AP - 002

STAGE 1 & 2 REPORTS

DATE:

JAN. 14, 1999

Shell E&P Technology Company
A Division of Shell Exploration & Production Company

Woodcreek
200 N Dairy Ashford
Houston, TX 77079

P.O. Box 576
Houston, TX 77001

January 14, 1999

Mr. Roger Anderson
Environmental Bureau Chief
New Mexico Oil Conservation Division
2040 S. Pacheco
Santa Fe, New Mexico 87505

Subject: Grimes Lease Stage I Interim Report; Response to New Mexico Oil Conservation Division (OCD) December 15, 1998 Letter

Dear Mr. Anderson,

Shell Exploration and Technology Company (Shell) respectfully submits this letter pursuant to your December 15, 1998, letter. As requested in your letter, Shell submits the following information:

A. Requested Information

1. Figure 14, Groundwater Potentiometric Map is attached and indicates that the groundwater gradient in the subject area is to the east.

2. Figure 15 (attached) shows soil gas survey locations where total petroleum hydrocarbons (TPH) were detected. Where detected, TPH concentration ranges are color-coded and concentrations are shown. Interpretations of analytical results of soil borings and groundwater investigations will be submitted in the final Stage I Report following additional work at the subject site.

3. a-d Figure 15 (discussed above in item A. 2) plots the results of the soil vapor survey.

4. Soil vapor sample locations SV-187, TSV-O, TSV-P, and TSV-Q have been included in Figure 5 (attached). Sample location SV-297 is actually sample location SV-187. SV-297 was a typographical error.

5. Analytical results for TSV-W are attached. Table 2 has been revised to include the missing sample point analytical results and will be submitted with the final Stage I Abatement Plan report as requested by OCD.

6. Sample depths for the "CSS" samples are 0-1 foot below ground surface. Sample depths are included in the attached Table 3.

7. The full suite of analytical sampling data for CSS #6 is included in the attached Table 3.

B. Additional Investigation Activities

1. Attached is Shell's vapor monitoring and contingency plan for OCD approval prior to excavation activities.

2. As requested by OCD, confirmation samples from the assessment areas defined in Task 2 and Task 3 of Shell's November 6, 1998, correspondence will be collected as discrete samples.

3. Soil samples will be field preserved with methanol.

4. All wastes generated during the investigation will be disposed of at an OCD approved facility.

5. As requested by OCD, Shell submits the following workplan for additional investigation. This workplan is based on discussions with OCD in our meeting January 7, 1999. The workplan to perform Tasks 1-5 was submitted to the OCD for approval on November 6, 1998 and approved in your letter dated December 15, 1998.

Task #1: Free Product Removal

Monitor well GMW-5 will be bailed daily for ten days to determine the recharge rate of free product hydrocarbons. Based on the ten-day free product recharge rate, a hydrocarbon recovery program will be implemented. The free product recovery will continue until the hydrocarbons are no longer measurable with a bailer or an electronic oil/water interface probe. The recovered product will be disposed of at an OCD approved disposal facility.

Task #2: North of Grimes Battery Assessment-Remediation

Shell proposes to assess and dispose of the soils containing organic constituents north of the former Grimes Battery as shown in Figure 1.

Three individual discrete soil samples will be collected prior to any assessment work. The samples will be selected from sample locations identified as representing highest observed organic constituent concentrations based on field observation (odor, visible staining, and PID readings). The samples will be submitted for total petroleum hydrocarbons (USEPA Method 418.1) and for compounds listed in 20 NMAC 6.2 3103 and 1101 laboratory analysis of these compounds will be performed using USEPA methods 8260, 8270, 8080, 8081A, 150.1, 160.1, 200.7, 245.1, 335.2, 340.2, and 353.3.

The assessment work will be done with a backhoe to determine the vertical and horizontal extent of organic constituents. Field backhoe assessment and excavation will

continue until no visible hydrocarbons and no PID readings are observed. Shell will do either a Risk Assessment or use OCD Guidelines for Remediation of Leaks, Spills, and Releases to determine the soil cleanup level. Once the visual and field measured extent of organic constituents have been removed with the backhoe, a confirmation soil sample will be taken. The confirmation sample will be taken from the same locations as the initial samples. The final laboratory chemical analyses will be compounds that were found in the initial samples.

Task #3: South of Grimes Battery Assessment-Remediation

Shell proposes to assess and dispose of the soils containing organic constituents south of the former Grimes Battery designated as Task Area #3.

Three individual discrete soil samples will be collected prior to any assessment work. The samples will be selected from sample locations identified as representing highest organic constituent concentrations based on field observation (odor, visible staining, and PID readings). The samples will be submitted for total petroleum hydrocarbons (USEPA Method 418.1), benzene, toluene, ethylbenzene, and xylenes (BTEX- USEPA methods 8260), chlorides (USEPA Method 200, and metals (USEPA Method 6010).

The assessment work will be done with a backhoe to determine the vertical and horizontal extent organic constituents. Field backhoe assessment and excavation will continue until no visible hydrocarbons and no PID readings are observed. Shell will do either a Risk Assessment or use OCD Guidelines for Remediation of Leaks, Spills, and Releases to determine the soil cleanup level. Once the visual and field measured extent of organic constituents has been removed with the backhoe, three confirmation soil samples will be collected.

The confirmation samples will be taken from the same locations as the initial samples. The final laboratory chemical analyses will be of those analyses that indicated the compounds were found in the initial samples.

Task #4: Casey Residence Assessment

At the Grimes Battery Site area, Shell proposes to drill three soil borings (GSB-12, GSB-13, & GSB-14) around and in the Casey home property in an attempt to delineate the eastern, southern, and northern edge of the material found at Grimes soil boring #7 (GSB-7) (Figure 1, Task Area #4).

The sampling protocol will consist of sampling every five feet until PID readings are zero with a minimum depth of 20 feet. Samples representing the highest PID reading and bottom of the boring will be submitted for total petroleum hydrocarbons (USEPA Method 418.1) and for compounds listed in 20 NMAC 6.2 3103 and 1101 laboratory analysis of these compounds will be performed using USEPA methods 8260, 8270, 8080, 8081A, 150.1, 160.1, 200.7, 245.1, 335.2, 340.2, and 353.3.

If field observations necessitate additional soil borings, we will commit to up to two additional soil borings in areas to be determined by the field activities. The same sampling protocols will be followed. Shell will obtain the property owner's permission prior to commencing these activities.

Task #5: East of Tasker Road Assessment

Shell proposes to drill one soil boring (TSB-14) approximately 20 feet east of TSB-13 in the front yard of 1328 Tasker (Figure 2, Task Area #5).

The sampling protocol will consist of sampling every five feet until PID readings are zero with a minimum depth of 20 feet. Samples representing the highest PID reading and bottom of the boring will be submitted for total petroleum hydrocarbons (USEPA Method 418.1) and for compounds listed in 20 NMAC 6.2 3103 and 1101 laboratory analysis of these compounds will be performed using USEPA methods 8260, 8270, 8080, 8081A, 150.1, 160.1, 200.7, 245.1, 335.2, 340.2, and 353.3.

If field observations necessitate additional soil borings, we will commit to up to two additional soil borings in areas to be determined by the field activities. The same sampling protocols will be followed. Shell will obtain the property owner's permission prior to commencing these activities.

Task #6: Southwest Area of Subject Property

Shell proposes the drilling and sampling of one soil boring in the area where TPH was detected by soil vapor analysis. The proposed sample location is between SV-24 and 239. Soils will be sampled at five-foot intervals and screened in the field for volatile organic constituents with a photoionization detector (PID). The borehole will be installed to a minimum depth of 20 feet below ground surface or until PID readings are zero. The sample exhibiting the highest PID reading and the sample collected at total depth of the borehole will be submitted for analysis for TPH using USEPA Method 418.1 for total petroleum hydrocarbons, BTEX- (USEPA method 8260), chlorides (USEPA Method 200,) and metals (USEPA Method 6010).

Prior to drilling, Shell will research the lease history of the subject site and locate the two Rice Engineering pipelines and one Shell line that are present in the subject area to identify if the elevated TPH concentrations are a result of activities not associated with Shell and/or the scope of work of the subject Stage I Abatement Plan.

Task #7: Southeast Area of Subject Property

Shell proposes conducting additional soil vapor survey activities in the area where TPH was detected by soil vapor analysis. The proposed soil vapor sample locations are sample point SV-111 and approximately 50 feet north, south, east, and west of SV-111. If organic constituents are detected, additional soil vapor samples will be collected to identify the horizontal extent of organic constituents. Based on the soil vapor analysis,

Shell will discuss with OCD to determine the need for a soil boring. The sampling protocol is described above in **Task #6**.

Task #8: Cobb Drive

Shell proposes conducting additional soil vapor survey activities in the area where TPH was detected by soil vapor analysis. The proposed soil vapor sample locations are sample point SV-164 and approximately 50 feet north, south, east, and west of SV-164. If organic constituents are detected, additional soil vapor samples will be collected to identify the horizontal extent of organic constituents. Based on the soil vapor analysis, Shell will discuss with OCD to determine the need for a soil boring. The sampling protocol is described above in **Tasks #6 and #7**.

Task #9: Cobb Drive

Shell proposes conducting additional soil vapor survey activities in the area where TPH was detected by soil vapor analysis. The proposed soil vapor sample locations are sample point SV-182 and approximately 50 feet north, south, east, and west of SV-182. If organic constituents are detected, additional soil vapor samples will be collected to identify the horizontal extent of organic constituents. Based on the soil vapor analysis, Shell will discuss with OCD to determine the need for a soil boring. The sampling protocol is described above in **Tasks #6- #8**.

Task #10: East of Tasker Road

Shell proposes conducting additional soil vapor survey activities in the area where TPH was detected by soil vapor analysis. The proposed soil vapor sample locations are sample point SV-187 and approximately 50 feet north, south, east, and west of SV-187. If organic constituents are detected, additional soil vapor samples will be collected to identify the horizontal extent of organic constituents. Based on the soil vapor analysis, Shell will discuss with OCD to determine the need for a soil boring. The sampling protocol is described above in **Tasks #6- #9**.

Task #11-Monitor Well GMW-9

Shell proposes the drilling and sampling of four soil borings in the area adjacent to GMW-9. The proposed sample locations are 50 feet north, south, east, and west of GMW-9. Soils will be sampled at five-foot intervals and screened in the field for volatile organic constituents with a photoionization detector (PID). The boreholes will be installed to a minimum depth of 20 feet below ground surface or until PID readings are zero. The sample exhibiting the highest PID reading and the sample collected at total depth of the borehole will be submitted for analysis for TPH using USEPA Method 418.1, BTEX (USEPA Method 8260), and metals (USEPA Method 6010).

Task #12- Delineation of Western Extent of Tasker Road Pit

Shell proposes the drilling and sampling of one soil boring approximately forty feet west of TSB-12. Soils will be sampled at five-foot intervals and screened in the field for volatile organic constituents with a photoionization detector (PID). The boreholes will be installed to a minimum depth of 20 feet below ground surface or until PID readings are zero. The sample exhibiting the highest PID reading and the sample collected at total depth of the borehole will be submitted for analysis for TPH using USEPA Method 418.1 and BTEX using USEPA Method 8260.

Task #13- Metals Background Samples

Three surface soil samples (0-1 feet below ground surface) will be collected and analyzed for metals using USEPA Method 6010 to identify a range of metal background concentrations in the subject area. The proposed sample locations are sections 6, 13, and 76 (**Figure 14**).

Task #14-Sampling of Monitor Wells

Shell will resample the thirteen existing monitor wells located at the subject site. A groundwater sample from each of the monitor wells will be collected and submitted for analysis for BTEX, phenol, polycyclic aromatic hydrocarbons (PAH), and metals using USEPA Methods 8260, 5520, 8270, and 6010, respectively. Based on the analytical results, additional monitor wells may be installed at a later date.

The work activities described above, if approved by OCD, will begin on February 1, 1999, and an Investigation Update Report will be submitted to OCD on April 15, 1999. If you have any questions, I may be reached at (281) 544-2322.

Sincerely,

Cliff P. Brunson /FOR

Wayne A. Hamilton
Retained Properties Manager

Performance Analytical Inc.
Air Quality Laboratory
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LABORATORY REPORT

Client:	BBC INTERNATIONAL, INC.	Date of Report:	09/22/98
Address:	1324 W. Marland Blvd.	Date Received:	08/24/98
	Hobbs, NM 88240	PAI Project No:	P9801474
Contact:	Mr. Cliff Brunson	Purchase Order:	Verbal

Client Project ID: Shell Tasker Site

One (1) Stainless Steel Summa Canister labeled: "TSV-W 6.5'"

The sample was received at the laboratory under chain of custody on August 24, 1998. The sample was received intact. The dates of analysis are indicated on the attached data sheets.

Volatile Organic Compound Analysis

The sample was analyzed by combined gas chromatography/mass spectrometry (GC/MS) for volatile organic compounds and tentatively identified compounds. The analyses were performed according to the methodology outlined in EPA Method TO-14 from the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, EPA 600/4-84-041, U.S. Environmental Protection Agency, Research Triangle Park, NC, April, 1984 and May, 1988. The analyses were performed by gas chromatography/mass spectrometry, utilizing a direct cryogenic trapping technique. The analytical system used was comprised of a Hewlett Packard Model 5989 GC/MS/DS interfaced to an Entech 7000 automated whole air inlet system/cryogenic concentrator. A 100% Dimethylpolysiloxane capillary column (RT_x-1, Restek Corporation, Bellefonte, PA) was used to achieve chromatographic separation.

The results of analyses are given on the attached data summary sheets.

Data Release Authorization:

Christopher Casteel
Manager of Technical Operations

Reviewed and Approved:

Michael Tuday
Laboratory Director

Performance Analytical Inc.
Air Quality Laboratory
A Division of Columbia Analytical Services, Inc.
An Employee Owned Company

RESULTS OF ANALYSIS

Client : BBC International, Inc.

Client Sample ID : TSV-W 6.5'
PAI Sample ID : P9801474-001

Test Code : GC/MS EPA TO-14
Analyst : Chris Casteel
Instrument : HP 5989A/Entech 7000
Matrix : Summa Canister

Date Sampled : 8/19/98
Date Received : 8/24/98
Date Analyzed : 8/29/98
Volume(s) Analyzed : 0.000250 Liter(s)

Pi l = -2.2
Pf l = 3.0
D.F. = 1.42

CAS #	COMPOUND	RESULT µg/M^3	REPORTING LIMIT µg/M^3	RESULT ppb	REPORTING LIMIT ppb
74-87-3	Chloromethane	ND	4,000	ND	2,000
75-01-4	Vinyl Chloride	ND	4,000	ND	1,600
75-00-3	Chloroethane	ND	4,000	ND	1,500
74-83-9	Bromomethane	ND	4,000	ND	1,000
67-64-1	Acetone	ND	4,000	ND	1,700
75-69-4	Trichlorofluoromethane	ND	4,000	ND	720
75-35-4	1,1-Dichloroethene	ND	4,000	ND	1,000
75-09-2	Methylene chloride	ND	4,000	ND	1,200
75-15-0	Carbon Disulfide	ND	4,000	ND	1,300
76-13-1	Trichlorotrifluoroethane	ND	4,000	ND	530
156-60-5	trans-1,2-Dichloroethene	ND	4,000	ND	1,000
156-59-2	cis-1,2-Dichloroethene	ND	4,000	ND	1,000
75-34-3	1,1-Dichloroethane	ND	4,000	ND	1,000
1634-04-4	Methyl tert-Butyl Ether	ND	4,000	ND	1,100
108-05-4	Vinyl Acetate	ND	4,000	ND	1,100
78-93-3	2-Butanone	ND	4,000	ND	1,400
67-66-3	Chloroform	ND	4,000	ND	830
107-06-2	1,2-Dichloroethane	ND	4,000	ND	1,000
71-55-6	1,1,1-Trichloroethane	ND	4,000	ND	740
71-43-2	Benzene	ND	4,000	ND	1,300
56-23-5	Carbon Tetrachloride	ND	4,000	ND	640
78-87-5	1,2-Dichloropropane	ND	4,000	ND	870

TR = Detected Below Indicated Reporting Limit
ND = Not Detected

Verified by : RG

Date : 9/2/98

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RESULTS OF ANALYSIS

Client : BBC International, Inc.

Client Sample ID : N/A
PAI Sample ID : Method Blank

Test Code : GC/MS EPA TO-14
Analyst : Chris Casteel
Instrument : HP 5989A/Entech 7000
Matrix : Summa Canister

Date Sampled : N/A
Date Received : N/A
Date Analyzed : 8/29/98
Volume(s) Analyzed : 1.000 Liter(s)

Pi l = 0.0
Pf l = 0.0

D.F. = 1.00

CAS #	COMPOUND	RESULT µg/M^3	REPORTING LIMIT µg/M^3	RESULT ppb	REPORTING LIMIT ppb
75-27-4	Bromodichloromethane	ND	1.0	ND	0.15
79-01-6	Trichloroethene	ND	1.0	ND	0.19
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ND	0.22
108-10-1	4-Methyl-2-pentanone	ND	1.0	ND	0.24
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ND	0.22
79-00-5	1,1,2-Trichloroethane	ND	1.0	ND	0.19
108-88-3	Toluene	ND	1.0	ND	0.27
124-48-1	Dibromochloromethane	ND	1.0	ND	0.12
591-78-6	2-Hexanone	ND	1.0	ND	0.24
106-93-4	1,2-Dibromoethane	ND	1.0	ND	0.13
127-18-4	Tetrachloroethene	ND	1.0	ND	0.15
108-90-7	Chlorobenzene	ND	1.0	ND	0.22
100-41-4	Ethylbenzene	ND	1.0	ND	0.23
75-25-2	Bromoform	ND	1.0	ND	0.10
100-42-5	Styrene	ND	1.0	ND	0.24
1330-20-7	m,p-Xylenes	ND	1.0	ND	0.23
95-47-6	o-Xylene	ND	1.0	ND	0.23
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ND	0.15
541-73-1	1,3-Dichlorobenzene	ND	1.0	ND	0.17
106-46-7	1,4-Dichlorobenzene	ND	1.0	ND	0.17
95-50-1	1,2-Dichlorobenzene	ND	1.0	ND	0.17

TR = Detected Below Indicated Reporting Limit
ND = Not Detected

Verified by : RC

Date : 9/2/98

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RESULTS OF ANALYSIS
(Tentatively Identified Compounds)

Client : BBC International, Inc.

Client Sample ID : TSV-W 6.5'
PAI Sample ID : P9801474-001

Test Code : GC/MS EPA TO-14
Analyst : Chris Casteel
Instrument : HP 5989A/Entech 7000
Matrix : Summa Canister

Date Sampled : 8/19/98
Date Received : 8/24/98
Date Analyzed : 8/29/98
Volume(s) Analyzed : 0.000250 Liter(s)

Pi 1 = -2.2
Pf 1 = 3.0
D.F. = 1.42

Time	COMPOUND	ESTIMATED CONCENTRATION $\mu g/M^3$
14.93	3-Methylhexane	200,000
15.55	Dimethylcyclopentane	300,000
16.93	Methylcyclohexane	900,000
17.56	Trimethylcyclopentane	200,000
17.85	Trimethylcyclopentane	200,000
18.34	2-Methylheptane	300,000
18.64	3-Methylheptane	200,000
19.05	Dimethylcyclohexane	300,000
19.56	Octane	200,000
19.85	Dimethylcyclohexane	200,000
20.64	C9 Branched Alkane	200,000
21.08	Ethylcyclohexane	300,000
21.27	Trimethylcyclohexane	200,000
21.84	C9 Branched Alkane	200,000
22.10	3-Methyloctane	200,000

Verified by : RC

Date : 9/2/98

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RESULTS OF ANALYSIS

Client : BBC International, Inc.

Client Sample ID : N/A
PAI Sample ID : Method Blank

Test Code : GC/MS EPA TO-14
Analyst : Chris Casteel
Instrument : HP 5989A/Entech 7000
Matrix : Summa Canister

Date Sampled : N/A
Date Received : N/A
Date Analyzed : 8/29/98
Volume(s) Analyzed : 1.000 Liter(s)

Pi 1 = 0.0
Pf 1 = 0.0

D.F. = 1.00

CAS #	COMPOUND	RESULT µg/M³	REPORTING LIMIT µg/M³	RESULT ppb	REPORTING LIMIT ppb
74-87-3	Chloromethane	ND	1.0	ND	0.49
75-01-4	Vinyl Chloride	ND	1.0	ND	0.39
75-00-3	Chloroethane	ND	1.0	ND	0.38
74-83-9	Bromomethane	ND	1.0	ND	0.26
67-64-1	Acetone	ND	1.0	ND	0.42
75-69-4	Trichlorofluoromethane	ND	1.0	ND	0.18
75-35-4	1,1-Dichloroethene	ND	1.0	ND	0.25
75-09-2	Methylene chloride	ND	1.0	ND	0.29
75-15-0	Carbon Disulfide	ND	1.0	ND	0.32
76-13-1	Trichlorotrifluoroethane	ND	1.0	ND	0.13
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ND	0.25
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ND	0.25
75-34-3	1,1-Dichloroethane	ND	1.0	ND	0.25
1634-04-4	Methyl tert-Butyl Ether	ND	1.0	ND	0.28
108-05-4	Vinyl Acetate	ND	1.0	ND	0.28
78-93-3	2-Butanone	ND	1.0	ND	0.34
67-66-3	Chloroform	ND	1.0	ND	0.21
107-06-2	1,2-Dichloroethane	ND	1.0	ND	0.25
71-55-6	1,1,1-Trichloroethane	ND	1.0	ND	0.19
71-43-2	Benzene	ND	1.0	ND	0.31
56-23-5	Carbon Tetrachloride	ND	1.0	ND	0.16
78-87-5	1,2-Dichloropropane	ND	1.0	ND	0.22

TR = Detected Below Indicated Reporting Limit
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RESULTS OF ANALYSIS

Client : BBC International, Inc.

Client Sample ID : N/A
PAI Sample ID : Method Blank

Test Code : GC/MS EPA TO-14
Analyst : Chris Casteel
Instrument : HP 5989A/Entech 7000
Matrix : Summa Canister

Date Sampled : N/A
Date Received : N/A
Date Analyzed : 8/29/98
Volume(s) Analyzed : 1.000 Liter(s)

Pi l = 0.0
Pf l = 0.0

D.F. = 1.00

CAS #	COMPOUND	RESULT µg/M^3	REPORTING LIMIT µg/M^3	RESULT ppb	REPORTING LIMIT ppb
75-27-4	Bromodichloromethane	ND	1.0	ND	0.15
79-01-6	Trichloroethene	ND	1.0	ND	0.19
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ND	0.22
108-10-1	4-Methyl-2-pentanone	ND	1.0	ND	0.24
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ND	0.22
79-00-5	1,1,2-Trichloroethane	ND	1.0	ND	0.19
108-88-3	Toluene	ND	1.0	ND	0.27
124-48-1	Dibromochloromethane	ND	1.0	ND	0.12
591-78-6	2-Hexanone	ND	1.0	ND	0.24
106-93-4	1,2-Dibromoethane	ND	1.0	ND	0.13
127-18-4	Tetrachloroethene	ND	1.0	ND	0.15
108-90-7	Chlorobenzene	ND	1.0	ND	0.22
100-41-4	Ethylbenzene	ND	1.0	ND	0.23
75-25-2	Bromoform	ND	1.0	ND	0.10
100-42-5	Styrene	ND	1.0	ND	0.24
1330-20-7	m,p-Xylenes	ND	1.0	ND	0.23
95-47-6	o-Xylene	ND	1.0	ND	0.23
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ND	0.15
541-73-1	1,3-Dichlorobenzene	ND	1.0	ND	0.17
106-46-7	1,4-Dichlorobenzene	ND	1.0	ND	0.17
95-50-1	1,2-Dichlorobenzene	ND	1.0	ND	0.17

TR = Detected Below Indicated Reporting Limit
ND = Not Detected

Verified by : RG

Date : 9/2/98

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RESULTS OF ANALYSIS
(Tentatively Identified Compounds)

Client : BBC International, Inc.

Client Sample ID : N/A
PAI Sample ID : Method Blank

Test Code :	GC/MS EPA TO-14	Date Sampled :	N/A
Analyst :	Chris Casteel	Date Received :	N/A
Instrument :	HP 5989A/Entech 7000	Date Analyzed :	8/29/98
Matrix :	Summa Canister	Volume(s) Analyzed :	1.000 Liter(s)

Pi 1 = 0.0
Pf 1 = 0.0 D.F. = 1.00

Time	COMPOUND	ESTIMATED CONCENTRATION $\mu g/M^3$
N/A	No Compounds Detected	N/A

Verified by : RC

Date : 9/2/98

Performance Analytical Inc.

Air Quality Laboratory
A Division of Columbia Analytical Services, Inc.
An Employee Owned Company

2665 Park Center Drive, Suite D
Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

Chain of Custody Record
Analytical Services Request

Client / Address: BBC INTERNATIONAL, Inc. 1324 W. MARLAND P.O. BOX 297 HOBBS, NM 88241	Phone: (505) ~~397-0397~~ 3976388 Fax 397-0397	ANALYSES	PAI Project No. 9901474
Client Project Name / Location: Shell Tasker Sit, Hobbs, N.M.	Client Project No.		
Contact: CLIFF BRUNSON	Sampler (Signature):	P. O. No.: Verbal - Cliff	

Client Sample ID	Date Collected	Time Collected	Lab Sample No.	Type of Sample	Container ID (Serial#)	Regulator ID (Serial#)	EPA TO-14 TIC	Expected Turnaround Time	Remarks
TSV-W 6.5'	8/19/98	13:30	-001	SOIL VAPOR	00374	—		5 Business Days	

	Date	Time	Received by : (Signature)	Date	Time
Relinquished by : (Signature)	8/19/98	5:00pm		8/24/98	0930
Relinquished by : (Signature)	Date	Time	Received by : (Signature)	Date	Time
Relinquished by : (Signature)	Date	Time	Received by : (Signature)	Date	Time

White Copy : Accompanies Sampler Yellow Copy : Sampler

Table 3 - Soil Laboratory Results

Analyte	Method	GSB-1 58-60'	GSB-1 63-65'	GSB-1B 63-65'	GSB-2 45-47'	GSB-2 55-57'	GSB-3 38-40'	GSB-3 48-50'	GSB-3D 48-50'	GSB-4 48-50'	GSB-4 57-59'	GSB-4D 57-59'	GSB-5 18-20'	GSB-5 38-40'	GSB-6 18-20'	GSB-6 38-40'	GSB-7 33-35'	GSB-7 58-60'	GSB-8 43-45'
		Sample: 105072	Sample: 105073	Sample: 105074	Sample: 105225	Sample: 105226	Sample: 107013	Sample: 107014	Sample: 107015	Sample: 107003	Sample: 107004	Sample: 107005	Sample: 106263	Sample: 106264	Sample: 106829	Sample: 106830	Sample: 106260	Sample: 106261	Sample: 107017
		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
MTBE	S 8021B				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	S 8021B	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	S 8021B	ND	ND	ND	0.101	0.481	5.69	ND	2.07	0.400	5.54	10.3	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	S 8021B	ND	ND	ND	0.125	0.296	1.78	1.1	2.80	3.21	1.79	2.17	ND	ND	ND	ND	0.433	ND	0.558
m,p,o-xylene	S 8021B	0.857	0.075	ND	1.25	2.62	7.20	8.0	18.4	21.3	6.13	9.56	ND	ND	0.162	ND	2.42	ND	4.04
TRPHC	S 418.1	1,770	274	1,340	870	1,020	4,030	771	1,890	2,900	5,340	5,720	ND	ND	ND	ND	692	ND	1,350
Chloride	E 300.0	ND	13	11	26	37	140	37	52	40	66	77	150	120	75	11	37	11	100

Analyte	Method	GSB-8 57-59'	GSB-8D 57-59'	GSB-9 13-15'	GSB-9 50-52'	GSB-10 3-5'	GSB-10 50-52'	GSB-11	GSB-11 2-3'	GSB-11 48-50'	CSS 1 0 - 1'	CSS 2 0 - 1'	CSS 3 0 - 1'	CSS 4 0 - 1'	CSS 5 0 - 1'	CSS 7 0 - 1'	CSS 8 0 - 1'	TSB-1 43-45'	TSB-7 28-30'	TSB-10 28-31'
		Sample: 107018	Sample: 107019	Sample: 106787	Sample: 106788	Sample: 106790	Sample: 106791	Sample: 107162	Sample: 107160	Sample: 107161	Sample: 103639	Sample: 103640	Sample: 103641	Sample: 103642	Sample: 103643	Sample: 103644	Sample: 104146	Sample: 105961	Sample: 106028	Sample: 106032
		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
MTBE	S 8021B	ND	ND			ND		ND	ND	ND								ND	ND	ND
Benzene	S 8021B	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND
Toluene	S 8021B	5.69	2.81	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND
Ethylbenzene	S 8021B	1.78	4.27	0.93	0.546	2.48	0.577	0.309	0.469	0.694	ND	ND	ND	ND	ND	ND		ND	ND	ND
m,p,o-xylene	S 8021B	7.20	34.6	6.48	4.24	15.8	4.31	3.25	2.95	7.41	ND	ND	ND	ND	ND	ND		ND	ND	ND
TRPHC	S 418.1	4,030	6,380	2,050	2,310	3,960	2,920	704	1,100	1,990	460	222	39.8	24.7	19.2	55.0	ND	17.4	ND	ND
Chloride	E 300.0	140	140	32	96	150	54	22	140	7.6							51			

ND = Not Detected. See Laboratory Analysis in Appendix V for detection limits.

Table 3 - Soil Laboratory Results

Analyte	Method	GMW-2 3'	GMW-2 13-15'	GMW-2 58-60	GMW-2 62-64D	GMW-3 53-55'	GMW-3 63-65'	GMW-4 18-20'	GMW-4 63-65'	GMW-5 58-60'	GMW-5 63-65'	GW-6 3-5'	GMW-6 63-65'	GMW-7 48-50'	GMW-7 63-65'	GMW-8 28-30'	GMW-8 63-65'	GMW-9 8-10'	GMW-9 63-65'	GMW-9D 63-65'	GMW-10 3-5'	GMW-10 63-65'	CSS #6 0 - 1'
		Sample: 106823	Sample: 103766	Sample: 103765	Sample: 103764	Sample: 104147	Sample: 104148	Sample: 104099	Sample: 104100	Sample: 104339	Sample: 104340	Sample: 104532	Sample: 104533	Sample: 104633	Sample: 104634	Sample: 104948	Sample: 104949	Sample: 106457	Sample: 106458	Sample: 106459	Sample: 106342	Sample: 106343	Sample: 103645
		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Benzidine	S-8270C		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorobenzene	S-8270C		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pentachlorobenzene	S-8270C		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4,5-tetrachlorobenzene	S-8270C		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachloroethane	S-8270C		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-dichlorophenol	S-8270C		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4,5-trichlorophenol	S-8270C		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4,6-trichlorophenol	S-8270C		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
bis (2-chloroethyl) ether	S-8270C		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
bis (2-chloroisopropyl) ether	S-8270C		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
bis (chloromethyl) ether	S-8270C		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3,3-dichlorobenzidine	S-8270C		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-dinitrotoluene	S-8270C		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diphenylhydrazine	S-8270C		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	S-8270C		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorocyclopentadiene	S-8270C		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isophorone	S-8270C		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrobenzene	S-8270C		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-dinitro-o-cresol	S-8270C		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-dinitrophenols	S-8270C		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-nitrosodiethylamine	S-8270C		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-nitrosodimethylamine	S-8270C		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-nitrosodibutylamine	S-8270C		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-nitrosodiphenylamine	S-8270C		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-nitrosopyrrolidine	S-8270C		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pentachlorophenol	S-8270C		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibutyl phthalate	S-8270C		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
di-2-ethylhexyl phthalate	S-8270C		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diethyl phthalate	S-8270C		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dimethyl phthalate	S-8270C		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Anthracene	S-8270C		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3,4-benzofluoranthene	S-8270C		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND = Not Detected. See Laboratory Analysis in Appendix V for detection limits.
GMW-2 is metals background sample, not analyzed for other compounds.

Table 3 - Soil Laboratory Results

Analyte	Method	GMW-2 3' Sample: 106823	GMW-2 13-15' Sample: 103766	GMW-2 58-60 Sample: 103765	GMW-2 62-64D Sample: 103764	GMW-3 53-55' Sample: 104147	GMW-3 63-65' Sample: 104148	GMW-4 18-20' Sample: 104099	GMW-4 63-65' Sample: 104100	GMW-5 58-60' Sample: 104339	GMW-5 63-65' Sample: 104340	GW-6 3-5' Sample: 104532	GMW-6 63-65' Sample: 104533	GMW-7 48-50' Sample: 104633	GMW-7 63-65' Sample: 104634	GMW-8 28-30' Sample: 104948	GMW-8 63-65' Sample: 104949	GMW-9 8-10' Sample: 106457	GMW-9 63-65' Sample: 106458	GMW-9D 63-65' Sample: 106459	GMW-10 3-5' Sample: 106342	GMW-10 63-65' Sample: 106343	CSS #6 0 - 1' Sample: 103645
		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Benzo(k)fluoranthene	S-8270C		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	S-8270C		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorene	S-8270C		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	S-8270C		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pyrene	S-8270C		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	S-8270C		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1-methylnaphthalene	S-8270C		ND	ND	ND	2.90	2.60	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-methylnaphthalene	S-8270C		ND	ND	ND	2.85	2.52	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo-a-pyrene	S-8270C		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenol	S-8270C		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Aldrin	S-8080		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND***	ND	ND
Chlordane	S-8080		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND***	ND	ND
DDT	S-8080		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND***	ND	ND
Dieldrin	S-8080		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND***	ND	ND
Endosulfan	S-8080		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND***	ND	ND
Endrin	S-8080		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND***	ND	ND
	S-8080		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND***	ND	ND
		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
PCB's	S 8082		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Arsenic	S 6010B	2.7	ND	ND	0.79	ND	1.1	3.0	1.5	ND	ND	1.8	ND	0.68	ND	0.2	ND	ND	ND	0.59	ND	ND	ND
Barium	S 6010B	514	65	7.4	64	20	29	100	8.2	ND	ND	320	9.7	6.5	4.3	490	13	230	15	19	618	17	95
Cadmium	S 6010B	0.19	0.16	0.14	0.15	0.64	0.61	0.52	0.58	ND	ND	0.32	0.23	0.14	0.23	ND	ND	0.12	ND	0.21	0.5	0.42	0.31
Chromium	S 6010B	3.0	2.3	4.4	5.4	3.7	4.4	3.7	3.7	ND	ND	5.4	5.2	4.5	4.0	3.2	3.4	6.1	2.4	4.0	3.4	3.6	12
Lead	S 6010B	0.91	1.0	1.8	2.1	2.7	1.7	1.9	1.7	ND	ND	ND	ND	2.2	1.2	0.59	ND	2.4	1.2	1.2	1.7	1.5	7.2
		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Total Mercury	S 7471	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.32

ND = Not Detected. See Laboratory Analysis in Appendix V for detection limits.
GMW-2 is metals background sample, not analyzed for other compounds.

Table 3 - Soil Laboratory Results

Analyte	Method	GMW-2 3' Sample: 106823	GMW-2 13-15' Sample: 103766	GMW-2 58-60 Sample: 103765	GMW-2 62-64D Sample: 103764	GMW-3 53-55' Sample: 104147	GMW-3 63-65' Sample: 104148	GMW-4 18-20' Sample: 104099	GMW-4 63-65' Sample: 104100	GMW-5 58-60' Sample: 104339	GMW-5 63-65' Sample: 104340	GW-6 3-5' Sample: 104532	GMW-6 63-65' Sample: 104533	GMW-7 48-50' Sample: 104633	GMW-7 63-65' Sample: 104634	GMW-8 28-30' Sample: 104948	GMW-8 63-65' Sample: 104949	GMW-9 8-10' Sample: 106457	GMW-9 63-65' Sample: 106458	GMW-9D 63-65' Sample: 106459	GMW-10 3-5' Sample: 106342	GMW-10 63-65' Sample: 106343	CSS #6 0 - 1' Sample: 103645
		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Selenium	S 6010B	ND	0.93	ND	ND	ND	0.76	0.78	ND	ND	ND	ND	ND	ND	ND	1.2	ND	ND	ND	ND	ND	ND	ND
Silver	S 6010B	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Uranium	S 6010B		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper	S 6010B		1.8	ND	1.3	2.2	2.3	5.6	1.6	ND	ND	2.1	ND	1.3	ND	1.9	1.5	1.3	ND	1.0	1.6	2.1	5.4
Iron	S 6010B		1,800	2,600	3,600	2,400	2,600	2,300	2,600	ND	ND	3,210	1,880	1,790	1,200	2,600	3,200	4,300	2,000	2,300	2,200	2,300	11000
Manganese	S 6010B		25	20	25	18	23	40	22	ND	ND	25	21	21	8.7	15	25	37	19	23	20	22	180
Zinc	S 6010B		11	11	11	7.0	9.3	7.3	5.2	ND	ND	20	8	3.7	2.8	7.2	6.3	12	4.6	5.1	6.8	6	38
Aluminum	S 6010B		2,400	2,200	2,700	2,000	2,100	3,800	2,200	ND	ND	4,940	1,620	1,950	1,390	3,100	2,700	7,100	1,630	1,900	4,000	2,300	[illegible]00
Boron	S 6010B		ND	ND	ND	6.3	6.9	9.2	6.6	ND	ND	12	ND	ND	ND	ND	ND	15	ND	ND	ND	ND	20
Cobalt	S 6010B		5.0	2.8	3.4	2.5	2.9	5.0	2.7	ND	ND	6.2	2.3	2.8	1.5	4.3	4.1	7.1	2.5	2.7	5.9	2.7	11
Molybdenum	S 6010B		2.5	1.1	1.7	1.3	1.9	3.0	1.6	ND	ND	1.6	ND	ND	ND	2.4	1.6	2.1	ND	ND	1.6	1.3	3.7
Nickel	S 6010B		5.1	2.7	3.3	2.1	2.6	4.5	2.0	ND	ND	8.6	4.9	2.4	1.7	4.3	4.2	6.8	2.2	2.4	6	2	11
		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Cyanide	Sm 4500 CN,CE		0.08	ND	0.02	ND	0.02	0.01	0.07	ND	ND	0.02	ND	0.01	0.02	ND	ND	ND	ND	ND	ND	ND	ND
		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Fluoride	E 300.0		3.4	0.78	0.84	0.96	1.1	2.9	0.81	0.77	0.83	8.3	0.75	0.79	0.75	2.9	1.0	9.9	1.2	1.3	9.5	1.2	0.54
Nitrate	E 300.0		6.2	1.4	1.5	1.2	ND	2.4	1.2	1.1	ND	4.2	4.2/1.3	1.2	1.3	1.3	1.2	1.7	1.7	ND	8.6	1.8	7.2
Chloride	E 300.0		170	28	35	28	37	85	29	18	37	22	13	10	12	85	18	16	25	21	27	20	43
Sulfate	E 300.0		340	26	36	7.6	6.1	85	18	38	35	96	30	8.8	6.0	92	4.9	140	7.2	9.8	180	73	120
		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
TDS	E 160.1		2500	400	570	330	310	160	240	280	260	3,900	220	200	280	530	170	880	150	252	900	470	850
		s.u.	s.u.	s.u.	s.u.	s.u.	s.u.	s.u.	s.u.	s.u.	s.u.	s.u.	s.u.	s.u.	s.u.	s.u.	s.u.	s.u.	s.u.	s.u.	s.u.	s.u.	s.u.
pH	E 150.1		8.3	8.6	8.7	9.6	9.0	8.7	8.8	10.3	8.9	8.7	8.5	8.8	8.9	8.7	9.1	8.1	8.9	8.7	7.9	8.7	7.9
		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
TRPHC	S 418.1		ND	ND	10.6	3,000	3,820	ND	ND	3,170	1,950	15.6	ND	ND	ND	ND	ND	11,900	206	688	4,180	ND	12900

ND = Not Detected. See Laboratory Analysis in Appendix V for detection limits.
GMW-2 is metals background sample, not analyzed for other compounds.

Table 3 - Soil Laboratory Results

Analyte	Method	GMW-2 3'	GMW-2 13-15'	GMW-2 58-60	GMW-2 62-64D	GMW-3 53-55'	GMW-3 63-65'	GMW-4 18-20'	GMW-4 63-65'	GMW-5 58-60'	GMW-5 63-65'	GW-6 3-5'	GMW-6 63-65'	GMW-7 48-50'	GMW-7 63-65'	GMW-8 28-30'	GMW-8 63-65'	GMW-9 8-10'	GMW-9 63-65'	GMW-9D 63-65'	GMW-10 3-5'	GMW-10 63-65'	CSS #6 0 - 1'
		Sample: 106823	Sample: 103766	Sample: 103765	Sample: 103764	Sample: 104147	Sample: 104148	Sample: 104099	Sample: 104100	Sample: 104339	Sample: 104340	Sample: 104532	Sample: 104533	Sample: 104633	Sample: 104634	Sample: 104948	Sample: 104949	Sample: 106457	Sample: 106458	Sample: 106459	Sample: 106342	Sample: 106343	Sample: 103645
		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Total Phenols	SM 5530 A,D		0.25	11	3.8	9.5	7.5	6.5	2.75	7.8	ND	ND	ND	3.75	4.0	3.5	1.5	2.4	3.8	1.8	5.1	23.4	1.5
		pCi/gm	pCi/gm	pCi/gm	pCi/gm	pCi/gm	pCi/gm	pCi/gm	pCi/gm	pCi/gm	pCi/gm	pCi/gm	pCi/gm	pCi/gm	pCi/gm	pCi/gm	pCi/gm	pCi/gm	pCi/gm	pCi/gm	pCi/gm	pCi/gm	pCi/gm
Total Activity	E 901.1M		13.32	40.61	11.48	4.80	4.34	1.67	13.32	4.33	4.33	3.59	2.38	17.62	6.55	4.13	6.14	14.47	5.84	4.92	3.08	7.04	1.67

*** 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.

ND = Not Detected. See Laboratory Analysis in Appendix V for detection limits.
GMW-2 is metals background sample, not analyzed for other compounds.

BBC INTERNATIONAL
INCORPORATED

Air Quality Corrective Action & Health Plan
Grimes Battery &Tasker Road - Hobbs, New Mexico

Procedures:

1.) A photo ionization detector (PID) will be on site at all times to monitor for fugitive volatile organic compounds (VOCs). A ToxicRae PGM-30D instrument will be used to monitor the air.

2.) The vapors to be monitored are: toluene, benzene, and xylene. The action limits are:

TWA:	10ppm
STEL:	25 ppm
Low:	50 ppm
High:	100 ppm

3.) The PID will be on at all times and will be placed near excavation sites and will be used to monitor the site area in a walk around of the site perimeter periodically.

4.) The readings will be instantaneous and all readings will be data-logged at an interval of every 60 seconds. All data-logging information will be down loaded to a PC after completion of site activities. Print outs will be generated.

5.) Corrective Action: In the event fugitive emissions exceed alarm limits continuously, all site excavation activities will be suspended, fresh soil placed on top of the emission source, the OCD notified, home office notified, and any residents potentially affected will be notified.

6.) Project Manager: Cliff P. Brunson/Joe Frank Dean, BBC International, Inc.

7.) Site phone number: (505) 390-6102

8.) Emergency Phone Numbers: 397-6388 (24 hrs.) - BBC International, Inc.
911- (Police, Fire, Ambulance)
392-5571 - Dr. Hood (company Doctor)
392-9212 - Columbia Lea Regional Medical Center

9.) Safety Coordinator - Terry Brem - 393-6169

10.) H_2S monitors will be in place or on person while on location at all times.

11.) 3 gas monitor will be on location at all times.

12.) A photo ionization detector will be on site at all times to monitor for volatile organic compounds (VOCs).

13.) A first aid kit will be on location at all times.

14.) All first aid injuries or needs will be reported to the Site Project Manager first, then further action will be taken if necessary.

15.) All personnel will have personal protection equipment (PPE). As a minimum, hard hats, steel toe safety shoes, gloves, and safety glasses.

BBC INTERNATIONAL
INCORPORATED

Site Safety & Health Plan
Grimes Battery & Tasker Road - Hobbs, New Mexico

Procedures:

1.) Perform tailgate site safety meeting prior to start of any activities. Written document will be signed by all attendees and social security numbers.

2.) Site Project Manager: Cliff P. Brunson/Joe Frank Dean, BBC International, Inc.

3.) Site phone number: (505) 390-6103

4.) Emergency Phone Numbers: 397-6388 (24 hrs.) - BBC International, Inc.
911- (Police, Fire, Ambulance)
392-5571 - Dr. Hood (company Doctor)
392-9212 - Columbia Lea Regional Medical Center

5.) Safety Coordinator - Terry Brem - 393-6169

6.) H_2S monitors will be in place or on person while on location at all times.

7.) 3 gas LEL monitor will be on location at all times.

8.) A photo ionization detector will be on site at all times to monitor for volatile organic compounds (VOCs).

9.) A first aid kit will be on location at all times.

10.) All first aid injuries or needs will be reported to the Site Project Manager first, then further action will be taken if necessary.

11.) All personnel will have personal protection equipment (PPE). As a minimum, hard hats, steel toe safety shoes, gloves, and safety glasses.

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JAN 14 1999
ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

LEGEND

DENOTES EXISTING RESIDENCE

DENOTES PROPOSED PARK CARVE-OUT

TSV – DENOTES TASKER SOIL VAPOR

10 0 10 20 FEET
Scale: 1"=10'

JOHN WEST SURVEYING COMPANY
HOBBS, NEW MEXICO

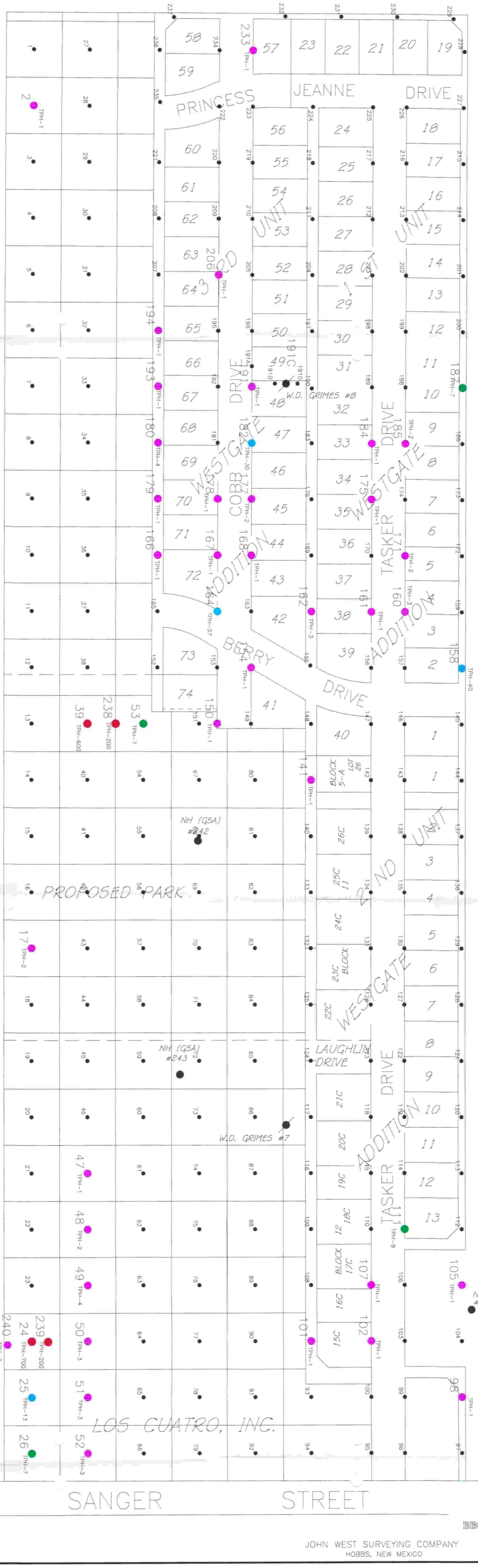
BBC INTERNATIONAL
HOBBS, NEW MEXICO

BBC INTERNATIONAL, INC.

TASKER ROAD

SOIL VAPOR SAMPLE POINTS
PERRY HOME AND LOT
IN SECTION 28
TOWNSHIP 18 SOUTH,
RANGE 38 EAST, N.M.P.M.,
LEA COUNTY, NEW MEXICO.

SURVEYED BY: LAWLESS	DRAWN BY: D.McCARLEY	REV. DATE: 12/24/98	Drawing Number D-847
DATE BEGIN: 5/11/98	DATE: 8/13/98	FILE NAME: 0738TASK	
DATE END: 9/1/98	CHECKED BY:	SHEET 1 OF 1	FIGURE 5
PROJECT #: 98110738	DISK #: BBC	Scale: 1"=10'	


JEANNE
DRIVE
PRINCESS
WESTGATE
TASKER
ADDITION
BERRY
DRIVE
2ND
STREET
LAUGHLIN
DRIVE
PROPOSED PARK
LOS CUATRO, INC.
SANGER
STREET
W.D. GRIMES #8
W.D. GRIMES #7
NH (GSA) #242
NH (GSA) #243
NH (GSA) #241
TPH-1
TPH-2
TPH-3
TPH-4
TPH-7
TPH-9
TPH-30
TPH-37
TPH-40
TPH-200
TPH-600
TPH-700
NOTE:
THE INFORMATION AND INTERPRETATION CONTAINED ON THIS MAP ARE PRELIMINARY. THE MAP INTERPRETATION MAY CHANGE WHEN ADDITIONAL INFORMATION AND DATA IS DEVELOPED.
LEGEND
SOIL VAPOR TPH CONCENTRATION
= 1-5 PPM
= 6-10 PPM
= 11-100 PPM
= > 100
RECEIVED
JAN 14 1999
ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION
60 0 60 120 FEET
Scale:1"=60'
JOHN WEST SURVEYING COMPANY
HOBBS, NEW MEXICO
BBC INTERNATIONAL INC.
SOIL VAPOR SURVEY SAMPLE POINTS-100 FOOT GRID SPACI.
FIRST, SECOND, AND THIRD UNITS OF WESTGATE ADDITIONS LOCATED IN THE WEST HALF OF SECTION 28, TOWNSHIP 18 SOUTH, RANGE 38 EAST, N.M.P.M., LEA COUNTY, NEW MEXICO.
Surveyed By: LAWLESS
Date Begin: 5/11/98
Date End:
Project #: 981107.38
Drawn By: JLP/GMCC
Date: 5/12/98
Approved By:
Filename: 0738-14
Last Rev.: 12/30/98
Disk: BBC
Sheet of
D-007
FIGURE 14

NOTE:
THE INFORMATION AND INTERPRETATION CONTAINED ON THIS MAP ARE PRELIMINARY. THE MAP INTERPRETATION MAY CHANGE WHEN ADDITIONAL INFORMATION AND DATA IS DEVELOPED.

LEGEND

- DENOTES EXCAVATED AREA
- DENOTES PROPOSED PARK CARVE-OUT
- DENOTES EXISTING RESIDENCE
- DENOTES DIRT LEASE ROAD
- TMW – DENOTES TASKER MONITOR WELL
- GMW – DENOTES GRIMES MONITOR WELL

RECEIVED
JAN 14 1999
ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

30 0 30 60 FEET
Scale: 1"=30'

JOHN WEST SURVEYING COMPANY
HOBBS, NEW MEXICO

BBC INTERNATIONAL
HOBBS, NEW MEXICO

BBC INTERNATIONAL, INC.

GRIMES BATTERY & TASKER ROAD

GROUND WATER ELEVATIONS & GRADIENT
LOCATIONS IN SECTION 28
TOWNSHIP 18 SOUTH,
RANGE 38 EAST, N.M.P.M.,
LEA COUNTY, NEW MEXICO.

SURVEYED BY: LAWLESS	DRAWN BY: D.McCARLEY	REV. DATE: 9/8/98	D-847
DATE BEGIN: 5/11/98	DATE: 8/13/98	FILE NAME: 0738T-G	FIGURE 15
DATE END: 9/1/98	CHECKED BY:	SHEET 1 OF 1	
PROJECT #: 98110738	DISK #: BBC	Scale: 1"=30'	