5		59	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	23-120
Surr. 2-Fluorobiphenyl		66	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	30-115
Surr. 2,4,6-Tribromophenol		48	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	19-122
Surr. Terphenyl-d14		75	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	28-137

Corrected - Added Phenol result.

Date: 10-6-98

Page # 33

Order ID Number: 9808000510

Sample Number: 106100

Project Number: 19350

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Field Code: TSB-11 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	10/16/98	10/19/98	KC	---	---	50
Chlordane		<50	ug/Kg	S-8080	10/16/98	10/19/98	KC	---	---	50
DDT		<50	ug/Kg	S-8080	10/16/98	10/19/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S-8080	10/16/98	10/19/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S-8080	10/16/98	10/19/98	KC	---	---	50
Endrin		<50	ug/Kg	S-8080	10/16/98	10/19/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S-8080	10/16/98	10/19/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	9/8/98	9/9/98	RC	4910	5262	0.1
Arsenic		1.1	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Barium		256	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Cadmium		0.14	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.10
Chromium		3.8	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Lead		2	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Total Mercury		<0.1	mg/Kg	S 7471	8/27/98	8/28/98	MS	4804	5149	0.1
Selenium		0.89	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Silver		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	2.0
Copper		3.6	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	1.0
Iron		2,900	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5040	5373	10
Manganese		36	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	1.0
Zinc		9.6	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	2.0
Aluminum		5,200	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5040	5373	10
Boron		<10	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	10
Cobalt		6.4	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Molybdenum		1.5	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	1.0
Nickel		7	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5040	5354	0.50
Cyanide		<0.01	mg/Kg	SM 4500 C,E		9/1/98	SA		5186	0.01
Fluoride		2	mg/Kg	E 300.0		9/19/98	JS		5423	0.2
Nitrate		2	mg/Kg	E 300.0		9/19/98	JS		5423	0.2
Chloride		35	mg/Kg	E 300.0		9/19/98	JS		5423	1.0
Sulfate		300	mg/Kg	E 300.0		9/21/98	JS		5480	5.0
TDS		716	mg/Kg	E 160.1		9/19/98	RS		5417	---
pH		8.1	s.u.	E 150.1		8/27/98	SA		5134	---
TRPHC		1,210	mg/Kg	S 418.1	8/27/98	8/29/98	SR	4809	5160	10
Total Phenols		<0.25	mg/Kg	SM 5530 A,D		9/16/98	RC	5356	0.01	0.25
Total Radium		6.56	pCi/gm	E 901.1M		9/4/98	DS	---	---	---



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ARS Tracking Number: ARS-98-0872 P.O. Number:
 Client I.D.: Sample No. 106100 ARS Sample I.D.: ARS-98-3187
 Date Sampled: 8/24/98 Date Received: 8/27/98
 Time Sampled: N/A Time Received: 1051
 Type of Sample: Soil Date of Report: 9/8/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	2.48	1.41	pCi/gm	0.092	0.052	Bq/gm	EPA 901.1M	9/4/98 1651	KH
Ra-228	0.38	0.17	pCi/gm	0.014	0.006	Bq/gm	EPA 901.1M	9/4/98 1651	KH
Pb-210	1.53	1.52	pCi/gm	0.057	0.056	Bq/gm	EPA 901.1M	9/4/98 1651	KH
Total Activity	6.56	N/A	pCi/gm	0.243	N/A	Bq/gm	EPA 901.1M	9/4/98 1651	KH

Notes:

Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-6-98
Page # 34

Project Number: 19350
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000510
Sample Number: 106101

Field Code: TSB-11 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<290	ug/Kg	S-8260B		9/6/98	AG		5207	290
Acrylonitrile		<290	ug/Kg	S-8260B		9/6/98	AG		5207	290
Benzene		<58	ug/Kg	S-8260B		9/6/98	AG		5207	58
Carbon tetrachloride		<58	ug/Kg	S-8260B		9/6/98	AG		5207	58
Chlorobenzene		<58	ug/Kg	S-8260B		9/6/98	AG		5207	58
1,2-dichloroethane		<58	ug/Kg	S-8260B		9/6/98	AG		5207	58
1,1,2,2-tetrachloroethane		<58	ug/Kg	S-8260B		9/6/98	AG		5207	58
1,1,1-trichloroethane		<58	ug/Kg	S-8260B		9/6/98	AG		5207	58
1,1,2-trichloroethane		<58	ug/Kg	S-8260B		9/6/98	AG		5207	58
1,1,2-trichloroethylene		<58	ug/Kg	S-8260B		9/6/98	AG		5207	58
Chloroform		<58	ug/Kg	S-8260B		9/6/98	AG		5207	58
Dichlorobenzene		<116	ug/Kg	S-8260B		9/6/98	AG		5207	116
1,1-dichloroethylene		<58	ug/Kg	S-8260B		9/6/98	AG		5207	58
Dichloropropenes		<58	ug/Kg	S-8260B		9/6/98	AG		5207	58
Ethylbenzene		<58	ug/Kg	S-8260B		9/6/98	AG		5207	58
Bromodichloromethane		<58	ug/Kg	S-8260B		9/6/98	AG		5207	58
Bromomethane		<290	ug/Kg	S-8260B		9/6/98	AG		5207	290
Chloromethane		<58	ug/Kg	S-8260B		9/6/98	AG		5207	58
Dichlorodifluoromethane		<58	ug/Kg	S-8260B		9/6/98	AG		5207	58
Dichloromethane		<58	ug/Kg	S-8260B		9/6/98	AG		5207	58
Trichlorofluoromethane		<58	ug/Kg	S-8260B		9/6/98	AG		5207	58
Tetrachloroethylene		<58	ug/Kg	S-8260B		9/6/98	AG		5207	58
Toluene		<58	ug/Kg	S-8260B		9/6/98	AG		5207	58
Trichloroethylene		<58	ug/Kg	S-8260B		9/6/98	AG		5207	58
Vinyl chloride		<58	ug/Kg	S-8260B		9/6/98	AG		5207	58
m,p-xylene		<58	ug/Kg	S-8260B		9/6/98	AG		5207	58
o-xylene		<58	ug/Kg	S-8260B		9/6/98	AG		5207	58
1,1-dichloroethane		<58	ug/Kg	S-8260B		9/6/98	AG		5207	58
Ethylene dibromide		<58	ug/Kg	S-8260B		9/6/98	AG		5207	58
cis-1,2-dichloroethylene		<58	ug/Kg	S-8260B		9/6/98	AG		5207	58
trans-1,2-dichloroethylene		<58	ug/Kg	S-8260B		9/6/98	AG		5207	58
Methylene chloride		<290	ug/Kg	S-8260B		9/6/98	AG		5207	290
Surr. Dibromofluoromethane		109	%	S-8260B		9/6/98	AG		5207	86-118
Surr. Toluene-d8		86	%	S-8260B		9/6/98	AG		5207	88-110
Surr. 4-Bromofluorobenzene		100	%	S-8260B		9/6/98	AG		5207	86-115
Benzidine		<2.5	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25

Corrected *

Date: 10-6-98

Page # 35

Order ID Number: 9808000510

Sample Number: 106101

Project Number: 19350

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Field Code: TSB-11 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Isophorone		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
2,4-dinitro-o-cresol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
n-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	1.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Anthracene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Fluorene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Pyrene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
1-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
2-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Phenol		<0.25	mg/Kg	S-8270C	9/9/98	9/19/98	DG	4920	5455	0.25
Surr. 2-Fluorophenol		59	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	25-121
Surr. Phenol-d6		62	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	24-113
Surr. Nitroobenzene-d5		69	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	23-120
Surr. 2-Fluorobiphenyl		70	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	30-115
Surr. 2,4,6-Tribromophenol		59	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	19-122
Surr. Terphenyl-d14		80	%	S-8270C	9/9/98	9/19/98	DG	4920	5455	28-137

Corrected - Added Phenol result.

Date: 10-6-98

Page # 36

Order ID Number: 9808000510

Sample Number: 106101

Project Number: 19350

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Field Code: TSB-11 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	10/16/98	10/19/98	KC	---	---	50
Chlordane		<50	ug/Kg	S-8080	10/16/98	10/19/98	KC	---	---	50
DDT		<50	ug/Kg	S-8080	10/16/98	10/19/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S-8080	10/16/98	10/19/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S-8080	10/16/98	10/19/98	KC	---	---	50
Endrin		<50	ug/Kg	S-8080	10/16/98	10/19/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S-8080	10/16/98	10/19/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	9/8/98	9/9/98	RC	4911	5263	0.1
Arsenic		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Barium		350	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Cadmium		0.17	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.10
Chromium		4.5	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Lead		1	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Total Mercury		<0.1	mg/Kg	S 7471	8/27/98	8/28/98	MS	4804	5149	0.1
Selenium		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Silver		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	2.0
Copper		3.4	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	1.0
Iron		3,300	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5041	5374	0.50
Manganese		23	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	1.0
Zinc		8	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	2.0
Aluminum		6,600	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5041	5374	0.50
Boron		13	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	10
Cobalt		6.5	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Molybdenum		2.3	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	1.0
Nickel		8.3	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Cyanide		<0.01	mg/Kg	SM 4500 CN,CE		9/1/98	SA		5185	0.01
Fluoride		6.5	mg/Kg	E 300.0		9/19/98	JS		5423	0.2
Nitrate		<0.4	mg/Kg	E 300.0		9/19/98	JS		5423	0.4
Chloride		45	mg/Kg	E 300.0		9/19/98	JS		5423	1.0
Sulfate		180	mg/Kg	E 300.0		9/21/98	JS		5480	5.0
TDS		770	mg/Kg	E 160.1		9/19/98	RS		5417	---
pH		8.3	s.u.	E 150.1		8/27/98	SA		5134	---
TRPHC		1,940	mg/Kg	S 418.1	8/27/98	8/29/98	SR	4809	5160	10
Total Phenols		<0.25	mg/Kg	SM 5530 A,D		9/16/98	RC		5357	0.25
Total Radium		6.85	pCi/gm	E 901.1M		9/4/98	DS	---	---	---



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1 (800) 401-4277 • Fax (504) 927-6822

ARS Tracking Number: ARS-98-0872

P.O. Number:

Client I.D.: Sample No. 106101

ARS Sample I.D.: ARS-98-3188

Date Sampled: 8/24/98

Date Received: 8/27/98

Time Sampled: N/A

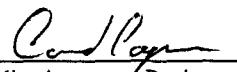
Time Received: 1051

Type of Sample: Soil

Date of Report: 9/8/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	1.91	1.52	pCi/gm	0.071	0.056	Bq/gm	EPA 901.1M	9/4/98 1724	KH
Ra-228	<0.15	N/A	pCi/gm	<0.006	N/A	Bq/gm	EPA 901.1M	9/4/98 1724	KH
Pb-210	2.62	1.82	pCi/gm	0.097	0.067	Bq/gm	EPA 901.1M	9/4/98 1724	KH
Total Activity	6.85	N/A	pCi/gm	0.253	N/A	Bq/gm	EPA 901.1M	9/4/98 1724	KH

Notes:


Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-6-98
Page # 37

Project Number: 19350
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000510
Sample Number: 106102

Field Code: TSB-11 18-20'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<1900	ug/Kg	S-8260B		9/6/98	AG		5207	1900
Acrylonitrile		<1900	ug/Kg	S-8260B		9/6/98	AG		5207	1900
Benzene		<380	ug/Kg	S-8260B		9/6/98	AG		5207	380
Carbon tetrachloride		<380	ug/Kg	S-8260B		9/6/98	AG		5207	380
Chlorobenzene		<380	ug/Kg	S-8260B		9/6/98	AG		5207	380
1,2-dichloroethane		<380	ug/Kg	S-8260B		9/6/98	AG		5207	380
1,1,2,2-tetrachloroethane		<380	ug/Kg	S-8260B		9/6/98	AG		5207	380
1,1,1-trichloroethane		<380	ug/Kg	S-8260B		9/6/98	AG		5207	380
1,1,2-trichloroethane		<380	ug/Kg	S-8260B		9/6/98	AG		5207	380
1,1,2-trichloroethylene		<380	ug/Kg	S-8260B		9/6/98	AG		5207	380
Chloroform		<380	ug/Kg	S-8260B		9/6/98	AG		5207	380
Dichlorobenzene		<760	ug/Kg	S-8260B		9/6/98	AG		5207	760
1,1-dichloroethylene		<380	ug/Kg	S-8260B		9/6/98	AG		5207	380
Dichloropropenes		<380	ug/Kg	S-8260B		9/6/98	AG		5207	380
Ethylbenzene		1,400	ug/Kg	S-8260B		9/6/98	AG		5207	380
Bromodichloromethane		<380	ug/Kg	S-8260B		9/6/98	AG		5207	380
Bromomethane		<1900	ug/Kg	S-8260B		9/6/98	AG		5207	1900
Chloromethane		<380	ug/Kg	S-8260B		9/6/98	AG		5207	380
Dichlorodifluoromethane		<380	ug/Kg	S-8260B		9/6/98	AG		5207	380
Dichloromethane		<380	ug/Kg	S-8260B		9/6/98	AG		5207	380
Trichlorofluoromethane		<380	ug/Kg	S-8260B		9/6/98	AG		5207	380
Tetrachloroethylene		<380	ug/Kg	S-8260B		9/6/98	AG		5207	380
Toluene		<380	ug/Kg	S-8260B		9/6/98	AG		5207	380
Trichloroethylene		<380	ug/Kg	S-8260B		9/6/98	AG		5207	380
Vinyl chloride		<380	ug/Kg	S-8260B		9/6/98	AG		5207	380
m,p-xylene		4,400	ug/Kg	S-8260B		9/6/98	AG		5207	380
o-xylene		<380	ug/Kg	S-8260B		9/6/98	AG		5207	380
1,1-dichloroethane		<380	ug/Kg	S-8260B		9/6/98	AG		5207	380
Ethylene dibromide		<380	ug/Kg	S-8260B		9/6/98	AG		5207	380
cis-1,2-dichloroethylene		<380	ug/Kg	S-8260B		9/6/98	AG		5207	380
trans-1,2-dichloroethylene		<380	ug/Kg	S-8260B		9/6/98	AG		5207	380
Methylene chloride		<1900	ug/Kg	S-8260B		9/6/98	AG		5207	1900
Surr. Dibromofluoromethane		113	%	S-8260B		9/6/98	AG		5207	86-118
Surr. Toluene-d8		88	%	S-8260B		9/6/98	AG		5207	88-110
Surr. 4-Bromofluorobenzene		102	%	S-8260B		9/6/98	AG		5207	86-115
Benzidine		<2.5	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25

Corrected *

Date: 10-6-98

Page # 38

Order ID Number: 9808000510

Sample Number: 106102

Project Number: 19350

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Field Code: TSB-11 18-20'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Isophorone		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
2,4-dinitro-o-cresol		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
n-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Anthracene		2.97	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Fluorene		1.64	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Pyrene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Naphthalene		8.02	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
1-methylnaphthalene		14.9	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
2-methylnaphthalene		8.02	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Phenol		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Surr. 2-Fluorophenol		84	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	25-121
Surr. Phenol-d6		46	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	24-113
Surr. Nitrobenzene-d5		91	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	23-120
Surr. 2-Fluorobiphenyl		125	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	30-115
Surr. 2,4,6-Tribromophenol		94	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	19-122
Surr. Terphenyl-d14		95	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	28-137

Corrected - Added Phenol result.

Project Number: 19350
 Project Name: Shell Grimes
 Project Location: Grimes Battery, Hobbs, NM

Date: 10-6-98
 Page # 39
 Order ID Number: 9808000510
 Sample Number: 106102

Field Code: TSB-11 18-20'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	8/29/98	9/22/98	KC	---	---	50
Chlordane		<50	ug/Kg	S-8080	8/29/98	9/22/98	KC	---	---	50
DDT		<50	ug/Kg	S-8080	8/29/98	9/22/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S-8080	8/29/98	9/22/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S-8080	8/29/98	9/22/98	KC	---	---	50
Endrin		<50	ug/Kg	S-8080	8/29/98	9/22/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S-8080	8/29/98	9/22/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	9/8/98	9/9/98	RC	4911	5263	0.1
Arsenic		2	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Barium		87	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Cadmium		0.16	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.10
Chromium		2.2	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Lead		1.2	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Total Mercury		<0.1	mg/Kg	S 7471	8/27/98	8/28/98	MS	4804	5149	0.1
Selenium		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Silver		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	2.0
Copper		3.6	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	1.0
Iron		1,500	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5041	5374	0.50
Manganese		14	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	1.0
Zinc		4.1	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	2.0
Aluminum		2,400	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5041	5374	0.50
Boron		<10	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	10
Cobalt		2.7	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Molybdenum		1	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	1.0
Nickel		2.8	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Cyanide		<0.01	mg/Kg	SM 4500 CN,CE		9/1/98	SA		5185	0.01
Fluoride		1.3	mg/Kg	E 300.0		9/19/98	JS		5423	0.2
Nitrate		<0.2	mg/Kg	E 300.0		9/19/98	JS		5423	0.2
Chloride		180	mg/Kg	E 300.0		9/19/98	JS		5423	5.0
Sulfate		12	mg/Kg	E 300.0		9/19/98	JS		5423	1.0
TDS		450	mg/Kg	E 160.1		9/19/98	RS		5417	---
pH		8.8	s.u.	E 150.1		8/27/98	SA		5134	---
TRPHC		22,700	mg/Kg	S 418.1	8/27/98	8/29/98	SR	4809	5160	10
Total Phenols		1.31	mg/Kg	SM 5530 A,D		9/16/98	RC		5357	0.25
Total Radium		2.71	pCi/gm	E 901.1M		9/5/98	DS	---	---	---



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ARS Tracking Number: ARS-98-0872 P.O. Number:
 Client I.D.: Sample No. 106102 ARS Sample I.D.: ARS-98-3189
 Date Sampled: 8/24/98 Date Received: 8/27/98
 Time Sampled: N/A Time Received: 1051
 Type of Sample: Soil Date of Report: 9/8/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	1.34	1.08	pCi/gm	0.050	0.040	Bq/gm	EPA 901.1M	9/5/98 0920	MK
Ra-228	<0.13	N/A	pCi/gm	<0.005	N/A	Bq/gm	EPA 901.1M	9/5/98 0920	MK
Pb-210	<0.78	N/A	pCi/gm	<0.029	N/A	Bq/gm	EPA 901.1M	9/5/98 0920	MK
Total Activity	2.71	N/A	pCi/gm	0.100	N/A	Bq/gm	EPA 901.1M	9/5/98 0920	MK

Notes:

Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-6-98
Page # 40

Project Number: 19350
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000510
Sample Number: 106103

Field Code: TSB-11 29-31'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<185	ug/Kg	S-8260B		9/6/98	AG		5207	185
Acrylonitrile		<185	ug/Kg	S-8260B		9/6/98	AG		5207	185
Benzene		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
Carbon tetrachloride		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
Chlorobenzene		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
1,2-dichloroethane		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
1,1,2,2-tetrachloroethane		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
1,1,1-trichloroethane		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
1,1,2-trichloroethane		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
1,1,2-trichloroethylene		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
Chloroform		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
Dichlorobenzene		<74	ug/Kg	S-8260B		9/6/98	AG		5207	74
1,1-dichloroethylene		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
Dichloropropenes		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
Ethylbenzene		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
Bromodichloromethane		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
Bromomethane		<185	ug/Kg	S-8260B		9/6/98	AG		5207	185
Chloromethane		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
Dichlorodifluoromethane		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
Dichloromethane		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
Trichlorofluoromethane		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
Tetrachloroethylene		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
Toluene		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
Trichloroethylene		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
Vinyl chloride		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
m,p-xylene		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
o-xylene		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
1,1-dichloroethane		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
Ethylene dibromide		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
cis-1,2-dichloroethylene		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
trans-1,2-dichloroethylene		<37	ug/Kg	S-8260B		9/6/98	AG		5207	37
Methylene chloride		<185	ug/Kg	S-8260B		9/6/98	AG		5207	185
Surr. Dibromofluoromethane		105	%	S-8260B		9/6/98	AG		5207	86-118
Surr. Toluene-d8		85	%	S-8260B		9/6/98	AG		5207	88-110
Surr. 4-Bromofluorobenzene		94	%	S-8260B		9/6/98	AG		5207	86-115
Benzidine		<2.5	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25

Corrected *

Date: 10-6-98

Page # 41

Order ID Number: 9808000510

Sample Number: 106103

Project Number: 19350

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Field Code: TSB-11 29-31'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Isophorone		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
2,4-dinitro-o-cresol		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
n-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Anthracene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Fluorene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Pyrene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
1-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
2-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Phenol		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Surr. 2-Fluorophenol		70	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	25-121
Surr. Phenol-d6		73	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	24-113
Surr. Nitrobenzene-d5		69	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	23-120
Surr. 2-Fluorobiphenyl		91	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	30-115
Surr. 2,4,6-Tribromophenol		59	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	19-122
Surr. Terphenyl-d14		82	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	28-137

Corrected - Added Phenol result.

Date: 10-6-98

Page # 42

Order ID Number: 9808000510

Sample Number: 106103

Project Number: 19350

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Field Code: TSB-11 29-31'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	8/29/98	9/22/98	KC	---	---	50
Chlordane		<50	ug/Kg	S-8080	8/29/98	9/22/98	KC	---	---	50
DDT		<50	ug/Kg	S-8080	8/29/98	9/22/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S-8080	8/29/98	9/22/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S-8080	8/29/98	9/22/98	KC	---	---	50
Endrin		<50	ug/Kg	S-8080	8/29/98	9/22/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S-8080	8/29/98	9/22/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	9/8/98	9/9/98	RC	4911	5263	0.1
Arsenic		1.4	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Barium		30	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Cadmium		0.21	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.10
Chromium		3.5	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Lead		1.7	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Total Mercury		<0.1	mg/Kg	S 7471	8/27/98	8/28/98	MS	4804	5149	0.1
Selenium		2.9	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Silver		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	2.0
Copper		1.8	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	1.0
Iron		2,400	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5041	5374	0.50
Manganese		1.8	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	1.0
Zinc		4.5	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	2.0
Aluminum		2,400	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5041	5374	0.50
Boron		<10	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	10
Cobalt		2.1	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Molybdenum		<1.0	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	1.0
Nickel		2.3	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Cyanide		<0.01	mg/Kg	SM 4500 CN,CE		9/1/98	SA		5185	0.01
Fluoride		2.4	mg/Kg	E 300.0		9/21/98	JS		5481	0.2
Nitrate		1.8	mg/Kg	E 300.0		9/21/98	JS		5481	0.2
Chloride		120	mg/Kg	E 300.0		9/21/98	JS		5481	2.0
Sulfate		20	mg/Kg	E 300.0		9/21/98	JS		5481	1.0
TDS		150	mg/Kg	E 160.1		9/19/98	RS		5417	---
pH		9.3	s.u.	E 150.1		8/27/98	SA		5134	---
TRPHC		127	mg/Kg	S 418.1	8/27/98	8/29/98	SR	4809	5160	10
Total Phenols		<0.25	mg/Kg	SM 5530 A,D		9/16/98	RC		5357	0.25
Total Radium		6.90	pCi/gm	E 901.1M		9/5/98	DS	---	---	---



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ARS Tracking Number: ARS-98-0872

P.O. Number:

Client I.D.: Sample No. 106103

ARS Sample I.D.: ARS-98-3190

Date Sampled: 8/24/98

Date Received: 8/27/98

Time Sampled: N/A

Time Received: 1051

Type of Sample: Soil

Date of Report: 9/8/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	1.55	1.21	pCi/gm	0.057	0.045	Bq/gm	EPA 901.1M	9/5/98 0954	MK
Ra-228	<0.09	N/A	pCi/gm	<0.003	N/A	Bq/gm	EPA 901.1M	9/5/98 0954	MK
Pb-210	<0.77	N/A	pCi/gm	<0.028	N/A	Bq/gm	EPA 901.1M	9/5/98 0954	MK
Total Activity	6.90	N/A	pCi/gm	0.255	N/A	Bq/gm	EPA 901.1M	9/5/98 0954	MK

Notes:


Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-9-98
Page # 13

Project Number: 19350
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000544
Sample Number: 106199

Field Code: TSB-12 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<125	ug/Kg	S-8260B		9/8/98	AG		5230	125
Acrylonitrile		<125	ug/Kg	S-8260B		9/8/98	AG		5230	125
Benzene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Carbon tetrachloride		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Chlorobenzene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,2-dichloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1,2,2-tetrachloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1,1-trichloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1,2-trichloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1,2-trichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Chloroform		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Dichlorobenzene		<50	ug/Kg	S-8260B		9/8/98	AG		5230	2
1,1-dichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	50
Dichloropropenes		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Ethylbenzene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Bromodichloromethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Bromomethane		<125	ug/Kg	S-8260B		9/8/98	AG		5230	125
Chloromethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Dichlorodifluoromethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Dichloromethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Trichlorofluoromethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Tetrachloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Toluene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Trichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Vinyl chloride		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
m,p-xylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
o-xylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1-dichloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Ethylene dibromide		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
cis-1,2-dichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
trans-1,2-dichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Methylene chloride		<125	ug/Kg	S-8260B		9/8/98	AG		5230	125
Surr. Dibromofluoromethane		109	%	S-8260B		9/8/98	AG		5230	86-118
Surr. Toluene-d8		86	%	S-8260B		9/8/98	AG		5230	88-110
Surr. 4-Bromofluorobenzene		97	%	S-8260B		9/8/98	AG		5230	86-115
Benzidine		<2.5	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25

Corrected *

Date: 10-9-98

Page # 14

Order ID Number: 9808000544

Sample Number: 106199

Project Number: 19350

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Field Code: TSB-12 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Isophorone		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
2,4-dinitro-o-cresol		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
n-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Anthracene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Fluorene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Pyrene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
1-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
2-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Phenol		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Surr. 2-Fluorophenol		72	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	25-121
Surr. Phenol-d6		84	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	24-113
Surr. Nitroobenzene-d5		71	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	23-120
Surr. 2-Fluorobiphenyl		88	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	30-115
Surr. 2,4,6-Tribromophenol		71	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	19-122
Surr. Terphenyl-d14		82	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	28-137

* Corrected - Added Phenol result.

Date: 10-9-98

Page # 15

Order ID Number: 9808000544

Sample Number: 106199

Project Number: 19350

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Field Code: TSB-12 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin	**	<50	ug/Kg	S-8081A	10/2/98	10/9/98	KC	---	---	50
Chlordane	**	<75	ug/Kg	S-8081A	10/2/98	10/9/98	KC	---	---	50
DDT	**	<50	ug/Kg	S-8081A	10/2/98	10/9/98	KC	---	---	50
Dieldrin	**	<50	ug/Kg	S-8081A	10/2/98	10/9/98	KC	---	---	50
Endosulfan	**	<50	ug/Kg	S-8081A	10/2/98	10/9/98	KC	---	---	50
Endrin	**	<50	ug/Kg	S-8081A	10/2/98	10/9/98	KC	---	---	50
Heptachlor	**	<50	ug/Kg	S-8081A	10/2/98	10/9/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	9/8/98	9/9/98	RC	4911	5263	0.1
Arsenic		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Barium		277	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Cadmium		0.16	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.10
Chromium		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Lead		0.92	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Total Mercury		<0.10	mg/Kg	S 7471	8/27/98	9/1/98	SA		5185	0.01
Selenium		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Silver		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	2.0
Copper		2.5	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	1.0
Iron		2,000	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5041	5374	10
Manganese		21	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	1.0
Zinc		6.4	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	2.0
Aluminum		3,900	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5041	5374	10
Boron		<10	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	10
Cobalt		5.5	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Molybdenum		1.2	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	1.0
Nickel		5.8	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Cyanide		<0.01	mg/L	335.2		9/1/98	SA		5185	0.01
Fluoride		4.7	mg/Kg	E 300.0		9/21/98	JS		5482	0.2
Nitrate		10	mg/Kg	E 300.0		9/21/98	JS		5482	0.2
Chloride		33	mg/Kg	E 300.0		9/21/98	JS		5482	1.0
Sulfate		460	mg/Kg	E 300.0		9/21/98	JS		5482	5.0
TDS		890	mg/Kg			9/19/98	RS		5417	---
pH		8.1	s.u.	E 150.1		8/28/98	SA		5154	7.1
TRPHC		1,160	mg/Kg	S 418.1	8/27/98	8/29/98	SR	4810	5168	10.0
Total Phenols		<0.25	mg/Kg	M 5530 A,D		9/16/98	RC		5357	0.25
Total Radium		0.35	pCi/g	E 901.1M		10/1/98	DS	---	---	---

** NOTE: Samples extracted past holding times. Middle and closing CCVs were out of acceptance criteria, biased high. Relative Percent Difference between MS and MSD out of acceptance criteria.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-9-98
Page # 16

Project Number: 19350
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000544
Sample Number: 106200

Field Code: TSB-12 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<125	ug/Kg	S-8260B		9/8/98	AG		5230	125
Acrylonitrile		<125	ug/Kg	S-8260B		9/8/98	AG		5230	125
Benzene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Carbon tetrachloride		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Chlorobenzene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,2-dichloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1,2,2-tetrachloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1,1-trichloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1,2-trichloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1,2-trichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Chloroform		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Dichlorobenzene		<50	ug/Kg	S-8260B		9/8/98	AG		5230	2
1,1-dichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	50
Dichloropropenes		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Ethylbenzene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Bromodichloromethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Bromomethane		<125	ug/Kg	S-8260B		9/8/98	AG		5230	125
Chloromethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Dichlorodifluoromethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Dichloromethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Trichlorofluoromethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Tetrachloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Toluene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Trichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Vinyl chloride		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
m,p-xylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
o-xylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1-dichloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Ethylene dibromide		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
cis-1,2-dichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
trans-1,2-dichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Methylene chloride		<125	ug/Kg	S-8260B		9/8/98	AG		5230	125
Surr. Dibromofluoromethane		91	%	S-8260B		9/8/98	AG		5230	86-118
Surr. Toluene-d8		85	%	S-8260B		9/8/98	AG		5230	88-110
Surr. 4-Bromofluorobenzene		90	%	S-8260B		9/8/98	AG		5230	86-115
Benzidine		<2.5	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25

Corrected *

Date: 10-9-98

Page # 17

Order ID Number: 9808000544

Sample Number: 106200

Project Number: 19350

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Field Code: TSB-12 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Isophorone		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
2,4-dinitro-o-cresol		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
n-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Anthracene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Fluorene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Pyrene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
1-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
2-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Phenol		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Surr. 2-Fluorophenol		67	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	25-121
Surr. Phenol-d6		70	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	24-113
Surr. Nitrobenzene-d5		69	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	23-120
Surr. 2-Fluorobiphenyl		88	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	30-115
Surr. 2,4,6-Tribromophenol		50	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	19-122
Surr. Terphenyl-d14		79	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	28-137

* Corrected - Added Phenol result.

Project Number: 19350
 Project Name: Shell Grimes
 Project Location: Grimes Battery, Hobbs, NM

Date: 10-9-98
 Page # 18
 Order ID Number: 9808000544
 Sample Number: 106200

Field Code: TSB-12 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin	**	<50	ug/Kg	S-8081A	10/2/98	10/9/98	KC	---	---	50
Chlordane	**	<75	ug/Kg	S-8081A	10/2/98	10/9/98	KC	---	---	50
DDT	**	<50	ug/Kg	S-8081A	10/2/98	10/9/98	KC	---	---	50
Dieldrin	**	<50	ug/Kg	S-8081A	10/2/98	10/9/98	KC	---	---	50
Endosulfan	**	<50	ug/Kg	S-8081A	10/2/98	10/9/98	KC	---	---	50
Endrin	**	<50	ug/Kg	S-8081A	10/2/98	10/9/98	KC	---	---	50
Heptachlor	**	<50	ug/Kg	S-8081A	10/2/98	10/9/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	9/8/98	9/9/98	RC	4911	5263	0.1
Arsenic		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Barium		328	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Cadmium		0.25	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.10
Chromium		4	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Lead		1.1	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Total Mercury		<0.10	mg/Kg	S 7471	8/27/98	9/1/98	SA		5185	0.01
Selenium		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Silver		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	2.0
Copper		2.6	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	1.0
Iron		2,800	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5041	5374	10
Manganese		93	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	1.0
Zinc		13	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	2.0
Aluminum		4,900	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5041	5374	10
Boron		10	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	10
Cobalt		6.2	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Molybdenum		1.6	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	1.0
Nickel		836	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Cyanide		<0.01	mg/L	335.2		9/1/98	SA		5185	0.01
Fluoride		9	mg/Kg	E 300.0		9/21/98	JS		5482	0.2
Nitrate		1.7	mg/Kg	E 300.0		9/21/98	JS		5482	0.2
Chloride		27	mg/Kg	E 300.0		9/21/98	JS		5482	1.0
Sulfate		360	mg/Kg	E 300.0		9/21/98	JS		5482	5.0
TDS		930	mg/Kg			9/19/98	RS		5418	---
pH		8.1	s.u.	E 150.1		8/28/98	SA		5154	7.1
TRPHC		7,800	mg/Kg	S 418.1	8/27/98	8/29/98	SR	4810	5168	10.0
Total Phenols		1.5	mg/Kg	M 5530 A,D		9/16/98	RC		5357	0.25
Total Radium		0.50	pCi/g	E 901.1M		10/1/98	DS	---	---	---

** NOTE: Samples extracted past holding times. Middle and closing CCVs were out of acceptance criteria, biased high. Relative Percent Difference between MS and MSD out of acceptance criteria.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-9-98
Page # 19

Project Number: 19350
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000544
Sample Number: 106201

Field Code: TSB-12 18-20'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<125	ug/Kg	S-8260B		9/8/98	AG		5230	125
Acrylonitrile		<125	ug/Kg	S-8260B		9/8/98	AG		5230	125
Benzene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Carbon tetrachloride		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Chlorobenzene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,2-dichloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1,2,2-tetrachloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1,1-trichloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1,2-trichloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1,2-trichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Chloroform		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Dichlorobenzene		<50	ug/Kg	S-8260B		9/8/98	AG		5230	2
1,1-dichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	50
Dichloropropenes		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Ethylbenzene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Bromodichloromethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Bromomethane		<125	ug/Kg	S-8260B		9/8/98	AG		5230	125
Chloromethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Dichlorodifluoromethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Dichloromethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Trichlorofluoromethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Tetrachloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Toluene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Trichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Vinyl chloride		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
m,p-xylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
o-xylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1-dichloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Ethylene dibromide		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
cis-1,2-dichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
trans-1,2-dichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Methylene chloride		<125	ug/Kg	S-8260B		9/8/98	AG		5230	125
Surr. Dibromofluoromethane		80	%	S-8260B		9/8/98	AG		5230	86-118
Surr. Toluene-d8		82	%	S-8260B		9/8/98	AG		5230	88-110
Surr. 4-Bromofluorobenzene		114	%	S-8260B		9/8/98	AG		5230	86-115
Benzidine		<2.5	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25

Corrected *

Date: 10-9-98

Page # 20

Order ID Number: 9808000544

Sample Number: 106201

Project Number: 19350

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Field Code: TSB-12 18-20'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Isophorone		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
2,4-dinitro-o-cresol		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
n-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Anthracene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Fluorene		0.832	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Phenanthrene		2.41	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Pyrene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
1-methylnaphthalene		4.99	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
2-methylnaphthalene		3.75	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Phenol		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Surr. 2-Fluorophenol		36	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	25-121
Surr. Phenol-d6		81	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	24-113
Surr. Nitroobenzene-d5		81	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	23-120
Surr. 2-Fluorobiphenyl		98	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	30-115
Surr. 2,4,6-Tribromophenol		65	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	19-122
Surr. Terphenyl-d14		86	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	28-137

* Corrected - Added Phenol result.

Project Number: 19350
 Project Name: Shell Grimes
 Project Location: Grimes Battery, Hobbs, NM

Date: 10-9-98
 Page # 21
 Order ID Number: 9808000544
 Sample Number: 106201

Field Code: TSB-12 18-20'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin	* **	<100	ug/Kg	S-8081A	10/2/98	10/9/98	KC	---	---	100
Chlordane	* **	<150	ug/Kg	S-8081A	10/2/98	10/9/98	KC	---	---	150
DDT	* **	<100	ug/Kg	S-8081A	10/2/98	10/9/98	KC	---	---	100
Dieldrin	* **	<100	ug/Kg	S-8081A	10/2/98	10/9/98	KC	---	---	100
Endosulfan	* **	<100	ug/Kg	S-8081A	10/2/98	10/9/98	KC	---	---	100
Endrin	* **	<100	ug/Kg	S-8081A	10/2/98	10/9/98	KC	---	---	100
Heptachlor	* **	<100	ug/Kg	S-8081A	10/2/98	10/9/98	KC	---	---	100
PCB's		<0.1	mg/Kg	S 8082						
Arsenic		2.6	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Barium		105	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Cadmium		0.17	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.10
Chromium		2.4	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Lead		0.71	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Total Mercury		<0.10	mg/Kg	S 7471	8/27/98	9/1/98	SA		5185	0.01
Selenium		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Silver		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	2.0
Copper		4.3	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	1.0
Iron		1,700	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5041	5374	10
Manganese		25	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	1.0
Zinc		5.2	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	2.0
Aluminum		3,000	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5041	5374	10
Boron		<10	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	10
Cobalt		4.8	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Molybdenum		1.3	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	1.0
Nickel		4.5	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Cyanide		<0.01	mg/L	335.2		9/1/98	SA		5185	0.01
Fluoride		4.5	mg/Kg	E 300.0		9/21/98	JS		5483	0.2
Nitrate		1.7	mg/Kg	E 300.0		9/21/98	JS		5483	0.2
Chloride		160	mg/Kg	E 300.0		9/21/98	JS		5483	2.0
Sulfate		71	mg/Kg	E 300.0		9/21/98	JS		5483	1.0
TDS		770	mg/Kg			9/19/98	RS		5418	---
pH		9.0	s.u.	E 150.1		8/28/98	SA		5154	7.1
TRPHC		14,700	mg/Kg	S 418.1	8/27/98	8/29/98	SR	4810	5168	10.0
Total Phenols		1.15	mg/Kg	M 5530 A,D		9/16/98	RC		5357	0.25
Total Radium		2.51	pCi/g	E 901.1M		10/1/98	DS	---	---	---

* NOTE: Detection limits raised due to matrix interference.

** NOTE: Samples extracted past holding times. Middle and closing CCVs were out of acceptance criteria, biased high. Relative Percent Difference between MS and MSD out of acceptance criteria.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-9-98
Page # 22

Project Number: 19350
Project Name: Shell Grimes
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000544
Sample Number: 106202

Field Code: TSB-12 48-50'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<125	ug/Kg	S-8260B		9/8/98	AG		5230	125
Acrylonitrile		<125	ug/Kg	S-8260B		9/8/98	AG		5230	125
Benzene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Carbon tetrachloride		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Chlorobenzene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,2-dichloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1,2,2-tetrachloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1,1-trichloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1,2-trichloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1,2-trichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Chloroform		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Dichlorobenzene		<50	ug/Kg	S-8260B		9/8/98	AG		5230	2
1,1-dichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	50
Dichloropropenes		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Ethylbenzene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Bromodichloromethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Bromomethane		<125	ug/Kg	S-8260B		9/8/98	AG		5230	125
Chloromethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Dichlorodifluoromethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Dichloromethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Trichlorofluoromethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Tetrachloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Toluene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Trichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Vinyl chloride		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
m,p-xylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
o-xylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
1,1-dichloroethane		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Ethylene dibromide		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
cis-1,2-dichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
trans-1,2-dichloroethylene		<25	ug/Kg	S-8260B		9/8/98	AG		5230	25
Methylene chloride		<125	ug/Kg	S-8260B		9/8/98	AG		5230	125
Surr. Dibromofluoromethane		81	%	S-8260B		9/8/98	AG		5230	86-118
Surr. Toluene-d8		81	%	S-8260B		9/8/98	AG		5230	88-110
Surr. 4-Bromofluorobenzene		83	%	S-8260B		9/8/98	AG		5230	86-115
Benzidine		<2.5	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25

Corrected *

Date: 10-9-98

Page # 23

Order ID Number: 9808000544

Sample Number: 106202

Project Number: 19350

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Field Code: TSB-12 48-50'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Isophorone		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
2,4-dinitro-o-cresol		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
n-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	1.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Anthracene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Fluorene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Pyrene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
1-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
2-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Phenol		<0.25	mg/Kg	S-8270C	9/9/98	9/20/98	DG	4921	5470	0.25
Surr. 2-Fluorophenol		58	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	25-121
Surr. Phenol-d6		63	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	24-113
Surr. Nitrobenzene-d5		57	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	23-120
Surr. 2-Fluorobiphenyl		78	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	30-115
Surr. 2,4,6-Tribromophenol		64	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	19-122
Surr. Terphenyl-d14		87	%	S-8270C	9/9/98	9/20/98	DG	4921	5470	28-137

* Corrected - Added Phenol result.

Project Number: 19350
 Project Name: Shell Grimes
 Project Location: Grimes Battery, Hobbs, NM

Date: 10-9-98
 Page # 24
 Order ID Number: 9808000544
 Sample Number: 106202

Field Code: TSB-12 48-50'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin	**	<50	ug/Kg	S-8081A	10/2/98	10/9/98	KC	---	---	50
Chlordane	**	<75	ug/Kg	S-8081A	10/2/98	10/9/98	KC	---	---	50
DDT	**	<50	ug/Kg	S-8081A	10/2/98	10/9/98	KC	---	---	50
Dieldrin	**	<50	ug/Kg	S-8081A	10/2/98	10/9/98	KC	---	---	50
Endosulfan	**	<50	ug/Kg	S-8081A	10/2/98	10/9/98	KC	---	---	50
Endrin	**	<50	ug/Kg	S-8081A	10/2/98	10/9/98	KC	---	---	50
Heptachlor	**	<50	ug/Kg	S-8081A	10/2/98	10/9/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	9/8/98	9/9/98	RC	4911	5263	0.1
Arsenic		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Barium		10	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Cadmium		0.12	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.10
Chromium		3.8	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Lead		2.2	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Total Mercury		<0.10	mg/Kg	S 7471	8/27/98	9/1/98	SA		5185	0.01
Selenium		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Silver		<0.50	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	2.0
Copper		1.7	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	1.0
Iron		2,200	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5041	5374	10
Manganese		24	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	1.0
Zinc		4.8	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	2.0
Aluminum		2,100	mg/Kg	S 6010B	9/15/98	9/17/98	RR	5041	5374	10
Boron		<10	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	10
Cobalt		2.9	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Molybdenum		<1.0	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	1.0
Nickel		2	mg/Kg	S 6010B	9/15/98	9/16/98	RR	5041	5354	0.50
Cyanide		<0.01	mg/L	335.2		9/1/98	SA		5185	0.01
Fluoride		1.1	mg/Kg	E 300.0		9/21/98	JS		5483	0.2
Nitrate		<0.4	mg/Kg	E 300.0		9/21/98	JS		5483	0.4
Chloride		56	mg/Kg	E 300.0		9/21/98	JS		5483	1.0
Sulfate		14	mg/Kg	E 300.0		9/21/98	JS		5483	1.0
TDS		270	mg/Kg			9/19/98	RS		5418	---
pH		8.8	s.u.	E 150.1		8/28/98	SA		5154	7.1
TRPHC		20.3	mg/Kg	S 418.1	8/27/98	8/29/98	SR	4810	5168	10.0
Total Phenols		6.08	mg/Kg	M 5530 A,D		9/16/98	RC		5357	0.25
Total Radium		3.16	pCi/g	E 901.1M		10/1/98	DS	---	---	---

** NOTE: Samples extracted past holding times. Middle and closing CCVs were out of acceptance criteria, biased high. Relative Percent Difference between MS and MSD out of acceptance criteria.

Analytical Results Report

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7904 IH 20 West
Midland, TX 79706

Date: 10-1-98
Page # 5

Project Number: 19350
Project Name: Shell Tasker Road
Project Location: Hobbs, NM

Order ID Number: 9809000114
Sample Number: 106824

Sample Description: TSB-13 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<125	ug/Kg	S-8260B		9/9/98	AG		5264	125
Acrylonitrile		<125	ug/Kg	S-8260B		9/9/98	AG		5264	125
Benzene		<25	ug/Kg	S-8260B		9/9/98	AG		5264	25
Carbon tetrachloride		<25	ug/Kg	S-8260B		9/9/98	AG		5264	25
Chlorobenzene		<25	ug/Kg	S-8260B		9/9/98	AG		5264	25
1,2-dichloroethane		<25	ug/Kg	S-8260B		9/9/98	AG		5264	25
1,1,2,2-tetrachloroethane		<25	ug/Kg	S-8260B		9/9/98	AG		5264	25
1,1,1-trichloroethane		<25	ug/Kg	S-8260B		9/9/98	AG		5264	25
1,1,2-trichloroethane		<25	ug/Kg	S-8260B		9/9/98	AG		5264	25
1,1,2-trichloroethylene		<25	ug/Kg	S-8260B		9/9/98	AG		5264	25
Chloroform		<25	ug/Kg	S-8260B		9/9/98	AG		5264	25
Dichlorobenzene		<50	ug/Kg	S-8260B		9/9/98	AG		5264	2
1,1-dichloroethylene		<25	ug/Kg	S-8260B		9/9/98	AG		5264	50
Dichloropropenes		<25	ug/Kg	S-8260B		9/9/98	AG		5264	25
Ethylbenzene		<25	ug/Kg	S-8260B		9/9/98	AG		5264	25
Bromodichloromethane		<25	ug/Kg	S-8260B		9/9/98	AG		5264	25
Bromomethane		<125	ug/Kg	S-8260B		9/9/98	AG		5264	125
Chloromethane		<25	ug/Kg	S-8260B		9/9/98	AG		5264	25
Dichlorodifluoromethane		<25	ug/Kg	S-8260B		9/9/98	AG		5264	25
Dichloromethane		<25	ug/Kg	S-8260B		9/9/98	AG		5264	25
Trichlorofluoromethane		<25	ug/Kg	S-8260B		9/9/98	AG		5264	25
Tetrachloroethylene		<25	ug/Kg	S-8260B		9/9/98	AG		5264	25
Toluene		<25	ug/Kg	S-8260B		9/9/98	AG		5264	25
Trichloroethylene		<25	ug/Kg	S-8260B		9/9/98	AG		5264	25
Vinyl chloride		<25	ug/Kg	S-8260B		9/9/98	AG		5264	25
m,p-xylene		<25	ug/Kg	S-8260B		9/9/98	AG		5264	25
o-xylene		<25	ug/Kg	S-8260B		9/9/98	AG		5264	25
1,1-dichloroethane		<25	ug/Kg	S-8260B		9/9/98	AG		5264	25
Ethylene dibromide		<25	ug/Kg	S-8260B		9/9/98	AG		5264	25
cis-1,2-dichloroethylene		<25	ug/Kg	S-8260B		9/9/98	AG		5264	25
trans-1,2-dichloroethylene		<25	ug/Kg	S-8260B		9/9/98	AG		5264	25
Methylene chloride		<125	ug/Kg	S-8260B		9/9/98	AG		5264	125
Dibromofluoromethane		86	%	S-8260B		9/9/98	AG		5264	72-130
Toluene-d8		80	%	S-8260B		9/9/98	AG		5264	77-127
4-Bromofluorobenzene		82	%	S-8260B		9/9/98	AG		5264	72-131
Benzidine		<25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	25
Hexachlorobenzene		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
Pentachlorobenzene		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
1,2,4,5-tetrachlorobenzene		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5

Corrected *

Date: 10-1-98

Project Number: 19350
 Project Name: Shell Tasker Road
 Project Location: Hobbs, NM

Page # 6

Order ID Number: 9809000114

Sample Number: 106824

Field Code: TSB-13 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
2,4-dichlorophenol		<12.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	12.5
2,4,5-trichlorophenol		<12.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	12.5
2,4,6-trichlorophenol		<12.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	12.5
bis (2-chloroethyl) ether		<12.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	12.5
bis (2-chloroisopropyl) ether		<12.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	12.5
bis (chloromethyl) ether		<12.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	12.5
3,3-dichlorobenzidine		<12.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	12.5
2,4-dinitrotoluene		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
Diphenylhydrazine		<12.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	12.5
Hexachlorobutadiene		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
Hexachlorocyclopentadiene		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
Isophorone		<12.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	12.5
Nitrobenzene		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
2,4-dinitro-o-cresol		<12.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	12.5
2,4-dinitrophenols		<12.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	12.5
n-nitrosodiethylamine		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
N-nitrosodimethylamine		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
N-nitrosodibutylamine		<12.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	12.5
N-nitrosodiphenylamine		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
N-nitrosopyrrolidine		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
Pentachlorophenol		<12.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	12.5
Dibutyl phthalate		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
di-2-ethylhexyl phthalate		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
Diethyl phthalate		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
Dimethyl phthalate		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
Anthracene		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
3,4-benzofluoranthene		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
Benzo(k)fluoranthene		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
Fluoranthene		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
Fluorene		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
Phenanthrene		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
Pyrene		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
Naphthalene		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
1-methylnaphthalene		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
2-methylnaphthalene		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
Benzo-a-pyrene		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
Phenol		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
Surr. 2-Fluorophenol		70	%	S-8270C	9/18/98	9/19/98	DG	5100	5430	25-121
Surr. Phenol-d6		43	%	S-8270C	9/18/98	9/19/98	DG	5100	5430	24-113
Surr. Nitrobenzene-d5		61	%	S-8270C	9/18/98	9/19/98	DG	5100	5430	23-120
Surr. 2-Fluorobiphenyl		106	%	S-8270C	9/18/98	9/19/98	DG	5100	5430	30-115
Surr. 2,4,6-Tribromophenol		65	%	S-8270C	9/18/98	9/19/98	DG	5100	5430	19-122
Surr. Terphenyl-d14		96	%	S-8270C	9/18/98	9/19/98	DG	5100	5430	28-137

* Corrected - Added Phenol result.

Date: 10-1-98

Page # 7

Order ID Number: 9809000114

Sample Number: 106824

Project Number: 19350
 Project Name: Shell Tasker Road
 Project Location: Hobbs, NM

Sample Description: TSB-13 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Chlordane		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
DDT		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Endrin		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	9/15/98	9/18/98	RC	5044	5401	0.1
Arsenic		<.50	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	0.50
Barium		173	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	0.50
Cadmium		<0.10	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	0.10
Chromium		4.1	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	0.50
Lead		1.3	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	0.50
Total Mercury		<0.10	mg/Kg	E 7471A	9/9/98	9/10/98	MS	4916	5274	0.10
Selenium		<.50	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	0.50
Silver		<.50	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	0.50
Uranium		<1.0	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	1.0
Copper		1.1	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	1.0
Iron		3,200	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	10
Manganese		27	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	1.0
Zinc		7.4	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	2.0
Aluminum		4,800	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	10
Boron		12	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	10
Cobalt		6.1	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	0.50
Molybdenum		1.5	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	1.0
Nickel		6.3	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	0.50
Cyanide		<0.010	mg/Kg	SM 4500 CN,CE		9/15/98	SA		5330	0.01
Fluoride		13	mg/Kg	E 300.0		9/21/98	JS		5487	0.2
Nitrate		<0.4	mg/Kg	E 300.0		9/21/98	JS		5487	0.4
Chloride		21	mg/Kg	E 300.0		9/21/98	JS		5487	1.0
Sulfate		150	mg/Kg	E 300.0		9/21/98	JS		5487	2.0
TDS		550	mg/Kg	E 160.1		9/20/98	RS		5435	---
pH		8.2	s.u.	E 150.1		9/8/98	SA		5241	---
TRPHC		10,800	mg/Kg	S 418.1	9/9/98	9/10/98	SR	4915	5270	10.0
Total Phenols		2.8	mg/Kg	SM 5530 A,D		9/20/98	RC		5450	0.25
Total Radium		1.09	pCi/gm	E 901.1M		9/14/98	DS	---	---	---



1726 Wooddale Court • Baton Rouge, Louisiana 70806

1 (800) 401-4277 • Fax (504) 927-6822

ARS Tracking Number: ARS-98-0914

P.O. Number:

Client I.D.: 106824

ARS Sample I.D.: ARS-98-3340

Date Sampled: 9/1/98

Date Received: 9/11/98

Time Sampled: N/A

Time Received: 1000

Type of Sample: Solid

Date of Report: 9/16/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	<0.91	N/A	pCi/gm	<0.034	N/A	Bq/gm	EPA 901.1M	9/14/98 1324	kh
Ra-228	<0.11	N/A	pCi/gm	<0.004	N/A	Bq/gm	EPA 901.1M	9/14/98 1324	kh
Pb-210	<1.26	N/A	pCi/gm	<0.047	N/A	Bq/gm	EPA 901.1M	9/14/98 1324	kh
Total Activity	1.09	N/A	pCi/gm	0.040	N/A	Bq/gm	EPA 901.1M	9/14/98 1324	kh

Notes:

Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-1-98
Page # 8

Project Number: 19350
Project Name: Shell Tasker Road
Project Location: Hobbs, NM

Order ID Number: 9809000114
Sample Number: 106825

Sample Description: TSB-13 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<105	ug/Kg	S-8260B		9/9/98	AG		5264	105
Acrylonitrile		<105	ug/Kg	S-8260B		9/9/98	AG		5264	105
Benzene		<21	ug/Kg	S-8260B		9/9/98	AG		5264	21
Carbon tetrachloride		<21	ug/Kg	S-8260B		9/9/98	AG		5264	21
Chlorobenzene		<21	ug/Kg	S-8260B		9/9/98	AG		5264	21
1,2-dichloroethane		<21	ug/Kg	S-8260B		9/9/98	AG		5264	21
1,1,2,2-tetrachloroethane		<21	ug/Kg	S-8260B		9/9/98	AG		5264	21
1,1,1-trichloroethane		<21	ug/Kg	S-8260B		9/9/98	AG		5264	21
1,1,2-trichloroethane		<21	ug/Kg	S-8260B		9/9/98	AG		5264	21
1,1,2-trichloroethylene		<21	ug/Kg	S-8260B		9/9/98	AG		5264	21
Chloroform		<21	ug/Kg	S-8260B		9/9/98	AG		5264	21
Dichlorobenzene		<42	ug/Kg	S-8260B		9/9/98	AG		5264	42
1,1-dichloroethylene		<21	ug/Kg	S-8260B		9/9/98	AG		5264	21
Dichloropropenes		<21	ug/Kg	S-8260B		9/9/98	AG		5264	21
Ethylbenzene		<21	ug/Kg	S-8260B		9/9/98	AG		5264	21
Bromodichloromethane		<21	ug/Kg	S-8260B		9/9/98	AG		5264	21
Bromomethane		<105	ug/Kg	S-8260B		9/9/98	AG		5264	105
Chloromethane		<21	ug/Kg	S-8260B		9/9/98	AG		5264	21
Dichlorodifluoromethane		<21	ug/Kg	S-8260B		9/9/98	AG		5264	21
Dichloromethane		<21	ug/Kg	S-8260B		9/9/98	AG		5264	21
Trichlorofluoromethane		<21	ug/Kg	S-8260B		9/9/98	AG		5264	21
Tetrachloroethylene		<21	ug/Kg	S-8260B		9/9/98	AG		5264	21
Toluene		<21	ug/Kg	S-8260B		9/9/98	AG		5264	21
Trichloroethylene		<21	ug/Kg	S-8260B		9/9/98	AG		5264	21
Vinyl chloride		<21	ug/Kg	S-8260B		9/9/98	AG		5264	21
m,p-xylene		<21	ug/Kg	S-8260B		9/9/98	AG		5264	21
o-xylene		<21	ug/Kg	S-8260B		9/9/98	AG		5264	21
1,1-dichloroethane		<21	ug/Kg	S-8260B		9/9/98	AG		5264	21
Ethylene dibromide		<21	ug/Kg	S-8260B		9/9/98	AG		5264	21
cis-1,2-dichloroethylene		<21	ug/Kg	S-8260B		9/9/98	AG		5264	21
trans-1,2-dichloroethylene		<21	ug/Kg	S-8260B		9/9/98	AG		5264	21
Methylene chloride		<105	ug/Kg	S-8260B		9/9/98	AG		5264	105
Dibromofluoromethane		87	%	S-8260B		9/9/98	AG		5264	72-130
Toluene-d8		81	%	S-8260B		9/9/98	AG		5264	77-127
4-Bromofluorobenzene		83	%	S-8260B		9/9/98	AG		5264	72-131
Benzidine		<25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	25
Hexachlorobenzene		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5

Date: 10-1-98
Page # 9

Corrected *

Project Number: 19350
 Project Name: Shell Tasker Road
 Project Location: Hobbs, NM

Order ID Number: 9809000114
 Sample Number: 106825

Field Code: TSB-13 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Pentachlorobenzene		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
1,2,4,5-tetrachlorobenzene		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
Hexachloroethane		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
2,4-dichlorophenol		<12.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	12.5
2,4,5-trichlorophenol		<12.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	12.5
2,4,6-trichlorophenol		<12.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	12.5
bis (2-chloroethyl) ether		<12.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	12.5
bis (2-chloroisopropyl) ether		<12.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	12.5
bis (chloromethyl) ether		<12.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	12.5
3,3-dichlorobenzidine		<12.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	12.5
2,4-dinitrotoluene		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
Diphenylhydrazine		<12.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	12.5
Hexachlorobutadiene		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
Hexachlorocyclopentadiene		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
Isophorone		<12.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	12.5
Nitrobenzene		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
2,4-dinitro-o-cresol		<12.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	12.5
2,4-dinitrophenols		<12.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	12.5
n-nitrosodiethylamine		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
N-nitrosodimethylamine		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
N-nitrosodibutylamine		<12.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	12.5
N-nitrosodiphenylamine		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
N-nitrosopyrrolidine		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
Pentachlorophenol		<12.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	12.5
Dibutyl phthalate		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
di-2-ethylhexyl phthalate		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
Diethyl phthalate		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
Dimethyl phthalate		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
Anthracene		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
3,4-benzofluoranthene		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
Benzo(k)fluoranthene		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
Fluoranthene		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
Fluorene		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
Phenanthrene		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
Pyrene		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
Naphthalene		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
1-methylnaphthalene		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
2-methylnaphthalene		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
Benzo-a-pyrene		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
Phenol		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
Surr. 2-Fluorophenol		75	%	S-8270C	9/18/98	9/19/98	DG	5100	5430	25-121
Surr. Phenol-d6		76	%	S-8270C	9/18/98	9/19/98	DG	5100	5430	24-113
Surr. Nitrobenzene-d5		61	%	S-8270C	9/18/98	9/19/98	DG	5100	5430	23-120
Surr. 2-Fluorobiphenyl		108	%	S-8270C	9/18/98	9/19/98	DG	5100	5430	30-115
Surr. 2,4,6-Tribromophenol		59	%	S-8270C	9/18/98	9/19/98	DG	5100	5430	19-122
Surr. Terphenyl-d14		101	%	S-8270C	9/18/98	9/19/98	DG	5100	5430	28-137

Corrected - Added Phenol result.

Project Number: 19350
 Project Name: Shell Tasker Road
 Project Location: Hobbs, NM

Date: 10-1-98
 Page # 10
 Order ID Number: 9809000114
 Sample Number: 106825

Sample Description: TSB-13 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Chlordane		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
DDT		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Endrin		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	9/15/98	9/18/98	RC	5044	5401	0.1
Arsenic		<.50	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	0.50
Barium		537	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	0.50
Cadmium		0.12	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	0.10
Chromium		5.6	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	0.50
Lead		2.4	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	0.50
Total Mercury		<0.10	mg/Kg	E 7471A	9/9/98	9/10/98	MS	4916	5274	0.10
Selenium		<.50	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	0.50
Silver		<.50	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	0.50
Uranium		<1.0	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	1.0
Copper		1.3	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	1.0
Iron		4,700	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	10
Manganese		48	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	1.0
Zinc		11	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	2.0
Aluminum		6,900	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	10
Boron		12	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	10
Cobalt		7.7	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	0.50
Molybdenum		1.5	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	1.0
Nickel		7	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	0.50
Cyanide		<0.010	mg/Kg	SM 4500 CN,CE		9/15/98	SA		5330	0.01
Fluoride		15	mg/Kg	E 300.0		9/21/98	JS		5487	0.2
Nitrate		<0.4	mg/Kg	E 300.0		9/21/98	JS		5487	0.4
Chloride		14	mg/Kg	E 300.0		9/21/98	JS		5487	1.0
Sulfate		150	mg/Kg	E 300.0		9/21/98	JS		5487	2.0
TDS		550	mg/Kg	E 160.1		9/20/98	RS		5435	---
pH		8.2	s.u.	E 150.1		9/8/98	SA		5241	---
TRPHC		15,900	mg/Kg	S 418.1	9/9/98	9/10/98	SR	4915	5270	10.0
Total Phenols		2.5	mg/Kg	SM 5530 A,D		9/20/98	RC		5450	0.25
Total Radium		5.08	pCi/gm	E 901.1M		9/14/98	DS	---	---	---



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ARS Tracking Number: ARS-98-0914

P.O. Number:

Client I.D.: 106825

ARS Sample I.D.: ARS-98-3341

Date Sampled: 9/1/98

Date Received: 9/11/98

Time Sampled: N/A

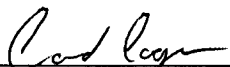
Time Received: 1000

Type of Sample: Solid

Date of Report: 9/15/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	2.45	1.64	pCi/gm	0.091	0.061	Bq/gm	EPA 901.1M	9/14/98 1550	kh
Ra-228	0.58	0.30	pCi/gm	0.021	0.011	Bq/gm	EPA 901.1M	9/14/98 1550	kh
Pb-210	<1.03	N/A	pCi/gm	<0.038	N/A	Bq/gm	EPA 901.1M	9/14/98 1550	kh
Total Activity	5.08	N/A	pCi/gm	0.188	N/A	Bq/gm	EPA 901.1M	9/14/98 1550	kh

Notes:


Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-1-98
Page # 11

Project Number: 19350
Project Name: Shell Tasker Road
Project Location: Hobbs, NM

Order ID Number: 9809000114
Sample Number: 106826

Sample Description: TSB-13 8-10'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<135	ug/Kg	S-8260B		9/9/98	AG		5264	135
Acrylonitrile		<135	ug/Kg	S-8260B		9/9/98	AG		5264	135
Benzene		<27	ug/Kg	S-8260B		9/9/98	AG		5264	27
Carbon tetrachloride		<27	ug/Kg	S-8260B		9/9/98	AG		5264	27
Chlorobenzene		<27	ug/Kg	S-8260B		9/9/98	AG		5264	27
1,2-dichloroethane		<27	ug/Kg	S-8260B		9/9/98	AG		5264	27
1,1,2,2-tetrachloroethane		<27	ug/Kg	S-8260B		9/9/98	AG		5264	27
1,1,1-trichloroethane		<27	ug/Kg	S-8260B		9/9/98	AG		5264	27
1,1,2-trichloroethane		<27	ug/Kg	S-8260B		9/9/98	AG		5264	27
1,1,2-trichloroethylene		<27	ug/Kg	S-8260B		9/9/98	AG		5264	27
Chloroform		<27	ug/Kg	S-8260B		9/9/98	AG		5264	27
Dichlorobenzene		<54	ug/Kg	S-8260B		9/9/98	AG		5264	54
1,1-dichloroethylene		<27	ug/Kg	S-8260B		9/9/98	AG		5264	27
Dichloropropenes		<27	ug/Kg	S-8260B		9/9/98	AG		5264	27
Ethylbenzene		<27	ug/Kg	S-8260B		9/9/98	AG		5264	27
Bromodichloromethane		<27	ug/Kg	S-8260B		9/9/98	AG		5264	27
Bromomethane		<135	ug/Kg	S-8260B		9/9/98	AG		5264	135
Chloromethane		<27	ug/Kg	S-8260B		9/9/98	AG		5264	27
Dichlorodifluoromethane		<27	ug/Kg	S-8260B		9/9/98	AG		5264	27
Dichloromethane		<27	ug/Kg	S-8260B		9/9/98	AG		5264	27
Trichlorofluoromethane		<27	ug/Kg	S-8260B		9/9/98	AG		5264	27
Tetrachloroethylene		<27	ug/Kg	S-8260B		9/9/98	AG		5264	27
Toluene		<27	ug/Kg	S-8260B		9/9/98	AG		5264	27
Trichloroethylene		<27	ug/Kg	S-8260B		9/9/98	AG		5264	27
Vinyl chloride		<27	ug/Kg	S-8260B		9/9/98	AG		5264	27
m,p-xylene		<27	ug/Kg	S-8260B		9/9/98	AG		5264	27
o-xylene		<27	ug/Kg	S-8260B		9/9/98	AG		5264	27
1,1-dichloroethane		<27	ug/Kg	S-8260B		9/9/98	AG		5264	27
Ethylene dibromide		<27	ug/Kg	S-8260B		9/9/98	AG		5264	27
cis-1,2-dichloroethylene		<27	ug/Kg	S-8260B		9/9/98	AG		5264	27
trans-1,2-dichloroethylene		<27	ug/Kg	S-8260B		9/9/98	AG		5264	27
Methylene chloride		<135	ug/Kg	S-8260B		9/9/98	AG		5264	135
Dibromofluoromethane		87	%	S-8260B		9/9/98	AG		5264	72-130
Toluene-d8		82	%	S-8260B		9/9/98	AG		5264	77-127
4-Bromofluorobenzene		86	%	S-8260B		9/9/98	AG		5264	72-131
Benzidine		<25	mg/Kg	S-8270C	9/18/98	9/20/98	DG	5100	5471	25
Hexachlorobenzene		<2.5	mg/Kg	S-8270C	9/18/98	9/20/98	DG	5100	5471	2.5
Pentachlorobenzene		<2.5	mg/Kg	S-8270C	9/18/98	9/20/98	DG	5100	5471	2.5
1,2,4,5-tetrachlorobenzene		<2.5	mg/Kg	S-8270C	9/18/98	9/20/98	DG	5100	5471	2.5

Corrected *

Project Number: 19350
 Project Name: Shell Tasker Road
 Project Location: Hobbs, NM

Date: 10-1-98
 Page # 12
 Order ID Number: 9809000114
 Sample Number: 106826

Field Code: TSB-13 8-10'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5471	2.5
2,4-dichlorophenol		<12.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5471	12.5
2,4,5-trichlorophenol		<12.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5471	12.5
2,4,6-trichlorophenol		<12.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5471	12.5
bis (2-chloroethyl) ether		<12.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5471	12.5
bis (2-chloroisopropyl) ether		<12.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5471	12.5
bis (chloromethyl) ether		<12.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5471	12.5
3,3-dichlorobenzidine		<12.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5471	12.5
2,4-dinitrotoluene		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5471	2.5
Diphenylhydrazine		<12.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5471	12.5
Hexachlorobutadiene		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5471	2.5
Hexachlorocyclopentadiene		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5471	2.5
Isophorone		<12.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5471	12.5
Nitrobenzene		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5471	2.5
2,4-dinitro-o-cresol		<12.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5471	12.5
2,4-dinitrophenols		<12.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5471	12.5
n-nitrosodiethylamine		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5471	2.5
N-nitrosodimethylamine		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5471	2.5
N-nitrosodibutylamine		<12.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5471	12.5
N-nitrosodiphenylamine		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5471	2.5
N-nitrosopyrrolidine		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5471	2.5
Pentachlorophenol		<12.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5471	12.5
Dibutyl phthalate		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5471	2.5
di-2-ethylhexyl phthalate		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5471	2.5
Diethyl phthalate		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5471	2.5
Dimethyl phthalate		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5471	2.5
Anthracene		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5471	2.5
3,4-benzofluoranthene		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5471	2.5
Benzo(k)fluoranthene		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5471	2.5
Fluoranthene		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5471	2.5
Fluorene		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5471	2.5
Phenanthrene		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5471	2.5
Pyrene		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5471	2.5
Naphthalene		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5471	2.5
1-methylnaphthalene		6.31	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5471	2.5
2-methylnaphthalene		5.45	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5471	2.5
Benzo-a-pyrene		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5471	2.5
Phenol		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5471	2.5
Surr. 2-Fluorophenol		75	%	S-8270C	9/18/98	9/19/98	DG	5100	5471	25-121
Surr. Phenol-d6		72	%	S-8270C	9/18/98	9/19/98	DG	5100	5471	24-113
Surr. Nitroobenzene-d5		56	%	S-8270C	9/18/98	9/19/98	DG	5100	5471	23-120
Surr. 2-Fluorobiphenyl		112	%	S-8270C	9/18/98	9/19/98	DG	5100	5471	30-115
Surr. 2,4,6-Tribromophenol		64	%	S-8270C	9/18/98	9/19/98	DG	5100	5471	19-122
Surr. Terphenyl-d14		105	%	S-8270C	9/18/98	9/19/98	DG	5100	5471	28-137

* Corrected - Added Phenol result.

Project Number: 19350
 Project Name: Shell Tasker Road
 Project Location: Hobbs, NM

Date: 10-1-98
 Page # 13
 Order ID Number: 9809000114
 Sample Number: 106826

Sample Description: TSB-13 8-10'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Chlordane		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
DDT		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Endrin		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	9/15/98	9/18/98	RC	5044	5401	0.1
Arsenic		0.52	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	0.50
Barium		149	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	0.50
Cadmium		0.15	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	0.10
Chromium		4.2	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	0.50
Lead		0.97	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	0.50
Total Mercury		<0.10	mg/Kg	E 7471A	9/9/98	9/10/98	MS	4916	5274	0.10
Selenium		<.50	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	0.50
Silver		<.50	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	0.50
Uranium		<1.0	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	1.0
Copper		2.7	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	1.0
Iron		3,200	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	10
Manganese		28	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	1.0
Zinc		7.7	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	2.0
Aluminum		4,800	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	10
Boron		12	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	10
Cobalt		5.9	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	0.50
Molybdenum		1.8	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	1.0
Nickel		6.1	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	0.50
Cyanide		<0.010	mg/Kg	SM 4500 CN,CE		9/15/98	SA		5330	0.01
Fluoride		9	mg/Kg	E 300.0		9/21/98	JS		5487	0.2
Nitrate		1.7	mg/Kg	E 300.0		9/21/98	JS		5487	0.2
Chloride		14	mg/Kg	E 300.0		9/21/98	JS		5487	1.0
Sulfate		56	mg/Kg	E 300.0		9/21/98	JS		5487	1.0
TDS		440	mg/Kg	E 160.1		9/20/98	RS		5435	---
pH		8.6	s.u.	E 150.1		9/8/98	SA		5241	---
TRPHC		6,250	mg/Kg	S 418.1	9/9/98	9/10/98	SR	4915	5270	10.0
Total Phenols		1.5	mg/Kg	SM 5530 A,D		9/20/98	RC		5450	0.25
Total Radium		8.19	pCi/gm	E 901.1M		9/14/98	DS	---	---	---



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ARS Tracking Number: ARS-98-0914

P.O. Number:

Client I.D.: 106826

ARS Sample I.D.: ARS-98-3342

Date Sampled: 9/1/98

Date Received: 9/11/98

Time Sampled: N/A

Time Received: 1000

Type of Sample: Solid

Date of Report: 9/15/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	2.07	1.32	pCi/gm	0.077	0.049	Bq/gm	EPA 901.1M	9/14/98 1624	kh
Ra-228	<0.17	N/A	pCi/gm	<0.006	N/A	Bq/gm	EPA 901.1M	9/14/98 1624	kh
Pb-210	3.57	1.68	pCi/gm	0.132	0.062	Bq/gm	EPA 901.1M	9/14/98 1624	kh
Total Activity	8.19	N/A	pCi/gm	0.303	N/A	Bq/gm	EPA 901.1M	9/14/98 1624	kh

Notes:

Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-1-98
Page # 14

Project Number: 19350
Project Name: Shell Tasker Road
Project Location: Hobbs, NM

Order ID Number: 9809000114
Sample Number: 106827

Sample Description: TSB-13 23-25'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<265	ug/Kg	S-8260B		9/9/98	AG		5264	265
Acrylonitrile		<265	ug/Kg	S-8260B		9/9/98	AG		5264	265
Benzene		<53	ug/Kg	S-8260B		9/9/98	AG		5264	53
Carbon tetrachloride		<53	ug/Kg	S-8260B		9/9/98	AG		5264	53
Chlorobenzene		<53	ug/Kg	S-8260B		9/9/98	AG		5264	53
1,2-dichloroethane		<53	ug/Kg	S-8260B		9/9/98	AG		5264	53
1,1,2,2-tetrachloroethane		<53	ug/Kg	S-8260B		9/9/98	AG		5264	53
1,1,1-trichloroethane		<53	ug/Kg	S-8260B		9/9/98	AG		5264	53
1,1,2-trichloroethane		<53	ug/Kg	S-8260B		9/9/98	AG		5264	53
1,1,2-trichloroethylene		<53	ug/Kg	S-8260B		9/9/98	AG		5264	53
Chloroform		<53	ug/Kg	S-8260B		9/9/98	AG		5264	53
Dichlorobenzene		<106	ug/Kg	S-8260B		9/9/98	AG		5264	106
1,1-dichloroethylene		<53	ug/Kg	S-8260B		9/9/98	AG		5264	53
Dichloropropenes		<53	ug/Kg	S-8260B		9/9/98	AG		5264	53
Ethylbenzene		<53	ug/Kg	S-8260B		9/9/98	AG		5264	53
Bromodichloromethane		<53	ug/Kg	S-8260B		9/9/98	AG		5264	53
Bromomethane		<180	ug/Kg	S-8260B		9/9/98	AG		5264	265
Chloromethane		<53	ug/Kg	S-8260B		9/9/98	AG		5264	53
Dichlorodifluoromethane		<53	ug/Kg	S-8260B		9/9/98	AG		5264	53
Dichloromethane		<53	ug/Kg	S-8260B		9/9/98	AG		5264	53
Trichlorofluoromethane		<53	ug/Kg	S-8260B		9/9/98	AG		5264	53
Tetrachloroethylene		<53	ug/Kg	S-8260B		9/9/98	AG		5264	53
Toluene		<53	ug/Kg	S-8260B		9/9/98	AG		5264	53
Trichloroethylene		<53	ug/Kg	S-8260B		9/9/98	AG		5264	53
Vinyl chloride		<53	ug/Kg	S-8260B		9/9/98	AG		5264	53
m,p-xylene		<53	ug/Kg	S-8260B		9/9/98	AG		5264	53
o-xylene		<53	ug/Kg	S-8260B		9/9/98	AG		5264	53
1,1-dichloroethane		<53	ug/Kg	S-8260B		9/9/98	AG		5264	53
Ethylene dibromide		<53	ug/Kg	S-8260B		9/9/98	AG		5264	53
cis-1,2-dichloroethylene		<53	ug/Kg	S-8260B		9/9/98	AG		5264	53
trans-1,2-dichloroethylene		<53	ug/Kg	S-8260B		9/9/98	AG		5264	53
Methylene chloride		<180	ug/Kg	S-8260B		9/9/98	AG		5264	265
Dibromofluoromethane		84	%	S-8260B		9/9/98	AG		5264	72-130
Toluene-d8		83	%	S-8260B		9/9/98	AG		5264	77-127
4-Bromofluorobenzene		83	%	S-8260B		9/9/98	AG		5264	72-131
Benzidine		<2.5	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25

Project Number: 19350
 Project Name: Shell Tasker Road
 Project Location: Hobbs, NM

Corrected *

Date: 10-1-98
 Page # 15
 Order ID Number: 9809000114
 Sample Number: 106827

Field Code: TSB-13 23-25'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
Isophorone		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
2,4-dinitro-o-cresol		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	1.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	1.25
n-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	1.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
Anthracene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
Fluorene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
Pyrene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
1-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
2-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
Phenol		<0.25	mg/Kg	S-8270C	9/18/98	9/19/98	DG	5100	5430	0.25
Surr. 2-Fluorophenol		65	%	S-8270C	9/18/98	9/19/98	DG	5100	5430	25-121
Surr. Phenol-d6		68	%	S-8270C	9/18/98	9/19/98	DG	5100	5430	24-113
Surr. Nitrobenzene-d5		62	%	S-8270C	9/18/98	9/19/98	DG	5100	5430	23-120
Surr. 2-Fluorobiphenyl		78	%	S-8270C	9/18/98	9/19/98	DG	5100	5430	30-115
Surr. 2,4,6-Tribromophenol		63	%	S-8270C	9/18/98	9/19/98	DG	5100	5430	19-122
Surr. Terphenyl-d14		75	%	S-8270C	9/18/98	9/19/98	DG	5100	5430	28-137

* Corrected - Added Phenol result.

Project Number: 19350
 Project Name: Shell Tasker Road
 Project Location: Hobbs, NM

Date: 10-1-98
 Page # 16
 Order ID Number: 9809000114
 Sample Number: 106827

Sample Description: TSB-13 23-25'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Chlordane		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
DDT		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Endrin		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S-8080	9/15/98	9/16/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	9/15/98	9/18/98	RC	5044	5401	0.1
Arsenic		3	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	0.50
Barium		31	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	0.50
Cadmium		0.11	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	0.10
Chromium		4	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	0.50
Lead		2.4	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	0.50
Total Mercury		<0.10	mg/Kg	E 7471A	9/9/98	9/10/98	MS	4916	5274	0.10
Selenium		<.50	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	0.50
Silver		<.50	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	0.50
Uranium		<1.0	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	1.0
Copper		8.4	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	1.0
Iron		2,500	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	10
Manganese		27	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	1.0
Zinc		8.2	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	2.0
Aluminum		4,100	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	10
Boron		15	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	10
Cobalt		5.4	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	0.50
Molybdenum		1.8	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	1.0
Nickel		6	mg/Kg	E 6010B	9/16/98	9/16/98	RR	5065	5361	0.50
Cyanide		<0.010	mg/Kg	SM 4500 CN,CE		9/15/98	SA		5330	0.01
Fluoride		4	mg/Kg	E 300.0		9/21/98	JS		5488	0.2
Nitrate		2.3	mg/Kg	E 300.0		9/21/98	JS		5488	0.2
Chloride		320	mg/Kg	E 300.0		9/21/98	JS		5488	5.0
Sulfate		500	mg/Kg	E 300.0		9/21/98	JS		5488	10.0
TDS		1,500	mg/Kg	E 160.1		9/21/98	JS		5449	---
pH		8.7	s.u.	E 150.1		9/8/98	SA		5241	---
TRPHC		<10.0	mg/Kg	S 418.1	9/9/98	9/10/98	SR	4915	5270	10.0
Total Phenols		4.2	mg/Kg	SM 5530 A,D		9/20/98	RC		5450	0.25
Total Radium		1.11	pCi/gm	E 901.1M		9/14/98	DS	---	---	---



1726 Wooddale Court • Baton Rouge, Louisiana 70806

1 (800) 401-4277 • Fax (504) 927-6822

ARS Tracking Number: ARS-98-0914

P.O. Number:

Client I.D.: 106827

ARS Sample I.D.: ARS-98-3343

Date Sampled: 9/1/98

Date Received: 9/11/98

Time Sampled: N/A

Time Received: 1000

Type of Sample: Solid

Date of Report: 9/15/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	<0.81	N/A	pCi/gm	<0.030	N/A	Bq/gm	EPA 901.1M	9/14/98 1656	kh
Ra-228	<0.09	N/A	pCi/gm	<0.003	N/A	Bq/gm	EPA 901.1M	9/14/98 1656	kh
Pb-210	<0.93	N/A	pCi/gm	<0.034	N/A	Bq/gm	EPA 901.1M	9/14/98 1656	kh
Total Activity	1.11	N/A	pCi/gm	0.041	N/A	Bq/gm	EPA 901.1M	9/14/98 1656	kh

Notes:

Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-1-98
Page # 4

Project Number: 19350
Project Name: Shell Tasker Road
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000435
Sample Number: 105742

Field Code: TMW-1 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<10,000	ug/Kg	S-8260B		9/3/98	AG		5205	10,000
Acrylonitrile		<10,000	ug/Kg	S-8260B		9/3/98	AG		5205	10,000
Benzene		<2,000	ug/Kg	S-8260B		9/3/98	AG		5205	2,000
Carbon tetrachloride		<2,000	ug/Kg	S-8260B		9/3/98	AG		5205	2,000
Chlorobenzene		<2,000	ug/Kg	S-8260B		9/3/98	AG		5205	2,000
1,2-dichloroethane		<2,000	ug/Kg	S-8260B		9/3/98	AG		5205	2,000
1,1,2,2-tetrachloroethane		<2,000	ug/Kg	S-8260B		9/3/98	AG		5205	2,000
1,1,1-trichloroethane		<2,000	ug/Kg	S-8260B		9/3/98	AG		5205	2,000
1,1,2-trichloroethane		<2,000	ug/Kg	S-8260B		9/3/98	AG		5205	2,000
1,1,2-trichloroethylene		<2,000	ug/Kg	S-8260B		9/3/98	AG		5205	2,000
Chloroform		<2,000	ug/Kg	S-8260B		9/3/98	AG		5205	2,000
Dichlorobenzene		<4,000	ug/Kg	S-8260B		9/3/98	AG		5205	4,000
1,1-dichloroethylene		<2,000	ug/Kg	S-8260B		9/3/98	AG		5205	2,000
Dichloropropenes		<2,000	ug/Kg	S-8260B		9/3/98	AG		5205	2,000
Ethylbenzene		10,900	ug/Kg	S-8260B		9/3/98	AG		5205	2,000
Bromodichloromethane		<2,000	ug/Kg	S-8260B		9/3/98	AG		5205	2,000
Bromomethane		<10,000	ug/Kg	S-8260B		9/3/98	AG		5205	10,000
Chloromethane		<2,000	ug/Kg	S-8260B		9/3/98	AG		5205	2,000
Dichlorodifluoromethane		<2,000	ug/Kg	S-8260B		9/3/98	AG		5205	2,000
Dichloromethane		<2,000	ug/Kg	S-8260B		9/3/98	AG		5205	2,000
Trichlorofluoromethane		<2,000	ug/Kg	S-8260B		9/3/98	AG		5205	2,000
Tetrachloroethylene		<2,000	ug/Kg	S-8260B		9/3/98	AG		5205	2,000
Toluene		<2,000	ug/Kg	S-8260B		9/3/98	AG		5205	2,000
Trichloroethylene		<2,000	ug/Kg	S-8260B		9/3/98	AG		5205	2,000
Vinyl chloride		<2,000	ug/Kg	S-8260B		9/3/98	AG		5205	2,000
m,p-xylene		43,600	ug/Kg	S-8260B		9/3/98	AG		5205	2,000
o-xylene		<2,000	ug/Kg	S-8260B		9/3/98	AG		5205	2,000
1,1-dichloroethane		<2,000	ug/Kg	S-8260B		9/3/98	AG		5205	2,000
Ethylene dibromide		<2,000	ug/Kg	S-8260B		9/3/98	AG		5205	2,000
cis-1,2-dichloroethylene		<2,000	ug/Kg	S-8260B		9/3/98	AG		5205	2,000
trans-1,2-dichloroethylene		<2,000	ug/Kg	S-8260B		9/3/98	AG		5205	2,000
Methylene chloride		<10,000	ug/Kg	S-8260B		9/3/98	AG		5205	10,000
Surr. Dibromofluoromethane		105	%	S-8260B		9/3/98	AG		5205	72-130
Surr. Toluene-d8		97	%	S-8260B		9/3/98	AG		5205	77-127
Surr. 4-Bromofluorobenzene		105	%	S-8260B		9/3/98	AG		5205	72-131
Benzidine		<125	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	125
Hexachlorobenzene		<12.5	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	12.5
Pentachlorobenzene		<12.5	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	12.5
1,2,4,5-tetrachlorobenzene		<12.5	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	12.5

Date: 10-1-98

Page # 5

Project Number: 19350

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000435

Sample Number: 105742

Field Code: TMW-1 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<12.5	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	12.5
2,4-dichlorophenol		<62.5	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	62.5
2,4,5-trichlorophenol		<62.5	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	62.5
2,4,6-trichlorophenol		<62.5	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	62.5
bis (2-chloroethyl) ether		<62.5	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	62.5
bis (2-chloroisopropyl) ether		<62.5	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	62.5
bis (chloromethyl) ether		<62.5	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	62.5
3,3-dichlorobenzidine		<62.5	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	62.5
2,4-dinitrotoluene		<12.5	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	12.5
Diphenylhydrazine		<62.5	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	62.5
Hexachlorobutadiene		<12.5	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	12.5
Hexachlorocyclopentadiene		<12.5	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	12.5
Isophorone		<62.5	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	62.5
Nitrobenzene		<12.5	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	12.5
2,4-dinitro-o-cresol		<62.5	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	62.5
2,4-dinitrophenols		<62.5	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	62.5
n-nitrosodiethylamine		<12.5	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	12.5
N-nitrosodimethylamine		<12.5	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	12.5
N-nitrosodibutylamine		<62.5	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	62.5
N-nitrosodiphenylamine		<12.5	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	12.5
N-nitrosopyrrolidine		<12.5	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	12.5
Pentachlorophenol		<62.5	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	62.5
Dibutyl phthalate		<12.5	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	12.5
di-2-ethylhexyl phthalate		<12.5	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	12.5
Diethyl phthalate		<12.5	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	12.5
Dimethyl phthalate		<12.5	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	12.5
Anthracene		<12.5	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	12.5
3,4-benzofluoranthene		<12.5	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	12.5
Benzo(k)fluoranthene		<12.5	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	12.5
Fluoranthene		<12.5	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	12.5
Fluorene		<12.5	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	12.5
Phenanthrene		<12.5	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	12.5
Pyrene		<12.5	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	12.5
Naphthalene		<12.5	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	12.5
1-methylnaphthalene		<12.5	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	12.5
2-methylnaphthalene		<12.5	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	12.5
Benzo-a-pyrene		<12.5	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	12.5
monomethylnaphthalenes		<12.5	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	12.5
Surr. 2-Fluorophenol		65	%	S-8270C	8/31/98	9/10/98	DG	4829	5276	25-121
Surr. Phenol-d6		38	%	S 8270C	8/31/98	9/10/98	DG	4829	5276	24-113
Surr. Nitroobenzene-d5		82	%	S 8270C	8/31/98	9/10/98	DG	4829	5276	23-120
Surr. 2-Fluorobiphenyl		89	%	S 8270C	8/31/98	9/10/98	DG	4829	5276	30-115
Surr. 2,4,6-Tribromophenol	LSR	6	%	S 8270C	8/31/98	9/10/98	DG	4829	5276	19-122
Surr. Terphenyl-d14		114	%	S 8270C	8/31/98	9/10/98	DG	4829	5276	28-137

Date: 10-1-98

Page # 6

Project Number: 19350

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000435

Sample Number: 105742

Field Code: TMW-1 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	8/26/98	10/2/98	SH	---	---	50
Chlordane		<50	ug/Kg	S-8080	8/26/98	10/2/98	SH	---	---	50
DDT		<50	ug/Kg	S-8080	8/26/98	10/2/98	SH	---	---	50
Dieldrin		<50	ug/Kg	S-8080	8/26/98	10/2/98	SH	---	---	50
Endosulfan		<50	ug/Kg	S-8080	8/26/98	10/2/98	SH	---	---	50
Endrin		<50	ug/Kg	S-8080	8/26/98	10/2/98	SH	---	---	50
Heptachlor		<50	ug/Kg	S-8080	8/26/98	10/2/98	SH	---	---	50
PCB's		<1.0	mg/Kg	S 8082	8/26/98	9/3/98	RC	4795	5204	1.0
Arsenic		0.68	mg/Kg	S 6010B	9/1/98	9/4/98	RR	4848	5208	0.50
Barium		150	mg/Kg	S 6010B	9/1/98	9/4/98	RR	4848	5208	0.50
Cadmium		0.14	mg/Kg	S 6010B	9/1/98	9/4/98	RR	4848	5208	0.10
Chromium		3.3	mg/Kg	S 6010B	9/1/98	9/4/98	RR	4848	5208	0.50
Lead		1.1	mg/Kg	S 6010B	9/1/98	9/4/98	RR	4848	5208	0.50
Total Mercury		<0.10	mg/Kg	S 7471	8/24/98	8/25/98	MS	4765	5101	<0.10
Selenium		0.52	mg/Kg	S 6010B	9/1/98	9/4/98	RR	4848	5208	0.50
Silver		<0.50	mg/Kg	S 6010B	9/1/98	9/4/98	RR	4848	5208	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/1/98	9/4/98	RR	4848	5208	2.0
Copper		2.6	mg/Kg	S 6010B	9/1/98	9/4/98	RR	4848	5208	1.0
Iron		1,970	mg/Kg	S 6010B	9/1/98	9/17/98	RR	4848	5372	10
Manganese		34	mg/Kg	S 6010B	9/1/98	9/4/98	RR	4848	5208	1.0
Zinc		11	mg/Kg	S 6010B	9/1/98	9/4/98	RR	4848	5208	2.0
Aluminum		3,800	mg/Kg	S 6010B	9/1/98	9/17/98	RR	4848	5372	10
Boron		<10	mg/Kg	S 6010B	9/1/98	9/4/98	RR	4848	5208	10
Cobalt		3.9	mg/Kg	S 6010B	9/1/98	9/4/98	RR	4848	5208	0.50
Molybdenum		1.7	mg/Kg	S 6010B	9/1/98	9/4/98	RR	4848	5208	1.0
Nickel		4.4	mg/Kg	S 6010B	9/1/98	9/4/98	RR	4848	5208	0.50
Cyanide		<0.01	mg/Kg	SM 4500 CN,CE	8/24/98	8/24/98	SA		5087	0.01
Fluoride		2.1	mg/Kg	E 300.0		9/9/98	JS		5251	0.2
Nitrate		1.5	mg/Kg	E 300.0		9/9/98	JS		5251	0.2
Chloride		94	mg/Kg	E 300.0		9/16/98	JS		5360	2.0
Sulfate		34	mg/Kg	E 300.0		9/19/98	JS		5424	5.0
TDS		2,700	mg/Kg	E 160.2		9/10/98	RS		5273	---
pH		9.5	s.u.	E 150.1		8/25/98	SA		5104	7.0
Phenolics		0.04	mg/kg	SM 5530 Cl		8/26/98	RC		5110	0.01
TRPHC		28,500	mg/kg	S 418.1	8/21/98	8/22/98	SR	4743	5045	10
Total Radium		3.12	pCi/gm	E 901.1M		9/5/98	DS	---	---	---

LSR Low surrogate recovery due to matrix.



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1 (800) 401-4277 • Fax (504) 927-6822

ARS Tracking Number: ARS-98-0867 P.O. Number: Verbal
 Client LD.: 105742 ARS Sample LD.: ARS-98-3153
 Date Sampled: 8/19/98 Date Received: 8/26/98
 Time Sampled: N/A Time Received: 1157
 Type of Sample: Solid Date of Report: 9/15/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	<1.09	N/A	pCi/gm	<0.040	N/A	Bq/gm	EPA 901.1M	9/5/98 1208	sw
Ra-228	<0.12	N/A	pCi/gm	<0.004	N/A	Bq/gm	EPA 901.1M	9/5/98 1208	sw
Pb-210	<1.11	N/A	pCi/gm	<0.041	N/A	Bq/gm	EPA 901.1M	9/5/98 1208	sw
Total Activity	3.12	N/A	pCi/gm	0.115	N/A	Bq/gm	EPA 901.1M	9/5/98 1208	sw

Notes:

Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-1-98
Date: 9-29-98
Page # 7

Project Number: 19350
Project Name: Shell Tasker Road
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000435
Sample Number: 105743

Field Code: TMW-1 63-65'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<215	ug/Kg	S-8260B		9/3/98	AG		5205	215
Acrylonitrile		<215	ug/Kg	S-8260B		9/3/98	AG		5205	215
Benzene		<43	ug/Kg	S-8260B		9/3/98	AG		5205	43
Carbon tetrachloride		<43	ug/Kg	S-8260B		9/3/98	AG		5205	43
Chlorobenzene		<43	ug/Kg	S-8260B		9/3/98	AG		5205	43
1,2-dichloroethane		<43	ug/Kg	S-8260B		9/3/98	AG		5205	43
1,1,2,2-tetrachloroethane		<43	ug/Kg	S-8260B		9/3/98	AG		5205	43
1,1,1-trichloroethane		<43	ug/Kg	S-8260B		9/3/98	AG		5205	43
1,1,2-trichloroethane		<43	ug/Kg	S-8260B		9/3/98	AG		5205	43
1,1,2-trichloroethylene		<43	ug/Kg	S-8260B		9/3/98	AG		5205	43
Chloroform		<43	ug/Kg	S-8260B		9/3/98	AG		5205	43
Dichlorobenzene		<86	ug/Kg	S-8260B		9/3/98	AG		5205	86
1,1-dichloroethylene		<43	ug/Kg	S-8260B		9/3/98	AG		5205	43
Dichloropropenes		<43	ug/Kg	S-8260B		9/3/98	AG		5205	43
Ethylbenzene		<43	ug/Kg	S-8260B		9/3/98	AG		5205	43
Bromodichloromethane		<43	ug/Kg	S-8260B		9/3/98	AG		5205	43
Bromomethane		970	ug/Kg	S-8260B		9/3/98	AG		5205	215
Chloromethane		<43	ug/Kg	S-8260B		9/3/98	AG		5205	43
Dichlorodifluoromethane		<43	ug/Kg	S-8260B		9/3/98	AG		5205	43
Dichloromethane		<43	ug/Kg	S-8260B		9/3/98	AG		5205	43
Trichlorofluoromethane		<43	ug/Kg	S-8260B		9/3/98	AG		5205	43
Tetrachloroethylene		<43	ug/Kg	S-8260B		9/3/98	AG		5205	43
Toluene		<43	ug/Kg	S-8260B		9/3/98	AG		5205	43
Trichloroethylene		<43	ug/Kg	S-8260B		9/3/98	AG		5205	43
Vinyl chloride		<43	ug/Kg	S-8260B		9/3/98	AG		5205	43
m,p-xylene		<43	ug/Kg	S-8260B		9/3/98	AG		5205	43
o-xylene		<43	ug/Kg	S-8260B		9/3/98	AG		5205	43
1,1-dichloroethane		<43	ug/Kg	S-8260B		9/3/98	AG		5205	43
Ethylene dibromide		<43	ug/Kg	S-8260B		9/3/98	AG		5205	43
cis-1,2-dichloroethylene		<43	ug/Kg	S-8260B		9/3/98	AG		5205	43
trans-1,2-dichloroethylene		<43	ug/Kg	S-8260B		9/3/98	AG		5205	43
Methylene chloride		<215	ug/Kg	S-8260B		9/3/98	AG		5205	215
Surr. Dibromofluoromethane		106	%	S-8260B		9/3/98	AG		5205	72-130
Surr. Toluene-d8		95	%	S-8260B		9/3/98	AG		5205	77-127
Surr. 4-Bromofluorobenzene		101	%	S-8260B		9/3/98	AG		5205	72-131
Benzidine		<2.5	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25

Date: 10-1-98

Page # 8

Project Number: 19350

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000435

Sample Number: 105743

Field Code: TMW-1 63-65'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Isophorone		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
2,4-dinitro-o-cresol		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
n-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Anthracene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Fluorene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Pyrene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
1-methylnaphthalene		20	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
2-methylnaphthalene		17.9	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Surr. 2-Fluorophenol		35	%	S-8270C	8/31/98	9/10/98	DG	4829	5276	25-121
Surr. Phenol-d6		43	%	S 8270C	8/31/98	9/10/98	DG	4829	5276	24-113
Surr. Nitroobenzene-d5		35	%	S 8270C	8/31/98	9/10/98	DG	4829	5276	23-120
Surr. 2-Fluorobiphenyl		42	%	S 8270C	8/31/98	9/10/98	DG	4829	5276	30-115
Surr. 2,4,6-Tribromophenol		33	%	S 8270C	8/31/98	9/10/98	DG	4829	5276	19-122
Surr. Terphenyl-d14		44	%	S 8270C	8/31/98	9/10/98	DG	4829	5276	28-137

Date: 10-1-98

Page # 9

Project Number: 19350

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000435

Sample Number: 105743

Field Code: TMW-1 63-65'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	8/26/98	10/2/98	SH	---	---	50
Chlordane		<50	ug/Kg	S-8080	8/26/98	10/2/98	SH	---	---	50
DDT		<50	ug/Kg	S-8080	8/26/98	10/2/98	SH	---	---	50
Dieldrin		<50	ug/Kg	S-8080	8/26/98	10/2/98	SH	---	---	50
Endosulfan		<50	ug/Kg	S-8080	8/26/98	10/2/98	SH	---	---	50
Endrin		<50	ug/Kg	S-8080	8/26/98	10/2/98	SH	---	---	50
Heptachlor		<50	ug/Kg	S-8080	8/26/98	10/2/98	SH	---	---	50
PCB's		<0.1	mg/Kg	S-8080	8/26/98	8/26/98	RC	4796	5112	0.1
Arsenic		<0.50	mg/Kg	S 6010B	9/1/98	9/4/98	RR	4848	5208	0.50
Barium		5.5	mg/Kg	S 6010B	9/1/98	9/4/98	RR	4848	5208	0.50
Cadmium		<0.10	mg/Kg	S 6010B	9/1/98	9/4/98	RR	4848	5208	0.10
Chromium		3.5	mg/Kg	S 6010B	9/1/98	9/4/98	RR	4848	5208	0.50
Lead		0.85	mg/Kg	S 6010B	9/1/98	9/4/98	RR	4848	5208	0.50
Total Mercury		<0.10	mg/Kg	S 7471	8/24/98	8/25/98	MS	4765	5101	<0.10
Selenium		1.3	mg/Kg	S 6010B	9/1/98	9/4/98	RR	4848	5208	0.50
Silver		<0.50	mg/Kg	S 6010B	9/1/98	9/4/98	RR	4848	5208	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/1/98	9/4/98	RR	4848	5208	2.0
Copper		<1.0	mg/Kg	S 6010B	9/1/98	9/4/98	RR	4848	5208	1.0
Iron		1,740	mg/Kg	S 6010B	9/1/98	9/17/98	RR	4848	5372	10
Manganese		14	mg/Kg	S 6010B	9/1/98	9/4/98	RR	4848	5208	1.0
Zinc		4.3	mg/Kg	S 6010B	9/1/98	9/4/98	RR	4848	5208	2.0
Aluminum		1,790	mg/Kg	S 6010B	9/1/98	9/17/98	RR	4848	5372	10
Boron		<10	mg/Kg	S 6010B	9/1/98	9/4/98	RR	4848	5208	10
Cobalt		<0.50	mg/Kg	S 6010B	9/1/98	9/4/98	RR	4848	5208	0.50
Molybdenum		<1.0	mg/Kg	S 6010B	9/1/98	9/4/98	RR	4848	5208	1.0
Nickel		<0.50	mg/Kg	S 6010B	9/1/98	9/4/98	RR	4848	5208	0.50
Cyanide		<0.01	mg/Kg	SM 4500 CN,CE	8/24/98	8/24/98	SA		5087	0.01
Fluoride		0.84	mg/Kg	E 300.0		9/2/98	JS		5192	0.1
Nitrate		2.0	mg/Kg	E 300.0		9/2/98	JS		5192	0.1
Chloride		82	mg/Kg	E 300.0		9/2/98	JS		5192	0.5
Sulfate		9.1	mg/Kg	E 300.0		9/2/98	JS		5192	0.5
TDS		170	mg/Kg	E 160.2		9/10/98	RS		5273	---
pH		8.7	s.u.	E 150.1		8/25/98	SA		5104	---
Phenolics		0.11	mg/kg	SM 5530 A,D		8/26/98	RC		5110	0.01
TRPHC		18.1	mg/kg	S 418.1	8/21/98	8/22/98	SR	4743	5045	10
Total Radium		11.3	pCi/gm	E 901.1M		9/5/98	DS	---	---	---

ARS Tracking Number:	ARS-98-0867	P.O. Number:	Verbal
Client I.D.:	1057423 ^m	ARS Sample I.D.:	ARS-98-3154
Date Sampled:	8/19/98	Date Received:	8/26/98
Time Sampled:	N/A	Time Received	1157
Type of Sample:	Solid	Date of Report	9/15/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	4.14	2.50	pCi/gm	0.153	0.092	Bq/gm	EPA 901.1M	9/5/98 1255	sw
Ra-228	<0.17	N/A	pCi/gm	<0.006	N/A	Bq/gm	EPA 901.1M	9/5/98 1255	sw
Pb-210	2.48	2.29	pCi/gm	0.092	0.085	Bq/gm	EPA 901.1M	9/5/98 1255	sw
Total Activity	11.30	N/A	pCi/gm	0.418	N/A	Bq/gm	EPA 901.1M	9/5/98 1255	sw

Notes:


 Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-1-98
Page # 10

Project Number: 19350
Project Name: Shell Tasker Road
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000435
Sample Number: 105744

Field Code: TMW-1A 63-65'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<275	ug/Kg	S-8260B		9/3/98	AG		5205	275
Acrylonitrile		<275	ug/Kg	S-8260B		9/3/98	AG		5205	275
Benzene		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
Carbon tetrachloride		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
Chlorobenzene		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
1,2-dichloroethane		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
1,1,2,2-tetrachloroethane		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
1,1,1-trichloroethane		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
1,1,2-trichloroethane		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
1,1,2-trichloroethylene		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
Chloroform		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
Dichlorobenzene		<110	ug/Kg	S-8260B		9/3/98	AG		5205	110
1,1-dichloroethylene		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
Dichloropropenes		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
Ethylbenzene		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
Bromodichloromethane		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
Bromomethane		<275	ug/Kg	S-8260B		9/3/98	AG		5205	275
Chloromethane		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
Dichlorodifluoromethane		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
Dichloromethane		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
Trichlorofluoromethane		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
Tetrachloroethylene		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
Toluene		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
Trichloroethylene		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
Vinyl chloride		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
m,p-xylene		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
o-xylene		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
1,1-dichloroethane		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
Ethylene dibromide		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
cis-1,2-dichloroethylene		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
trans-1,2-dichloroethylene		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
Methylene chloride		<275	ug/Kg	S-8260B		9/3/98	AG		5205	275
Surr. Dibromofluoromethane		101	%	S-8260B		9/3/98	AG		5205	72-130
Surr. Toluene-d8		98	%	S-8260B		9/3/98	AG		5205	77-127
Surr. 4-Bromofluorobenzene		99	%	S-8260B		9/3/98	AG		5205	72-131
Benzidine		<2.5	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-1-98
Page # 10

Project Number: 19350
Project Name: Shell Tasker Road
Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000435
Sample Number: 105744

Field Code: TMW-1A 63-65'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<275	ug/Kg	S-8260B		9/3/98	AG		5205	275
Acrylonitrile		<275	ug/Kg	S-8260B		9/3/98	AG		5205	275
Benzene		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
Carbon tetrachloride		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
Chlorobenzene		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
1,2-dichloroethane		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
1,1,2,2-tetrachloroethane		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
1,1,1-trichloroethane		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
1,1,2-trichloroethane		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
1,1,2-trichloroethylene		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
Chloroform		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
Dichlorobenzene		<110	ug/Kg	S-8260B		9/3/98	AG		5205	110
1,1-dichloroethylene		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
Dichloropropenes		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
Ethylbenzene		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
Bromodichloromethane		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
Bromomethane		<275	ug/Kg	S-8260B		9/3/98	AG		5205	275
Chloromethane		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
Dichlorodifluoromethane		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
Dichloromethane		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
Trichlorofluoromethane		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
Tetrachloroethylene		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
Toluene		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
Trichloroethylene		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
Vinyl chloride		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
m,p-xylene		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
o-xylene		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
1,1-dichloroethane		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
Ethylene dibromide		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
cis-1,2-dichloroethylene		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
trans-1,2-dichloroethylene		<55	ug/Kg	S-8260B		9/3/98	AG		5205	55
Methylene chloride		<275	ug/Kg	S-8260B		9/3/98	AG		5205	275
Surr. Dibromofluoromethane		101	%	S-8260B		9/3/98	AG		5205	72-130
Surr. Toluene-d8		98	%	S-8260B		9/3/98	AG		5205	77-127
Surr. 4-Bromofluorobenzene		99	%	S-8260B		9/3/98	AG		5205	72-131
Benzidine		<2.5	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25

Date: 10-1-98

Page # 11

Project Number: 19350

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000435

Sample Number: 105744

Field Code: TMW-1A 63-65'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Isophorone		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
2,4-dinitro-o-cresol		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
n-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Anthracene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Fluorene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Pyrene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
1-methylnaphthalene		20	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
2-methylnaphthalene		17.9	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Surr. 2-Fluorophenol		47	%	S-8270C	8/31/98	9/10/98	DG	4829	5276	25-121
Surr. Phenol-d6		56	%	S 8270C	8/31/98	9/10/98	DG	4829	5276	24-113
Surr. Nitroobenzene-d5		46	%	S 8270C	8/31/98	9/10/98	DG	4829	5276	23-120
Surr. 2-Fluorobiphenyl		53	%	S 8270C	8/31/98	9/10/98	DG	4829	5276	30-115
Surr. 2,4,6-Tribromophenol		38	%	S 8270C	8/31/98	9/10/98	DG	4829	5276	19-122
Surr. Terphenyl-d14		53	%	S 8270C	8/31/98	9/10/98	DG	4829	5276	28-137

Date: 10-1-98

Page # 12

Project Number: 19350

Project Name: Shell Grimes

Project Location: Grimes Battery, Hobbs, NM

Order ID Number: 9808000435

Sample Number: 105744

Field Code: TMW-1A 63-65'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	8/26/98	10/2/98	SH	---	---	50
Chlordane		<50	ug/Kg	S-8080	8/26/98	10/2/98	SH	---	---	50
DDT		<50	ug/Kg	S-8080	8/26/98	10/2/98	SH	---	---	50
Dieldrin		<50	ug/Kg	S-8080	8/26/98	10/2/98	SH	---	---	50
Endosulfan		<50	ug/Kg	S-8080	8/26/98	10/2/98	SH	---	---	50
Endrin		<50	ug/Kg	S-8080	8/26/98	10/2/98	SH	---	---	50
Heptachlor		<50	ug/Kg	S-8080	8/26/98	10/2/98	SH	---	---	50
PCB's		<0.1	mg/Kg	S-8080	8/26/98	8/26/98	RC	4796	5112	0.1
Arsenic		0.88	mg/Kg	S 6010B	9/1/98	9/4/98	RR	4848	5208	0.50
Barium		29	mg/Kg	S 6010B	9/1/98	9/4/98	RR	4848	5208	0.50
Cadmium		0.13	mg/Kg	S 6010B	9/1/98	9/4/98	RR	4848	5208	0.10
Chromium		4.1	mg/Kg	S 6010B	9/1/98	9/4/98	RR	4848	5208	0.50
Lead		1.2	mg/Kg	S 6010B	9/1/98	9/4/98	RR	4848	5208	0.50
Total Mercury		<0.10	mg/Kg	S 7471	8/24/98	8/25/98	MS	4765	5101	0.10
Selenium		<0.50	mg/Kg	S 6010B	9/1/98	9/4/98	RR	4848	5208	0.50
Silver		<0.50	mg/Kg	S 6010B	9/1/98	9/4/98	RR	4848	5208	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/1/98	9/4/98	RR	4848	5208	2.0
Copper		1.1	mg/Kg	S 6010B	9/1/98	9/4/98	RR	4848	5208	1.0
Iron		2,530	mg/Kg	S 6010B	9/1/98	9/17/98	RR	4848	5372	10
Manganese		46	mg/Kg	S 6010B	9/1/98	9/4/98	RR	4848	5208	1.0
Zinc		5.3	mg/Kg	S 6010B	9/1/98	9/4/98	RR	4848	5208	2.0
Aluminum		2,240	mg/Kg	S 6010B	9/1/98	9/17/98	RR	4848	5372	10
Boron		<10	mg/Kg	S 6010B	9/1/98	9/4/98	RR	4848	5208	10
Cobalt		1.1	mg/Kg	S 6010B	9/1/98	9/4/98	RR	4848	5208	0.50
Molybdenum		<1.0	mg/Kg	S 6010B	9/1/98	9/4/98	RR	4848	5208	1.0
Nickel		0.79	mg/Kg	S 6010B	9/1/98	9/4/98	RR	4848	5208	0.50
Cyanide		<0.01	mg/Kg	SM 4500 CN,CE	8/24/98	8/24/98	SA		5087	0.01
Fluoride		1.0	mg/Kg	E 335.2		9/2/98	JS		5192	0.1
Nitrate		1.9	mg/Kg	E 300.0		9/2/98	JS		5192	0.1
Chloride		240	mg/Kg	E 300.0		9/2/98	JS		5192	0.5
Sulfate		13	mg/Kg	E 300.0		9/2/98	JS		5192	0.5
TDS		510	mg/Kg	E 160.2		9/10/98	RS		5273	---
pH		8.7	s.u.	E 150.1		8/25/98	SA		5104	---
Phenolics		<0.01	mg/kg	SM 5530 A,D		8/26/98	RC		5110	0.01
TRPHC		63.0	mg/kg	S 418.1	8/21/98	8/22/98	SR	4743	5045	10
Total Radium		11.3	pCi/gm	E 901.1M		9/5/98	DS	---	---	---



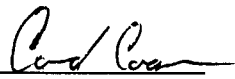
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ARS Tracking Number:	ARS-98-0867	P.O. Number:	Verbal
Client I.D.:	105744	ARS Sample I.D.:	ARS-98-3155
Date Sampled:	8/19/98	Date Received:	8/26/98
Time Sampled:	N/A	Time Received	1157
Type of Sample:	Solid	Date of Report	9/6/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	2.15	1.81	pCi/gm	0.080	0.067	Bq/gm	EPA 901.1M	9/5/98 1449	sw
Ra-228	0.37	0.21	pCi/gm	0.014	0.008	Bq/gm	EPA 901.1M	9/5/98 1449	sw
Pb-210	<0.94	N/A	pCi/gm	<0.035	N/A	Bq/gm	EPA 901.1M	9/5/98 1449	sw
Total Activity	7.14	N/A	pCi/gm	0.264	N/A	Bq/gm	EPA 901.1M	9/5/98 1449	sw

Notes:


Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 9-29-98
Page # 4

Project Number: 19350
Project Name: Shell Tasker Road
Project Location: Hobbs, NM

Order ID Number: 9808000400
Sample Number: 105614

Field Code: TMW-2 53-55'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<125	ug/Kg	S-8260B		8/24/98	AG		5082	125
Acrylonitrile		<125	ug/Kg	S-8260B		8/24/98	AG		5082	125
Benzene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Carbon tetrachloride		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Chlorobenzene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
1,2-dichloroethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
1,1,2,2-tetrachloroethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
1,1,1-trichloroethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
1,1,2-trichloroethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
1,1,2-trichloroethylene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Chloroform		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Dichlorobenzene		<50	ug/Kg	S-8260B		8/24/98	AG		5082	2
1,1-dichloroethylene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	50
Dichloropropenes		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Ethylbenzene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Bromodichloromethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Bromomethane		<125	ug/Kg	S-8260B		8/24/98	AG		5082	125
Chloromethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Dichlorodifluoromethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Dichloromethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Trichlorofluoromethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Tetrachloroethylene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Toluene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Trichloroethylene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Vinyl chloride		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
m,p-xylene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
o-xylene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
1,1-dichloroethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Ethylene dibromide		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
cis-1,2-dichloroethylene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
trans-1,2-dichloroethylene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Methylene chloride		<125	ug/Kg	S-8260B		8/24/98	AG		5082	125
Surr. Dibromofluoromethane		120	%	S-8260B		8/24/98	AG		5082	72-130
Surr. Toluene-d8		104	%	S-8260B		8/24/98	AG		5082	77-127
Surr. 4-Bromofluorobenzene		113	%	S-8260B		8/24/98	AG		5082	72-131
Benzidine		<2.5	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25

Project Number: 19350
 Project Name: Shell Tasker Road
 Project Location: Hobbs, NM

Date: 9-29-98
 Page # 5
 Order ID Number: 9808000400
 Sample Number: 105614

Field Code: TMW-2 53-55'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Isophorone		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
2,4-dinitro-o-cresol		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
n-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	1.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Anthracene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Fluorene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Pyrene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
1-methylnaphthalene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
2-methylnaphthalene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	8/31/98	9/10/98	DG	4829	5276	0.25
Surr. 2-Fluorophenol		63	%	S-8270C	8/31/98	9/10/98	DG	4829	5276	25-121
Surr. Phenol-d6		77	%	S-8270C	8/31/98	9/10/98	DG	4829	5276	24-113
Surr. Nitroobenzene-d5		61	%	S-8270C	8/31/98	9/10/98	DG	4829	5276	23-120
Surr. 2-Fluorobiphenyl		72	%	S-8270C	8/31/98	9/10/98	DG	4829	5276	30-115
Surr. 2,4,6-Tribromophenol		60	%	S-8270C	8/31/98	9/10/98	DG	4829	5276	19-122
Surr. Terphenyl-d14		71	%	S-8270C	8/31/98	9/10/98	DG	4829	5276	28-137

Project Number: 19350
 Project Name: Shell Tasker Road
 Project Location: Hobbs, NM

Date: 9-29-98
 Page # 6
 Order ID Number: 9808000400
 Sample Number: 105614

Field Code: TMW-2 53-55'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	8/26/98	9/27/98	KC	---	---	50
Chlordane		<50	ug/Kg	S-8080	8/26/98	9/27/98	KC	---	---	50
DDT		<50	ug/Kg	S-8080	8/26/98	9/27/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S-8080	8/26/98	9/27/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S-8080	8/26/98	9/27/98	KC	---	---	50
Endrin		<50	ug/Kg	S-8080	8/26/98	9/27/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S-8080	8/26/98	9/27/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	8/26/98	8/26/98	RC	4796	5112	0.1
Arsenic		<0.50	mg/Kg	S 6010B	8/26/98	8/27/98	RR	4797	5120	0.50
Barium		29	mg/Kg	S 6010B	8/26/98	8/27/98	RR	4797	5120	0.50
Cadmium		<0.10	mg/Kg	S 6010B	8/26/98	8/27/98	RR	4797	5120	0.10
Chromium		3.5	mg/Kg	S 6010B	8/26/98	8/27/98	RR	4797	5120	0.50
Lead		0.67	mg/Kg	S 6010B	8/26/98	8/27/98	RR	4797	5120	0.50
Total Mercury		<0.10	mg/Kg	S 7471	8/24/98	8/25/98	MS	4765	5101	0.10
Selenium		2.3	mg/Kg	S 6010B	8/26/98	8/27/98	RR	4797	5120	0.50
Silver		<0.50	mg/Kg	S 6010B	8/26/98	8/27/98	RR	4797	5120	0.50
Uranium		<2.0	mg/Kg	S 6010B	8/26/98	8/27/98	RR	4797	5120	2.0
Copper		<1.0	mg/Kg	S 6010B	8/26/98	8/27/98	RR	4797	5120	1.0
Iron		2,000	mg/Kg	S 6010B	8/26/98	8/27/98	RR	4798	5122	2.0
Manganese		17	mg/Kg	S 6010B	8/26/98	8/27/98	RR	4797	5120	1.0
Zinc		6.1	mg/Kg	S 6010B	8/26/98	8/27/98	RR	4797	5120	2.0
Aluminum		1,900	mg/Kg	S 6010B	8/26/98	8/27/98	RR	4798	5122	10.0
Boron		<10	mg/Kg	S 6010B	8/26/98	8/27/98	RR	4797	5120	10
Cobalt		1.4	mg/Kg	S 6010B	8/26/98	8/27/98	RR	4797	5120	0.50
Molybdenum		<1.0	mg/Kg	S 6010B	8/26/98	8/27/98	RR	4797	5120	1.0
Nickel		1.5	mg/Kg	S 6010B	8/26/98	8/27/98	RR	4797	5120	0.50
Cyanide		<0.01	mg/Kg	SM 4500 CN,CE		8/24/98	SA		5087	0.01
Fluoride		0.98	mg/Kg	E 300.0		9/2/98	JS		5192	0.2
Nitrate		1.8	mg/Kg	E 300.0		9/2/98	JS		5192	0.2
Chloride		18	mg/Kg	E 300.0		9/2/98	JS		5192	1.0
Sulfate		12	mg/Kg	E 300.0		9/2/98	JS		5192	1.0
TDS		140	mg/Kg	E 160.2		9/10/98	RS		5273	---
pH		9.0	s.u.	E 150.1		8/24/98	SA		5085	---
TRPHC		21.5	mg/Kg	S 418.1	8/21/98	8/22/98	SR	4743	5045	10.0
Total Phenol		2.25	mg/Kg	SM 5530 A,D		8/26/98	RC		5110	0.25
Total Radium		7.59	pCi/gm	E 901.1M		9/5/98	DS	---	---	---



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ARS Tracking Number:	ARS-98-0867	P.O. Number:	Verbal
Client I.D.:	105614	ARS Sample I.D.:	ARS-98-3151
Date Sampled:	8/18/98	Date Received:	8/26/98
Time Sampled:	N/A	Time Received	1157
Type of Sample:	Solid	Date of Report	9/6/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	2.08	1.61	pCi/gm	0.077	0.060	Bq/gm	EPA 901.1M	9/5/98 1137	sw
Ra-228	<0.15	N/A	pCi/gm	<0.006	N/A	Bq/gm	EPA 901.1M	9/5/98 1137	sw
Pb-210	3.83	2.18	pCi/gm	0.142	0.081	Bq/gm	EPA 901.1M	9/5/98 1137	sw
Total Activity	7.59	N/A	pCi/gm	0.281	N/A	Bq/gm	EPA 901.1M	9/5/98 1137	sw

Notes:

Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 9-29-98
Page # 7

Project Number: 19350
Project Name: Shell Tasker Road
Project Location: Hobbs, NM

Order ID Number: 9808000400
Sample Number: 105615

Field Code: TMW-2 63-65'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<125	ug/Kg	S-8260B		8/24/98	AG		5082	125
Acrylonitrile		<125	ug/Kg	S-8260B		8/24/98	AG		5082	125
Benzene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Carbon tetrachloride		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Chlorobenzene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
1,2-dichloroethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
1,1,2,2-tetrachloroethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
1,1,1-trichloroethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
1,1,2-trichloroethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
1,1,2-trichloroethylene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Chloroform		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Dichlorobenzene		<50	ug/Kg	S-8260B		8/24/98	AG		5082	2
1,1-dichloroethylene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	50
Dichloropropenes		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Ethylbenzene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Bromodichloromethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Bromomethane		<125	ug/Kg	S-8260B		8/24/98	AG		5082	125
Chloromethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Dichlorodifluoromethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Dichloromethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Trichlorofluoromethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Tetrachloroethylene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Toluene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Trichloroethylene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Vinyl chloride		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
m,p-xylene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
o-xylene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
1,1-dichloroethane		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Ethylene dibromide		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
cis-1,2-dichloroethylene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
trans-1,2-dichloroethylene		<25	ug/Kg	S-8260B		8/24/98	AG		5082	25
Methylene chloride		<125	ug/Kg	S-8260B		8/24/98	AG		5082	125
Surr. Dibromofluoromethane		119	%	S-8260B		8/24/98	AG		5082	72-130
Surr. Toluene-d8		104	%	S-8260B		8/24/98	AG		5082	77-127
Surr. 4-Bromofluorobenzene		113	%	S-8260B		8/24/98	AG		5082	72-131
Benzidine		<2.5	mg/Kg	S-8270C	9/4/98	9/16/98	DG	4885	5363	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	9/4/98	9/16/98	DG	4885	5363	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	9/4/98	9/16/98	DG	4885	5363	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	9/4/98	9/16/98	DG	4885	5363	0.25

Project Number: 19350
 Project Name: Shell Tasker Road
 Project Location: Hobbs, NM

Date: 9-29-98
 Page # 8
 Order ID Number: 9808000400
 Sample Number: 105615

Field Code: TMW-2 63-65'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<0.25	mg/Kg	S-8270C	9/4/98	9/16/98	DG	4885	5363	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	9/4/98	9/16/98	DG	4885	5363	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	9/4/98	9/16/98	DG	4885	5363	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	9/4/98	9/16/98	DG	4885	5363	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	9/4/98	9/16/98	DG	4885	5363	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	9/4/98	9/16/98	DG	4885	5363	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	9/4/98	9/16/98	DG	4885	5363	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	9/4/98	9/16/98	DG	4885	5363	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	9/4/98	9/16/98	DG	4885	5363	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	9/4/98	9/16/98	DG	4885	5363	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	9/4/98	9/16/98	DG	4885	5363	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	9/4/98	9/16/98	DG	4885	5363	0.25
Isophorone		<1.25	mg/Kg	S-8270C	9/4/98	9/16/98	DG	4885	5363	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	9/4/98	9/16/98	DG	4885	5363	0.25
2,4-dinitro-o-cresol		<1.25	mg/Kg	S-8270C	9/4/98	9/16/98	DG	4885	5363	1.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	9/4/98	9/16/98	DG	4885	5363	1.25
n-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	9/4/98	9/16/98	DG	4885	5363	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	9/4/98	9/16/98	DG	4885	5363	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	9/4/98	9/16/98	DG	4885	5363	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	9/4/98	9/16/98	DG	4885	5363	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	9/4/98	9/16/98	DG	4885	5363	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	9/4/98	9/16/98	DG	4885	5363	1.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	9/4/98	9/16/98	DG	4885	5363	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	9/4/98	9/16/98	DG	4885	5363	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	9/4/98	9/16/98	DG	4885	5363	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	9/4/98	9/16/98	DG	4885	5363	0.25
Anthracene		<0.25	mg/Kg	S-8270C	9/4/98	9/16/98	DG	4885	5363	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	9/4/98	9/16/98	DG	4885	5363	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	9/4/98	9/16/98	DG	4885	5363	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	9/4/98	9/16/98	DG	4885	5363	0.25
Fluorene		<0.25	mg/Kg	S-8270C	9/4/98	9/16/98	DG	4885	5363	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	9/4/98	9/16/98	DG	4885	5363	0.25
Pyrene		<0.25	mg/Kg	S-8270C	9/4/98	9/16/98	DG	4885	5363	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	9/4/98	9/16/98	DG	4885	5363	0.25
1-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/4/98	9/16/98	DG	4885	5363	0.25
2-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/4/98	9/16/98	DG	4885	5363	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	9/4/98	9/16/98	DG	4885	5363	0.25
monomethylnaphthalenes		<0.25	mg/Kg	S-8270C	9/4/98	9/16/98	DG	4885	5363	0.25
Surr. 2-Fluorophenol		46	%	S-8270C	9/4/98	9/16/98	DG	4885	5363	25-121
Surr. Phenol-d6		59	%	S-8270C	9/4/98	9/16/98	DG	4885	5363	24-113
Surr. Nitroobenzene-d5		48	%	S-8270C	9/4/98	9/16/98	DG	4885	5363	23-120
Surr. 2-Fluorobiphenyl		63	%	S-8270C	9/4/98	9/16/98	DG	4885	5363	30-115
Surr. 2,4,6-Tribromophenol		55	%	S-8270C	9/4/98	9/16/98	DG	4885	5363	19-122
Surr. Terphenyl-d14		74	%	S-8270C	9/4/98	9/16/98	DG	4885	5363	28-137

Project Number: 19350
 Project Name: Shell Tasker Road
 Project Location: Hobbs, NM

Date: 9-29-98
 Page # 9
 Order ID Number: 9808000400
 Sample Number: 105615

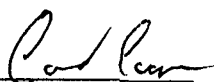
Field Code: TMW-2 63-65'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	8/26/98	9/27/98	KC	---	---	50
Chlordane		<50	ug/Kg	S-8080	8/26/98	9/27/98	KC	---	---	50
DDT		<50	ug/Kg	S-8080	8/26/98	9/27/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S-8080	8/26/98	9/27/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S-8080	8/26/98	9/27/98	KC	---	---	50
Endrin		<50	ug/Kg	S-8080	8/26/98	9/27/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S-8080	8/26/98	9/27/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	8/26/98	8/26/98	RC	4796	5112	0.1
Arsenic		<0.50	mg/Kg	S 6010B	8/26/98	8/27/98	RR	4797	5120	0.50
Barium		34	mg/Kg	S 6010B	8/26/98	8/27/98	RR	4797	5120	0.50
Cadmium		<0.10	mg/Kg	S 6010B	8/26/98	8/27/98	RR	4797	5120	0.10
Chromium		3.7	mg/Kg	S 6010B	8/26/98	8/27/98	RR	4797	5120	0.50
Lead		1.3	mg/Kg	S 6010B	8/26/98	8/27/98	RR	4797	5120	0.50
Total Mercury		<0.10	mg/Kg	S 7471	8/24/98	8/25/98	MS	4765	5101	0.10
Selenium		<0.50	mg/Kg	S 6010B	8/26/98	8/27/98	RR	4797	5120	0.50
Silver		<0.50	mg/Kg	S 6010B	8/26/98	8/27/98	RR	4797	5120	0.50
Uranium		<2.0	mg/Kg	S 6010B	8/26/98	8/27/98	RR	4797	5120	2.0
Copper		<1.0	mg/Kg	S 6010B	8/26/98	8/27/98	RR	4797	5120	1.0
Iron		2,300	mg/Kg	S 6010B	8/26/98	8/27/98	RR	4798	5122	2.0
Manganese		21	mg/Kg	S 6010B	8/26/98	8/27/98	RR	4797	5120	1.0
Zinc		5.3	mg/Kg	S 6010B	8/26/98	8/27/98	RR	4797	5120	2.0
Aluminum		2,300	mg/Kg	S 6010B	8/26/98	8/27/98	RR	4798	5122	10
Boron		<10	mg/Kg	S 6010B	8/26/98	8/27/98	RR	4797	5120	10
Cobalt		1.8	mg/Kg	S 6010B	8/26/98	8/27/98	RR	4797	5120	0.50
Molybdenum		<1.0	mg/Kg	S 6010B	8/26/98	8/27/98	RR	4797	5120	1.0
Nickel		1.5	mg/Kg	S 6010B	8/26/98	8/27/98	RR	4797	5120	0.50
Cyanide		<0.01	mg/Kg	SM 4500 CN,CE	8/24/98	8/24/98	SA		5087	0.01
Fluoride		0.99	mg/Kg	E 300.0		9/2/98	JS		5192	0.2
Nitrate		1.8	mg/Kg	E 300.0		9/2/98	JS		5192	0.2
Chloride		27	mg/Kg	E 300.0		9/2/98	JS		5192	1.0
Sulfate		12	mg/Kg	E 300.0		9/2/98	JS		5192	1.0
TDS		130	mg/Kg	E 160.2		9/10/98	RS		5273	---
pH		8.4	s.u.	E 150.1	8/24/98	8/24/98	SA		5085	
TRPHC		50.0	mg/Kg	S 418.1	8/21/98	8/22/98	SR	4743	5045	10.0
Total Phenol		<0.25	mg/Kg	SM 5530 A,D		8/26/98	RC		5110	0.25
Total Radium		0.74	pCi/gm	E 901.1M		8/29/98	DS	---	---	---

ARS Tracking Number:	ARS-98-0867	P.O. Number:	Verbal
Client LD.:	105615	ARS Sample LD.:	ARS-98-3152
Date Sampled:	8/18/98	Date Received:	8/26/98
Time Sampled:	N/A	Time Received	1157
Type of Sample:	Solid	Date of Report	9/6/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	<1.01	N/A	pCi/gm	<0.037	N/A	Bq/gm	EPA 901.1M	8/29/98 1547	sw
Ra-228	<0.09	N/A	pCi/gm	<0.003	N/A	Bq/gm	EPA 901.1M	8/29/98 1547	sw
Pb-210	<1.28	N/A	pCi/gm	<0.047	N/A	Bq/gm	EPA 901.1M	8/29/98 1547	sw
Total Activity	0.74	N/A	pCi/gm	0.027	N/A	Bq/gm	EPA 901.1M	8/29/98 1547	sw

Notes:


 Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-20-98

Page # 2

Project Number: 19350
Project Name: Shell Tasker Road
Project Location: Hobbs, NM

Order ID Number: 9809000488

Sample Number: 108238

Field Code: TMW-3 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<350	ug/Kg	S-8260B		10/9/98	MB		5709	350
Acrylonitrile		<350	ug/Kg	S-8260B		10/9/98	MB		5709	350
Benzene		74	ug/Kg	S-8260B		10/9/98	MB		5709	70
Carbon tetrachloride		<70	ug/Kg	S-8260B		10/9/98	MB		5709	70
Chlorobenzene		<70	ug/Kg	S-8260B		10/9/98	MB		5709	70
1,2-dichloroethane		<70	ug/Kg	S-8260B		10/9/98	MB		5709	70
1,1,2,2-tetrachloroethane		<70	ug/Kg	S-8260B		10/9/98	MB		5709	70
1,1,1-trichloroethane		<70	ug/Kg	S-8260B		10/9/98	MB		5709	70
1,1,2-trichloroethane		<70	ug/Kg	S-8260B		10/9/98	MB		5709	70
1,1,2-trichloroethylene		<70	ug/Kg	S-8260B		10/9/98	MB		5709	70
Chloroform		<70	ug/Kg	S-8260B		10/9/98	MB		5709	70
Dichlorobenzene		<140	ug/Kg	S-8260B		10/9/98	MB		5709	140
1,1-dichloroethylene		<70	ug/Kg	S-8260B		10/9/98	MB		5709	50
Dichloropropenes		<70	ug/Kg	S-8260B		10/9/98	MB		5709	70
Ethylbenzene		<70	ug/Kg	S-8260B		10/9/98	MB		5709	70
Bromodichloromethane		<70	ug/Kg	S-8260B		10/9/98	MB		5709	70
Bromomethane		<350	ug/Kg	S-8260B		10/9/98	MB		5709	350
Chloromethane		<70	ug/Kg	S-8260B		10/9/98	MB		5709	70
Dichlorodifluoromethane		<70	ug/Kg	S-8260B		10/9/98	MB		5709	70
Dichloromethane		<70	ug/Kg	S-8260B		10/9/98	MB		5709	70
Trichlorofluoromethane		<70	ug/Kg	S-8260B		10/9/98	MB		5709	70
Tetrachloroethylene		<70	ug/Kg	S-8260B		10/9/98	MB		5709	70
Toluene		<70	ug/Kg	S-8260B		10/9/98	MB		5709	70
Trichloroethylene		<70	ug/Kg	S-8260B		10/9/98	MB		5709	70
Vinyl chloride		<70	ug/Kg	S-8260B		10/9/98	MB		5709	70
m,p-xylene		<70	ug/Kg	S-8260B		10/9/98	MB		5709	70
o-xylene		<70	ug/Kg	S-8260B		10/9/98	MB		5709	70
1,1-dichloroethane		<70	ug/Kg	S-8260B		10/9/98	MB		5709	70
Ethylene dibromide		<70	ug/Kg	S-8260B		10/9/98	MB		5709	70
cis-1,2-dichloroethylene		<70	ug/Kg	S-8260B		10/9/98	MB		5709	70
trans-1,2-dichloroethylene		<70	ug/Kg	S-8260B		10/9/98	MB		5709	70
Methylene chloride		<350	ug/Kg	S-8260B		10/9/98	MB		5709	350
Surr. Dibromofluoromethane		101	%	S-8260B		10/9/98	MB		5709	72-130
Surr. Toluene-d8		104	%	S-8260B		10/9/98	MB		5709	77-127
Surr. 4-Bromofluorobenzene		106	%	S-8260B		10/9/98	MB		5709	72-131
Benzidine		<25	mg/Kg	S-8270C	9/27/98	10/1/98	DG	5302	5662	25
Hexachlorobenzene		<2.5	mg/Kg	S-8270C	9/27/98	10/1/98	DG	5302	5662	2.5
Pentachlorobenzene		<2.5	mg/Kg	S-8270C	9/27/98	10/1/98	DG	5302	5662	2.5
1,2,4,5-tetrachlorobenzene		<2.5	mg/Kg	S-8270C	9/27/98	10/1/98	DG	5302	5662	2.5

Project Number: 19350
 Project Name: Shell Tasker Road
 Project Location: Hobbs, NM

Date: 10-20-98
 Page # 3
 Order ID Number: 9809000488
 Sample Number: 108238

Field Code: TMW-3 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<2.5	mg/Kg	S-8270C	9/27/98	10/1/98	DG	5302	5662	2.5
2,4-dichlorophenol		<12.5	mg/Kg	S-8270C	9/27/98	10/1/98	DG	5302	5662	12.5
2,4,5-trichlorophenol		<12.5	mg/Kg	S-8270C	9/27/98	10/1/98	DG	5302	5662	12.5
2,4,6-trichlorophenol		<12.5	mg/Kg	S-8270C	9/27/98	10/1/98	DG	5302	5662	12.5
bis (2-chloroethyl) ether		<12.5	mg/Kg	S-8270C	9/27/98	10/1/98	DG	5302	5662	12.5
bis (2-chloroisopropyl) ether		<12.5	mg/Kg	S-8270C	9/27/98	10/1/98	DG	5302	5662	12.5
bis (chloromethyl) ether		<12.5	mg/Kg	S-8270C	9/27/98	10/1/98	DG	5302	5662	12.5
3,3-dichlorobenzidine		<12.5	mg/Kg	S-8270C	9/27/98	10/1/98	DG	5302	5662	12.5
2,4-dinitrotoluene		<2.5	mg/Kg	S-8270C	9/27/98	10/1/98	DG	5302	5662	2.5
Diphenylhydrazine		<12.5	mg/Kg	S-8270C	9/27/98	10/1/98	DG	5302	5662	12.5
Hexachlorobutadiene		<2.5	mg/Kg	S-8270C	9/27/98	10/1/98	DG	5302	5662	2.5
Hexachlorocyclopentadiene		<2.5	mg/Kg	S-8270C	9/27/98	10/1/98	DG	5302	5662	2.5
Isophorone		<12.5	mg/Kg	S-8270C	9/27/98	10/1/98	DG	5302	5662	12.5
Nitrobenzene		<2.5	mg/Kg	S-8270C	9/27/98	10/1/98	DG	5302	5662	2.5
2,4-dinitro-o-cresol		<12.5	mg/Kg	S-8270C	9/27/98	10/1/98	DG	5302	5662	12.5
2,4-dinitrophenols		<12.5	mg/Kg	S-8270C	9/27/98	10/1/98	DG	5302	5662	12.5
n-nitrosodiethylamine		<2.5	mg/Kg	S-8270C	9/27/98	10/1/98	DG	5302	5662	2.5
N-nitrosodimethylamine		<2.5	mg/Kg	S-8270C	9/27/98	10/1/98	DG	5302	5662	2.5
N-nitrosodibutylamine		<12.5	mg/Kg	S-8270C	9/27/98	10/1/98	DG	5302	5662	12.5
N-nitrosodiphenylamine		<2.5	mg/Kg	S-8270C	9/27/98	10/1/98	DG	5302	5662	2.5
N-nitrosopyrrolidine		<2.5	mg/Kg	S-8270C	9/27/98	10/1/98	DG	5302	5662	2.5
Pentachlorophenol		<12.5	mg/Kg	S-8270C	9/27/98	10/1/98	DG	5302	5662	12.5
Dibutyl phthalate		<2.5	mg/Kg	S-8270C	9/27/98	10/1/98	DG	5302	5662	2.5
di-2-ethylhexyl phthalate		<2.5	mg/Kg	S-8270C	9/27/98	10/1/98	DG	5302	5662	2.5
Diethyl phthalate		<2.5	mg/Kg	S-8270C	9/27/98	10/1/98	DG	5302	5662	2.5
Dimethyl phthalate		<2.5	mg/Kg	S-8270C	9/27/98	10/1/98	DG	5302	5662	2.5
Anthracene		<2.5	mg/Kg	S-8270C	9/27/98	10/1/98	DG	5302	5662	2.5
3,4-benzofluoranthene		<2.5	mg/Kg	S-8270C	9/27/98	10/1/98	DG	5302	5662	2.5
Benzo(k)fluoranthene		<2.5	mg/Kg	S-8270C	9/27/98	10/1/98	DG	5302	5662	2.5
Fluoranthene		<2.5	mg/Kg	S-8270C	9/27/98	10/1/98	DG	5302	5662	2.5
Fluorene		<2.5	mg/Kg	S-8270C	9/27/98	10/1/98	DG	5302	5662	2.5
Phenanthrene		<2.5	mg/Kg	S-8270C	9/27/98	10/1/98	DG	5302	5662	2.5
Pyrene		<2.5	mg/Kg	S-8270C	9/27/98	10/1/98	DG	5302	5662	2.5
Naphthalene		<2.5	mg/Kg	S-8270C	9/27/98	10/1/98	DG	5302	5662	2.5
1-methylnaphthalene		<2.5	mg/Kg	S-8270C	9/27/98	10/1/98	DG	5302	5662	2.5
2-methylnaphthalene		<2.5	mg/Kg	S-8270C	9/27/98	10/1/98	DG	5302	5662	2.5
Benzo-a-pyrene		<2.5	mg/Kg	S-8270C	9/27/98	10/1/98	DG	5302	5662	2.5
Surr. 2-Fluorophenol		86	%	S-8270C	9/27/98	10/1/98	DG	5302	5662	25-121
Surr. Phenol-d6		66	%	S-8270C	9/27/98	10/1/98	DG	5302	5662	24-113
Surr. Nitroobenzene-d5		74	%	S-8270C	9/27/98	10/1/98	DG	5302	5662	23-120
Surr. 2-Fluorobiphenyl		84	%	S-8270C	9/27/98	10/1/98	DG	5302	5662	30-115
Surr. 2,4,6-Tribromophenol		70	%	S-8270C	9/27/98	10/1/98	DG	5302	5662	19-122
Surr. Terphenyl-d14		100	%	S-8270C	9/27/98	10/1/98	DG	5302	5662	28-137

Project Number: 19350
 Project Name: Shell Tasker Road
 Project Location: Hobbs, NM

Date: 10-20-98
 Page # 4
 Order ID Number: 9809000488
 Sample Number: 108238

Field Code: TMW-3 2-3'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	10/5/98	10/16/98	KC	---	---	50
Chlordane		<50	ug/Kg	S-8080	10/5/98	10/16/98	KC	---	---	50
DDT		<50	ug/Kg	S-8080	10/5/98	10/16/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S-8080	10/5/98	10/16/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S-8080	10/5/98	10/16/98	KC	---	---	50
Endrin		<50	ug/Kg	S-8080	10/5/98	10/16/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S-8080	10/5/98	10/16/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	9/30/98	10/1/98	RC	5320	5662	0.1
Arsenic		3.6	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	0.50
Barium		152	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	0.50
Cadmium		<0.10	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	0.10
Chromium		3.2	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	0.50
Lead		1.4	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	0.50
Total Mercury		0.28	mg/Kg	S 7471	10/4/98	10/4/98	MS	5339	5680	0.10
Selenium		<0.50	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	0.50
Silver		<0.50	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	2.0
Copper		3.5	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	1.0
Iron		2500	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	2.0
Manganese		25	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	1.0
Zinc		7.5	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	2.0
Aluminum		3800	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	10.0
Boron		<10.0	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	10.0
Cobalt		5.0	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	0.50
Molybdenum		1.2	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	1.0
Nickel		6.4	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	0.50
Cyanide		<0.01	mg/Kg	SM 4500 CN,CE		9/30/98	SA		5651	0.01
Fluoride		3.4	mg/Kg	E 300.0		9/29/98	JS		5645	0.2
Nitrate		<0.2	mg/Kg	E 300.0		9/29/98	JS		5645	0.4
Chloride		81	mg/Kg	E 300.0		9/29/98	JS		5645	1.0
Sulfate		180	mg/Kg	E 300.0		9/29/98	JS		5645	1.0
TDS		460	mg/Kg	E 160.2		10/8/98	RS		5699	---
pH		8.2	s.u.	E 150.1		9/28/98	SA		5640	---
TRPHC		1,460	mg/Kg	S 418.1	9/28/98	9/29/98	MF		5521	10.0
Total Phenol		<0.25	mg/Kg	SM 5530 A,D		10/6/98	RC		5698	0.25
Total Radium		7.54	pCi/gm	E 901.1M		9/30/98	KH	---	---	---

S 8260B analysis was run out of hold time.



1726 Wooddale Court • Baton Rouge, Louisiana 70806

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ARS Tracking Number: ARS-98-0973 P.O. Number: N/A
Client I.D.: 108238 ARS Sample I.D.: ARS-98-3535
Date Sampled: N/A Date Received: 9/29/98
Time Sampled: N/A Time Received: 1039
Type of Sample: Solid Date of Report: 10/1/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	2.61	1.66	pCi/gm	0.097	0.061	Bq/gm	EPA 901.1M	9/30/98 1309	kh
Ra-228	< 0.14	N/A	pCi/gm	<0.005	N/A	Bq/gm	EPA 901.1M	9/30/98 1309	kh
Pb-210	2.85	1.99	pCi/gm	0.105	0.074	Bq/gm	EPA 901.1M	9/30/98 1309	kh
Total Activity	7.54	N/A	pCi/gm	0.279	N/A	Bq/gm	EPA 901.1M	9/30/98 1309	kh

Notes:


Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-20-98
Page # 5

Project Number: 19350
Project Name: Shell Tasker Road
Project Location: Hobbs, NM

Order ID Number: 9809000488
Sample Number: 108239

Field Code: TMW-3 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<240	ug/Kg	S-8260B		10/9/98	MB		5709	240
Acrylonitrile		<240	ug/Kg	S-8260B		10/9/98	MB		5709	240
Benzene		73	ug/Kg	S-8260B		10/9/98	MB		5709	48
Carbon tetrachloride		<48	ug/Kg	S-8260B		10/9/98	MB		5709	48
Chlorobenzene		<48	ug/Kg	S-8260B		10/9/98	MB		5709	48
1,2-dichloroethane		<48	ug/Kg	S-8260B		10/9/98	MB		5709	48
1,1,2,2-tetrachloroethane		<48	ug/Kg	S-8260B		10/9/98	MB		5709	48
1,1,1-trichloroethane		<48	ug/Kg	S-8260B		10/9/98	MB		5709	48
1,1,2-trichloroethane		<48	ug/Kg	S-8260B		10/9/98	MB		5709	48
1,1,2-trichloroethylene		<48	ug/Kg	S-8260B		10/9/98	MB		5709	48
Chloroform		<48	ug/Kg	S-8260B		10/9/98	MB		5709	48
Dichlorobenzene		<96	ug/Kg	S-8260B		10/9/98	MB		5709	96
1,1-dichloroethylene		<48	ug/Kg	S-8260B		10/9/98	MB		5709	50
Dichloropropenes		<48	ug/Kg	S-8260B		10/9/98	MB		5709	48
Ethylbenzene		<48	ug/Kg	S-8260B		10/9/98	MB		5709	48
Bromodichloromethane		<48	ug/Kg	S-8260B		10/9/98	MB		5709	48
Bromomethane		<240	ug/Kg	S-8260B		10/9/98	MB		5709	240
Chloromethane		<48	ug/Kg	S-8260B		10/9/98	MB		5709	48
Dichlorodifluoromethane		<48	ug/Kg	S-8260B		10/9/98	MB		5709	48
Dichloromethane		<48	ug/Kg	S-8260B		10/9/98	MB		5709	48
Trichlorofluoromethane		<48	ug/Kg	S-8260B		10/9/98	MB		5709	48
Tetrachloroethylene		<48	ug/Kg	S-8260B		10/9/98	MB		5709	48
Toluene		<48	ug/Kg	S-8260B		10/9/98	MB		5709	48
Trichloroethylene		<48	ug/Kg	S-8260B		10/9/98	MB		5709	48
Vinyl chloride		<48	ug/Kg	S-8260B		10/9/98	MB		5709	48
m,p-xylene		<48	ug/Kg	S-8260B		10/9/98	MB		5709	48
o-xylene		<48	ug/Kg	S-8260B		10/9/98	MB		5709	48
1,1-dichloroethane		<48	ug/Kg	S-8260B		10/9/98	MB		5709	48
Ethylene dibromide		<48	ug/Kg	S-8260B		10/9/98	MB		5709	48
cis-1,2-dichloroethylene		<48	ug/Kg	S-8260B		10/9/98	MB		5709	48
trans-1,2-dichloroethylene		<48	ug/Kg	S-8260B		10/9/98	MB		5709	48
Methylene chloride		<240	ug/Kg	S-8260B		10/9/98	MB		5709	240
Surr. Dibromofluoromethane		101	%	S-8260B		10/9/98	MB		5709	72-130
Surr. Toluene-d8		103	%	S-8260B		10/9/98	MB		5709	77-127
Surr. 4-Bromofluorobenzene		101	%	S-8260B		10/9/98	MB		5709	72-131
Benzidine		<25	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
Hexachlorobenzene		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
Pentachlorobenzene		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
1,2,4,5-tetrachlorobenzene		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5

Project Number: 19350
 Project Name: Shell Tasker Road
 Project Location: Hobbs, NM

Date: 10-20-98
 Page # 6
 Order ID Number: 9809000488
 Sample Number: 108239

Field Code: TMW-3 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
2,4-dichlorophenol		<12.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	12.5
2,4,5-trichlorophenol		<12.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	12.5
2,4,6-trichlorophenol		<12.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	12.5
bis (2-chloroethyl) ether		<12.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	12.5
bis (2-chloroisopropyl) ether		<12.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	12.5
bis (chloromethyl) ether		<12.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	12.5
3,3-dichlorobenzidine		<12.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	12.5
2,4-dinitrotoluene		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
Diphenylhydrazine		<12.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	12.5
Hexachlorobutadiene		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
Hexachlorocyclopentadiene		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
Isophorone		<12.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	12.5
Nitrobenzene		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
2,4-dinitro-o-cresol		<12.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	12.5
2,4-dinitrophenols		<12.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	12.5
n-nitrosodiethylamine		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
N-nitrosodimethylamine		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
N-nitrosodibutylamine		<12.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	12.5
N-nitrosodiphenylamine		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
N-nitrosopyrrolidine		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
Pentachlorophenol		<12.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	12.5
Dibutyl phthalate		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
di-2-ethylhexyl phthalate		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
Diethyl phthalate		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
Dimethyl phthalate		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
Anthracene		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
3,4-benzofluoranthene		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
Benzo(k)fluoranthene		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
Fluoranthene		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
Fluorene		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
Phenanthrene		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
Pyrene		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
Naphthalene		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
1-methylnaphthalene		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
2-methylnaphthalene		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
Benzo-a-pyrene		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
Surr. 2-Fluorophenol		76	%	S-8270C	9/27/98	10/4/98	JG	5302	5681	25-121
Surr. Phenol-d6		61	%	S-8270C	9/27/98	10/4/98	JG	5302	5681	24-113
Surr. Nitrobenzene-d5		82	%	S-8270C	9/27/98	10/4/98	JG	5302	5681	23-120
Surr. 2-Fluorobiphenyl		105	%	S-8270C	9/27/98	10/4/98	JG	5302	5681	30-115
Surr. 2,4,6-Tribromophenol		66	%	S-8270C	9/27/98	10/4/98	JG	5302	5681	19-122
Surr. Terphenyl-d14		102	%	S-8270C	9/27/98	10/4/98	JG	5302	5681	28-137

Project Number: 19350
 Project Name: Shell Tasker Road
 Project Location: Hobbs, NM

Date: 10-20-98
 Page # 7
 Order ID Number: 9809000488
 Sample Number: 108239

Field Code: TMW-3 3-5'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	10/5/98	10/16/98	KC	---	---	50
Chlordane		<50	ug/Kg	S-8080	10/5/98	10/16/98	KC	---	---	50
DDT		<50	ug/Kg	S-8080	10/5/98	10/16/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S-8080	10/5/98	10/16/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S-8080	10/5/98	10/16/98	KC	---	---	50
Endrin		<50	ug/Kg	S-8080	10/5/98	10/16/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S-8080	10/5/98	10/16/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	9/30/98	10/1/98	RC	5320	5662	0.1
Arsenic		2.0	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	0.50
Barium		147	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	0.50
Cadmium		<0.10	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	0.10
Chromium		4.2	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	0.50
Lead		1.3	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	0.50
Total Mercury		0.35	mg/Kg	S 7471	10/4/98	10/4/98	MS	5339	5680	0.10
Selenium		0.66	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	0.50
Silver		<0.50	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	2.0
Copper		1.3	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	1.0
Iron		3300	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	2.0
Manganese		24	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	1.0
Zinc		8.4	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	2.0
Aluminum		5100	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	10
Boron		12	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	10
Cobalt		5.5	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	0.50
Molybdenum		1.1	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	1.0
Nickel		7.0	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	0.50
Cyanide		<0.01	mg/Kg	SM 4500 CN,CE		9/30/98	SA		5651	0.01
Fluoride		7.4	mg/Kg	E 300.0		9/29/98	JS		5645	0.2
Nitrate		<0.2	mg/Kg	E 300.0		9/29/98	JS		5645	0.2
Chloride		41	mg/Kg	E 300.0		9/29/98	JS		5645	1.0
Sulfate		63	mg/Kg	E 300.0		9/29/98	JS		5645	1.0
TDS		470	mg/Kg	E 160.2		10/8/98	RS		5699	---
pH		8.4	s.u.	E 150.1		9/28/98	SA		5640	
TRPHC		2986.0	mg/Kg	S 418.1	9/28/98	9/29/98	MF		5521	10.0
Total Phenol		<0.25	mg/Kg	SM 5530 A,D		10/6/98	RC		5698	0.25
Total Radium		14.14	pCi/gm	E 901.1M		9/30/98	KH	---	---	---

S 8260B analysis was run out of hold time.



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ARS Tracking Number:	ARS-98-0973	P.O. Number:	N/A
Client I.D.:	108239	ARS Sample I.D.:	ARS-98-3536
Date Sampled:	N/A	Date Received:	9/29/98
Time Sampled:	N/A	Time Received:	1039
Type of Sample:	Solid	Date of Report:	10/1/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	3.66	1.38	pCi/gm	0.135	0.051	Bq/gm	EPA 901.1M	9/30/98 1237	dc
Ra-228	< 0.15	N/A	pCi/gm	<0.006	N/A	Bq/gm	EPA 901.1M	9/30/98 1237	dc
Pb-210	2.09	2.07	pCi/gm	0.077	0.077	Bq/gm	EPA 901.1M	9/30/98 1237	dc
Total Activity	14.14	N/A	pCi/gm	0.523	N/A	Bq/gm	EPA 901.1M	9/30/98 1237	dc

Notes:

Bradley Taylor
Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-20-98

Page # 8

Project Number: 19350
Project Name: Shell Tasker Road
Project Location: Hobbs, NM

Order ID Number: 9809000488

Sample Number: 108240

Field Code: TMW-3 23-25'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<500	ug/Kg	S-8260B		10/9/98	MB		5709	500
Acrylonitrile		<500	ug/Kg	S-8260B		10/9/98	MB		5709	500
Benzene		120	ug/Kg	S-8260B		10/9/98	MB		5709	100
Carbon tetrachloride		<100	ug/Kg	S-8260B		10/9/98	MB		5709	100
Chlorobenzene		<100	ug/Kg	S-8260B		10/9/98	MB		5709	100
1,2-dichloroethane		<100	ug/Kg	S-8260B		10/9/98	MB		5709	100
1,1,2,2-tetrachloroethane		<100	ug/Kg	S-8260B		10/9/98	MB		5709	100
1,1,1-trichloroethane		<100	ug/Kg	S-8260B		10/9/98	MB		5709	100
1,1,2-trichloroethane		<100	ug/Kg	S-8260B		10/9/98	MB		5709	100
1,1,2-trichloroethylene		<100	ug/Kg	S-8260B		10/9/98	MB		5709	100
Chloroform		<100	ug/Kg	S-8260B		10/9/98	MB		5709	100
Dichlorobenzene		<200	ug/Kg	S-8260B		10/9/98	MB		5709	200
1,1-dichloroethylene		<100	ug/Kg	S-8260B		10/9/98	MB		5709	100
Dichloropropenes		<100	ug/Kg	S-8260B		10/9/98	MB		5709	100
Ethylbenzene		3,000	ug/Kg	S-8260B		10/9/98	MB		5709	100
Bromodichloromethane		<100	ug/Kg	S-8260B		10/9/98	MB		5709	100
Bromomethane		<500	ug/Kg	S-8260B		10/9/98	MB		5709	500
Chloromethane		<100	ug/Kg	S-8260B		10/9/98	MB		5709	100
Dichlorodifluoromethane		<100	ug/Kg	S-8260B		10/9/98	MB		5709	100
Dichloromethane		<100	ug/Kg	S-8260B		10/9/98	MB		5709	100
Trichlorofluoromethane		<100	ug/Kg	S-8260B		10/9/98	MB		5709	100
Tetrachloroethylene		<100	ug/Kg	S-8260B		10/9/98	MB		5709	100
Toluene		<100	ug/Kg	S-8260B		10/9/98	MB		5709	100
Trichloroethylene		<100	ug/Kg	S-8260B		10/9/98	MB		5709	100
Vinyl chloride		<100	ug/Kg	S-8260B		10/9/98	MB		5709	100
m,p-xylene		11,500	ug/Kg	S-8260B		10/9/98	MB		5709	100
o-xylene		<100	ug/Kg	S-8260B		10/9/98	MB		5709	100
1,1-dichloroethane		<100	ug/Kg	S-8260B		10/9/98	MB		5709	100
Ethylene dibromide		<100	ug/Kg	S-8260B		10/9/98	MB		5709	100
cis-1,2-dichloroethylene		<100	ug/Kg	S-8260B		10/9/98	MB		5709	100
trans-1,2-dichloroethylene		<100	ug/Kg	S-8260B		10/9/98	MB		5709	100
Methylene chloride		<500	ug/Kg	S-8260B		10/9/98	MB		5709	500
Surr. Dibromofluoromethane		101	%	S-8260B		10/9/98	MB		5709	72-130
Surr. Toluene-d8		110	%	S-8260B		10/9/98	MB		5709	77-127
Surr. 4-Bromofluorobenzene		115	%	S-8260B		10/9/98	MB		5709	72-131
Benzidine		<25	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
Hexachlorobenzene		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
Pentachlorobenzene		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
1,2,4,5-tetrachlorobenzene		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5

Project Number: 19350
 Project Name: Shell Tasker Road
 Project Location: Hobbs, NM

Date: 10-20-98
 Page # 9
 Order ID Number: 9809000488
 Sample Number: 108240

Field Code: TMW-3 23-25'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
2,4-dichlorophenol		<12.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	12.5
2,4,5-trichlorophenol		<12.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	12.5
2,4,6-trichlorophenol		<12.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	12.5
bis (2-chloroethyl) ether		<12.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	12.5
bis (2-chloroisopropyl) ether		<12.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	12.5
bis (chloromethyl) ether		<12.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	12.5
3,3-dichlorobenzidine		<12.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	12.5
2,4-dinitrotoluene		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
Diphenylhydrazine		<12.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	12.5
Hexachlorobutadiene		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
Hexachlorocyclopentadiene		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
Isophorone		<12.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	12.5
Nitrobenzene		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
2,4-dinitro-o-cresol		<12.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	12.5
2,4-dinitrophenols		<12.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	12.5
n-nitrosodiethylamine		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
N-nitrosodimethylamine		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
N-nitrosodibutylamine		<12.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	12.5
N-nitrosodiphenylamine		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
N-nitrosopyrrolidine		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
Pentachlorophenol		<12.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	12.5
Dibutyl phthalate		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
di-2-ethylhexyl phthalate		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
Diethyl phthalate		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
Dimethyl phthalate		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
Anthracene		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
3,4-benzofluoranthene		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
Benzo(k)fluoranthene		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
Fluoranthene		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
Fluorene		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
Phenanthrene		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
Pyrene		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
Naphthalene		3.41	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
1-methylnaphthalene		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
2-methylnaphthalene		7.52	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
Benzo-a-pyrene		8.81	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
Surr. 2-Fluorophenol		42	%	S-8270C	9/27/98	10/4/98	JG	5302	5681	25-121
Surr. Phenol-d6		40	%	S-8270C	9/27/98	10/4/98	JG	5302	5681	24-113
Surr. Nitroobenzene-d5		52	%	S-8270C	9/27/98	10/4/98	JG	5302	5681	23-120
Surr. 2-Fluorobiphenyl		72	%	S-8270C	9/27/98	10/4/98	JG	5302	5681	30-115
Surr. 2,4,6-Tribromophenol		34	%	S-8270C	9/27/98	10/4/98	JG	5302	5681	19-122
Surr. Terphenyl-d14		69	%	S-8270C	9/27/98	10/4/98	JG	5302	5681	28-137

Project Number: 19350
Project Name: Shell Tasker Road
Project Location: Hobbs, NM

Date: 10-20-98
Page # 10
Order ID Number: 9809000488
Sample Number: 108240

Field Code: TMW-3 23-25'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	10/5/98	10/16/98	KC	---	---	50
Chlordane		<50	ug/Kg	S-8080	10/5/98	10/16/98	KC	---	---	50
DDT		<50	ug/Kg	S-8080	10/5/98	10/16/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S-8080	10/5/98	10/16/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S-8080	10/5/98	10/16/98	KC	---	---	50
Endrin		<50	ug/Kg	S-8080	10/5/98	10/16/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S-8080	10/5/98	10/16/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	9/30/98	10/1/98	RC	5320	5662	0.1
Arsenic		0.54	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	0.50
Barium		285	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	0.50
Cadmium		0.14	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	0.10
Chromium		2.6	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	0.50
Lead		0.69	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	0.50
Total Mercury		0.38	mg/Kg	S 7471	10/4/98	10/4/98	MS	5339	5680	0.10
Selenium		<0.50	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	0.50
Silver		<0.50	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	2.0
Copper		2.0	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	1.0
Iron		1500	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	2.0
Manganese		13	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	1.0
Zinc		4.2	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	2.0
Aluminum		1800	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	10.0
Boron		<10.0	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	10.0
Cobalt		3.7	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	0.50
Molybdenum		<1.0	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	1.0
Nickel		3.9	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	0.50
Cyanide		<0.01	mg/Kg	SM 4500 CN,CE		9/30/98	SA		5651	0.01
Fluoride		2.4	mg/Kg	E 300.0		9/29/98	JS		5645	0.2
Nitrate		<0.4	mg/Kg	E 300.0		9/29/98	JS		5645	0.4
Chloride		42	mg/Kg	E 300.0		9/29/98	JS		5645	1.0
Sulfate		17	mg/Kg	E 300.0		9/29/98	JS		5645	2.0
TDS		200	mg/Kg	E 160.2		10/8/98	RS		5699	---
pH		8.6	s.u.	E 150.1		9/28/98	SA		5640	---
TRPHC		3,574	mg/Kg	S 418.1	9/28/98	9/29/98	MF		5521	10.0
Total Phenol		<0.25	mg/Kg	SM 5530 A,D		10/6/98	RC		5698	0.25
Total Radium		1.91	pCi/gm	E 901.1M		9/30/98	KH	---	---	---

S 8260B analysis was run out of hold time.



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ARS Tracking Number:	ARS-98-0973	P.O. Number:	N/A
Client I.D.:	108240	ARS Sample I.D.:	ARS-98-3537
Date Sampled:	N/A	Date Received:	9/29/98
Time Sampled:	N/A	Time Received:	1039
Type of Sample:	Solid	Date of Report:	10/1/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	1.12	1.09	pCi/gm	0.041	0.040	Bq/gm	EPA 901.1M	9/30/98 1341	kh
Ra-228	< 0.09	N/A	pCi/gm	<0.003	N/A	Bq/gm	EPA 901.1M	9/30/98 1341	kh
Pb-210	< 0.89	N/A	pCi/gm	<0.033	N/A	Bq/gm	EPA 901.1M	9/30/98 1341	kh
Total Activity	1.91	N/A	pCi/gm	0.071	N/A	Bq/gm	EPA 901.1M	9/30/98 1341	kh

Notes:

Bradley Snyder
Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff Kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-20-98
Page # 11

Project Number: 19350
Project Name: Shell Tasker Road
Project Location: Hobbs, NM

Order ID Number: 9809000488
Sample Number: 108241

Field Code: TMW-3 63-65'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<180	ug/Kg	S-8260B		10/9/98	MB		5709	180
Acrylonitrile		<180	ug/Kg	S-8260B		10/9/98	MB		5709	180
Benzene		57	ug/Kg	S-8260B		10/9/98	MB		5709	36
Carbon tetrachloride		<36	ug/Kg	S-8260B		10/9/98	MB		5709	36
Chlorobenzene		<36	ug/Kg	S-8260B		10/9/98	MB		5709	36
1,2-dichloroethane		<36	ug/Kg	S-8260B		10/9/98	MB		5709	36
1,1,2,2-tetrachloroethane		<36	ug/Kg	S-8260B		10/9/98	MB		5709	36
1,1,1-trichloroethane		<36	ug/Kg	S-8260B		10/9/98	MB		5709	36
1,1,2-trichloroethane		<36	ug/Kg	S-8260B		10/9/98	MB		5709	36
1,1,2-trichloroethylene		<36	ug/Kg	S-8260B		10/9/98	MB		5709	36
Chloroform		<36	ug/Kg	S-8260B		10/9/98	MB		5709	36
Dichlorobenzene		<72	ug/Kg	S-8260B		10/9/98	MB		5709	72
1,1-dichloroethylene		<36	ug/Kg	S-8260B		10/9/98	MB		5709	180
Dichloropropenes		<36	ug/Kg	S-8260B		10/9/98	MB		5709	36
Ethylbenzene		<36	ug/Kg	S-8260B		10/9/98	MB		5709	36
Bromodichloromethane		<36	ug/Kg	S-8260B		10/9/98	MB		5709	36
Bromomethane		<180	ug/Kg	S-8260B		10/9/98	MB		5709	180
Chloromethane		<36	ug/Kg	S-8260B		10/9/98	MB		5709	36
Dichlorodifluoromethane		<36	ug/Kg	S-8260B		10/9/98	MB		5709	36
Dichloromethane		<36	ug/Kg	S-8260B		10/9/98	MB		5709	36
Trichlorofluoromethane		<36	ug/Kg	S-8260B		10/9/98	MB		5709	36
Tetrachloroethylene		<36	ug/Kg	S-8260B		10/9/98	MB		5709	36
Toluene		<36	ug/Kg	S-8260B		10/9/98	MB		5709	36
Trichloroethylene		<36	ug/Kg	S-8260B		10/9/98	MB		5709	36
Vinyl chloride		<36	ug/Kg	S-8260B		10/9/98	MB		5709	36
m,p-xylene		<36	ug/Kg	S-8260B		10/9/98	MB		5709	36
o-xylene		<36	ug/Kg	S-8260B		10/9/98	MB		5709	36
1,1-dichloroethane		<36	ug/Kg	S-8260B		10/9/98	MB		5709	36
Ethylene dibromide		<36	ug/Kg	S-8260B		10/9/98	MB		5709	36
cis-1,2-dichloroethylene		<36	ug/Kg	S-8260B		10/9/98	MB		5709	36
trans-1,2-dichloroethylene		<36	ug/Kg	S-8260B		10/9/98	MB		5709	36
Methylene chloride		<180	ug/Kg	S-8260B		10/9/98	MB		5709	180
Surr. Dibromofluoromethane		100	%	S-8260B		10/9/98	MB		5709	72-130
Surr. Toluene-d8		104	%	S-8260B		10/9/98	MB		5709	77-127
Surr. 4-Bromofluorobenzene		104	%	S-8260B		10/9/98	MB		5709	72-131
Benzidine		<2.5	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	2.5
Hexachlorobenzene		<0.25	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	0.25
Pentachlorobenzene		<0.25	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	0.25
1,2,4,5-tetrachlorobenzene		<0.25	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	0.25

Project Number: 19350
 Project Name: Shell Tasker Road
 Project Location: Hobbs, NM

Date: 10-20-98
 Page # 12
 Order ID Number: 9809000488
 Sample Number: 108241

Field Code: TMW-3 63-65'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Hexachloroethane		<0.25	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	0.25
2,4-dichlorophenol		<1.25	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	1.25
2,4,5-trichlorophenol		<1.25	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	1.25
2,4,6-trichlorophenol		<1.25	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	1.25
bis (2-chloroethyl) ether		<1.25	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	1.25
bis (2-chloroisopropyl) ether		<1.25	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	1.25
bis (chloromethyl) ether		<1.25	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	1.25
3,3-dichlorobenzidine		<1.25	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	1.25
2,4-dinitrotoluene		<0.25	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	0.25
Diphenylhydrazine		<1.25	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	1.25
Hexachlorobutadiene		<0.25	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	0.25
Hexachlorocyclopentadiene		<0.25	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	0.25
Isophorone		<1.25	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	1.25
Nitrobenzene		<0.25	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	0.25
2,4-dinitro-o-cresol		<1.25	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	1.25
2,4-dinitrophenols		<1.25	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	1.25
n-nitrosodiethylamine		<0.25	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	0.25
N-nitrosodimethylamine		<0.25	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	0.25
N-nitrosodibutylamine		<1.25	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	1.25
N-nitrosodiphenylamine		<0.25	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	0.25
N-nitrosopyrrolidine		<0.25	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	0.25
Pentachlorophenol		<1.25	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	1.25
Dibutyl phthalate		<0.25	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	0.25
di-2-ethylhexyl phthalate		<0.25	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	0.25
Diethyl phthalate		<0.25	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	0.25
Dimethyl phthalate		<0.25	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	0.25
Anthracene		<0.25	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	0.25
3,4-benzofluoranthene		<0.25	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	0.25
Benzo(k)fluoranthene		<0.25	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	0.25
Fluoranthene		<0.25	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	0.25
Fluorene		<0.25	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	0.25
Phenanthrene		<0.25	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	0.25
Pyrene		<0.25	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	0.25
Naphthalene		<0.25	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	0.25
1-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	0.25
2-methylnaphthalene		<0.25	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	0.25
Benzo-a-pyrene		<0.25	mg/Kg	S-8270C	9/27/98	10/4/98	JG	5302	5681	0.25
Surr. 2-Fluorophenol		70	%	S-8270C	9/27/98	10/4/98	JG	5302	5681	25-121
Surr. Phenol-d6		83	%	S-8270C	9/27/98	10/4/98	JG	5302	5681	24-113
Surr. Nitroobenzene-d5		75	%	S-8270C	9/27/98	10/4/98	JG	5302	5681	23-120
Surr. 2-Fluorobiphenyl		79	%	S-8270C	9/27/98	10/4/98	JG	5302	5681	30-115
Surr. 2,4,6-Tribromophenol		74	%	S-8270C	9/27/98	10/4/98	JG	5302	5681	19-122
Surr. Terphenyl-d14		78	%	S-8270C	9/27/98	10/4/98	JG	5302	5681	28-137

Project Number: 19350
 Project Name: Shell Tasker Road
 Project Location: Hobbs, NM

Date: 10-20-98
 Page # 13

Order ID Number: 9809000488
 Sample Number: 108241

Field Code: TMW-3 63-65'

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<50	ug/Kg	S-8080	10/5/98	10/16/98	KC	---	---	50
Chlordane		<50	ug/Kg	S-8080	10/5/98	10/16/98	KC	---	---	50
DDT		<50	ug/Kg	S-8080	10/5/98	10/16/98	KC	---	---	50
Dieldrin		<50	ug/Kg	S-8080	10/5/98	10/16/98	KC	---	---	50
Endosulfan		<50	ug/Kg	S-8080	10/5/98	10/16/98	KC	---	---	50
Endrin		<50	ug/Kg	S-8080	10/5/98	10/16/98	KC	---	---	50
Heptachlor		<50	ug/Kg	S-8080	10/5/98	10/16/98	KC	---	---	50
PCB's		<0.1	mg/Kg	S 8082	9/30/98	10/1/98	RC	5320	5662	0.1
Arsenic		<0.50	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	0.50
Barium		10	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	0.50
Cadmium		0.14	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	0.10
Chromium		3.3	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	0.50
Lead		1.0	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	0.50
Total Mercury		0.45	mg/Kg	S 7471	10/4/98	10/4/98	MS	5339	5680	0.10
Selenium		<0.50	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	0.50
Silver		<0.50	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	0.50
Uranium		<2.0	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	2.0
Copper		1.1	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	1.0
Iron		2400	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	2.0
Manganese		20	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	1.0
Zinc		7.4	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	2.0
Aluminum		2000	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	10
Boron		<10.0	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	10
Cobalt		2.5	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	0.50
Molybdenum		<1.0	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	1.0
Nickel		2.4	mg/Kg	S 6010B	9/27/98	9/28/98	RR	5301	5511	0.50
Cyanide		<0.01	mg/Kg	SM 4500 CN,CE		9/30/98	SA		5651	0.01
Fluoride		1.5	mg/Kg	E 300.0		9/30/98	JS		5650	0.2
Nitrate		<0.2	mg/Kg	E 300.0		9/30/98	JS		5650	0.2
Chloride		31	mg/Kg	E 300.0		10/1/98	JS		5661	1.0
Sulfate		9.0	mg/Kg	E 300.0		10/1/98	JS		5661	1.0
TDS		170	mg/Kg	E 160.2		10/8/98	RS		5699	---
pH		9.2	s.u.	E 150.1		9/28/98	SA		5640	
TRPHC		<10.0	mg/Kg	S 418.1	9/28/98	9/29/98	MF		5521	10.0
Total Phenol		<0.25	mg/Kg	SM 5530 A,D		10/6/98	RC		5698	0.25
Total Radium		10.60	pCi/gm	E 901.1M		9/30/98	KH	---	---	---

S 8260B analysis was run out of hold time.



1726 Wooddale Court • Baton Rouge, Louisiana 70806

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ARS Tracking Number:	ARS-98-0973	P.O. Number:	N/A
Client I.D.:	108241	ARS Sample I.D.:	ARS-98-3538
Date Sampled:	N/A	Date Received:	9/29/98
Time Sampled:	N/A	Time Received:	1039
Type of Sample:	Solid	Date of Report:	10/1/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Result	Analysis Error $\pm 2\sigma$	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	< 0.92	N/A	pCi/gm	<0.034	N/A	Bq/gm	EPA 901.1M	9/30/98 1205	kh
Ra-228	0.40	0.27	pCi/gm	0.015	0.010	Bq/gm	EPA 901.1M	9/30/98 1205	kh
Pb-210	2.33	1.60	pCi/gm	0.086	0.059	Bq/gm	EPA 901.1M	9/30/98 1205	kh
Total Activity	10.60	N/A	pCi/gm	0.392	N/A	Bq/gm	EPA 901.1M	9/30/98 1205	kh

Notes:

Brendly Langdon
Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-20-98
Page # 2

Project Number: 19349
Project Name: Shell Grimes Tank Battery
Project Location: Hobbs, NM

Order ID Number: 9810000164
Sample Number: 109439

Sample Description: GMW-1

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<250	ug/L	S 8260B		10/16/98	MB		5790	250
Acrylonitrile		<250	ug/L	S 8260B		10/16/98	MB		5790	250
Benzene		<50	ug/L	S 8260B		10/16/98	MB		5790	50
Carbon tetrachloride		<50	ug/L	S 8260B		10/16/98	MB		5790	50
Chlorobenzene		<50	ug/L	S 8260B		10/16/98	MB		5790	50
1,2-dichloroethane		<50	ug/L	S 8260B		10/16/98	MB		5790	50
1,1,2,2-tetrachloroethane		<50	ug/L	S 8260B		10/16/98	MB		5790	50
1,1,1-trichloroethane		<50	ug/L	S 8260B		10/16/98	MB		5790	50
1,1,2-trichloroethane		<50	ug/L	S 8260B		10/16/98	MB		5790	50
1,1,2-trichloroethylene		<50	ug/L	S 8260B		10/16/98	MB		5790	50
Chloroform		<50	ug/L	S 8260B		10/16/98	MB		5790	50
Dichlorobenzene		<100	ug/L	S 8260B		10/16/98	MB		5790	100
1,1-dichloroethylene		<50	ug/L	S 8260B		10/16/98	MB		5790	50
Dichloropropenes		<50	ug/L	S 8260B		10/16/98	MB		5790	50
Ethylbenzene		200	ug/L	S 8260B		10/16/98	MB		5790	50
Bromodichloromethane		<50	ug/L	S 8260B		10/16/98	MB		5790	50
Bromomethane		<250	ug/L	S 8260B		10/16/98	MB		5790	250
Chloromethane		<50	ug/L	S 8260B		10/16/98	MB		5790	50
Dichlorodifluoromethane		<50	ug/L	S 8260B		10/16/98	MB		5790	50
Dichloromethane		<50	ug/L	S 8260B		10/16/98	MB		5790	50
Trichlorofluoromethane		<50	ug/L	S 8260B		10/16/98	MB		5790	50
Tetrachloroethylene		<50	ug/L	S 8260B		10/16/98	MB		5790	50
Toluene		<50	ug/L	S 8260B		10/16/98	MB		5790	50
Trichloroethylene		<50	ug/L	S 8260B		10/16/98	MB		5790	50
Vinyl chloride		<50	ug/L	S 8260B		10/16/98	MB		5790	50
m,p-xylene		720	ug/L	S 8260B		10/16/98	MB		5790	50
o-xylene		170	ug/L	S 8260B		10/16/98	MB		5790	50
1,1-dichloroethane		<50	ug/L	S 8260B		10/16/98	MB		5790	50
Ethylene dibromide		<50	ug/L	S 8260B		10/16/98	MB		5790	50
cis-1,2-dichloroethylene		<50	ug/L	S 8260B		10/16/98	MB		5790	50
trans-1,2-dichloroethylene		<50	ug/L	S 8260B		10/16/98	MB		5790	50
Methylene chloride		<250	ug/L	S 8260B		10/16/98	MB		5790	250
Surr. Dibromofluoromethane		100	%	S 8260B		10/16/98	MB		5790	71-132
Surr. Toluene-d8		93	%	S 8260B		10/16/98	MB		5790	82-124
Surr. 4-Bromofluorobenzene		95	%	S 8260B		10/16/98	MB		5790	76-126
Benzidine		<0.01	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.01
Pentachlorobenzene		<0.001	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.001
1,2,4,5-tetrachlorobenzene		<0.001	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.001
Hexachloroethane		<0.001	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.001

Date: 10-20-98

Page # 3

Order ID Number: 9810000164

Sample Number: 109439

Project Number: 19350
 Project Name: Shell Tasker Road
 Project Location: Hobbs, NM

Sample Description: GMW-1

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
2,4-dichlorophenol		<0.005	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.005
2,4,5-trichlorophenol		<0.005	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.005
2,4,6-trichlorophenol		<0.005	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.005
bis (2-chloroethyl) ether		<0.005	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.005
bis (2-chloroisopropyl) ether		<0.005	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.005
bis (chloromethyl) ether		<0.005	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.005
3,3-dichlorobenzidine		<0.005	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.005
2,4-dinitrotoluene		<0.001	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.001
Diphenylhydrazine		<0.005	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.005
Hexachlorobutadiene		<0.001	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.001
Hexachlorocyclopentadiene		<0.001	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.001
Isophorone		<0.005	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.005
Nitrobenzene		<0.001	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.001
2,4-dinitro-o-cresol		<0.001	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.001
2,4-dinitrophenols		<0.005	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.005
i-nitrosodiethylamine		<0.001	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.001
N-nitrosodimethylamine		<0.001	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.001
N-nitrosodibutylamine		<0.005	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.005
N-nitrosodiphenylamine		<0.001	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.001
N-nitrosopyrrolidine		<0.001	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.001
Pentachlorophenol		<0.005	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.005
Phenol		<0.001	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.001
Dibutyl phthalate		<0.001	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.001
bis(2-ethylhexyl) phthalate	*	0.035	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.001
Diethyl phthalate		<0.001	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.001
Dimethyl phthalate		<0.001	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.001
Anthracene		<0.001	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.001
Benzo(k)fluoranthene		<0.001	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.001
Fluoranthene		<0.001	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.001
Fluorene		0.0012	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.001
Phenanthrene		0.0020	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.001
Pyrene		<0.001	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.001
Naphthalene		0.005	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.001
1-methylnaphthalene		0.0097	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.001
2-methylnaphthalene		0.010	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.001
Benzo-a-pyrene		<0.001	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.001
Surr. 2-Fluorophenol		26	%	S 8270C	10/13/98	10/17/98	DG	5396	5799	1-85
Surr. Phenol-d6		36	%	S 8270C	10/13/98	10/17/98	DG	5396	5799	0-82
Surr. Nitroobenzene-d5		34	%	S 8270C	10/13/98	10/17/98	DG	5396	5799	38-111
Surr. 2-Fluorobiphenyl		34	%	S 8270C	10/13/98	10/17/98	DG	5396	5799	38-103
Surr. 2,4,6-Tribromophenol		32	%	S 8270C	10/13/98	10/17/98	DG	5396	5799	1-127
Surr. Terphenyl-d14		37	%	S 8270C	10/13/98	10/17/98	DG	5396	5799	38-122

*0.051 mg/L found in method blank

Project Number: 19350
 Project Name: Shell Tasker Road
 Project Location: Hobbs, NM

Date: 10-20-98
 Page # 4
 Order ID Number: 9810000164
 Sample Number: 109439

Sample Description: GMW-1

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<1.0	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	1.0
Chlordane		<2.5	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	2.5
DDT		<1.0	ug/L	S-8080	10/24/98	10/26/98	KC	---	---	1.0
Dieldrin		<0.5	ug/L	S-8080	10/24/98	10/26/98	KC	---	---	0.5
Endosulfan		<0.5	ug/L	S-8080	10/24/98	10/26/98	KC	---	---	0.5
Endrin		<1.0	ug/L	S-8080	10/24/98	10/26/98	KC	---	---	1.0
Heptachlor		<0.5	ug/L	S-8080	10/24/98	10/26/98	KC	---	---	0.5
PCB's		<0.001	mg/L	S-8082	10/24/98	10/26/98	RC	5366	5670	0.001
Arsenic		<0.10	mg/L	S 6010B	10/24/98	10/26/98	RR	5398	5785	0.10
Barium		0.26	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.10
Cadmium		<0.01	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.01
Chromium		<0.05	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.05
Lead		<0.05	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.05
Total Mercury		<0.001	mg/L	S 7471	10/9/98	10/11/98	MS	5365	5725	0.0010
Selenium		<0.05	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.05
Silver		<0.05	mg/L	S 6010B	10/12/98	10/17/98	RR	5398	5795	0.05
Uranium		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.10
Copper		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.10
Iron		2.2	mg/L	S 6010B	10/12/98	10/18/98	RR	5398	5812	0.10
Manganese		0.38	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.10
Zinc		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.10
Aluminum		3.1	mg/L	S 6010B	10/12/98	10/18/98	RR	5398	5812	0.10
Boron		0.22	mg/L	S 6010B	10/12/98	10/17/98	RR	5398	5795	0.10
Cobalt		<0.05	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.05
Molybdenum		<0.10	mg/L	S 6010B	10/12/98	10/18/98	RR	5398	5812	0.10
Nickel		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.10
Cyanide		<0.01	mg/L	SM 4500 C,E		10/13/98	SA		5761	0.01
Fluoride		2.0	mg/L	E 300.0		10/12/98	JS		5705	0.5
Nitrate		<1.0	mg/L	E 300.0		10/12/98	JS		5705	1.0
Chloride		110	mg/L	E 300.0		10/12/98	JS		5705	2.5
Sulfate		100	mg/L	E 300.0		10/12/98	JS		5705	2.5
TDS		550	mg/L	E 160.1		10/11/98	RS		5728	---
pH		7.5	s.u.	E 150.1		10/8/98	SA		5707	---
TRPHC		16.9	mg/L	E 418.1	10/11/98	10/12/98	MF	5372	5750	0.500
Total Phenols		<0.01	mg/L	S 5530 A,D		10/15/98	RC		5781	0.01
Total Radium		5.27	pCi/L	E 901.1M		10/28/98	DC	---	---	---

ARS Tracking Number: ARS-98-1077

[illegible]

Analytical Results Report

Jeff kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-20-98
Page # 2

Project Number: 19349
Project Name: Shell Grimes Tank Battery
Project Location: Hobbs, NM

Order ID Number: 9810000083
Sample Number: 109059

Sample Description: GMW-2

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<5	ug/L	S 8260B		10/10/98	MB		5712	5
Acrylonitrile		<5	ug/L	S 8260B		10/10/98	MB		5712	5
Benzene		<1	ug/L	S 8260B		10/10/98	MB		5712	1
Carbon tetrachloride		<1	ug/L	S 8260B		10/10/98	MB		5712	1
Chlorobenzene		<1	ug/L	S 8260B		10/10/98	MB		5712	1
1,2-dichloroethane		<1	ug/L	S 8260B		10/10/98	MB		5712	1
1,1,2,2-tetrachloroethane		<1	ug/L	S 8260B		10/10/98	MB		5712	1
1,1,1-trichloroethane		<1	ug/L	S 8260B		10/10/98	MB		5712	1
1,1,2-trichloroethane		<1	ug/L	S 8260B		10/10/98	MB		5712	1
1,1,2-trichloroethylene		<1	ug/L	S 8260B		10/10/98	MB		5712	1
Chloroform		<1	ug/L	S 8260B		10/10/98	MB		5712	1
Dichlorobenzene		<2	ug/L	S 8260B		10/10/98	MB		5712	2
1,1-dichloroethylene		<1	ug/L	S 8260B		10/10/98	MB		5712	1
Dichloropropenes		<1	ug/L	S 8260B		10/10/98	MB		5712	1
Ethylbenzene		<1	ug/L	S 8260B		10/10/98	MB		5712	1
Bromodichloromethane		<1	ug/L	S 8260B		10/10/98	MB		5712	1
Bromomethane		<5	ug/L	S 8260B		10/10/98	MB		5712	5
Chloromethane		<1	ug/L	S 8260B		10/10/98	MB		5712	1
Dichlorodifluoromethane		<1	ug/L	S 8260B		10/10/98	MB		5712	1
Dichloromethane		<1	ug/L	S 8260B		10/10/98	MB		5712	1
Trichlorofluoromethane		<1	ug/L	S 8260B		10/10/98	MB		5712	1
Tetrachloroethylene		<1	ug/L	S 8260B		10/10/98	MB		5712	1
Toluene		1	ug/L	S 8260B		10/10/98	MB		5712	1
Trichloroethylene		<1	ug/L	S 8260B		10/10/98	MB		5712	1
Vinyl chloride		<1	ug/L	S 8260B		10/10/98	MB		5712	1
m,p-xylene		2	ug/L	S 8260B		10/10/98	MB		5712	1
o-xylene		<1	ug/L	S 8260B		10/10/98	MB		5712	1
1,1-dichloroethane		<1	ug/L	S 8260B		10/10/98	MB		5712	1
Ethylene dibromide		<1	ug/L	S 8260B		10/10/98	MB		5712	1
cis-1,2-dichloroethylene		<1	ug/L	S 8260B		10/10/98	MB		5712	1
trans-1,2-dichloroethylene		<1	ug/L	S 8260B		10/10/98	MB		5712	1
Methylene chloride		<5	ug/L	S 8260B		10/10/98	MB		5712	5
Surr. Dibromofluoromethane		106	%	S 8260B		10/10/98	MB		5712	71-132
Surr. Toluene-d8		100	%	S 8260B		10/10/98	MB		5712	82-124
Surr. 4-Bromofluorobenzene		103	%	S 8260B		10/10/98	MB		5712	76-126
Benzidine		<0.01	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.01
Pentachlorobenzene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
1,2,4,5-tetrachlorobenzene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Hexachloroethane		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001

Date: 10-20-98

Page # 3

Order ID Number: 9810000083

Sample Number: 109059

Project Number: 19349

Project Name: Shell Grimes Tank Battery

Project Location: Hobbs, NM

Sample Description: GMW-2

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
2,4-dichlorophenol		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
2,4,5-trichlorophenol		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
2,4,6-trichlorophenol		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
bis (2-chloroethyl) ether		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
bis (2-chloroisopropyl) ether		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
bis (chloromethyl) ether		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
3,3-dichlorobenzidine		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
2,4-dinitrotoluene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Diphenylhydrazine		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
Hexachlorobutadiene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Hexachlorocyclopentadiene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Isophorone		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
Nitrobenzene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
2,4-dinitro-o-cresol		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
2,4-dinitrophenols		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
i-nitrosodiethylamine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
N-nitrosodimethylamine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
N-nitrosodibutylamine		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
N-nitrosodiphenylamine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
N-nitrosopyrrolidine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Pentachlorophenol		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
Phenol		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Dibutyl phthalate		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
bis(2-ethylhexyl) phthalate		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Diethyl phthalate		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Dimethyl phthalate		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Anthracene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Benzo(b)fluoranthene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Benzo(k)fluoranthene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Fluoranthene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Fluorene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Phenanthrene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Pyrene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Naphthalene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
1-methylnaphthalene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
2-methylnaphthalene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Benzo-a-pyrene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Surr. 2-Fluorophenol		21	%	S 8270C	10/7/98	10/9/98	DG	5355	5713	1-85
Surr. Phenol-d6		15	%	S 8270C	10/7/98	10/9/98	DG	5355	5713	0-82
Surr. Nitrobenzene-d5		46	%	S 8270C	10/7/98	10/9/98	DG	5355	5713	38-111
Surr. 2-Fluorobiphenyl		51	%	S 8270C	10/7/98	10/9/98	DG	5355	5713	38-103
Surr. 2,4,6-Tribromophenol		43	%	S 8270C	10/7/98	10/9/98	DG	5355	5713	1-127
Surr. Terphenyl-d14		47	%	S 8270C	10/7/98	10/9/98	DG	5355	5713	38-122

Project Number: 19349
 Project Name: Shell Grimes Tank Battery
 Project Location: Hobbs, NM

Date: 10-20-98
 Page # 4
 Order ID Number: 9810000083
 Sample Number: 109059

Sample Description: GMW-2

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<1.0	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	1.0
Chlordane		<2.5	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	2.5
DDT		<1.0	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	1.0
Dieldrin		<0.5	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	0.5
Endosulfan		<0.5	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	0.5
Endrin		<1.0	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	1.0
Heptachlor		<0.5	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	0.5
PCB's		<0.001	mg/L	S-8082	10/9/98	10/13/98	RC	5366	5670	0.001
Arsenic		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.10
Barium		0.25	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.10
Cadmium		<0.01	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.01
Chromium		0.07	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.05
Lead		<0.05	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.05
Total Mercury		<0.0002	mg/L	S 7471B	10/9/98	10/11/98	MS	5365	5725	0.0002
Selenium		<0.05	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.05
Silver		<0.05	mg/L	S 6010B	10/12/98	10/17/98	RR	5380	5800	0.05
Uranium		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.10
Copper		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.10
Iron		23	mg/L	S 6010B	10/12/98	10/18/98	RR	5380	5812	0.10
Manganese		0.28	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.10
Zinc		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.10
Aluminum		39	mg/L	S 6010B	10/12/98	10/18/98	RR	5380	5812	0.10
Boron		0.21	mg/L	S 6010B	10/12/98	10/17/98	RR	5380	5800	0.10
Cobalt		0.05	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.05
Molybdenum		<0.10	mg/L	S 6010B	10/12/98	10/18/98	RR	5380	5812	0.10
Nickel		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.10
Cyanide		<0.01	mg/L	SM 4500 C,E		10/9/98	SA		5709	0.01
Fluoride		1.8	mg/L	E 300.0		10/6/98	JS		5695	0.5
Nitrate		2.17	mg/L	SM 4500 NO3,E		10/9/98	JS		5711	0.10
Chloride		51	mg/L	E 300.0		10/6/98	JS		5695	2.5
Sulfate		87	mg/L	E 300.0		10/6/98	JS		5695	2.5
TDS		450	mg/L	E 160.1		10/5/98	RS		5682	---
pH		7.4	s.u.	E 150.1		10/3/98	SA		5669	---
TRPHC		<0.500	mg/L	E 418.1	10/5/98	10/7/98	MF	5342	5700	0.500
Total Phenols		0.1	mg/L	S 5530 A,D		10/15/98	RC		5783	0.01
Total Radium		3.42	pCi/L	E 901.1M		10/20/98	DC	---	---	---

Analytical Results Report

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Date: 10-20-98
Page # 5

Project Number: 19349
Project Name: Shell Grimes Tank Battery
Project Location: Hobbs, NM

Order ID Number: 9810000164
Sample Number: 109440

Sample Description: GMW-3

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<500	ug/L	S 8260B		10/16/98	MB		5790	500
Acrylonitrile		<500	ug/L	S 8260B		10/16/98	MB		5790	500
Benzene		<100	ug/L	S 8260B		10/16/98	MB		5790	100
Carbon tetrachloride		<100	ug/L	S 8260B		10/16/98	MB		5790	100
Chlorobenzene		<100	ug/L	S 8260B		10/16/98	MB		5790	100
1,2-dichloroethane		<100	ug/L	S 8260B		10/16/98	MB		5790	100
1,1,2,2-tetrachloroethane		<100	ug/L	S 8260B		10/16/98	MB		5790	100
1,1,1-trichloroethane		<100	ug/L	S 8260B		10/16/98	MB		5790	100
1,1,2-trichloroethane		<100	ug/L	S 8260B		10/16/98	MB		5790	100
1,1,2-trichloroethylene		<100	ug/L	S 8260B		10/16/98	MB		5790	100
Chloroform		<100	ug/L	S 8260B		10/16/98	MB		5790	100
Dichlorobenzene		<200	ug/L	S 8260B		10/16/98	MB		5790	200
1,1-dichloroethylene		<100	ug/L	S 8260B		10/16/98	MB		5790	100
Dichloropropenes		<100	ug/L	S 8260B		10/16/98	MB		5790	100
Ethylbenzene		<100	ug/L	S 8260B		10/16/98	MB		5790	100
Bromodichloromethane		<100	ug/L	S 8260B		10/16/98	MB		5790	100
Bromomethane		<500	ug/L	S 8260B		10/16/98	MB		5790	500
Chloromethane		<100	ug/L	S 8260B		10/16/98	MB		5790	100
Dichlorodifluoromethane		<100	ug/L	S 8260B		10/16/98	MB		5790	100
Dichloromethane		<100	ug/L	S 8260B		10/16/98	MB		5790	100
Trichlorofluoromethane		<100	ug/L	S 8260B		10/16/98	MB		5790	100
Tetrachloroethylene		<100	ug/L	S 8260B		10/16/98	MB		5790	100
Toluene		<100	ug/L	S 8260B		10/16/98	MB		5790	100
Trichloroethylene		<100	ug/L	S 8260B		10/16/98	MB		5790	100
Vinyl chloride		<100	ug/L	S 8260B		10/16/98	MB		5790	100
m,p-xylene		580	ug/L	S 8260B		10/16/98	MB		5790	100
o-xylene		120	ug/L	S 8260B		10/16/98	MB		5790	100
1,1-dichloroethane		<100	ug/L	S 8260B		10/16/98	MB		5790	100
Ethylene dibromide		<100	ug/L	S 8260B		10/16/98	MB		5790	100
cis-1,2-dichloroethylene		<100	ug/L	S 8260B		10/16/98	MB		5790	100
trans-1,2-dichloroethylene		<100	ug/L	S 8260B		10/16/98	MB		5790	100
Methylene chloride		<500	ug/L	S 8260B		10/16/98	MB		5790	500
Surr. Dibromofluoromethane		101	%	S 8260B		10/16/98	MB		5790	71-132
Surr. Toluene-d8		92	%	S 8260B		10/16/98	MB		5790	82-124
Surr. 4-Bromofluorobenzene		96	%	S 8260B		10/16/98	MB		5790	76-126
Benzidine		<0.01	mg/L	S 8270C	10/13/98	10/14/98	DG	5396	5781	0.01
Pentachlorobenzene		<0.001	mg/L	S 8270C	10/13/98	10/14/98	DG	5396	5781	0.001
1,2,4,5-tetrachlorobenzene		<0.001	mg/L	S 8270C	10/13/98	10/14/98	DG	5396	5781	0.001
Hexachloroethane		<0.001	mg/L	S 8270C	10/13/98	10/14/98	DG	5396	5781	0.001

Date: 10-20-98
Page # 6
Order ID Number: 9810000164
Sample Number: 109440

Project Number: 19350
Project Name: Shell Tasker Road
Project Location: Hobbs, NM

Sample Description: GMW-3

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
2,4-dichlorophenol		<0.001	mg/L	S 8270C	10/13/98	10/14/98	DG	5396	5781	0.005
2,4,5-trichlorophenol		<0.001	mg/L	S 8270C	10/13/98	10/14/98	DG	5396	5781	0.005
2,4,6-trichlorophenol		<0.001	mg/L	S 8270C	10/13/98	10/14/98	DG	5396	5781	0.005
bis (2-chloroethyl) ether		<0.001	mg/L	S 8270C	10/13/98	10/14/98	DG	5396	5781	0.005
bis (2-chloroisopropyl) ether		<0.001	mg/L	S 8270C	10/13/98	10/14/98	DG	5396	5781	0.005
bis (chloromethyl) ether		<0.001	mg/L	S 8270C	10/13/98	10/14/98	DG	5396	5781	0.005
3,3-dichlorobenzidine		<0.001	mg/L	S 8270C	10/13/98	10/14/98	DG	5396	5781	0.005
2,4-dinitrotoluene		<0.001	mg/L	S 8270C	10/13/98	10/14/98	DG	5396	5781	0.001
Diphenylhydrazine		<0.001	mg/L	S 8270C	10/13/98	10/14/98	DG	5396	5781	0.005
Hexachlorobutadiene		<0.001	mg/L	S 8270C	10/13/98	10/14/98	DG	5396	5781	0.001
Hexachlorocyclopentadiene		<0.001	mg/L	S 8270C	10/13/98	10/14/98	DG	5396	5781	0.001
Isophorone		<0.001	mg/L	S 8270C	10/13/98	10/14/98	DG	5396	5781	0.005
Nitrobenzene		<0.001	mg/L	S 8270C	10/13/98	10/14/98	DG	5396	5781	0.001
2,4-dinitro-o-cresol		<0.001	mg/L	S 8270C	10/13/98	10/14/98	DG	5396	5781	0.001
2,4-dinitrophenols		<0.001	mg/L	S 8270C	10/13/98	10/14/98	DG	5396	5781	0.005
i-nitrosodiethylamine		<0.001	mg/L	S 8270C	10/13/98	10/14/98	DG	5396	5781	0.001
N-nitrosodimethylamine		<0.001	mg/L	S 8270C	10/13/98	10/14/98	DG	5396	5781	0.001
N-nitrosodibutylamine		<0.001	mg/L	S 8270C	10/13/98	10/14/98	DG	5396	5781	0.005
N-nitrosodiphenylamine		<0.001	mg/L	S 8270C	10/13/98	10/14/98	DG	5396	5781	0.001
N-nitrosopyrrolidine		<0.001	mg/L	S 8270C	10/13/98	10/14/98	DG	5396	5781	0.001
Pentachlorophenol		<0.001	mg/L	S 8270C	10/13/98	10/14/98	DG	5396	5781	0.005
Phenol		<0.001	mg/L	S 8270C	10/13/98	10/14/98	DG	5396	5781	0.001
Dibutyl phthalate		<0.001	mg/L	S 8270C	10/13/98	10/14/98	DG	5396	5781	0.001
bis(2-ethylhexyl) phthalate	*	0.020	mg/L	S 8270C	10/13/98	10/14/98	DG	5396	5781	0.001
Diethyl phthalate		<0.001	mg/L	S 8270C	10/13/98	10/14/98	DG	5396	5781	0.001
Dimethyl phthalate		<0.001	mg/L	S 8270C	10/13/98	10/14/98	DG	5396	5781	0.001
Anthracene		<0.001	mg/L	S 8270C	10/13/98	10/14/98	DG	5396	5781	0.001
Benzo(k)fluoranthene		<0.001	mg/L	S 8270C	10/13/98	10/14/98	DG	5396	5781	0.001
Fluoranthene		<0.001	mg/L	S 8270C	10/13/98	10/14/98	DG	5396	5781	0.001
Fluorene		<0.001	mg/L	S 8270C	10/13/98	10/14/98	DG	5396	5781	0.001
Phenanthrene		<0.001	mg/L	S 8270C	10/13/98	10/14/98	DG	5396	5781	0.001
Pyrene		<0.001	mg/L	S 8270C	10/13/98	10/14/98	DG	5396	5781	0.001
Naphthalene		0.023	mg/L	S 8270C	10/13/98	10/14/98	DG	5396	5781	0.001
1-methylnaphthalene		0.034	mg/L	S 8270C	10/13/98	10/14/98	DG	5396	5781	0.001
2-methylnaphthalene		0.024	mg/L	S 8270C	10/13/98	10/14/98	DG	5396	5781	0.001
Benzo-a-pyrene		<0.001	mg/L	S 8270C	10/13/98	10/14/98	DG	5396	5781	0.001
Surr. 2-Fluorophenol		24	%	S 8270C	10/13/98	10/14/98	DG	5396	5781	1-85
Surr. Phenol-d6		19	%	S 8270C	10/13/98	10/14/98	DG	5396	5781	0-82
Surr. Nitrobenzene-d5		67	%	S 8270C	10/13/98	10/14/98	DG	5396	5781	38-111
Surr. 2-Fluorobiphenyl		74	%	S 8270C	10/13/98	10/14/98	DG	5396	5781	38-103
Surr. 2,4,6-Tribromophenol		68	%	S 8270C	10/13/98	10/14/98	DG	5396	5781	1-127
Surr. Terphenyl-d14		69	%	S 8270C	10/13/98	10/14/98	DG	5396	5781	38-122

*0.051 mg/L found in method blank

Project Number: 19350
Project Name: Shell Tasker Road
Project Location: Hobbs, NM

Date: 10-20-98
Page # 7
Order ID Number: 9810000082
Sample Number: 109440

Sample Description: GMW-3

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<1.0	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	1.0
Chlordane		<2.5	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	2.5
DDT		<1.0	ug/L	S-8080	10/24/98	10/26/98	KC	---	---	1.0
Dieldrin		<0.5	ug/L	S-8080	10/24/98	10/26/98	KC	---	---	0.5
Endosulfan		<0.5	ug/L	S-8080	10/24/98	10/26/98	KC	---	---	0.5
Endrin		<1.0	ug/L	S-8080	10/24/98	10/26/98	KC	---	---	1.0
Heptachlor		<0.5	ug/L	S-8080	10/24/98	10/26/98	KC	---	---	0.5
PCB's		<0.001	mg/L	S-8082	10/24/98	10/26/98	RC	5366	5670	0.001
Arsenic		<0.10	mg/L	S 6010B	10/24/98	10/26/98	RR	5398	5785	0.10
Barium		0.61	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.10
Cadmium		<0.01	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.01
Chromium		<0.05	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.05
Lead		<0.05	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.05
Total Mercury		<0.001	mg/L	S 7471	10/9/98	10/11/98	MS	5365	5725	0.0010
Selenium		<0.05	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.05
Silver		<0.05	mg/L	S 6010B	10/12/98	10/17/98	RR	5398	5795	0.05
Uranium		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.10
Copper		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.10
Iron		14	mg/L	S 6010B	10/12/98	10/18/98	RR	5398	5812	0.10
Manganese		0.25	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.10
Zinc		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.10
Aluminum		22	mg/L	S 6010B	10/12/98	10/18/98	RR	5398	5812	0.10
Boron		0.42	mg/L	S 6010B	10/12/98	10/17/98	RR	5398	5795	0.10
Cobalt		0.05	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.05
Molybdenum		<0.10	mg/L	S 6010B	10/12/98	10/18/98	RR	5398	5812	0.10
Nickel		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.10
Cyanide		<0.01	mg/L	SM 4500 C,E		10/13/98	SA		5761	0.01
Fluoride		2.3	mg/L	E 300.0		10/12/98	JS		5705	0.5
Nitrate		3.4	mg/L	E 300.0		10/12/98	JS		5705	1.0
Chloride		160	mg/L	E 300.0		10/12/98	JS		5705	2.5
Sulfate		160	mg/L	E 300.0		10/12/98	JS		5705	2.5
TDS		840	mg/L	E 160.1		10/11/98	RS		5728	---
pH		7.3	s.u.	E 150.1		10/8/98	SA		5707	---
TRPHC		27	mg/L	E 418.1		10/7/98	MF	5372	5750	0.500
Total Phenols		0.0	mg/L	S 5530 A,D		10/15/98	RC		5781	0.01
Total Radium		2.13	pCi/L	E 901.1M		10/28/98	DC	---	---	---

ARS Tracking Number: ARS-98-1077

P.O. Number: N/A

Client I.D.: 109440

ARS Sample I.D.: ARS-98-3919

Date Sampled: N/A

Date Received: 10/23/98

Time Sampled: N/A

Time Received 1019

Type of Sample: Liquid

Date of Report 10/28/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Detection Limit	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	2.13	0.47	0.93	pCi/L	EPA 903	10/28/98 1356	DC
Ra-228	BDL	N/A	1.43	pCi/L	EPA 904	10/27/98 1201	DC


Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-20-98
Page # 6

Project Number: 19349
Project Name: Shell Grimes Tank Battery
Project Location: Hobbs, NM

Order ID Number: 9810000083
Sample Number: 109061

Sample Description: GMW-4

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<5	ug/L	S 8260B		10/10/98	MB		5712	5
Acrylonitrile		<5	ug/L	S 8260B		10/10/98	MB		5712	5
Benzene		2	ug/L	S 8260B		10/10/98	MB		5712	1
Carbon tetrachloride		<1	ug/L	S 8260B		10/10/98	MB		5712	1
Chlorobenzene		<1	ug/L	S 8260B		10/10/98	MB		5712	1
1,2-dichloroethane		<1	ug/L	S 8260B		10/10/98	MB		5712	1
1,1,2,2-tetrachloroethane		<1	ug/L	S 8260B		10/10/98	MB		5712	1
1,1,1-trichloroethane		<1	ug/L	S 8260B		10/10/98	MB		5712	1
1,1,2-trichloroethane		<1	ug/L	S 8260B		10/10/98	MB		5712	1
1,1,2-trichloroethylene		<1	ug/L	S 8260B		10/10/98	MB		5712	1
Chloroform		<1	ug/L	S 8260B		10/10/98	MB		5712	1
Dichlorobenzene		<2	ug/L	S 8260B		10/10/98	MB		5712	2
1,1-dichloroethylene		<1	ug/L	S 8260B		10/10/98	MB		5712	1
Dichloropropenes		<1	ug/L	S 8260B		10/10/98	MB		5712	1
Ethylbenzene		<1	ug/L	S 8260B		10/10/98	MB		5712	1
Bromodichloromethane		<1	ug/L	S 8260B		10/10/98	MB		5712	1
Bromomethane		<5	ug/L	S 8260B		10/10/98	MB		5712	5
Chloromethane		<1	ug/L	S 8260B		10/10/98	MB		5712	1
Dichlorodifluoromethane		<1	ug/L	S 8260B		10/10/98	MB		5712	1
Dichloromethane		<1	ug/L	S 8260B		10/10/98	MB		5712	1
Trichlorofluoromethane		<1	ug/L	S 8260B		10/10/98	MB		5712	1
Tetrachloroethylene		<1	ug/L	S 8260B		10/10/98	MB		5712	1
Toluene		<1	ug/L	S 8260B		10/10/98	MB		5712	1
Trichloroethylene		<1	ug/L	S 8260B		10/10/98	MB		5712	1
Vinyl chloride		<1	ug/L	S 8260B		10/10/98	MB		5712	1
m,p-xylene		<1	ug/L	S 8260B		10/10/98	MB		5712	1
o-xylene		<1	ug/L	S 8260B		10/10/98	MB		5712	1
1,1-dichloroethane		<1	ug/L	S 8260B		10/10/98	MB		5712	1
Ethylene dibromide		<1	ug/L	S 8260B		10/10/98	MB		5712	1
cis-1,2-dichloroethylene		<1	ug/L	S 8260B		10/10/98	MB		5712	1
trans-1,2-dichloroethylene		<1	ug/L	S 8260B		10/10/98	MB		5712	1
Methylene chloride		<5	ug/L	S 8260B		10/10/98	MB		5712	5
Surr. Dibromofluoromethane		107	%	S 8260B		10/10/98	MB		5712	71-132
Surr. Toluene-d8		98	%	S 8260B		10/10/98	MB		5712	82-124
Surr. 4-Bromofluorobenzene		100	%	S 8260B		10/10/98	MB		5712	76-126
Benzidine		<0.01	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.01
Pentachlorobenzene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
1,2,4,5-tetrachlorobenzene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Hexachloroethane		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001

Project Number: 19349
 Project Name: Shell Grimes Tank Battery
 Project Location: Hobbs, NM

Date: 10-20-98
 Page # 7
 Order ID Number: 9810000083
 Sample Number: 109061

Sample Description: GMW-4

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
2,4-dichlorophenol		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
2,4,5-trichlorophenol		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
2,4,6-trichlorophenol		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
bis (2-chloroethyl) ether		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
bis (2-chloroisopropyl) ether		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
bis (chloromethyl) ether		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
3,3-dichlorobenzidine		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
2,4-dinitrotoluene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Diphenylhydrazine		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
Hexachlorobutadiene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Hexachlorocyclopentadiene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Isophorone		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
Nitrobenzene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
2,4-dinitro-o-cresol		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
2,4-dinitrophenols		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
i-nitrosodiethylamine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
N-nitrosodimethylamine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
N-nitrosodibutylamine		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
N-nitrosodiphenylamine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
N-nitrosopyrrolidine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Pentachlorophenol		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
Phenol		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Dibutyl phthalate		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
bis(2-ethylhexyl) phthalate	*	0.008	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Diethyl phthalate		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Dimethyl phthalate		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Anthracene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Benzo(b)fluoranthene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Benzo(k)fluoranthene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Fluoranthene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Fluorene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Phenanthrene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Pyrene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Naphthalene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
1-methylnaphthalene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
2-methylnaphthalene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Benzo-a-pyrene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Surr. 2-Fluorophenol		14	%	S 8270C	10/7/98	10/9/98	DG	5355	5713	1-85
Surr. Phenol-d6		20	%	S 8270C	10/7/98	10/9/98	DG	5355	5713	0-82
Surr. Nitroobenzene-d5		46	%	S 8270C	10/7/98	10/9/98	DG	5355	5713	38-111
Surr. 2-Fluorobiphenyl		50	%	S 8270C	10/7/98	10/9/98	DG	5355	5713	38-103
Surr. 2,4,6-Tribromophenol		42	%	S 8270C	10/7/98	10/9/98	DG	5355	5713	1-127
Surr. Terphenyl-d14		49	%	S 8270C	10/7/98	10/9/98	DG	5355	5713	38-122

Project Number: 19349
 Project Name: Shell Grimes Tank Battery
 Project Location: Hobbs, NM

Date: 10-20-98
 Page # 8
 Order ID Number: 9810000083
 Sample Number: 109061

Sample Description: GMW-4

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<1.0	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	1.0
Chlordane		<2.5	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	2.5
DDT		<1.0	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	1.0
Dieldrin		<0.5	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	0.5
Endosulfan		<0.5	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	0.5
Endrin		<1.0	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	1.0
Heptachlor		<0.5	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	0.5
PCB's		<0.001	mg/L	S-8082	10/9/98	10/13/98	RC	5366	5670	0.001
Arsenic		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.10
Barium		0.31	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.10
Cadmium		<0.01	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.01
Chromium		<0.05	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.05
Lead		<0.05	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.05
Total Mercury		<0.0002	mg/L	S 7471B	10/9/98	10/11/98	MS	5365	5725	0.0002
Selenium		<0.05	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.05
Silver		<0.05	mg/L	S 6010B	10/12/98	10/17/98	RR	5380	5800	0.05
Uranium		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.10
Copper		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.10
Iron		14	mg/L	S 6010B	10/12/98	10/18/98	RR	5380	5812	0.10
Manganese		0.17	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.10
Zinc		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.10
Aluminum		24	mg/L	S 6010B	10/12/98	10/18/98	RR	5380	5812	0.10
Boron		0.16	mg/L	S 6010B	10/12/98	10/17/98	RR	5380	5800	0.10
Cobalt		<0.05	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.05
Molybdenum		<0.10	mg/L	S 6010B	10/12/98	10/18/98	RR	5380	5812	0.10
Nickel		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.10
Cyanide		<0.01	mg/L	SM 4500 C,E		10/9/98	SA		5709	0.01
Fluoride		1.8	mg/L	E 300.0		10/6/98	JS		5695	0.5
Nitrate		2.30	mg/L	SM 4500 NO3,E		10/9/98	JS		5711	0.10
Chloride		42	mg/L	E 300.0		10/6/98	JS		5695	2.5
Sulfate		72	mg/L	E 300.0		10/6/98	JS		5695	2.5
TDS		470	mg/L	E 160.1		10/5/98	RS		5682	---
pH		7.4	s.u.	E 150.1		10/3/98	SA		5669	---
TRPHC		0.533	mg/L	E 418.1	10/5/98	10/7/98	MF	5342	5700	0.500
Total Phenols		0.7	mg/L	S 5530 A,D		10/15/98	RC		5783	0.01
Total Radium		2.74	pCi/L	E 901.1M		10/20/98	DC	---	---	---

*Reportable bis(2-ethylhexyl)phthalate in method blank.

Analytical Results Report

Jeff kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-20-98
Page # 8

Project Number: 19349
Project Name: Shell Grimes Tank Battery
Project Location: Hobbs, NM

Order ID Number: 9810000164
Sample Number: 109441

Sample Description: GMW-5

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<500	ug/L	S 8260B		10/16/98	MB		5790	500
Acrylonitrile		<500	ug/L	S 8260B		10/16/98	MB		5790	500
Benzene		<100	ug/L	S 8260B		10/16/98	MB		5790	100
Carbon tetrachloride		<100	ug/L	S 8260B		10/16/98	MB		5790	100
Chlorobenzene		<100	ug/L	S 8260B		10/16/98	MB		5790	100
1,2-dichloroethane		<100	ug/L	S 8260B		10/16/98	MB		5790	100
1,1,2,2-tetrachloroethane		<100	ug/L	S 8260B		10/16/98	MB		5790	100
1,1,1-trichloroethane		<100	ug/L	S 8260B		10/16/98	MB		5790	100
1,1,2-trichloroethane		<100	ug/L	S 8260B		10/16/98	MB		5790	100
1,1,2-trichloroethylene		<100	ug/L	S 8260B		10/16/98	MB		5790	100
Chloroform		<100	ug/L	S 8260B		10/16/98	MB		5790	100
Dichlorobenzene		<200	ug/L	S 8260B		10/16/98	MB		5790	200
1,1-dichloroethylene		<100	ug/L	S 8260B		10/16/98	MB		5790	100
Dichloropropenes		<100	ug/L	S 8260B		10/16/98	MB		5790	100
Ethylbenzene		190	ug/L	S 8260B		10/16/98	MB		5790	100
Bromodichloromethane		<100	ug/L	S 8260B		10/16/98	MB		5790	100
Bromomethane		<500	ug/L	S 8260B		10/16/98	MB		5790	500
Chloromethane		<100	ug/L	S 8260B		10/16/98	MB		5790	100
Dichlorodifluoromethane		<100	ug/L	S 8260B		10/16/98	MB		5790	100
Dichloromethane		<100	ug/L	S 8260B		10/16/98	MB		5790	100
Trichlorofluoromethane		<100	ug/L	S 8260B		10/16/98	MB		5790	100
Tetrachloroethylene		<100	ug/L	S 8260B		10/16/98	MB		5790	100
Toluene		<100	ug/L	S 8260B		10/16/98	MB		5790	100
Trichloroethylene		<100	ug/L	S 8260B		10/16/98	MB		5790	100
Vinyl chloride		<100	ug/L	S 8260B		10/16/98	MB		5790	100
m,p-xylene		1,220	ug/L	S 8260B		10/16/98	MB		5790	100
o-xylene		275	ug/L	S 8260B		10/16/98	MB		5790	100
1,1-dichloroethane		<100	ug/L	S 8260B		10/16/98	MB		5790	100
Ethylene dibromide		<100	ug/L	S 8260B		10/16/98	MB		5790	100
cis-1,2-dichloroethylene		<100	ug/L	S 8260B		10/16/98	MB		5790	100
trans-1,2-dichloroethylene		<100	ug/L	S 8260B		10/16/98	MB		5790	100
Methylene chloride		<500	ug/L	S 8260B		10/16/98	MB		5790	500
Surr. Dibromofluoromethane		104	%	S 8260B		10/16/98	MB		5790	71-132
Surr. Toluene-d8		92	%	S 8260B		10/16/98	MB		5790	82-124
Surr. 4-Bromofluorobenzene		98	%	S 8260B		10/16/98	MB		5790	76-126
Benzidine		<0.1	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.1
Pentachlorobenzene		<0.01	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.01
1,2,4,5-tetrachlorobenzene		<0.01	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.01
Hexachloroethane		<0.01	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.01

Date: 10-20-98

Page # 9

Order ID Number: 9810000164

Sample Number: 109441

Project Number: 19350

Project Name: Shell Tasker Road

Project Location: Hobbs, NM

Sample Description: GMW-5

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
2,4-dichlorophenol		<0.05	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.05
2,4,5-trichlorophenol		<0.05	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.05
2,4,6-trichlorophenol		<0.05	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.05
bis (2-chloroethyl) ether		<0.05	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.05
bis (2-chloroisopropyl) ether		<0.05	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.05
bis (chloromethyl) ether		<0.05	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.05
3,3-dichlorobenzidine		<0.05	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.05
2,4-dinitrotoluene		<0.01	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.01
Diphenylhydrazine		<0.05	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.05
Hexachlorobutadiene		<0.01	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.01
Hexachlorocyclopentadiene		<0.01	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.01
Isophorone		<0.05	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.05
Nitrobenzene		<0.01	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.01
2,4-dinitro-o-cresol		<0.01	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.01
2,4-dinitrophenols		<0.05	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.05
i-nitrosodiethylamine		<0.01	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.01
N-nitrosodimethylamine		<0.01	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.01
N-nitrosodibutylamine		<0.05	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.05
N-nitrosodiphenylamine		<0.01	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.01
N-nitrosopyrrolidine		<0.01	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.01
Pentachlorophenol		<0.05	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.05
Phenol		<0.01	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.01
Dibutyl phthalate		<0.01	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.01
bis(2-ethylhexyl) phthalate	*	0.054	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.01
Diethyl phthalate		<0.01	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.01
Dimethyl phthalate		<0.01	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.01
Anthracene		<0.01	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.01
Benzo(k)fluoranthene		<0.01	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.01
Fluoranthene		<0.01	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.01
Fluorene		<0.01	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.01
Phenanthrene		0.024	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.01
Pyrene		<0.01	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.01
Naphthalene		0.01	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.01
1-methylnaphthalene		0.15	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.01
2-methylnaphthalene		0.16	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.01
Benzo-a-pyrene		<0.01	mg/L	S 8270C	10/13/98	10/17/98	DG	5396	5799	0.01
Surr. 2-Fluorophenol		22	%	S 8270C	10/13/98	10/17/98	DG	5396	5799	1-85
Surr. Phenol-d6		19	%	S 8270C	10/13/98	10/17/98	DG	5396	5799	0-82
Surr. Nitrobenzene-d5		80	%	S 8270C	10/13/98	10/17/98	DG	5396	5799	38-111
Surr. 2-Fluorobiphenyl		68	%	S 8270C	10/13/98	10/17/98	DG	5396	5799	38-103
Surr. 2,4,6-Tribromophenol		50	%	S 8270C	10/13/98	10/17/98	DG	5396	5799	1-127
Surr. Terphenyl-d14		70	%	S 8270C	10/7/98	10/9/98	DG	5358	5708	38-122

*0.051 mg/L found in method blank

Date: 10-20-98

Page # 10

Order ID Number: 9810000164

Sample Number: 109441

Project Number: 19350

Project Name: Shell Tasker Road

Project Location: Hobbs, NM

Sample Description: GMW-5

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<1.0	ug/L	S-8080	10/24/98	10/26/98	KC	---	---	1.0
Chlordane		<2.5	ug/L	S-8080	10/24/98	10/26/98	KC	---	---	2.5
DDT		<1.0	ug/L	S-8080	10/24/98	10/26/98	KC	---	---	1.0
Dieldrin		<0.5	ug/L	S-8080	10/24/98	10/26/98	KC	---	---	0.5
Endosulfan		<0.5	ug/L	S-8080	10/24/98	10/26/98	KC	---	---	0.5
Endrin		<1.0	ug/L	S-8080	10/24/98	10/26/98	KC	---	---	1.0
Heptachlor		<0.5	ug/L	S-8080	10/24/98	10/26/98	KC	---	---	0.5
PCB's		<0.001	mg/L	S-8082	10/9/98	10/21/98	RC	5366	5888	0.001
Arsenic		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.10
Barium		0.25	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.10
Cadmium		<0.01	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.01
Chromium		<0.05	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.05
Lead		<0.05	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.05
Total Mercury		<0.001	mg/L	S 7471	10/9/98	10/11/98	MS	5365	5725	0.0010
Selenium		<0.05	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.05
Silver		<0.05	mg/L	S 6010B	10/12/98	10/17/98	RR	5398	5795	0.05
Uranium		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.10
Copper		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.10
Iron		4.6	mg/L	S 6010B	10/12/98	10/18/98	RR	5398	5812	0.10
Manganese		0.19	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.10
Zinc		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.10
Aluminum		5.6	mg/L	S 6010B	10/12/98	10/18/98	RR	5398	5812	0.10
Boron		0.37	mg/L	S 6010B	10/12/98	10/17/98	RR	5398	5795	0.10
Cobalt		0.07	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.05
Molybdenum		<0.10	mg/L	S 6010B	10/12/98	10/18/98	RR	5398	5812	0.10
Nickel		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.10
Cyanide		<0.01	mg/L	SM 4500 C,E		10/13/98	SA		5761	0.01
Fluoride		2.0	mg/L	E 300.0		10/12/98	JS		5705	0.5
Nitrate		3.6	mg/L	E 300.0		10/12/98	JS		5705	1.0
Chloride		150	mg/L	E 300.0		10/12/98	JS		5705	2.5
Sulfate		160	mg/L	E 300.0		10/12/98	JS		5705	2.5
TDS		790	mg/L	E 160.1		10/11/98	RS		5728	---
pH		7.1	s.u.	E 150.1		10/8/98	JS		5707	---
TRPHC		5	pCi/L	E 418.1		10/28/98	DC	5372	5750	0.500
Total Phenols		<0.01	mg/L	S 5530 A,D		10/15/98	RC		5781	0.01
Total Radium		4.51	pCi/L	E 901.1M		10/28/98	DC	---	---	---

Analytical Results Report

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Midland, TX 79706

Date: 10-20-98

Page # 10

Project Number: 19349
Project Name: Shell Grimes Tank Battery
Project Location: Hobbs, NM

Order ID Number: 9810000083

Sample Number: 109063

Sample Description: GMW-6

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<5	ug/L	S 8260B		10/10/98	MB		5712	5
Acrylonitrile		<5	ug/L	S 8260B		10/10/98	MB		5712	5
Benzene		<1	ug/L	S 8260B		10/10/98	MB		5712	1
Carbon tetrachloride		<1	ug/L	S 8260B		10/10/98	MB		5712	1
Chlorobenzene		<1	ug/L	S 8260B		10/10/98	MB		5712	1
1,2-dichloroethane		<1	ug/L	S 8260B		10/10/98	MB		5712	1
1,1,2,2-tetrachloroethane		<1	ug/L	S 8260B		10/10/98	MB		5712	1
1,1,1-trichloroethane		<1	ug/L	S 8260B		10/10/98	MB		5712	1
1,1,2-trichloroethane		<1	ug/L	S 8260B		10/10/98	MB		5712	1
1,1,2-trichloroethylene		<1	ug/L	S 8260B		10/10/98	MB		5712	1
Chloroform		<1	ug/L	S 8260B		10/10/98	MB		5712	1
Dichlorobenzene		<2	ug/L	S 8260B		10/10/98	MB		5712	2
1,1-dichloroethylene		<1	ug/L	S 8260B		10/10/98	MB		5712	1
Dichloropropenes		<1	ug/L	S 8260B		10/10/98	MB		5712	1
Ethylbenzene		2	ug/L	S 8260B		10/10/98	MB		5712	1
Bromodichloromethane		<1	ug/L	S 8260B		10/10/98	MB		5712	1
Bromomethane		<5	ug/L	S 8260B		10/10/98	MB		5712	5
Chloromethane		<1	ug/L	S 8260B		10/10/98	MB		5712	1
Dichlorodifluoromethane		<1	ug/L	S 8260B		10/10/98	MB		5712	1
Dichloromethane		<1	ug/L	S 8260B		10/10/98	MB		5712	1
Trichlorofluoromethane		<1	ug/L	S 8260B		10/10/98	MB		5712	1
Tetrachloroethylene		<1	ug/L	S 8260B		10/10/98	MB		5712	1
Toluene		<1	ug/L	S 8260B		10/10/98	MB		5712	1
Trichloroethylene		<1	ug/L	S 8260B		10/10/98	MB		5712	1
Vinyl chloride		<1	ug/L	S 8260B		10/10/98	MB		5712	1
m,p-xylene		7	ug/L	S 8260B		10/10/98	MB		5712	1
o-xylene		2	ug/L	S 8260B		10/10/98	MB		5712	1
1,1-dichloroethane		<1	ug/L	S 8260B		10/10/98	MB		5712	1
Ethylene dibromide		<1	ug/L	S 8260B		10/10/98	MB		5712	1
cis-1,2-dichloroethylene		<1	ug/L	S 8260B		10/10/98	MB		5712	1
trans-1,2-dichloroethylene		<1	ug/L	S 8260B		10/10/98	MB		5712	1
Methylene chloride		<5	ug/L	S 8260B		10/10/98	MB		5712	5
Surr. Dibromofluoromethane		109	%	S 8260B		10/10/98	MB		5712	71-132
Surr. Toluene-d8		97	%	S 8260B		10/10/98	MB		5712	82-124
Surr. 4-Bromofluorobenzene		100	%	S 8260B		10/10/98	MB		5712	76-126
Benzidine		<0.01	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.01
Pentachlorobenzene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
1,2,4,5-tetrachlorobenzene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Hexachloroethane		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001

Date: 10-20-98

Page # 11

Order ID Number: 9810000083

Sample Number: 109063

Project Number: 19349

Project Name: Shell Grimes Tank Battery

Project Location: Hobbs, NM

Sample Description: GMW-6

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
2,4-dichlorophenol		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
2,4,5-trichlorophenol		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
2,4,6-trichlorophenol		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
bis (2-chloroethyl) ether		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
bis (2-chloroisopropyl) ether		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
bis (chloromethyl) ether		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
3,3-dichlorobenzidine		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
2,4-dinitrotoluene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Diphenylhydrazine		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
Hexachlorobutadiene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Hexachlorocyclopentadiene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Isophorone		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
Nitrobenzene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
2,4-dinitro-o-cresol		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
2,4-dinitrophenols		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
i-nitrosodiethylamine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
N-nitrosodimethylamine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
N-nitrosodibutylamine		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
N-nitrosodiphenylamine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
N-nitrosopyrrolidine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Pentachlorophenol		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
Phenol		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Dibutyl phthalate		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
bis(2-ethylhexyl) phthalate		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Diethyl phthalate		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Dimethyl phthalate		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Anthracene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Benzo(b)fluoranthene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Benzo(k)fluoranthene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Fluoranthene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Fluorene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Phenanthrene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Pyrene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Naphthalene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
1-methylnaphthalene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
2-methylnaphthalene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Benzo-a-pyrene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Surr. 2-Fluorophenol		26	%	S 8270C	10/7/98	10/9/98	DG	5355	5713	1-85
Surr. Phenol-d6		23	%	S 8270C	10/7/98	10/9/98	DG	5355	5713	0-82
Surr. Nitrobenzene-d5		61	%	S 8270C	10/7/98	10/9/98	DG	5355	5713	38-111
Surr. 2-Fluorobiphenyl		69	%	S 8270C	10/7/98	10/9/98	DG	5355	5713	38-103
Surr. 2,4,6-Tribromophenol		58	%	S 8270C	10/7/98	10/9/98	DG	5355	5713	1-127
Surr. Terphenyl-d14		63	%	S 8270C	10/7/98	10/9/98	DG	5355	5713	38-122

Project Number: 19349
 Project Name: Shell Grimes Tank Battery
 Project Location: Hobbs, NM

Date: 10-20-98
 Page # 12
 Order ID Number: 9810000083
 Sample Number: 109063

Sample Description: GMW-6

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<1.0	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	1.0
Chlordane		<2.5	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	2.5
DDT		<1.0	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	1.0
Dieldrin		<0.5	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	0.5
Endosulfan		<0.5	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	0.5
Endrin		<1.0	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	1.0
Heptachlor		<0.5	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	0.5
PCB's		<0.001	mg/L	S-8082	10/9/98	10/13/98	RC	5366	5670	0.001
Arsenic		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.10
Barium		0.41	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.10
Cadmium		<0.01	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.01
Chromium		0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.05
Lead		<0.05	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.05
Total Mercury		0.0002	mg/L	S 7471B	10/2/98	10/13/98	RR	5375	5763	0.0002
Selenium		<0.05	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.05
Silver		<0.05	mg/L	S 6010B	10/12/98	10/17/98	RR	5380	5800	0.05
Uranium		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.10
Copper		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.10
Iron		34	mg/L	S 6010B	10/12/98	10/18/98	RR	5380	5812	0.10
Manganese		0.42	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.10
Zinc		0.16	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.10
Aluminum		51	mg/L	S 6010B	10/12/98	10/18/98	RR	5380	5812	0.10
Boron		0.23	mg/L	S 6010B	10/12/98	10/17/98	RR	5380	5800	0.10
Cobalt		0.05	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.05
Molybdenum		<0.10	mg/L	S 6010B	10/12/98	10/18/98	RR	5380	5812	0.10
Nickel		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.10
Cyanide		<0.01	mg/L	SM 4500 C,E		10/9/98	SA		5709	0.01
Fluoride		1.7	mg/L	E 300.0		10/6/98	JS		5695	0.5
Nitrate		4.81	mg/L	SM 4500 NO3,E		10/9/98	JS		5711	0.10
Chloride		46	mg/L	E 300.0		10/6/98	JS		5695	2.5
Sulfate		79	mg/L	E 300.0		10/6/98	JS		5695	2.5
TDS		500	mg/L	E 160.1		10/5/98	RS		5682	---
pH		7.4	s.u.	E 150.1		10/3/98	SA		5669	---
TRPHC		<0.500	mg/L	E 418.1	10/5/98	10/7/98	MF	5342	5700	0.500
Total Phenols		0.1	mg/L	S 5530 A,D		10/15/98	RC		5783	0.01
Total Radium		2.5	pCi/L	E 901.1M		10/20/98	DC	---	---	---

ARS Tracking Number:	ARS-98-1002	P.O. Number:	N/A
Client I.D.:	109063	ARS Sample I.D.:	ARS-98-3619
Date Sampled:	10/1/98	Date Received:	10/6/98
Time Sampled:	N/A	Time Received	1121
Type of Sample:	Liquid	Date of Report	10/21/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Detection Limit	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	2.50	0.67	1.11	pCi/L	EPA 903	10/21/98 1515	DC
Ra-228	BDL	N/A	1.54	pCi/L	EPA 904	10/20/98 2010	DC

l-sh
Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-20-98
Page # 14

Project Number: 19349
Project Name: Shell Grimes Tank Battery
Project Location: Hobbs, NM

Order ID Number: 9810000083
Sample Number: 109065

Sample Description: GMW-7

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<5	ug/L	S 8260B		10/13/98	MB		5764	5
Acrylonitrile		<5	ug/L	S 8260B		10/13/98	MB		5764	5
Benzene		1.2	ug/L	S 8260B		10/13/98	MB		5764	1
Carbon tetrachloride		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Chlorobenzene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
1,2-dichloroethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
1,1,2,2-tetrachloroethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
1,1,1-trichloroethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
1,1,2-trichloroethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
1,1,2-trichloroethylene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Chloroform		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Dichlorobenzene		<2	ug/L	S 8260B		10/13/98	MB		5764	2
1,1-dichloroethylene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Dichloropropenes		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Ethylbenzene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Bromodichloromethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Bromomethane		<5	ug/L	S 8260B		10/13/98	MB		5764	5
Chloromethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Dichlorodifluoromethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Dichloromethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Trichlorofluoromethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Tetrachloroethylene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Toluene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Trichloroethylene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Vinyl chloride		<1	ug/L	S 8260B		10/13/98	MB		5764	1
m,p-xylene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
o-xylene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
1,1-dichloroethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Ethylene dibromide		<1	ug/L	S 8260B		10/13/98	MB		5764	1
cis-1,2-dichloroethylene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
trans-1,2-dichloroethylene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Methylene chloride		<5	ug/L	S 8260B		10/13/98	MB		5764	5
Surr. Dibromofluoromethane		106	%	S 8260B		10/13/98	MB		5764	71-132
Surr. Toluene-d8		95	%	S 8260B		10/13/98	MB		5764	82-124
Surr. 4-Bromofluorobenzene		103	%	S 8260B		10/13/98	MB		5764	76-126
Benzidine		<0.01	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.01
Pentachlorobenzene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
1,2,4,5-tetrachlorobenzene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Hexachloroethane		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001

Date: 10-20-98

Page # 15

Order ID Number: 9810000083

Sample Number: 109065

Project Number: 19349

Project Name: Shell Grimes Tank Battery

Project Location: Hobbs, NM

Sample Description: GMW-7

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
2,4-dichlorophenol		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
2,4,5-trichlorophenol		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
2,4,6-trichlorophenol		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
bis (2-chloroethyl) ether		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
bis (2-chloroisopropyl) ether		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
bis (chloromethyl) ether		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
3,3-dichlorobenzidine		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
2,4-dinitrotoluene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Diphenylhydrazine		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
Hexachlorobutadiene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Hexachlorocyclopentadiene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Isophorone		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
Nitrobenzene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
2,4-dinitro-o-cresol		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
2,4-dinitrophenols		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
i-nitrosodiethylamine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
N-nitrosodimethylamine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
N-nitrosodibutylamine		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
N-nitrosodiphenylamine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
N-nitrosopyrrolidine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Pentachlorophenol		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
Phenol		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Dibutyl phthalate		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
bis(2-ethylhexyl) phthalate		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Diethyl phthalate		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Dimethyl phthalate		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Anthracene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Benzo(b)fluoranthene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Benzo(k)fluoranthene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Fluoranthene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Fluorene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Phenanthrene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Pyrene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Naphthalene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
1-methylnaphthalene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
2-methylnaphthalene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Benzo-a-pyrene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Surr. 2-Fluorophenol		27	%	S 8270C	10/7/98	10/9/98	DG	5355	5713	1-85
Surr. Phenol-d6		21	%	S 8270C	10/7/98	10/9/98	DG	5355	5713	0-82
Surr. Nitrobenzene-d5		66	%	S 8270C	10/7/98	10/9/98	DG	5355	5713	38-111
Surr. 2-Fluorobiphenyl		71	%	S 8270C	10/7/98	10/9/98	DG	5355	5713	38-103
Surr. 2,4,6-Tribromophenol		59	%	S 8270C	10/7/98	10/9/98	DG	5355	5713	1-127
Surr. Terphenyl-d14		63	%	S 8270C	10/7/98	10/9/98	DG	5355	5713	38-122

Project Number: 19349
 Project Name: Shell Grimes Tank Battery
 Project Location: Hobbs, NM

Date: 10-20-98
 Page # 16
 Order ID Number: 9810000083
 Sample Number: 109065

Sample Description: GMW-7

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<1.0	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	1.0
Chlordane		<2.5	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	2.5
DDT		<1.0	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	1.0
Dieldrin		<0.5	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	0.5
Endosulfan		<0.5	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	0.5
Endrin		<1.0	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	1.0
Heptachlor		<0.5	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	0.5
PCB's		<0.001	mg/L	S-8082	10/9/98	10/13/98	RC	5366	5670	0.001
Arsenic		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.10
Barium		0.14	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.10
Cadmium		<0.01	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.01
Chromium		<0.05	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.05
Lead		<0.05	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.05
Total Mercury		<0.0002	mg/L	S 7471B	10/9/98	10/11/98	MS	5365	5725	0.0002
Selenium		<0.05	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.05
Silver		<0.05	mg/L	S 6010B	10/12/98	10/17/98	RR	5380	5800	0.05
Uranium		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.10
Copper		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.10
Iron		7.4	mg/L	S 6010B	10/12/98	10/18/98	RR	5380	5812	0.10
Manganese		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.10
Zinc		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.10
Aluminum		11	mg/L	S 6010B	10/12/98	10/18/98	RR	5380	5812	0.10
Boron		0.19	mg/L	S 6010B	10/12/98	10/17/98	RR	5380	5800	0.10
Cobalt		<0.05	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.05
Molybdenum		<0.10	mg/L	S 6010B	10/12/98	10/18/98	RR	5380	5812	0.10
Nickel		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.10
Cyanide		<0.01	mg/L	SM 4500 C,E		10/9/98	SA		5709	0.01
Fluoride		1.9	mg/L	E 300.0		10/6/98	JS		5696	0.5
Nitrate		1.97	mg/L	SM 4500 NO3,E		10/9/98	JS		5711	0.10
Chloride		41	mg/L	E 300.0		10/6/98	JS		5696	2.5
Sulfate		74	mg/L	E 300.0		10/6/98	JS		5696	2.5
TDS		430	mg/L	E 160.1		10/5/98	RS		5682	---
pH		7.4	s.u.	E 150.1		10/3/98	SA		5669	---
TRPHC		<0.500	mg/L	E 418.1	10/5/98	10/7/98	MF	5342	5700	0.500
Total Phenols		<0.01	mg/L	S 5530 A,D		10/15/98	RC		5783	0.01
Total Radium		2.27	pCi/L	E 901.1M		10/20/98	DC	---	---	---

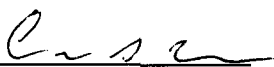


1726 Wooddale Court • Baton Rouge, Louisiana 70806

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ARS Tracking Number: ARS-98-1002 P.O. Number: N/A
Client I.D.: 109065 ARS Sample I.D.: ARS-98-3620
Date Sampled: 10/1/98 Date Received: 10/6/98
Time Sampled: N/A Time Received: 1121
Type of Sample: Liquid Date of Report: 10/21/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Detection Limit	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	2.27	0.85	1.39	pCi/L	EPA 903	10/21/98 1514	DC
Ra-228	BDL	N/A	1.54	pCi/L	EPA 904	10/20/98 2010	DC


Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-20-98
Page # 18

Project Number: 19349
Project Name: Shell Grimes Tank Battery
Project Location: Hobbs, NM

Order ID Number: 9810000083
Sample Number: 109067

Sample Description: GMW-8

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<5	ug/L	S 8260B		10/13/98	MB		5764	5
Acrylonitrile		<5	ug/L	S 8260B		10/13/98	MB		5764	5
Benzene		2.1	ug/L	S 8260B		10/13/98	MB		5764	1
Carbon tetrachloride		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Chlorobenzene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
1,2-dichloroethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
1,1,2,2-tetrachloroethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
1,1,1-trichloroethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
1,1,2-trichloroethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
1,1,2-trichloroethylene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Chloroform		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Dichlorobenzene		<2	ug/L	S 8260B		10/13/98	MB		5764	2
1,1-dichloroethylene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Dichloropropenes		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Ethylbenzene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Bromodichloromethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Bromomethane		<5	ug/L	S 8260B		10/13/98	MB		5764	5
Chloromethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Dichlorodifluoromethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Dichloromethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Trichlorofluoromethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Tetrachloroethylene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Toluene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Trichloroethylene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Vinyl chloride		<1	ug/L	S 8260B		10/13/98	MB		5764	1
m,p-xylene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
o-xylene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
1,1-dichloroethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Ethylene dibromide		<1	ug/L	S 8260B		10/13/98	MB		5764	1
cis-1,2-dichloroethylene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
trans-1,2-dichloroethylene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Methylene chloride		<5	ug/L	S 8260B		10/13/98	MB		5764	5
Surr. Dibromofluoromethane		109	%	S 8260B		10/13/98	MB		5764	71-132
Surr. Toluene-d8		94	%	S 8260B		10/13/98	MB		5764	82-124
Surr. 4-Bromofluorobenzene		103	%	S 8260B		10/13/98	MB		5764	76-126
Benzidine		<0.01	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.01
Pentachlorobenzene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
1,2,4,5-tetrachlorobenzene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Hexachloroethane		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001

Date: 10-20-98

Page # 19

Order ID Number: 9810000083

Sample Number: 109067

Project Number: 19349

Project Name: Shell Grimes Tank Battery

Project Location: Hobbs, NM

Sample Description: GMW-8

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
2,4-dichlorophenol		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
2,4,5-trichlorophenol		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
2,4,6-trichlorophenol		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
bis (2-chloroethyl) ether		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
bis (2-chloroisopropyl) ether		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
bis (chloromethyl) ether		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
3,3-dichlorobenzidine		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
2,4-dinitrotoluene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Diphenylhydrazine		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
Hexachlorobutadiene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Hexachlorocyclopentadiene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Isophorone		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
Nitrobenzene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
2,4-dinitro-o-cresol		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
2,4-dinitrophenols		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
i-nitrosodiethylamine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
N-nitrosodimethylamine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
N-nitrosodibutylamine		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
N-nitrosodiphenylamine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
N-nitrosopyrrolidine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Pentachlorophenol		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
Phenol		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Dibutyl phthalate		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
bis(2-ethylhexyl) phthalate		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Diethyl phthalate		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Dimethyl phthalate		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Anthracene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Benzo(b)fluoranthene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Benzo(k)fluoranthene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Fluoranthene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Fluorene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Phenanthrene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Pyrene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Naphthalene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
1-methylnaphthalene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
2-methylnaphthalene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Benzo-a-pyrene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Surr. 2-Fluorophenol		34	%	S 8270C	10/7/98	10/9/98	DG	5355	5713	1-85
Surr. Phenol-d6		26	%	S 8270C	10/7/98	10/9/98	DG	5355	5713	0-82
Surr. Nitrobenzene-d5		97	%	S 8270C	10/7/98	10/9/98	DG	5355	5713	38-111
Surr. 2-Fluorobiphenyl		100	%	S 8270C	10/7/98	10/9/98	DG	5355	5713	38-103
Surr. 2,4,6-Tribromophenol		82	%	S 8270C	10/7/98	10/9/98	DG	5355	5713	1-127
Surr. Terphenyl-d14		75	%	S 8270C	10/7/98	10/9/98	DG	5355	5713	38-122

Date: 10-20-98

Page # 20

Order ID Number: 9810000083

Sample Number: 109067

Project Number: 19349

Project Name: Shell Grimes Tank Battery

Project Location: Hobbs, NM

Sample Description: GMW-8

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<1.0	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	1.0
Chlordane		<2.5	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	2.5
DDT		<1.0	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	1.0
Dieldrin		<0.5	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	0.5
Endosulfan		<0.5	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	0.5
Endrin		<1.0	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	1.0
Heptachlor		<0.5	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	0.5
PCB's		<0.01	mg/L	S-8082	10/9/98	10/21/98	RC	5366	5888	0.001
Arsenic		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.10
Barium		0.28	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.10
Cadmium		<0.01	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.01
Chromium		<0.05	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.05
Lead		<0.05	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.05
Total Mercury		<0.0002	mg/L	S 7471B	10/9/98	10/11/98	MS	5365	5725	0.0002
Selenium		<0.05	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.05
Silver		<0.05	mg/L	S 6010B	10/12/98	10/17/98	RR	5380	5800	0.05
Uranium		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.10
Copper		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.10
Iron		4.4	mg/L	S 6010B	10/12/98	10/18/98	RR	5380	5812	0.10
Manganese		0.18	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.10
Zinc		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.10
Aluminum		6.6	mg/L	S 6010B	10/12/98	10/18/98	RR	5380	5812	0.10
Boron		0.41	mg/L	S 6010B	10/12/98	10/17/98	RR	5380	5800	0.10
Cobalt		<0.05	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.05
Molybdenum		<0.10	mg/L	S 6010B	10/12/98	10/18/98	RR	5380	5812	0.10
Nickel		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5380	5782	0.10
Cyanide		<0.01	mg/L	SM 4500 C,E		10/9/98	SA		5710	0.01
Fluoride		2.0	mg/L	E 300.0		10/6/98	JS		5696	0.5
Nitrate		0.59	mg/L	SM 4500 NO3,E		10/9/98	JS		5711	0.10
Chloride		170	mg/L	E 300.0		10/6/98	JS		5696	2.5
Sulfate		68	mg/L	E 300.0		10/6/98	JS		5696	2.5
TDS		750	mg/L	E 160.1		10/6/98	RS		5693	---
pH		7.2	s.u.	E 150.1		10/3/98	SA		5669	---
TRPHC		<0.500	mg/L	E 418.1	10/5/98	10/7/98	MF	5342	5700	0.500
Total Phenols		<0.01	mg/L	S 5530 A,D		10/15/98	RC		5783	0.01
Total Radium		2.62	pCi/L	E 901.1M		10/20/98	DC	---	---	---

ARS Tracking Number: ARS-98-1002

P.O. Number: N/A

Client I.D.: 109067

ARS Sample I.D.: ARS-98-3621

Date Sampled: 10/1/98

Date Received: 10/6/98

Time Sampled: N/A

Time Received 1121

Type of Sample: Liquid

Date of Report 10/21/98

Analysis Description	Analysis Result	Analysis Error $\pm 2\sigma$	Detection Limit	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
Ra-226	2.62	0.85	1.39	pCi/L	EPA 903	10/21/98 1514	DC
Ra-228	BDL	N/A	1.54	pCi/L	EPA 904	10/20/98 2010	DC

Cost
Quality Assurance Review

Notes: American Radiation Services, Inc assumes no liability for the use or interpretation of any analytical results provided other than the cost of the performed analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Analytical Results Report

Jeff kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-20-98
Page # 22

Project Number: 19349
Project Name: Shell Grimes Tank Battery
Project Location: Hobbs, NM

Order ID Number: 9810000083
Sample Number: 109069

Sample Description: GMW-9

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<5	ug/L	S 8260B		10/13/98	MB		5764	5
Acrylonitrile		<5	ug/L	S 8260B		10/13/98	MB		5764	5
Benzene		1.8	ug/L	S 8260B		10/13/98	MB		5764	1
Carbon tetrachloride		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Chlorobenzene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
1,2-dichloroethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
1,1,2,2-tetrachloroethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
1,1,1-trichloroethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
1,1,2-trichloroethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
1,1,2-trichloroethylene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Chloroform		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Dichlorobenzene		<2	ug/L	S 8260B		10/13/98	MB		5764	2
1,1-dichloroethylene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Dichloropropenes		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Ethylbenzene		18	ug/L	S 8260B		10/13/98	MB		5764	1
Bromodichloromethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Bromomethane		<5	ug/L	S 8260B		10/13/98	MB		5764	5
Chloromethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Dichlorodifluoromethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Dichloromethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Trichlorofluoromethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Tetrachloroethylene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Toluene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Trichloroethylene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Vinyl chloride		<1	ug/L	S 8260B		10/13/98	MB		5764	1
m,p-xylene		80	ug/L	S 8260B		10/13/98	MB		5764	1
o-xylene		27	ug/L	S 8260B		10/13/98	MB		5764	1
1,1-dichloroethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Ethylene dibromide		<1	ug/L	S 8260B		10/13/98	MB		5764	1
cis-1,2-dichloroethylene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
trans-1,2-dichloroethylene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Methylene chloride		<5	ug/L	S 8260B		10/13/98	MB		5764	5
Surr. Dibromofluoromethane		111	%	S 8260B		10/13/98	MB		5764	71-132
Surr. Toluene-d8		96	%	S 8260B		10/13/98	MB		5764	82-124
Surr. 4-Bromofluorobenzene		103	%	S 8260B		10/13/98	MB		5764	76-126
Benzidine		<0.01	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.01
Pentachlorobenzene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
1,2,4,5-tetrachlorobenzene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Hexachloroethane		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001

Project Number: 19349
 Project Name: Shell Grimes Tank Battery
 Project Location: Hobbs, NM

Date: 10-20-98
 Page # 23
 Order ID Number: 9810000083
 Sample Number: 109069

Sample Description: GMW-9

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
2,4-dichlorophenol		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
2,4,5-trichlorophenol		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
2,4,6-trichlorophenol		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
bis (2-chloroethyl) ether		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
bis (2-chloroisopropyl) ether		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
bis (chloromethyl) ether		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
3,3-dichlorobenzidine		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
2,4-dinitrotoluene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Diphenylhydrazine		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
Hexachlorobutadiene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Hexachlorocyclopentadiene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Isophorone		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
Nitrobenzene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
2,4-dinitro-o-cresol		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
2,4-dinitrophenols		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
i-nitrosodiethylamine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
N-nitrosodimethylamine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
N-nitrosodibutylamine		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
N-nitrosodiphenylamine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
N-nitrosopyrrolidine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Pentachlorophenol		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
Phenol		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Dibutyl phthalate		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
bis(2-ethylhexyl) phthalate		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Diethyl phthalate		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Dimethyl phthalate		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Anthracene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Benzo(b)fluoranthene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Benzo(k)fluoranthene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Fluoranthene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Fluorene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Phenanthrene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Pyrene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Naphthalene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
1-methylnaphthalene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
2-methylnaphthalene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Benzo-a-pyrene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Surr. 2-Fluorophenol		21	%	S 8270C	10/7/98	10/9/98	DG	5355	5713	1-85
Surr. Phenol-d6		14	%	S 8270C	10/7/98	10/9/98	DG	5355	5713	0-82
Surr. Nitrobenzene-d5		58	%	S 8270C	10/7/98	10/9/98	DG	5355	5713	38-111
Surr. 2-Fluorobiphenyl		64	%	S 8270C	10/7/98	10/9/98	DG	5355	5713	38-103
Surr. 2,4,6-Tribromophenol		63	%	S 8270C	10/7/98	10/9/98	DG	5355	5713	1-127
Surr. Terphenyl-d14		71	%	S 8270C	10/7/98	10/9/98	DG	5355	5713	38-122

Project Number: 19349
 Project Name: Shell Grimes Tank Battery
 Project Location: Hobbs, NM

Date: 10-20-98
 Page # 24
 Order ID Number: 9810000083
 Sample Number: 109069

Sample Description: GMW-9

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<1.0	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	1.0
Chlordane		<2.5	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	2.5
DDT		<1.0	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	1.0
Dieldrin		<0.5	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	0.5
Endosulfan		<0.5	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	0.5
Endrin		<1.0	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	1.0
Heptachlor		<0.5	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	0.5
PCB's		<0.001	mg/L	S-8082	10/9/98	10/13/98	RC	5366	5670	0.001
Arsenic		<0.10	mg/L	S 6010B	10/13/98	10/15/98	RR	5389	5783	0.10
Barium		0.42	mg/L	S 6010B	10/13/98	10/15/98	RR	5389	5783	0.10
Cadmium		<0.01	mg/L	S 6010B	10/13/98	10/15/98	RR	5389	5783	0.01
Chromium		<0.05	mg/L	S 6010B	10/13/98	10/15/98	RR	5389	5783	0.05
Lead		<0.05	mg/L	S 6010B	10/13/98	10/15/98	RR	5389	5783	0.05
Total Mercury		<0.0002	mg/L	S 7471B	10/9/98	10/11/98	MS	5365	5725	0.0002
Selenium		<0.05	mg/L	S 6010B	10/13/98	10/15/98	RR	5389	5783	0.05
Silver		<0.05	mg/L	S 6010B	10/13/98	10/17/98	RR	5389	5800	0.05
Uranium		<0.10	mg/L	S 6010B	10/13/98	10/15/98	RR	5389	5783	0.10
Copper		<0.10	mg/L	S 6010B	10/13/98	10/15/98	RR	5389	5783	0.10
Iron		5.6	mg/L	S 6010B	10/12/98	10/18/98	RR	5380	5812	0.10
Manganese		0.16	mg/L	S 6010B	10/13/98	10/15/98	RR	5389	5783	0.10
Zinc		<0.10	mg/L	S 6010B	10/13/98	10/15/98	RR	5389	5783	0.10
Aluminum		10	mg/L	S 6010B	10/12/98	10/18/98	RR	5380	5812	0.10
Boron		0.24	mg/L	S 6010B	10/13/98	10/17/98	RR	5389	5800	0.10
Cobalt		<0.05	mg/L	S 6010B	10/13/98	10/15/98	RR	5389	5783	0.05
Molybdenum		<0.10	mg/L	S 6010B	10/12/98	10/18/98	RR	5380	5812	0.10
Nickel		<0.10	mg/L	S 6010B	10/13/98	10/15/98	RR	5389	5783	0.10
Cyanide		<0.01	mg/L	SM 4500 C,E		10/9/98	SA		5710	0.01
Fluoride		2.1	mg/L	E 300.0		10/6/98	JS		5696	0.5
Nitrate		2.39	mg/L	SM 4500 NO3,E		10/9/98	JS		5711	0.10
Chloride		57	mg/L	E 300.0		10/6/98	JS		5696	2.5
Sulfate		85	mg/L	E 300.0		10/6/98	JS		5696	2.5
TDS		540	mg/L	E 160.1		10/6/98	RS		5693	---
pH		7.0	s.u.	E 150.1		10/3/98	SA		5669	---
TRPHC		7.28	mg/L	E 418.1	10/5/98	10/7/98	MF	5342	5700	0.500
Total Phenols		<0.01	mg/L	S 5530 A,D		10/15/98	RC		5783	0.01
Total Radium		3.43	pCi/L	E 901.1M		10/20/98	DC	---	---	---



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P.O. Number: N/A

ARS Sample I.D.: ARS-98-3622

Date Received: 10/6/98

Time Received 1121

Date of Report 10/21/98



Quality Assurance Review



Analytical Results Report

Jeff kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-20-98
Page # 26

Project Number: 19349
Project Name: Shell Grimes Tank Battery
Project Location: Hobbs, NM

Order ID Number: 9810000083
Sample Number: 109071

Sample Description: GMW-10

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<5	ug/L	S 8260B		10/13/98	MB		5764	5
Acrylonitrile		<5	ug/L	S 8260B		10/13/98	MB		5764	5
Benzene		1.6	ug/L	S 8260B		10/13/98	MB		5764	1
Carbon tetrachloride		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Chlorobenzene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
1,2-dichloroethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
1,1,2,2-tetrachloroethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
1,1,1-trichloroethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
1,1,2-trichloroethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
1,1,2-trichloroethylene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Chloroform		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Dichlorobenzene		<2	ug/L	S 8260B		10/13/98	MB		5764	2
1,1-dichloroethylene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Dichloropropenes		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Ethylbenzene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Bromodichloromethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Bromomethane		<5	ug/L	S 8260B		10/13/98	MB		5764	5
Chloromethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Dichlorodifluoromethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Dichloromethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Trichlorofluoromethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Tetrachloroethylene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Toluene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Trichloroethylene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Vinyl chloride		<1	ug/L	S 8260B		10/13/98	MB		5764	1
m,p-xylene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
o-xylene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
1,1-dichloroethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Ethylene dibromide		<1	ug/L	S 8260B		10/13/98	MB		5764	1
cis-1,2-dichloroethylene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
trans-1,2-dichloroethylene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Methylene chloride		<5	ug/L	S 8260B		10/13/98	MB		5764	5
Surr. Dibromofluoromethane		106	%	S 8260B		10/13/98	MB		5764	71-132
Surr. Toluene-d8		94	%	S 8260B		10/13/98	MB		5764	82-124
Surr. 4-Bromofluorobenzene		103	%	S 8260B		10/13/98	MB		5764	76-126
Benzidine		<0.01	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.01
Pentachlorobenzene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
1,2,4,5-tetrachlorobenzene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Hexachloroethane		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001

Project Number: 19349
 Project Name: Shell Grimes Tank Battery
 Project Location: Hobbs, NM

Date: 10-20-98
 Page # 27
 Order ID Number: 9810000083
 Sample Number: 109071

Sample Description: GMW-10

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
2,4-dichlorophenol		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
2,4,5-trichlorophenol		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
2,4,6-trichlorophenol		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
bis (2-chloroethyl) ether		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
bis (2-chloroisopropyl) ether		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
bis (chloromethyl) ether		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
3,3-dichlorobenzidine		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
2,4-dinitrotoluene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Diphenylhydrazine		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
Hexachlorobutadiene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Hexachlorocyclopentadiene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Isophorone		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
Nitrobenzene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
2,4-dinitro-o-cresol		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
2,4-dinitrophenols		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
i-nitrosodiethylamine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
N-nitrosodimethylamine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
N-nitrosodibutylamine		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
N-nitrosodiphenylamine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
N-nitrosopyrrolidine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Pentachlorophenol		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
Phenol		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Dibutyl phthalate		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
bis(2-ethylhexyl) phthalate		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Diethyl phthalate		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Dimethyl phthalate		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Anthracene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Benzo(b)fluoranthene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Benzo(k)fluoranthene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Fluoranthene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Fluorene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Phenanthrene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Pyrene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Naphthalene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
1-methylnaphthalene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
2-methylnaphthalene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Benzo-a-pyrene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Surr. 2-Fluorophenol		18	%	S 8270C	10/7/98	10/9/98	DG	5355	5713	1-85
Surr. Phenol-d6		14	%	S 8270C	10/7/98	10/9/98	DG	5355	5713	0-82
Surr. Nitroobenzene-d5		58	%	S 8270C	10/7/98	10/9/98	DG	5355	5713	38-111
Surr. 2-Fluorobiphenyl		64	%	S 8270C	10/7/98	10/9/98	DG	5355	5713	38-103
Surr. 2,4,6-Tribromophenol		52	%	S 8270C	10/7/98	10/9/98	DG	5355	5713	1-127
Surr. Terphenyl-d14		53	%	S 8270C	10/7/98	10/9/98	DG	5355	5713	38-122

Project Number: 19349
 Project Name: Shell Grimes Tank Battery
 Project Location: Hobbs, NM

Date: 10-20-98
 Page # 2 8
 Order ID Number: 9810000083
 Sample Number: 109071

Sample Description: GMW-10

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<1.0	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	1.0
Chlordane		<2.5	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	2.5
DDT		<1.0	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	1.0
Dieldrin		<0.5	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	0.5
Endosulfan		<0.5	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	0.5
Endrin		<1.0	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	1.0
Heptachlor		<0.5	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	0.5
PCB's		<0.001	mg/L	S-8082	10/9/98	10/13/98	RC	5366	5670	0.001
Arsenic		<0.10	mg/L	S 6010B	10/13/98	10/15/98	RR	5389	5783	0.10
Barium		0.19	mg/L	S 6010B	10/13/98	10/15/98	RR	5389	5783	0.10
Cadmium		<0.01	mg/L	S 6010B	10/13/98	10/15/98	RR	5389	5783	0.01
Chromium		<0.05	mg/L	S 6010B	10/13/98	10/15/98	RR	5389	5783	0.05
Lead		<0.05	mg/L	S 6010B	10/13/98	10/15/98	RR	5389	5783	0.05
Total Mercury		<0.0002	mg/L	S 7471B	10/9/98	10/11/98	MS	5365	5725	0.0002
Selenium		<0.05	mg/L	S 6010B	10/13/98	10/15/98	RR	5389	5783	0.05
Silver		<0.05	mg/L	S 6010B	10/13/98	10/17/98	RR	5389	5800	0.05
Uranium		<0.10	mg/L	S 6010B	10/13/98	10/15/98	RR	5389	5783	0.10
Copper		<0.10	mg/L	S 6010B	10/13/98	10/15/98	RR	5389	5783	0.10
Iron		6.6	mg/L	S 6010B	10/12/98	10/18/98	RR	5380	5812	0.10
Manganese		<0.10	mg/L	S 6010B	10/13/98	10/15/98	RR	5389	5783	0.10
Zinc		<0.10	mg/L	S 6010B	10/13/98	10/15/98	RR	5389	5783	0.10
Aluminum		12	mg/L	S 6010B	10/12/98	10/18/98	RR	5380	5812	0.10
Boron		0.26	mg/L	S 6010B	10/13/98	10/17/98	RR	5389	5800	0.10
Cobalt		<0.05	mg/L	S 6010B	10/13/98	10/15/98	RR	5389	5783	0.05
Molybdenum		<0.10	mg/L	S 6010B	10/12/98	10/18/98	RR	5380	5812	0.10
Nickel		<0.10	mg/L	S 6010B	10/13/98	10/15/98	RR	5389	5783	0.10
Cyanide		<0.01	mg/L	SM 4500 C,E		10/9/98	SA		5710	0.01
Fluoride		1.7	mg/L	E 300.0		10/6/98	JS		5696	0.5
Nitrate		1.66	mg/L	SM 4500 NO3,E		10/9/98	JS		5711	0.10
Chloride		180	mg/L	E 300.0		10/6/98	JS		5696	2.5
Sulfate		80	mg/L	E 300.0		10/6/98	JS		5696	2.5
TDS		640	mg/L	E 160.1		10/6/98	RS		5693	---
pH		7.2	s.u.	E 150.1		10/3/98	SA		5669	---
TRPHC		<0.500	mg/L	E 418.1	10/5/98	10/7/98	MF	5342	5700	0.500
Total Phenols		<0.01	mg/L	S 5530 A,D		10/15/98	RC		5783	0.01
Total Radium		4.22	pCi/L	E 901.1M		10/20/98	DC	---	---	---

Analytical Results Report

Jeff kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-20-98
Page # 30

Project Number: 19349
Project Name: Shell Grimes Tank Battery
Project Location: Hobbs, NM

Order ID Number: 9810000083
Sample Number: 109073

Sample Description: MW-9D

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<5	ug/L	S 8260B		10/13/98	MB		5764	5
Acrylonitrile		<5	ug/L	S 8260B		10/13/98	MB		5764	5
Benzene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Carbon tetrachloride		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Chlorobenzene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
1,2-dichloroethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
1,1,2,2-tetrachloroethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
1,1,1-trichloroethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
1,1,2-trichloroethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
1,1,2-trichloroethylene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Chloroform		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Dichlorobenzene		<2	ug/L	S 8260B		10/13/98	MB		5764	2
1,1-dichloroethylene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Dichloropropenes		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Ethylbenzene		18	ug/L	S 8260B		10/13/98	MB		5764	1
Bromodichloromethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Bromomethane		<5	ug/L	S 8260B		10/13/98	MB		5764	5
Chloromethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Dichlorodifluoromethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Dichloromethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Trichlorofluoromethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Tetrachloroethylene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Toluene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Trichloroethylene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Vinyl chloride		<1	ug/L	S 8260B		10/13/98	MB		5764	1
m,p-xylene		82	ug/L	S 8260B		10/13/98	MB		5764	1
o-xylene		27	ug/L	S 8260B		10/13/98	MB		5764	1
1,1-dichloroethane		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Ethylene dibromide		<1	ug/L	S 8260B		10/13/98	MB		5764	1
cis-1,2-dichloroethylene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
trans-1,2-dichloroethylene		<1	ug/L	S 8260B		10/13/98	MB		5764	1
Methylene chloride		<5	ug/L	S 8260B		10/13/98	MB		5764	5
Surr. Dibromofluoromethane		111	%	S 8260B		10/13/98	MB		5764	71-132
Surr. Toluene-d8		96	%	S 8260B		10/13/98	MB		5764	82-124
Surr. 4-Bromofluorobenzene		104	%	S 8260B		10/13/98	MB		5764	76-126
Benzidine		<0.01	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.01
Pentachlorobenzene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
1,2,4,5-tetrachlorobenzene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Hexachloroethane		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001

Date: 10-20-98

Page # 31

Order ID Number: 9810000083

Sample Number: 109073

Project Number: 19349

Project Name: Shell Grimes Tank Battery

Project Location: Hobbs, NM

Sample Description: MW-9D

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
2,4-dichlorophenol		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
2,4,5-trichlorophenol		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
2,4,6-trichlorophenol		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
bis (2-chloroethyl) ether		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
bis (2-chloroisopropyl) ether		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
bis (chloromethyl) ether		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
3,3-dichlorobenzidine		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
2,4-dinitrotoluene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Diphenylhydrazine		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
Hexachlorobutadiene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Hexachlorocyclopentadiene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Isophorone		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
Nitrobenzene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
2,4-dinitro-o-cresol		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
2,4-dinitrophenols		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
i-nitrosodiethylamine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
N-nitrosodimethylamine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
N-nitrosodibutylamine		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
N-nitrosodiphenylamine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
N-nitrosopyrrolidine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Pentachlorophenol		<0.005	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.005
Phenol		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Dibutyl phthalate		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
bis(2-ethylhexyl) phthalate		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Diethyl phthalate		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Dimethyl phthalate		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Anthracene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Benzo(b)fluoranthene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Benzo(k)fluoranthene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Fluoranthene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Fluorene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Phenanthrene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Pyrene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Naphthalene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
1-methylnaphthalene		0.003	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
2-methylnaphthalene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Benzo-a-pyrene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5355	5713	0.001
Surr. 2-Fluorophenol		26	%	S 8270C	10/7/98	10/9/98	DG	5355	5713	1-85
Surr. Phenol-d6		18	%	S 8270C	10/7/98	10/9/98	DG	5355	5713	0-82
Surr. Nitrobenzene-d5		67	%	S 8270C	10/7/98	10/9/98	DG	5355	5713	38-111
Surr. 2-Fluorobiphenyl		70	%	S 8270C	10/7/98	10/9/98	DG	5355	5713	38-103
Surr. 2,4,6-Tribromophenol		63	%	S 8270C	10/7/98	10/9/98	DG	5355	5713	1-127
Surr. Terphenyl-d14		63	%	S 8270C	10/7/98	10/9/98	DG	5355	5713	38-122

Project Number: 19349
 Project Name: Shell Grimes Tank Battery
 Project Location: Hobbs, NM

Date: 10-20-98
 Page # 32
 Order ID Number: 9810000083
 Sample Number: 109073

Sample Description: MW-9D

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<1.0	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	1.0
Chlordane		<2.5	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	2.5
DDT		<1.0	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	1.0
Dieldrin		<0.5	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	0.5
Endosulfan		<0.5	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	0.5
Endrin		<1.0	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	1.0
Heptachlor		<0.5	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	0.5
PCB's		<0.001	mg/L	S-8082	10/9/98	10/13/98	RC	5366	5670	0.001
Arsenic		<0.10	mg/L	S 6010B	10/13/98	10/15/98	RR	5389	5783	0.10
Barium		0.43	mg/L	S 6010B	10/13/98	10/15/98	RR	5389	5783	0.10
Cadmium		<0.01	mg/L	S 6010B	10/13/98	10/15/98	RR	5389	5783	0.01
Chromium		<0.05	mg/L	S 6010B	10/13/98	10/15/98	RR	5389	5783	0.05
Lead		<0.05	mg/L	S 6010B	10/13/98	10/15/98	RR	5389	5783	0.05
Total Mercury		<0.0002	mg/L	S 7471B	10/9/98	10/11/98	MS	5365	5725	0.0002
Selenium		<0.05	mg/L	S 6010B	10/13/98	10/15/98	RR	5389	5783	0.05
Silver		<0.05	mg/L	S 6010B	10/13/98	10/17/98	RR	5389	5800	0.05
Uranium		<0.10	mg/L	S 6010B	10/13/98	10/15/98	RR	5389	5783	0.10
Copper		<0.10	mg/L	S 6010B	10/13/98	10/15/98	RR	5389	5783	0.10
Iron		3.2	mg/L	S 6010B	10/12/98	10/18/98	RR	5380	5812	0.10
Manganese		0.14	mg/L	S 6010B	10/13/98	10/15/98	RR	5389	5783	0.10
Zinc		<0.10	mg/L	S 6010B	10/13/98	10/15/98	RR	5389	5783	0.10
Aluminum		5	mg/L	S 6010B	10/12/98	10/18/98	RR	5380	5812	0.10
Boron		0.23	mg/L	S 6010B	10/13/98	10/17/98	RR	5389	5800	0.10
Cobalt		<0.05	mg/L	S 6010B	10/13/98	10/15/98	RR	5389	5783	0.05
Molybdenum		<0.10	mg/L	S 6010B	10/12/98	10/18/98	RR	5380	5812	0.10
Nickel		<0.10	mg/L	S 6010B	10/13/98	10/15/98	RR	5389	5783	0.10
Cyanide		<0.01	mg/L	SM 4500 C,E		10/9/98	SA		5710	0.01
Fluoride		2.3	mg/L	E 300.0		10/6/98	JS		5696	0.5
Nitrate		1.50	mg/L	SM 4500 NO3,E		10/9/98	JS		5711	0.10
Chloride		64	mg/L	E 300.0		10/6/98	JS		5696	2.5
Sulfate		87	mg/L	E 300.0		10/6/98	JS		5696	2.5
TDS		580	mg/L	E 160.1		10/6/98	RS		5693	---
pH		7.1	s.u.	E 150.1		10/3/98	SA		5669	---
TRPHC		4.76	mg/L	E 418.1	10/5/98	10/7/98	MF	5342	5700	0.500
Total Phenols		<0.01	mg/L	S 5530 A,D		10/15/98	RC		5783	0.01
Total Radium		3.73	pCi/L	E 901.1M		10/20/98	DC	---	---	---

Analytical Results Report

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Date: 10-20-98
Page # 2

Project Number: 19350
Project Name: Shell Tasker Road
Project Location: Hobbs, NM

Order ID Number: 9810000082
Sample Number: 109052

Sample Description: TMW-1

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<5	ug/L	S 8260B		10/10/98	MB		5710	5
Acrylonitrile		<5	ug/L	S 8260B		10/10/98	MB		5710	5
Benzene		2	ug/L	S 8260B		10/10/98	MB		5710	1
Carbon tetrachloride		<1	ug/L	S 8260B		10/10/98	MB		5710	1
Chlorobenzene		<1	ug/L	S 8260B		10/10/98	MB		5710	1
1,2-dichloroethane		<1	ug/L	S 8260B		10/10/98	MB		5710	1
1,1,2,2-tetrachloroethane		<1	ug/L	S 8260B		10/10/98	MB		5710	1
1,1,1-trichloroethane		<1	ug/L	S 8260B		10/10/98	MB		5710	1
1,1,2-trichloroethane		<1	ug/L	S 8260B		10/10/98	MB		5710	1
1,1,2-trichloroethylene		<1	ug/L	S 8260B		10/10/98	MB		5710	1
Chloroform		<1	ug/L	S 8260B		10/10/98	MB		5710	1
Dichlorobenzene		<2	ug/L	S 8260B		10/10/98	MB		5710	2
1,1-dichloroethylene		<1	ug/L	S 8260B		10/10/98	MB		5710	1
Dichloropropenes		<1	ug/L	S 8260B		10/10/98	MB		5710	1
Ethylbenzene		<1	ug/L	S 8260B		10/10/98	MB		5710	1
Bromodichloromethane		<1	ug/L	S 8260B		10/10/98	MB		5710	1
Bromomethane		<5	ug/L	S 8260B		10/10/98	MB		5710	5
Chloromethane		<1	ug/L	S 8260B		10/10/98	MB		5710	1
Dichlorodifluoromethane		<1	ug/L	S 8260B		10/10/98	MB		5710	1
Dichloromethane		<1	ug/L	S 8260B		10/10/98	MB		5710	1
Trichlorofluoromethane		<1	ug/L	S 8260B		10/10/98	MB		5710	1
Tetrachloroethylene		<1	ug/L	S 8260B		10/10/98	MB		5710	1
Toluene		<1	ug/L	S 8260B		10/10/98	MB		5710	1
Trichloroethylene		<1	ug/L	S 8260B		10/10/98	MB		5710	1
Vinyl chloride		<1	ug/L	S 8260B		10/10/98	MB		5710	1
m,p-xylene		1	ug/L	S 8260B		10/10/98	MB		5710	1
o-xylene		<1	ug/L	S 8260B		10/10/98	MB		5710	1
1,1-dichloroethane		<1	ug/L	S 8260B		10/10/98	MB		5710	1
Ethylene dibromide		<1	ug/L	S 8260B		10/10/98	MB		5710	1
cis-1,2-dichloroethylene		<1	ug/L	S 8260B		10/10/98	MB		5710	1
trans-1,2-dichloroethylene		<1	ug/L	S 8260B		10/10/98	MB		5710	1
Methylene chloride		<5	ug/L	S 8260B		10/10/98	MB		5710	5
Surr. Dibromofluoromethane		100	%	S 8260B		10/10/98	MB		5710	71-132
Surr. Toluene-d8		100	%	S 8260B		10/10/98	MB		5710	82-124
Surr. 4-Bromofluorobenzene		102	%	S 8260B		10/10/98	MB		5710	76-126
Benzidine		<0.01	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.01
Pentachlorobenzene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
1,2,4,5-tetrachlorobenzene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Hexachloroethane		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001

Project Number: 19350
 Project Name: Shell Tasker Road
 Project Location: Hobbs, NM

Date: 10-20-98
 Page # 3
 Order ID Number: 9810000082
 Sample Number: 109052

Sample Description: TMW-1

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
2,4-dichlorophenol		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.005
2,4,5-trichlorophenol		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.005
2,4,6-trichlorophenol		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.005
bis (2-chloroethyl) ether		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.005
bis (2-chloroisopropyl) ether		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.005
bis (chloromethyl) ether		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.005
3,3-dichlorobenzidine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.005
2,4-dinitrotoluene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Diphenylhydrazine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.005
Hexachlorobutadiene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Hexachlorocyclopentadiene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Isophorone		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.005
Nitrobenzene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
2,4-dinitro-o-cresol		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
2,4-dinitrophenols		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.005
i-nitrosodiethylamine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
N-nitrosodimethylamine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
N-nitrosodibutylamine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.005
N-nitrosodiphenylamine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
N-nitrosopyrrolidine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Pentachlorophenol		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.005
Phenol		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Dibutyl phthalate		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
bis(2-ethylhexyl) phthalate		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Diethyl phthalate		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Dimethyl phthalate		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Anthracene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Benzo(b)fluoranthene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Benzo(k)fluoranthene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Fluoranthene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Fluorene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Phenanthrene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Pyrene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Naphthalene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
1-methylnaphthalene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
2-methylnaphthalene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Benzo-a-pyrene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Surr. 2-Fluorophenol		21	%	S 8270C	10/7/98	10/9/98	DG	5358	5708	1-85
Surr. Phenol-d6		25	%	S 8270C	10/7/98	10/9/98	DG	5358	5708	0-82
Surr. Nitrobenzene-d5		68	%	S 8270C	10/7/98	10/9/98	DG	5358	5708	38-111
Surr. 2-Fluorobiphenyl		72	%	S 8270C	10/7/98	10/9/98	DG	5358	5708	38-103
Surr. 2,4,6-Tribromophenol		79	%	S 8270C	10/7/98	10/9/98	DG	5358	5708	1-127
Surr. Terphenyl-d14		68	%	S 8270C	10/7/98	10/9/98	DG	5358	5708	38-122

Project Number: 19350
 Project Name: Shell Tasker Road
 Project Location: Hobbs, NM

Date: 10-20-98
 Page # 4
 Order ID Number: 9810000082
 Sample Number: 109052

Sample Description: TMW-1

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<1.0	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	1.0
Chlordane		<2.5	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	2.5
DDT		<1.0	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	1.0
Dieldrin		<0.5	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	0.5
Endosulfan		<0.5	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	0.5
Endrin		<1.0	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	1.0
Heptachlor		<0.5	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	0.5
PCB's		<0.001	mg/L	S-8082	10/9/98	10/13/98	RC	5366	5670	0.001
Arsenic		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.10
Barium		0.19	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.10
Cadmium		<0.01	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.01
Chromium		<0.05	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.05
Lead		<0.05	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.05
Total Mercury		0.0017	mg/L	S 6010B	10/9/98	10/11/98	MS	5365	5725	0.0002
Selenium		<0.05	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.05
Silver		<0.05	mg/L	S 6010B	10/12/98	10/17/98	RR	5398	5795	0.05
Uranium		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.10
Copper		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.10
Iron		5	mg/L	S 6010B	10/12/98	10/18/98	RR	5398	5812	0.10
Manganese		0.14	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.10
Zinc		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.10
Aluminum		7	mg/L	S 6010B	10/12/98	10/18/98	RR	5398	5812	0.10
Boron		0.37	mg/L	S 6010B	10/12/98	10/17/98	RR	5398	5795	0.10
Cobalt		<0.05	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.05
Molybdenum		<0.10	mg/L	S 6010B	10/12/98	10/18/98	RR	5398	5812	0.10
Nickel		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.10
Cyanide		<0.01	mg/L	SM 4500 C,E		10/9/98	SA		5699	0.01
Fluoride		1.7	mg/L	E 300.0		10/7/98	JS		5698	0.5
Nitrate		0.16	mg/L	SM 4500 NO3,E		10/9/98	JS		5706	0.10
Chloride		250	mg/L	E 300.0		10/7/98	JS		5698	2.5
Sulfate		58	mg/L	E 300.0		10/7/98	JS		5698	2.5
TDS		830	mg/L	E 160.1		10/5/98	RS		5680	---
pH		7.0	s.u.	E 150.1		10/3/98	SA		5670	---
TRPHC		<0.500	mg/L	E 418.1		10/7/98	MF	5342	5700	0.500
Total Phenols		<0.01	mg/L	S 5530 A,D		10/15/98	RC		5787	0.01
Total Radium		17.07	pCi/gm	E 901.1M		10/20/98	DC	---	---	---

pCi/L

Analytical Results Report

Jeff kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-20-98
Page # 6

Project Number: 19350
Project Name: Shell Tasker Road
Project Location: Hobbs, NM

Order ID Number: 9810000082
Sample Number: 109054

Sample Description: TMW-2

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<5	ug/L	S 8260B		10/10/98	MB		5710	5
Acrylonitrile		<5	ug/L	S 8260B		10/10/98	MB		5710	5
Benzene		2	ug/L	S 8260B		10/10/98	MB		5710	1
Carbon tetrachloride		<1	ug/L	S 8260B		10/10/98	MB		5710	1
Chlorobenzene		<1	ug/L	S 8260B		10/10/98	MB		5710	1
1,2-dichloroethane		<1	ug/L	S 8260B		10/10/98	MB		5710	1
1,1,2,2-tetrachloroethane		<1	ug/L	S 8260B		10/10/98	MB		5710	1
1,1,1-trichloroethane		<1	ug/L	S 8260B		10/10/98	MB		5710	1
1,1,2-trichloroethane		<1	ug/L	S 8260B		10/10/98	MB		5710	1
1,1,2-trichloroethylene		<1	ug/L	S 8260B		10/10/98	MB		5710	1
Chloroform		<1	ug/L	S 8260B		10/10/98	MB		5710	1
Dichlorobenzene		<2	ug/L	S 8260B		10/10/98	MB		5710	2
1,1-dichloroethylene		<1	ug/L	S 8260B		10/10/98	MB		5710	1
Dichloropropenes		<1	ug/L	S 8260B		10/10/98	MB		5710	1
Ethylbenzene		<1	ug/L	S 8260B		10/10/98	MB		5710	1
Bromodichloromethane		<1	ug/L	S 8260B		10/10/98	MB		5710	1
Bromomethane		<5	ug/L	S 8260B		10/10/98	MB		5710	5
Chloromethane		<1	ug/L	S 8260B		10/10/98	MB		5710	1
Dichlorodifluoromethane		<1	ug/L	S 8260B		10/10/98	MB		5710	1
Dichloromethane		<1	ug/L	S 8260B		10/10/98	MB		5710	1
Trichlorofluoromethane		<1	ug/L	S 8260B		10/10/98	MB		5710	1
Tetrachloroethylene		<1	ug/L	S 8260B		10/10/98	MB		5710	1
Toluene		<1	ug/L	S 8260B		10/10/98	MB		5710	1
Trichloroethylene		<1	ug/L	S 8260B		10/10/98	MB		5710	1
Vinyl chloride		<1	ug/L	S 8260B		10/10/98	MB		5710	1
m,p-xylene		<1	ug/L	S 8260B		10/10/98	MB		5710	1
o-xylene		<1	ug/L	S 8260B		10/10/98	MB		5710	1
1,1-dichloroethane		<1	ug/L	S 8260B		10/10/98	MB		5710	1
Ethylene dibromide		<1	ug/L	S 8260B		10/10/98	MB		5710	1
cis-1,2-dichloroethylene		<1	ug/L	S 8260B		10/10/98	MB		5710	1
trans-1,2-dichloroethylene		<1	ug/L	S 8260B		10/10/98	MB		5710	1
Methylene chloride		<5	ug/L	S 8260B		10/10/98	MB		5710	5
Surr. Dibromofluoromethane		103	%	S 8260B		10/10/98	MB		5710	71-132
Surr. Toluene-d8		100	%	S 8260B		10/10/98	MB		5710	82-124
Surr. 4-Bromofluorobenzene		102	%	S 8260B		10/10/98	MB		5710	76-126
Benzidine		<0.01	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.01
Pentachlorobenzene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
1,2,4,5-tetrachlorobenzene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Hexachloroethane		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001

Date: 10-20-98

Page # 7

Project Number: 19350

Project Name: Shell Tasker Road

Project Location: Hobbs, NM

Order ID Number: 9810000082

Sample Number: 109054

Sample Description: TMW-2

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
2,4-dichlorophenol		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.005
2,4,5-trichlorophenol		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.005
2,4,6-trichlorophenol		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.005
bis (2-chloroethyl) ether		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.005
bis (2-chloroisopropyl) ether		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.005
bis (chloromethyl) ether		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.005
3,3-dichlorobenzidine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.005
2,4-dinitrotoluene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Diphenylhydrazine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.005
Hexachlorobutadiene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Hexachlorocyclopentadiene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Isophorone		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.005
Nitrobenzene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
2,4-dinitro-o-cresol		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
2,4-dinitrophenols		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.005
i-nitrosodiethylamine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
N-nitrosodimethylamine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
N-nitrosodibutylamine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.005
N-nitrosodiphenylamine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
N-nitrosopyrrolidine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Pentachlorophenol		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.005
Phenol		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Dibutyl phthalate		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
bis(2-ethylhexyl) phthalate		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Diethyl phthalate		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Dimethyl phthalate		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Anthracene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Benzo(b)fluoranthene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Benzo(k)fluoranthene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Fluoranthene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Fluorene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Phenanthrene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Pyrene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Naphthalene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
1-methylnaphthalene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
2-methylnaphthalene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Benzo-a-pyrene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Surr. 2-Fluorophenol		10	%	S 8270C	10/7/98	10/9/98	DG	5358	5708	1-85
Surr. Phenol-d6		12	%	S 8270C	10/7/98	10/9/98	DG	5358	5708	0-82
Surr. Nitrobenzene-d5		56	%	S 8270C	10/7/98	10/9/98	DG	5358	5708	38-111
Surr. 2-Fluorobiphenyl		60	%	S 8270C	10/7/98	10/9/98	DG	5358	5708	38-103
Surr. 2,4,6-Tribromophenol		63	%	S 8270C	10/7/98	10/9/98	DG	5358	5708	1-127
Surr. Terphenyl-d14		63	%	S 8270C	10/7/98	10/9/98	DG	5358	5708	38-122

Date: 10-20-98

Page # 8

Project Number: 19350
 Project Name: Shell Tasker Road
 Project Location: Hobbs, NM

Order ID Number: 9810000082
 Sample Number: 109054

Sample Description: TMW-2

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<1.0	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	1.0
Chlordane		<2.5	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	2.5
DDT		<1.0	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	1.0
Dieldrin		<0.5	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	0.5
Endosulfan		<0.5	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	0.5
Endrin		<1.0	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	1.0
Heptachlor		<0.5	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	0.5
PCB's		<0.001	mg/L	S-8082	10/9/98	10/13/98	RC	5366	5670	0.001
Arsenic		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.10
Barium		0.26	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.10
Cadmium		<0.01	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.01
Chromium		<0.05	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.05
Lead		<0.05	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.05
Total Mercury		0.0006	mg/L	S 6010B	10/9/98	10/11/98	MS	5365	5725	0.0002
Selenium		<0.05	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.05
Silver		<0.05	mg/L	S 6010B	10/12/98	10/17/98	RR	5398	5795	0.05
Uranium		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.10
Copper		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.10
Iron		5.9	mg/L	S 6010B	10/12/98	10/18/98	RR	5398	5812	0.10
Manganese		0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.10
Zinc		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.10
Aluminum		10	mg/L	S 6010B	10/12/98	10/18/98	RR	5398	5812	0.10
Boron		0.44	mg/L	S 6010B	10/12/98	10/17/98	RR	5398	5795	0.10
Cobalt		<0.05	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.05
Molybdenum		<0.10	mg/L	S 6010B	10/12/98	10/18/98	RR	5398	5812	0.10
Nickel		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.10
Cyanide		<0.01	mg/L	SM 4500 C,E		10/9/98	SA		5699	0.01
Fluoride		1.5	mg/L	E 300.0		10/6/98	JS		5697	0.5
Nitrate		0.41	mg/L	SM 4500 NO3,E		10/9/98	JS		5706	0.10
Chloride		230	mg/L	E 300.0		10/6/98	JS		5697	2.5
Sulfate		51	mg/L	E 300.0		10/6/98	JS		5697	2.5
TDS		880	mg/L	E 160.1		10/5/98	RS		5680	---
pH		7.0	s.u.	E 150.1		10/3/98	SA		5670	---
TRPHC		<0.500	mg/L	E 418.1		10/20/98	MF	5342	5700	0.500
Total Phenols		0.1	mg/L	S 5530 A,D		10/15/98	RC		5787	0.01
Total Radium		3.93	pCi/L	E 901.1M		10/20/98	DC	---	---	---

Analytical Results Report

Jeff kindley / Sharon Hall
Philip Services Corp.
7904 IH 20 West
Midland, TX 79706

Date: 10-20-98
Page # 10

Project Number: 19350
Project Name: Shell Tasker Road
Project Location: Hobbs, NM

Order ID Number: 9810000082
Sample Number: 109056

Sample Description: TMW-3

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Acrolein		<5	ug/L	S 8260B		10/10/98	MB		5710	5
Acrylonitrile		<5	ug/L	S 8260B		10/10/98	MB		5710	5
Benzene		<1	ug/L	S 8260B		10/10/98	MB		5710	1
Carbon tetrachloride		<1	ug/L	S 8260B		10/10/98	MB		5710	1
Chlorobenzene		<1	ug/L	S 8260B		10/10/98	MB		5710	1
1,2-dichloroethane		<1	ug/L	S 8260B		10/10/98	MB		5710	1
1,1,2,2-tetrachloroethane		<1	ug/L	S 8260B		10/10/98	MB		5710	1
1,1,1-trichloroethane		<1	ug/L	S 8260B		10/10/98	MB		5710	1
1,1,2-trichloroethane		<1	ug/L	S 8260B		10/10/98	MB		5710	1
1,1,2-trichloroethylene		<1	ug/L	S 8260B		10/10/98	MB		5710	1
Chloroform		<1	ug/L	S 8260B		10/10/98	MB		5710	1
Dichlorobenzene		<2	ug/L	S 8260B		10/10/98	MB		5710	2
1,1-dichloroethylene		<1	ug/L	S 8260B		10/10/98	MB		5710	1
Dichloropropenes		<1	ug/L	S 8260B		10/10/98	MB		5710	1
Ethylbenzene		1	ug/L	S 8260B		10/10/98	MB		5710	1
Bromodichloromethane		<1	ug/L	S 8260B		10/10/98	MB		5710	1
Bromomethane		<5	ug/L	S 8260B		10/10/98	MB		5710	5
Chloromethane		<1	ug/L	S 8260B		10/10/98	MB		5710	1
Dichlorodifluoromethane		<1	ug/L	S 8260B		10/10/98	MB		5710	1
Dichloromethane		<1	ug/L	S 8260B		10/10/98	MB		5710	1
Trichlorofluoromethane		<1	ug/L	S 8260B		10/10/98	MB		5710	1
Tetrachloroethylene		<1	ug/L	S 8260B		10/10/98	MB		5710	1
Toluene		<1	ug/L	S 8260B		10/10/98	MB		5710	1
Trichloroethylene		<1	ug/L	S 8260B		10/10/98	MB		5710	1
Vinyl chloride		<1	ug/L	S 8260B		10/10/98	MB		5710	1
m,p-xylene		5	ug/L	S 8260B		10/10/98	MB		5710	1
o-xylene		2	ug/L	S 8260B		10/10/98	MB		5710	1
1,1-dichloroethane		<1	ug/L	S 8260B		10/10/98	MB		5710	1
Ethylene dibromide		<1	ug/L	S 8260B		10/10/98	MB		5710	1
cis-1,2-dichloroethylene		<1	ug/L	S 8260B		10/10/98	MB		5710	1
trans-1,2-dichloroethylene		<1	ug/L	S 8260B		10/10/98	MB		5710	1
Methylene chloride		<5	ug/L	S 8260B		10/10/98	MB		5710	5
Surr. Dibromofluoromethane		103	%	S 8260B		10/10/98	MB		5710	71-132
Surr. Toluene-d8		99	%	S 8260B		10/10/98	MB		5710	82-124
Surr. 4-Bromofluorobenzene		102	%	S 8260B		10/10/98	MB		5710	76-126
Benzidine		<0.01	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.01
Pentachlorobenzene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
1,2,4,5-tetrachlorobenzene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Hexachloroethane		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001

Date: 10-20-98

Page # 11

Project Number: 19350
 Project Name: Shell Tasker Road
 Project Location: Hobbs, NM

Order ID Number: 9810000082
 Sample Number: 109056

Sample Description: TMW-3

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
2,4-dichlorophenol		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.005
2,4,5-trichlorophenol		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.005
2,4,6-trichlorophenol		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.005
bis (2-chloroethyl) ether		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.005
bis (2-chloroisopropyl) ether		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.005
bis (chloromethyl) ether		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.005
3,3-dichlorobenzidine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.005
2,4-dinitrotoluene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Diphenylhydrazine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.005
Hexachlorobutadiene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Hexachlorocyclopentadiene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Isophorone		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.005
Nitrobenzene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
2,4-dinitro-o-cresol		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
2,4-dinitrophenols		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.005
i-nitrosodiethylamine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
N-nitrosodimethylamine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
N-nitrosodibutylamine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.005
N-nitrosodiphenylamine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
N-nitrosopyrrolidine		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Pentachlorophenol		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.005
Phenol		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Dibutyl phthalate		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
bis(2-ethylhexyl) phthalate		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Diethyl phthalate		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Dimethyl phthalate		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Anthracene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Benzo(b)fluoranthene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Benzo(k)fluoranthene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Fluoranthene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Fluorene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Phenanthrene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Pyrene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Naphthalene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
1-methylnaphthalene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
2-methylnaphthalene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Benzo-a-pyrene		<0.001	mg/L	S 8270C	10/7/98	10/9/98	DG	5358	5708	0.001
Surr. 2-Fluorophenol		33	%	S 8270C	10/7/98	10/9/98	DG	5358	5708	1-85
Surr. Phenol-d6		23	%	S 8270C	10/7/98	10/9/98	DG	5358	5708	0-82
Surr. Nitrobenzene-d5		66	%	S 8270C	10/7/98	10/9/98	DG	5358	5708	38-111
Surr. 2-Fluorobiphenyl		72	%	S 8270C	10/7/98	10/9/98	DG	5358	5708	38-103
Surr. 2,4,6-Tribromophenol		68	%	S 8270C	10/7/98	10/9/98	DG	5358	5708	1-127
Surr. Terphenyl-d14		60	%	S 8270C	10/7/98	10/9/98	DG	5358	5708	38-122

Project Number: 19350
 Project Name: Shell Tasker Road
 Project Location: Hobbs, NM

Date: 10-20-98
 Page # 12

Order ID Number: 9810000082
 Sample Number: 109056

Sample Description: TMW-3

Parameter	Flag	Result	Units	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	Run Batch #	Reporting Limit
Aldrin		<1.0	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	1.0
Chlordane		<2.5	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	2.5
DDT		<1.0	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	1.0
Dieldrin		<0.5	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	0.5
Endosulfan		<0.5	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	0.5
Endrin		<1.0	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	1.0
Heptachlor		<0.5	ug/L	S-8080	10/7/98	10/20/98	KC	---	---	0.5
PCB's		<0.001	ug/Kg	S 8082	10/9/98	10/13/98	RC	5366	5670	0.001
Arsenic		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.10
Barium		0.21	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.10
Cadmium		<0.01	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.01
Chromium		<0.05	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.05
Lead		<0.05	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.05
Total Mercury		0.0004	mg/L	S 6010B	10/9/98	10/11/98	MS	5365	5725	0.0002
Selenium		<0.05	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.05
Silver		<0.05	mg/L	S 6010B	10/12/98	10/17/98	RR	5398	5795	0.05
Uranium		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.10
Copper		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.10
Iron		9.0	mg/L	S 6010B	10/12/98	10/18/98	RR	5398	5812	0.10
Manganese		0.16	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.10
Zinc		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.10
Aluminum		15	mg/L	S 6010B	10/12/98	10/18/98	RR	5398	5812	0.10
Boron		0.33	mg/L	S 6010B	10/12/98	10/17/98	RR	5398	5795	0.10
Cobalt		<0.05	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.05
Molybdenum		<0.10	mg/L	S 6010B	10/12/98	10/18/98	RR	5398	5812	0.10
Nickel		<0.10	mg/L	S 6010B	10/12/98	10/15/98	RR	5398	5785	0.10
Cyanide		<0.01	mg/L	SM 4500 C,E		10/9/98	SA		5699	0.01
Fluoride		2.1	mg/L	E 300.0		10/6/98	JS		5697	0.5
Nitrate		1.03	mg/L	SM 4500 NO3,E		10/9/98	JS		5706	0.10
Chloride		150	mg/L	E 300.0		10/6/98	JS		5697	2.5
Sulfate		110	mg/L	E 300.0		10/6/98	JS		5697	2.5
TDS		930	mg/L	E 160.1		10/5/98	RS		5680	---
pH		6.9	s.u.	E 150.1		10/3/98	SA		5670	---
TRPHC		<0.500	mg/L	E 418.1		10/20/98	MF	5342	5700	0.500
Total Phenols		0.5	mg/L	S 5530 A,D		10/15/98	RC		5787	0.01
Total Radium		6.23	pCi/L	E 901.1M		10/20/98	DC	---	---	---

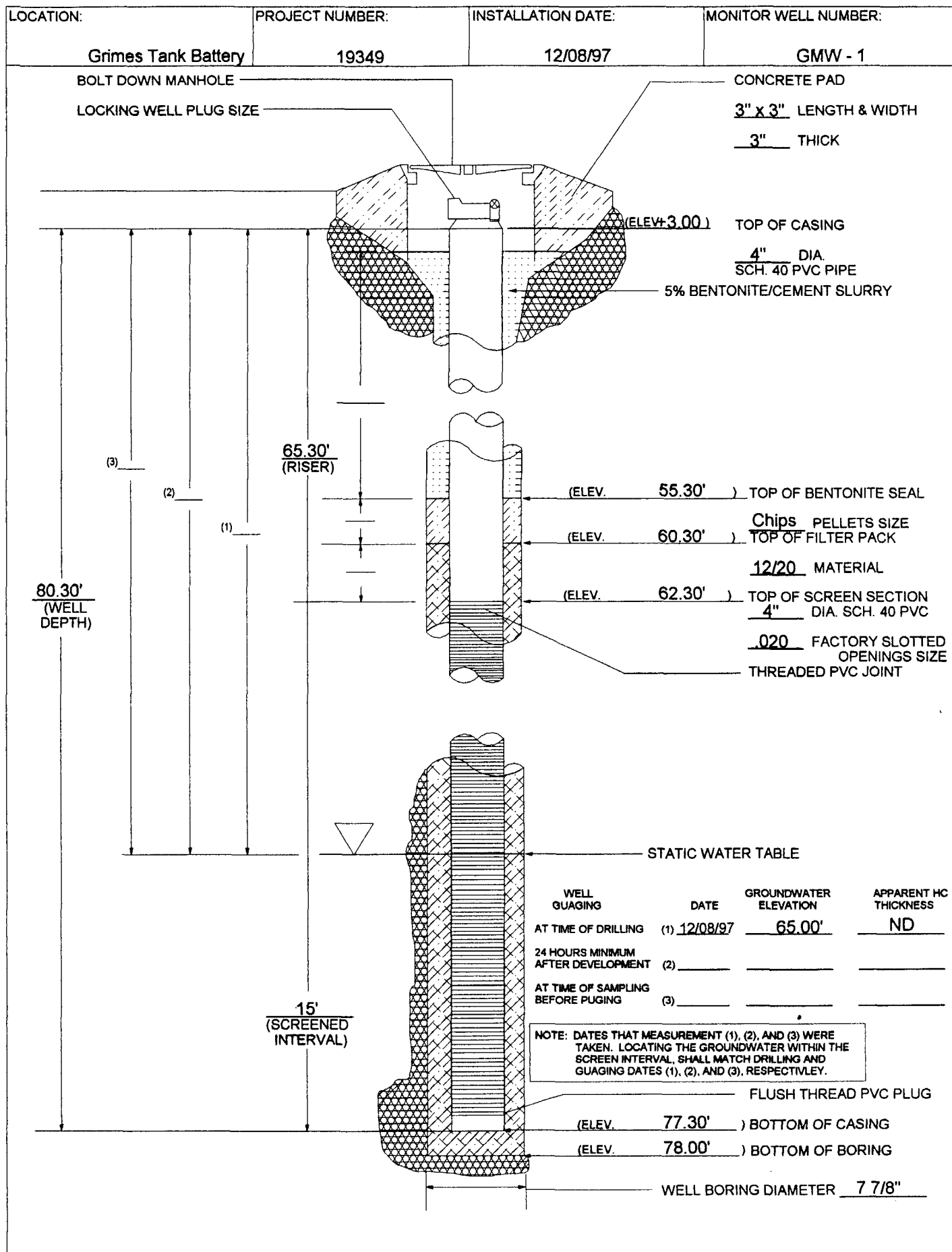
ARS Tracking Number: ARS-98-1002

Analysis Description	Analysis Result	Analysis Error ±2σ	Detection Limit	Analysis Units	Analysis Test Method	Analysis Date & Time	Analysis Technician
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Ra-228	3.22	0.84	1.54	pCi/L	EPA 904	10/20/98 2010	DC

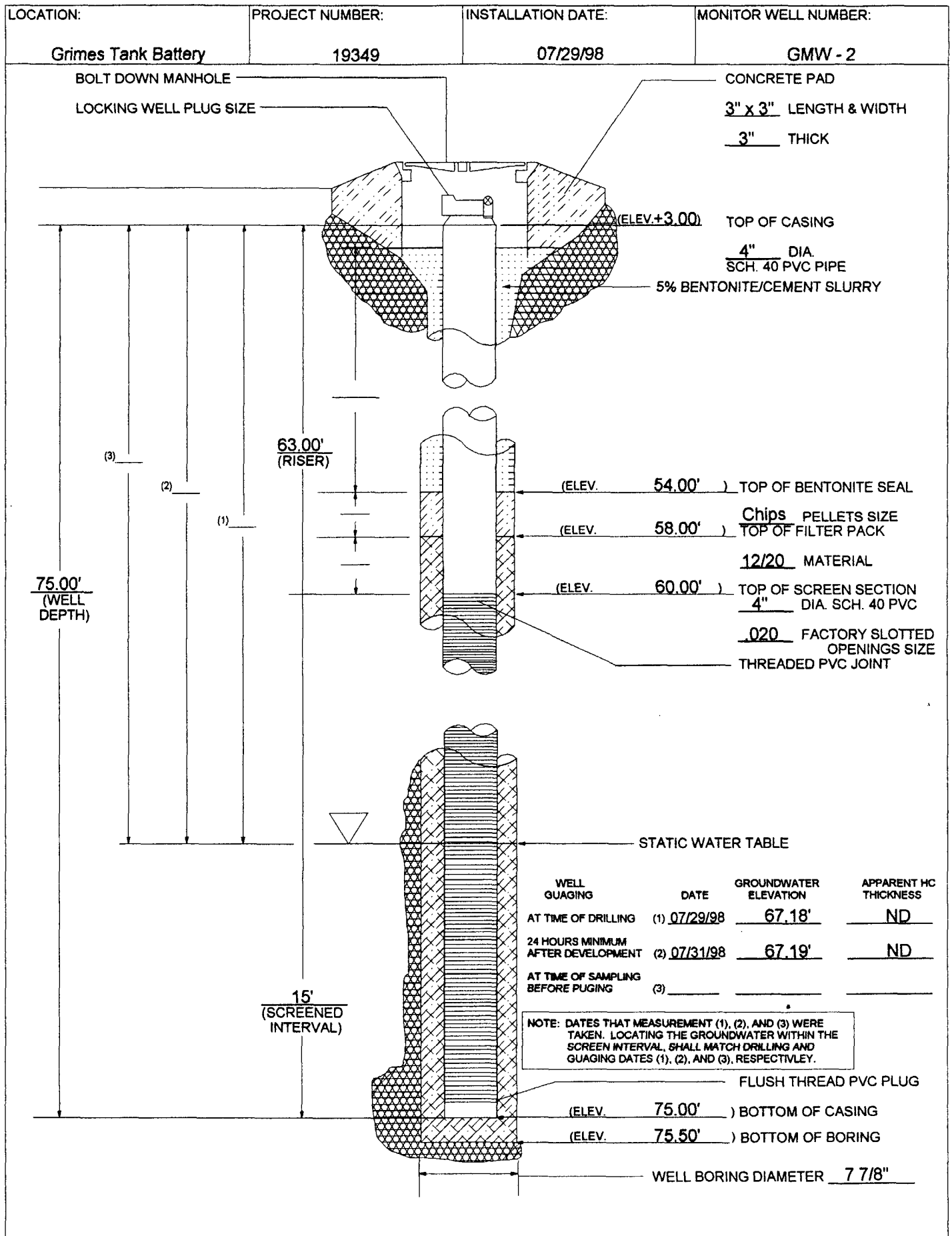
Appendix VI

Monitor Well Construction Diagrams

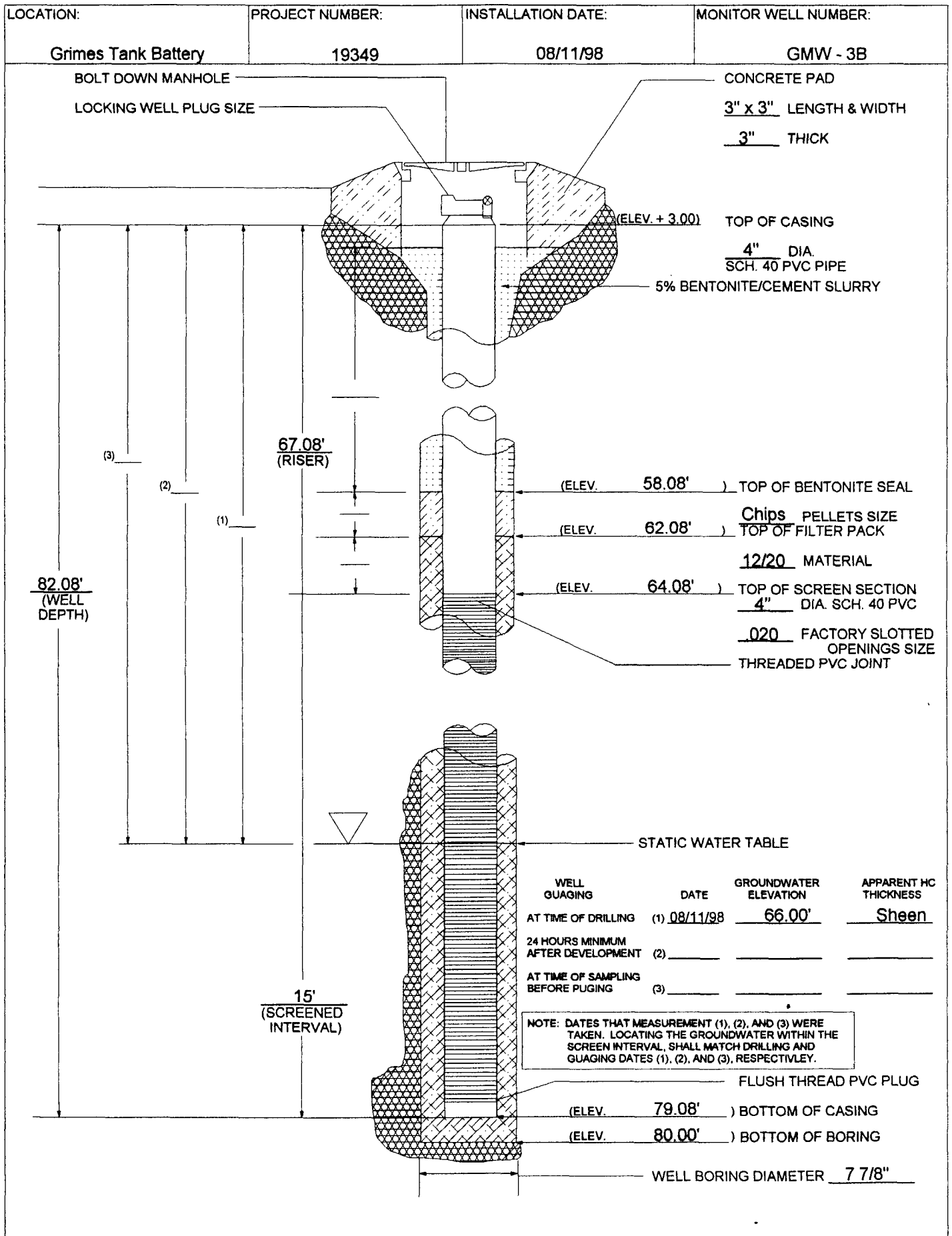
Monitor Well Installation Detail



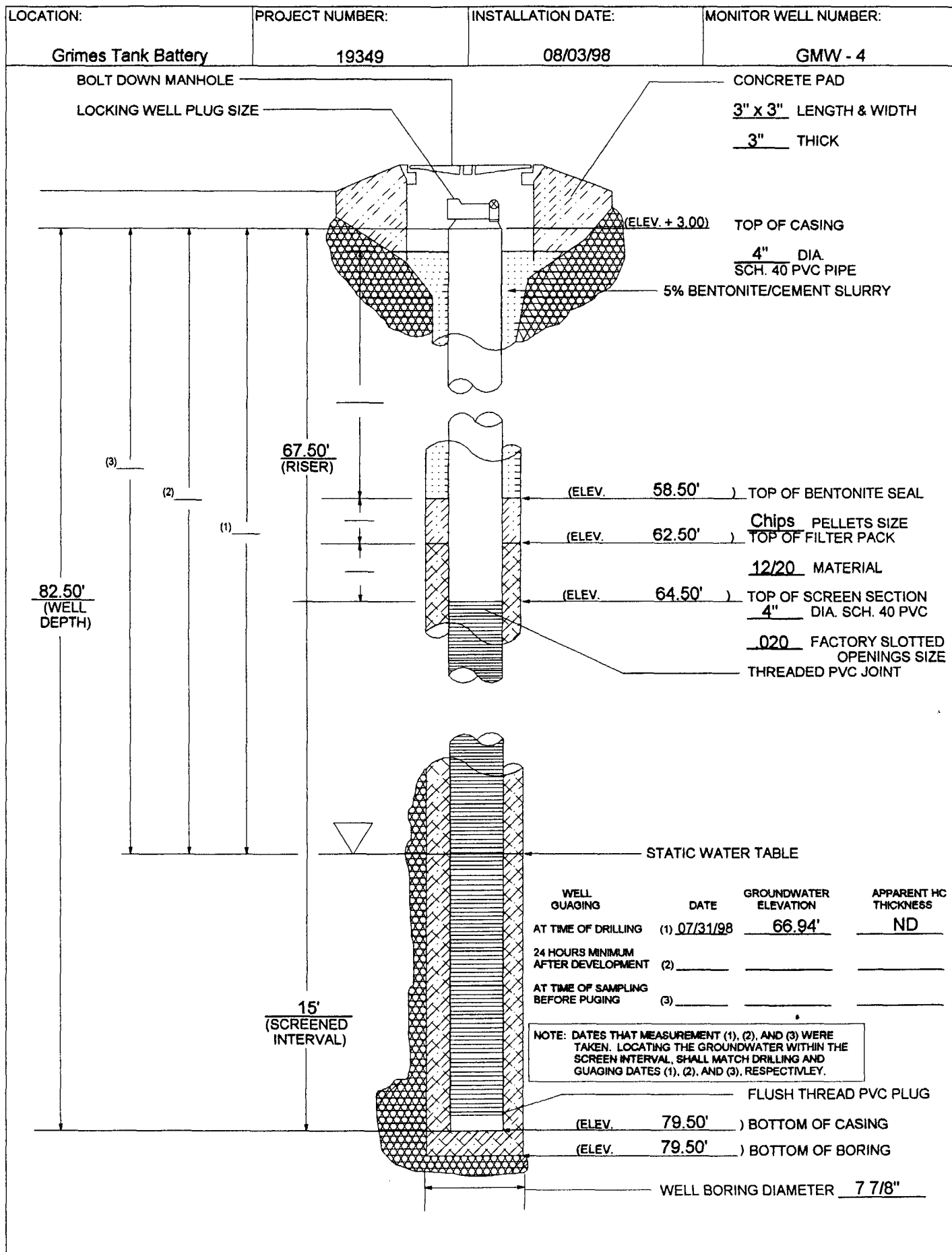
Monitor Well Installation Detail



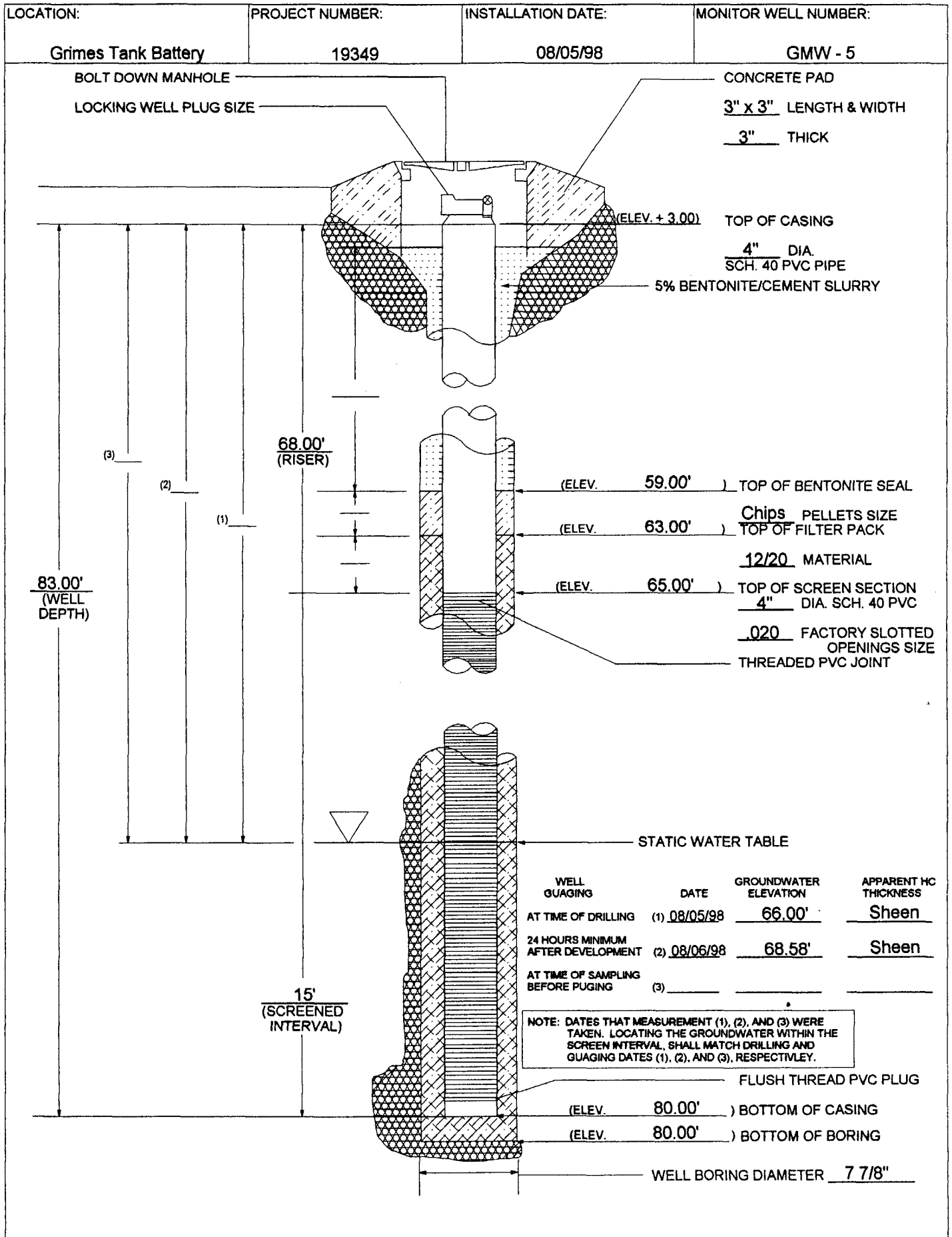
Monitor Well Installation Detail



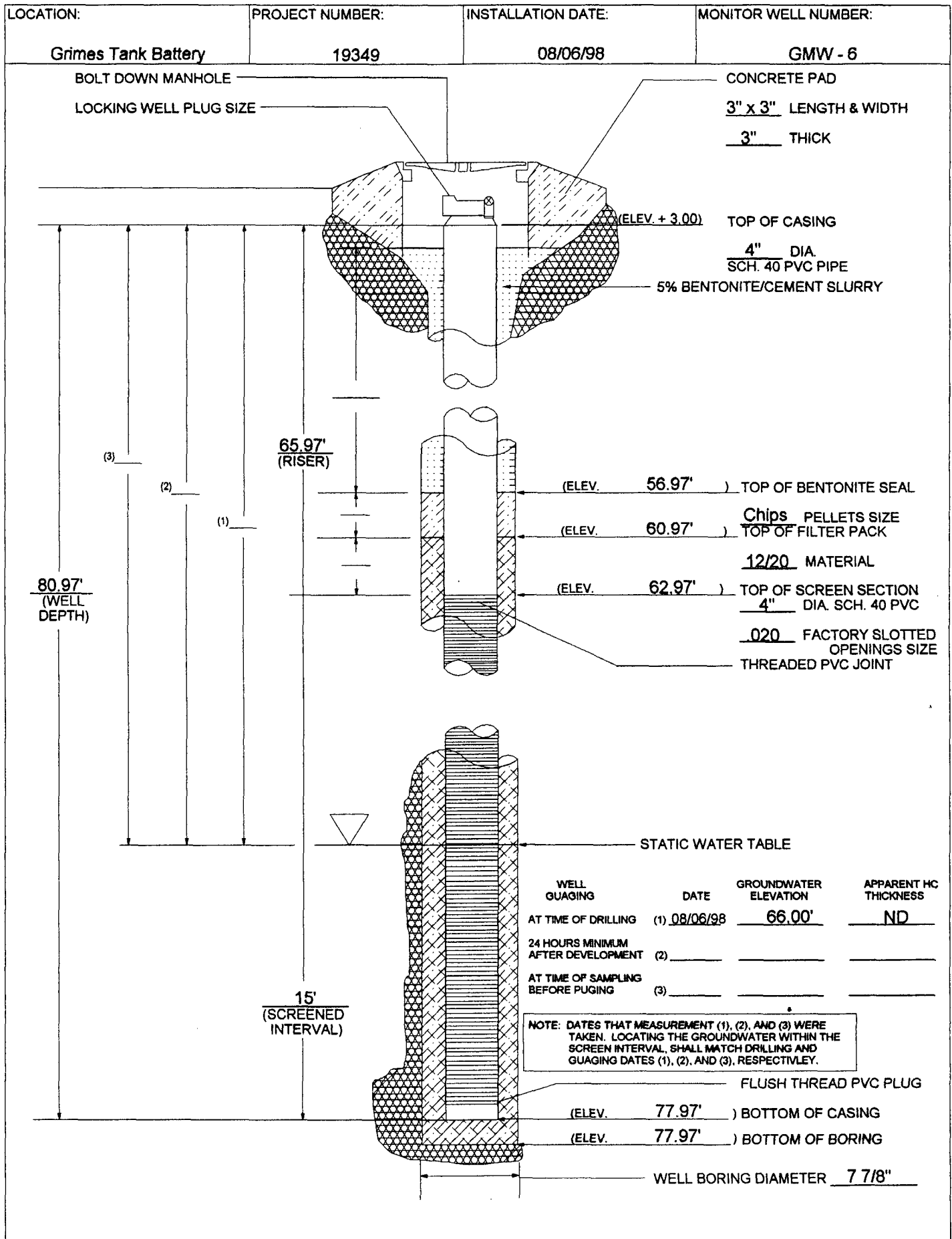
Monitor Well Installation Detail



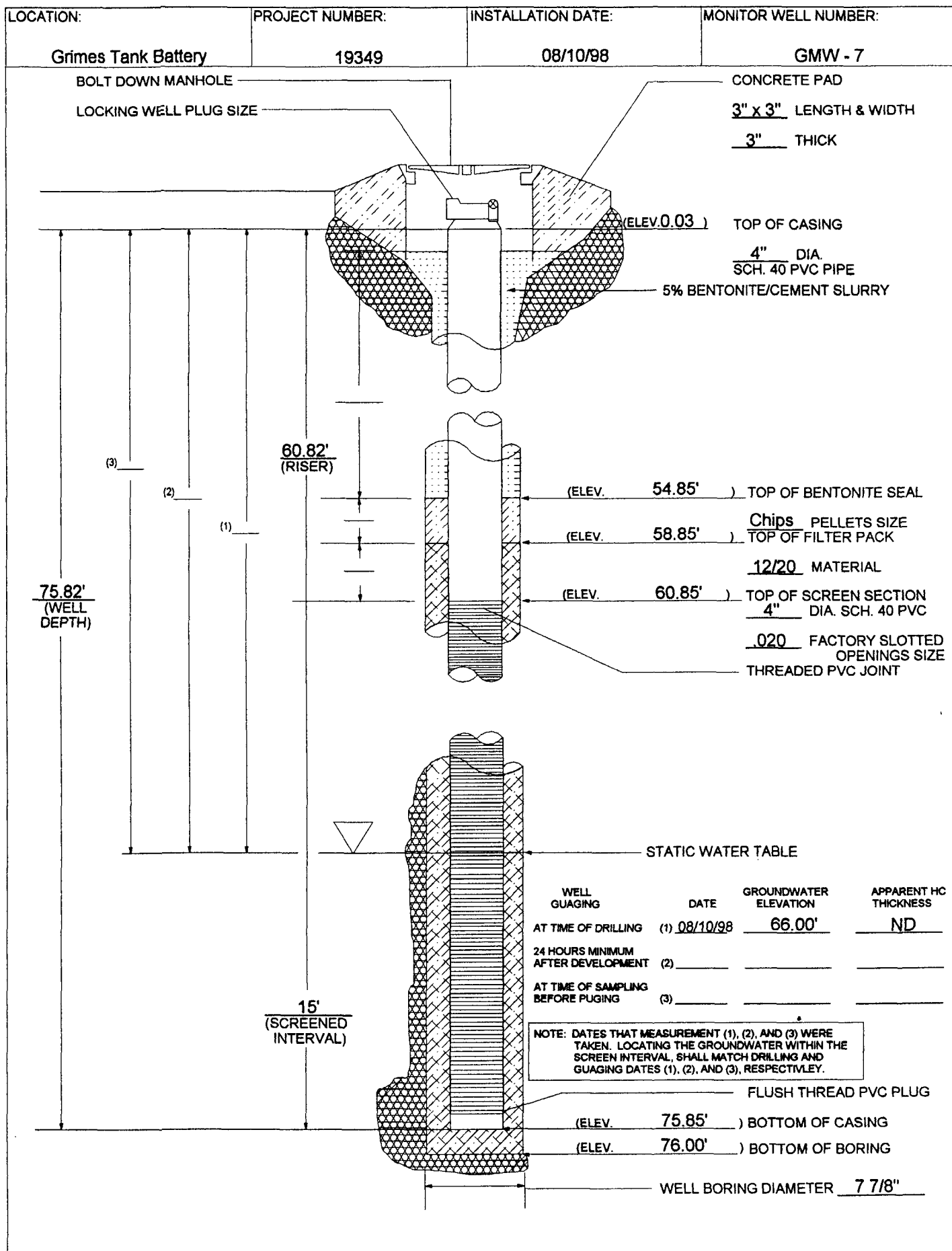
Monitor Well Installation Detail



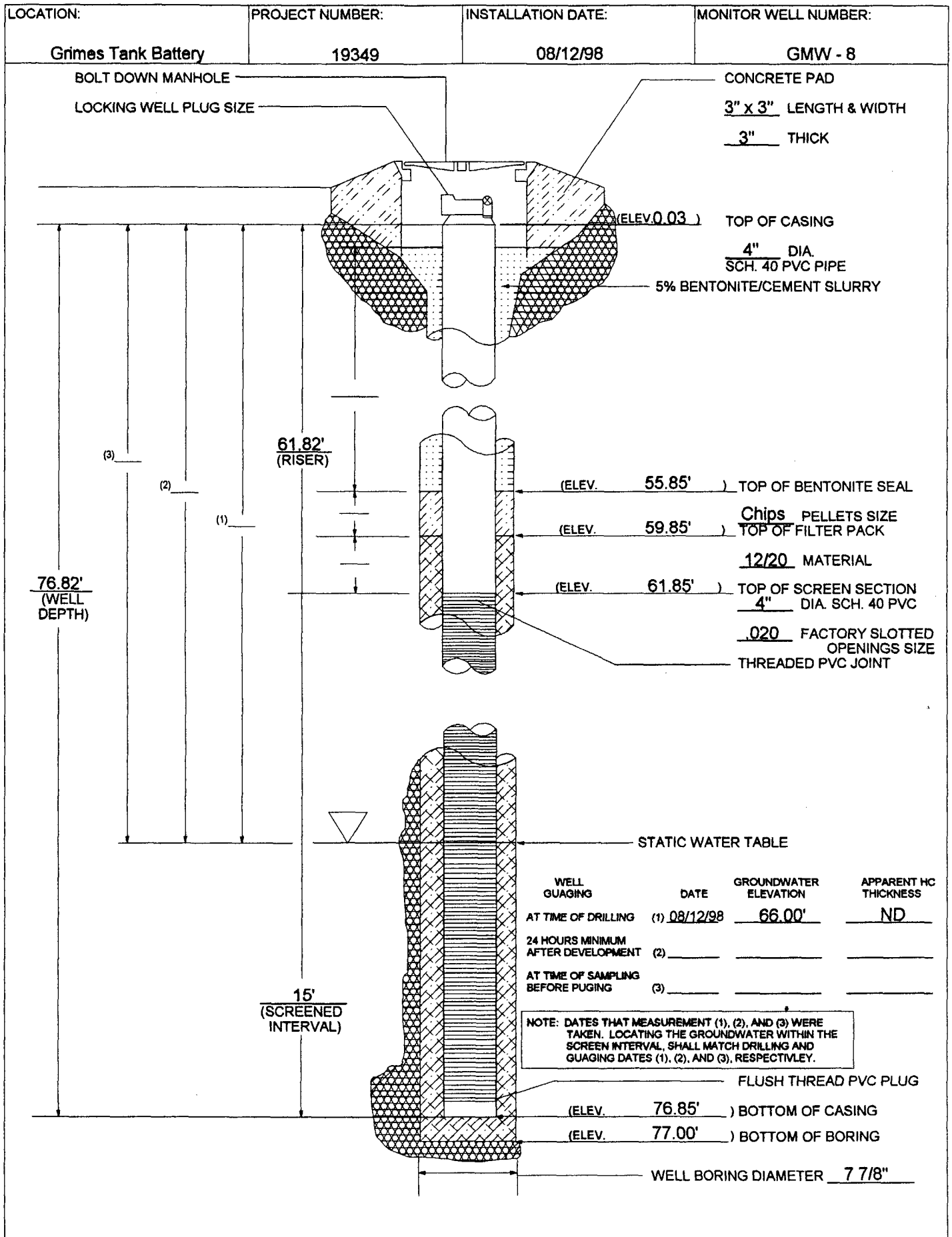
Monitor Well Installation Detail



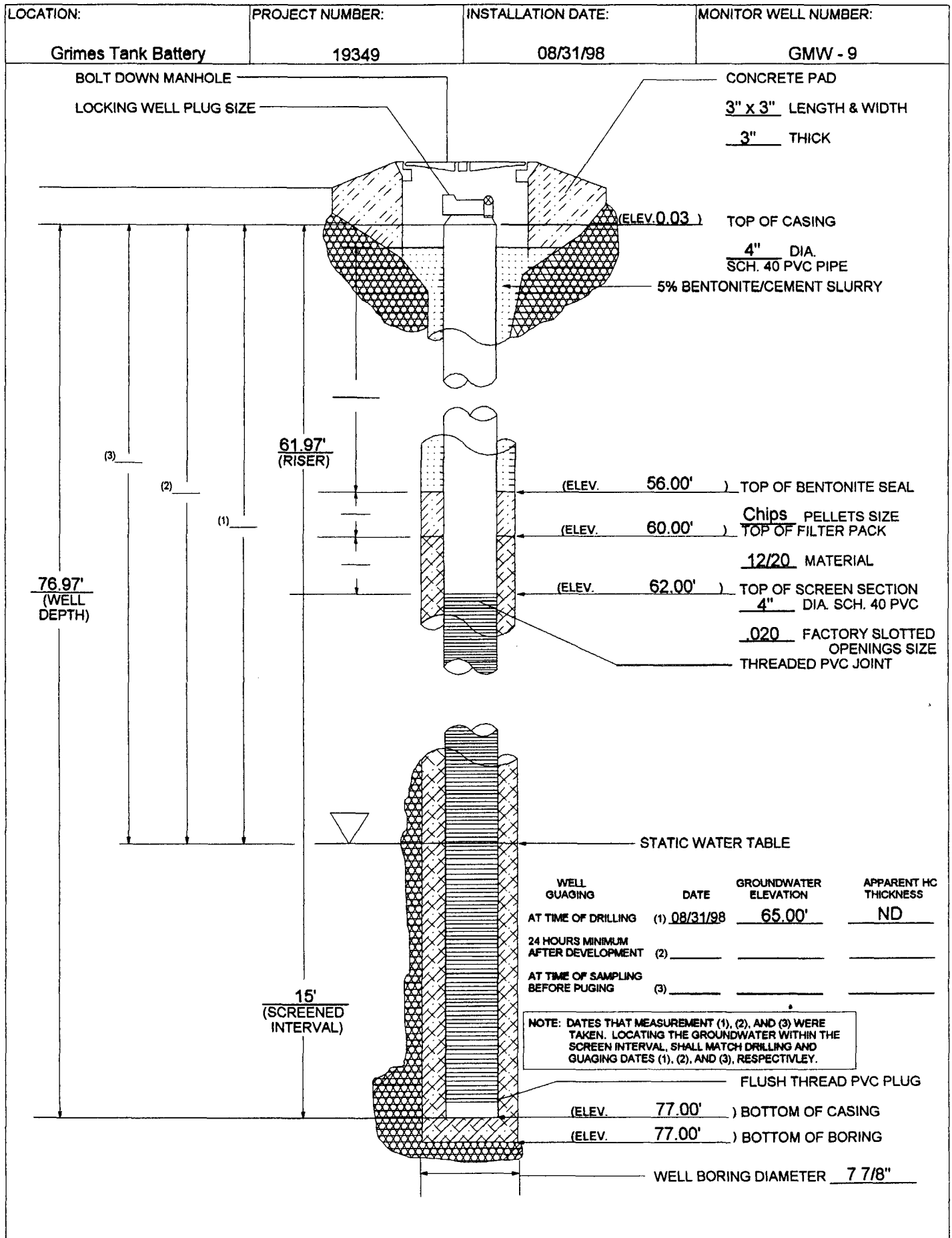
Monitor Well Installation Detail



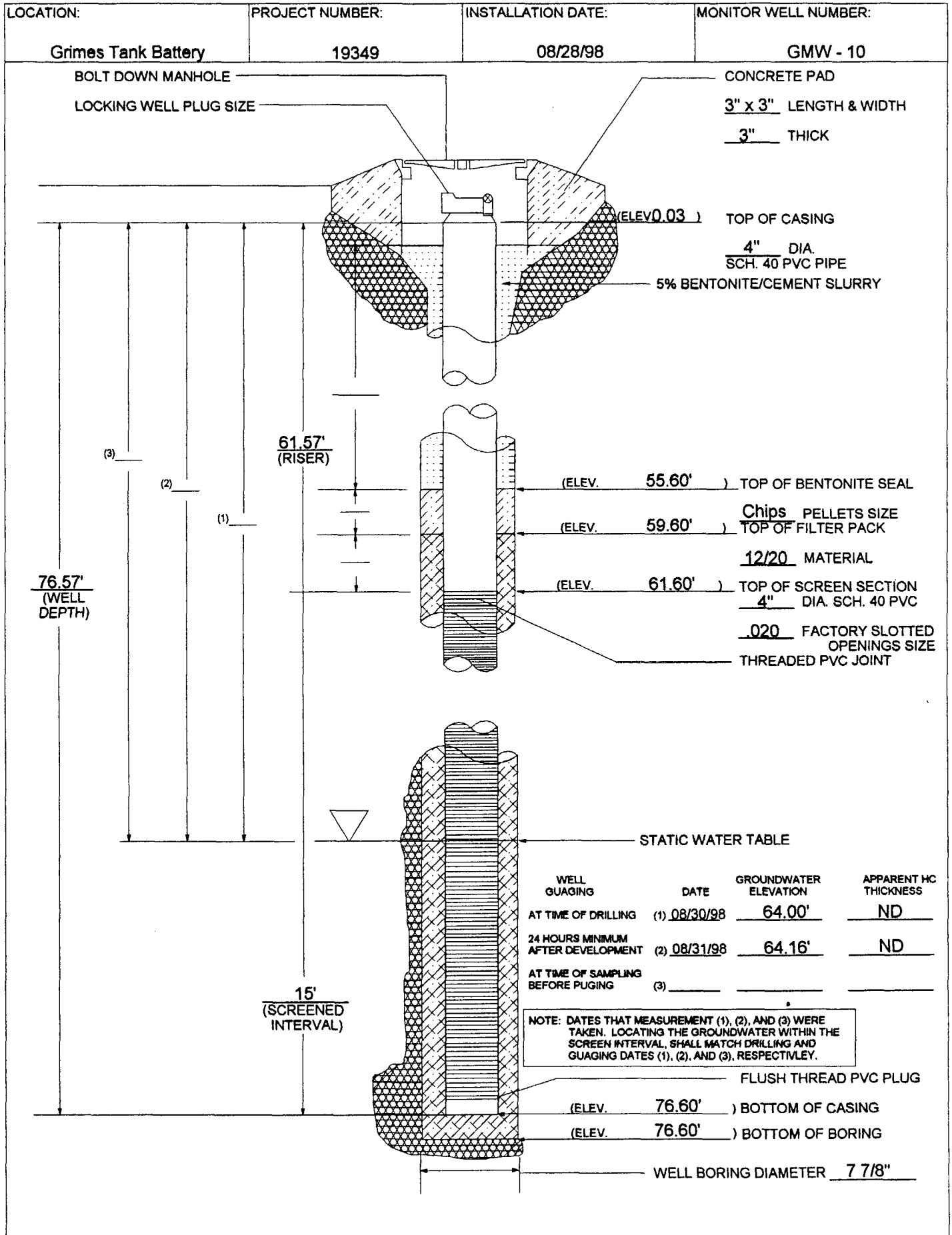
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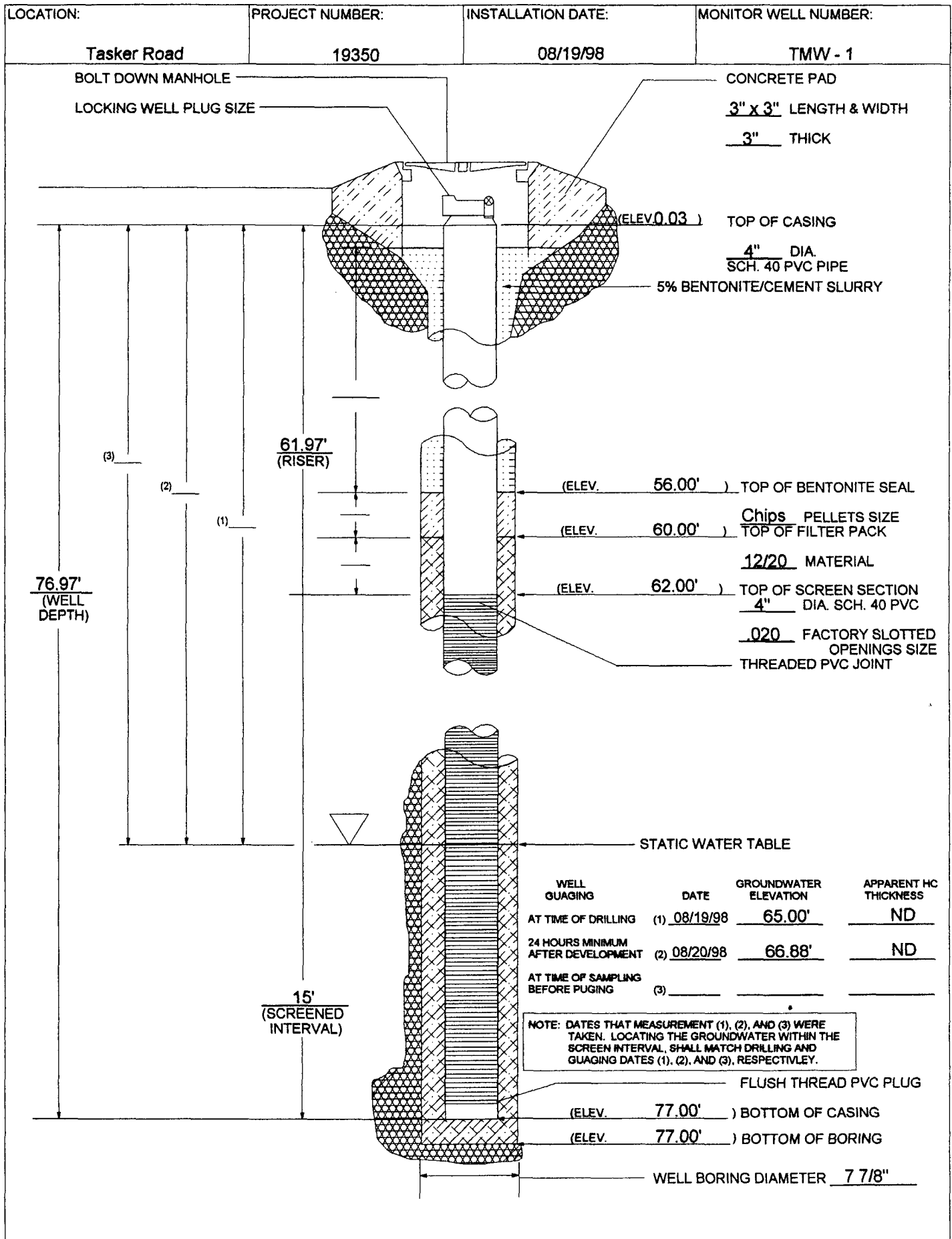
Monitor Well Installation Detail



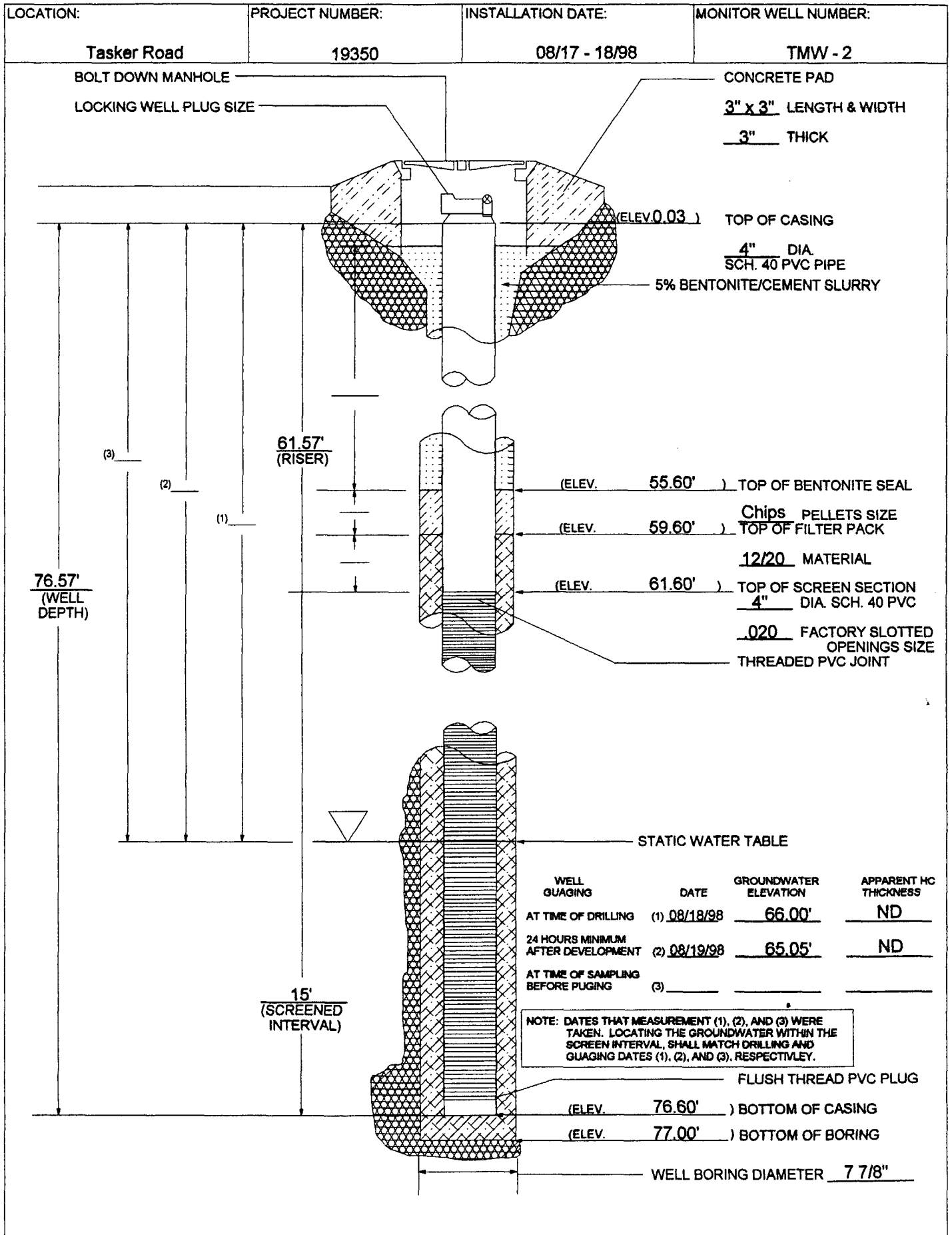
Monitor Well Installation Detail



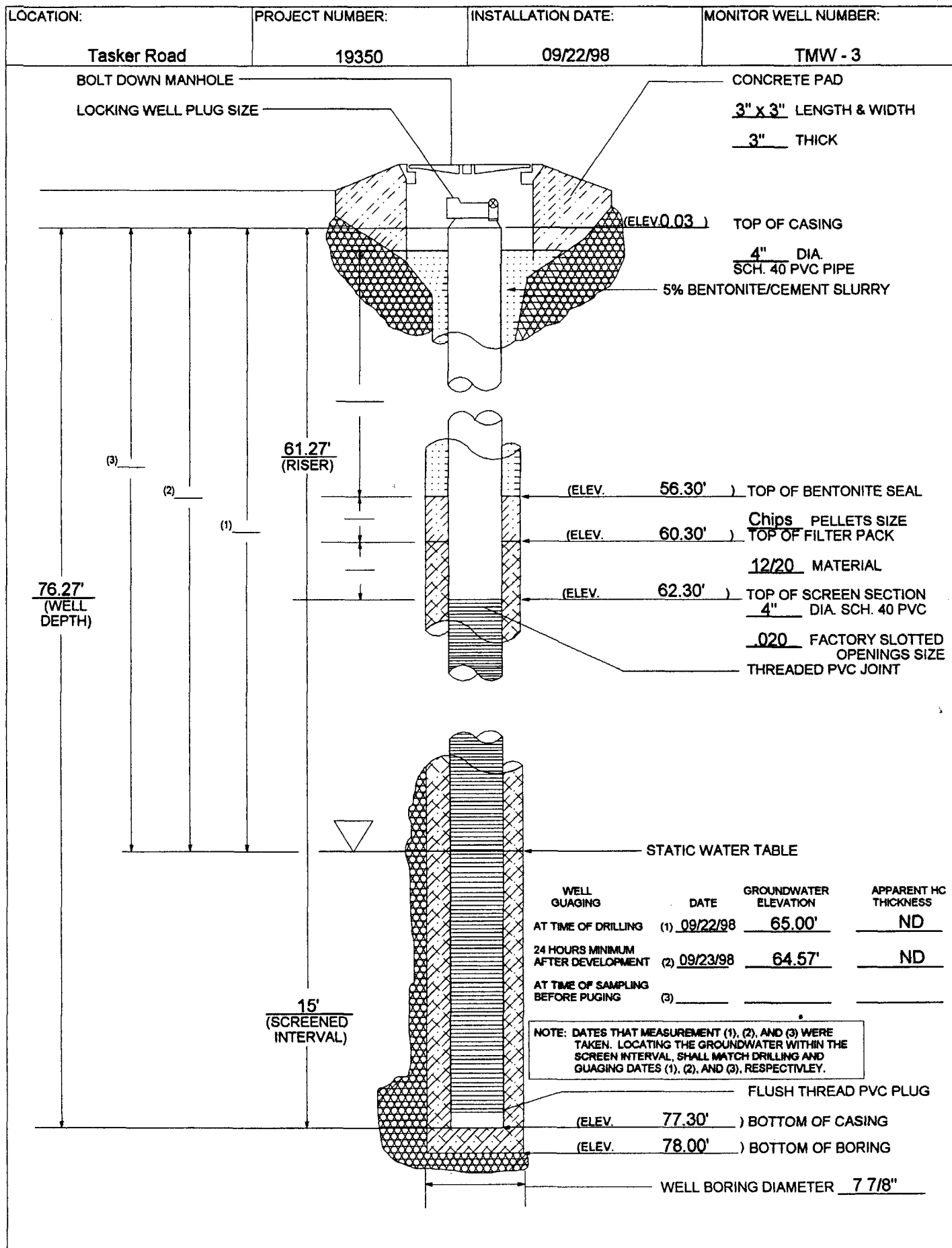
Monitor Well Installation Detail



Monitor Well Installation Detail



Monitor Well Installation Detail



Appendix VI

Monitor Well Construction Diagrams