CORRESPONDENCE

MISC.

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3. Article Addressed to:

AIR LIQUIDE AMERICA CORP.
12800 WEST LITTLE YORK
HOUSTON, TEXAS 77041
ATT: MR. RENE GOMEZ

4a. Article Number
Z 357 870 118

4b. Service Type
☒ Registered ☒ Certified
☐ Express Mail ☐ Insured
☐ Return Receipt for Merchandise ☐ COD

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PS Form **3811**, December 1994 Domestic Return Receipt

Thank you for using Return Receipt Service.

CC:

Price, Wayne

From: Kiker, Cristi[SMTP:CKiker@ENSR.com]
Sent: Tuesday, May 18, 1999 11:52 AM
To: Price, Wayne
Cc: Turner, Russell
Subject: Bowen Tool facility - Hobbs, NM - drum disposal

Wayne,

At your request, ENSR is notifying you of the following waste disposal activities at the Bowen Tools facility located in Hobbs, New Mexico. A total of 28 drums are being removed from the site including:

24 soil cutting drums
2 purged groundwater drums
2 empty drums

USA Waste Services is coordinating the disposal effort and should have this accomplished by May 21st. If you have any further questions, please contact me or Russell Turner at (713)520-9900.

Christi Kiker
Project Engineer

ENSR

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

January 27, 1999

Certified Mail
Return Receipt NO. P 288 259 094

Mr. Rene Gomez-EM
Air Liquide America Corporation
12800 West Little York
Houston, Texas 77041

Re: Amended Groundwater Monitor Well Locations
Bowen Tools Facility
Hobbs, New Mexico

Dear Mr. Gomez:

The New Mexico Oil Conservation Division (NMOCD) is in receipt of the Air Liquide America Corporation's (ALAC) amended work plan dated January 6, 1999 submitted by ENSR. NMOCD **hereby approves** of the work plan subject to the following additional conditions:

1. The plan proposes to install three permanent monitor wells as shown in ENSR's figure 1 dated December 10, 1998 and attached hereto. NMOCD requires that one additional monitor well be located in the vicinity of the "Former Shallow Well," either directly at this location or situated slightly to the southeast of this area.

2. Groundwater from the monitor well that is to be located in the "Former Shallow Well" area shall be sampled and analyzed using EPA approved methods for chemical constituents that are contained in the New Mexico Water Quality Control Commission (WQCC) regulations. EPA methods 8260 and 8270 are sufficient for the analysis of volatile and semi-volatile organics. Acceptable methods for other chemical constituents listed in the WQCC standards are as follows: Metals by EPA ICAP 6010 (Al, Sb, As, Ba, Be, B, Cd, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, T1,V, Zn & Mercury by CVAA; and General Chemistry F, Br, Ca, K, Mg, Na, Alk. Group, Cl, S04,Tds, Cations/Anion Balance, Conductivity, Ph and Nitrate.

3. The other three monitor wells may be sampled and retained by the lab until the results of the monitor well installed in the "Former Shallow Well" area are received. **ALAC may then request from OCD approval on which constituents to be analylized.** The sample collection, preservation and retain holding times shall be pursuant to EPA QA/QC protocols.

4. Each monitor well will be constructed and completed as follows:

   a. A minimum of 15 feet of well screen will be installed with 5 feet of well screen placed above the water table and 10 feet of well screen placed below the water table.

   b. An appropriately sized gravel pack will be set in the annulus around the well screen from the bottom of the hole to 2-3 feet above the top of the well screen.

   c. A 2-3 foot bentonite plug will be placed above the gravel pack.

   d. The remainder of the hole will be grouted to the surface with cement containing 3-5% bentonite.

   e. A concrete pad and locking well cover will be placed at the surface.

   f. The well will be developed after construction using EPA approved procedures.

5. **ALAC will submit a comprehensive investigation report to the OCD by April 1, 1999.** The report will be submitted to the OCD Santa Fe Office with a copy provided to the OCD Hobbs District Office. The report will contain:

   a. A description of all past and present investigation and remedial actions including discussion of the results as well as conclusions and recommendations.

   b. Summary tables of all past and present soil/waste and water quality sampling results including copies of recent laboratory analytical data sheets and associated quality assurance/quality control (QA/QC) data. Laboratory analytical data sheets which have been previously submitted to the OCD need only be referenced and do not need to be included in the report.

   c. A site map showing the location of all soil/waste sampling points, excavation confirmation samples, boreholes, monitor wells and all relevant site features such as pit locations and spill areas.

   d. A ground water potentiometric map created using the water table elevations from all monitor wells. The map will show the direction and magnitude of the hydraulic gradient.

   e. Geologic/lithologic logs and well completion diagrams for each borehole and monitor well.

   f. Soil and ground water isopleth maps for contaminants of concern such as benzene, BTEX, TDS, etc and any other significant contaminants found during the investigations.

5. (Cont.)

g. The disposition of all investigation derived wastes.

h. Any other pertinent information.

6. ALAC will notify the OCD Santa Fe office and the OCD District office at least 48 hours in advance of all scheduled activities such that the OCD has the opportunity to witness the events and split samples.

Please be advised that OCD approval does not limit ALAC to the proposed work plan should the actions fail to adequately investigate contamination related to ALAC's activities, or if contamination exists which is outside the scope of the work plan. In addition, OCD approval does not relieve ALAC of responsibility for compliance with any other federal, state or local laws and regulations.

If you require any further information or assistance please do not hesitate to write or call me at (505-827-7155).

Sincerely Yours,

Wayne Price-Environmental Bureau

attachments-1

cc: OCD Hobbs

Mr. Russell G. Turner
ENSR
3000 Richmond Av.
Suite 400
Houston, Tx 77098

file: O/envr../word/way../bowen

Is your RETURN ADDRESS completed on the reverse side?

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2. ☐ Restricted Delivery

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AIR LIQUIDE AMERICA CORP
12800 WEST LITTLE YORK
HOUSTON, TEXAS 77041
ATT: MR. RENE GOMEZ-EM

4a. Article Number
P288 259 094

4b. Service Type

- ☒ Registered
- ☐ Express Mail
- ☐ Return Receipt for Merchandise
- ☒ Certified
- ☐ Insured
- ☐ COD

7. Date of Delivery
2-1-99 BC

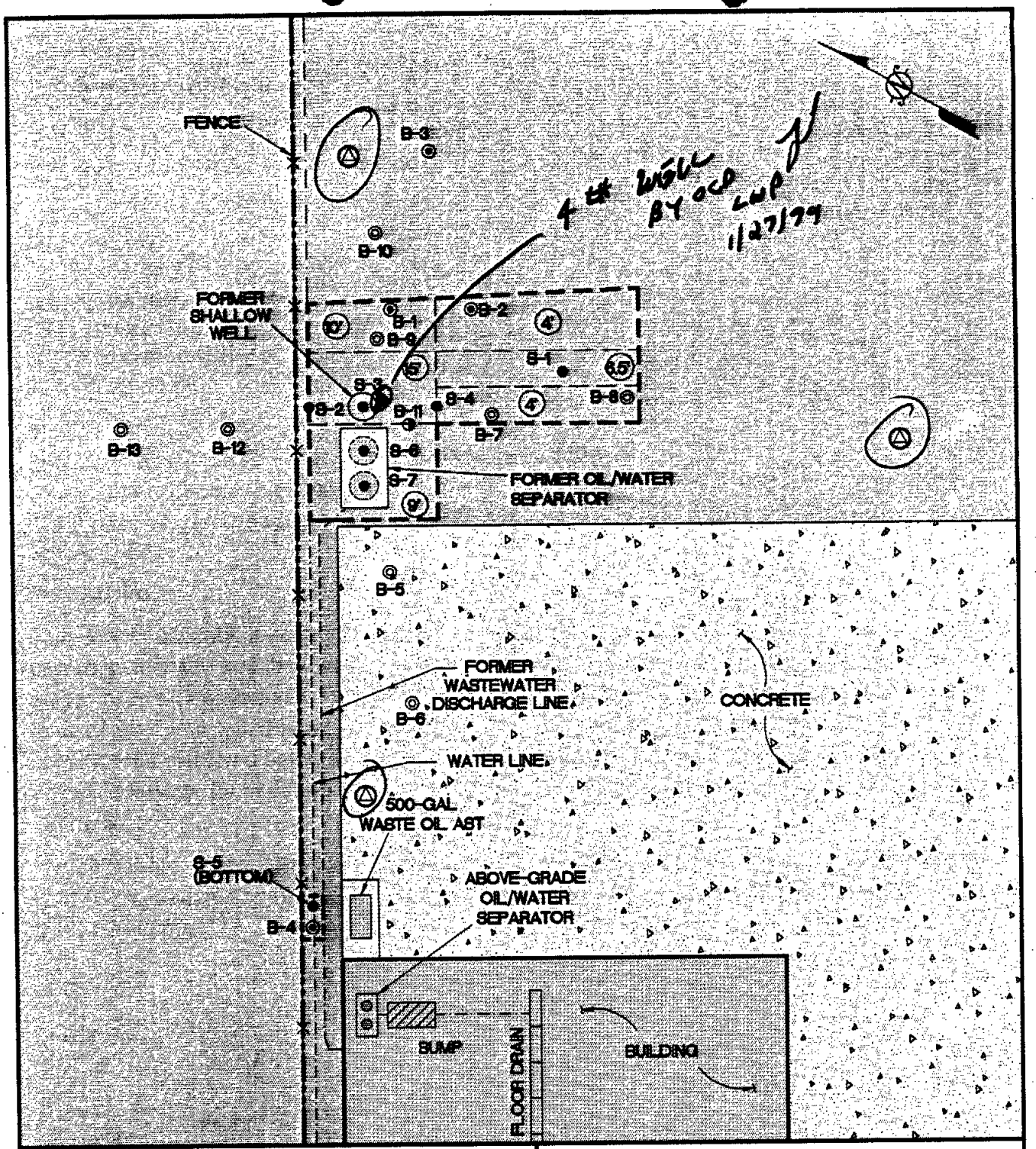
5. Received By: *(Print Name)*

8. Addressee's Address *(Only if requested and fee is paid)*

6. Signature: *(Addressee or Agent)*
X

PS Form **3811**, December 1994 102595-97-B-0179 Domestic Return Receipt

Thank you for using Return Receipt Service.



NOTES:
PLAN DEVELOPED FROM TAPING, VISUAL OBSERVATIONS AND DRAWING PROVIDED BY AIR LIQUIDE. ALL LOCATIONS ARE APPROXIMATE.

LEGEND:

- (10') DEPTH OF EXCAVATION (ft.)
- ● VERIFICATION SAMPLE LOCATION AND I.D.
- ◉ PHASE II BORING LOCATION
- ◎ PHASE III BORING LOCATION
- ◑ PHASE III SOIL BORING/TEMPORARY WELL LOCATION
- △ PROPOSED WELL LOCATION
- APPROXIMATE PROPERTY BOUNDARY
- LIMITS OF EXCAVATION
- BELOW GRADE LINE

0 20 40

SCALE IN FEET

DWG. No. 00770116

ENSR CORPORATION

FIGURE 1

PROPOSED MONITOR WELL LOCATION MAP

AIR LIQUIDE AMERICA CORPORATION
BOWEN TOOLS FACILITY
HOBBS, NEW MEXICO

DRAWN:	R. FAISON	DATE:	2-18-98	PROJECT NUMBER:
APPV'D:	M. BOARD	REVISED:	12-10-98	0077-013-411

ENSR
Consulting • Engineering • Remediation

3000 Richmond Avenue
Suite 400
Houston, TX 77098
(713) 520-9900
FAX (713) 520-6802
http://www.ensr.com

January 6, 1999

Mr. Wayne Price
State Of New Mexico
Oil Conservation Division
2040 S. Pacheco
Santa Fe, New Mexico 87505

Re: Amended Groundwater Monitor Well Locations
Bowen Tools Facility
Hobbs, New Mexico

Dear Mr. Price,

This correspondence is an addendum to our letter dated December 10, 1998. Previously, one proposed monitor well was situated on a neighboring property requiring permission from the owner prior to installation. To simplify the data gathering process, ENSR has relocated the monitor well onto the Bowen Tools property. Since the purpose of the well installation is to confirm total dissolved solids and selenium concentrations, the revised monitor well location is equally adequate for the intended purpose. The revised monitor well locations are as shown on Figure 1.

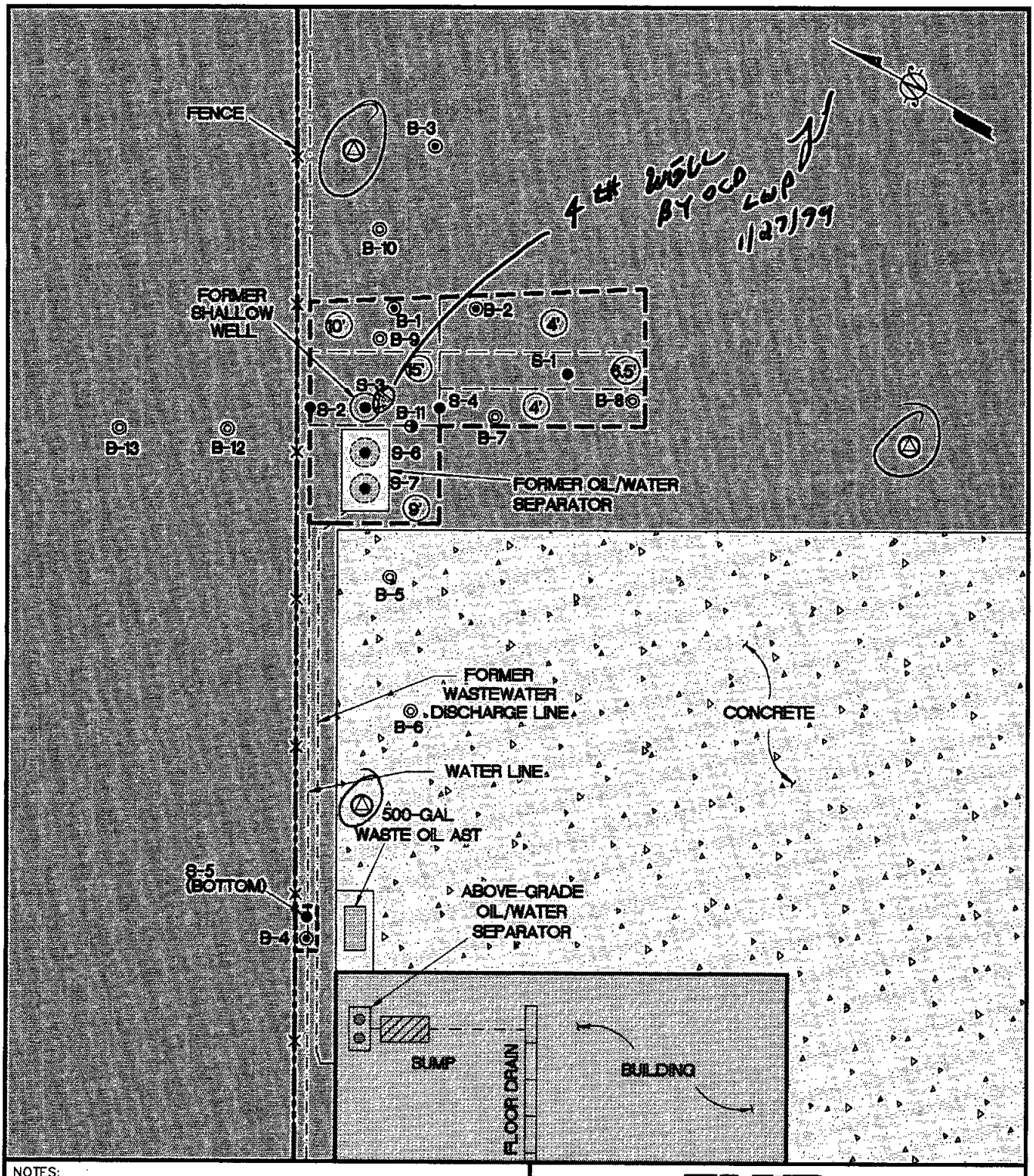
We appreciate your assistance and will contact you to discuss the monitor well locations after your return on January 19, 1999. If you have any questions or comments you may reach us at (713) 520-9900.

Sincerely,

Russell G. Turner
Sr. Project Manager

Mark A. Board, P.E.
Sr. Project Manager

Cc: René Gomez
s:\96 misc\bowen\hobbs\mwell.doc



NOTES:
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- PHASE II BORING LOCATION
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- PHASE III SOIL BORING/TEMPORARY WELL LOCATION
- PROPOSED WELL LOCATION
- APPROXIMATE PROPERTY BOUNDARY
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- BELOW GRADE LINE

0 20 40

SCALE IN FEET

DWG. No. 00770116

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ENSR CORPORATION

FIGURE 1

PROPOSED MONITOR WELL LOCATION MAP

AIR LIQUIDE AMERICA CORPORATION
BOWEN TOOLS FACILITY
HOBBS, NEW MEXICO

DRAWN: R. FAISON	DATE: 2-18-98	PROJECT NUMBER:
APPV'D: M. BOARD	REVISED: 12-10-98	0077-013-411

LETTER OF TRANSMITTAL **ENSR**

TO: Oil Conservation Division
State of New Mexico
2040 S. Pacheco
Santa Fe, New Mexico 87505

FROM: ENSR
3000 Richmond, Suite 400
Houston, Texas 77098
Phone: (713) 520-9900

ATTENTION: Mr. Wayne Price (505)827-7155

RE: Bowen Tools – Hobbs, NM

Date: 12/1098
Your Job Number:
Our Job Number: 0077013-411

Copies	Date or Number	Description
2		

These are transmitted:

- ___X___ As Requested
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- _____ For Your Action
- _____ For Your Files
- ___X___ For Approval
- _____ For Review and Comment
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- _____ Resubmit ___ Copies for Signature
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- _____ Please Return
- _____ For Construction

Groundwater Sampling Plan.

By: _____
Mark A. Board, P.E.
Sr. Project Manager
ENSR Corporation

Bowen Tools, Inc.
Hobbs, New Mexico
Additional Assessment Soil TPH Results (mg/kg)

Sample Depth (ft-BGS)	B-5	B-6	B-7	B-8	B-9	B-10	B-11	B-12
0 - 1								
3 - 4		< 10						< 10
6 - 7				< 10		< 10		
9 - 10	< 10		< 10					
12 - 13								
15 - 16		< 10				< 10		
18 - 19				< 10	< 10		GRO (ND), DRO 127, WO 161, TOTAL 288	< 10
21 - 22								
24 - 25	< 10	< 10	< 10	< 10		< 10	GRO ND, DRO 1220, WO 1270, TOTAL 2490, SPLP 0.657	< 10
27 - 28								
30 - 31								
33 - 34								
36 - 37					GRO (ND), DRO 327, WO 408, TOTAL 735, SPLP 0.512			
39 - 40								
42 - 43								
45 - 46					GRO (ND), DRO 438, WO 344, TOTAL 782, SPLP 0.298		GRO ND, DRO 407, WO 523, TOTAL 930, SPLP 0.494	

Note: It was not necessary to analyze samples from Boring B-13 because Constituents of Concern were not detected in the nearest boring on that side (B-12).

(ND) - Not Detected

SPLP - Synthetic Precipitation Leaching Procedure in mg/l

GRO - Gasoline Range Organics; DRO - Diesel Range Organic; WO - Waste Oil Range Organics

Total - Total Petroleum Hydrocarbons (EPA Method 8015-B)

Bowen Tools, Inc.
Hobbs, New Mexico
Additional Assessment Soil Results (mg/kg)

Sample Depth (ft-BGS)	B-9		B-11	
	36'-37'	45'-46'	24'-25'	45'-46'
Arsenic	< 1.00	< 1.00	NA	NA
Barium	568	61.3	NA	NA
Cadmium	0.697	0.697	NA	NA
Chromium	4.68	4.18	NA	NA
Lead	2.49	2.49	NA	NA
Mercury	< 0.10	< 0.10	NA	NA
Selenium	2.89	3.49	NA	NA
Silver	< 0.50	< 0.50	NA	NA
VOC's	ND	ND	NA	NA
SVOC's	ND	ND	NA	NA
TPH-GRO	ND	ND	ND	ND
TPH-DRO	327	438	1220	407
TPH-WORO	408	344	1270	523
TPH-TOTAL	735	782	2490	930
SPLP-TPH	0.512	0.298	0.657	0.494
SPLP divided by TOTAL TPH	0.00070	0.00038	0.00026	0.00053

(ND) - Not Detected

SPLP - Synthetic Precipitation Leaching Procedure in mg/l

GRO - Gasoline Range Organics; DRO - Diesel Range Organic; WO - Waste Oil Range Organics

Total - Total Petroleum Hydrocarbons (EPA Method 8015-B)

Bowen Tools, Inc.
Hobbs, New Mexico
Additional Assessment Groundwater Results (mg/l)

	B-11	NMEP (GW)
Arsenic	0.019	0.1
Barium	0.21	1
Cadmium	< 0.005	0.01
Chromium	< 0.010	0.05
Lead	0.01	0.05
Mercury	< 0.0005	0.002
Selenium	0.057	0.05
Silver	< 0.005	0.05
VOC's	ND	Chemical Specific
SVOC's	ND	Chemical Specific
TPH-GRO	0.144	Not Developed
TPH-DRO	0.858	Not Developed
TPH-WORO	1.17	Not Developed
TPH-TOTAL	2.03	Site Specific
TDS	1,260	1,000

Notes:

ND - Not Detected

NMEP (GW) - New Mexico Environmental Protection Groundwater Standards

GRO - Gasoline Range Organics; DRO - Diesel Range Organics

WORO - Waste Oil Range Organics

Total - Total Petroleum Hydrocarbons (EPA Method 8015-B)

Bowen Tools, Inc.
Hobbs, New Mexico
Risk-Based Calculations

				Industrial
Water Ingestion Rate			IR_W =	1 l/day
Exposure Frequency			EF =	250 days/yr
Exposure Duration			ED =	25 yrs
Body Weight			BW =	70 kg
Averaging Time for Noncarcinogens			AT_n =	25 yrs
Oral Chronic Reference Dose			RfD_o =	Chemical Specific, mg/kg-day
Leaching Factor	LF_{SW} =	0.0007	Chemical Specific, (mg/l)/(mg/kg)	
Target Hazard Quotient	THQ =	1	unitless	
Risk-Based Screening level (Ground Water)	$RBSL_W$ (mg/l) =	$\frac{THQ \times RfD_O \times BW \times AT_n \times 365\ (days/yr)}{IR_W \times EF \times ED}$		
Risk-Based Screening level (Soil Leaching to Groundwater)	$RBSL_S$ (mg/kg) =	$\frac{RBSL_W\ (mg/l)}{LF_{SW}}$		

Notes:

(1) The above equations and defalt values are from ASTM E 1739-95 "Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites"

(2) Based on four SPLP-THP test results: LF_{SW} ranges from 0.00026 to 0.0007. The following calculations are based on LFSW = .0007

				Concentrations Detected (mg/kg)
Carbon Chain Group	**RfD_o**	**$RBSL_W$**	**$RBSL_S$**	**Sample B-9 (36-37 ft)**
Aliphatics C_5-C_8	5	511	730,000	ND
Aliphatics C_9-C_{16}	0.1	10	14,600	424
Aliphatics C_{16}-C_{35}	2	204	292,000	559
Aromatics C_7-C_8	0.2	20	29,200	ND
Aromatics C_8-C_{16}	0.04	4	5,840	145
Aromatics C_{16}-C_{35}	0.03	3	4,380	113

				Concentrations Detected (mg/kg)
Carbon Chain Group	**RfD_o**	**$RBSL_W$**	**$RBSL_S$**	**Sample S-2**
Aliphatics C_5-C_8	0.06	6	8,760	188
Aliphatics C_9-C_{18}	0.6	61	87,600	1,320
Aliphatics C_{19}-C_{32}	6	613	876,000	8,150
Aromatics C_9-C_{32}	0.03	3	4,380	631

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FAX (713) 520-6802
http://www.ensr.com

December 10, 1998

Mr. Wayne Price
State Of New Mexico
Oil Conservation Division
2040 S. Pacheco
Santa Fe, New Mexico 87505

Dear Mr. Price,

As discussed in the December 3, 1998 meeting at your offices, ENSR Corporation is obtaining additional information necessary for regulatory closure of the Bowen Tools facility located in Hobbs, New Mexico. At the meeting, we discussed remedial and investigative work already performed at the site and concluded that volatile and semi-volatile organic compounds, and petroleum hydrocarbons are not constituents of concern (COC) at this site based on the analytical data summarized on the attached tables. Analysis of groundwater samples indicate that selenium and dissolved solids may be COCs in groundwater but may not be associated with activities at this site.

In accordance with your request, ENSR is proposing to install and sample three shallow groundwater monitor wells as shown on Figure 1 to determine if identified selenium and dissolved solids concentrations are associated with this site. One of the proposed wells is situated on a neighboring property and will require permission from the owner prior to installation. Groundwater samples will be collected from the three wells and analyzed for selenium and total dissolved solids. We will measure the groundwater level in each well and survey the top of each casing to establish groundwater flow gradient. We will coordinate the activities with your office and will notify you prior to the initiation of work at the facility.

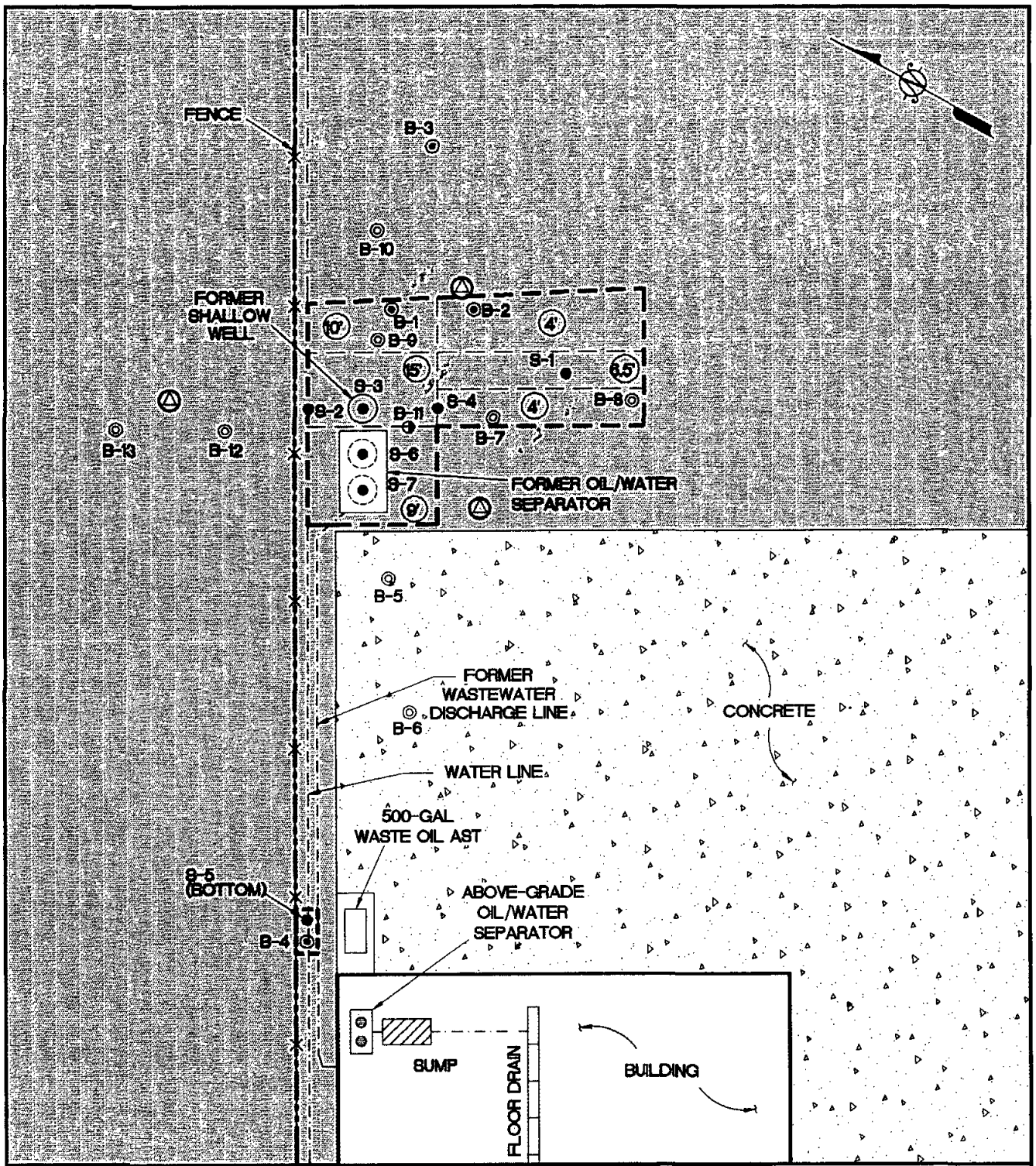
We appreciate your assistance and will call in a few days to discuss any questions you may have. If you have any questions or comments you may reach us at (713) 520-9900.

Sincerely,

Russell Turner
Sr. Project Manager

Mark A. Board, P.E.
Sr. Project Manager

Cc: René Gomez
s:\96 misc\bowen\hobbs\mwell.doc



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- LIMITS OF EXCAVATION
- BELOW GRADE LINE

0 20 40

SCALE IN FEET

DWG. No. 00770116

ENSR CORPORATION

FIGURE 1

PROPOSED MONITOR WELL LOCATION MAP

AIR LIQUIDE AMERICA CORPORATION
BOWEN TOOLS FACILITY
HOBBS, NEW MEXICO

DRAWN:	R. FAISON	DATE:	2-18-98	PROJECT NUMBER:	
APPV'D:	M. BOARD	REVISED:	12-10-98		0077-013-411

Bowen Tools, Inc.
Hobbs, New Mexico
Additional Assessment Soil TPH Results (mg/kg)

Sample Depth (ft-BGS)	B-5	B-6	B-7	B-8	B-9	B-10	B-11	B-12
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3 - 4		< 10						< 10
6 - 7				< 10		< 10		
9 - 10	< 10		< 10					
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18 - 19				< 10	< 10		GRO (ND), DRO 127, WO 161, TOTAL 288	< 10
21 - 22								
24 - 25	< 10	< 10	< 10	< 10		< 10	GRO ND, DRO 1220, WO 1270, TOTAL 2490, SPLP 0.657	< 10
27 - 28								
30 - 31								
33 - 34								
36 - 37					GRO (ND), DRO 327, WO 408, TOTAL 735, SPLP 0.512			
39 - 40								
42 - 43								
45 - 46					GRO (ND), DRO 438, WO 344, TOTAL 782, SPLP 0.298		GRO ND, DRO 407, WO 523, TOTAL 930, SPLP 0.494	

Note: It was not necessary to analyze samples from Boring B-13 because Constituents of Concern were not detected in the nearest boring on that side (B-12).

(ND) - Not Detected

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Cadmium	0.697	0.697	NA	NA
Chromium	4.68	4.18	NA	NA
Lead	2.49	2.49	NA	NA
Mercury	< 0.10	< 0.10	NA	NA
Selenium	2.89	3.49	NA	NA
Silver	< 0.50	< 0.50	NA	NA
VOC's	ND	ND	NA	NA
SVOC's	ND	ND	NA	NA
TPH-GRO	ND	ND	ND	ND
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Bowen Tools, Inc.
Hobbs, New Mexico
Additional Assessment Groundwater Results (mg/l)

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Barium	0.21	1
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Chromium	< 0.010	0.05
Lead	0.01	0.05
Mercury	< 0.0005	0.002
Selenium	0.057	0.05
Silver	< 0.005	0.05
VOC's	ND	Chemical Specific
SVOC's	ND	Chemical Specific
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Bowen Tools, Inc.
Hobbs, New Mexico
Risk-Based Calculations

				Industrial
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Exposure Frequency			EF =	250 days/yr
Exposure Duration			ED =	25 yrs
Body Weight			BW =	70 kg
Averaging Time for Noncarcinogens			AT_n =	25 yrs
Oral Chronic Reference Dose			RfD_o =	Chemical Specific, mg/kg-day
Leaching Factor	LF_{SW} =	0.0007		Chemical Specific, (mg/l)/(mg/kg)
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Risk-Based Screening level (Soil Leaching to Groundwater)	$RBSL_S$ (mg/kg) =	$\frac{RBSL_W\ (mg/l)}{LF_{SW}}$		

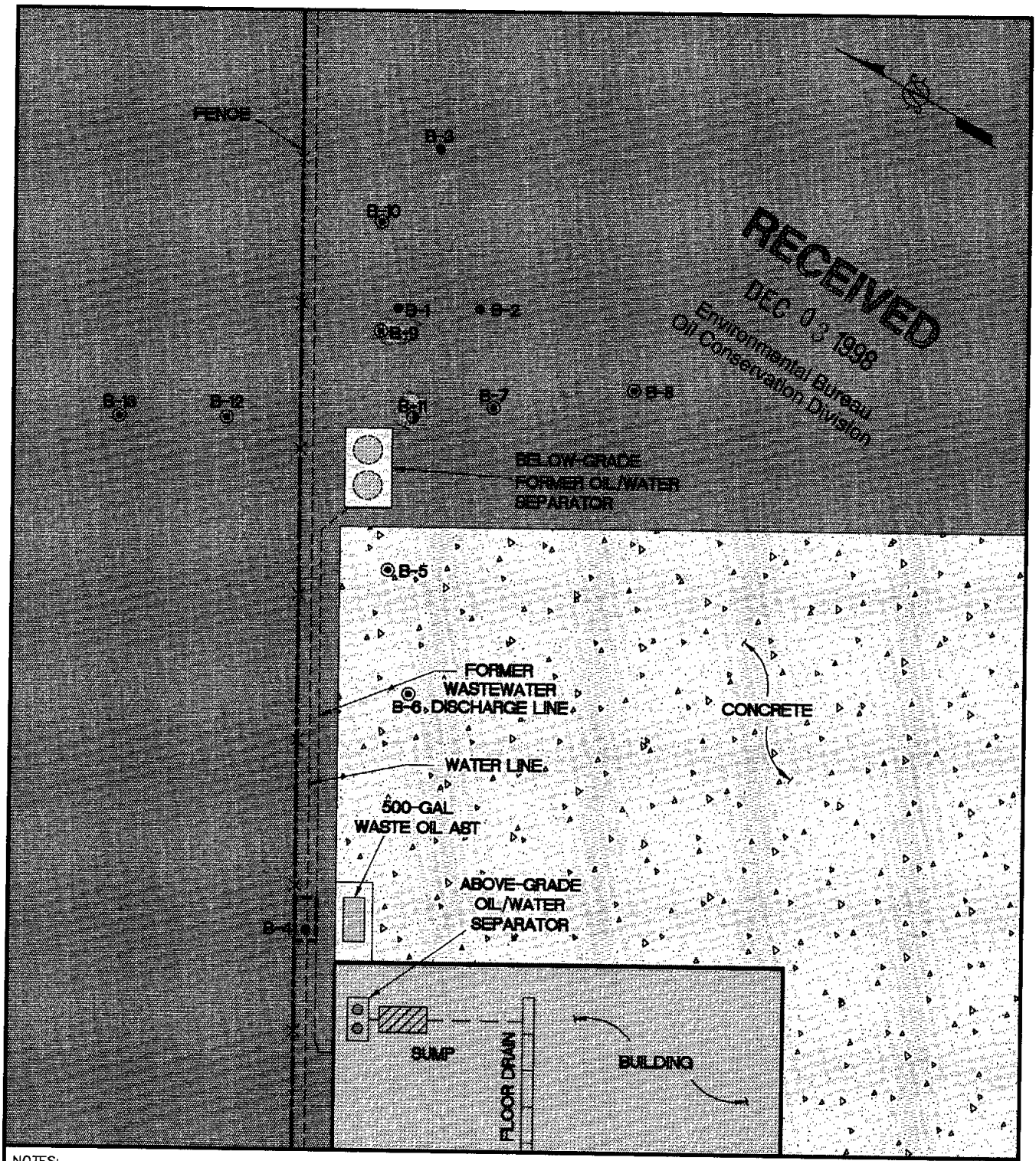
Notes:

(1) The above equations and defalt values are from ASTM E 1739-95 "Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites"

(2) Based on four SPLP-THP test results: LF_{SW} ranges from 0.00026 to 0.0007. The following calculations are based on LFSW = .0007

				Concentrations Detected (mg/kg)
Carbon Chain Group	**RfD_o**	**$RBSL_W$**	**$RBSL_S$**	**Sample B-9 (36-37 ft)**
Aliphatics C_5-C_8	5	511	730,000	ND
Aliphatics C_9-C_{16}	0.1	10	14,600	424
Aliphatics C_{16}-C_{35}	2	204	292,000	559
Aromatics C_7-C_8	0.2	20	29,200	ND
Aromatics C_8-C_{16}	0.04	4	5,840	145
Aromatics C_{16}-C_{35}	0.03	3	4,380	113

				Concentrations Detected (mg/kg)
Carbon Chain Group	**RfD_o**	**$RBSL_W$**	**$RBSL_S$**	**Sample S-2**
Aliphatics C_5-C_8	0.06	6	8,760	188
Aliphatics C_9-C_{18}	0.6	61	87,600	1,320
Aliphatics C_{19}-C_{32}	6	613	876,000	8,150
Aromatics C_9-C_{32}	0.03	3	4,380	631



NOTES:
PLAN DEVELOPED FROM TAPING, VISUAL OBSERVATIONS AND DRAWING PROVIDED BY AIR LIQUIDE. ALL LOCATIONS ARE APPROXIMATE.

LEGEND:

- ● PHASE II SOIL BORING LOCATION
- ◉ PHASE III SOIL BORING LOCATION
- ◑ PHASE III SOIL BORING/TEMPORARY WELL LOCATION
- APPROXIMATE PROPERTY BOUNDARY
- BELOW GRADE LINE

0 20 40

SCALE IN FEET

DWG. No. 00770106

ENSR®
ENSR CORPORATION

FIGURE 2

ADDITIONAL ASSESSMENT SAMPLE LOCATIONS AIR LIQUIDE AMERICA CORPORATION BOWEN TOOLS FACILITY HOBBS, NEW MEXICO

DRAWN: S. CHEN	DATE: 10-12-98	PROJECT NUMBER: 0077-013-411
APPV'D: D. TUNKI	REVISED:	

Bowen Tools, Inc.
Hobbs, New Mexico
Phase II Results

Soil TPH Results (mg/kg)

B-1		B-2		B-3		B-4	
Depth	TPH	Depth	TPH	Depth	TPH	Depth	TPH
0 to 2 ft	480	0 to 3 ft	57	0 to 3 ft	24	0 to 1.5 ft	570
3 to 6 ft	65	3 to 6 ft	190	3 to 6 ft	27		

Summary of Additional Analytical Results, B-1 from 0 to 2 ft (mg/kg)

Barium	Cadmium	Chromium	Lead	DRO	GRO
213	2.3	15	348	54	1.1

Note:
None of the other eight RCRA metals, VOC's, or SVOC's were identified above detection limits

TCLP Concentrations, B-1 from 0 to 2 ft (mg/l)

Metal	TCLP Concentration	Groundwater Standards (<10,000 TDS)
Barium	0.9	1
Cadmium	<.01	0.01
Chromium	<.01	0.05
Lead	<.05	0.05

Bowen Tools, Inc.
Hobbs, New Mexico
Remediation Verification

Soil Verification TPH Results (After Soil Excavation)

Sample Number	S-1	S-2	S-3	S-4	S-5	S-6	S-7
Depth (ft)	5	(Sidewall)	14	(Sidewall)	2	10	10
Concentration Detected (mg/kg)	36	13,300 *	4,350	4,590	95	1,050	1,450

Soil Organic Analytical Results, Sample S-2 (mg/kg)

Constituent	Volatile Organic Compounds				Semivolatiles	
	Ethylbenzene	Toluene	m&p-Xylene	o-Xylene	2-Methylnapthalene	Napthalene
Concentration Detected	1.2	0.07	5.8	2.7	1.9	3.5

Soil Metals Analytical Results, Sample S-2 (mg/kg)

Constituent	Barium	Chromium	Lead
Concentration Detected	123	1.79	2.33

Note:
None of the other eight RCRA metals, VOC's, or SVOC's were identified above detection limits

Soil Carbon Chain Analytical Results, Sample S-2 (mg/kg)

TPH Range		Concentration Detected
Alkanes/Cycloalkanes	C5-C8	188
	C9-C18	1,320
	C19-C32	8,150
Alkenes/Aromatics	C9-C32	631
Total		10,290

EXCEEDS WQCC STANDARD

* NO WQCC STANDARD FOR TPH - OCD GUIDELINES ≈ 1000 TPH

Bowen Tools, Inc.
Hobbs, New Mexico
Additional Assessment TPH Results MW

	B-5	B-6	B-7	B-8	B-9	B-10	B-11	B-12	B-13
0 - 1									
3 - 4		< 10						< 10	
6 - 7				< 10		< 10			
9 - 10	< 10		< 10						
12 - 13									
15 - 16		< 10				< 10			
18 - 19				< 10	< 10		GRO (ND), DRO 127, WO 161, TOTAL 288	< 10	
21 - 22									
24 - 25	< 10	< 10	< 10	< 10		< 10	GRO ND, DRO 1220, WO 1270, TOTAL 2490, SPLP 0.657	< 10	
27 - 28									
30 - 31									
33 - 34									
36 - 37					GRO (ND), DRO 327, WO 408, TOTAL 735, SPLP 0.512				
39 - 40									
42 - 43									
45 - 46					GRO (ND), DRO 438, WO 344, TOTAL 782, SPLP 0.296		GRO ND, DRO 407, WO 523, TOTAL 930, SPLP 0.494		

Note: It was not necessary to analyze samples from Boring B-13 because Constituents of Concern were not detected in the nearist boring on that side (B-12).

Bowen Tools, Inc.
Hobbs, New Mexico
Additional Assessment Soil Results

	B-9		B-11	
	36'-37'	45'-46'	24'-25'	45'-46'
Arsenic	< 1.00	< 1.00	NA	NA
Barium	568	61.3	NA	NA
Cadmium	0.697	0.697	NA	NA
Chromium	4.68	4.18	NA	NA
Lead	2.49	2.49	NA	NA
Mercury	< 0.10	< 0.10	NA	NA
Selenium	2.89	3.49	NA	NA
Silver	< 0.50	< 0.50	NA	NA
VOC's	ND	ND	NA	NA
SVOC's	ND	ND	NA	NA
TPH-GRO	ND	ND	ND	ND
TPH-DRO	327	438	1220	407
TPH-WORO	408	344	1270	523
TPH-TOTAL	735	782	2490	930
SPLP-TPH	0.512	0.298	0.657	0.494
SPLP/TOTAL TPH	0.00070	0.00038	0.00026	0.00053

EXCEEDS WQCC STANDARDS

Bowen Tools, Inc.
Hobbs, New Mexico
Additional Assessment Groundwater Results

	B-11	NWEP
	(mg/l)	GW (mg/l)
Arsenic	0.019	0.1
Barium	0.21	1
Cadmium	< 0.005	0.01
Chromium	< 0.010	0.05
Lead	0.01	0.05
Mercury	< 0.0005	0.002
Selenium	0.057	0.05
Silver	< 0.005	0.05
VOC's	ND	
SVOC's	ND	
TPH-GRO	0.144	
TPH-DRO	0.858	
TPH-WORO	1.17	
TPH-TOTAL	2.03	
TDS	1260	

Bowen Tools, Inc.
Hobbs, New Mexico
Risk-Based Calculations

			Industrial
Water Ingestion Rate		IR_W =	1 l/day
Exposure Frequency		EF =	250 days/yr
Exposure Duration		ED =	25 yrs
Body Weight		BW =	70 kg
Averaging Time for Noncarcinogens		AT_n =	25 yrs
Oral Chronic Reference Dose		RfD_o =	Chemical Specific, mg/kg-day
Leaching Factor	LF_{SW} =	0.0007	Chemical Specific, (mg/l)/(mg/kg)
Target Hazard Quotient	THQ =	1	unitless
Risk-Based Screening level (Ground Water)	$RBSL_W$ (mg/l) =	$\frac{THQ \times RfD_O \times BW \times AT_n \times 365\ (days/yr)}{IR_W \times EF \times ED}$	
Risk-Based Screening level (Soil Leaching to Groundwater)	$RBSL_S$ (mg/kg) =	$\frac{RBSL_W\ (mg/l)}{LF_{SW}}$	

Notes:

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JPH

RECEIVED
DEC 03 1998
Environmental Bureau
Oil Conservation Division

				Concentrations Detected (mg/kg)
Carbon Chain Group	RfD_o	$RBSL_W$	$RBSL_S$	Sample S-2 (36-37 ft)
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NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
DISTRICT I HOBBS
PO BOX 1980, Hobbs, NM 88241
(505) 393-6161
FAX (505) 393-0720

Jennifer A. Salisbury
CABINET SECRETARY

August 26, 1998

Rene Gomez-EM
Air Liquide America Corporation
12800 West Little York
Houston, Texas 77041

Re: Environmental Site Assessment Workplan
Bowen Tools Facility
Hobbs, New Mexico

Dear Mr. Gomez:

New Mexico Oil Conservation Division (NMOCD) is in receipt of the above referenced plan and the two associated documents sent "A Risk-Based Approach for the Management of Total Petroleum Hydrocarbons" developed by the TPH Working Group and the "Interim Final Petroleum Report: Development of Health-Based Alternative To the Total Petroleum Hydrocarbon (TPH) Parameter" for the Massachusetts Department of Environmental Protection submitted by ENSR.

NMOCD has reviewed the documents, and relates that we have not adopted a specific Risk-Assessment method but currently allow known and proven methods to be utilized. Unfortunately this increases the review time and we may ask for additional information such as literature and/or software, etc. Also most Class V well closures (shallow well & Leachfield) located at Oilfield Service Companies are handled by our Santa Fe Environmental office. However, since this particular site does not have a Discharge Plan the NMOCD District I office can handle the closure subject to oversight by the NMOCD Environmental Bureau.

After reviewing the above referenced submittal **the NMOCD hereby approves of the Limited Phase III ESA Work Plan for the Bowen Tools Facility located at 2623 Enterprise Drive, Hobbs, NM. <u>This plan is approved and is subject to the following additional conditions:</u>**

1. The horizontal and vertical extent of all contaminated areas must be delineated pursuant to NMOCD rules, guidelines or other approved methods. NMOCD normally considers 100 ppm of TPH (418.1) as being clean for the purposes of delineation of hydrocarbon waste. This is not to be confused with levels of chemical constituents that can remain if demonstrated these levels will not be a future threat to public health, groundwater, surface water and/or the environment. Also NMOCD may require additional analysis if contaminants is other than hydrocarbon waste.

   NMOCD recommends that any leaching procedure of soils be analyzed for the NM WQCC constituents of concern. A list of WQCC numerical standards and toxic pollutant list may be obtained from NMOCD upon request or from our Internet home page at (WWW.EMNRD.STATE.NM.US/OCD/).

2. All waste disposed of off-site must be approved by NMOCD.

3. Upon time of closure, all soil borings and monitor wells must be closed by filling in from bottom to top with a cement grout with 2-5 % bentonite. Soil cuttings or bentonite will not be allowed as backfill.

4. All Monitor wells must have a minimum of 15 feet of slotted screen, with a minimum of 10 feet in the water, and five above the water. All wells shall be grouted to the surface (above the sand pack bentonite plug) with cement grout containing 2-5 % bentonite.

5. All groundwater samples shall include the complete sweep of NM Water Quality Control Commission chemical constituents. Typically EPA 8260, 8270, NM WQCC metals, and General Chemistry will suffice. Questions concerning sampling should be directed to NMOCD before sampling.

6. **Discovery of groundwater contamination must be reported pursuant to NMOCD Rule 116 within 24 hours of discovery and a written report within 15 days.**

7. Page C-2 third paragraph. The word **alkenes/cycloalkanes** does not appear to be the correct organic chemistry group. NMOCD recognizes this to be a "typo" and should have read as **"Alkanes".** Please verify.

8. NMOCD will be given a 48 hour notice prior to any on-site work or significate events.

9. **NMOCD shall receive the final report of the findings with recommendations no later than November 15, 1998.**

Please be advised that NMOCD approval of this plan does not relieve **Air Liquide America Corporation** of liability should their operations fail to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD District I approval does not relieve **Air Liquide America Corporation** of responsibility for compliance with any other federal, state, or local laws and/or regulations including requirements from the NMOCD Environmental Bureau.

If you require any further information or assistance please do not hesitate to call (505-393-6161) or write this office.

Sincerely Yours,

Wayne Price

Wayne Price-Environmental Engineer

cc: Chris Williams-NMOCD District I Supervisor
Roger Anderson-Environmental Bureau Chief, Santa Fe, NM

Mark A. Board
ENSR
3000 Richmond Avenue
Houston, Tx 77098

file: wp98/bowen