

CLOSURE REPORT

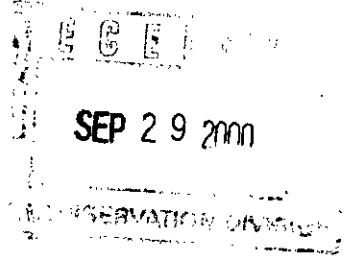
AMERADA HESS CORPORATION

SAMUEL W. SMALL, PE
OFFICE 915/758-6741
FAX 915/758-6768

P.O. BOX 840
SEMINOLE, TEXAS 79360
915/758-6700

September 27, 2000

Mr. William Olson
Oil Conservation Division
2040 Pacheco
Santa Fe, New Mexico 87505



RE: **Closure Report**
Chevron Graham NCT-B Tank Battery Site
Lea County, New Mexico

Dear Mr. Olson,

This letter is to advise you of the plugging of the four (4) monitor wells at the subject location, pursuant to the request in your letter of December 28, 1999. The wells were plugged on January 21 and 24, 2000. All four wells were plugged from TD to the surface with cement containing five- percent bentonite. The casing risers, cement pads and vaults were then removed and the ground restored to contour. Reseeding efforts have been hampered by the continuing drought in the area, but will be undertaken when the situation improves.

Amerada Hess Corporation apologizes for the delay in submitting this report. An inquiry from the State Land Office in Hobbs brought the oversight to our attention. If you have any questions, please contact the undersigned at the letterhead address or at 915-758-6741.

Sincerely,

Sam Small, PE
Environmental Coordinator

Xc: State Land Office –Hobbs
NMOCD – Hobbs
Houston Environmental file
PBBU Environmental File
Monument Area File



STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

December 28, 1999

CERTIFIED MAIL
RETURN RECEIPT NO. Z-274-520-748

Mr. Samuel Small
Amerada Hess Corporation
P.O. Box 840
Seminole, Texas 79360

**RE: CLOSURE REPORT
CHEVRON GRAHAM NCT-B TANK BATTERY**

Dear Mr. Small:

The New Mexico Oil Conservation Division (OCD) has reviewed Amerada Hess Corporation's (AHC) October 25, 1999 "CLOSURE REPORT, CHEVRON GRAHAM NCT-B SITE, LEA COUNTY, NM". This document contains the results of AHC's recent investigations of ground water contamination at the Graham NCT-B Tank Battery site. The document also requests final closure approval of remedial actions and permission to plug and abandon the site monitor wells.

The above referenced closure request is approved with the following conditions:

1. AHC shall plug the monitor wells by cutting the casing off at the surface and filling the casing with a cement grout containing 3-5% bentonite.
2. AHC will submit a plugging report to the OCD upon completion of the plugging actions.

Please be advised that OCD approval does not relieve AHC of liability if remaining contaminants pose a future threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve AHC of responsibility for compliance with any other federal, state or local laws and regulations. If you have any questions, please call me at (505) 827-7154.

Sincerely,

A handwritten signature in black ink, appearing to read "William C. Olson".

William C. Olson
Hydrologist
Environmental Bureau

xc: Chris Williams, OCD Hobbs District Supervisor

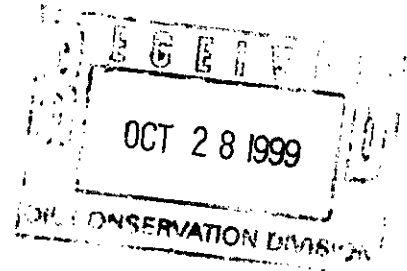
AMERADA HESS CORPORATION

SAMUEL W. SMALL, PE
OFFICE 915/758-6741
FAX 915/758-6768

P.O. BOX 840
SEMINOLE, TEXAS 79360
915/758-6700

October 25, 1999

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
Z437 801 867



Mr. William C. Olson
Oil Conservation Division
2040 Pacheco
Santa Fe, New Mexico 87505

RE: **Closure Report**
Chevron Graham NCT-B Site
Lea County, NM

Dear Mr. Olson:

Pursuant to your request of June 12, 1998, Amerada Hess Corporation (AHC) installed an 'up-gradient' monitor well, well #4, at the referenced site. The 'up-gradient' well location was selected in consideration of regional drainage trends. Fluid levels recorded in the recently drilled and existing monitor wells indicate that there is little or no gradient across the site. No elevation datum has been established to normalize the fluid levels, however, the site is reasonably level with a slight incline to the north.

The results of the analyses conducted on water obtained from monitor well #4 indicate that the groundwater up-gradient of the site exhibits chloride contamination in concentrations comparable to the groundwater down gradient. BTEX concentrations are not significant in the groundwater samples collected from the monitor wells.

Monitor well #4 was drilled on Sep. 7, 1999 and a groundwater sample was collected from the well by BBC International on Sep. 27, 1999. The sample was obtained using a bailer after the wellbore was first purged of standing fluid. Cardinal Laboratories analyzed the sample for TDS, Cl and BTEX concentrations. A plat of the site, wellbore diagram and results of the sample analysis are attached.

Groundwater samples were collected on the same day from the three existing monitor wells, again after first purging the wellbores of standing fluid. The results of the analyses (Cl, TDS & BTEX) conducted on them are included along with a summary of the analytical results, which accompanied the original closure report, submitted on March 3, 1998. Monitor well #3 was re-sampled on Oct. 13, 1999 to confirm or disprove the benzene concentration, above 0.01 mg/L, in the Sep. 27th sample; a result inconsistent with previous test results. The Oct. 13th sample indicated that

benzene concentrations are below 0.002 mg/L, which is consistent with previous results.

In view of the condition of the groundwater upgradient of the site, AHC requests confirmation from the Oil Conservation Division that no additional remedial action or sampling will be required at the site and that the monitor wells can be plugged. Re-vegetation of the site will be conducted in cooperation with the State Land Office.

Sincerely,

A handwritten signature in black ink, appearing to read "Samuel Small". The signature is fluid and cursive, with a large, stylized "S" at the beginning.

Samuel Small, PE
Environmental Coordinator

Xc: OCD – Hobbs w/attachments
Houston Environmental File w/attachments
Seminole Environmental File w/attachments
Monument Files w/attachments

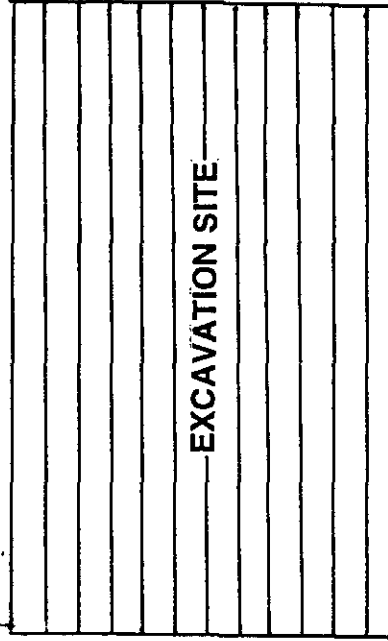


MONITOR WELL #4

MONITOR WELL #3

MONITOR WELL #2

MONITOR WELL #1

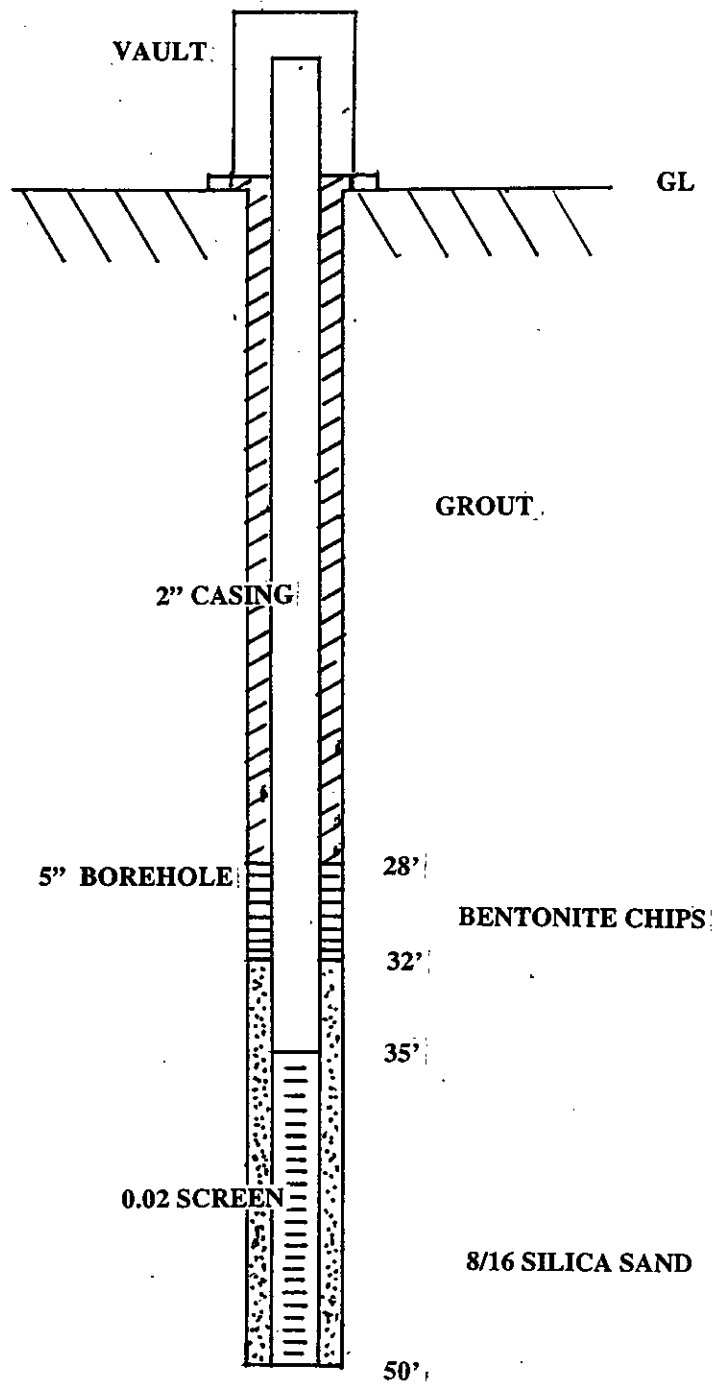


AMERADA HESS CORPORATION
CHEVRON GRAHAM NCT-B
REMEDIATION SITE
PLOT PLAN
LEA COUNTY, NM
SCALE: 1" = 60'
10/25/99

FLUID LEVELS 9/27/99

MONITOR WELL # 1	38.24'
MONITOR WELL # 2	39.09'
MONITOR WELL # 3	38.66'
MONITOR WELL # 4	39.23'

**MONITOR WELL NO. 4
WELLBORE DIAGRAM**





ARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603

PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

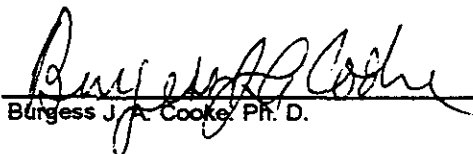
ANALYTICAL RESULTS FOR
BBC INTERNATIONAL
ATTN: J.F. DEAN
P.O. BOX 805
HOBBS, NM 88240
FAX TO:

Receiving Date: 09/27/99
Reporting Date: 09/29/99
Project Owner: AMERADA HESS
Project Name: NOT GIVEN
Project Location: OXY E-GRAHAM NCT-B

Sampling Date: 09/27/99
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC/AH

LAB NUMBER	SAMPLE ID	TDS (mg/L)	CI (mg/L)	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE:		09/29/99	09/28/99	09/27/99	09/27/99	09/27/99	09/27/99
H4365-1	E 1	565	109	<0.002	<0.002	<0.002	<0.006
H4365-2	E 2	476	122	0.018	<0.002	<0.002	<0.006
H4365-3	E 3	1368	470	<0.002	<0.002	<0.002	<0.006
H4365-4	E 4	1316	576	<0.002	<0.002	<0.002	<0.006
H4365-5	E 5	1048	284	<0.002	<0.002	<0.002	0.007
H4365-6	C 1	1634	466	<0.002	<0.002	<0.002	<0.006
H4365-7	C 2	2355	679	<0.002	<0.002	<0.002	<0.006
H4365-8	C 3	1642	527	0.019	<0.002	<0.002	<0.006
H4365-9	C 4	2933	801	<0.002	<0.002	<0.002	<0.006
Quality Control		NR	983	0.087	0.095	0.095	0.290
True Value QC		NR	1000	0.100	0.100	0.100	0.300
% Recovery		NR	98.3	86.6	95.2	95.1	96.6
Relative Percent Difference		NR	1.0	6.3	5.4	4.7	4.8

METHODS: TRPHC-EPA 600/4-79-020 418.1; CI-Std. Methods 4500-CIB; BTEX-EPA SW-846 8260


Burgess J. A. Cooke, Ph. D.

9/29/99
Date

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims for those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above-stated reasons or otherwise.

2111 Beechwood, Abilene, TX 79603 101 East Marland, Hobbs, NM 88240
(915) 673-7001 Fax (915) 673-7020 (505) 393-2326 Fax (505) 393-2476

Page of

Company Name: BBC		BILL TO PO #:	
Project Manager: Joe Deard		Company: BBC	
Address: P.O. Box 805		Attn:	
City: Hills State: VA Zip: 22840		Address:	
Phone #: 397 6388		City:	
Fax #:		State:	
Project #: Amorah Hess		Zip:	
Project Name:		Phone #:	
Project Location: OXY E - Graham Net-B		Fax #:	

LAB I.D.	Sample I.D.	MATRIX					PRES.	SAMPLING
		# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	SLUDGE		
14365-1	E 1							
-2	E 2							
-3	E 3							
-4	E 4							
-5	E 5							
-6	C 1							
-7	C 2							
-8	C 3							
-9	C 4							

DATE	TIME	OTHER:	ICE / COOL	ACID:	OTHER:	SLUDGE	SOIL	WASTEWATER	GROUNDWATER	# CONTAINERS	(G) RAB OR (C) COMP.	FOR LAB USE ONLY	
												LAB I.D.	Sample I.D.
9/27	8:30												
	9:00												
	9:30												
	10:00												
	10:30												
	11:00												
	11:30												
	12:00												
	12:30												

TERMS AND CONDITIONS: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.	
PLEASE NOTE: Liability and Damages: Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Additional Fax #: <input type="checkbox"/> Yes <input type="checkbox"/> No Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No
REMARKS:	

Date: 9-27 Time: 1:50	Received By: (Lab Staff)
Date: 9-27 Time: 1:50	Checked By: (Initials)
Relinquished By: (Signature)	Sample Condition: <input type="checkbox"/> Cool <input type="checkbox"/> Intact <input type="checkbox"/> Yes <input type="checkbox"/> No
Delivered By: (Circle One)	Checked By: (Initials)
Sampler - UPS - Bus - Other:	Checked By: (Initials)

† Cardinal cannot accept verbal changes. Please fax written changes to 915-673-7020.



ARDINAL LABORATORIES

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PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

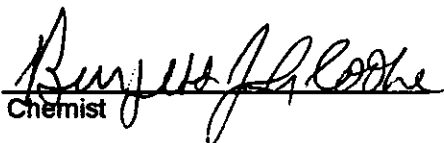
ANALYTICAL RESULTS FOR
BBC INTERNATIONAL, INC.
ATTN: JOE F. DEAN
P.O. BOX 805
HOBBS, NM 88241
FAX TO:

Receiving Date: 10/13/99
Reporting Date: 10/14/99
Project Number: NOT GIVEN
Project Name: AMERADA HESS
Project Location: NOT GIVEN

Sampling Date: 10/13/99
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: BC/AH

LAB NO.	SAMPLE ID	CI (mg/L)	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE:		10/13/99	10/13/99	10/13/99	10/13/99	10/13/99
H4396-1	C-3	580	<0.002	<0.002	<0.002	<0.006
Quality Control		955	0.096	0.097	0.096	0.291
True Value QC		1000	0.100	0.100	0.100	0.300
% Recovery		95.5	96.3	97.2	96.1	96.9
Relative Percent Difference		2.9	2.8	6.6	6.5	5.8

METHODS: CI: Std. Methods 4500-CI'B; BTEX - EPA SW-846 8260


Chemist

10/14/99
Date

H4396.XLS

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above-stated reasons or otherwise.

ORDINAL LABORATORIES, INC.

2111 Beechwood, Abilene, TX 79603 101 East Marland, Hobbs, NM 88240
(915) 673-7001 Fax (915) 673-7020 (505) 393-2326 Fax (505) 393-2476

Page of

Company Name: <u>BBC International</u> Project Manager: <u>Joe Dean</u>		BILL TO PO #:		ANALYSIS REQUEST																																																									
Address: City: <u>Holts</u> State: <u>TX</u> Zip: _____ Phone #: <u>397-6388</u> Fax #: _____		Company: <u>RBC</u> Attn: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone #: _____ Fax #: _____		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th colspan="2">FOR LAB USE ONLY</th> <th colspan="2">MATRIX</th> <th colspan="2">PRES.</th> <th colspan="2">SAMPLING</th> <th colspan="2">DATE</th> <th colspan="2">TIME</th> </tr> <tr> <th>LAB I.D.</th> <th>Sample I.D.</th> <th>(G)RAB OR (C)OMP.</th> <th># CONTAINERS</th> <th>GROUNDWATER</th> <th>WASTEWATER</th> <th>SOIL</th> <th>OIL</th> <th>SLUDGE</th> <th>OTHER:</th> <th>ACID:</th> <th>ICE / COOL</th> </tr> <tr> <td>H48961</td> <td>C-3</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>										FOR LAB USE ONLY		MATRIX		PRES.		SAMPLING		DATE		TIME		LAB I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID:	ICE / COOL	H48961	C-3																						
FOR LAB USE ONLY		MATRIX												PRES.		SAMPLING		DATE		TIME																																									
LAB I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS											GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID:	ICE / COOL																																								
H48961	C-3																																																												
Project #: _____ Project Owner: _____ Project Name: _____ Project Location: <u>Amesbury Hwy</u>																																																													

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collection, including attorney's fees.

Delivered By: _____ Delivered By: (Circle One) Sampler - UPS - Bus - Other: _____		Date: _____ Time: _____		Received By: _____ Date: <u>8-13-99</u> Time: _____ Received By: <u>Bucetta</u> Checked By: _____ (Initials) Sample Condition: Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>									
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Relinquished By: _____ Date: _____ Time: _____		REMARKS: Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Additional Fax #: <input type="checkbox"/> Yes <input type="checkbox"/> No Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No									
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† Cardinal cannot accept verbal changes. Please fax written changes to 915-673-7020.

CHEVRON GRAHAM NCT-B

DATE	TDS mg/L	CI mg/L	BENZENE mg/L	TOLUENE mg/L	ETHYL BENZENE mg/L	TOTAL XYLENES mg/L
Well C-1						
9/30/96	1284	440	< 1	< 1	< 1	< 1
3/18/97	1455	540	< 0.001	0.002	< 0.001	< 0.003
7/2/97	1495	520	< 0.001	< 0.001	< 0.001	< 0.003
9/5/97	1424	508	< 0.002	< 0.002	< 0.002	< 0.006
9/27/99	1634	466	< 0.002	< 0.002	< 0.002	< 0.006
Well C-2						
9/30/96	2194	592	< 1	< 1	< 1	< 1
3/18/97	1941	700	< 0.001	0.002	< 0.001	< 0.003
7/2/97	2950	1112	< 0.001	< 0.001	< 0.001	< 0.003
9/5/97	3659	1360	< 0.002	0.016	< 0.002	< 0.006
9/27/99	2355	679	< 0.002	< 0.002	< 0.002	< 0.006
Well C-3						
9/30/96	2655	715	< 1	< 1	< 1	< 1
3/18/97	1782	740	< 0.001	0.004	< 0.001	0.003
7/2/97	1948	692	< 0.001	< 0.001	< 0.001	< 0.003
9/5/97	2000	680	< 0.002	< 0.002	< 0.002	< 0.006
9/27/99	1642	527	0.019	< 0.002	< 0.002	< 0.006
10/13/99		580	< 0.002	< 0.002	< 0.002	< 0.006
Well C-4						
9/27/99	2933	801	< 0.002	< 0.002	< 0.002	< 0.006

AMERADA HESS CORPORATION

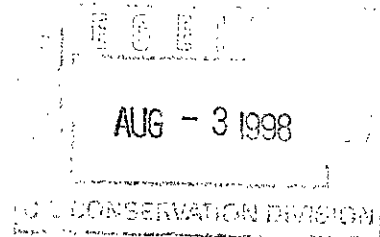
SAMUEL W. SMALL, PE
OFFICE 915/758-6741
FAX 915/758-6768

P.O. BOX 840
SEMINOLE, TEXAS 79360
915/758-6700

July 31, 1998

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
Z 437 801 896

Mr. William C. Olson
Oil Conservation Division
2040 S. Pacheco
Santa Fe, New Mexico 87505



RE: Additional Observation Well
Chevron Graham NCT-B Site
Lea County, NM

Dear Mr. Olson:

In response to your letter of June 12, 1998, Amerada Hess Corporation (AHC) plans to drill the subject observation well during the fourth quarter of this year. The well will be drilled following the program employed to drill the three existing observation wells. AHC does not plan to sample or analyze drill cuttings from the well as the OCD has indicated that it is interested primarily in the groundwater quality to determine background conditions in the area. Water samples obtained from the well will be analyzed for chloride and BTEX concentrations.

If you have any questions or need additional information, please contact the undersigned at (915) 758-6741 or at the letterhead address.

Yours truly,

A handwritten signature in black ink, appearing to read "Samuel Small". The signature is fluid and cursive, with a large, stylized "S" at the beginning.

Samuel Small, PE
Environmental Coordinator

Xc: NMOCD - Hobbs Office
Houston Environmental File
Seminole District Environmental File
Monument File



STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

June 12, 1998

CERTIFIED MAIL
RETURN RECEIPT NO. Z-235-437-291

Mr. Samuel Small
Amerada Hess Corporation
P.O. Box 840
Seminole, Texas 79360

**RE: SITE REMEDIATION REPORT
CHEVRON GRAHAM NCT-B TANK BATTERY**

Dear Mr. Small:

The New Mexico Oil Conservation Division (OCD) has reviewed Amerada Hess Corporation's (AHC) March 3, 1998 "GROUNDWATER INVESTIGATION AND CLOSURE REPORT, CHEVRON GRAHAM NCT-B TANK BATTERY, LEA COUNTY, NEW MEXICO". This document contains the results of AHC's remediation of contaminated soils and investigation of ground water contamination at the Graham NCT-B Tank Battery site located in Unit P, Section 02, Township 20 South, Range 36, East, Lea County, New Mexico. The document also requests final closure approval of remedial actions and permission to plug and abandon the existing site monitor wells.

Upon a review of the above document, the OCD believes that an upgradient monitor well is necessary in order to determine the background ground water quality conditions in the direct vicinity of the site. Therefore, the OCD defers comment on the above referenced closure request and requires that AHC submit a plan for installation of an upgradient ground water monitoring well to the OCD by July 31, 1998. Please submit the plan to the OCD Santa Fe Office with a copy provided to the OCD Hobbs District Office.

If you have any questions, please call me at (505) 827-7154.

Sincerely,

William C. Olson
Hydrologist
Environmental Bureau

xc: Wayne Price, OCD Hobbs District Office.

Z 235 437 291	
US Postal Service	
Receipt for Certified Mail	
No Insurance Coverage Provided.	
Do not use for International Mail (See reverse)	
Sent to	
Street & Number	
Post Office, State, & ZIP Code	
Postage	\$
Certified Fee	
Special Delivery Fee	

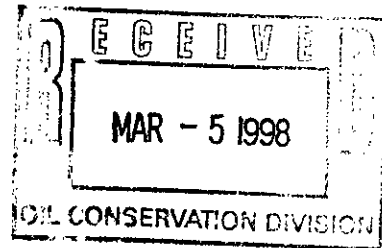
AMERADA HESS CORPORATION

SAMUEL W. SMALL, PE
OFFICE 915/758-6741
FAX 915/758-6768

P.O. BOX 840
SEMINOLE, TEXAS 79360
915/758-6700

March 3, 1998

**CERTIFIED MAIL
RETURN RECEIPT REQUESTED
Z 437 801 535**



Mr. William C. Olson
New Mexico Oil Conservation Division
2042 S. Pacheco
Santa Fe, New Mexico 87505

**RE: Groundwater Investigation and
Closure Report**
Chevron Graham NCT-B Tank Battery
Lea County, New Mexico

Dear Mr. Olson:

Enclosed find the final closure report for the groundwater investigation and site reclamation project conducted at the referenced abandoned battery location. Included with the report is the supporting laboratory data. Some of this information has previously been submitted to the NMOCD, but with the additional data your files will now be complete.

After you have had a chance to review the report, Amerada Hess would appreciate written confirmation that no additional testing of the monitor wells is required and that they may be plugged. As this is a State Land Trust lease, an annual fee of \$300.00/well will be required if the wells are to remain active.

If you need additional data or have any questions, please contact the undersigned at (915) 758-6741 or at the letterhead address.

Sincerely,

Samuel Small, PE
Environmental Coordinator

xc: NMOCD – Hobbs District
State Land Office – Hobbs
Houston Environmental File
Seminole District Environmental File
Monument Area File

CLOSURE REPORT

AMERADA HESS CORPORATION CHEVRON GRAHAM NCT-B BATTERY SITE (NMGSAU BATT. NO. 75)

The following closure report summarizes work performed at the abandoned battery site described below. Site restoration activities began at the site during March, 1996 and were completed in July, 1997. The work plan was developed in consultation with the New Mexico Oil Conservation Division.

I. Site Location and Description:

The site is located in the SE⁴, of the SE⁴ of Section 2, Township 20 South, Range 36 East, Lea County, New Mexico. USGS map coordinates are: Latitude 32° 35' 56" and Longitude 103° 19' 07". The surrounding area is primarily pasture land vegetated with native grasses, mesquite and shinary oak. Surface soil is comprised primarily of sand with some caliche rocks present.

II. Background:

The Graham NCT-B tank battery was built by Gulf Oil to service a two wells drilled in 1936. The two wells along with the battery were incorporated into the Amerada Hess Corporation (AHC) operated North Monument Grayburg San Andres Unit (NMGSAU) in 1992. In 1995 production from the lease was diverted to the NMGSAU Central Battery and the Graham NCT-B battery was abandoned. In March, 1996 work commenced at the site to clean up existing hydrocarbon contaminated soil and restore the site to conditions compatible with the surrounding area. The scope of work at the site was expanded to include a groundwater investigation when water was encountered while excavating.

III. Conclusions:

Remediation of hydrocarbon contamination at the abandoned Chevron NCT B battery site has been successfully completed and the potential for contaminating the groundwater with hydrocarbons at this site has been eliminated. Source material containing contaminants has been removed from the vadose zone immediately above the water table and the groundwater beneath the work site has been isolated from future contact with contaminated material by an impermeable clay cap. Hydrocarbon contaminated material remaining at the site has been remediated to TPH and BTEX concentrations pursuant to the program submitted by AHC to the NMOCDD on December 18, 1996. Concentrations of BTEX are below SDW standards in water samples obtained from the monitor wells. Concentrations of TDS and chlorides are elevated in the monitor wells, however, samples from other groundwater sources in the area indicate that this condition appears to be typical in the aquifer underlying the whole area. Fluid levels measured in the

monitor wells indicate that there is little or no pressure gradient and therefore little or no fluid migration across the site.

IV. **Job Summary:**

Contaminated material from directly beneath the original battery site was excavated to a depth of approximately 37 feet (see site plat). Groundwater was encountered on March 27, 1996, excavation activities were immediately suspended, and the NMOCD was notified of the situation. During September, 1996, three (3) groundwater monitor wells were drilled adjacent to the excavated area and water samples were obtained for analyses on September 30, 1996. Drill samples were collected at five (5) foot intervals while drilling each well and were analyzed for BTEX, TPH and chloride concentration. The water samples were analyzed for concentrations of BTEX, TDS, RCRA metals, and major cations and anions. A sample of water was obtained from the only active windmill in the area, located approximately 7/8 mile north west of the site, on November 18, 1996 and was analyzed for TDS and chloride concentrations. Samples of water from the groundwater monitor wells were obtained and analyzed for TDS, BTEX, and major cations and anions on March 18, 1997 and again on July 2, 1997 (the July samples were also re-tested for RCRA metals). On May 27, 1997, restoration activities were again resumed. The excavated area was back-filled with five (5) feet of clean caliche (TPH < 100 ppm). The caliche was capped with two (2) feet of redbed clay and the remaining excavation was back-filled with material which had been remediated to TPH concentrations less than 1000 ppm and BTEX concentration less than 50 ppm (benzene concentration less than 10 ppm). The backfill material was deposited in the excavation in five (5) foot lifts, with composite samples taken from each lift for laboratory analysis. The site was then graded to contour and seeded with native grasses. Water samples were obtained from the groundwater monitor wells on September 5, 1997 and were analyzed for BTEX, TDS, RCRA metals and major cations and anions. Work at the site was completed on July 24, 1997.

V. **Monitor Well Data Summary:**

Depth to Groundwater:

WELL	FLUID LEVEL FROM SURFACE	FLUID LEVEL SEA LEVEL
C-1	37	3541
C-2	37	3541
C-3	37	3541

Drill Sample Analyses:

DEPTH	C-1			C-2			C-3		
	TPH (PPM)	BTEX (PPM)	Cl ⁻ (PPM)	TPH (PPM)	BTEX (PPM)	Cl ⁻ (PPM)	TPH (PPM)	BTEX (PPM)	Cl ⁻ (PPM)
5'	319	< 0.2	2600	12	< 0.2	1700	17	< 0.2	1400
10'	44	< 0.2	1200	774	< 0.2	3300	259	< 0.2	2400
15'	34	< 0.2	< 1000				93	< 0.2	1000
20'							21	< 0.2	< 1000
23'				11	< 0.2	1000			
25'	26	< 0.2	< 1000						
28				14	< 0.2	< 1000	12	< 0.2	< 1000
30'	69	< 0.2	< 1000						
35'	95	< 0.2	< 1000						
36							5	< 0.2	< 1000
37				9	< 0.2	< 1000			
40'	147	< 0.2	< 1000						
45'									
47				6	< 0.2	< 1000			

Groundwater Sample Analysis:

DATE	HYDROCARBONS				SOLIDS
	BENZENE mg/L	TOLUENE mg/l	ETHYL BENZENE mg/L	TOTAL XYLENES mg/L	TDS mg/L
WELL C-1					
9/30/96	< 1	< 1	< 1	< 1	1284
3/18/97	< 0.001	0.002	< 0.001	< 0.003	1455
7/2/97	< 0.001	< 0.001	< 0.001	< 0.003	1495
9/5/97	< 0.002	< 0.002	< 0.002	< 0.006	1424
WELL C-2					
9/30/96	< 1	< 1	< 1	< 1	2194
3/18/97	< 0.001	0.002	< 0.001	< 0.003	1941
7/2/97	< 0.001	< 0.001	< 0.001	< 0.003	2950
9/5/97	< 0.002	0.016	< 0.002	< 0.006	3659
WELL C-3					
9/30/96	< 1	< 1	< 1	< 1	2655
3/18/97	< 0.001	0.004	< 0.001	0.003	1782
7/2/97	< 0.001	< 0.001	< 0.001	< 0.003	1948
9/5/97	< 0.002	< 0.002	< 0.002	< 0.006	2000

Groundwater Sample Analysis: (con't)

DATE	RCRA METALS (PPM)							
	As	Ag	Ba	Cd	Cr	Pb	Hg	Se
WELL C-1								
9/30/96	0.013	< 0.1	< 2	< 0.1	< 0.5	< 0.5	< 0.001	< 0.01
3/18/97								
7/2/97	0.013	< 0.1	1.7	< 0.1	< 1	< 0.1	< 0.02	< 0.1
9/5/97	0.007	< 0.05	0.1	< 0.01	< 0.05	0.015	< 0.002	0.002
WELL C-2								
9/30/96	0.013	< 0.1	< 2	< 0.1	< 0.5	< 0.5	< 0.001	< 0.01
3/18/97								
7/2/97	0.01	< 0.1	1.69	< 0.1	< 1	< 0.1	< 0.02	< 0.1
9/5/97	0.01	< 0.05	0.2	< 0.01	< 0.05	0.008	< 0.002	< 0.002
WELL C-3								
9/30/96	0.013	< 0.1	< 2	< 0.1	< 0.5	< 0.5	< 0.001	< 0.01
3/18/97								
7/2/97	0.009	< 0.1	1.5	< 0.1	< 1	< 0.1	< 0.02	< 0.1
9/5/97	0.004	< 0.05	0.1	< 0.01	< 0.05	0.014	< 0.002	< 0.002

DATE	ANIONS AND CATIONS (PPM)							
	Na	Ca	Mg	K	Cl	SO ₄	CO ₃	HCO ₃
WELL C-1								
9/30/96	227.6	158.5	41.8	7.18	440	123	Trace	288
3/18/97	248	155	54	4.1	540	131	0	317
7/2/97	260	135	58	3.2	520	150	0	312
9/5/97	209	162	56	14.3	508	145	0	298
WELL C-2								
9/30/96	260	253.5	63.8	8.49	592	136	0	298
3/18/97	278	155	102	3.9	700	160	0	322
7/2/97	387	284	106	4.1	1112	156	0	322
9/5/97	328	400	151	13.5	1360	180	0	337
WELL C-3								
9/30/96	215	365	72.5	10.17	715	102	0	205
3/18/97	244	179	85	4.2	740	85	0	249
7/2/97	254	186	64	5.3	692	12	0	239
9/5/97	290	198	77	2.0	680	115	0	234

VI. **Windmill Well and Water Data:**

Date	FLUID LEVEL FROM SURF.	FLUID LEVEL SEA LEVEL	TDS (mg/l)	Cl (mg/l)
3/26/91	37'	3568'		
11/18/96			3402	1483

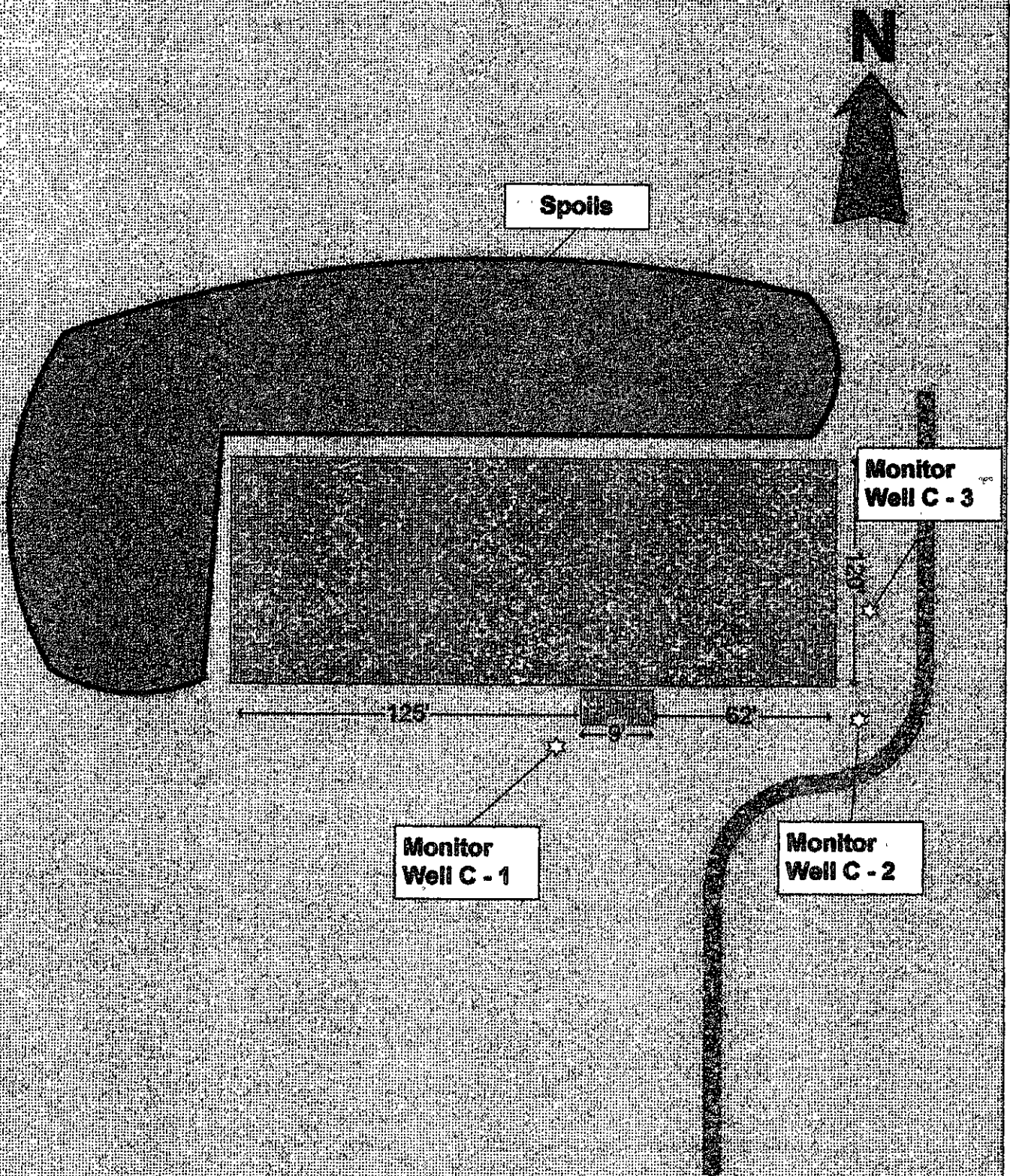
VII. **Backfill Material Data:**

SAMPLE DEPTH	DATE	TPH (mg/l)	BENZENE (mg/l)	TOLUENE (mg/l)	ETHYL- BENZENE (mg/l)	XYLENE (mg/l)
33' - 27'	4/1/97	5.98	< 0.1	1.814	1.203	5.306
27' - 25'	REDBED CLAY					
25' - 20'	6/20/97	827				
20' - 15'	6/20/97	807				
15' - 10'	7/1/97	490	0.002	0.008	0.004	0.023
10' - 5'	7/11/97	399	0.017	0.042	0.049	0.19
5' - surf.	7/21/97	641	0.005	< 0.002	< 0.002	0.027

VIII. **Remaining Work:**

Re-vegetation progress at the site will be continuously monitored. Upon receipt of NMOCD approval the monitor wells will be plugged.

PLATS AND DIAGRAMS



NOT TO SCALE

**Amerada Hess
Corporation**

**Site Plan
Chevron NCBT**

**Safety & Environmental Solutions, Inc.
Hobbs, New Mexico**

DRILL SAMPLE ANALYSES

WESTERN ENVIRONMENTAL CONSULTANTS

P.O. Box 1816
Hobbs New, Mexico 88240
(505) 392 - 5021

SOIL ANALYSIS REPORT

DATE: 09/30/96
CLIENT: S.E.S.
SUPERVISOR: A. Hodge
Sample Matrix: Soil

FACILITY: Chevron NCBT
Test Method: EPA 418.1
Order No.: Dyke Browning
SAMPLE RECEIVED: Cool and intact

	TPH		DEPTH	LOCATION
SAMPLE NO. 1-1:	319	PPM	5'	MW-1 Chevron NCBT
SAMPLE NO. 1-2:	44	PPM	10'	MW-1 Chevron NCBT
SAMPLE NO. 1-3:	34	PPM	15'	MW-1 Chevron NCBT
SAMPLE NO. 1-4:	26	PPM	25'	MW-1 Chevron NCBT
SAMPLE NO. 1-5:	69	PPM	30'	MW-1 Chevron NCBT
SAMPLE NO. 1-6:	95	PPM	35'	MW-1 Chevron NCBT
SAMPLE NO. 1-7:	147	PPM	40'	MW-1 Chevron NCBT

COMMENTS: These samples were taken with split-spoon during drilling operations. There was no sample at 20' due to a bridge in well bore.

WESTERN ENVIRONMENTAL CONSULTANTS

P.O. Box 1816
Hobbs, New Mexico 88240
(505) 392-5021

CHEMICAL ANALYSIS REPORT

DATE: 09/30/96

CLIENT: S.E.S.

SUPERVISOR: Allen Hodge

SAMPLE MATRIX: Soil

SITE ID: Chevron NCBT

ORDERED BY: Dyke Browning

TEST METHOD: 8020

SAMPLE RECEIVED: Cool and intact

<u>Parameter</u>	<u>Value</u>	<u>Units</u>	<u>Test Method</u>
Sample #1-1 MW-1 5'			
Benzene	<0.2	Mg/L	Headspace GC
Toluene	<0.2	Mg/L	8020/EPA
Ethylbenzene	<0.2	Mg/L	
Xylene (OMP)	<0.2	Mg/L	
Sample # 1-2 MW-1 10'			
Benzene	<0.2	Mg/L	Headspace GC
Toluene	<0.2	Mg/L	8020/EPA
Ethylbenzene	<0.2	Mg/L	
Xylene (OMP)	<0.2	Mg/L	
Sample # 1-3 MW-1 15'			
Benzene	<0.2	Mg/L	Headspace GC
Toluene	<0.2	Mg/L	8020/EPA
Ethylbenzene	<0.2	Mg/L	
Xylene (OMP)	<0.2	Mg/L	
Sample # 1-4 MW-1 25'			
Benzene	<0.2	Mg/L	Headspace GC
Toluene	<0.2	Mg/L	8020/EPA
Ethylbenzene	<0.2	Mg/L	
Xylene (OMP)	<0.2	Mg/L	
Sample # 1-5 MW-1 30'			
Benzene	<0.2	Mg/L	Headspace GC
Toluene	<0.2	Mg/L	8020/EPA
Ethylbenzene	<0.2	Mg/L	
Xylene (OMP)	<0.2	Mg/L	
Sample # 1-6 MW-1 35'			
Benzene	<0.2	Mg/L	Headspace GC
Toluene	<0.2	Mg/L	8020/EPA
Eethylbenzene	<0.2	Mg/L	
Xylene (OMP)	<0.2	Mg/L	

Page two
Chevron NCBT MW-1
BTEX Report

<u>Parameter</u>	<u>Value</u>	<u>Units</u>	<u>Test Method</u>
Sample # 1-7 MW-1 40'			
Benzene	<0.2	Mg/L	Headspace GC
Toluene	<0.2	Mg/L	8020/EPA
Ethylbenzene	<0.2	Mg/L	
Xylene (OMP)	<0.2	Mg/L	

COMMENTS: These samples were taken with split-spoon during drilling operations. There was no sample at 20' due to a bridge in well bore.

WESTERN ENVIRONMENTAL CONSULTANTS

P.O. Box 1816
Hobbs New, Mexico 88240
(505) 392 - 5021

SOIL ANALYSIS REPORT

DATE: 09/30/96
CLIENT: S.E.S.
SUPERVISOR: A. Hodge
Sample Matrix: Soil

FACILITY: Chevron NCBT
Test Method: EPA 325.3
Order No.: Dyke Browning
SAMPLE RECEIVED: Cool and intact

	CL		DEPTH	LOCATION
SAMPLE NO. 1-1:	2600	PPM	5'	MW-1 Chevron NCBT
SAMPLE NO. 1-2:	1200	PPM	10'	MW-1 Chevron NCBT
SAMPLE NO. 1-3:	<1000	PPM	15'	MW-1 Chevron NCBT
SAMPLE NO. 1-4:	<1000	PPM	25'	MW-1 Chevron NCBT
SAMPLE NO. 1-5:	<1000	PPM	30'	MW-1 Chevron NCBT
SAMPLE NO. 1-6:	<1000	PPM	35'	MW-1 Chevron NCBT
SAMPLE NO. 1-7:	<1000	PPM	40'	MW-1 Chevron NCBT

COMMENTS: These samples were taken with split-spoon during drilling operations. There was no sample at 20' due to a bridge in well bore.

WESTERN ENVIRONMENTAL CONSULTANTS

P.O. Box 1816
Hobbs New, Mexico 88240
(505) 392 - 5021

SOIL ANALYSIS REPORT

DATE: 09/30/96
CLIENT: S.E.S.
SUPERVISOR: A. Hodge
Sample Matrix: Soil

FACILITY: Chevron NCBT
Test Method: EPA 325.3
Order No.: Dyke Browning
SAMPLE RECEIVED: Cool and intact

	CL		DEPTH	LOCATION
SAMPLE NO. 2-1:	1700	PPM	5'	MW-2 Chevron NCBT
SAMPLE NO. 2-2:	3300	PPM	10'	MW-2 Chevron NCBT
SAMPLE NO. 2-3:	1000	PPM	23'	MW-2 Chevron NCBT
SAMPLE NO. 2-4:	<1000	PPM	28'	MW-2 Chevron NCBT
SAMPLE NO. 2-5:	<1000	PPM	37'	MW-2 Chevron NCBT
SAMPLE NO. 2-6:	<1000	PPM	47'	MW-2 Chevron NCBT

COMMENTS: These samples were taken with split-spoon during drilling operations.

WESTERN ENVIRONMENTAL CONSULTANTS

P.O. Box 1816

Hobbs, New Mexico 88240

(505) 392-5021

CHEMICAL ANALYSIS REPORT

DATE: 09/30/96

CLIENT: S.E.S.

SUPERVISOR: Allen Hodge

SAMPLE MATRIX: Soil

SITE ID: Chevron NCBT

ORDERED BY: Dyke Browning

TEST METHOD: 8020

SAMPLE RECEIVED: Cool and intact

<u>Parameter</u>	<u>Value</u>	<u>Units</u>	<u>Test Method</u>
Sample # 2-1 MW-2 5'			
Benzene	<0.2	Mg/L	Headspace GC
Toluene	<0.2	Mg/L	8020/EPA
Ethylbenzene	<0.2	Mg/L	
Xylene (OMP)	<0.2	Mg/L	
Sample # 2-2 MW-2 10'			
Benzene	<0.2	Mg/L	Headspace GC
Toluene	<0.2	Mg/L	8020/EPA
Ethylbenzene	<0.2	Mg/L	
Xylene (OMP)	<0.2	Mg/L	
Sample # 2-3 MW-2 23'			
Benzene	<0.2	Mg/L	Headspace GC
Toluene	<0.2	Mg/L	8020/EPA
Ethylbenzene	<0.2	Mg/L	
Xylene (OMP)	<0.2	Mg/L	
Sample # 2-4 MW-2 28'			
Benzene	<0.2	Mg/L	Headspace GC
Toluene	<0.2	Mg/L	8020/EPA
Ethylbenzene	<0.2	Mg/L	
Xylene (OMP)	<0.2	Mg/L	
Sample # 2-5 MW-2 37'			
Benzene	<0.2	Mg/L	Headspace GC
Toluene	<0.2	Mg/L	8020/EPA
Ethylbenzene	<0.2	Mg/L	
Xylene (OMP)	<0.2	Mg/L	
Sample # 2-6 MW-2 47'			
Benzene	<0.2	Mg/L	Headspace GC
Toluene	<0.2	Mg/L	8020/EPA
Eethylbenzene	<0.2	Mg/L	
Xylene (OMP)	<0.2	Mg/L	

COMMENTS: These samples were taken with split-spoon during drilling operations.

WESTERN ENVIRONMENTAL CONSULTANTS

P.O. Box 1816
Hobbs New, Mexico 88240
(505) 392 - 5021

SOIL ANALYSIS REPORT

DATE: 09/30/96
CLIENT: S.E.S.
SUPERVISOR: A. Hodge
Sample Matrix: Soil

FACILITY: Chevron NCBT
Test Method: EPA 418.1
Order No.: Dyke Browning
SAMPLE RECEIVED: Cool and intact

	TPH		DEPTH	LOCATION
SAMPLE NO. 2-1:	12	PPM	5'	MW-2 Chevron NCBT
SAMPLE NO. 2-2:	774	PPM	10'	MW-2 Chevron NCBT
SAMPLE NO. 2-3:	11	PPM	23'	MW-2 Chevron NCBT
SAMPLE NO. 2-4:	14	PPM	28'	MW-2 Chevron NCBT
SAMPLE NO. 2-5:	09	PPM	37'	MW-2 Chevron NCBT
SAMPLE NO. 2-6:	06	PPM	47'	MW-2 Chevron NCBT

COMMENTS: These samples were taken with split-spoon during drilling operations.

WESTERN ENVIRONMENTAL CONSULTANTS

P.O. Box 1816
Hobbs New, Mexico 88240
(505) 392 - 5021

SOIL ANALYSIS REPORT

DATE: 09/30/96

CLIENT: S.E.S.

SUPERVISOR: A. Hodge

Sample Matrix: Soil

FACILITY: Chevron NCBT

Test Method: EPA 325.3

Order No.: Dyke Browning

SAMPLE RECEIVED: Cool and intact

	CL		DEPTH	LOCATION
SAMPLE NO. 3-1:	1400	PPM	5'	MW-3 Chevron NCBT
SAMPLE NO. 3-2:	2400	PPM	10'	MW-3 Chevron NCBT
SAMPLE NO. 3-3:	1000	PPM	15'	MW-3 Chevron NCBT
SAMPLE NO. 3-4:	<1000	PPM	20'	MW-3 Chevron NCBT
SAMPLE NO. 3-5:	<1000	PPM	28'	MW-3 Chevron NCBT
SAMPLE NO. 3-6:	<1000	PPM	36'	MW-3 Chevron NCBT

COMMENTS: These samples were taken with split-spoon during drilling operations.

WESTERN ENVIRONMENTAL CONSULTANTS

P.O. Box 1816

Hobbs, New Mexico 88240

(505) 392-5021

CHEMICAL ANALYSIS REPORT

DATE: 09/30/96

CLIENT: S.E.S.

SUPERVISOR: Allen Hodge

SAMPLE MATRIX: Soil

SITE ID: Chevron NCBT

ORDERED BY: Dyke Browning

TEST METHOD: 8020

SAMPLE RECEIVED: Cool and intact

<u>Parameter</u>	<u>Value</u>	<u>Units</u>	<u>Test Method</u>
Sample # 3-1 MW-3 5'			
Benzene	<0.2	Mg/L	Headspace GC
Toluene	<0.2	Mg/L	8020/EPA
Ethylbenzene	<0.2	Mg/L	
Xylene (OMP)	<0.2	Mg/L	
Sample # 3-2 MW-3 10'			
Benzene	<0.2	Mg/L	Headspace GC
Toluene	<0.2	Mg/L	8020/EPA
Ethylbenzene	<0.2	Mg/L	
Xylene (OMP)	<0.2	Mg/L	
Sample # 3-3 MW-3 15'			
Benzene	<0.2	Mg/L	Headspace GC
Toluene	<0.2	Mg/L	8020/EPA
Ethylbenzene	<0.2	Mg/L	
Xylene (OMP)	<0.2	Mg/L	
Sample # 3-4 MW-3 20'			
Benzene	<0.2	Mg/L	Headspace GC
Toluene	<0.2	Mg/L	8020/EPA
Ethylbenzene	<0.2	Mg/L	
Xylene (OMP)	<0.2	Mg/L	
Sample # 3-5 MW-3 28'			
Benzene	<0.2	Mg/L	Headspace GC
Toluene	<0.2	Mg/L	8020/EPA
Ethylbenzene	<0.2	Mg/L	
Xylene (OMP)	<0.2	Mg/L	
Sample # 3-6 MW-3 36'			
Benzene	<0.2	Mg/L	Headspace GC
Toluene	<0.2	Mg/L	8020/EPA
Eethylbenzene	<0.2	Mg/L	
Xylene (OMP)	<0.2	Mg/L	

COMMENTS: These samples were taken with split-spoon during drilling operations.

WINDMILL WATER ANALYSES



PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603

PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

PHONE (505) 326-4669 • 118 S. COMMERCIAL AVE. • FARMINGTON, NM 87401

PHONE (806) 796-2800 • 5262 34th ST. • LUBBOCK, TX 79407

ANALYTICAL RESULTS FOR
AMERADA HESS CORP.
ATTN: S.W. SMALL
P.O. BOX 840
SEMINOLE, TX 79360
FAX TO: 915-758-6741

Receiving Date: 11/18/96
Reporting Date: 11/19/96
Project Number: NOT GIVEN
Project Name: WM35
Project Location: NMGBSAU

Sampling Date: 11/18/96
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: BC

LAB NUMBER	SAMPLE ID	TDS (mg/L)	Cl (mg/L)
ANALYSIS DATE:		11/19/96	11/18/96
H2708-1	NMGBSAU	3402	1483
Quality Control		NR	208
True Value QC		NR	200
% Accuracy		NR	104
Relative Percent Difference		3.2	1.9
METHODS: EPA 600/4-79-02		160.1	325.3

Burgess R. Cashe
Chemist

11/19/96
Date

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. H2708-1 Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above-stated reasons or otherwise.

BACKFILL MATERIAL ANALYSES

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

RE ENVIRONMENTAL SERVICES, INC.
ATTN: MR. CURTIS ELAM
P.O. BOX 13418
ODESSA, TEXAS 79768-3418
FAX: 915-368-0804

Receiving Date: 04/02/96
Sample Type: 7146 WATER, 7147 SOIL
Project: NMQSAU

Analysis Date: 04/02/96
Sampling Date: 04/01/96
Sample Condition: Intact

ELT#	FIELD CODE	BENZENE (ppm)	TOLUENE (ppm)	ETHYLBENZENE (ppm)	m,p-XYLENE (ppm)	o-XYLENE (ppm)	TPH (ppm)
7146	GRAHAM NCTB AHC	0.002	0.008	0.012	0.032	0.008	9
7147	GRAHAM NCT	<0.100	1.814	1.203	5.306	3.391	5.980

% IA	91	101	103	104	103	97
% EA 7147	88	114	93	93	87	--
% EA 7146	84	85	87	93	99	74
BLANK	<0.001	<0.001	<0.001	<0.001	<0.001	<1

METHODS: SW 846-8020, 5030 EPA 418.1


Michael R. Fowler

4-3-96
Date

H3007.XLS

**ARDINAL**
LABORATORIES

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**ANALYTICAL RESULTS FOR
AMERADA HESS
ATTN: MARK VINSON
P. O. BOX 840
SEMINOLE, TX 79380
FAX TO:**

Receiving Date: 06/20/97

Reporting Date: 06/20/97

Project Number: NMGSAU BATTERY #75

Project Name: NOT GIVEN

Project Location: MONUMENT, NM

Analysis Date: 06/20/97

Sampling Date: 06/20/97

Sample Type: SOIL

Sample Condition: COOL & INTACT

Sample Received By: GP

Analyzed By: GP

LAB NUMBER	SAMPLE ID	TPH (ppm)
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H3018-1	NMGSAU-EAST	827
H3018-2	NMGSAU-WEST	807
Quality Control		209.7
True Value QC		200.0
% Accuracy		104
Relative Percent Difference		2.4

METHOD: EPA 418.1, 3510, 3540, or 3550; Infrared Spectroscopy


Gayle A. Potter, Chemist

Date

06/20/97

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ANALYTICAL RESULTS FOR
AMERADA HESS
ATTN: MARK VINSON
ADDRESS: P. O. DRAWER D
MONUMENT, NM 88265
FAX TO:

Receiving Date: 07/11/97
Reporting Date: 07/13/97
Project Number: NOT GIVEN
Project Name: NMGSAU BATT #75
Project Location: MONUMENT, NM

Sampling Date: 07/11/97
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC/GP

LAB NO.	SAMPLE ID	TPH (mg/kg)	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL BENZENE (mg/kg)	TOTAL XYLENES (mg/kg)
---------	-----------	----------------	--------------------	--------------------	-----------------------------	-----------------------------

ANALYSIS DATE:	07/11/97	07/13/97	07/13/97	07/13/97	07/13/97
H3048-1	399	0.017	0.042	0.049	0.19

Quality Control	198.8	246	242	231	236
True Value QC	200.0	271	269	262	259
% Recovery	99.4	90.9	90.0	88.2	91.1
Relative Percent Difference	0.1	9.6	10.5	12.6	9.4

METHODS: TRPHC - EPA 600/7-79-020, 418.1; BTEX - EPA SW846-8020, 8260


Gayle A. Potter
Chemist

07/15/97
Date

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ANALYTICAL RESULTS FOR
AMERADA HESS
ATTN: MARK VINSON
P. O. DRAWER "D"
MONUMENT, NM 88265
FAX TO:

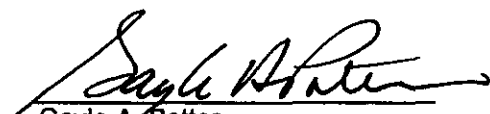
Receiving Date: 07/01/97
Reporting Date: 07/02/97
Project Number: not given
Project Name: not given
Project Location: not given

Sampling Date: 07/01/97
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: AH/JA

LAB NO.	SAMPLE ID	TPH (mg/kg)	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)
ANALYSIS DATE:		07/01/97	07/02/97	07/02/97	07/02/97	07/02/97
H3030-1	NMGSAU BATT 75	490	0.002	0.008	0.004	0.023

Quality Control	214	0.110	0.092	0.114	0.342
True Value QC	200	0.109	0.103	0.105	0.31
% Recovery	107	101	89	109	110
Relative Percent Difference	6.8	<1	<1	<1	<1

METHODS: TRPHC - EPA 600/7-79-020, 418.1; BTEX - EPA SW846-8020, 8260


Gayle A. Potter
Chemist

07/02/97
Date

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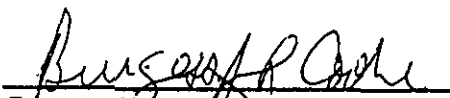
ANALYTICAL RESULTS FOR
AMERADA HESS
ATTN: MARK VINSON
P.O. DRAWER D
MONUMENT, NM 88265
FAX TO:

Receiving Date: 07/21/97
Reporting Date: 07/23/97
Project Number: NOT GIVEN
Project Name: NMGSAU BATT #75
Project Location: MONUMENT

Sampling Date: 07/21/97
Sample Type: SOIL
Sample Condition: COOL, INTACT
Sample Received By: BC
Analyzed By: BC

LAB NUMBER	SAMPLE ID	TPH (mg/Kg)	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)
ANALYSIS DATE:		07/21/97	07/21/97	07/21/97	07/21/97	07/21/97
H3066-1	NMGSAU BATT #75	641	0.005	<0.002	<0.002	0.027
Quality Control		194	0.101	0.089	0.081	0.253
True Value QC		200	0.090	0.090	0.087	0.260
% Recovery		96.9	102	99	93	97
Relative Percent Difference		2.9	5.1	16.8	12.2	8.8

METHODS: TRPHC - EPA 600/7-79-020, 418.1; BTEX - EPA SW-846-8020


Burgess J. A. Cooke, Ph. D.

7/23/97
Date

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WESTERN ENVIRONMENTAL CONSULTANTS

P.O. Box 1816
Hobbs New, Mexico 88240
(505) 392 - 5021

SOIL ANALYSIS REPORT

DATE: 09/30/96
CLIENT: S.E.S.
SUPERVISOR: A. Hodge
Sample Matrix: Soil

FACILITY: Chevron NCBT
Test Method: EPA 418.1
Order No.: Dyke Browning
SAMPLE RECEIVED: Cool and intact

	TPH		DEPTH	LOCATION
SAMPLE NO. 3-1:	17	PPM	5'	MW-3 Chevron NCBT
SAMPLE NO. 3-2:	259	PPM	10'	MW-3 Chevron NCBT
SAMPLE NO. 3-3:	93	PPM	15'	MW-3 Chevron NCBT
SAMPLE NO. 3-4:	21	PPM	20'	MW-3 Chevron NCBT
SAMPLE NO. 3-5:	12	PPM	28'	MW-3 Chevron NCBT
SAMPLE NO. 3-6:	05	PPM	36'	MW-3 Chevron NCBT

COMMENTS: These samples were taken with split-spoon during drilling operations.

GROUNDWATER ANALYSES



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PHONE (505) 326-4669 • 118 S. COMMERCIAL AVE. • FARMINGTON, NM 87401

PHONE (806) 796-2800 • 5262 34th ST. • LUBBOCK, TX 79407

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: DEE WHATLEY
703 E. CLINTON
HOBBS, NM 88240
FAX TO:

Receiving Date: 09/30/96
Reporting Date: 10/04/96
Project Number: NOT GIVEN
Project Name: C1-C3, D1-D4
Project Location: AMERADA HESS, CHEVRON
NCBT & DURHAM ST. A

Sampling Date: 09/30/96
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: WL
Analyzed By: BC/GP

LAB NUMBER	SAMPLE ID	TPH (mg/L)	BENZENE (ppb)	TOLUENE (ppb)	ETHYL BENZENE (ppb)	TOTAL XYLENES (ppb)
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ANALYSIS DATE:	10/2/96	10/1/96	10/1/96	10/1/96	10/1/96
H2662-1 C-1	1.12	<1	<1	<1	<1
H2662-2 C-2	0.59	<1	<1	<1	<1
H2662-3 C-3	0.50	<1	<1	<1	<1
H2662-4 D-1	0.50	<1	<1	<1	<1
H2662-5 D-2	1.22	<1	<1	<1	<1
H2662-6 D-3	0.55	<1	<1	<1	<1
H2662-7 D-4	2.61	<1	<1	<1	<1
Quality Control	198	91.4	82.6	80.2	239
True Value QC	200	88.2	85.8	83.4	254
% Accuracy	99.0	104	96.3	96.1	94.1
Relative Percent Difference	1.0	2.5	3.9	9.4	5.5

METHODS: TRPHC - EPA 600/7-79-020, 418.1; BTEX - EPA SW-846-8020

Burgess J. A. Cooke, Ph. D.

10/14/96
Date

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ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: DEE WHATLEY
703 E. CLINTON
HOBBS, NM 88240
FAX TO:

Receiving Date: 09/30/96
Reporting Date: 10/07/96
Project Number: NOT GIVEN
Project Name: C1-C3, D1-D4
Project Location: AMERADA HESS, CHEVRON
NCBT & DURHAM ST. A

Analysis Date: 10/04/96
Sampling Date: 09/30/96
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: WL
Analyzed By: GP

LAB NUMBER	SAMPLE ID	TDS (mg/L)
H2662-1	C-1	1284
H2662-2	C-2	2194
H2662-3	C-3	2655
H2662-4	D-1	1285
H2662-5	D-2	1062
H2662-6	D-3	939
H2662-7	D-4	1064
Quality Control		NR
True Value QC		NR
% Accuracy		NR
Relative Percent Difference		3.2

METHOD: EPA 600/4-79-020, 160.1

Chemist

10/7/96

Date

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ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: DEE WHATLEY
703 E. CLINTON
HOBBS, NM 88240
FAX TO:

Receiving Date: 09/30/96
Reporting Date: 10/09/96
Project Number: NOT GIVEN
Project Name: C1-C3, D1-D4
Project Location: AMERADA HESS, CHEVRON NCBT
& DURHAM ST. A

Sampling Date: 09/30/96
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: WL
Analyzed By: WL

RCRA METALS

LAB NUMBER	SAMPLE ID	As ppm	Ag ppm	Ba ppm	Cd ppm	Cr ppm	Pb ppm	Hg ppm	Se ppm
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ANALYSIS DATE:		10/7/96	10/4/96	10/2/96	10/4/96	10/8/96	10/4/96	10/8/96	10/5/96
H2662-1	C-1	0.013	<0.1	<2	<0.1	<0.5	<0.5	<0.001	<0.01
H2662-2	C-2	0.013	<0.1	<2	<0.1	<0.5	<0.5	<0.001	<0.01
H2662-3	C-3	0.013	<0.1	<2	<0.1	<0.5	<0.5	<0.001	<0.01
H2662-4	D-1	0.013	<0.1	<2	<0.1	<0.5	<0.5	<0.001	<0.01
H2662-5	D-2	0.013	<0.1	<2	<0.1	<0.5	<0.5	<0.001	<0.01
H2662-6	D-3	0.017	<0.1	<2	<0.1	<0.5	<0.5	<0.001	<0.01
H2662-7	D-4	0.027	<0.1	<2	<0.1	<0.5	<0.5	<0.001	<0.01
Quality Control		11.1	0.490	18.23	0.107	1.072	0.50	21.0	44.9
True Value QC		10.0	0.500	20.00	0.100	1.000	0.50	25.0	50.0
% Accuracy		111	98.0	91.1	107	107.2	100	84.0	89.8
Relative Percent Difference		1.2	0.2	14.7	0.6	1.1	0	0	9.0

METHODS: EPA 600/4-79-02	206.2	272.1	208.1	213.1	218.1	239.1	245.1	270.2
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Wei Li

Wei Li, Chemist

10-9-96

Date

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ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: DEE WHATLEY
703 E. CLINTON
HOBBS, NM 88240
FAX TO:

Receiving Date: 09/30/96
Reporting Date: 10/07/96
Project Number: NOT GIVEN
Project Name: C1-C3, D1-D4
Project Location: AMERADA HESS, CHEVRON NCBT
& DURHAM ST. A

Sampling Date: 09/30/96
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: WL
Analyzed By: GP/WL

LAB NUMBER	SAMPLE ID	Na ppm	Ca ppm	Mg ppm	K ppm	Cl ppm	SO4 ppm	CO3 ppm	HCO3 ppm
ANALYSIS DATE:		10/3/96	10/3/96	10/3/96	10/3/96	10/4/96	10/4/96	10/4/96	10/4/96
H2662-1	C-1	227.6	158.5	41.8	7.18	440	123	trace	288
H2662-2	C-2	260.0	253.5	63.8	8.49	592	136	0	298
H2662-3	C-3	215.0	365.0	72.5	10.17	715	102	0	205
H2662-4	D-1	142.5	232.3	45.3	10.52	336	108	0	301
H2662-5	D-2	92.5	247.3	44.0	20.74	220	80	0	273
H2662-6	D-3	195.0	259.3	37.0	18.74	276	50	0	342
H2662-7	D-4	327.5	235.8	33.8	13.82	334	57	0	361
Quality Control		0.52	1.04	1.00	5.05	103	98	NR	NR
True Value QC		0.50	1.00	1.00	5.00	100	100	NR	NR
% Accuracy		104	104	100	101	103	98	NR	NR
Relative Percent Difference		0.7	0.8	0	7.2	3.0	2.0	0	0
METHODS: EPA 600/4-79-02						352.3	375.4		
Std. Methods		3111B	3111B	3111B	3111B			2320B	2320B

Wei Li, Chemist

10-7-96
Date

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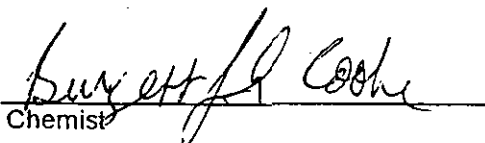
ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: DEE WHATLEY
703 E. CLINTON
HOBBS, NM 88240
FAX TO:

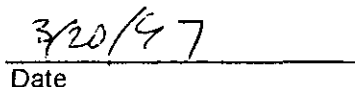
Receiving Date: 03/18/97
Reporting Date: 03/20/97
Project Number: NOT GIVEN
Project Name: AMERADA HESS
Project Location: CHEVRON NCBT & DURHAM STATE "A"

Sampling Date: 03/18/97
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC

LAB NUMBER	SAMPLE ID	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE		03/19/97	03/19/97	03/19/97	03/19/97
H2854-1	CHEVRON NCBT #1	<0.001	0.002	<0.001	<0.003
H2854-2	CHEVRON NCBT #2	<0.001	0.002	<0.001	<0.003
H2854-3	CHEVRON NCBT #3	<0.001	0.004	<0.001	0.003
H2854-4	DURHAM ST. "A" #1	<0.001	0.004	<0.001	0.003
H2854-5	DURHAM ST. "A" #2	<0.001	0.003	<0.001	<0.003
H2854-6	DURHAM ST. "A" #3	<0.001	0.003	<0.001	0.004
H2854-7	DURHAM ST. "A" #4	<0.001	0.003	<0.001	0.003
Quality Control		0.091	0.104	0.108	0.326
True Value QC		0.100	0.100	0.100	0.300
% Accuracy		91.3	104	108	109
Relative Percent Difference		9.5	4.0	7.6	7.9

METHOD: EPA SW 846-8260, 5030, GC/MS


Chemist


Date

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ARDINAL LABORATORIES

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PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: DEE WHATLEY
703 E. CLINTON
HOBBS, NM 88240
FAX TO:

Receiving Date: 03/18/97
Reporting Date: 03/20/97
Project Number: NOT GIVEN
Project Name: AMERADA HESS
Project Location: CHEVRON NCBT & DURHAM STATE "A"

Analysis Date: 03/18/97
Sampling Date: 03/18/97
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: AH

LAB NUMBER	SAMPLE ID	TDS (mg/L)
H2854-1	CHEVRON NCBT #1	1455
H2854-2	CHEVRON NCBT #2	1941
H2854-3	CHEVRON NCBT #3	1782
H2854-4	DURHAM ST. "A" #1	1053
H2854-5	DURHAM ST. "A" #2	900
H2854-6	DURHAM ST. "A" #3	775
H2854-7	DURHAM ST. "A" #4	1087
Quality Control		NR
True Value QC		NR
% Accuracy		NR
Relative Percent Difference		0.1

METHOD: EPA 600/4-79-020, 160.1


Chemist


Date

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ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: DEE WHATLEY
703 E. CLINTON
HOBBS, NM 88240
FAX TO:

Receiving Date: 03/18/97
Reporting Date: 03/20/97
Project Number: NOT GIVEN
Project Name: AMERADA HESS
Project Location: CHEVRON NCBT & DURHAM STATE "A"

Sampling Date: 03/18/97
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: AH/BC

LAB NUMBER	SAMPLE ID	Na ppm	Ca ppm	Mg ppm	K ppm	Cl ppm	SO4 ppm	CO3 ppm	HCO3 ppm
ANALYSIS DATE:		03/20/97	03/19/97	03/19/97	03/19/97	03/19/97	03/19/97	03/19/97	03/19/97
H2854-1	CHEV. NCBT #1	248	155	54	4.1	540	131	0	317
H2854-2	CHEV. NCBT #2	278	155	102	3.9	700	160	0	322
H2854-3	CHEV. NCBT #3	244	179	85	4.2	740	85	0	249
H2854-4	DURH. ST. "A" #1	227	125	41	4.3	300	89	0	381
H2854-5	DURH. ST. "A" #2	131	115	46	4.0	280	74	0	361
H2854-6	DURH. ST. "A" #3	223	61	33	2.8	280	43	0	410
H2854-7	DURH. ST. "A" #4	310	32	20	1.8	320	59	0	400
Quality Control		NR	NR	NR	NR	480	105	NR	NR
True Value QC		NR	NR	NR	NR	500	100	NR	NR
% Accuracy		NR	NR	NR	NR	96.0	105	NR	NR
Relative Percent Difference		NR	NR	NR	NR	0	4.8	0	0
METHODS: EPA 600/4-79-02						352.3	375.4		
Std. Methods		3111B	3111B	3111B	3111B			2320B	2320B

Say G. B. P. [Signature]
Chemist

03/20/97
Date



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FAX TO:

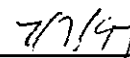
Receiving Date: 07/02/97
Reporting Date: 07/07/97
Project Number: NOT GIVEN
Project Name: AMERADA HESS MONITOR WELLS
Project Location: MONUMENT, NM

Sampling Date: 07/02/97
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC

LAB NUMBER	SAMPLE ID	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE		07/03/97	07/03/97	07/03/97	07/03/97
H3036-1	#1 CHEVRON NCBT	<0.001	<0.001	<0.001	<0.003
H3036-2	#2 CHEVRON NCBT	<0.001	<0.001	<0.001	<0.003
H3036-3	#3 CHEVRON NCBT	<0.001	<0.001	<0.001	<0.003
H3036-4	#4 DURHAM ST A 1	<0.001	<0.001	<0.001	0.004
H3036-5	#5 DURHAM ST A 2	<0.001	<0.001	<0.001	<0.003
H3036-6	#6 DURHAM ST A 3	<0.001	<0.001	<0.001	0.004
H3036-7	#7 DURHAM ST A 4	0.001	<0.001	<0.001	0.005
Quality Control		0.112	0.113	0.114	0.339
True Value QC		0.100	0.100	0.100	0.300
% Accuracy		112	113	114	113
Relative Percent Difference		4.4	0.9	0.9	2.4

METHOD: EPA SW 846-8020, 5030, Gas Chromatography


Chemist


Date



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ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: DEE WHATLEY
703 E. CLINTON
HOBBS, NM 88240

Receiving Date: 07/02/97
Reporting Date: 07/14/97
Project Number: NOT GIVEN
Project Name: AMERADA HESS MONITOR WELLS
Project Location: MONUMENT, NM

Sampling Date: 07/02/97
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: GP

RCRA METALS

LAB NUMBE	SAMPLE ID	As ppm	Ag ppm	Ba ppm	Cd ppm	Cr ppm	Pb ppm	Hg ppm	Se ppm
-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------

ANALYSIS DATE:	07/09/97	07/09/97	07/09/97	07/09/97	07/09/97	07/09/97	07/08/97	07/09/97
H3036-1 #1 CHEVRON NCBT	0.013	<0.1	1.7	<0.1	<1	<0.1	<0.02	<0.1
H3036-2 #2 CHEVRON NCBT	0.010	<0.1	1.6	<0.1	<1	<0.1	<0.02	<0.1
H3036-3 #3 CHEVRON NCBT	0.009	<0.1	1.5	<0.1	<1	<0.1	<0.02	<0.1
H3036-4 #4 DURHAM ST A 1	0.009	<0.1	1.5	<0.1	<1	<0.1	<0.02	<0.1
H3036-5 #5 DURHAM ST A 2	0.009	<0.1	1.9	<0.1	<1	<0.1	<0.02	<0.1
H3036-6 #6 DURHAM ST A 3	0.009	<0.1	1.9	<0.1	<1	<0.1	<0.02	<0.1
H3036-7 #7 DURHAM ST A 4	0.011	<0.1	1.7	<0.1	<1	<0.1	<0.02	<0.1
Quality Control	0.053	4.01	5.00	1.965	4.99	2.00	0.0099	0.094
True Value QC	0.050	4.00	5.00	2.000	5.00	2.00	0.0100	0.100
% Recovery	106	101	100	98	99	100	99	94
Relative Percent Difference	5.3	0.3	7.6	0.4	10.9	1.4	3.1	11.1

METHODS: EPA 600/4-79-020	206.2	272.1	208.1	213.1	218.1	239.1	245.1	270.2
METHODS: SW-846	7060A	7760A	7080A	7130	7190	7420	7470A	7740

Dee Whatley
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7/14/97
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ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: DEE WHATLEY
703 E. CLINTON
HOBBS, NM 88240

Receiving Date: 07/02/97
Reporting Date: 07/07/97
Project Number: NOT GIVEN
Project Name: AMERADA HESS MONITOR WELLS
Project Location: MONUMENT, NM

Sampling Date: 07/02/97
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: AH/BC

LAB NUMBER	SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (umhos/cm)	T-Alkalinity (mgCaCO3/L)
ANALYSIS DATE:		07/07/97	07/02/97	07/02/97	07/02/97	07/02/97	07/02/97
H3036-1	#1 CHEVRON NCBT	260	135	58	3.2	2226	256
H3036-2	#2 CHEVRON NCBT	387	284	106	4.1	4350	264
H3036-3	#3 CHEVRON NCBT	254	186	64	5.3	2790	196
H3036-4	#4 DURHAM ST A 1	176	116	41	3.7	1607	312
H3036-5	#5 DURHAM ST A 2	113	113	40	2.8	1284	304
H3036-6	#6 DURHAM ST A 3	239	73	18	2.8	1362	368
H3036-7	#7 DURHAM ST A 4	327	36	20	12.6	1703	372
Quality Control		NR	46	50	NR	1413	NR
True Value QC		NR	50	50	NR	1413	NR
% Accuracy		NR	92	100	NR	100	NR
Relative Percent Difference		NR	0	0	NR	0	NR
METHODS:		SM3500-Ca-D	3500-Mg E		8049	120.1	310.1

		Cl ⁻ (mg/L)	SO4 (mg/L)	CO3 (mg/L)	HCO3 (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:		07/02/97	07/03/97	07/02/97	07/02/97	07/02/97	07/02/97
H3036-1	#1 CHEVRON NCBT	520	150	0	312	7.41	1495
H3036-2	#2 CHEVRON NCBT	1112	156	0	322	7.36	2950
H3036-3	#3 CHEVRON NCBT	692	112	0	239	7.44	1948
H3036-4	#4 DURHAM ST A 1	296	112	0	381	7.43	1164
H3036-5	#5 DURHAM ST A 2	216	84	0	371	7.31	990
H3036-6	#6 DURHAM ST A 3	260	43	0	449	7.50	868
H3036-7	#7 DURHAM ST A 4	324	68	0	454	7.65	1085
Quality Control		200	97	NR	NR	7.04	NR
True Value QC		200	100	NR	NR	7.00	NR
% Accuracy		100	97	NR	NR	101	NR
Relative Percent Difference		0	1.6	NR	NR	0.6	NR
METHODS:		SM4500-Cl-B	375.4	310.1	310.1	150.1	160.1

Chemist

Date

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ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: DEE WHATLEY
703 E. CLINTON, SUITE 103
HOBBS, NM 88240
FAX TO: 505-397-4388

Receiving Date: 09/05/97
Reporting Date: 09/08/97
Project Number: 3421
Project Name: AMERADA MONITOR WELLS
Project Location: CHEVRON NCBT & DURHAM ST. A

Sampling Date: 09/05/97
Sample Type: GROUNDWATER
Sample Condition: COOL, INTACT
Sample Received By: AH
Analyzed By: BC

LAB NUMBER	SAMPLE ID	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE		09/05/97	09/05/97	09/05/97	09/05/97
H3178-1	C-1	<0.002	<0.002	<0.002	<0.006
H3178-2	C-2	<0.002	0.016	<0.002	<0.006
H3178-3	C-3	<0.002	<0.002	<0.002	<0.006
H3178-4	D-1	0.008	<0.002	<0.002	<0.006
H3178-5	D-2	<0.002	<0.002	<0.002	<0.006
H3178-6	D-3	<0.002	<0.002	<0.002	<0.006
H3178-7	D-4	<0.002	<0.002	<0.002	<0.006
Quality Control		0.095	0.095	0.088	0.263
True Value QC		0.090	0.090	0.087	0.260
% Recovery		105	106	101	101
Relative Percent Difference		10.3	6.8	13.8	2.2

METHOD: EPA SW 846-8020, 5030, Gas Chromatography

Chemist

Date

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ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: DEE WHATLEY
703 E. CLINTON, STE 103
HOBBS, NM 88240
FAX TO: 505-397-4388

Receiving Date: 09/05/97
Reporting Date: 09/12/97
Project Number: 3421
Project Name: AMERADA MONITOR WELLS
Project Location: CHEVRON NCBT & DURHAM ST. A

Sampling Date: 09/05/97
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: AH/GP

TOTAL METALS

LAB NO.	SAMPLE ID	As (ppm)	Ag (ppm)	Ba (ppm)	Cd (ppm)	Cr (ppm)	Pb (ppm)	Hg (ppm)	Se (ppm)
ANALYSIS DATE:		09/11/97	09/11/97	09/11/97	09/11/97	09/11/97	09/11/97	09/11/97	09/11/97
H3178-1	C-1	0.007	<0.05	0.1	<0.01	<0.05	0.015	<0.002	0.002
H3178-2	C-2	0.010	<0.05	0.2	<0.01	<0.05	0.008	<0.002	<0.002
H3178-3	C-3	0.004	<0.05	0.1	<0.01	<0.05	0.014	<0.002	<0.002
H3178-4	D-1	0.004	<0.05	0.1	<0.01	<0.05	0.006	<0.002	0.003
H3178-5	D-2	0.005	<0.05	0.3	<0.01	<0.05	<0.002	<0.002	<0.002
H3178-6	D-3	0.005	<0.05	0.4	<0.01	<0.05	0.006	<0.002	<0.002
H3178-7	D-4	0.009	<0.05	<0.1	<0.01	<0.05	<0.002	<0.002	<0.002
Quality Control		0.094	4.020	20.10	1.018	0.980	0.022	0.0092	0.098
True Value QC		0.100	4.000	20.00	1.000	1.000	0.020	0.0100	0.100
% Recovery		94	101	101	102	98	110	92	98
Relative Standard Deviation		1.3	0.7	0.8	0.5	0.7	14	1	2.1
METHODS: EPA 600/4-91/010		206.2	272.1	208.1	213.1	218.1	239.2	245.1	270.2

Chemist

Date

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ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: DEE WHATLEY
703 E. CLINTON, SUITE 103
HOBBS, NM 88240
FAX TO: 505-397-4388

Receiving Date: 09/05/97
Reporting Date: 09/10/97
Project Number: 3421
Project Name: AMERADA MONITOR WELLS
Project Location: CHEVRON NCBT & DURHAM ST. A

Sampling Date: 09/05/97
Sample Type: GROUNDWATER
Sample Condition: COOL, INTACT
Sample Received By: AH
Analyzed By: AH/BC

LAB NUMBER	SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (umhos/cm)	T-Alkalinity (mgCaCO3/L)
ANALYSIS DATE:		09/10/97	09/08/97	09/08/97	09/09/97	09/08/97	09/08/97
H3178-1	C-1	209	162	56	14.3	2135	244
H3178-2	C-2	328	400	151	13.5	5132	276
H3178-3	C-3	290	198	77	2.0	2745	192
H3178-4	D-1	170	133	44	0.5	1665	356
H3178-5	D-2	94	141	24	2.5	1363	280
H3178-6	D-3	159	74	27	3.8	1428	320
H3178-7	D-4	324	46	11	2.6	1799	348
Quality Control		NR	NR	NR	NR	1429	NR
True Value QC		NR	NR	NR	NR	1413	NR
% Accuracy		NR	NR	NR	NR	101	NR
Relative Percent Difference		NR	NR	NR	NR	0.4	NR
METHODS:		SM3500-Ca-D	3500-Mg E		8049	120.1	310.1

		Cl ⁻ (mg/L)	SO4 (mg/L)	CO3 (mg/L)	HCO3 (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:		09/08/97	09/09/97	09/08/97	09/08/97	09/08/97	09/08/97
H3178-1	C-1	508	145	0	298	7.23	1424
H3178-2	C-2	1360	180	0	337	7.09	3659
H3178-3	C-3	680	115	0	234	7.35	2000
H3178-4	D-1	308	165	0	356	7.27	1028
H3178-5	D-2	208	85	0	342	7.16	902
H3178-6	D-3	232	53	0	320	7.27	770
H3178-7	D-4	316	74	0	425	7.48	991
Quality Control		484	98.5	NR	NR	7.04	NR
True Value QC		500	100	NR	NR	7.00	NR
% Accuracy		96.8	98.5	NR	NR	101	NR
Relative Percent Difference		0	1.5	NR	NR	0.3	NR
METHODS:		SM4500-Cl-B	375.4	310.1	310.1	150.1	160.1


Gayle A. Potter, Chemist

09/11/97
Date

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