GW - 114

GENERAL CORRESPONDENCE

YEAR(S):

1/05 → 12/96

Environmental Oversight, Inc.

January 31, 2005

GW-114

Mr. Jack Ford
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

RE: 2004 Annual Report for the Schlumberger Technology Corporation (Dowell) Facility, Artesia, New Mexico

Dear Mr. Ford:

Submitted on behalf of Schlumberger Technology Corporation (Dowell) are (2) copies of the 2004 Annual Report for the facility in Artesia, New Mexico. An electronic version will be provided via e-mail. If you have any questions concerning the report please feel free to contact me at (281) 285 - 8498.

Sincerely,

John Miller

JM:co
Enclosures
cc: WWC - Laramie

14019 S.W. Freeway, Suite 301, PMB187
Sugar Land, Texas 77478
281-285-8498
jmiller11@slb.com

Environmental Oversight, Inc.

March 3, 2004

Mr. Jack Ford
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

GW-114

RE: 2003 Annual Report for the Schlumberger Oilfield Services (Dowell) Facility, Artesia, New Mexico

Dear Mr. Ford:

Submitted on behalf of Schlumberger Oilfield Services (Dowell) are (2) copies of the 2003 Annual Report for the facility in Artesia, New Mexico. An electronic version will be provided via e-mail. The report includes abandonment of the Maintenance Shop SVE System. If you have any questions concerning the report please feel free to contact me at (281) 285 - 8498.

Sincerely,

John Miller

JM:
Enclosures
cc: WWC - Laramie

14019 S.W. Freeway, Suite 301, PMB187
Sugar Land, Texas 77478
281-285-8498
jmiller11@slb.com

State of New Mexico
ENVIRONMENT DEPARTMENT
Petroleum Storage Tank Bureau
2044 Galisteo Street
Santa Fe, New Mexico 87504
Telephone (505) 984-1741
Fax (505) 984-1738

BILL RICHARDSON
Governor

RON CURRY
Secretary

JIM NORTON
Director

October 3, 2003

Mr. John Miller
Schlumberger Oilfield Services
200 Gillingham Lane MD7
Sugar Land, Texas 77478

Re: Technical Approval of Phase V SVE Plugging and Abandonment Workplan for the Dowell Schlumberger Site, 507 East Richey, Artesia, New Mexico

Facility #: 563001 / 30504 SID #: 39

Dear Mr. Miller:

The New Mexico Environment Department (Department) approves, with modifications, the technical approach and scope of work in the workplan dated August 19, 2003, which was submitted on your behalf by WWC Engineering. This workplan is for Phase V corrective action that includes decommissioning of the Maintenance Shop SVE System, for the Dowell Schlumberger Site in Artesia, New Mexico. The approved workplan has been modified as follows:

1. After plugging and abandonment of the SVE system wells and piping installations, report to the Department the volume of the bentonite and cement grout admixture actually employed in the decommission process.

2. Include the Maintenance Shop SVE system monitor wells in any future plans for well abandonment and site closure.

Please refer to the following table for a breakdown of the expected deliverable(s) and date(s) of completion. The dates listed in the table are the current deadlines in the applicable portion of the corrective action timeline for the subject site.

Deliverable Name	Completion Date
SVE System Plug & Abandonment Rpt.	02-28-04

Please be reminded that the SVE system decommissioning and well plugging and abandonment costs for this work will not be reimbursable from the Corrective Action Fund. Commencement of the described project activities will constitute your acceptance of this provision. This will not affect future compliance determinations or reimbursement status for this site.

The Department has reviewed the current statement of qualifications of WWC's authorized representative, the project professional engineer, and the individual with direct, responsible supervisory control of this workplan. In accordance with 20.5.16.1609 NMAC, the Department has determined that WWC Engineering is currently a qualified firm to perform the scope of work as described in the approved workplan.

You may begin work immediately. Approval of this workplan is contingent upon all work being performed on this site in accordance with all local, state, and federal regulations, including 29 CFR 1910 governing occupational health and safety. The Department expects WWC Engineering to complete the work as described. All changes to the technical approach and scope of work must be approved in writing prior to the work being performed.

If you have any questions, please contact me at (505) 984-1948. Thank you for your continued voluntary cooperation.

Sincerely,

George Beaumont

George G. Beaumont
Project Manager
Petroleum Storage Tank Bureau

GGB:elf

cc: Richard Deuell, P.E., WWC Engineering
✓Jack Ford, Oil Conservation Division
Jim Davis, Ph.D., Chief, NMED Petroleum Storage Tank Bureau
Joyce Shearer, Manager, Remedial Action Program, PSTB
Jeffrey C. Mills, Team Leader, Petroleum Storage Tank Bureau
Carl Stubbs, District IV Manager, NMED Field Operations Division, Roswell

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON
Governor
Joanna Prukop
Cabinet Secretary

September 3, 2003

Lori Wrotenbery
Director
Oil Conservation Division

Mr. John Miller
Schlumberger Oilfield Services (Dowell)
200 Gillingham Lane, MD7
Sugar Land, Texas 77478

RE: SVE System Decommissioning
GW-114 Artesia Service Facility
Eddy County, New Mexico

Dear Mr. Miller:

The New Mexico Oil Conservation Division (OCD) received the revised work plan for the decommissioning of the SVE system located at the Schlumberger Oilfield Services Artesia Service Facility located in the SE/4 SE/4 of Section 4, Township 17 South, Range 26 East, NMPM, Eddy County, New Mexico. The work plan, dated June 20, 2003 and the revised work plan, dated August 9, 2003, was submitted by your consultant, WWC Engineering on behalf of Schlumberger Oilfield Services. **Based on the information provided the SVE system decommissioning work plan is hereby approved, with the following conditions:**

- A copy of all of the work plans shall also be provided to the OCD Artesia District Office to the attention of Mr. Mike Stubblefield and notification provided to Mr. Stubblefield at least 48 hours prior to commencement of work.
- All of the items listed in the work plans, dated June 20 and August 19, 2003, from WWC Engineering on behalf of Schlumberger Oilfield Services shall be adhered to during the decommissioning process.
- Upon completion of the project a final report for the closure of the SVE system shall be submitted to the Santa Fe OCD office for approval within 30 days of final closure.

Note, that OCD approval does not limit Schlumberger Oilfield Services to the work proposed should it later be found that contamination exists which is beyond the scope of this plan. In addition, OCD approval does not relieve Schlumberger Oilfield Services of responsibility for compliance with any other Federal, State, or other Local Laws and Regulations.

If you have any questions regarding this matter feel free to call me at (505)-476-3489.

Sincerely,

W. Jack Ford, C.P.G.
Environmental Engineer
Environmental Bureau, OCD

cc: OCD Artesia District Office
Mr. Rick Deuell, P.E., WWC Engineering

WWC ENGINEERING

611 Skyline Road - Laramie, Wy 82070 - (307) 742-0031
FAX (307) 721-2913 - E-mail: infolar@wwcengineering.com

July 29, 2003

George Beaumont
Underground Storage Tank Bureau
2044 Galisteo Street
Santa Fe, NM 87504

RE: Schlumberger Oilfield Services, Artesia, NM

Dear Mr. Beaumont:

On behalf of Schlumberger Oilfield Services (Dowell), WWC Engineering is submitting the enclosed Work Plan to decommission the Maintenance Shop SVE System in Artesia, NM. The Wash Bay SVE System is to remain in service.

If there are any questions, please give me a call at 307-742-0031 or John Miller at 281-285-8498.

Sincerely yours,

Rick Deuell

Rick Deuell, P.E.

RD:sb
Enclosures
Cc: Jack Ford w/enclosure
John Miller w/enclosure
File: 90-125

WORK PLAN
MAINTENANCE SHOP SVE
SYSTEM DECOMMISSIONING

SCHLUMBERGER OILFIELD SERVICES
ARTESIA, NEW MEXICO

June 20, 2003

Prepared For:

Schlumberger Oilfield Services
200 Gillingham Lane, MD7
Sugar Land, TX 77478

Prepared By:

WWC ENGINEERING

611 Skyline Road
Laramie, Wyoming 82070

Background

Schlumberger Oilfield Services (Dowell) submitted a Work Plan to the New Mexico Environmental Department (NMED) in 1993 for the construction of two SVE systems at their facility in Artesia. Upon approval of the work plan, the systems were constructed in January – February 1994. A report documenting the construction and start-up of the systems was submitted to the NMED in March 1994. The systems were monitored and sampled on a quarterly schedule with the results provided to NMED. The two systems, maintenance shop and wash bay, were run continuously until October 1999. At that time the maintenance shop system was taken off-line due to equipment failure. Since no additional organic compounds being removed, the system was not repaired. The wash bay system continues to operate. Due to other construction on the site, it has now become desirable to decommission the maintenance shop SVE system.

System Effectiveness

Vapors from the system were sampled quarterly and analyzed by EPA Method 8260 for volatile organic compounds. From 1984-1997 each SVE zone was sampled independently. In April 1997 the protocol was changed to collect a composite sample from both zones. The analytical results are presented in Table 1. At startup, volatile organic compound concentrations were in excess of 140 mg/m^3 with PCE being the predominant compound. These concentrations declined steadily and at the time the system was shutdown in 1999 there were no detectable volatile compounds.

Removal of the compounds in the soils at the source area had a significant impact on the ground water quality at the monitoring wells immediately downgradient of the system. Monitoring wells MW-2, MW-5, and MW-13 (Figure 1) are the most representative of the effects of the maintenance shop SVE system. Concentrations versus time for each well are presented in Figures 2-4. These figures show that MW-13 is below MCL's for all compounds with MW-2 and MW-5 only having PCE slightly above the MCL for PCE. Source removal with the SVE system has been effective.

Decommissioning

After construction of a new shop building in 2001 it was necessary to demolish the old building. At this time the SVE building and equipment were moved to the back part of the facility to prevent damage and are still located there. Since the SVE wells and collector piping is no longer needed it is proposed to abandon these facilities in place.

The well locations are shown in Figure 5 with as-built details shown on Figure 6. To abandon the wells, the manhole will be removed. The well casing will be cut-off just below the tee. The casing will be filled with bentonite chips and hydrated in place. The connector pipe will be cut-off and sealed with a PVC cap. Eight inches of concrete will be placed in the bottom of the hole to protect the top of the abandoned casing. The remainder of the hole will be filled with road base to match the existing surface. Abandonment details are shown on Figure 7.

Schedule

It is planned to perform abandonment activities in August or September of 2003.

Table 1 - Summary of Laboratory Analytical Results, SVE Soil Vapor Samples (Maintenance Shop SVE Systems), Schlumberger Oilfield Services Facility, Artesia, New Mexico

SVE ZONE	SAMPLE DATE	BENZENE (mg/m3)	ETHYL-BENZENE (mg/m3)	TOLUENE (mg/m3)	TOTAL XYLENES (mg/m3)	1,1-DCA (mg/m3)	1,2-DCA (mg/m3)	1,1-DCE (mg/m3)	1,1,1-TCA (mg/m3)	1,1,2-TCA (mg/m3)	TCE (mg/m3)	PCE (mg/m3)
MS-1	02/10/94	ND(1)	ND(1)	ND(1)	ND(1)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)
	02/16/94	ND(1)	ND(1)	ND(1)	ND(1)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(1)
	02/23/94	ND(0.5)	ND(0.5)	0.51	ND(0.5)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(0.5)
	03/04/94	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(0.5)
	03/11/94	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(0.5)
	03/18/94	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(1)	ND(1)	ND(1)	5.60	ND(1)	ND(1)	ND(0.5)
	03/28/94	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(1)	ND(1)	ND(1)	1.10	ND(1)	ND(1)	ND(0.5)
	04/20/94	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(1)	ND(1)	ND(1)	21.30	ND(1)	ND(1)	ND(0.5)
	05/06/94	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(1)	6.20	ND(0.5)	ND(0.5)	ND(0.5)
	05/18/94	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(1)	4.00	ND(0.5)	ND(0.5)	ND(0.5)
	06/01/94	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	4.00	ND(1)	ND(1)	ND(1)
*	12/05/94	ND(0.001)	ND(0.001)	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	0.20
	10/18/95	ND(0.2)	2.02	ND(0.2)	8.07	ND(0.2)	ND(0.2)	ND(0.2)	4.98	ND(0.2)	ND(0.2)	ND(0.2)
	07/24/96	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.6)	ND(0.3)	ND(0.3)	ND(0.3)	1.70	ND(0.3)	ND(0.3)	0.40
	10/22/96	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	1.61	ND(0.2)	ND(0.2)	0.41
	01/21/97	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	1.07	ND(1.0)	ND(1.0)	ND(1.0)
MS-2	02/03/94	0.70	0.2J	ND(0.5)	ND(0.5)	1.60	ND(0.5)	ND(0.5)	2.20	ND(0.5)	0.68	140.00
	02/10/94	ND(1)	ND(1)	ND(1)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	27.25
	02/16/94	ND(1)	ND(1)	ND(1)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	14.50
	02/23/94	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	50.20
	03/04/94	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	8.50
	03/11/94	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	17.60
	03/18/94	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	15.90
	03/28/94	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(1)	ND(1)	ND(1)	1.20	ND(1)	ND(1)	6.90
	04/08/94	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(1)	ND(1)	ND(1)	1.20	ND(1)	ND(1)	ND(0.5)
	04/20/94	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(1)	ND(1)	ND(1)	2.50	ND(1)	ND(1)	12.10
	05/06/94	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(1)	1.60	ND(0.5)	ND(0.5)	6.80
	05/18/94	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(1)	4.00	ND(0.5)	ND(0.5)	6.90
	06/01/94	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	4.00	ND(1)	ND(1)	12.00
*	09/07/94	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	0.31	ND(0.001)	ND(0.001)	ND(0.001)
	01/25/95	ND(0.04)	ND(0.04)	ND(0.04)	0.12	ND(0.04)	ND(0.04)	ND(0.04)	0.93	ND(0.04)	ND(0.04)	0.07
	05/09/95	ND(0.2)	ND(0.2)	ND(0.2)	0.40	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	1.68
	10/18/95	ND(0.2)	2.14	ND(0.2)	8.62	ND(0.2)	ND(0.2)	ND(0.2)	1.03	ND(0.2)	ND(0.2)	ND(0.2)
	07/24/96	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.6)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	0.80
	10/22/96	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	0.24	ND(0.2)	ND(0.2)	0.66
	01/21/97	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
MS-COMP	04/09/97	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	0.46J	ND(1.0)	ND(1.0)	ND(1.0)
	07/29/97	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	0.60J
	01/07/98	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
	07/15/98	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	NA	ND(1.0)	ND(1.0)
	10/28/98	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
	02/10/99	ND(0.5)	ND(0.5)	ND(0.5)	ND(1.0)	ND(0.5)	ND(0.5)	ND(0.5)	ND(1.0)	ND(0.5)	ND(0.5)	0.83
	04/22/99	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
	07/13/99	ND(0.5)	ND(0.5)	ND(0.5)	ND(1.0)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)

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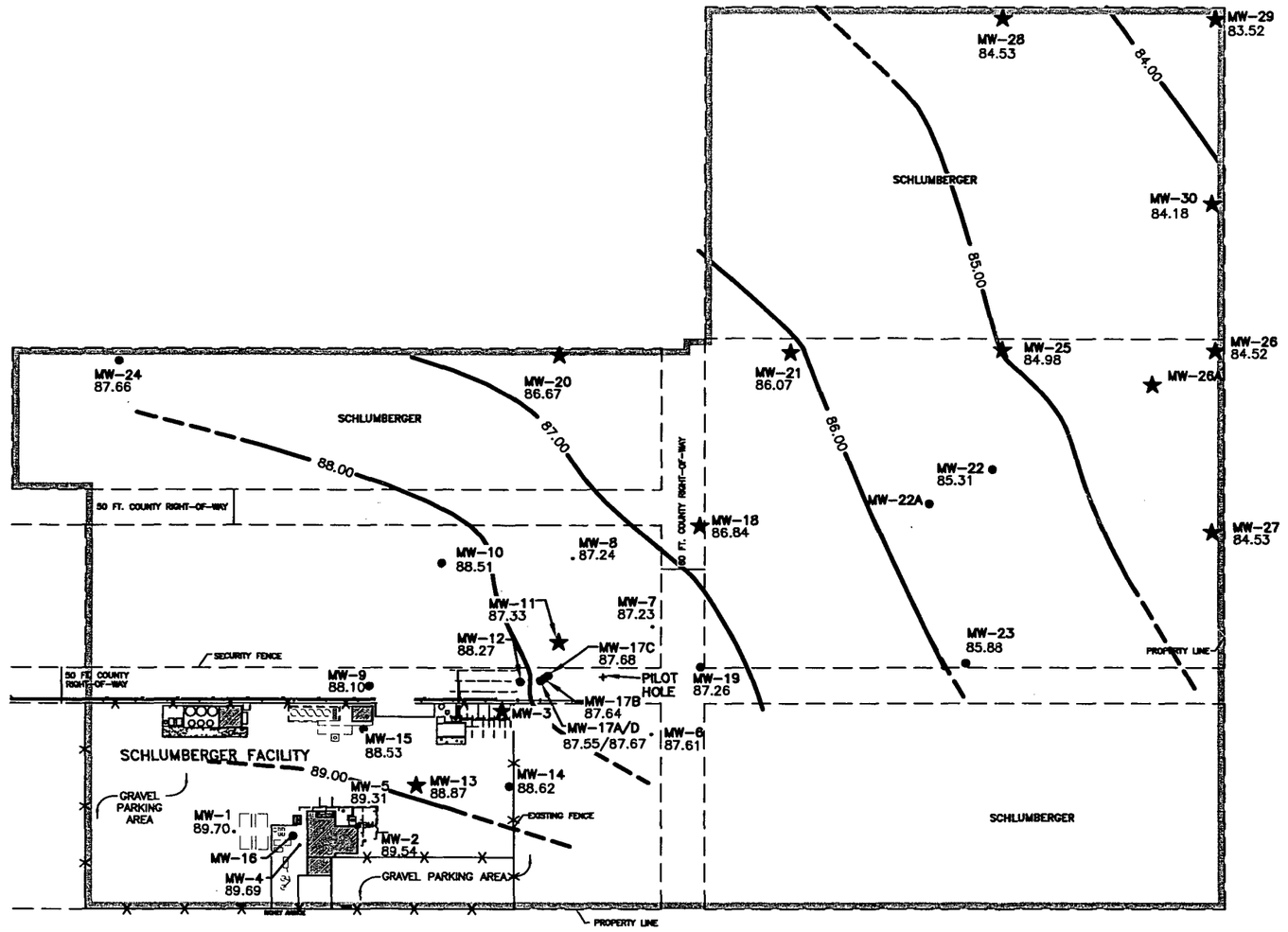


EXPLANATION

- MW-9 88.10 — WWC MONITORING WELL LOCATION, IDENTIFICATION, AND POTENTIOMETRIC SURFACE
- MW-6 87.61 — REED AND ASSOCIATES MONITORING WELL LOCATION, IDENTIFICATION, AND POTENTIOMETRIC SURFACE
- ★ — MONITORING WELLS TO BE SAMPLED QUARTERLY
- 86.00 — POTENTIOMETRIC SURFACE CONTOUR (DASHED WHERE INFERRED)
- TBM — TEMPORARY BENCH MARK
- ----- — AIR PIPING
- · — SVE EXTRACTION WELL

0 200 FT.
SCALE

BASE MAP MODIFIED FROM REED & ASSOCIATES

FIGURE 1

SITE MAP WITH
POTENTIOMETRIC SURFACE
(10/15/02)

SCHLUMBERGER OILFIELD SERVICES
ARTESIA, NEW MEXICO

WWC ENGINEERING

Figure 2 - Monitoring Well MW-2

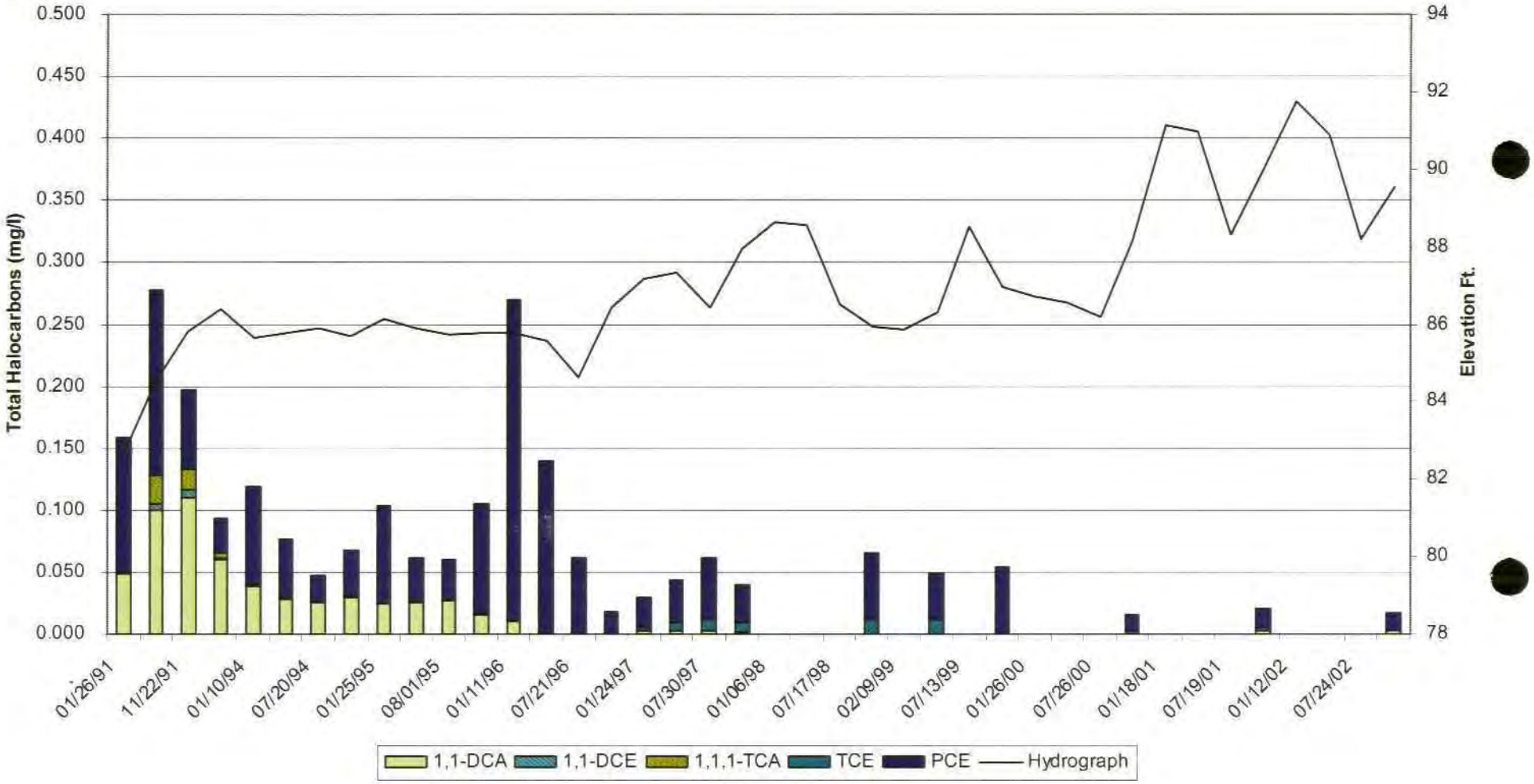


Figure 3 - Monitoring Well MW-5

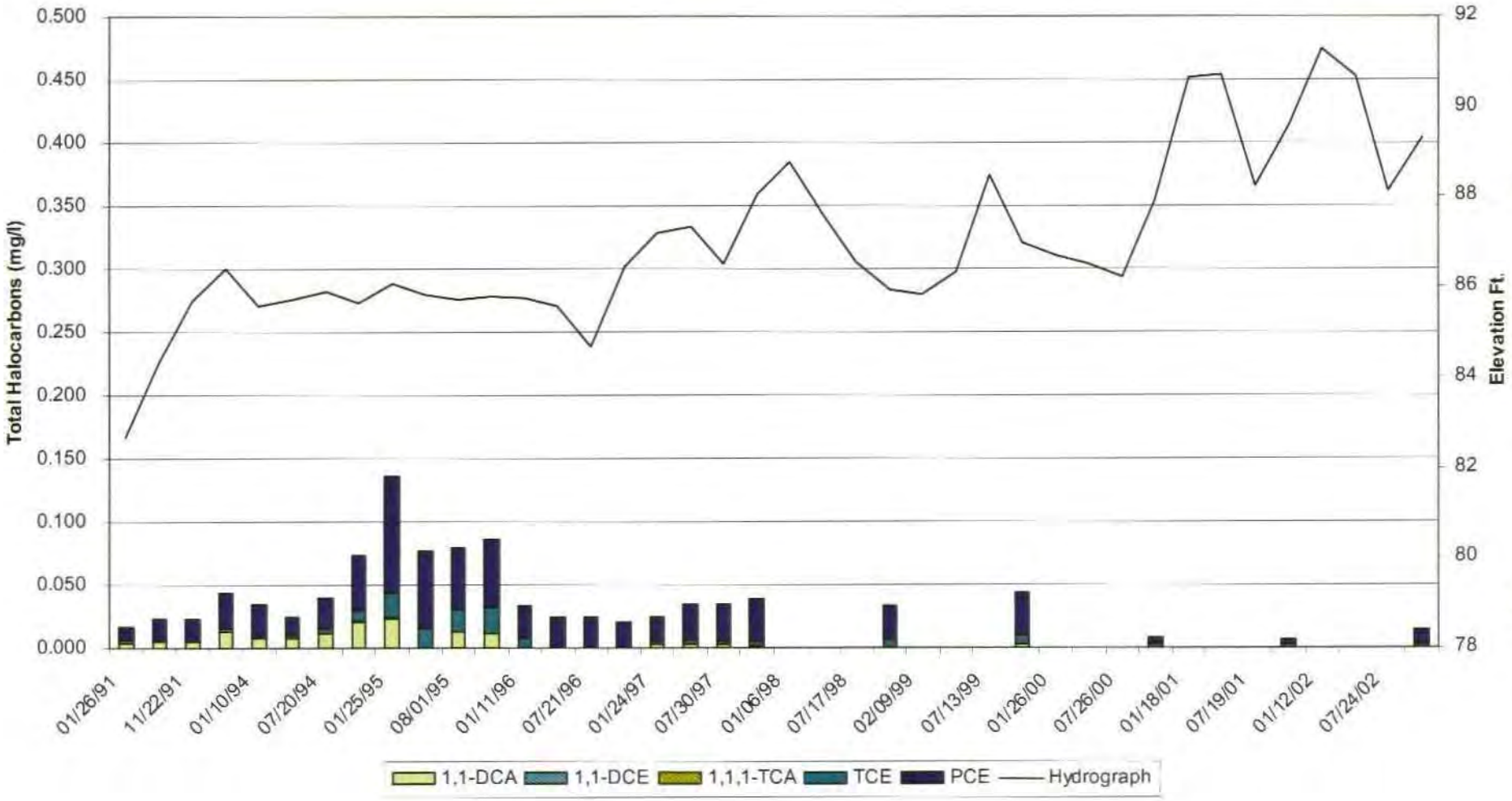
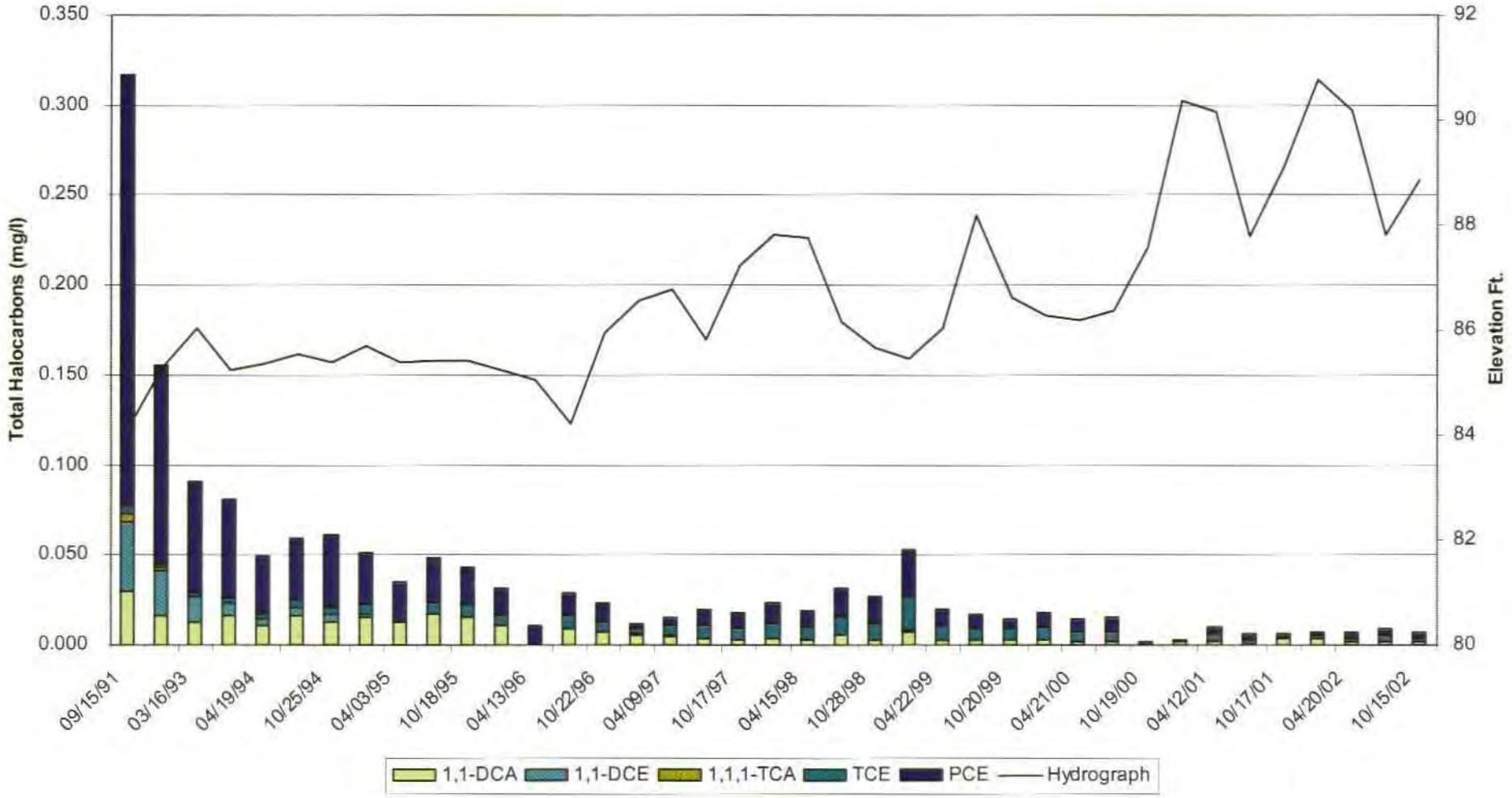
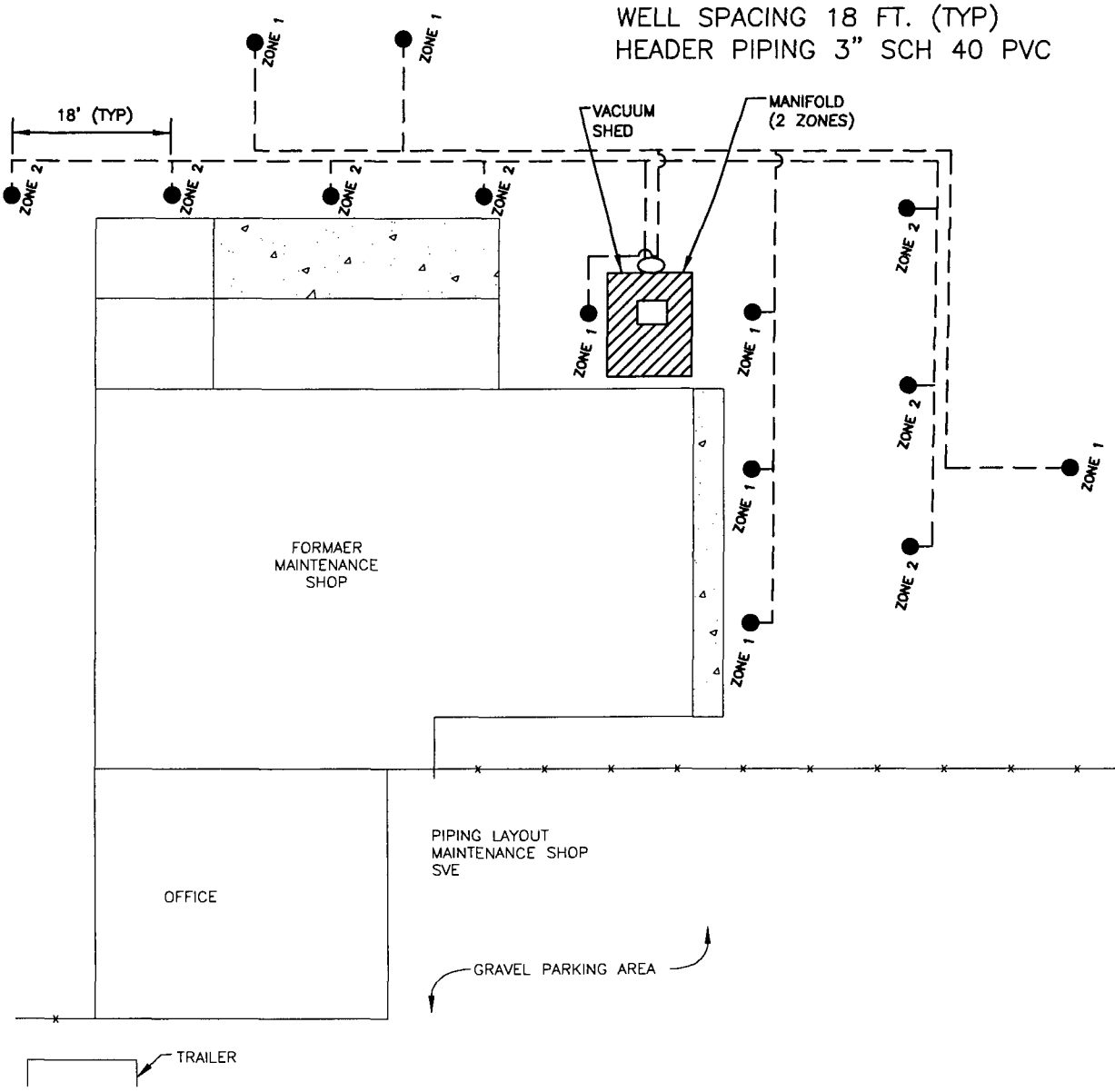


Figure 4 - Monitoring Well MW-13





EXPLANATION

- SOIL VAPOR EXTRACTION (SVE) WELL
- HEADER PIPING

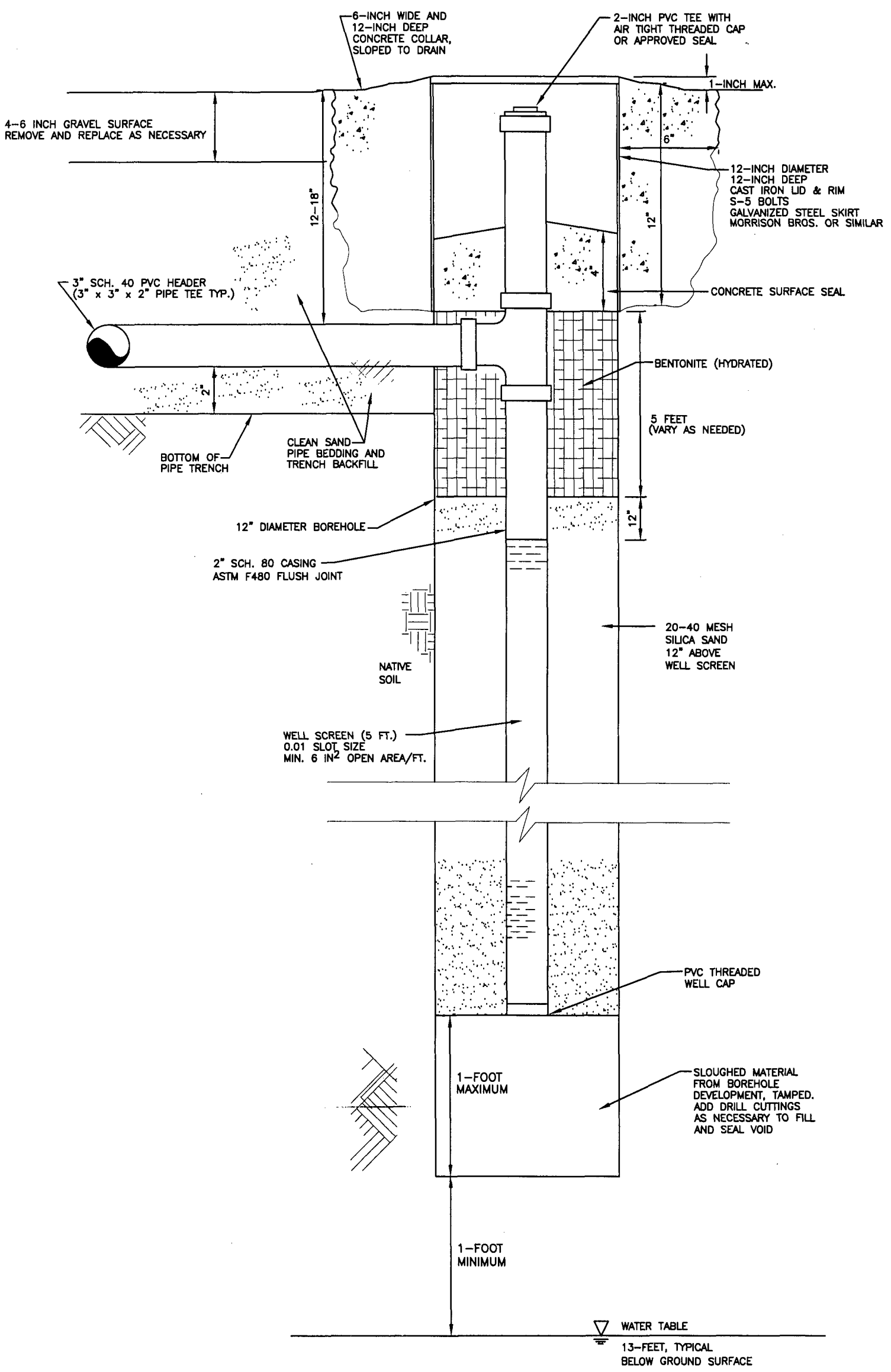
0 20 FT.
SCALE

FIGURE 5

PIPING LAYOUT FORMER MAINTENANCE SHOP SVE SYSTEM

SCHLUMBERGER OILFIELD SERVICES
ARTESIA, NEW MEXICO

WWC ENGINEERING



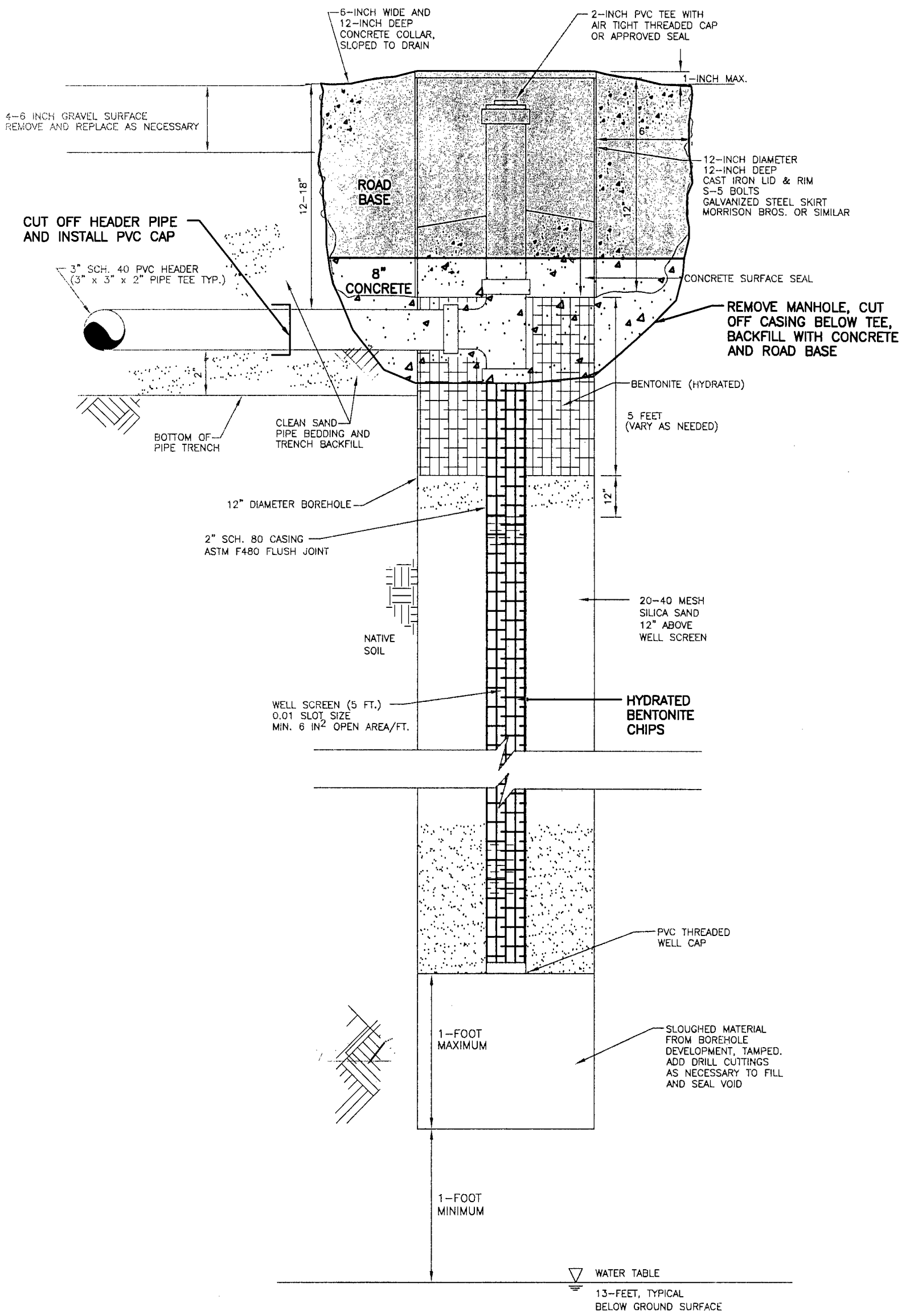
NOT TO SCALE

FIGURE 6

AS-BUILT
SVE WELL DETAIL

SCHLUMBERGER OILFIELD SERVICES
ARTESIA, NEW MEXICO

WWC ENGINEERING



NOT TO SCALE

FIGURE 7

SVE WELL ABANDONMENT

SCHLUMBERGER OILFIELD SERVICES
ARTESIA, NEW MEXICO

WWC ENGINEERING

WWC ENGINEERING

611 Skyline Road - Laramie, Wy 82070 - (307) 742-0031
FAX (307) 721-2913 - E-mail: infolar@wwcengineering.com

August 19, 2003

George Beaumont
Underground Storage Tank Bureau
2044 Galisteo Street
Santa Fe, NM 87504

RE: Schlumberger Oilfield Services, Artesia, NM

Dear Mr. Beaumont:

On behalf of Schlumberger Oilfield Services (Dowell), WWC Engineering is submitting a revised Work Plan to decommission the Maintenance Shop SVE System in Artesia, NM. The Work Plan has been revised to reflect your review comments. The Wash Bay SVE System is to remain in service.

If there are any questions, please give me a call at 307-742-0031 or John Miller at 281-285-8498.

Sincerely yours,

Tom Mueller

for Rick Deuell, P.E.

RD:sb
Enclosures
cc: Jack Ford w/enclosure
John Miller w/enclosure
File: 90-125

WORK PLAN
MAINTENANCE SHOP SVE
SYSTEM DECOMMISSIONING

SCHLUMBERGER OILFIELD SERVICES
ARTESIA, NEW MEXICO

August 19, 2003

Prepared For:

Schlumberger Oilfield Services
200 Gillingham Lane, MD7
Sugar Land, TX 77478

Prepared By:

WWC ENGINEERING

611 Skyline Road
Laramie, Wyoming 82070

Background

Schlumberger Oilfield Services (Dowell) submitted a Work Plan to the New Mexico Environmental Department (NMED) in 1993 for the construction of two SVE systems at their facility in Artesia. Upon approval of the work plan, the systems were constructed in January – February 1994. A report documenting the construction and start-up of the systems was submitted to the NMED in March 1994. The systems were monitored and sampled on a quarterly schedule with the results provided to NMED. The two systems, maintenance shop and wash bay, were run continuously until October 1999. At that time the maintenance shop system was taken off-line due to equipment failure. Since no additional organic compounds being removed, the system was not repaired. The wash bay system continues to operate. Due to other construction on the site, it has now become desirable to decommission the maintenance shop SVE system.

System Effectiveness

Vapors from the system were sampled quarterly and analyzed by EPA Method 8260 for volatile organic compounds. From 1984-1997 each SVE zone was sampled independently. In April 1997 the protocol was changed to collect a composite sample from both zones. The analytical results are presented in Table 1. At startup, volatile organic compound concentrations were in excess of 140 mg/m^3 with PCE being the predominant compound. These concentrations declined steadily and at the time the system was shutdown in 1999 there were no detectable volatile compounds.

Removal of the compounds in the soils at the source area had a significant impact on the ground water quality at the monitoring wells immediately downgradient of the system. Monitoring wells MW-2, MW-5, and MW-13 (Figure 1) are the most representative of the effects of the maintenance shop SVE system. Concentrations versus time for each well are presented in Figures 2-4. These figures show that MW-13 is below MCL's for all compounds with MW-2 and MW-5 only having PCE slightly above the MCL for PCE. Source removal with the SVE system has been effective.

Decommissioning

After construction of a new shop building in 2001 it was necessary to demolish the old building. At this time the SVE building and equipment were moved to the back part of the facility to prevent damage and are still located there. Since the SVE wells and collector piping is no longer needed it is proposed to abandon these facilities in place.

The SVE well locations are shown in Figure 5 with as-built details shown on Figure 6. To abandon the wells, the manhole will be removed. The SVE well casing will be cut-off just below the tee. The casing will be pumped full of cement grout amended with bentonite (6%). The connector pipes will be cut-off and sealed with the bentonite amended grout. Grout will be pumped until it is observed at the other end of the pipe. At that time each end of the pipe will capped. It is estimated that 180 feet of SVE well casing will take 4 Ft^3 of grout and 200 feet of piping will take 4.5 Ft^3 of grout. Eight inches of concrete will be placed in the bottom of the hole to protect the top of the abandoned casing. The remainder of the hole will be filled with road base to match the existing surface. Abandonment details are shown on Figure 7.

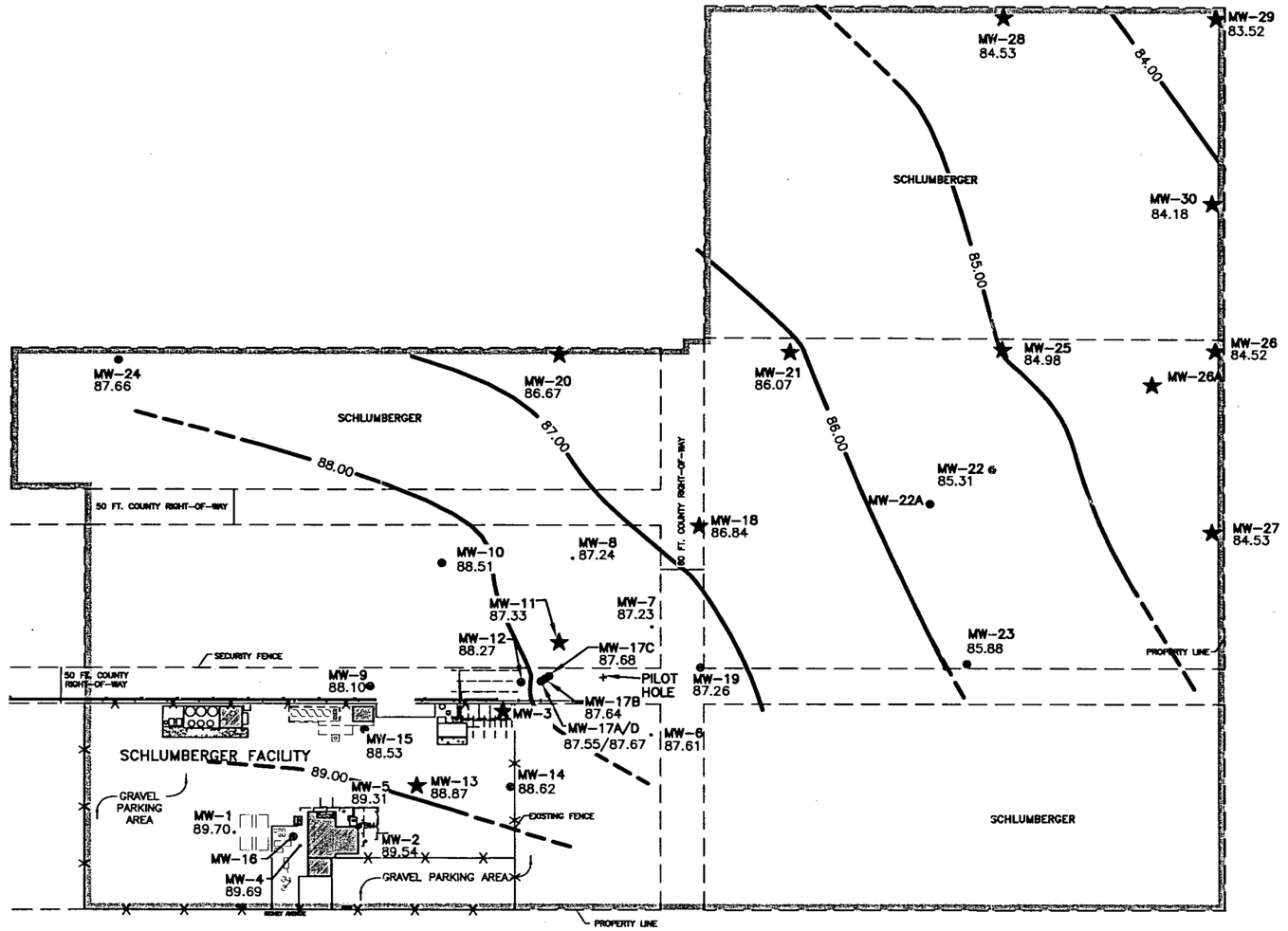
No monitoring wells are to be abandoned.

Schedule

It is planned to perform abandonment activities in August or September of 2003.

Table 1 - Summary of Laboratory Analytical Results, SVE Soil Vapor Samples (Maintenance Shop SVE Systems), Schlumberger Oilfield Services Facility, Artesia, New Mexico

SVE ZONE	SAMPLE DATE	BENZENE (mg/m3)	ETHYL-BENZENE (mg/m3)	TOLUENE (mg/m3)	TOTAL XYLENES (mg/m3)	1,1-DCA (mg/m3)	1,2-DCA (mg/m3)	1,1-DCE (mg/m3)	1,1,1-TCA (mg/m3)	1,1,2-TCA (mg/m3)	TCE (mg/m3)	PCE (mg/m3)
MS-1	02/10/94	ND(1)	ND(1)	ND(1)	ND(1)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)
	02/16/94	ND(1)	ND(1)	ND(1)	ND(1)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(1)
	02/23/94	ND(0.5)	ND(0.5)	0.51	ND(0.5)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(0.5)
	03/04/94	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(0.5)
	03/11/94	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(0.5)
	03/18/94	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(1)	ND(1)	ND(1)	5.60	ND(1)	ND(1)	ND(0.5)
	03/28/94	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(1)	ND(1)	ND(1)	1.10	ND(1)	ND(1)	ND(0.5)
	04/20/94	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(1)	ND(1)	ND(1)	21.30	ND(1)	ND(1)	ND(0.5)
	05/06/94	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(1)	6.20	ND(0.5)	ND(0.5)	ND(0.5)
	05/18/94	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(1)	4.00	ND(0.5)	ND(0.5)	ND(0.5)
	06/01/94	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	4.00	ND(1)	ND(1)	ND(1)
*	12/05/94	ND(0.001)	ND(0.001)	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	0.20
	10/18/95	ND(0.2)	2.02	ND(0.2)	8.07	ND(0.2)	ND(0.2)	ND(0.2)	4.98	ND(0.2)	ND(0.2)	ND(0.2)
	07/24/96	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.6)	ND(0.3)	ND(0.3)	ND(0.3)	1.70	ND(0.3)	ND(0.3)	0.40
	10/22/96	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	1.61	ND(0.2)	ND(0.2)	0.41
	01/21/97	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	1.07	ND(1.0)	ND(1.0)	ND(1.0)
MS-2	02/03/94	0.70	0.2J	ND(0.5)	ND(0.5)	1.60	ND(0.5)	ND(0.5)	2.20	ND(0.5)	0.68	140.00
	02/10/94	ND(1)	ND(1)	ND(1)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	27.25
	02/16/94	ND(1)	ND(1)	ND(1)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	14.50
	02/23/94	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	50.20
	03/04/94	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	8.50
	03/11/94	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	17.60
	03/18/94	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	15.90
	03/28/94	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(1)	ND(1)	ND(1)	1.20	ND(1)	ND(1)	6.90
	04/08/94	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(1)	ND(1)	ND(1)	1.20	ND(1)	ND(1)	ND(0.5)
	04/20/94	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(1)	ND(1)	ND(1)	2.50	ND(1)	ND(1)	12.10
	05/06/94	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(1)	1.60	ND(0.5)	ND(0.5)	6.80
	05/18/94	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(1)	4.00	ND(0.5)	ND(0.5)	6.90
	06/01/94	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	4.00	ND(1)	ND(1)	12.00
*	09/07/94	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	0.31	ND(0.001)	ND(0.001)	ND(0.001)
	01/25/95	ND(0.04)	ND(0.04)	ND(0.04)	0.12	ND(0.04)	ND(0.04)	ND(0.04)	0.93	ND(0.04)	ND(0.04)	0.07
	05/09/95	ND(0.2)	ND(0.2)	ND(0.2)	0.40	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	1.68
	10/18/95	ND(0.2)	2.14	ND(0.2)	8.62	ND(0.2)	ND(0.2)	ND(0.2)	1.03	ND(0.2)	ND(0.2)	ND(0.2)
	07/24/96	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.6)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	ND(0.3)	0.80
	10/22/96	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	0.24	ND(0.2)	ND(0.2)	0.66
	01/21/97	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
MS-COMP	04/09/97	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	0.46J	ND(1.0)	ND(1.0)	ND(1.0)
	07/29/97	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	0.60J
	01/07/98	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
	07/15/98	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	NA	ND(1.0)	ND(1.0)
	10/28/98	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
	02/10/99	ND(0.5)	ND(0.5)	ND(0.5)	ND(1.0)	ND(0.5)	ND(0.5)	ND(0.5)	ND(1.0)	ND(0.5)	ND(0.5)	0.83
	04/22/99	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
	07/13/99	ND(0.5)	ND(0.5)	ND(0.5)	ND(1.0)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)



EXPLANATION

MW-9 88.10	WWC MONITORING WELL LOCATION, IDENTIFICATION, AND POTENTIOMETRIC SURFACE
MW-6 87.61	REED AND ASSOCIATES MONITORING WELL LOCATION, IDENTIFICATION, AND POTENTIOMETRIC SURFACE
★	MONITORING WELLS TO BE SAMPLED QUARTERLY
86.00	POTENTIOMETRIC SURFACE CONTOUR (DASHED WHERE INFERRED)
TBM	TEMPORARY BENCH MARK
----	AIR PIPING
·	SVE EXTRACTION WELL

0 200 FT.

SCALE

BASE MAP MODIFIED FROM REED & ASSOCIATES

FIGURE 1

SITE MAP WITH
POTENTIOMETRIC SURFACE
(10/15/02)

SCHLUMBERGER OILFIELD SERVICES
ARTESIA, NEW MEXICO

WWC ENGINEERING

Figure 2 - Monitoring Well MW-2

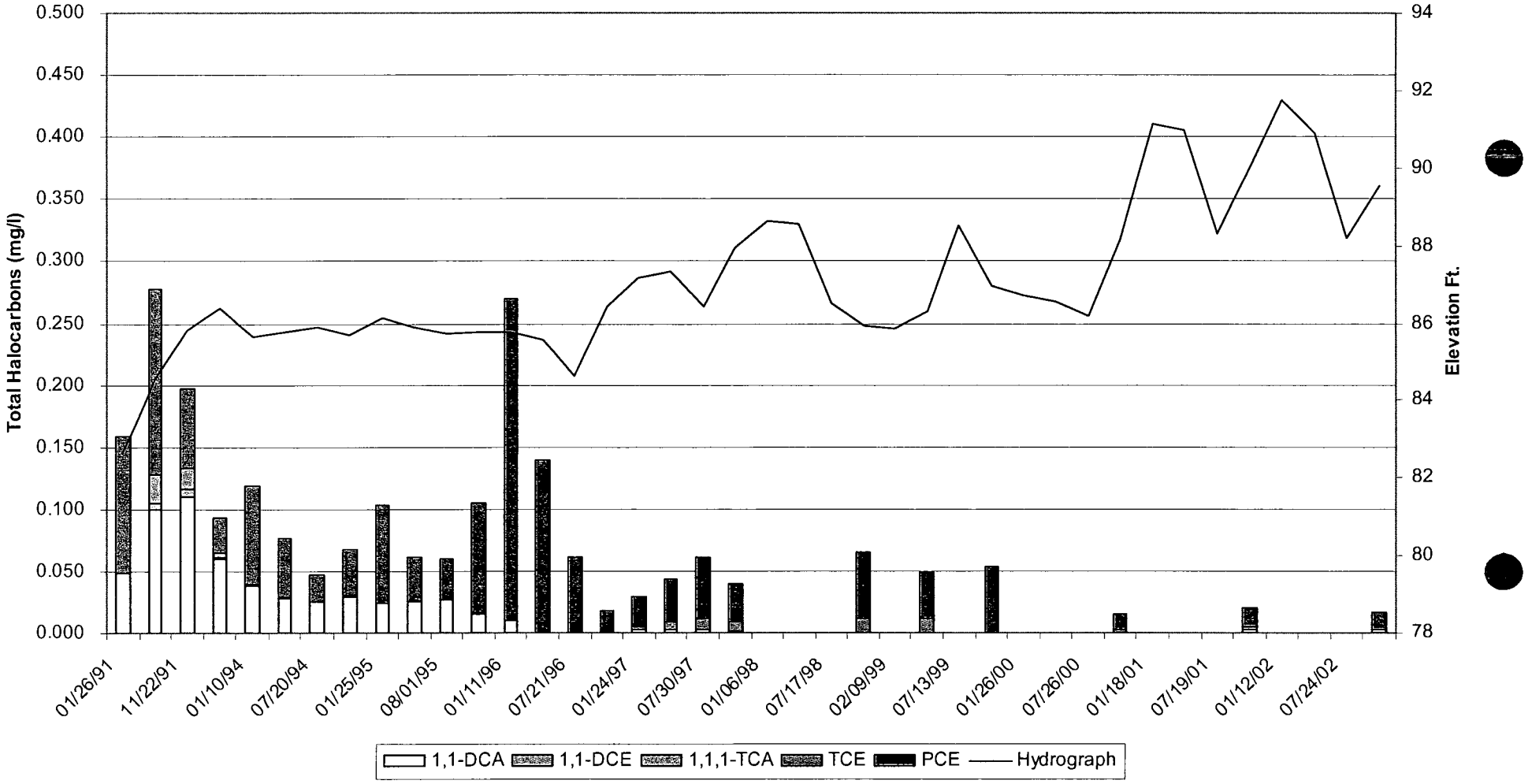


Figure 3 - Monitoring Well MW-5

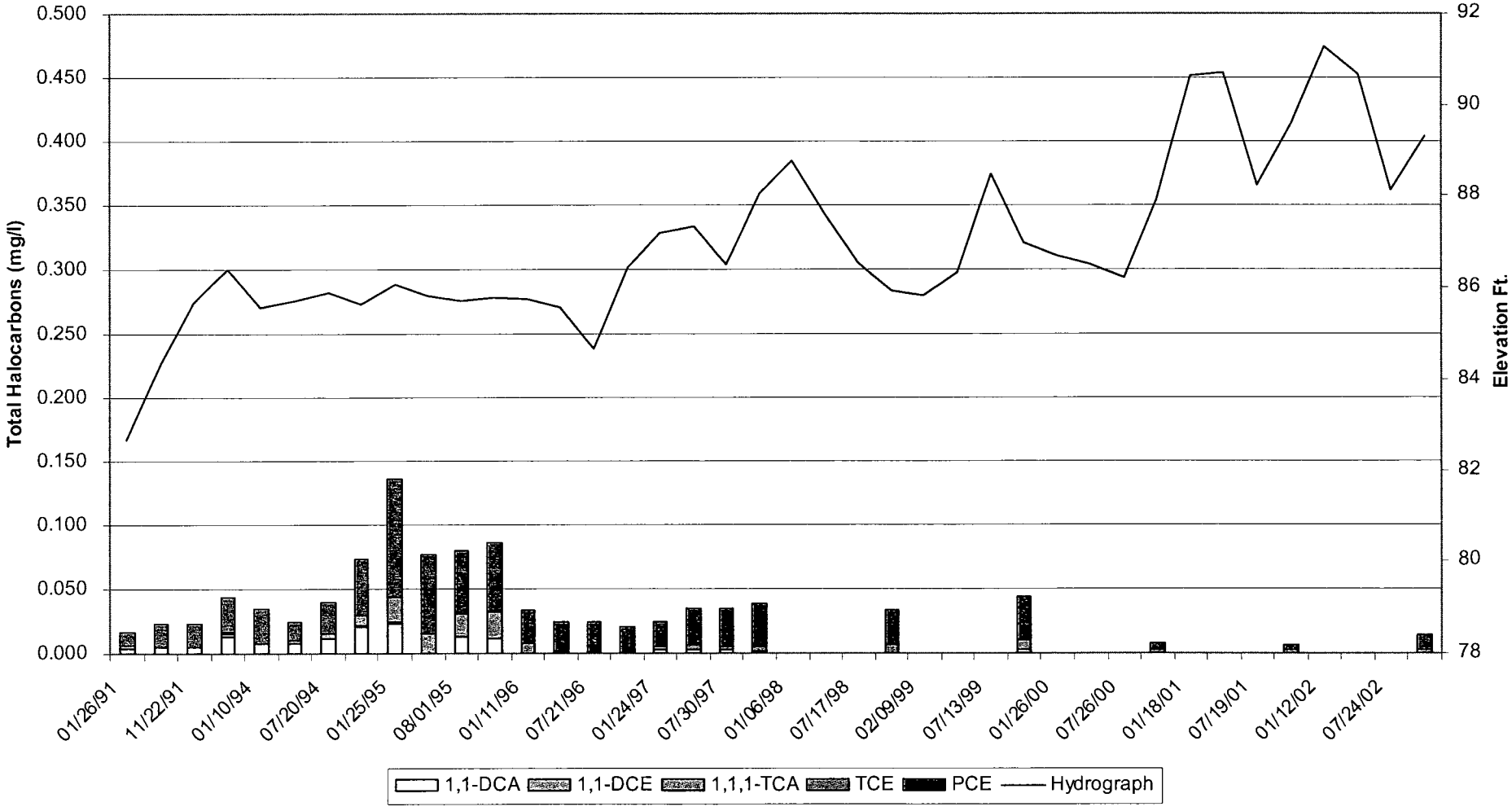
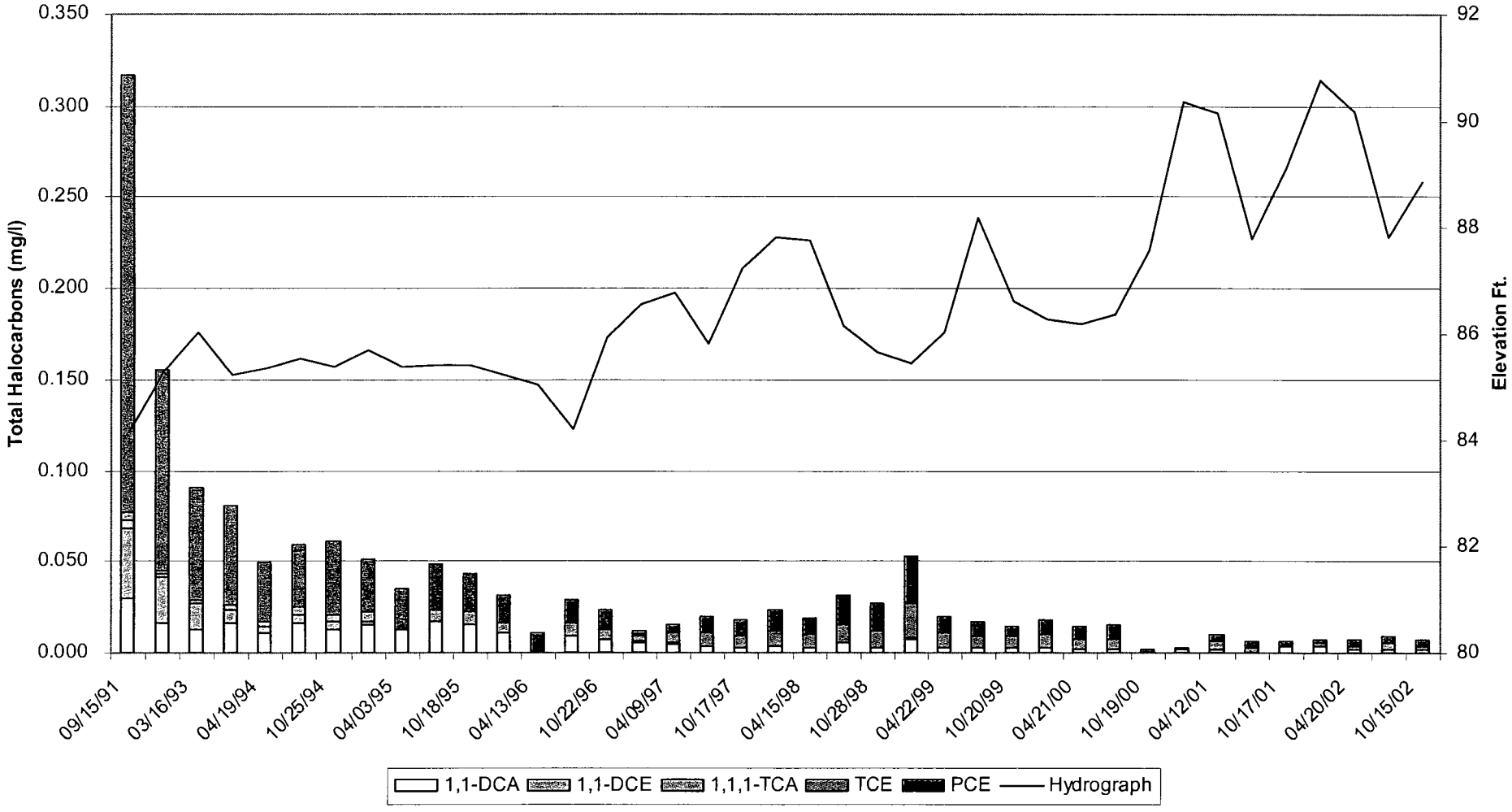
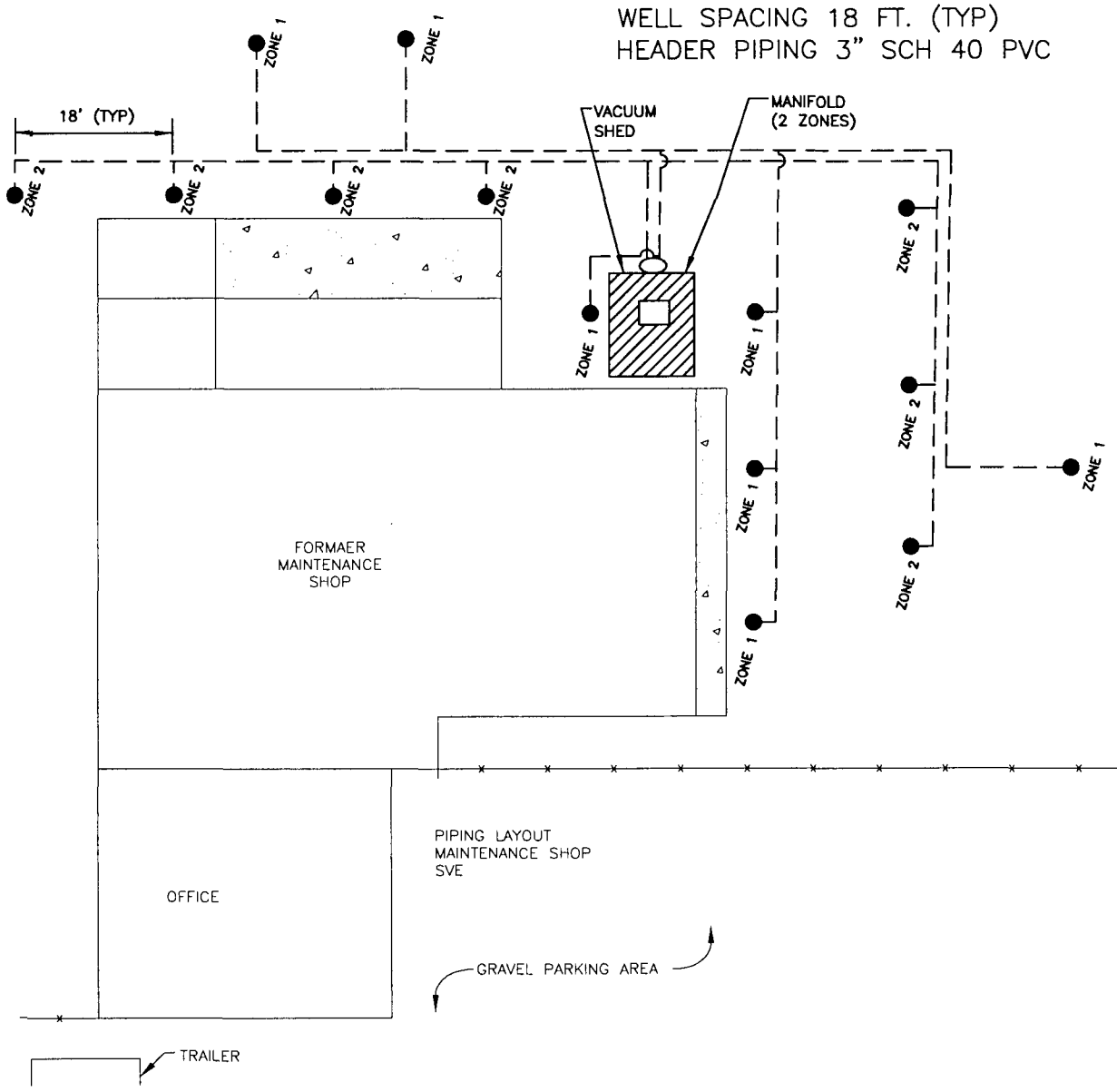


Figure 4 - Monitoring Well MW-13





EXPLANATION

- SOIL VAPOR EXTRACTION (SVE) WELL
- HEADER PIPING

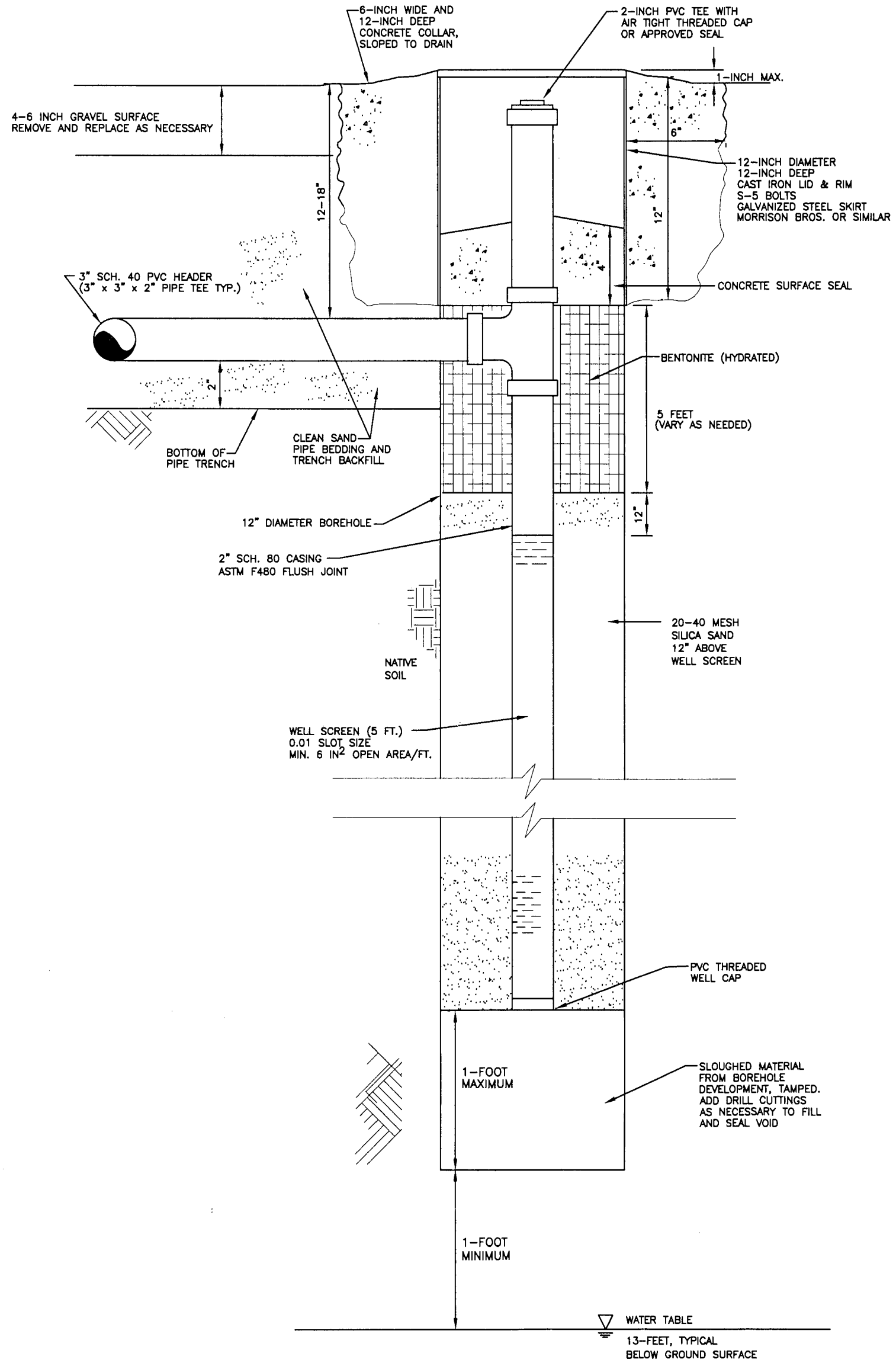
0 20 FT.
SCALE

FIGURE 5

PIPING LAYOUT
FORMER MAINTENANCE SHOP
SVE SYSTEM

SCHLUMBERGER OILFIELD SERVICES
ARTESIA, NEW MEXICO

WWC ENGINEERING



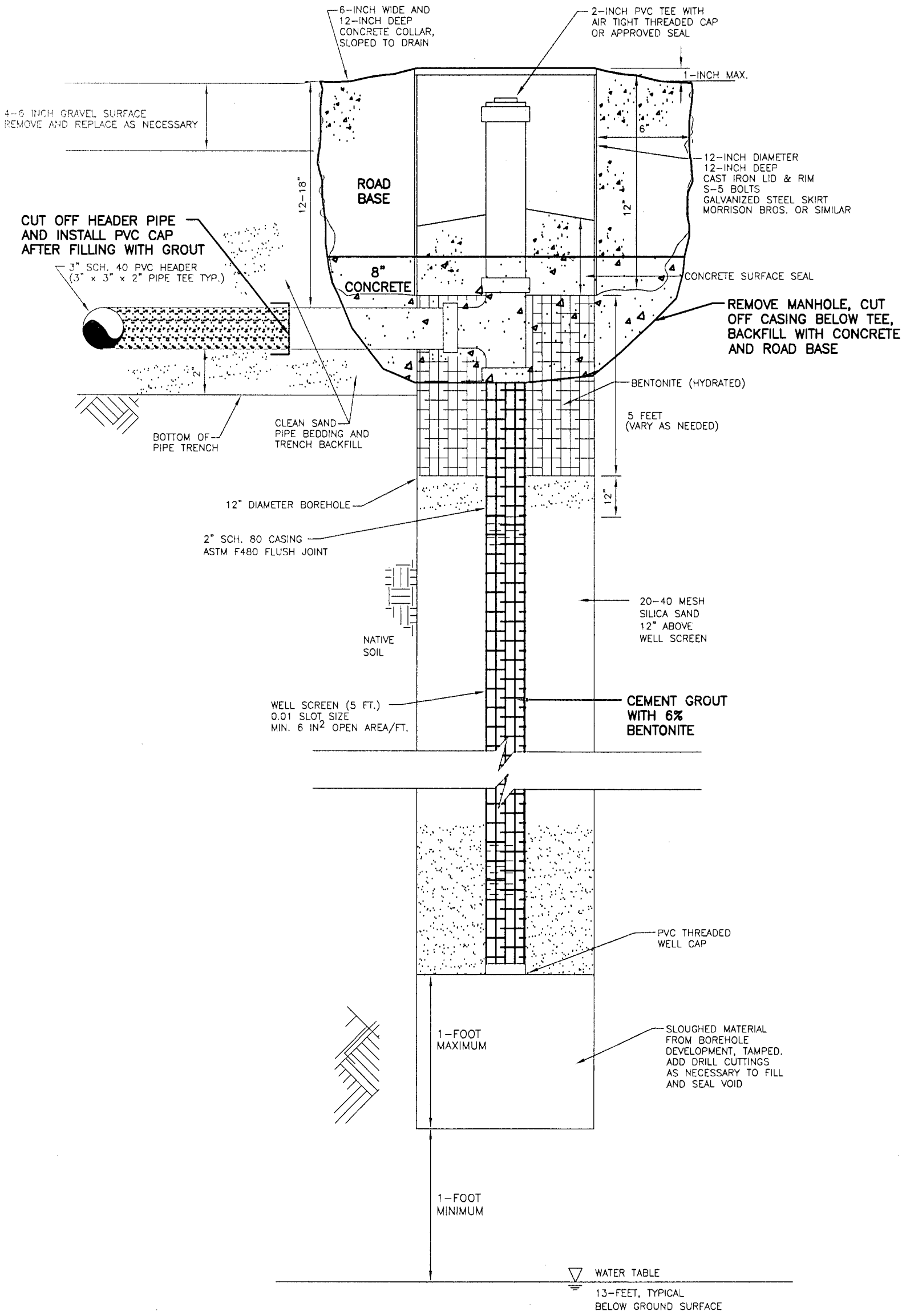
NOT TO SCALE

FIGURE 6

AS-BUILT
SVE WELL DETAIL

SCHLUMBERGER OILFIELD SERVICES
ARTESIA, NEW MEXICO

WWC ENGINEERING



NOT TO SCALE

FIGURE 7

SVE WELL ABANDONMENT

SCHLUMBERGER OILFIELD SERVICES
ARTESIA, NEW MEXICO

WWC ENGINEERING

Environmental Oversight, Inc.

March 12, 2003

RECEIVED
APR - 1 2003
Environmental Bureau
Oil Conservation Division

Mr. Jack Ford
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

GW-114

RE: 2002 Annual Report for the Schlumberger Oilfield Services (Dowell) Facility, Artesia, New Mexico

Dear Mr. Ford:

Submitted on behalf of Schlumberger Oilfield Services (Dowell) are (2) copies of the 2002 Annual Report for the facility in Artesia, New Mexico. An electronic version will be provided via e-mail. If you have any questions concerning the report please feel free to contact me at (281) 285 - 8498.

Sincerely,

John Miller

JM:
Enclosures
cc: WWC - Laramie

14019 S.W. Freeway, Suite 301, PMB187
Sugar Land, Texas 77478
281-285-8498
jmiller11@slb.com

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON
Governor
Betty Rivera
Cabinet Secretary

July 10, 2002

Lori Wrotenbery
Director
Oil Conservation Division

CERTIFIED MAIL
RETURN RECEIPT NO. 3929 9079

Mr. John Miller
Schlumberger Oilfield Services
14019 S.W. Freeway,
Suite 301, PMB187
Sugar Land, Texas 77478

RE: Discharge Plan Renewal Notice

Dear Mr. Miller:

Schlumberger Oilfield Services has the following discharge plan, which expires during the current calendar year.

GW-114 expires 12/1/2002 – Artesia Service Facility

WQCC 3106.F. If the holder of an approved discharge plan submits an application for discharge plan renewal at least 120 days before the discharge plan expires, and the discharger is not in violation of the approved discharge plan on the date of its expiration, then the existing approved discharge plan for the same activity shall not expire until the application for renewal has been approved or disapproved. A discharge plan continued under this provision remains fully effective and enforceable. An application for discharge plan renewal must include and adequately address all of the information necessary for evaluation of a new discharge plan. Previously submitted materials may be included by reference provided they are current, readily available to the secretary and sufficiently identified to be retrieved. [12-1-95]

The discharge plan renewal application for each of the above facilities is subject to WQCC Regulation 20NMAC 6.2.3114. Every billable facility submitting a discharge plan renewal will be assessed a fee equal to the filing fee of $100.00. After January 15, 2001 renewal discharge plans require a flat fee equal to $1,700.00 which is the flat fee schedule for oil field service facilities pursuant to revised WQCC Regulations 20NMAC 6.2.3114. The $100.00 filing fee is to be submitted with each discharge plan renewal application and is nonrefundable.

Please make all checks payable to: **NMED-Water Quality Management** and addressed to the OCD Santa Fe Office. Please submit the original discharge plan renewal application and one copy to the OCD Santa Fe Office and one copy to the OCD Hobbs District Office. **Note that the completed and signed application form must be submitted with your discharge plan renewal request.** A complete copy of the regulations is also available on NMED's website at **www.nmenv.state.nm.us**).

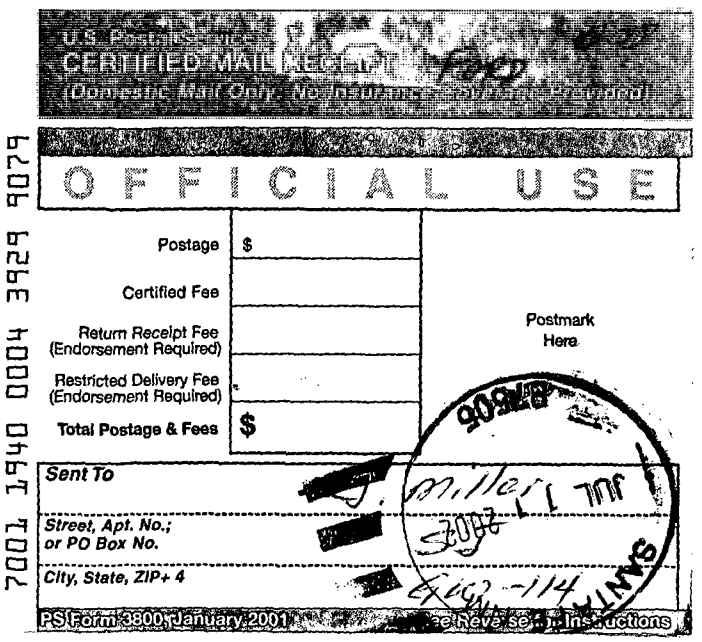
If any of the above-sited facilities no longer has any actual or potential discharges and a discharge plan is not needed, please notify this office. If Schlumberger Oilfield Services has any questions, please do not hesitate to contact Mr. Jack Ford at (505) 476-3489.

Sincerely,

Roger C. Anderson
Oil Conservation Division

RCA/wjf

cc: OCD Artesia District Office



Environmental Oversight, Inc.

RECEIVED
MAR 25 2002
Environmental Bureau
Oil Conservation Division

March 22, 2002

GW-114

Mr. Jack Ford
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

RE: 2001 Annual Report for the Schlumberger Oilfield Services (Dowell) Facility, Artesia, New Mexico

Dear Mr. Ford:

Submitted on behalf of Schlumberger Oilfield Services (Dowell) are (2) copies of the 2001 Annual Report for the facility in Artesia, New Mexico. An electronic version will be provided via e-mail. If you have any questions concerning the report please feel free to contact me at (281) 285 - 8498.

Sincerely,

John A. Miller
C/O Schlumberger Oilfield Services
200 Gillingham Lane, MD-7
Sugar Land, TX 77478

JM:
Enclosures
cc: WWC - Laramie

14019 S.W. Freeway, Suite 301, PMB187
Sugar Land, Texas 77478
281-285-8498
jmiller11@slb.com

Environmental Oversight, Inc.

RECEIVED
SEP 2 1 2001
Environmental Bureau
Oil Conservation Division

July 31, 2001

Mr. Jack Ford
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

RE: Zero-Valent Iron Pilot Study Work Plan for the Schlumberger Oilfield Services (Dowell) Facility, Artesia, New Mexico

Dear Mr. Ford:

Submitted on behalf of Schlumberger Oilfield Services (Dowell) are (2) copies of a Work Plan for Zero-Valent Iron Treatment Pilot Study for the facility in Artesia, New Mexico. We propose to do this pilot study to verify the effectiveness of iron filings under Artesia ground water conditions. I will call you after the middle of August to discuss any questions you have concerning the work plan. Please feel free to contact me at (281) 285 – 8498 if you get to it sooner.

Sincerely,

John A. Miller
C/o Schlumberger Oilfield Services
200 Gillingham Lane, MD-7
Sugar Land, TX 77478

JM:
Enclosures
cc: WWC - Laramie

14019 S.W. Freeway, Suite 301, PMB187
Sugar Land, Texas 77478
281-285-8498
jamiller@slb.com

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON
Governor
Jennifer A. Salisbury
Cabinet Secretary

September 24, 2001

Lori Wrotenbery
Director
Oil Conservation Division

CERTIFIED MAIL
RETURN RECEIPT NO. 5051 0852

Mr. John A. Miller
Remediation Manager
Schlumberger Oilfield Services, Inc. (DS)
300 Schlumberger Drive
Sugar Land, Texas 77478

RE: Dowell Schlumberger - Artesia Facility (GW-114)
Eddy County, New Mexico

Dear Mr. Miller:

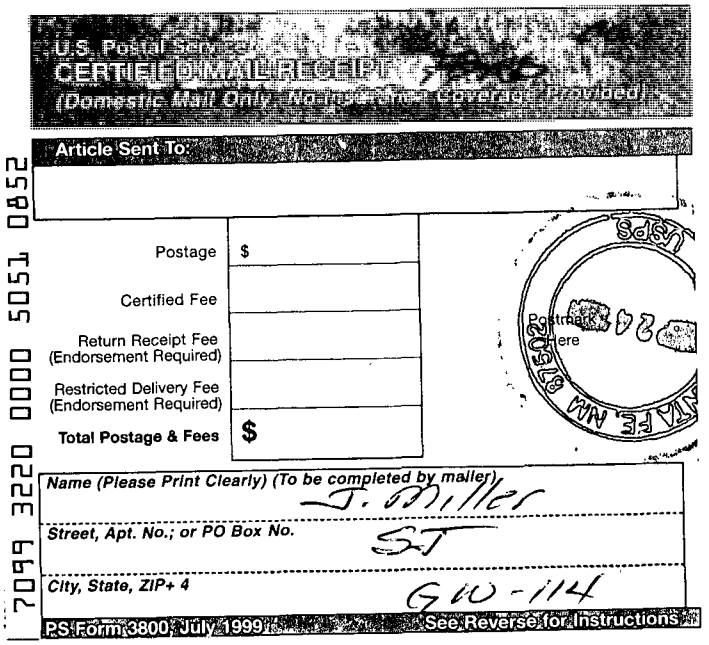
Pursuant to our telephone discussion of September 20 and the work plan, dated July 27, 2001, submitted to the OCD, approval is herewith granted for the proposed pilot study at the above referenced facility.

Please keep the OCD apprised of the progress and results of the proposed study. If you have any questions please contact me at (505) 476-3489.

Sincerely,

W. Jack Ford, C.P.G.
Environmental Bureau
Oil Conservation Division

cc: Artesia OCD District Office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Restricted Delivery Fee (Endorsement Required)
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7099 3220 0000 5051 0852
Name (Please Print Clearly) (To be completed by mailer)
J. Miller
Street, Apt. No.; or PO Box No.
ST
City, State, ZIP+ 4
GW-114
PS Form 3800, July 1999
See Reverse for Instructions

STATE OF NEW MEXICO
ENVIRONMENT DEPARTMENT
UNDERGROUND STORAGE TANK BUREAU

4131 MONTGOMERY BLVD., NE
ALBUQUERQUE, NEW MEXICO 87109

DATE 5/9 TIME 10:00 am PAGES 9 (including this sheet)

TO: JACK F[illegible]

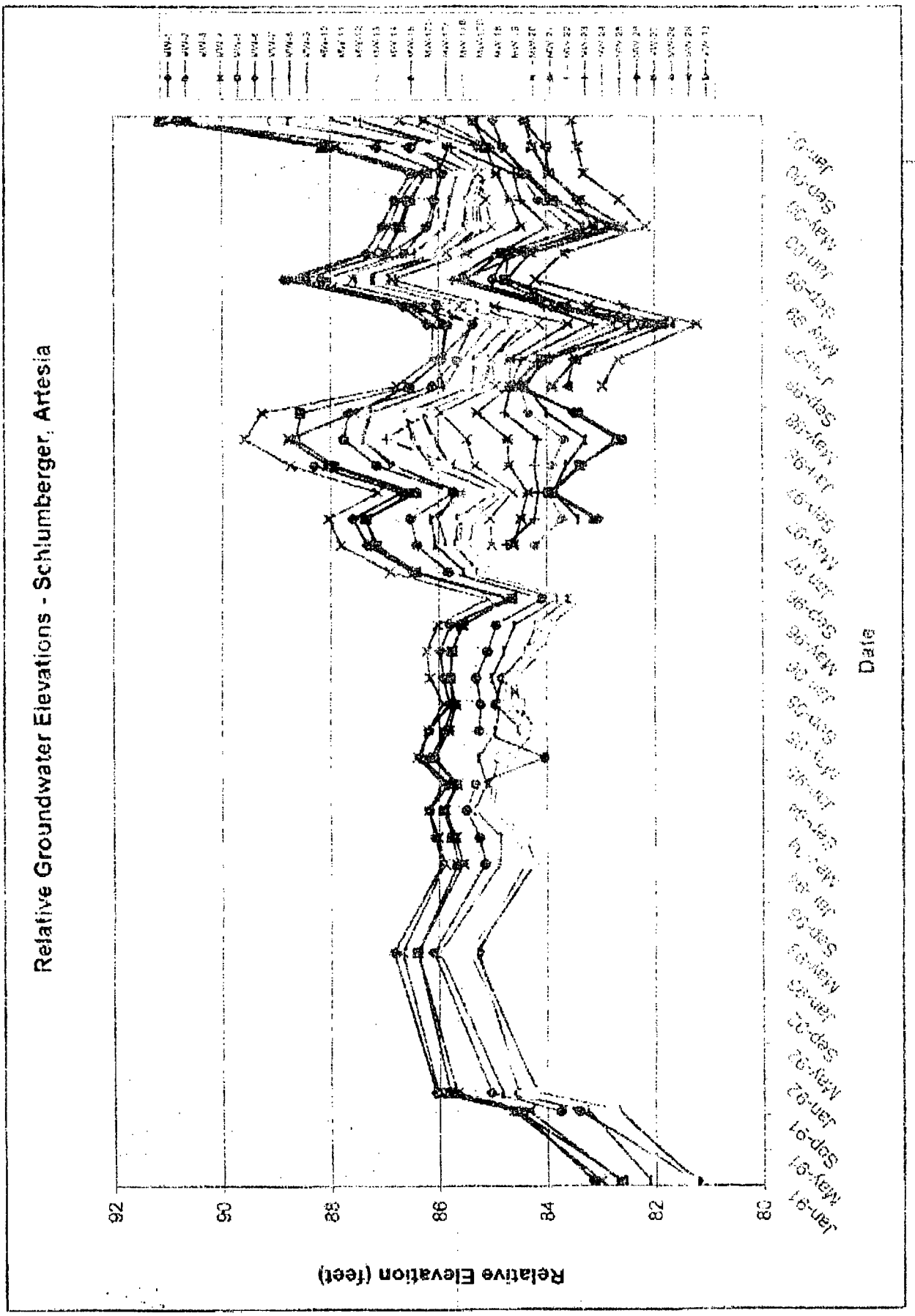
OFFICE: OCD SANTA FE

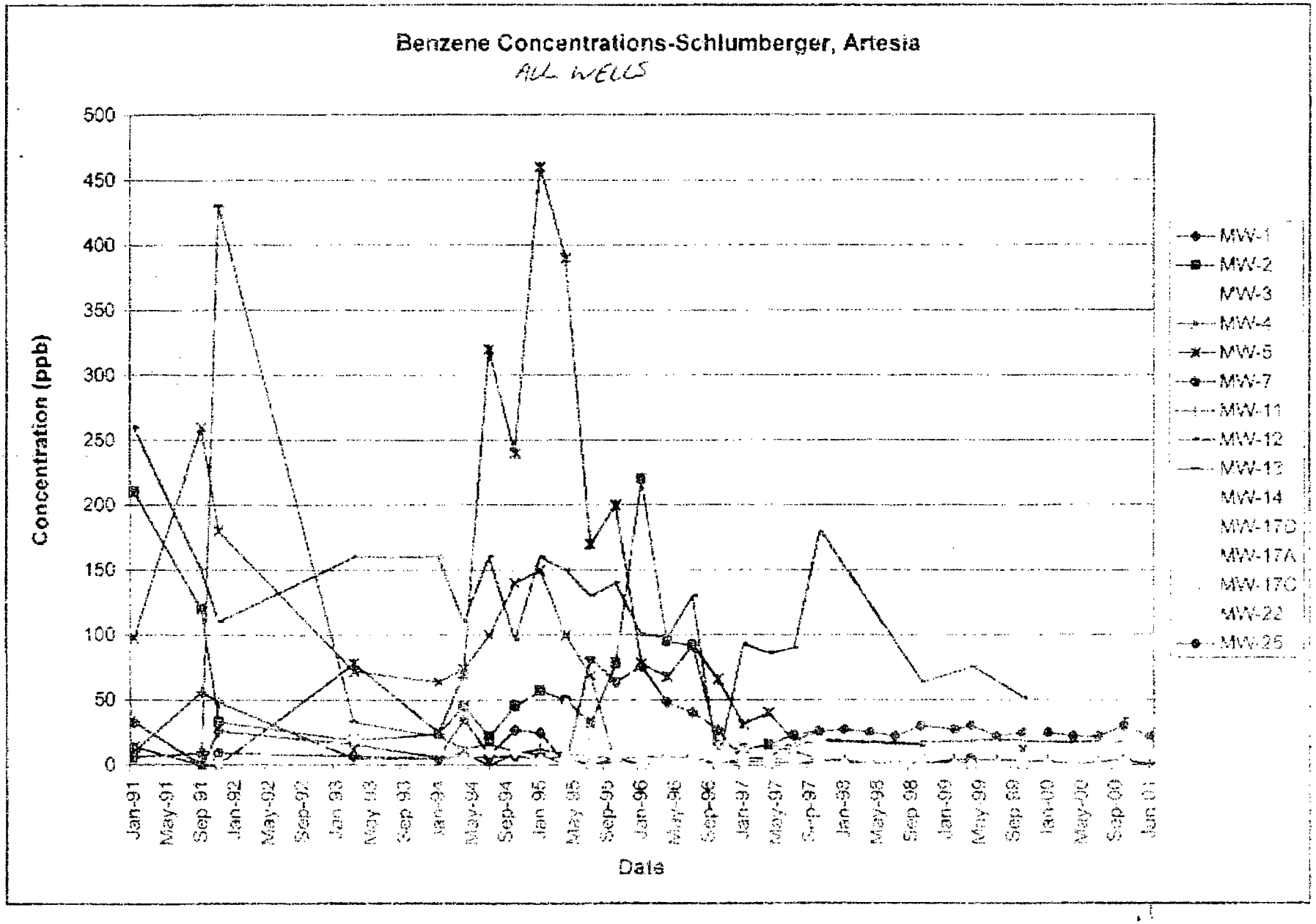
FAX #: 4[illegible]-3471 TELEPHONE #:

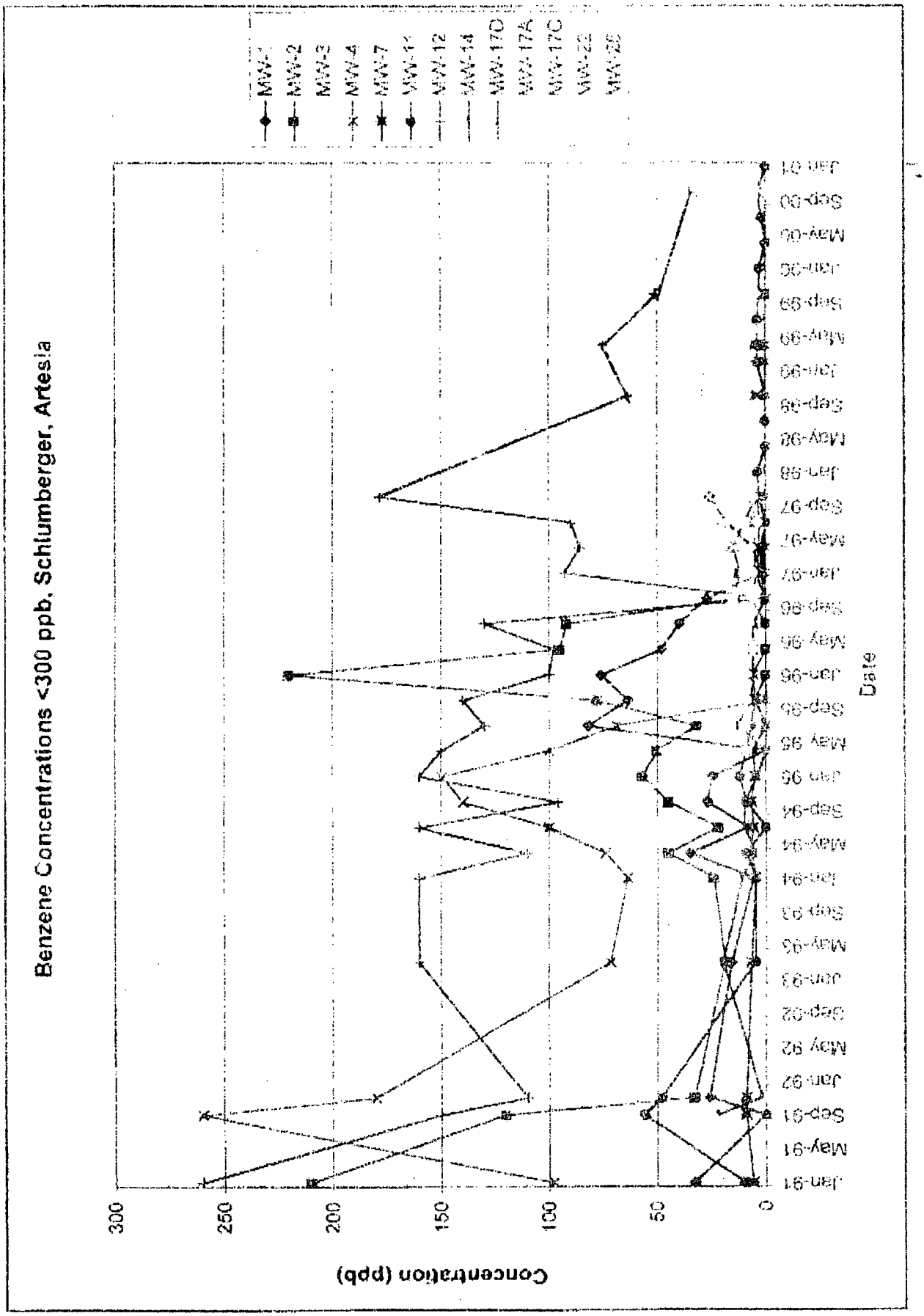
FROM: STEPHEN G. RE[illegible]

FAX #: TELEPHONE #:

COMMENTS: AS WE DISCUSSED, IF YOU HAVE QUESTIONS CALL ME AT 505-365-[illegible] [illegible] FROM SANTA FE. HOPE THIS IS USEFUL – [signature]


Relative Groundwater Elevations - Schlumberger, Artesia
Relative Elevation (feet)
92
90
88
86
84
82
80
Date
Jan-91
May-91
Sep-91
Jan-92
May-92
Sep-92
Jan-93
May-93
Sep-93
Jan-94
May-94
Sep-94
Jan-95
May-95
Sep-95
Jan-96
May-96
Sep-96
Jan-97
May-97
Sep-97
Jan-98
May-98
Sep-98
Jan-99
May-99
Sep-99
Jan-00


Benzene Concentrations-Schlumberger, Artesia
ALL WELLS
Concentration (ppb)
500
450
400
350
300
250
200
150
100
50
0
Jan-91
May-91
Sep-91
Jan-92
May-92
Sep-92
Jan-93
May-93
Sep-93
Jan-94
May-94
Sep-94
Jan-95
May-95
Sep-95
Jan-96
May-96
Sep-96
Jan-97
May-97
Sep-97
Jan-98
May-98
Sep-98
Jan-99
May-99
Sep-99
Jan-00
May-00
Sep-00
Jun-01
Data
MW-1
MW-2
MW-3
MW-4
MW-5
MW-7
MW-11
MW-12
MW-13
MW-14
MW-17D
MW-17A
MW-17C
MW-22
MW-25


Benzene Concentrations <300 ppb, Schlumberger, Artesia
MW-1
MW-2
MW-3
MW-4
MW-7
MW-11
MW-12
MW-14
MW-17D
MW-17A
MW-17C
MW-22
MW-23
Concentration (ppb)
300
250
200
150
100
50
0
Date
Jan-91
May-91
Sep-91
Jan-92
May 92
Sep-92
Jan-93
May-93
Sep-93
Jan-94
May-94
Sep-94
Jan 95
May 95
Sep-95
Jan-96
May 96
Sep-96
Jan-97
May-97
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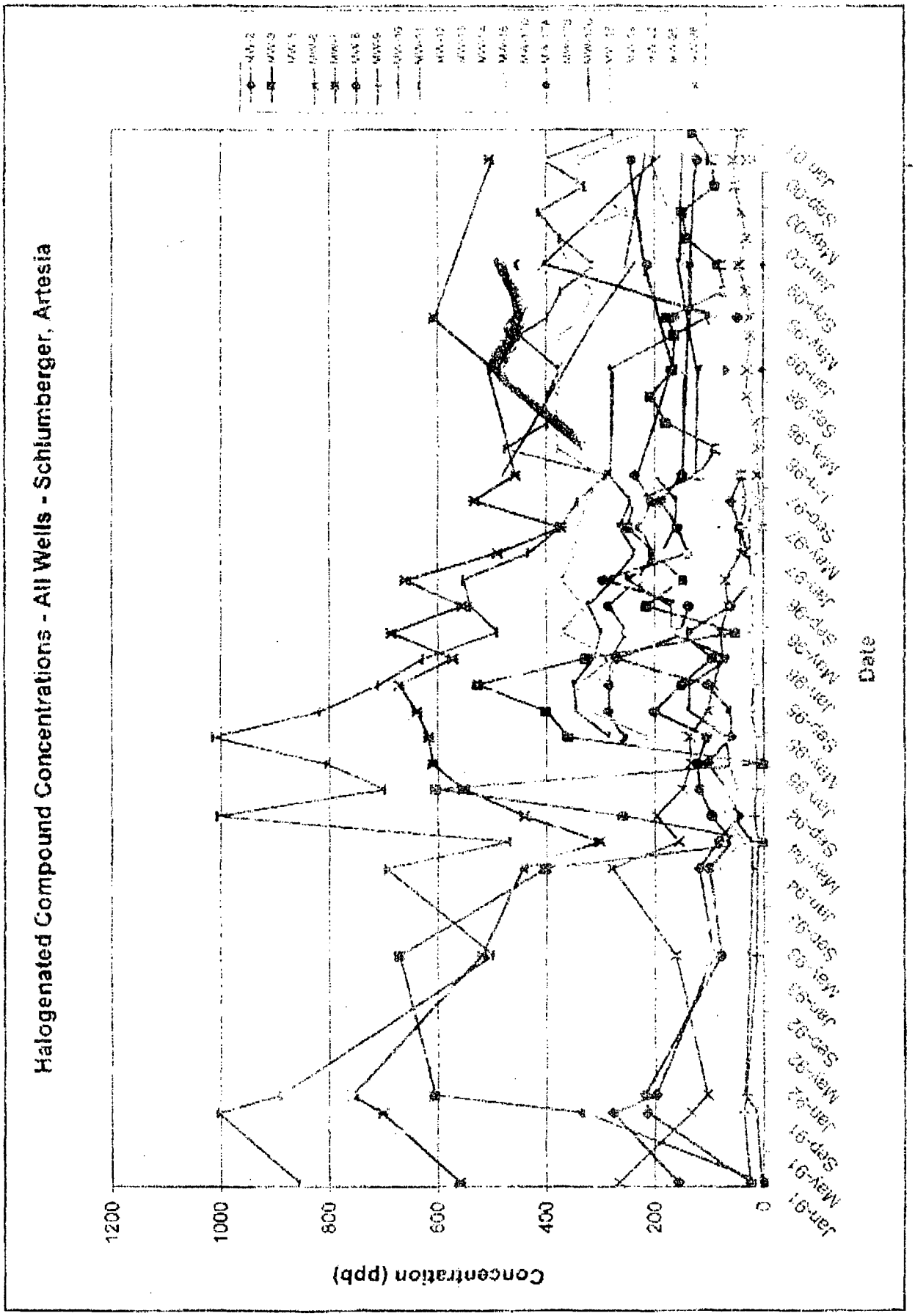
May-99
Sep-99
Jan-00
May-00
Sep-00
Jan-01


Halogenated Compound Concentrations - All Wells - Schlumberger, Artesia
Concentration (ppb)
1200
1000
800
600
400
200
0
Date
16-Jan-97
16-May-97
16-Sep-97
22-Jan-98
22-May-98
22-Sep-98
26-Jan-99
26-May-99
26-Sep-99
25-Jan-00
25-May-00
25-Sep-00
30-Jan-01
30-May-01
30-Sep-01
02-Jan-02
02-May-02
02-Sep-02
03-Jan-03
03-May-03
03-Sep-03
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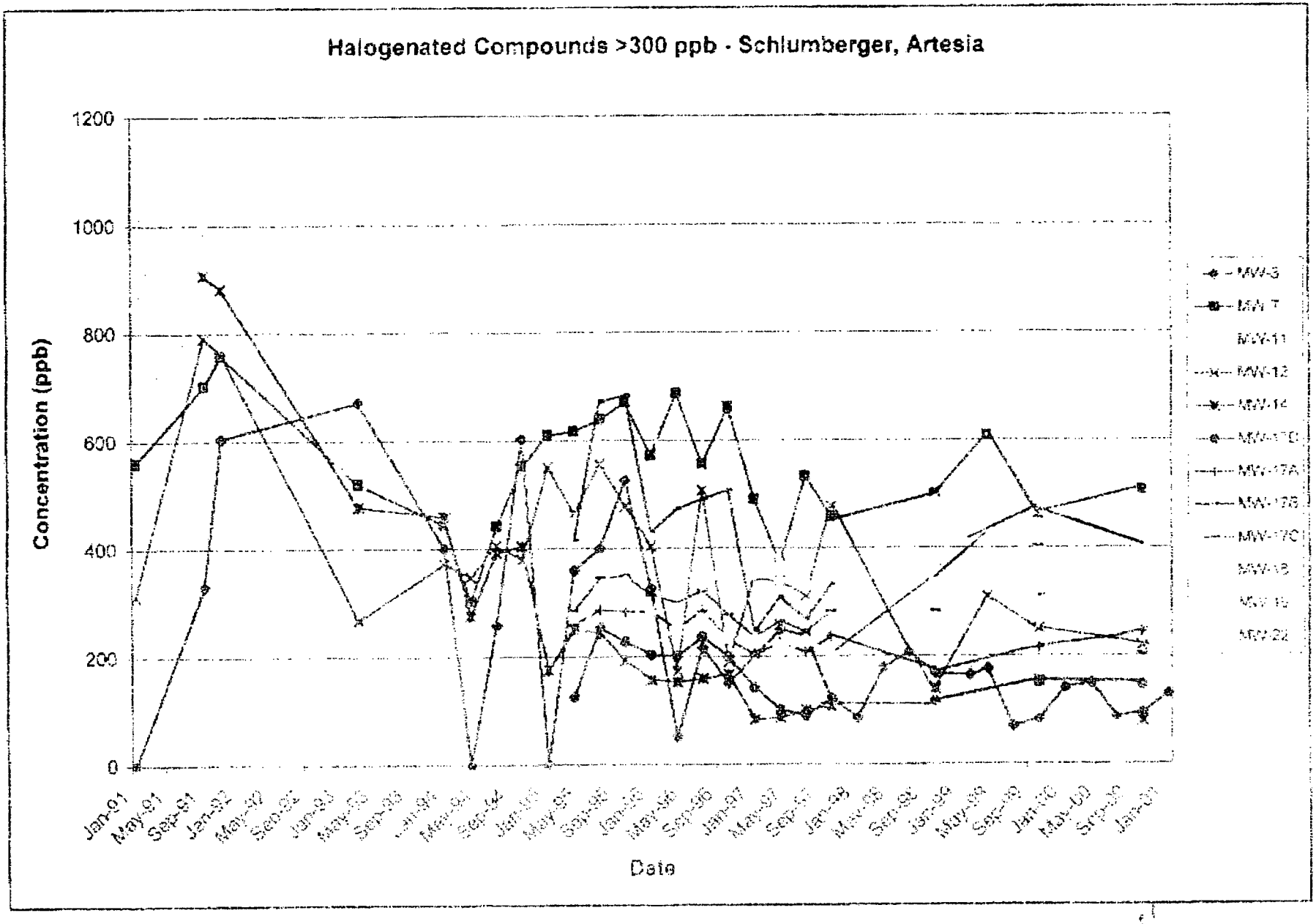
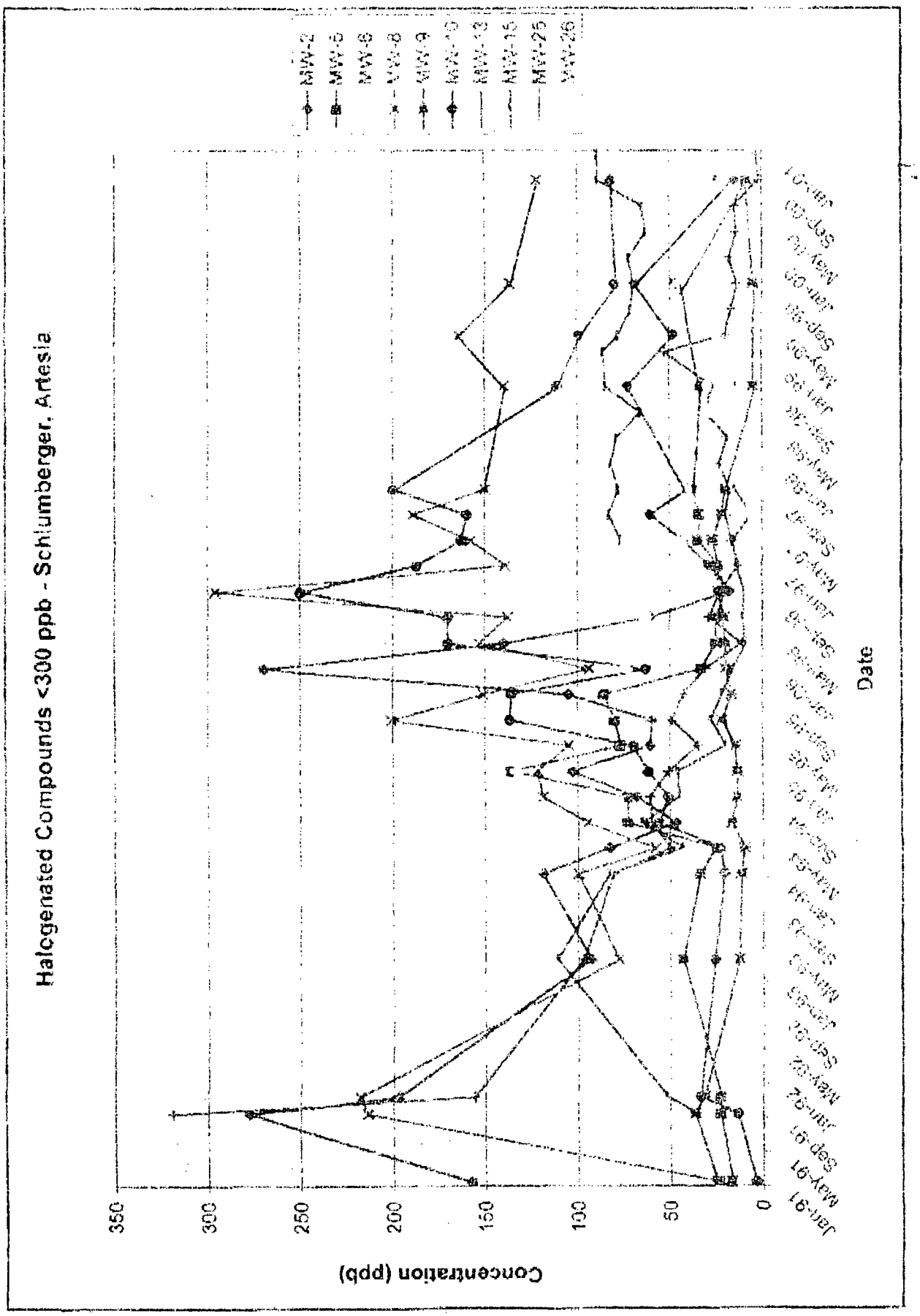
10-Jan-06
10-May-06
10-Sep-06


Halogenated Compounds >300 ppb - Schlumberger, Artesia
Concentration (ppb)
1200
1000
800
600
400
200
0
Jan-91
May-91
Sep-91
Jan-92
May-92
Sep-92
Jan-93
May-93
Sep-93
Jan-94
May-94
Sep-94
Jan-95
May-95
Sep-95
Jan-96
May-96
Sep-96
Jan-97
May-97
Sep-97
Jan-98
May-98
Sep-98
Jan-99
May-99
Sep-99
Jan-00
May-00
Sep-00
Jan-01
Date
MW-3
MW-7
MW-11
MW-12
MW-14
MW-17B
MW-17A
MW-17C
MW-18
MW-19
MW-22


Halcgenated Compounds <300 ppb - Schlumberger, Artesia
MW-2
MW-3
MW-8
MW-8
MW-9
MW-10
MW-13
MW-15
MW-25
MW-26
Concentration (ppb)
350
300
250
200
150
100
50
0
Jan-91
May-91
Sep-91
Jan-92
May-92
Sep-92
Jan-93
May-93
Sep-93
Jan-94
May-94
Sep-94
Jan-95
May-95
Sep-95
Jan-96
May-96
Sep-96
Jan-97
May-97
Sep-97
Jan-98
May-98
Sep-98
Jan-99
May-99
Sep-99
Jan-00
May-00
Sep-00
Date

Ford, Jack

From: Ford, Jack

Sent: Friday, April 27, 2001 3:53 PM

To: 'jamiller@slb.com'

Subject: Monitoring Reports

John,

Is it possible to henceforth send monitoring reports to OCD in electronic format rather than hardcopies? If so, please inform me of that and I will look for electronic files in the future. Thanks for all your assistance.

Best Regards

Jack Ford

NMOCD

Environmental Oversight, Inc.

April 20, 2001

GW-114

Mr. Jack Ford
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division
2040 S. Pacheco
Santa Fe, New Mexico 87505

RE: First Quarter Monitoring Results - 2001
Schlumberger Oilfield Services Facility – Artesia, New Mexico

Dear Mr. Ford:

Western Water Consultants, Inc. (WWC) conducted quarterly monitoring activities at the Schlumberger Oilfield Services (Dowell) facility in Artesia, New Mexico on January 18, 2001.

Two copies of the environmental data results are enclosed for your review.

Static water elevation data, measured in the 32 wells located in the vicinity of the Dowell facility on July 26th, are summarized on Table 1. The data were used to generate a potentiometric surface map as shown on Figure 1. As you can see water levels have risen 1.5-4 feet since January 2000.

The laboratory analytical results for both water quality and air quality monitoring are summarized on Tables 2 and 3, respectively. The laboratory reports are also enclosed for quality assurance/quality control purposes.

If you have any questions or comments, please call me at 281/285-8498.

Sincerely,

John A. Miller
C/o Schlumberger Oilfield Services
200 Gillingham Lane, MD-7
Sugar Land, TX 77478
Enclosures

14019 S.W. Freeway, Suite 301, PMB187
Sugar Land, Texas 77478
281-285-8498
jamiller@slb.com

cc: Steve Reuter, NMUST Bureau
WWC – Laramie, Wyoming

Environmental Oversight, Inc.

April 8, 2001

GW-114

Mr. Jack Ford
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

RE: 2000 Annual Report for the Schlumberger Oilfield Services (Dowell) Facility, Artesia, New Mexico

Dear Mr. Ford:

Submitted on behalf of Schlumberger Oilfield Services (Dowell) are (2) copies of the 2000 Annual Report for the facility in Artesia, New Mexico. If you have any questions concerning the report please feel free to contact me at (281) 285 - 8498.

Sincerely,

John A. Miller

JM:
Enclosures
cc: WWC - Laramie

14019 S.W. Freeway, Suite 301, PMB187
Sugar Land, Texas 77478
281-285-8498
jamiller@slb.com

John A. Miller
Remediation Manager
Oilfield Services

Schlumberger

Via FedEx

January 31, 2001

Mr. Jack Ford
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

RE: Schlumberger Oilfield Services Facility, Artesia, New Mexico.

Dear Mr. Ford:

We have previously submitted a voluntary Work Plan for construction of an aeration trench at the Schlumberger Oilfield Services facility in Artesia, New Mexico. This trench was proposed to shorten the period of active groundwater monitoring. After detailed analysis and site visits by construction contractors, the costs appear prohibitive to use this remediation technique. Therefore, we would like to withdraw the Aeration Trench work plan.

Our environmental consulting firm is gathering information on other possible remedial techniques such as injection of Hydrogen Release Compound or iron filings. After evaluation, we plan to submit a Pilot Test Work Plan for your review.

If you have any questions or comments, please call me at 281-285-8498.

Sincerely,

John A. Miller
Remediation Manager

JM:

P.O. Box 2727 Houston Texas 77252-2727 200 Gillingham Lane MD7 Sugar Land Texas 77478 Tel. (281) 285-8498 Fax (281) 285-8526

Rick Dowell

John A. Miller
Remediation Manager
Oilfield Services

Schlumberger

December 6, 2000

Mr. Jack Ford
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division
2040 S. Pacheco
Santa Fe, New Mexico 87505

GW-114

RE: Third Quarter Monitoring Results - 2000
Schlumberger Oilfield Services Facility – Artesia, New Mexico

Dear Mr. Ford:

Western Water Consultants, Inc. (WWC) conducted quarterly monitoring activities at the Schlumberger Oilfield Services (Dowell) facility in Artesia, New Mexico on July 26 and 27, 2000. Two copies of the environmental data results are enclosed for your review.

Static water elevation data, measured in the 32 wells located in the vicinity of the Dowell facility on July 26th, are summarized on Table 1. The data were used to generate a potentiometric surface map as shown on Figure 1. The laboratory analytical results for both water quality and air quality monitoring are summarized on Tables 2 and 3, respectively. The laboratory reports are also enclosed for quality assurance/quality control purposes.

The fourth quarter monitoring activities were conducted October 19. Environmental data from that monitoring event will be submitted in the 2000 Annual Report. Per our voicemails this date, I understand that your office is relocating and correspondence approving installation of an aeration trench will be forthcoming in January. We are making arrangements for the trench construction and will notify you when a date has been selected.

If you have any questions or comments, please call me at 281-285-8498.

Sincerely,

John A. Miller
Remediation Manager

Enclosures
cc: WWC – Laramie, Wyoming

John A. Miller
Remediation Manager
Oilfield Services

Schlumberger

December 6, 2000

Mr. Steve Reuter
New Mexico Environment Department
Underground Storage Tank Bureau, Reimbursement Program
1190 St. Francis Drive
P.O. Box 26110
Santa Fe, New Mexico 87502

RE: Third Quarter Monitoring Results - 2000
Schlumberger Oilfield Services Facility – Artesia, New Mexico

Dear Mr. Reuter:

Western Water Consultants, Inc. (WWC) conducted quarterly monitoring activities at the Schlumberger Oilfield Services (Dowell) facility in Artesia, New Mexico on July 26 and 27, 2000. A copy of the environmental data results is enclosed for your review.

Static water elevation data, measured in the 32 wells located in the vicinity of the Dowell facility on July 26th, are summarized on Table 1. The data were used to generate a potentiometric surface map as shown on Figure 1. The laboratory analytical results for both water quality and air quality monitoring are summarized on Tables 2 and 3, respectively. The laboratory reports are also enclosed for quality assurance/quality control purposes.

The fourth quarter monitoring activities were conducted October 19. Environmental data from that monitoring event will be submitted in the 2000 Annual Report.

If you have any questions or comments, please call me at 281-285-8498.

Sincerely,

John A. Miller
Remediation Manager

Enclosures
cc: WWC – Laramie, Wyoming

John A. Miller
Remediation Manager
Oilfield Services

Schlumberger

December 6, 2000

Mr. Wayne Price
New Mexico Oil Conservation Division
Hobbs District Office
P.O. Box 1980
Hobbs, New Mexico 88240

RE: Third Quarter Monitoring Results - 2000
Schlumberger Oilfield Services Facility – Hobbs, New Mexico

Dear Mr. Price:

Enclosed is a copy of the third quarter environmental monitoring results for the Schlumberger Oilfield Services (Dowell) facility in Hobbs, New Mexico.

Western Water Consultants, Inc. (WWC) conducted quarterly monitoring activities at the facility on July 25th, 2000. Site maps of the Dowell facility are shown on Figures 1 and 2.

Ground-water Elevation Data

WWC measured static water levels in each of 15 ground-water monitoring wells located on, or adjacent to, the Dowell facility (see Figure 1).

All wells were opened and allowed to equilibrate prior to measuring water levels with an oil-water interface probe. Ground-water elevation data (Table 1) were used to generate a potentiometric surface map of the facility as shown on Figure3.

Ground-water elevation data are presented on Table 1.

Ground-water Quality Data

Ground-water samples were collected from 9 of the 15 facility wells, in addition to the Shell Station Well (i.e., MW-4). Samples were submitted to Energy Laboratories, Inc. (Energy) in Casper, Wyoming for analysis by EPA Method 8260 (volatile organics by gas chromatography/mass spectrometry, or "GCMS").

In accordance with recommendations presented in the 1998 Annual Report, Wells 925-3, 925-5, 925-10, 925-11 and 925-12 are only sampled during the fourth quarter monitoring event.

Duplicate samples were collected to verify laboratory quality assurance/quality control (QA/QC). Sample 925-A is a duplicate sample from Well 925-16; sample 925-B is a duplicate sample from Well 925-10.

A summary of ground-water quality analytical data is provided in Table 2. Total halocarbon concentrations in the vicinity of the Dowell facility are depicted graphically on Figure 4.

Proposed Monitoring Schedule

The fourth quarter monitoring activities were conducted October 16. Environmental data from that monitoring event will be submitted in the 2000 Annual Report.

If you have any questions or comments, please call me at 281-285-8498.

Sincerely,

John A. Miller
Remediation Manager

Enclosures
cc: WWC – Laramie, Wyoming

John A. Miller
Remediation Manager
Oilfield Services

Schlumberger

Via FedEx

October 18, 2000

Mr. Jack Ford
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

RE: Work Plan for the Schlumberger Oilfield Services Facility, Artesia, New Mexico.

Dear Mr. Ford:

Enclosed are two copies of the Work Plan for construction of an aeration trench at the Schlumberger Oilfield Services facility in Artesia, New Mexico. This trench is proposed to ensure containment of the monitored groundwater. We would like to begin planning of installation of the trench in December 2000. I will call you after November 1, 2000 to discuss any questions you may have.

Sincerely,

John A. Miller
Remediation Manager

JM:
Enclosures
cc: Western Water Consultants, Inc.

P.O. Box 2727 Houston Texas 77252-2727 200 Gillingham Lane MD7 Sugar Land Texas 77478 Tel. (281) 285-8498 Fax (281) 285-8526

John A. Miller
Remediation Manager
Oilfield Services

Schlumberger

June 2, 2000

Mr. Jack Ford
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

RE: April Monitoring Results for the Schlumberger Oilfield Services Facility, Artesia, New Mexico.

Dear Mr. Ford:

Enclosed are (2) copies of the second quarter ground-water monitoring results for 2000 at the Schlumberger Oilfield Services facility in Artesia, New Mexico. Provided are a site and potentiometric surface map (Figure 1), static water level, air, and water quality data (Tables 1, 2, and 3), and laboratory data reports. The third quarter monitoring event for 2000 is tentatively scheduled for July. If you have any questions concerning the report, please feel free to contact me at (281) 285 - 8498.

Sincerely,

John A. Miller
Remediation Manager

JM:
Enclosures
cc: Western Water Consultants, Inc.

John A. Miller
Remediation Manager
Oilfield Services

Schlumberger

May 3, 2000

Mr. Jack Ford
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

Re: First Quarter Air and Ground-water Monitoring Results for the Schlumberger Oilfield Services Facility, Artesia, New Mexico.

Dear Mr. Ford:

Enclosed are (2) copies of the first quarter air and ground-water monitoring results for 2000 at the Schlumberger Oilfield Services facility in Artesia, New Mexico. Provided are a site and potentiometric surface map (Figure 1), static water level, air and water quality data (Tables 1, 2, and 3), and laboratory data reports. The second quarter monitoring event for 2000 is tentatively scheduled for April.

If you have any questions concerning the report, please feel free to contact me at (281) 285 - 8498.

Sincerely,

John A. Miller
Remediation Manager

Enclosures

cc: WWC, Laramie

P.O. Box 2727 Houston Texas 77252-2727 200 Gillingham Lane MD7 Sugar Land Texas 77478 Tel. (281) 285-8498 Fax (281) 285-8526

John A. Miller
Remediation Manager
Oilfield Services

Schlumberger

February 11, 2000

Mr. Jack Ford
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

RE: 1999 Annual Report for the Schlumberger Oilfield Services Facility
Artesia, New Mexico

Dear Mr. Ford:

Enclosed are (2) copies of the 1999 annual report for the Schlumberger Oilfield Services facility in Artesia, New Mexico. If you have any questions concerning the report please feel free to contact me at (281) 285-8498.

Sincerely,

John A. Miller
Remediation Manager

Enclosures
cc: WWC, Laramine

P.O. Box 2727 Houston Texas 77252-2727 200 Gillingham Lane MD7 Sugar Land Texas 77478 Tel. (281) 285-8498 Fax (281) 285-8526

John A. Miller
Remediation Manager
Oilfield Services

Schlumberger

December 15, 1999

Mr. Jack Ford
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

Re: Additional Natural Attenuation Monitoring Report for the Dowell, a division of Schlumberger Technology Corporation Facility, Artesia, New Mexico.

Dear Mr. Ford:

Enclosed are (2) copies of a report that updates the effect of natural attenuation on dissolved-phase constituents in the groundwater at the Dowell facility in Artesia, New Mexico. The report includes a discussion of natural attenuation parameters, 14 figures which graph natural attenuation parameters and chlorinated hydrocarbon concentrations, and tabular data for individual wells. The report concludes that natural attenuation processes are occurring and the long-term biodegradation of petroleum and chlorinated hydrocarbons continues.

If you have any questions concerning the report, please feel free to contact me at (281) 285-8498.

Sincerely,

John A. Miller
Remediation Manager

Enclosures
cc: WWC, Laramie

P.O. Box 2727 Houston Texas 77252-2727 200 Gillingham Lane MD7 Sugar Land Texas 77478 Tel. (281) 285-8498 Fax (281) 285-8526

John A. Miller
Remediation Manager
Oilfield Services

October 31, 1999

Schlumberger

Mr. Jack Ford
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

Re: Third Quarter Air and Ground-water Monitoring Results for the Dowell, a division of Schlumberger Technology Corporation Facility, Artesia, New Mexico.

Dear Mr. Ford:

Enclosed are (2) copies of the third quarter air and ground-water monitoring results for the Dowell facility in Artesia, New Mexico for 1999. Provided are a site and potentiometric surface map (Figure 1), static water level, air and water quality data (Tables 1, 2, and 3), and laboratory data sheets.

If you have any questions concerning the report, please feel free to contact me at (281) 285-8498.

Sincerely,

John A. Miller
Remediation Manager

Enclosures
cc: WWC, Laramie

P.O. Box 2727 Houston Texas 77252-2727 200 Gillingham Lane MD7 Sugar Land Texas 77478 Tel. (281) 285-8498 Fax (281) 285-8526

Schlumberger Oilfield Services

Oilfield Services Shared Resources
P.O. Box 2727, Houston, Texas 77252-2727
(713) 275-8700

Via FedEx

March 24, 1999

GW-114

Mr. Jack Ford
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

Re: First Quarter Air and Ground-water Monitoring Results for the Dowell, a division of Schlumberger Technology Corporation Facility, Artesia, New Mexico.

Dear Mr. Ford:

Enclosed are (2) copies of the first quarter air and ground-water monitoring results for the Dowell facility in Artesia, New Mexico for 1999. Provided are a site and potentiometric surface map (Figure 1), static water level, air and water quality data (Tables 1, 2, and 3), and laboratory data sheets. The second quarter monitoring event is tentatively scheduled for April 1999. If you have any questions concerning the report, please feel free to contact me at (281) 285 - 8498.

Sincerely,

John A. Miller
Remediation Manager

Enclosures

cc: WWC, Laramie

Schlumberger Oilfield Services

Oilfield Services Shared Resources
P.O. Box 2727, Houston, Texas 77252-2727
(713) 275-8700

February 23, 1999

Mr. Jack Ford
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

Re: 1998 Annual Air and Ground-water Monitoring report for the Dowell, a division of Schlumberger Technology Corporation Facility, Artesia, New Mexico.

Dear Mr. Ford:

Enclosed are (2) copies of the 1998 Annual Air and Ground-water Monitoring Report for the Dowell facility in Artesia, New Mexico. Included in the report are the fourth quarter air and ground-water monitoring results for 1998 and our plans for 1999.

If you have any questions, please feel free to contact me at (281) 285-8498.

Sincerely,

John A. Miller
Remediation Manager

Enclosure
cc: WWC, Laramie

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

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

September 15, 1998

CERTIFIED MAIL
RETURN RECEIPT NO. Z-357-870-022

Mr. John Miller
Remediation Manager
Schlumberger Oilfield Services
300 Schlumberger Drive
Sugar Land, TX 77478

RE: Minor Modification
GW-114, Dowell Schlumberger - Artesia
Soil Remediation Cell Closure

Dear Mr. Miller:

By letter dated September 12, 1996, the New Mexico Oil Conservation Division (OCD), pursuant to WQCC Regulation 3109, approved a minor modification to GW-114 discharge plan for the **Dowell Schlumberger (DS) Artesia Facility.** Such modification consisted of the onsite bioremediation of non-hazardous TPH contaminated soil on a synthetic liner. The OCD is in receipt of **DS's** request, dated September 10, 1998, for closure of the soil remediation cell. Based upon information submitted and the results of laboratory analyses **the requested closure of the remediation cell is hereby approved subject to Dowell Schlumberger's certification that all solid waste generated from the soil remediation, *e.g.* impervious liner, is properly disposed of in an OCD approved facility.**

Note, that OCD approval does not relieve **DS** of liability should **DS's** operation result in contamination of surface waters, ground waters or the environment. Also, OCD approval does not relieve **DS** from responsibility to comply with other Federal, State, and Local rules/regulations that may apply to this project.

If you have any questions please feel free to contact me at (505)-827-7156.

Sincerely,

W. Jack Ford, C.P.G., P.G.
Geologist
Environmental Bureau
Oil Conservation Division

cc: OCD Artesia Office

Z 357 870 022

US Postal Service
Receipt for Certified Mail
No Insurance Coverage Provided.
Do not use for International Mail *(See reverse)*

Sent to	John Miller
Street & Number	DS
Post Office, State, & ZIP Code	Sugar Land, TX
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date	GW-114

PS Form **3800**, April 1995

Schlumberger Oilfield Services

Oilfield Services Shared Resources
P.O. Box 2727, Houston, Texas 77252-2727
(713) 275-8700

Certified Mail
September 10, 1998

Mr. Jack Ford
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

Re: Authorization to Close a Land Farm at Dowell, a division of Schlumberger Technology Corporation, Artesia, New Mexico

Dear Mr. Ford:

Enclosed are the soil sample results from the land farm at the Dowell facility in Artesia, New Mexico. Having been successfully treated, the total petroleum hydrocarbons (TPH) is now less than the targeted 100 parts per million in each of the four quadrants of the land farm. Dowell is requesting authorization from the New Mexico Oil and Conservation Division to close the land farm in place. The liner beneath the land farm would be removed and all treated soil used as fill in the land farm area to raise the grade. It is anticipated that the land farm area would then be used for such activities as truck parking and equipment storage.

If you have any questions concerning the results or the land farm, please feel free to contact me at (281) 285-8498.

Sincerely,

John A. Miller
Remediation Manager

Enclosure
cc: Western Water Consultants

ENERGY LABORATORIES, INC.
SHIPPING: 2393 SALT CREEK HIGHWAY • CASPER, WY 82601
MAILING: P.O. BOX 3258 • CASPER, WY 82602
E-mail: energy@trib.com • FAX: (307) 234-1639 • PHONE: (307) 235-0515 • TOLL FREE: (888) 235-0515
Billings • Casper • Gillette • Rapid City

TPH AS DIESEL RANGE ORGANICS
EPA 8015 - MODIFIED CALIFORNIA METHOD
ANALYTICAL RESULTS

Client:	**Western Water Consultants**	Date Sampled:	08/11/98
Project:	90-125L.7	Time Sampled:	07:10
Matrix:	Soil	Date Received:	08/12/98
		Date Reported:	August 14, 1998

TPH AS DIESEL RANGE ORGANICS

Date of sample(s) extraction : 08/13/98 ***Extraction by:*** WD

Laboratory ID	Sample ID	Concentration mg/Kg	Detection Limit, mg/Kg	Date, Time Analyzed
C98 - 48546	90125NW.8/98	**74**	10	08/14/98 00:32
C98 - 48547	90125SE.8/98	**47**	10	08/14/98 01:13
C98 - 48548	90125NE.8/98	**88**	10	08/14/98 01:54
C98 - 48549	90125SW.8/98	**72**	10	08/14/98 02:35

QUALITY ASSURANCE REPORT

Standard Addition Analysis (spike):

Laboratory ID	Sample ID		Recovery %	Acceptance Range, %	Date Analyzed
C98 - 48546 S	Spike		**121%**	60 - 140	08/14/98
C98 - 48546 SD	Spike Dup		**104%**	60 - 140	08/14/98
		Duplicate RPD:	***15.0%***	*0 - 20*	

CCAL / QCS Standards:

Laboratory ID	Sample ID	Recovery %	Acceptance Range, %	Date Analyzed
5000 QCS	Ultra 5000 Std.	**112**	60 - 140	08/13/98
2000 CCAL	DRO STD	**115**	70 - 130	08/13/98

Method 8015 Blank Analysis:

Laboratory ID	Sample ID	Concentration mg/Kg	Detection Limit, mg/Kg	Date Analyzed
MB0813	Method Blank	**ND**	10	08/13/98

ND - Analyte not detected at stated limit of detection

sec r:\reports\clients98\western_water_consultants\98_48546_8015d.xls

Analyst: wd
Reviewed: sec

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EPA METHOD 8015 (Modified),TPH GRO

ANALYTICAL RESULTS

Client: **Western Water Consultants**
Project: 90-125L.7
Matrix: Soil

Date Sampled: 08/11/98
Time Sampled: 07:10
Date Received: 08/12/98
Date Reported: August 13, 1998

GASOLINE RANGE ORGANICS CONCENTRATION: 8015 TPH GRO

Laboratory ID	Sample ID	GRO mg/kg	Detection Limit, mg/kg	Surrogate Recovery: ααα-Trifluoro-toluene	Surrogate Recovery: Acceptance range, %	Date Analyzed
C98 - 48546	90125NW.8/98	< 2.0	< 2.0	103	80 - 120 %	08/13/98
C98 - 48547	90125SE.8/98	< 2.0	< 2.0	90	80 - 120 %	08/13/98
C98 - 48548	90125NE.8/98	< 2.0	< 2.0	107	80 - 120 %	08/13/98
C98 - 48549	90125SW.8/98	< 2.0	< 2.0	115	80 - 120 %	08/13/98

QUALITY ASSURANCE REPORT: 8015 TPH Gasoline

MATRIX SPIKE ANALYSIS

Laboratory ID	Gasoline Recovery, %	Gasoline Dup Recovery, %	Acceptance range, %	RPD, %	Acceptance range, %	Date Analyzed
C98 - 48546 S	63%	65%	40 - 80 %	2.1%	0 - 10 %	08/13/98

METHOD BLANK

Laboratory ID	Sample ID	Gasoline mg/kg	Surrogate Recovery: ααα-Trifluoro-toluene	Surrogate Recovery: Acceptance range, %	Date Analyzed
MB0812	Blank	< 2.0	99	80 - 120 %	08/13/98

Continuing Calibration and Second Source Checks

Laboratory ID	GRO Recovery, %	Acceptance range, %	Date Analyzed	Laboratory ID	Gasoline Recovery, %	Acceptance range, %
cc GRO CK STD	100%	75 - 125 %	08/12/98	lc GRO CK STD	57%	40 - 80 %

ND - Analyte not detected at stated limit of detection

Report Approved By: _____

Report File: R:\Reports\Clients98\Western_Water_Consultants\98_48546_8015D.xls

Analyst: jlp
Reviewed: sec

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TPH AS DIESEL PLUS TPH GRO
EPA 8015 - MODIFIED CALIFORNIA METHOD
ANALYTICAL RESULTS

Client:	**Western Water Consultants**	Date Sampled:	08/11/98
Project:	90-125L.7	Time Sampled:	07:10
Matrix:	Soil	Date Received:	08/12/98
		Date Reported:	August 14, 1998

TPH AS DIESEL PLUS TPH GRO

Laboratory ID	Sample ID	Concentration mg/Kg	Detection Limit, mg/Kg
C98 - 48546	90125NW.8/98	**74**	10
C98 - 48547	90125SE.8/98	**47**	10
C98 - 48548	90125NE.8/98	**88**	10
C98 - 48549	90125SW.8/98	**72**	10

ND - Analyte not detected at stated limit of detection

sec r:\reports\clients98\western_water_consultants\98_48546_8015g.xls

Analyst: wd
Reviewed: sec

Schlumberger Oilfield Services

Oilfield Services Shared Resources

John A. Miller
Remediation Manager

February 27, 1998

GW-114

Mr. Jack Ford
New Mexico Energy, Minerals and natural Resources Department
Oil Conservation division
2040 S. Pacheco
Santa Fe, NM 87505

Re: Fourth Quarter Ground-water Monitoring Results and Annual Report for the Dowell, a division of Schlumberger Technology Corporation Facility, Artesia, New Mexico

Dear Mr. Ford:

The enclosed report presents the results of the fourth quarter ground-water and air quality monitoring and a summary of all of the filed work performed during 1997 at the Dowell facility in Artesia, New Mexico. Enclosed in the report are updated static, air, soil, and water quality tables (Tables 1,2,3, and 8), site, potientiometric, and dissolved oxygen maps (Figures 1,2, and 3), SVE monitoring tables (Tables 4,5,6, and 7), isoconcentration maps for total halocarbon and aromatic hydrocarbons, plots for total halocarbons versus static water levels, and laboratory data sheets.

If you have questions please feel free to contact me at (281) 285-8498.

Sincerely,

John A. Miller

Enclosure

cc: WWC, Laramie

P.O. Box 2727, Houston, Texas 77252-2727
300 Schlumberger Drive, Sugar Land, Texas 77478
(281) 285-8498 (281) 285-8526 (fax)

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

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

February 4, 1997

CERTIFIED MAIL
RETURN RECEIPT NO. P-288-258-761

Mr. John Miller
Remediation Manager
Schlumberger Oilfield Services
300 Schlumberger Drive
Sugar Land, TX 77478

RE: Quarterly Report and Additional Investigation
Dated January 28, 1997, "3 More Groundwater Monitor Wells"
GW-114, Dowell Schlumberger - Artesia

Dear Mr. Miller:

The New Mexico Oil Conservation Division (OCD) has reviewed **Dowell Schlumbergers** "Quarterly Report" report dated January 28, 1997 prepared by Western Water Consultants, and submitted to the OCD by DS on January 31, 1997. The quarterly report summarizes the ongoing groundwater monitoring, vadose zone remediation by SVE, and groundwater contamination delineation at the site.

The report recommends (on page 5) the installation of three more groundwater delineation/monitoring wells approximately Northeast of MW-22 (As shown on Figure 1, page 8.) The requested installation and approximate location of the 3 additional wells is **hereby approved.** Per our telephone conversation of today, February 4, 1997 the 3 wells will be installed and sampled by March 14, 1997. All sampling and work will be conducted as previously approved.

Note, that OCD approval does not relieve Dowell Schlumberger of liability should Dowell Schlumbergers plan fail to adequately characterize and monitor the nature of the groundwater and vadose zone contamination. Also, OCD approval does not relieve Dowell Schlumberger from responsibility to comply with other federal, state, and local rules/regulations that may apply to this project.

Sincerely,

Patricio W. Sanchez
Petroleum Engineering Specialist
(505)-827-7156

xc: OCD Artesia Office

PS Form **3800**, April 1995

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Sent to	Mr. Miller - Schlumberger
Street & Number	DS Artesia GW-114
Post Office, State, & ZIP Code	Dowell 3 more wells
Postage	$
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P 288 258 761

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John A. Miller
Remediation Manager

RECEIVED

3 1997

Oil Conservation Division

January 31, 1997

Mr. Pat Sanchez
New Mexico Energy, Minerals and Natural Resources Department
Oil conservation Division
2040 S. Pacheco
Santa Fe, New Mexico 87505

Re: Quarterly Monitoring and Additional Investigation and Remediation Report
Dowell, Artesia, New Mexico < See RPT. DATED 1-28-97 from Western water Consultants. >

Dear Mr. Sanchez:

Enclosed are 2 copies of the subject report. It includes the fourth quarter 1996 monitoring event and the results of the additional investigation. Figure 1, page 8 shows the proposed location of three additional wells to delineate the horizontal extent of groundwater constituents. Upon your review and approval, we will schedule the drilling and make the appropriate notifications. If you have any questions, or require additional information, please call me at (281) 285-8498.

Sincerely,

John A. Miller
Remediation Manager

enclosures
cc: WWC, Laramie

P.O. Box 2727, Houston, Texas 77252-2727
300 Schlumberger Drive, Sugar Land, Texas 77478
(713) 275-8498 (713) 275-8526 (fax)

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☐ Telephone ☒ Personal | Time 9:00AM | Date 11-8-96

Originating Party	Other Parties
John Miller - Dowell Schlumberger, Artesia Facility, GW-114, RICK DEWELL	OCD - Pat Sanchez, Bill Olson, Roger Anderson.

Subject D.S., Artesia Facility, GW-114 - Groundwater Investigation / Groundwater Corrective Action.

Discussion (1) Discussed site history - i.e. UST and GWPRB involvement.

(2) Remmediation options - D.S. will look at various options.

(3) Extent - i.e. delineation needs to be addressed. Rick wants to prioritize Horizontal extent - then vertical extent.

Conclusions or Agreements

(1) D.S. will implement the continuation of the Delineation process. Original deadlines in Oct. 17 letter from OCD okay.

* (2) QTRLY Monitoring will be submitted in an Annual Report.

Distribution File - GW-114, Artesia District
Mr. John Miller - Schlumberger Oil Field Ser.

Signed Roger C. Anderson
John A. Miller

* Next Report (excluding Delineation data) Due Feb. 1, 1997.

Schlumberger Oilfield Services

Oilfield Services Shared Resources

John A. Miller
Remediation Manager

Via 2 Day Fedex

November 21, 1997

Mr. Jack Ford
New Mexico Energy, Minerals & Natural Resources Department
Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

RE: Dowell, Artesia New Mexico
Discharge Plan GW-114

Dear Mr. Ford:

Enclosed is a copy of the September 17, 1997 submittal of the third quarter 1997 groundwater and air quality monitoring report.

Also enclosed is Western Water Consultants, Inc. (WWC) October 3, 1997 letter to me which transmits the Sampling and Analysis Plan for the Renewal of Discharge Permit GW-114. In your files is a Memorandum of Conversation dated 7/25/95 from Pat Sanchez, which notes that the Remedial Action Plan to be submitted with the October 1997 Quarterly Monitoring Report will include the parameters for monitoring for Remediation by Natural Attenuation. The October 3, 1997 letter is our proposed listing. I am including them at this time so you can review them along with the September 17, 1997 letter report.

As a final item, I am including a November 14, 1997 WWC letter with the laboratory results from our landfarming area. At this time, we are requesting approval to remove the upper six inches of treated soil (now below 100 ppm in all four quadrants) so we can treat the remaining six inch lift.

If you have any questions or comments, please call me at 281-285-8498. I feel fortunate to have a newly assigned project officer who has previously visited the site. We've submitted a lot of information on this site including a Natural Attenuation study with references that is state of the art. If you feel anything is missing please call and I'll replace it.

Sincerely,

John A. Miller
Remediation Manager

JAM/lld
Enclosures
cc: Rick Deuell, WWC

P.O. Box 2727, Houston, Texas 77252-2727
300 Schlumberger Drive, Sugar Land, Texas 77478
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October 3, 1997

John A. Miller
Remediation Manager
Dowell, a division of Schlumberger Technology Corporation
300 Schlumberger Drive
Sugar Land, TX 77478

Re: Sampling and Analysis Plan for the Renewal of Discharge Permit GW-114 for the Dowell Facility in Artesia, New Mexico. WWC JN 90-125L

Dear John:

Enclosed are (2) **FINAL** copies of the Sampling and Analysis Plan developed for the renewal of discharge permit GW-114 for the Dowell facility in Artesia, New Mexico. Please give me a call if you have any questions or need any additional changes.

Sincerely,

Kevin Mattson

Kevin Mattson, P.G.

KM:gh
cc: Tracy Goad Walter, Brent Schindler
File: WWC 90-125L.A

OTHER LOCATIONS

1949 SUGARLAND DRIVE, SUITE 134
SHERIDAN, WYOMING 82801
(307) 672-0761
FAX (307) 674-4265

1901 ENERGY COURT, SUITE 270
GILLETTE, WYOMING 82718
(307) 682-1880
FAX (307) 682-2257

701 ANTLER DRIVE, SUITE 233
CASPER, WYOMING 82601
(307) 473-2707
FAX (307) 237-0828

October 3, 1997

Sampling and Analysis Plan for the Dowell Facility in Artesia, New Mexico

Ground-water monitoring will be performed on a quarterly and annual schedule at the Dowell facility in Artesia, New Mexico. Ground-water monitoring will be performed as follows:

Quarterly Monitoring:

Ground-water monitoring will continue on a quarterly sampling schedule for a select number of wells (Figure 1). These monitoring wells,

- MW-3, MW-11, MW-13, MW-18, MW-20, MW-21, MW-25, MW-26, and MW-27

will be analyzed by EPA Method 8260. The distribution of the wells will continue to provide adequate data for monitoring contaminant levels both down-gradient and laterally across the site. Static water levels will be collected from all of the monitoring wells on the facility.

Quarterly ground-water monitoring data will be presented to the New Mexico Oil and Conservation Division (NMOCD) in a brief letter report containing updated water level and water quality tables, site and potentiometric surface maps, laboratory data sheets, and chain of custody documentation.

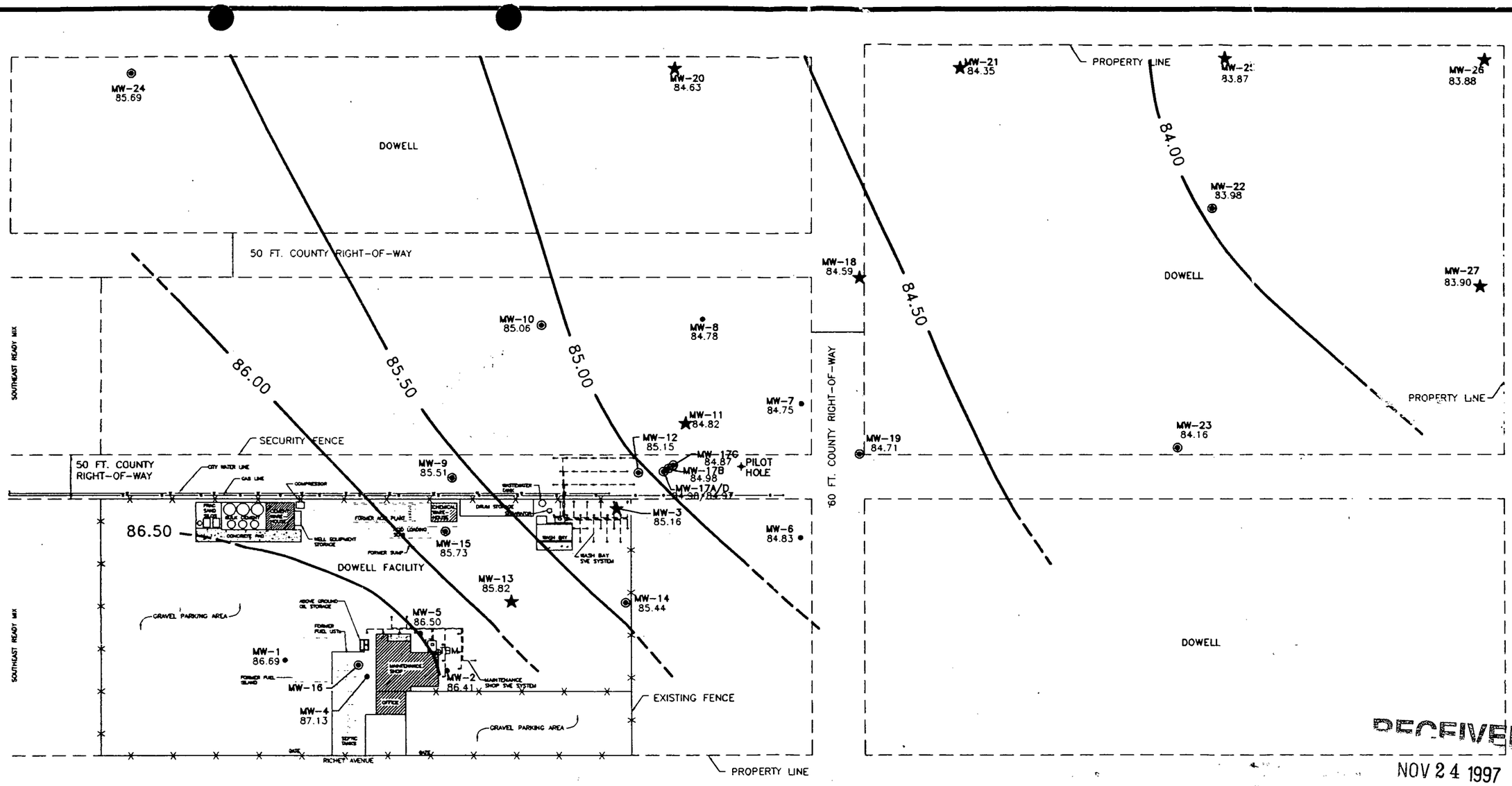
Annual Monitoring:

For the 4th quarter ground-water monitoring event all monitoring wells at the facility will be sampled and analyzed by EPA Method 8260. As with the quarterly sampling, static water levels will be collected from all monitoring wells.

In addition to monitoring for volatile organic compounds, samples will be collected to monitor Remediation by Natural Attenuation (RNA) parameters as stated in the facility closure plan. RNA parameters will be monitored by collecting field measurements of dissolved oxygen, pH, and eH (redox potential) in all of the wells. Ground-water samples will be collected and submitted for laboratory analyses for dissolved carbon dioxide, methane, ethane, ethene, sulfate, chloride, nitrate, ferrous iron, and total organic carbon.

An annual report will be presented to the NMOCD consisting of updated water quality and water elevation tables, site, potentiometric surface, isoconcentration, and maps which illustrate the effects of natural attenuation, a summary of fieldwork performed for the year, and data interpretations and recommendations.

K:\172040\80-125\97\QUARTER.DWG 09/09/97 15:43



EXPLANATION

- MW-12 / 85.15 — WWC MONITORING WELL LOCATION AND IDENTIFICATION, GROUND-WATER ELEVATION
- MW-2 / 86.41 — REED AND ASSOCIATES MONITORING WELL LOCATION AND IDENTIFICATION, GROUND-WATER ELEVATION
- MW-3 / 85.16 — MONITORING WELLS TO BE SAMPLED QUARTERLY, GROUND-WATER ELEVATION
- TBM — TEMPORARY BENCH MARK
- 85.0 — POTENTIOMETRIC SURFACE CONTOUR (7/29/97)
- AIR PIPING
- SVE EXTRACTION WELL

0 120 FT.
SCALE

BASE MAP MODIFIED FROM REED & ASSOCIATES

FIGURE 1

SITE MAP WITH
SELECTED MONITORING WELLS
FOR QUARTERLY SAMPLING

DOWELL, A DIVISION OF
SCHLUMBERGER TECHNOLOGY CORPORATION
ARTESIA, NEW MEXICO

Western Water Consultants, Inc. WWC Engineering
Engineering Environmental Mining Water Resources

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

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

November 24, 1997

CERTIFIED MAIL
RETURN RECEIPT NO. Z-357-869-900

Mr. John A. Miller
Remediation Manager
Schlumberger Oilfield Services, Inc. (DS)
300 Schlumberger Drive
Sugar Land, Texas 77478

RE: Dowell Schlumberger - Artesia Facility (GW-114)
Eddy County, New Mexico

Dear Mr. Miller:

Pursuant to your letter dated November 14, 1997 and our telephone discussions of November 20 and 21, approval is herewith granted for removal of the top six inches (6") of treated soil at the landfarming activity located at the above referenced facility. A review of the analytical results obtained from soil samples collected at the site indicate that the upper six inches (6") is below the required standards.

It is OCD's understanding that the remaining soils will continue to be remediated to standards or below prior to any removal. Thank you for your prompt submittal of the results and cooperation in the compliance to required regulations. If you have any questions please contact me at (505) 827-7156.

Sincerely,

W. Jack Ford, C.P.G.
Geologist
Environmental Bureau
Oil Conservation Division

cc: Artesia District Office

Z 357 869 900

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November 14, 1997

John A. Miller
Remediation Manager
Dowell, a division of Schlumberger Technology Corporation
300 Schlumberger Drive
Sugar Land, TX 77478

RE: Treatment of Land Farm Soils at the Dowell, a division of Schlumberger Technology Corporation Facility in Artesia, New Mexico. WWC JN 90-125L.8

Dear John:

Enclosed are the results for the last soil samples collected from the land farm at the Dowell facility in Artesia, New Mexico. Treatment of the upper 6 inches of soil has reduced concentrations of total petroleum hydrocarbons (TPH) to below 100 parts per million in each of the 4 quadrants over the past year. With the reduction in TPH, Dowell should make a request to the New Mexico Oil and Conservation Division for authorization to remove the upper 6 inches of treated soil so treatment can begin on the remaining 6 inch lift. If you have any questions concerning the results feel free to contact me.

Sincerely,

Kevin Mattson, P.G.

KM:sb
Enclosures
cc: Tracy Goad Walter
Brent Schindler
File: 90-125L.A

OTHER LOCATIONS

1949 SUGARLAND DRIVE, SUITE 134
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File 90125.D

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EPA METHOD 8015 (Modified),TPH GRO
ANALYTICAL RESULTS

Client:	**Western Water Consultants- Laramie**	Date Sampled:	10/17/97
Project:	90-125L.8	Date Received:	10/21/97
Matrix:	Soil	Date Reported:	October 31, 1997

GASOLINE RANGE ORGANICS CONCENTRATION: 8015 TPH GRO

Laboratory ID	Sample ID	GRO mg/kg	Detection Limit, mg/kg	Surrogate Recovery α,α,α-Trifluoro-toluene	Acceptance range, %	Date Analyzed
C97- 63870	90125-NE.10/97	< 2.0	2.0	106	80 - 120 %	10/24/97
C97- 63871	90125-SE.10/97	< 2.0	2.0	92	80 - 120 %	10/24/97
C97- 63872	90125-SW.10/97	< 2.0	2.0	97	80 - 120 %	10/24/97
C97- 63873	90125-NW.10/97	< 2.0	2.0	102	80 - 120 %	10/24/97

QUALITY ASSURANCE REPORT: 8015 GRO

MATRIX SPIKE ANALYSIS

Laboratory ID	GRO Recovery, %	GRO Dup Recovery, %	Acceptance range, %	RPD, %	Acceptance range, %	Date Analyzed
C97 - 63873 S	63%	63%	40 - 80 %	0.3%	0 - 10 %	10/24/97

METHOD BLANK

Laboratory ID	Sample ID	GRO mg/kg	Surrogate Recovery α,α,α-Trifluoro-toluene	Acceptance range, %	Date Analyzed
MB1024	Blank	< 2.0	118	80 - 120 %	10/24/97

Continuing Calibration and Second Source Checks

Laboratory ID	GRO Recovery, %	Acceptance range, %	Date Analyzed	Laboratory ID	GRO Recovery, %	Acceptance range, %
cc GRO CK STD	102%	75 - 125 %	10/24/97	lc GRO CK STD	63%	40 - 80 %

ND - Analyte not detected at stated limit of detection

Report Approved By: R. A. Crowley

Report File: \\ELI_CA\reports\Reports\CLIENTS.97\WEST_WAT.ER\ORGANIC.CAS\97_63870.xls

Analyst: wd
Reviewed: sec

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TPH AS DIESEL FUEL
EPA 8015 - MODIFIED CALIFORNIA METHOD
ANALYTICAL RESULTS

Client:	**Western Water Consultants- Laramie**	Date Sampled:	10/17/97
Project:	90-125L.8	Date Received:	10/21/97
Matrix:	Soil	Date Reported:	October 31, 1997

TPH AS DIESEL FUEL

Date of sample(s) extraction : 10/27/97 ***Extraction by:*** KS

Laboratory ID	Sample ID	Concentration mg/kg	Detection Limit, mg/kg	Date Analyzed
C97- 63870	90125-NE.10/97	**99**	10	10/27/97
C97- 63871	90125-SE.10/97	**58**	10	10/27/97
C97- 63872	90125-SW.10/97	**33**	10	10/27/97
C97- 63873	90125-NW.10/97	**62**	10	10/27/97

QUALITY ASSURANCE REPORT

Standard Addition Analysis (spike):

Laboratory ID	Sample ID		Recovery %	Acceptance Range, %	Date Analyzed
C97 - 58896 S	Spike		**69%**	60 - 140	10/27/97
C97 - 58896 S	Spike Dup		**74%**	60 - 140	10/27/97
		Duplicate RPD:	*7.3%*	*0 - 20*	

CCAL / QCS Standards:

Laboratory ID	Sample ID	Recovery %	Acceptance Range, %	Date Analyzed
5000 QCS	Restek 5000 Std.	**106**	60 - 140	10/27/97
2000 CCAL	DRO STD	**93**	70 - 130	10/27/97

Method 8015 Blank Analysis:

Laboratory ID	Sample ID	Concentration mg/kg	Detection Limit, mg/kg	Date Analyzed
MB1027	Method Blank	**ND**	10	10/27/97

ND - Analyte not detected at stated limit of detection

Report File: \\ELI_CA\reports\Reports\CLIENTS.97\WEST_WAT.ER\ORGANIC.CAS\97_63870.xls

Analyst: wd
Reviewed: sec

Affidavit of Publication

No. 15958

STATE OF NEW MEXICO,

County of Eddy:

Gary D. Scott being duly sworn, says: That he is the Publisher of The Artesia Daily Press, a daily newspaper of general circulation, published in English at Artesia, said county and state, and that the hereto attached Legal Notice

was published in a regular and entire issue of the said Artesia Daily Press, a daily newspaper duly qualified for that purpose within the meaning of Chapter 167 of the 1937 Session Laws of the state of New Mexico for 1 consecutive days" weeks on the same day as follows:

First Publication August 10, 1997

Second Publication

Third Publication

Fourth Publication

Gary D. Scott

Subscribed and sworn to before me this 14th day of August 19 97

Notary Public, Eddy County, New Mexico

My Commission expires September 23, 1999

OK NM 8-20-97

Copy of Publication

LEGAL NOTICE

NOTICE OF PUBLICATION
STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

Notice is hereby given that pursuant to New Mexico Water Quality Control Commission Regulations, the following discharge plan renewal application has been submitted to the Director of the Oil Conservation Division, 2040 South Pacheco, Santa Fe, New Mexico 87505, Telephone (505) 827-7131:

(GW-114) Dowell, A Division of Schlumberger Technology Corporation, Mr. Lynn Northcutt, (505)-748-1392, 507 East Richey, Artesia, NM, 88210, has submitted a Discharge Plan Renewal Application for their Artesia Service facility located in the S/2 SW/4, Section 4, Township 1 South, Range 26 East, NMPM Eddy County, New Mexico. The renewal application also includes a work plan for cleanup vadose zone and groundwater contamination beneath the facility. All other potential discharges at the facility will be stored in a closed top receptacle, or captured on pad and curb type containment. Groundwater most likely to be affected by a spill, leak, or accidental discharge to the surface is at a depth of approximately feet with a total dissolved solids concentration of approximately 2,800 mg/L. The discharge plan addresses how spills, leaks, and other accidental discharges to the surface will be managed.

Any interested person may obtain further information from the Oil Conservation Division and may submit written comments to the Director of the Oil Conservation Division at the address given above. The discharge plan renewal application may be viewed at the above address between 8:00 a.m. and 4:00 p.m., Monday through Friday. Prior to ruling on any proposed discharge plan or its modification, the Director of the Oil Conservation Division shall allow at least thirty (30) days after the date of publication of this notice during which comments may be submitted to him and a public hearing may be requested by any interested person. Requests for a public hearing shall set forth the reasons why a hearing should be held. A hearing will be held if the Director determines there is significant public interest. If no public hearing is held, the Director will approve or disapprove the proposed plan based on information available. If a public hearing is held, the director will approve or disapprove the proposed plan based on information in the discharge plan application and information submitted at the hearing.

GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 1st day of August, 1997.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION
s-William J. LeMay
WILLIAM J. LEMAY,
Director

SEAL

Published in the Artesia Daily Press, Artesia, N.M. August 10, 1997.

Legal 15958

The Santa Fe New Mexican

Since 1849 We Read You.

NM OIL DIVISION
ATTN: SALLY MARTINEZ
2040 S. PACHECO ST.
SANTA FE, NM 87505

AD NUMBER: 677696 ACCOUNT: 56689

LEGAL NO: 62175 P.O. #: 96-199-0029

178 LINES ONCE at $ 71.20

Affidavits: 5.25

Tax: 4.78

Total: $ 81.23

NOTICE OF PUBLICATION

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

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GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 1st day of August 1997.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION
WILLIAM J. LEMAY,
Director
Legal #62175
Pub. August 8, 1997

AFFIDAVIT OF PUBLICATION

STATE OF NEW MEXICO
COUNTY OF SANTA FE

I, BETSY PERNER being first duly sworn declare and say that I am Legal Advertising Representative of THE SANTA FE NEW MEXICAN, a daily news paper published in the English language, and having a general circulation in the Counties of Santa Fe and Los Alamos, State of New Mexico and being a News paper duly qualified to publish legal notices and advertisements under the provisions of Chapter 167 on Session Laws of 1937; that the publication # 62175 a copy of which is hereto attached was published in said newspaper once each WEEK for ONE consecutive week(s) and that the notice was published in the newspaper proper and not in any supplement; the first publication being on the 8 day of AUGUST 1997 and that the undersigned has personal knowledge of the matter and things set forth in this affidavit.

/S/ Betsy Perner
LEGAL ADVERTISEMENT REPRESENTATIVE

Subscribed and sworn to before me on this 8 day of AUGUST A.D., 1997

Notary Laura B. Harding
Commission Expires 11/23/99

OKM
8-19-97

NOTICE OF PUBLICATION

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

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GIVEN under the Seal of New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 1st day of August, 1997.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

S E A L

WILLIAM J. LEMAY, Director

WJL/pws

ACKNOWLEDGEMENT OF RECEIPT OF CHECK/CASH

I hereby acknowledge receipt of check No. [redacted] dated 7/28/97,

or cash received on _____ in the amount of $ 690.00

from D/S

for Artesia GW114

(Facility Name) (DP No.)

Submitted by: _____ Date: _____

Submitted to ASD by: [signature] Date: 7/31/97

Received in ASD by: _____ Date: _____

Filing Fee ___ New Facility ___ Renewal X

Modification ___ Other _____

(specify)

Organization Code 521.07 Applicable FY 98

To be deposited in the Water Quality Management Fund.

Full Payment X or Annual Increment ___

SUNWEST BANKING SUNWEST BANKING SUNWEST BANKING

STEPHANIE VELA 3-94
DBA PETTY CASH
P.O. BOX 640
HOBBS, NM 88241

95-321/1122

[redacted]

7-28-97

PAY TO THE ORDER OF NMED-Water Control $ 690.00**

Six hundred ninety and no/100 DOLLARS

SUNWEST

SUNWEST BANK OF HOBBS, N.A.
HOBBS, NEW MEXICO 88241 (505) 393-6480

MEMO [redacted]

Stephanie Vela

ACKNOWLEDGEMENT OF RECEIPT OF CHECK/CASH

I hereby acknowledge receipt of check No. [redacted] dated 7/28/97,

or cash received on _____ in the amount of $ 50.00

from D/S

for Artesia GW114

(Facility Name) (DP No.)

Submitted by: _____ Date: _____

Submitted to ASD by: R. Chavez Date: 7/31/97

Received in ASD by: _____ Date: _____

Filing Fee X New Facility ____ Renewal ____

Modification ____ Other _____

(specify)

Organization Code 521.07 Applicable FY 98

To be deposited in the Water Quality Management Fund.

Full Payment ____ or Annual Increment ____

[redacted]

STEPHANIE VELA 3-94
DBA PETTY CASH
P.O. BOX 640
HOBBS, NM 88241

95-321/1122

7-28-97

PAY TO THE ORDER OF NMED-Water Control $ 50^00/xx

Fifty and no/100 DOLLARS

SUNWEST

SUNWEST BANK OF HOBBS, N.A.
HOBBS, NEW MEXICO 88241 (505) 393-6460

MEMO Artesia Stephanie Vela

[redacted]

DISCHARGE PLAN GW-114
RENEWAL APPLICATION
JULY 29, 1997

DOWELL, A DIVISION OF SCHLUMBERGER TECHNOLOGY CORP.

507 EAST RICHEY
P.O. BOX 300
ARTESIA, NEW MEXICO
88210

PREPARED BY: LYNN NORTHCUTT
LOCATION MANAGER
ARTESIA, NEW MEXICO
505-748-1392 OR 505-420-2438

AND

DARWIN THOMPSON
MAINTENANCE SUPERVISOR
ARTESIA, NEW MEXICO
505-748-1391

P. O. Box 1980
Hobbs, NM 88241-1980
District II - (505) 748-1283
811 S. First
Artesia, NM 88210
District III - (505) 334-6178
1000 Rio Brazos Road
Aztec, NM 87410
District IV - (505) 827-7131

Energy Minerals and Natural Resources Department
Oil Conservation Division
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

Revised 12/1/

RECEIVED
JUL 31 1997
Environmental Bureau
Oil Conservation Division

Submit Origin
Plus 1 Copi
to Santa
Copy to appropria
District Offi

DISCHARGE PLAN APPLICATION FOR SERVICE COMPANIES, GAS PLANTS, REFINERIES, COMPRESSOR, AND CRUDE OIL PUMP STATIONS

(Refer to the OCD Guidelines for assistance in completing the application)

☐ New ☒ Renewal ☐ Modification

1. Type: OILFIELD PUMPING SERVICE
2. Operator: DOWELL, A DIVISION OF SCHLUMBERGER TECHNOLOGY CORP.
   Address: 507 EAST RICHEY, ARTESIA, N.M. 88210
   Contact Person: LYNN NORTHCUTT Phone: 505-748-1392
3. Location: S ½ SW 1/4 Section 4 Township 17S Range 26E
   Submit large scale topographic map showing exact location.
4. Attach the name, telephone number and address of the landowner of the facility site.
5. Attach the description of the facility with a diagram indicating location of fences, pits, dikes and tanks on the facility.
6. Attach a description of all materials stored or used at the facility.
7. Attach a description of present sources of effluent and waste solids. Average quality and daily volume of waste water must be included.
8. Attach a description of current liquid and solid waste collection/treatment/disposal procedures.
9. Attach a description of proposed modifications to existing collection/treatment/disposal systems.
10. Attach a routine inspection and maintenance plan to ensure permit compliance.
11. Attach a contingency plan for reporting and clean-up of spills or releases.
12. Attach geological/hydrological information for the facility. Depth to and quality of ground water must be included.
13. Attach a facility closure plan, and other information as is necessary to demonstrate compliance with any other OCD rules, regulations and/or orders.
14. CERTIFICATION

I herby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

NAME: LYNN NORTHCUTT Title: LOCATION MANAGER

Signature: [signature] Date: 7/29/97

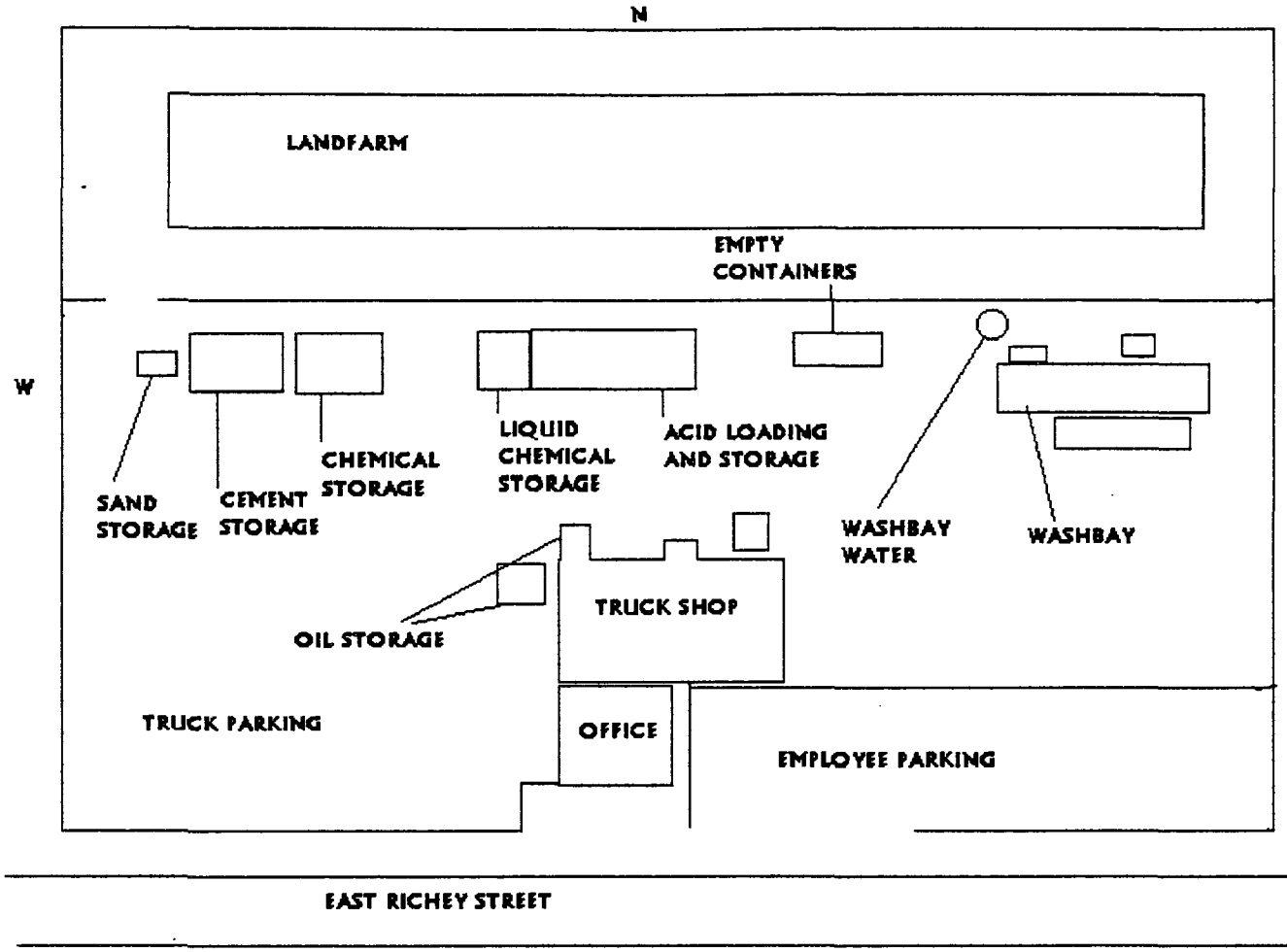
DISCHARGE PLAN GW-114
RENEWAL APPLICATION

TABLE OF CONTENTS

DISCHARGE PLAN GW-114
RENEWAL APPLICATION
ATTACHMENT #1

FACILITY LANDOWNER: DOWELL, A DIVISION OF SCHLUMBERGER TECHNOLOGY CORP.
300 SCHLUMBERGER DRIVE
P.O. BOX 4378
SUGAR LAND, TEXAS
77210

1-281-285-8400



DISCHARGE PLAN GW-114
RENEWAL APPLICATION
ATTACHMENT #2

DISCHARGE PLAN GW-114
RENEWAL APPLICATION
ATTACHMENT #3

LIST OF MATERIALS STORED AT FACILITY:

1. DRILLING FLUIDS

A261 - INHIBITOR - LIQUID - TOTE - 200 GALS. - LIQUID CHEM. STORAGE
A166 - INHIBITOR - LIQUID - TOTE - 75 GALS. - LIQUID CHEM. STORAGE
A179 - INHIBITOR AID - LIQUID - DRUM - 55 GALS. - LIQUID CHEM. STORAGE
A186 - CORROSION INHIBITOR - LIQUID - DRUM - 55 GALS. - LIQUID CHEM. STORAGE
A205 - CORBAN INHIBITOR - LIQUID - DRUM - 55 GALS. - LIQUID CHEM STORAGE
D075 - SILICATE ADDITIVE - LIQUID - TOTE - 700 GALS. - LIQUID CHEM. STORAGE
D122A - CHEMICAL WASH - LIQUID - PAIL - 75 GALS - LIQUID CHEM. STORAGE
D604AM - SALTBOND II ADDITIVE -LIQUID - DRUM - 70 GALS - LIQUID CHEM. STORAGE
J237A - MATRIX ACIDIZING AGENT - LIQUID- PAIL - 70 GALS. LIQUID CHEM. STORAGE
J257 OIL FRICTION REDUCER - LIQUID - DRUM - 50 GALS. LIQUID CHEM. STORAGE
J429 - ACID GELLING AGENT - LIQUID - DRUM - 135 GALS. LIQUID CHEM. STORAGE
J602L - PH CONTROL AGENT - LIQUID - PAIL- 10 GALS. - LIQUID CHEM. STORAGE
K230B - RESIN SOLUTION - LIQUID - PAIL - 5 GALS. - LIQUID CHEM. STORAGE
L063 - REDUCING AGENT - LIQUID - TOTE - 400 GALS. LIQUID CHEM. STORAGE
L064 - CLAY STABILIZER - LIQUID - PAIL - 10 GALS. LIQUID CHEM. STORAGE
U042 - CHELATING AGENT - LIQUID - TOTE - 600 GALS. LIQUID CHEM. STORAGE
L058 - IRON STABILIZER - SOLID - BAG - 600 # - CHEMICAL STORAGE
M024 - PROTECTZONE BREAKER - SOLID - PLASTIC BOTTLE - 8# - CHEMICAL STORAGE
B028 - EXPANDING CEMENT ADDITIVE - SOLID - BAG- 6650 # - CHEMICAL STORAGE
D013 - RETARDER - SOLID - BAG- 500# - CHEMICAL STORAGE
D029 - CELLOPHANE FLAKE - SOLID - BAG - 2000# - CHEMICAL STORAGE
DO31 - BARITE - SOLID - BAG - 2000# - CHEMICAL STORAGE
D042 - KOLITE - SOLID - BAG - 15000# - CHEMICAL STORAGE
D046 - ANTIFOAM AGENT-SOLID - BAG - 500 # - CHEMICAL STORAGE
D053 - CEMENT AGENT-SOLID - BAG- 40000# - CHEMICAL STORAGE
D059 - FLUID LOSS ADDITIVE-SOLID - BAG- 1100 # - CHEMICAL STORAGE
D060 - FLUID LOSS ADDITIVE -SOLID - BAG - 2550 # - CHEMICAL STORAGE
D065 - TIC DISPERSANT - BAG-SOLID - 2500 # - CHEMICAL STORAGE
D079 - CHEMICAL EXTENDER-SOLID - BAG - 13500# - CHEMICAL STORAGE
D112 - FLAC FLUID LOSS ADDITIVE-SOLID - BAG - 1500# - CHEMICAL STORAGE
D127 - FLAC FLUID LOSS ADDITIVE-SOLID - BAG - 2200# - CHEMICAL STORAGE
D149 - MUDPUSH LAMINAR SPACER-SOLID - BAG - 300# - CHEMICAL STORAGE
D156 - LOW TEMP. FLUID LOSS ADD.-SOLID - BAG - 350 # - CHEMICAL STORAGE
D800 - MID TEMP. RETARDER-SOLID - BAG - 2575 # - CHEMICAL STORAGE
J424 - WATER GELLING AGENT-SOLID - BAG - 200 # - CHEMICAL STORAGE
M038B - SILICATE CONTROL ADDITIVE-LIQUID -TOTE - 150 GAL. - LIQUID CHEM. STORAGE

2. BRINES

M117 - POTASSIUM CHLORIDE - SOLID - BAG - 3400# - CHEMICAL STORAGE
S001 - CALCIUM CHLORIDE - SOLID - BAG - 15000# - CHEMICAL STORAGE
D044 - GRANULATED SALT - SOLID - BAG - 40000# - CHEMICAL STORAGE

3. ACIDS

L401 - STABILIZING AGENT (ACETIC) - LIQUID - TOTE - 600 GAL. LIQUID CHEM. STORAGE
L010 - CROSSLINKER (BORIC) - SOLID - BAG - 500# - CHEMICAL STORAGE
Y001 - INTENSIFIER (HYDROFLOURIC) - SOLID - BAG - 1000# - CHEMICAL STORAGE
L001 - IRON STABILIZER (CITRIC) - SOLID - BAG - 1100# - CHEMICAL STORAGE
H036 - HYDROCHLORIC ACID 36% - LIQUID - TANK - 7500 GAL. - ACID STORAGE

4. DETERGENTS

F075N - EZEFLOW SURFACTANT - LIQUID - TOTE - 75 GAL. - LIQUID CHEM. STORAGE
F078 - EZEFLOW SURFACTANT - LIQUID - TOTE - 225 GAL. - LIQUID CHEM. STORAGE

5. SOLVENTS

U066 - MUTUAL SOLVENT - LIQUID - TOTE - 550 GAL. LIQUID CHEM. STORAGE

6. PARAFIN TREATMENT

W053 - NONEMULSIFYING AGENT - LIQUID - TOTE - 200GAL. - LIQUID CHEM. STORAGE
W054 - NONEMULSIFYING AGENT - LIQUID - TOTE - 450 GAL - LIQUID CHEM. STORAGE

7. BIOCIDES

M275 - BIOCIDE - SOLID - PLASTIC BOTTLE - 75 # - CHEMICAL STORAGE

8. OTHER

U051 - DIESEL FUEL - LIQUID - TANK - 100GAL. - ACID LOADING
D901 - CLASS A CEMENT - SOLID - SILO - 180000LB. - CEMENT STORAGE
D903 - CLASS C CEMENT - SOLID - SILO - 180000 LB. - CEMENT STORAGE
D909 - CLASS H CEMENT - SOLID - SILO - 180000 LB. - CEMENT STORAGE
D020 - BENTONITE - SOLID - SILO - 50000 LB. - CEMENT STORAGE
D132 - POZ FLY ASH - SOLID - SILO - 75000 LB. - CEMENT STORAGE
10 W OIL - LIQUID - 110 GAL. - OIL STORAGE
ANTIFREEZE - LIQUID - 500 GAL. - TANK - OIL STORAGE
80W -90 OIL - LIQUID - 150 GAL. - TANK - OIL STORAGE
H D 46 OIL - LIQUID - 150 GAL. TANK - OIL STORAGE
15W - 40 OIL - LIQUID - 500 GAL. - TANK - OIL STORAGE
DYNA 170 ZEP - LIQUID - 50 GAL. - DRUM - OIL STORAGE
UNLEADED GASOLINE - LIQUID - 100 GAL. -TANK - OIL STORAGE

DISCHARGE PLAN GW-114
RENEWAL APPLICATION
ATTACHMENT 4

7. SOURCES OF EFFLUENTS AND SOLID WASTES

A. TRUCK WASH BAY

WASTE WATER AND SLUDGE
80 BBLS PER MONTH GENERATED
DISPOSED OF AT LOCO HILLS WASTE DISPOSAL FACILITY
TRANSPORTED BY I&W INCORPORATED
NON-HAZARDOUS WASTE
ANALYSIS ATTACHED,GRAB SAMPLE, REFRIGERTATED
TESTED BY CARDINAL LABORATORY, HOBBS,NM
NO VARIATIONS EXPECTED

B. USED MOTOR OIL
125 GALLONS PER MONTH GENERATED
DISPOSED OF THROUGH E&E ENTERPRISES, BROWNFIED, TX
END PROCUCT IS BURNER FUEL
NON-HAZARDOUS WASTE
ANALYSIS ATTACHED,GRAB SAMPLE, REFRIGERATED,
TESTED BY CARDINAL LABORATORY, HOBBS, NM
NO VARIATIONS EXPECTED

C. USED OIL FILTERS
10LBS. PER MONTH GENERATED
DISPOSED OF AT O&S QUICK CHANGE, HOBBS, NM
CRUSHED AND SOLD AS SCRAP METAL
NON-HAZARDOUS WASTE
NO VARIATIONS EXPECTED

D. SOLID WASTES
TRASH, PAPER, SACKS AND MISCELLANEOUS WASTE
8000 LBS PER MONTH GENERATED
CITY OF ARTESIA LANDFILL
NON-HAZARDOUS WASTE
NO VARIATIONS EXPECTED

E. SEWAGE
DOMESTIC WASTE
NO OTHER WASTE ARE COMMINGLED WITH THIS WASTE STREAM
2000 GALLONS PER MONTH GENERATED
CITY OF ARTESIA WASTE WATER TREATMENT FACILITY
NON-HAZARDOUS WASTE
NO VARIATIONS EXPECTED

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page ___ of ___

Company Name:	Dowell Schlumberger
Project Manager:	Lynn Northcutt
Address:	PO Box 300 / 507 E. Richey
City:	Artesia State: NM Zip: 88210
Phone #:	748 1392
Fax #:	
Project #:	used oil
Project Name:	used oil
Project Location:	Artesia

BILL TO PO #:

Company:	
Attn:	
Address:	
City:	
State:	Zip:
Phone #:	
Fax #:	

ANALYSIS REQUEST

full TCLP
BCI

LAB I.D. #	Sample I.D.	COMP(C) OR GRAB(G)	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRESERVATIVE: ACID:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME
1	used oil												3-31-97	0900
2	used oil												3-31-97	0900
3	wash Bay water												4-1-97	0900
4	wash Bay mud												3-31-97	0900

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.

Sampler Relinquished: Dani Thompson	Date:	Received By:	Phone Result: ☐ Yes ☐ No Additional Fax #:
	Time:		Fax Results: ☐ Yes ☐ No
Relinquished By:	Date:	Received By: (Lab Staff)	REMARKS:
	Time:		
Delivered By: (Circle One) UPS - Fed Ex - Bus - Other:		Sample Condition: Cool ☑ Yes ☐ No; Intact ☑ Yes ☐ No	CHECKED BY: (Initials)

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
DOWELL SCHLUMBERGER
ATTN: LYNN NORTHCUTT
P.O. BOX 300
ARTESIA, NM 88210
FAX TO:

Receiving Date: 04/04/97
Reporting Date: 04/16/97
Project Number: NOT GIVEN
Project Name: USED OIL
Project Location: ARTESIA

Sampling Date: 03/31/97
Sample Type: LIQUID
Sample Condition: COOL & INTACT
Sample Received By: GP
Analyzed By: AH/BC

LAB NUMBER	SAMPLE ID	REACTIVITY Sulfide (ppm)	REACTIVITY Cyanide (ppm)	CORROSIVITY (pH)	IGNITABILITY (°F)
ANALYSIS DATE:		04/08/97	04/08/97	04/11/97	04/11/97
H2897-1	USED OIL	<50	<50	5.50	129
H2897-2	WASH BAY H2O	<50	<50	7.14	>140
Quality Control		NR	NR	7.03	NR
True Value QC		NR	NR	7.00	NR
% Accuracy		NR	NR	100	NR
Relative Percent Difference		NR	NR	0.4	NR

METHOD: EPA SW 846-7.3, 7.2, 1010

Chemist

04/16/97
Date

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
DOWELL SCHLUMBERGER
ATTN: LYNN NORTHCUTT
P.O. BOX 300
ARTESIA, NM 88210
FAX TO:

Receiving Date: 04/04/97
Reporting Date: 04/16/97
Project Number: NOT GIVEN
Project Name: USED OIL
Project Location: ARTESIA

Sampling Date: 03/31/97
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Sample Condition: COOL & INTACT
Sample Received By: GP
Analyzed By: AH/BC

LAB NUMBER	SAMPLE ID	REACTIVITY Sulfide (ppm)	REACTIVITY Cyanide (ppm)	CORROSIVITY (pH)	IGNITABILITY
ANALYSIS DATE:		04/08/97	04/08/97	04/11/97	04/11/97
H2897-3	WASH BAY MUD	<50	<50	10.52	Nonflammable
Quality Control		NR	NR	7.03	NR
True Value QC		NR	NR	7.00	NR
% Recovery		NR	NR	100	NR
Relative Percent Difference		NR	NR	0.4	NR

METHOD: EPA SW 846-7.3, 7.2, 1030 (Proposed) *40 CFR 261*

Chemist

04/16/97
Date

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
DOWELL SCHLUMBERGER
ATTN: LYNN NORTHCUTT
P.O. BOX 300
ARTESIA, NM 88210
FAX TO:

Receiving Date: 04/04/97
Reporting Date: 04/07/97
Project Number: NOT GIVEN
Project Name: USED OIL
Project Location: ARTESIA
Lab Number: H2897-1
Sample ID: USED OIL

Analysis Date: 04/06/97
Sampling Date: 03/31/97
Sample Type: OIL
Sample Condition: COOL & INTACT
Sample Received By: GP
Analyzed By: BC

TCLP VOLATILES (ppm)	EPA LIMIT	Sample Result H2897-1	Method Blank	QC	%Recov.	True Value QC
Vinyl Chloride	0.20	<0.005	<0.005	0.107	107	0.100
1,1-Dichloroethylene	0.7	<0.005	<0.005	0.082	82	0.100
Methyl Ethyl Ketone	200	<0.050	<0.050	0.082	82	0.100
Chloroform	6.0	<0.005	<0.005	0.109	109	0.100
1,2-Dichloroethane	0.5	<0.005	<0.005	0.119	119	0.100
Benzene	0.5	0.012	<0.005	0.088	88	0.100
Carbon Tetrachloride	0.5	<0.005	<0.005	0.099	99	0.100
Trichloroethylene	0.5	<0.005	<0.005	0.093	93	0.100
Tetrachloroethylene	0.7	<0.005	<0.005	0.102	102	0.100
Chlorobenzene	100	<0.005	<0.005	0.102	102	0.100
1,4-Dichlorobenzene	7.5	<0.005	<0.005	0.101	101	0.100

	% RECOVERY
Dibromofluoromethane	113
Toluene-d8	112
Bromofluorobenzene	116

METHODS: EPA SW 846-8260, 1311

Burgess J. A. Cooke, Ph. D.

4/7/97
Date

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
DOWELL SCHLUMBERGER
ATTN: LYNN NORTHCUTT
P.O. BOX 300
ARTESIA, NM 88210
FAX TO:

Receiving Date: 04/04/97
Reporting Date: 04/08/97
Project Number: NOT GIVEN
Project Name: USED OIL
Project Location: ARTESIA
Lab Number: H2897-1
Sample ID: USED OIL

Analysis Date: 04/07/97
Sampling Date: 03/31/97
Sample Type: OIL
Sample Condition: COOL & INTACT
Sample Received By: GP
Analyzed By: BC

TCLP SEMIVOLATILES (ppm)	EPA LIMIT	Sample Result H2897-1	Method Blank	QC (Matrix spike)	%Recov.	True Value QC
Pyridine	5.00	<0.005	<0.005	0.052	52	0.100
1,4-Dichlorobenzene	7.50	<0.005	<0.005	0.052	52	0.100
o-Cresol	200	0.009	<0.005	0.078	78	0.100
m, p-Cresol	200	0.016	<0.005	0.177	89	0.200
Hexachloroethane	3.00	<0.005	<0.005	0.049	49	0.100
Nitrobenzene	2.00	<0.005	<0.005	0.082	82	0.100
Hexachloro-1,3-butadiene	0.500	<0.005	<0.005	0.054	54	0.100
2,4,6-Trichlorophenol	2.00	<0.005	<0.005	0.094	94	0.100
2,4,5-Trichlorophenol	400	<0.005	<0.005	0.100	100	0.100
2,4-Dinitrotoluene	0.130	<0.005	<0.005	0.114	114	0.100
Hexachlorobenzene	0.130	<0.005	<0.005	0.100	100	0.100
Pentachlorophenol	100	<0.005	<0.005	0.107	107	0.100

	% RECOVERY
Fluorophenol	86
Phenol-d5	75
Nitrobenzene-d5	81
2-Fluorobiphenyl	80
2,4,6-Tribromophenol	77
Terphenyl-d14	94

METHODS: EPA SW 846-8270, 1311

Burgess J. A. Cooke, Ph. D.

4/8/97
Date

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ANALYTICAL RESULTS FOR
DOWELL SCHLUMBERGER
ATTN: LYNN NORTHCUTT
P.O. BOX 300
ARTESIA, NM 88210
FAX TO:

Receiving Date: 04/04/97
Reporting Date: 04/14/97
Project Number: NOT GIVEN
Project Name: USED OIL
Project Location: ARTESIA

Sampling Date: 03/31/97
Sample Type: LIQUID
Sample Condition: COOL & INTACT
Sample Received By: GP
Analyzed By: GP

TCLP METALS

LAB NUMBER	SAMPLE ID	As ppm	Ag ppm	Ba ppm	Cd ppm	Cr ppm	Pb ppm	Hg ppm	Se ppm
ANALYSIS DATE:		04/09/97	04/09/97	04/09/97	04/09/97	04/09/97	04/09/97	04/09/97	04/09/97
EPA LIMITS:		5	5	100	1	5	5	0.2	1
H2897-1	USED OIL	<1	<1	<5	<0.1	<1	<1	<0.02	<0.1
H2897-2	WASHBAY H2O	<1	<1	<5	<0.1	<1	<1	<0.02	<0.1
Quality Control		0.0502	0.940	11.00	1.033	1.100	1.090	0.0103	0.098
True Value QC		0.0500	1.000	10.00	1.000	1.000	1.000	0.0100	0.100
% Recovery		101	94.0	110	103	110	109	103	98.0
Relative Standard Deviation		2.8	0.3	2.7	1.1	3.5	1.3	6.5	1.4
METHODS: EPA 1311, 600/4-91/0		206.2	272.1	208.1	213.1	218.1	239.1	245.1	270.1

Gayle A. Potter, Chemist

04/16/97
Date

H2897M1.XLS

CARDINAL LABORATORIES

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

ANALYTICAL RESULTS FOR
DOWELL SCHLUMBERGER
ATTN: LYNN NORTHCUTT
P.O. BOX 300
ARTESIA, NM 88210
FAX TO:

Receiving Date: 04/04/97
Reporting Date: 04/14/97
Project Number: NOT GIVEN
Project Name: USED OIL
Project Location: ARTESIA

Sampling Date: 03/31/97
Sample Type: SOLID
Sample Condition: COOL & INTACT
Sample Received By: GP
Analyzed By: GP

TCLP METALS

LAB NUMBEF SAMPLE ID	As ppm	Ag ppm	Ba ppm	Cd ppm	Cr ppm	Pb ppm	Hg ppm	Se ppm
ANALYSIS DATE:	04/09/97	04/09/97	04/09/97	04/09/97	04/09/97	04/09/97	04/09/97	04/09/97
EPA LIMITS:	5	5	100	1	5	5	0.2	1
H2897-3 WASHBAY MUD	<1	<1	<5	<0.1	<1	<1	<0.02	<0.1
Quality Control	0.0502	0.940	11.00	1.033	1.100	1.090	0.0103	0.098
True Value QC	0.0500	1.000	10.00	1.000	1.000	1.000	0.0100	0.100
% Recovery	101	94.0	110	103	110	109	103	98.0
Relative Standard Deviation	2.8	0.3	2.7	1.1	3.5	1.3	6.5	1.4
METHODS: EPA 1311, 600/4-91/	206.2	272.1	208.1	213.1	218.1	239.1	245.1	270.1

Gayle A. Potter, Chemist

04/16/97
Date

CARDINAL LABORATORIES

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

ANALYTICAL RESULTS FOR
DOWELL SCHLUMBERGER
ATTN: LYNN NORTHCUTT
P.O. BOX 300
ARTESIA, NM 88210
FAX TO:

Receiving Date: 04/04/97
Reporting Date: 04/07/97
Project Number: NOT GIVEN
Project Name: USED OIL
Project Location: ARTESIA
Lab Number: H2897-3
Sample ID: WASH BAY MUD

Analysis Date: 04/06/97
Sampling Date: 03/31/97
Sample Type: SOLID
Sample Condition: COOL & INTACT
Sample Received By: GP
Analyzed By: BC

TCLP VOLATILES (ppm)	EPA LIMIT	Sample Result H2897-3	Method Blank	QC	%Recov.	True Value QC
Vinyl Chloride	0.20	<0.005	<0.005	0.107	107	0.100
1,1-Dichloroethylene	0.7	<0.005	<0.005	0.082	82	0.100
Methyl Ethyl Ketone	200	<0.050	<0.050	0.082	82	0.100
Chloroform	6.0	<0.005	<0.005	0.109	109	0.100
1,2-Dichloroethane	0.5	<0.005	<0.005	0.119	119	0.100
Benzene	0.5	<0.005	<0.005	0.088	88	0.100
Carbon Tetrachloride	0.5	<0.005	<0.005	0.099	99	0.100
Trichloroethylene	0.5	<0.005	<0.005	0.093	93	0.100
Tetrachloroethylene	0.7	<0.005	<0.005	0.102	102	0.100
Chlorobenzene	100	<0.005	<0.005	0.102	102	0.100
1,4-Dichlorobenzene	7.5	<0.005	<0.005	0.101	101	0.100

	% RECOVERY
Dibromofluoromethane	97
Toluene-d8	98
Bromofluorobenzene	103

METHODS: EPA SW 846-8260, 1311

Burgess J. A. Cooke, Ph. D.

4/7/97
Date

CARDINAL LABORATORIES

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

ANALYTICAL RESULTS FOR
DOWELL SCHLUMBERGER
ATTN: LYNN NORTHCUTT
P.O. BOX 300
ARTESIA, NM 88210
FAX TO:

Receiving Date: 04/04/97
Reporting Date: 04/08/97
Project Number: NOT GIVEN
Project Name: USED OIL
Project Location: ARTESIA
Lab Number: H2897-3
Sample ID: WASH BAY MUD

Analysis Date: 04/07/97
Sampling Date: 03/31/97
Sample Type: SOLID
Sample Condition: COOL & INTACT
Sample Received By: GP
Analyzed By: BC

TCLP SEMIVOLATILES (ppm)	EPA LIMIT	Sample Result H2897-3	Method Blank	QC (Matrix spike)	%Recov.	True Value QC
Pyridine	5.00	<0.005	<0.005	0.052	52	0.100
1,4-Dichlorobenzene	7.50	<0.005	<0.005	0.052	52	0.100
o-Cresol	200	<0.005	<0.005	0.078	78	0.100
m, p-Cresol	200	<0.005	<0.005	0.177	89	0.200
Hexachloroethane	3.00	<0.005	<0.005	0.049	49	0.100
Nitrobenzene	2.00	<0.005	<0.005	0.082	82	0.100
Hexachloro-1,3-butadiene	0.500	<0.005	<0.005	0.054	54	0.100
2,4,6-Trichlorophenol	2.00	<0.005	<0.005	0.094	94	0.100
2,4,5-Trichlorophenol	400	<0.005	<0.005	0.100	100	0.100
2,4-Dinitrotoluene	0.130	<0.005	<0.005	0.114	114	0.100
Hexachlorobenzene	0.130	<0.005	<0.005	0.100	100	0.100
Pentachlorophenol	100	<0.005	<0.005	0.107	107	0.100

	% RECOVERY
Fluorophenol	72
Phenol-d5	62
Nitrobenzene-d5	75
2-Fluorobiphenyl	79
2,4,6-Tribromophenol	66
Terphenyl-d14	100

METHODS: EPA SW 846-8270, 1311

Burgess J. A. Cooke, Ph. D.

4/9/97
Date

CARDINAL LABORATORIES

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ANALYTICAL RESULTS FOR
DOWELL SCHLUMBERGER
ATTN: LYNN NORTHCUTT
P.O. BOX 300
ARTESIA, NM 88210
FAX TO:

Receiving Date: 04/04/97
Reporting Date: 04/07/97
Project Number: NOT GIVEN
Project Name: USED OIL
Project Location: ARTESIA
Lab Number: H2897-2
Sample ID: WASH BAY WATER

Analysis Date: 04/06/97
Sampling Date: 04/01/97
Sample Type: LIQUID
Sample Condition: COOL & INTACT
Sample Received By: GP
Analyzed By: BC

TCLP VOLATILES (ppm)	EPA LIMIT	Sample Result H2897-2	Method Blank	QC	%Recov.	True Value QC
Vinyl Chloride	0.20	<0.005	<0.005	0.107	107	0.100
1,1-Dichloroethylene	0.7	<0.005	<0.005	0.082	82	0.100
Methyl Ethyl Ketone	200	1.867	<0.050	0.082	82	0.100
Chloroform	6.0	<0.005	<0.005	0.109	109	0.100
1,2-Dichloroethane	0.5	<0.005	<0.005	0.119	119	0.100
Benzene	0.5	<0.005	<0.005	0.088	88	0.100
Carbon Tetrachloride	0.5	<0.005	<0.005	0.099	99	0.100
Trichloroethylene	0.5	<0.005	<0.005	0.093	93	0.100
Tetrachloroethylene	0.7	<0.005	<0.005	0.102	102	0.100
Chlorobenzene	100	<0.005	<0.005	0.102	102	0.100
1,4-Dichlorobenzene	7.5	<0.005	<0.005	0.101	101	0.100

	% RECOVERY
Dibromofluoromethane	98
Toluene-d8	102
Bromofluorobenzene	103

METHODS: EPA SW 846-8260, 1311

Burgess J. A. Cooke, Ph. D.

4/7/97
Date

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
DOWELL SCHLUMBERGER
ATTN: LYNN NORTHCUTT
P.O. BOX 300
ARTESIA, NM 88210
FAX TO:

Receiving Date: 04/04/97
Reporting Date: 04/08/97
Project Number: NOT GIVEN
Project Name: USED OIL
Project Location: ARTESIA
Lab Number: H2897-2
Sample ID: WASH BAY WATER

Analysis Date: 04/07/97
Sampling Date: 03/31/97
Sample Type: LIQUID
Sample Condition: COOL & INTACT
Sample Received By: GP
Analyzed By: BC

TCLP SEMIVOLATILES (ppm)	EPA LIMIT	Sample Result H2897-2	Method Blank	QC (Matrix spike)	%Recov.	True Value QC
Pyridine	5.00	<0.005	<0.005	0.052	52	0.100
1,4-Dichlorobenzene	7.50	<0.005	<0.005	0.052	52	0.100
o-Cresol	200	0.005	<0.005	0.078	78	0.100
m, p-Cresol	200	0.008	<0.005	0.177	89	0.200
Hexachloroethane	3.00	<0.005	<0.005	0.049	49	0.100
Nitrobenzene	2.00	<0.005	<0.005	0.082	82	0.100
Hexachloro-1,3-butadiene	0.500	<0.005	<0.005	0.054	54	0.100
2,4,6-Trichlorophenol	2.00	<0.005	<0.005	0.094	94	0.100
2,4,5-Trichlorophenol	400	<0.005	<0.005	0.100	100	0.100
2,4-Dinitrotoluene	0.130	<0.005	<0.005	0.114	114	0.100
Hexachlorobenzene	0.130	<0.005	<0.005	0.100	100	0.100
Pentachlorophenol	100	<0.005	<0.005	0.107	107	0.100

	% RECOVERY
Fluorophenol	72
Phenol-d5	62
Nitrobenzene-d5	72
2-Fluorobiphenyl	71
2,4,6-Tribromophenol	63
Terphenyl-d14	86

METHODS: EPA SW 846-8270, 1311

Burgess J. A. Cooke, Ph. D.

4/8/97
Date

DISCHARGE PLAN GW-114
RENEWAL APPLICATION
ATTACHMENT 5

8. COLLECTION, TREATMENT, DISPOSAL SYSTEMS

A. TRUCK WASH BAY

THIS DISPOSAL SYSTEM IS COMPOSED OF A 20' BY 70' COATED CEMENT SLAB ON WHICH TRUCKS ARE WASHED. THE SEDIMENT AND WATER IS COLLECTED IN A BELOW GROUND DOUBLE CONTAINED 540 GALLON STEEL LINED SEDIMENT TRAP. THE WASTE WATER THEN TRAVELS THOUGH A 3" PVC NON-PRESSURIZED BURIED PIPE TO A BURIED DOUBLE CONTAINED 8 GALLON STEEL SUMP CONTAINING A SUMP PUMP. THIS PUMP TRANSFERS THE WATER TO AN ABOVE GROUND 700 GALLON STEEL OIL SKIMMER PLACED IN A REVETMENT. THE WATER IS THEN TRANSFERED THROUGH ABOVE GROUND 1" PVC PIPING TO A 90BBL. ABOVE GROUND FIBERGLASS TANK. THE WATER IS THEN TRANSPORTED FROM THIS TANK TO A DISPOSAL FACILITY AS DESCRIBED IN ATTACHMENT 4-7A.

B. USED MOTOR OIL

OIL IS COLLECTED FROM THE MAINTENANCE SHOP DURING THE EQUIPMENT REPAIR PROCESS. THE OIL IS TRANSFERED TO AN ABOVE GROUND 500 GALLON PLASTIC TANK VIA ¾" STEEL ABOVE GROUND PIPING. THIS TANK IS INSIDE A CONCRETE REVETMENT. THE OIL IS THEN OFF LOADED ON A TRUCK FOR TRANSPORT TO THE DISPOSAL FACILITY AS DESCRIBED IN ATTACHMENT 4-7B.

C. USED OIL FILTERS

USED OIL FILTERS ARE COLLECTED FROM THE MAINTENANCE SHOP. THEY ARE STORED IN A 20 GALLON PLASTIC DRUM FOR TRANSPORT TO THE DISPOSAL FACILITY AS DESCRIBED IN ATTACHMENT 4-7C.

D. SOLID WASTES

SOLID WASTES ARE STORED IN DUMPSTERS PROVIDED BY THE CITY OF ARTESIA. THEY ARE EMPTIED BY THE SOLID WASTE DEPARTMENT OF THE CITY OF ARTESIA.

E. SEWAGE

DOMESTIC WASTE IS TRANSFERED BY UNDERGROUND PLASTIC PIPE TO THE SEWER SYSTEM OF THE CITY OF ARTESIA.

DISCHARGE PLAN GW-114
RENEWAL APPLICATION
ATTACHMENT #6

PROPOSED MODIFICATIONS TO EXISTING COLLECTION/TREATMENT/DISPOSAL PROCEDURES.

1. AT PRESENT WE ARE WORKING WITH THE CITY OF ARTESIA, NEW MEXICO TO ATTACH THE WASHBAY FACILITY TO THE CITY SEWER SYSTEM. THIS WOULD ELEMINATE THE 90 BBL. FIBERGLASS TANK MENTIONED IN ATTACHMENT 4.7.A

A SAMPLING POINT WOULD BE INSTALLED WHERE THE LINE TIES INTO THE CITY SEWER SYSTEM. HYDROSTATIC TESTING OF THE LINE WOULD ALSO BE PERFORMED PRIOR TO TIE IN. THIS LINE IS 4" SCHEDULE 40 PVC AND IS 7 MONTHS OLD.

A COPY OF THE WATER SAMPLE RESULTS FOR THIS WASTE STREAM IS INCLUDED IN ATTACHMENT #4.

2. THE UNDERGROUND LINE FROM THE WASH BAY SUMP TO THE OIL SKIMMER WILL BE HYDROSTATIC TESTED AT THE SAME TIME AS THE SEWER LINE. THIS LINE IS 3" SCHEDULE 40 PVC AND IS 7 MONTHS OLD.

DISCHARGE PLAN GW-114
RENEWAL APPLICATION
ATTACHMENT #7

CONTINGENCY PLAN FOR REPORTING AND CLEAN-UP OF SPILLS OR RELEASES.

WEEKLY ENVIRONMENTAL INSPECTION REPORT

Inspector **Date**

District

1.	Yard and parking area free of spills	Yes	No
2.	Waste storage containers in good condition, leak free dated and properly labeled.	Yes	No
3.	Drum Storage area free of spills or leaks and properly sealed.	Yes	No
4.	Slurry gel plant free of spills or leaks.	Yes	No
5.	Acid dock area free of leaks and spills	Yes	No
6.	Cement plant free of spills and dust collector working properly.	Yes	No
7.	Stimulation warehouse free of spills	Yes	No
8.	Fuel island clean and free of spills.	Yes	No
9.	Shop oil storage area free of spills and leaks.	Yes	No
10.	Is Safety Kleen confined to the station.	Yes	No
11.	Paint and thinner properly stored.	Yes	No
12.	Batteries in proper storage area.	Yes	No
13.	Shop area free of spills	Yes	No
14.	Is Emergency Response Equipment in working order and properly stocked?	Yes	No

ANY "NO" ANSWERS REQUIRE CORRECTIVE ACTION AND COMMENTS BELOW:

ATTACHMENT 9

DISCHARGE PLAN GW-114
RENEWAL APPLICATION
ATTACHMENT #8

CONTINGENCY PLAN FOR REPORTING AND CLEAN-UP OF SPILLS OR RELEASES.

SCHLUMBERGER - *DOWELL*
ARTESIA, NEW MEXICO

SPILL PREVENTION, CONTROL AND COUNTERMEASURE / RCRA CONTINGENCY PLAN

JULY 28, 1997

TABLE OF CONTENTS

Attachment 4	Annual Tank Inspection Report
Attachment 5	Emergency Call List
Attachment 6	Spill Cleanup Contractors
Attachment 7	Schlumberger/NAM HSE Emergency Response System
Attachment 8	Oil Spill/Emergency Response Equipment
Attachment 9	Weekly Environmental Inspection Report

SCHLUMBERGER-*DOWELL*
ARTESIA, NEW MEXICO
SPILL PREVENTION, CONTROL AND COUNTERMEASURE / RCRA CONTINGENCY PLAN

1.0 INTRODUCTION

The management and personnel of Schlumberger at the Artesia, New Mexico Dowell location realize and acknowledge the importance of preventing hydrocarbons from being spilled into the navigable waters of the United States and preventing harmful releases of hazardous waste into the environment. The following Spill Prevention, Control and Countermeasure (SPCC) / RCRA Contingency Plan is designed to help protect the environment in two ways.

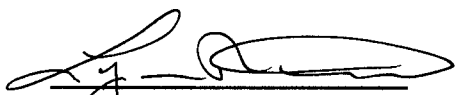
- First, it provides the procedures which will be used to prevent oil & chemical spills and waste releases.
- Second, should a spill or release occur, it describes the protocols for immediate coordination of necessary activities to minimize any harmful effects, including notification of appropriate government agencies as required under federal regulations.

To handle a spill response effectively, this SPCC/RCRA plan provides descriptions of the duties to be performed by facility personnel; procedures to be followed; available equipment; and available outside resources.

This SPCC/RCRA plan was developed in accordance with the requirements of Title 40 CFR Part 112, and requirements under Title 40 CFR Section 262.34 (a) for generators storing hazardous waste for less than 90 days. This plan conforms to the recommendations of API Bulletin D16, entitled "Suggested Procedures for Development of Spill Prevention, Control and Countermeasure Plans", revised April 1990.

1.1 Management Approval

This SPCC / RCRA Contingency plan will be implemented as described herein, and is approved by:



Location Manager

7/27/97

Date

Neil Campbell
H&E Manager NAM Shared Resources

Date

1.2 Engineering Certification

1. An SPCC plan is required under U.S. Clean Water Act (CWA, 33 U.S.C.A. section 1321(j) (c) and 40 C.F.R. Part 112. for onshore and offshore facilities that have more than 42,000 gallons of underground oil storage capacity, more than 1,320 gallons of total surface storage capacity, or a single surface container with an oil storage capacity in excess of 660 gallons which, due to their location, could reasonably have expected to have a spill of oil into the waters of the United States or adjoining shorelines. See 40 C.F.R. section 112.1 (d).

2. The determination as to need for an SPCC plan cannot include consideration of man-made features such as dikes and sumps. 40 C.F.R. section 122.1 (d) (1) (i).

3. Whenever SPCC plans are required due to the quantities referred to above, the plans and all amendments to the plans must be reviewed and certified by a registered professional engineer. 40 C.F.R. section 112.3(d) and 112.5(c).

4. An SPCC plan must be amended whenever there is a change at the facility which materially changes the potential for an oil spill and a plan must be reviewed and evaluated at least once every three years. 40 C.F.R. section 112.5.

I hereby certify that I have examined the Schlumberger Dowell facility located in Artesia, New Mexico and attest that the following SPCC/RCRA plan has been prepared in accordance with good engineering practices and requirements of 40 C.F.R. parts 112 & 262, certified by:

_____ _____

Name Date

Title

Registered Professional Engineer, State of _____

Registration No. _____

2.0 GENERAL FACILITY INFORMATION

2.1 Brief Facility Description

(Example)

Schlumberger Dowell in Artesia, New Mexico is an oilfield cementing, acidizing and fracturing service company for the oil and gas industry. It is an onshore, non-transportation related facility, storing bulk sand, bulk cement, and bulk liquids in tanks. Bulk liquids are stored in the following tankage: one (1)15,000 gallon tank for storage of a 36% Hydrochloric Acid solution, one (1) 90 Bbl. wastewater storage tank, one (1) 330 gallon of waste oil storage tank and miscellaneous chemicals liquid stored in containers (drums, totes and pails). Solid chemicals are stored in sacks at the facility. This facility is an occasional generator of hazardous waste; however waste is not allowed to accumulate on-site for more than 90 days and disposed of off-site. The hazardous waste materials are stored in drums and containers meeting applicable DOT specifications, and are labeled in accordance with the requirements of 40 CFR 262.34. Hydrocarbons and chemicals are stored in large tanks constructed either of all steel material with welded seams or HDPE. Miscellaneous chemicals are normally stored in warehouses, or in a fenced area. Appropriate warning signs are posted at the entrances to each of the chemical storage areas. There is no discharge of processed effluent from this facility. The Artesia facility is located at 507 E. Richey. A location

map (Attachment 1) and a facility plot plan (Attachment 2) are included for reference.

2.2 Designated Contact

Lynn Northcutt, Location Manager is the Emergency Coordinator for spill and hazardous release at the Artesia facility. Correspondence should be addressed to:

Dowell
P.O. Box 300
Artesia, New Mexico
505-748-1391

Dowell will utilize trained personnel from this facility and contractors as well as local police and fire departments to respond to emergency situations. If cleanup is required, then Dowell will rely on RCRA and OSHA trained personnel, either within the Company or contractors or both, to handle this.

2.3 Storage Tanks

A description of product and waste storage tanks, their volume and containment provisions are included in Attachment 3.

2.4 Loading and Unloading Facilities

There are one (1) loading and unloading areas at this facility.

1. Hydrochloric Acid storage area

2.4.1 Loading and Unloading Operations

The typical operation at each of the 1 area is described below.

1. Acid is delivered by transport trucks and off-loaded into the (1) 15,000 gallon rubber lined steel or HDPE storage tanks. The acid

storage tank is enclosed by a dike and spillage would be contained. The transports are also parked in a diked area, which would contain any spillage occurring during loading and unloading. Loading and unloading activities are supervised by a Dowell employee.

3.0 OIL SPILL & HAZARDOUS WASTE EMERGENCY PREVENTION MEASURES

The following preventive measures have been implemented at this facility to reduce the possibility of releases of oil, hazardous material or waste and to minimize their impact should a release occur.

3.1 Security

The entire facility is enclosed by a six foot high metal fence. There is one gate that is open during the work periods. The main gate is secured after work hours.

3.2 Lighting

The operational areas, including facilities with oil, chemical, and waste storage, of this facility are adequately lit at night to allow detection of any spills or leakage.

3.3 Spill Containment Devices.

This facility has installed revetments, dikes or booms to control and contain accidental oil, chemical, and waste releases should they occur. The containment volume is 110 percent of the volume of the largest storage vessel within the diked area. (See Attachment 3 for details.)

All the revetments which are used to store fuel or other material or wastes have no outlet piping or valves for drainage. Removal of accumulated liquids inside the revetments can be accomplished by using a portable pump or vacuum truck and requires the approval of the facility supervisor. Before approving removal of the water, the supervisor will visually inspect the quality of the liquid to be drained. Only uncontaminated rainwater can be discharged without treatment. Accumulated liquids that are contaminated are transferred to one of the wastewater tanks for subsequent treatment or disposal.

3.4 Special Precautions

No flammable hazardous waste materials will be stored within 50 feet of the property line in accordance with NFPA and RCRA standards. Incompatible waste will be stored in segregated areas or within designated sections of the hazardous waste storage area. Adequate aisle space will be provided in and around the area to allow unobstructed movement of personnel and equipment for spill control, emergency response, and fire fighting needs.

Hazardous waste handling operations will be conducted by personnel who have completed OSHA/RCRA training. Drums containing hazardous waste are marked and labeled in accordance with 40 CFR 262.31 and 49 CFR 172; and as necessary, tanks that contain hazardous waste liquids will be marked in accordance with 40 CFR 262.31 and 49 CFR 172.

3.5 Inspections

Each of the facility's storage tanks will be visually inspected annually. This inspection will include the following at a minimum:

- Integrity of joints
- Rusted areas and associated leaks
- Structural abnormalities
- Breathing vent condition
- Hoses and associated connections
- Valving
- Condition of paint
- Overall tank integrity

These inspections will be recorded in the "Annual Tank Inspection Form" provided in Attachment 4. Corrective action for defects will be taken as necessary and will be recorded on inspection forms.

The supervisor responsible for spill prevention and waste handling at this facility or his trained designated representative will conduct weekly facility tours to observe any abnormalities or potential problems. Any problems and subsequent corrective actions will be logged on the inspection provided in Attachment 4. This inspection includes the following:

- Condition of facility drainage
- Condition of oil spill retention system
- External appearance of tanks and piping

- Condition of waste drums in storage area.
- Condition of product drums and totes in storage area.
- Integrity of containment dikes
- Condition of diked areas
- Adequate aisle and work space in storage area

3.6 Personnel Training

All personnel, except office personnel, at the facility will receive training in oil spill prevention, safe handling procedures of products and wastes, waste minimization, and methods for recognizing oil spills and waste release. This training will cover site-specific information, including implementation of this plan. The training will be conducted annually by trained personnel who are familiar with this facility. This training will include:

A. Applicable Laws and Regulations
   1. Oil spill prevention & Response Act
   2. Waste handling requirements
   3. Reporting of releases

B. Environmental Awareness

C. Safe Hazardous Waste Planning
   1. Equipment location
   2. Incompatible waste
   3. Access space
   4. Employee precautions

D. Spill/Release Prevention
   1. Secondary Containment devices
   2. Containment device maintenance
   3. Inspection procedures
   4. Operational precautions

E. Spill/Release Control Emergency Equipment
   1. Proper use and limitations
   2. Inspection procedures

F. Oil and Waste Release response
   1. Response to minor releases
   2. Response to significant releases

G. Waste Minimization Practices

H. OSHA Required Training
   1. HAZCOM/PPE
   2. Decontamination procedures
   3. Site safety plan review
   4. Confined space entry
   5. Emergency response

I. The Emergency Response Team should be trained in the following courses:
   1. HAZWOPER 29CFR1910.120 I/C
   2. HAZCOM 29CFR1910.1200
   3. HAZWOPER 29CFR1910.120 24"Q"

Dowell personnel training records are maintained in the facility master file which is in the office. In accordance with 40 CFR 112.7(e)(10), Dowell personnel training and employee documentation records are kept in the files at the district office. These records include: job titles, job descriptions for each position, description of type and amount of training, and records documenting training or job experience.

4.0 OIL SPILL CONTINGENCY & HAZARDOUS WASTE EMERGENCY RESPONSE PLAN

4.1 Objectives

There are three primary objectives during a spill event. They are:

1. Stop the source of leakage

2. Contain the leakage

3. Commence remedial action

The order of priority for the above objectives will vary depending on the events and at what stage the leak is detected. For tank spills which have breached the firewall, containment activities should commence first. For spills associated with fires, remedial action should commence first. Consideration should be given to the fact that water used in fire fighting may cause an overflow of the spill containment systems. The general plan for oil spill/hazardous waste emergency response consists of four steps. They are:

1. The spill must be reported to the Emergency Coordinator (refer to the Phone Numbers in Attachment 5).

2. The Emergency Coordinator will determine which outside assistance organizations to contact, if any, to stop the leak, to contain the leak, and what form of remedial action is necessary. He will then initiate the necessary activities.

3. The Emergency Coordinator will determine which governmental agencies are required to be notified and ensure that these notifications are made.

4. The Emergency Coordinator will ensure that all non-Dowell Communications (i.e. news media) follow company policy.

The intent of the SPCC/RCRA plan is to provide the information necessary to respond properly to a spill event.

Generally, this facility could have four types of spill events:

1. Contained Spill - spill inside diked areas and all material is contained.

2. Controlled Small Spill - spill outside diked areas that is small enough not to spread off-site.

3. Uncontrolled Spill - a spill large enough to exceed diked capacity (due to weather or fire fighting water make-up) or the spill is outside of diked area, and the spill has significant potential to go off site.

4. Reportable Spill - the spill enters county ditch, is over 1,000 gallons or exceeds the reportable quantity for the material spilled.

4.2 Equipment Location

A list of available on-site equipment and the location of each item is provided in Attachment 8. The location of this equipment is also shown on the facility plot plan provided in Attachment 2. Other information which may be useful during an emergency event is provided below:

- There are several hand held radios available at the facility, which would be useful for communications.
- Outside contractors are available to provide personnel and equipment. A listing of local contractors is provided in Attachment 6.

4.3 Emergency Coordinator's Response

After receiving a report of a spill, leak or other emergency, the Emergency Coordinator shall determine the following:

1. Extent of personal injuries, if any.

2. Exact location of spill, leak or other emergency event.

3. Whether the event is still occurring and when it was first observed.

4. Contact personnel list on NAM HSE/Schlumberger Emergency Response (Attachment 7).

5. The extent of spill, leak or emergency.

6. Methods to safely control the event.

7. If spill containment devices are working.

8. If there are apparent on-site or off-site hazards associated with the event.

9. Which outside contractors will be utilized.

10. Present and predicted weather conditions at the facility.

11. Applicable government agency notifications required.

12. Determine Dowell Contact for non-Dowell communications if necessary. Based on the above criteria, the Emergency Coordinator will implement the most appropriate response.

4.4 Other Considerations

4.4.1 Drum/Tote Leaks

Drum: If a leaking drum is detected, the contents remaining in the drum will be transferred to a new drum if this can be done safely. The empty drum will be put in the empty storage area for disposal or reclamation. If the contents cannot be safely transferred to another drum, then the leaking drum will be placed in a DOT-approved overpack drum for off-site disposal. Any spillage and clean up materials will also be placed into the overpack drum for disposal. A label will be placed on the overpack drum, identifying the contents and the original date that it was placed in storage.

Tote: Leaking tote will be handled the same way as leaking drum, except if the contents cannot be safely transferred to another drum or tote, then stop the leak, if possible, then contain the area with absorbent material.

4.4.2 Evacuation of Site

It is not foreseen that any facility release or event would require evacuation. However, the evacuation routes are shown in a map posted on the office bulletin board. (Specific evacuation procedures are applicable in the coastal region of Gulf of Mexico.)

4.4.3 Arrangements with Local Authorities

A copy of this plan has been provided to the local fire and police departments, hospitals, state and local emergency response teams. Information concerning materials and waste stored at the site is kept in the Emergency Coordinator's office. This information will be provided to police, firefighters, hospitals and other emergency response personnel as needed.

5.0 REPORTING

5.1 Spills

When a discharge of oil, acid or other products leaves the facility's property or enters a drainage ditch, a REPORTABLE spill has occurred. The Dowell Emergency Coordinator will follow the steps outlined in Section 4.3 and then contact the emergency number (Attachment 7) to determine if the spill is a reportable spill. If the spill is a reportable spill, then either the Emergency Coordinator or the personnel on the Emergency Response System will notify the applicable governmental agencies.

5.2 Hazardous Waste Releases

If the facility has a fire, explosion or hazardous waste release which could threaten human health or the environment outside the facility, the incident must be reported according to company procedures to the:

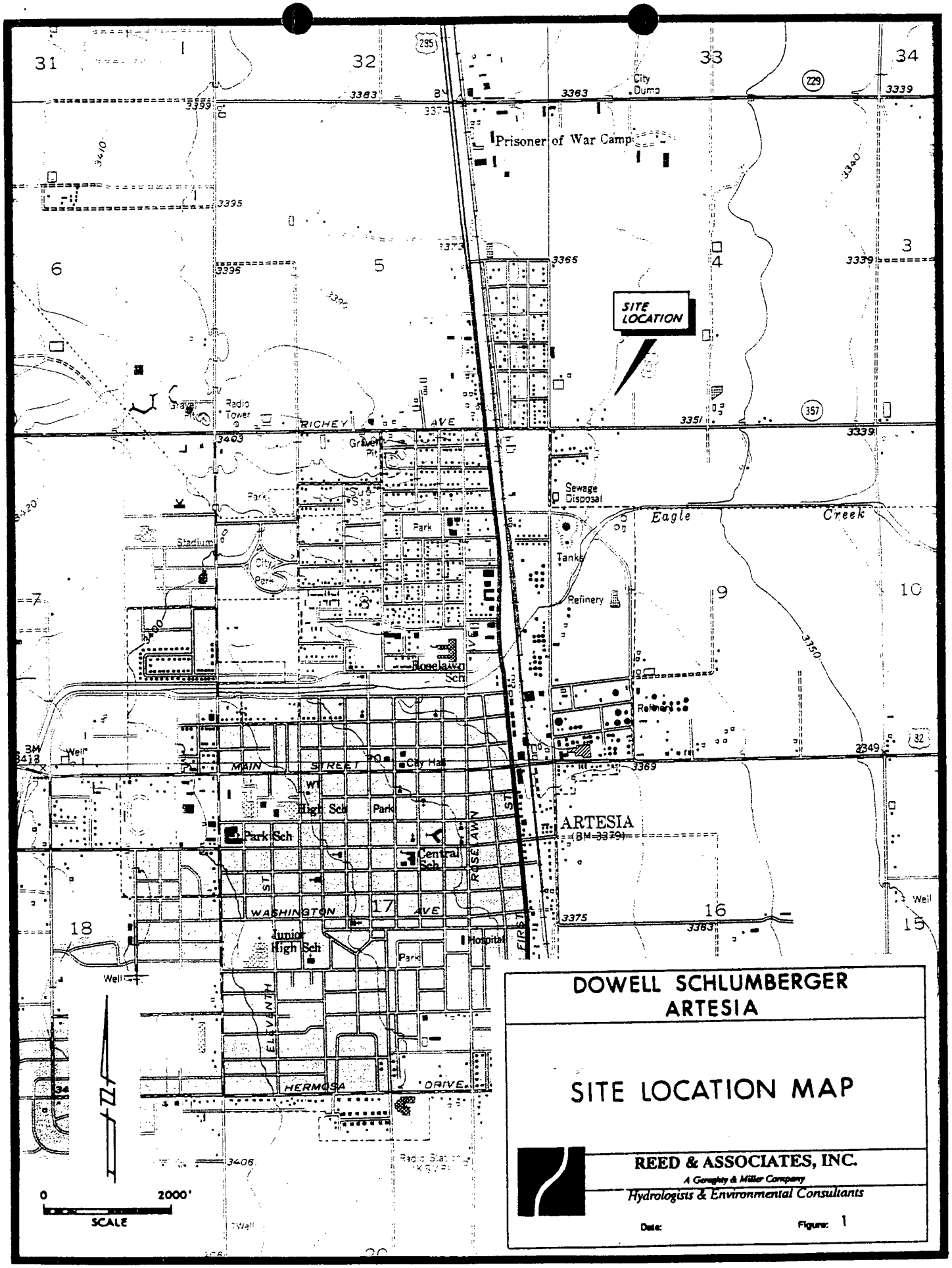
- Local Police and Fire Departments if evacuation is required
- Emergency Number
- National Response Center and the State Emergency Response Commission
- Environmental Protection Agency (EPA)
- Other governmental agencies (state-specific).

5.3 Plan Amendment

In the event that this facility has a reportable spill event, local Dowell Management will review the circumstances causing the event and determine if amendment of this plan is necessary. Every three years the SPCC plan will be reviewed for completeness by Dowell Management. Further, all future modifications and changes in operations at this facility which materially affect this plan will be incorporated into a revised plan within 6 months after such changes occur.

LOCATION MAP GOES HERE

ATTACHMENT 1



DOWELL SCHLUMBERGER ARTESIA

SITE LOCATION MAP

REED & ASSOCIATES, INC.

A Geraghty & Miller Company

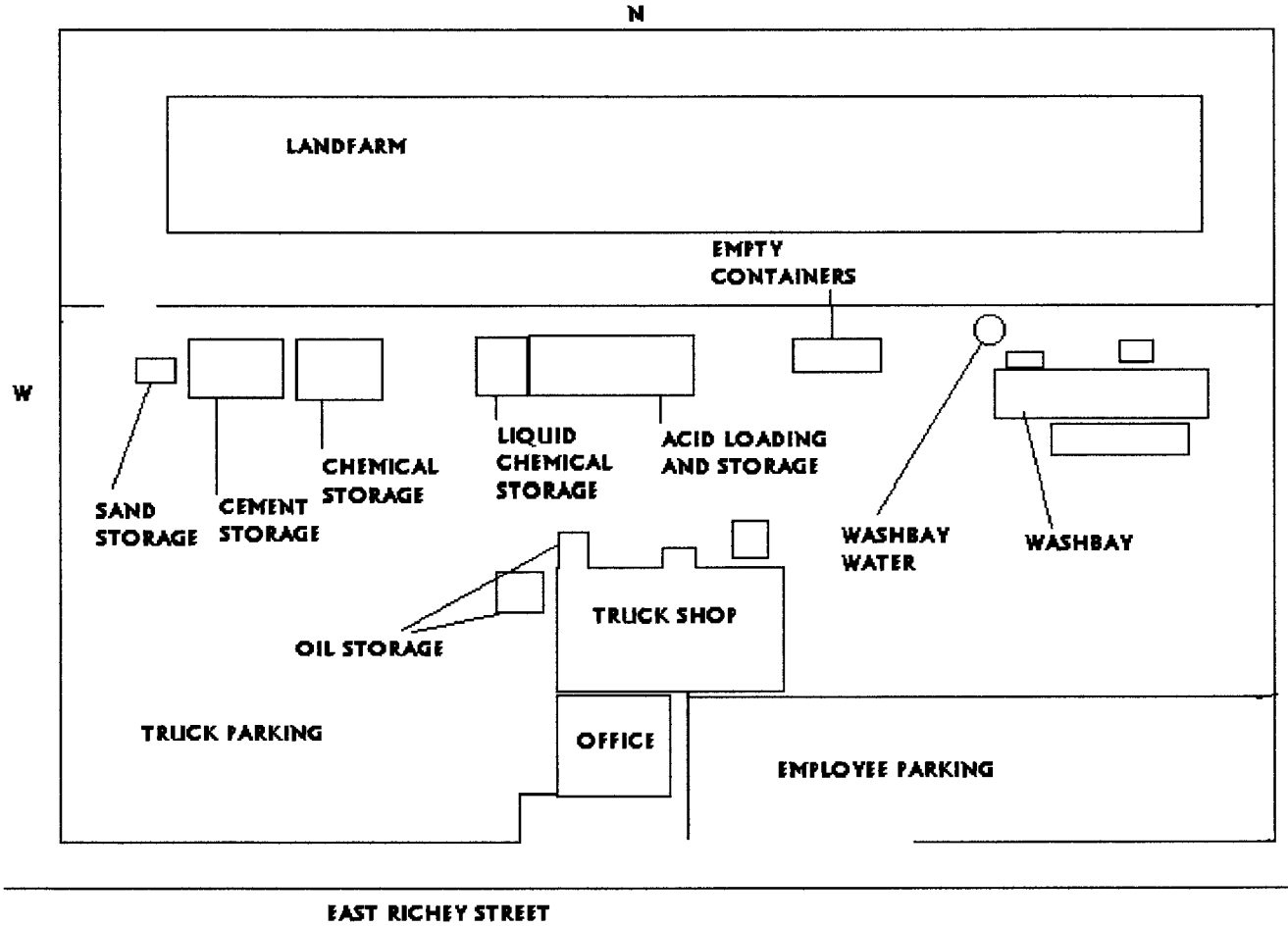
Hydrologists & Environmental Consultants

Date:

Figure: 1

FACILITY PLOT PLAN GOES HERE

ATTACHMENT 2



DISCHARGE PLAN GW-114
RENEWAL APPLICATION
ATTACHMENT #2

PRODUCT AND WASTE STORAGE AND SPILL CONTAINMENT FACILITIES

Source	Potential Type of Failure	Gallons Stored	Secondary Containment
Hydrochloric Acid	Rupture/Leak	15,000	Dike
Oil	Rupture/Leak	330	Dike
Wastewater	Rupture/Leak	3780	Dike

ATTACHMENT 3

ANNUAL TANK INSPECTION REPORT

TANK DESCRIPTION	INSPECTION DATE	INSPECTED BY	REMARKS
15,000 gal. Acid Storage			
Truck Wash Wastewater Tank			
Waste Oil Storage Tank			

Note: Inspection must include:

- Integrity of joints[1]
- Rusted areas
- Structural abnormalities
- Breathing vents condition
- Valving
- Condition of plan
- Condition of tank interior

[1]If problems are causing leakage, the entire tank will be tested for adequate steel thickness, in accordance with Dowell Procedures.

ATTACHMENT 4

EMERGENCY CALL LIST

(In order)

EMERGENCY COORDINATOR

Lynn Northcutt	***505-748-9047***

EMERGENCY ASSISTANCE TELEPHONE NUMBERS

FIRE Department	911
POLICE Department	911
AMBULANCE	911
HOSPITAL:	
Artesia General Hospital	*505-748-3333*

ADDITIONAL TELEPHONE NUMBERS FOR USE BY THE EMERGENCY SUPERVISOR

Schlumberger Emergency Number	281-595-3518
NAM HSE Shared Resources	281-285-8774
National Response Center (24 Hour)	800-424-8802
EPA Office (24 Hour)	202-260-7786

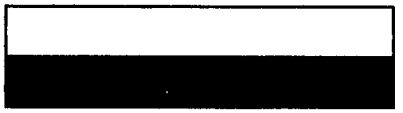
ATTACHMENT 5

SPILL CLEANUP CONTRACTORS

VALLEY CONSTRUCTION
P.O. BOX 390
ARTESIA, NEW MEXICO 88210
505-746-2761 TELEPHONE
505-746-6368 FAX
E.P.A. I.D.# 0001002484

BERGSTEIN ENVIRONMENTAL SERVICES
P.O. BOX 2724
LUBBOCK, TEXAS 79408
806-744-6278 - TELEPHONE

CHARTER WASTE MANAGMENT CORP
12035 WEST MURPHY
P.O. BOX 69055
ODESSA, TEXAS 79769
915-381-4722 - TELEPHONE



CHEMICAL EMERGENCY RESPONSE SYSTEM

The Chemical Emergency Response System is designed to provide immediate response information to the scene of a transportation, medical or environmental chemical emergency on a worldwide basis. This system operates 24-hours a day, 7 days a week.

24 HOUR EMERGENCY TELEPHONE NUMBER:

1-281-595-3518

I. INCIDENT WHEN EMERGENCY PHONE NUMBER MAY BE USED:

A. *CHEMICAL OR OTHER HAZARDOUS MATERIAL SPILLS from transport vehicles, storage facilities, equipment, or containers at the base or on location.*

B. *MOTOR VEHICLE ACCIDENTS in which there is a chemical spill or a potential for a spill to occur.*

C. *PERSONNEL EXPOSURES to chemicals.*

D. *SUDDEN RELEASE of chemical fumes.*

II. ACTION TO BE TAKEN IMMEDIATELY:

A. *FIRST AID for exposure or injury if required.*

B. *ISOLATE AREA by roping off as appropriate.*

C. *Shut off source of emissions.*

D. *Contain spill if possible.*

E. DO NOT *discuss liability with anyone.*

F. ***Telephone 1-281-595-3518**. Provide the following basic information (use estimates rather than waiting to get exact data):*

1. *A brief description of the incident.*
2. *Identities of the chemicals (product codes are acceptable)*
3. *Amount spilled (estimates are acceptable)*
4. *Location and time of the incident.*
5. *Name and phone number of local contact person (standby for call back from ER Team member).*

Interoffice Correspondence

TO: All Wireline & Dowell Locations

DATE: 25 November, 1996

FROM: R. Kuntz

cc: F. Osborn
M. Dijols
Area Mgrs.
Division Mgrs.
Department Heads
Div. HSE Mgrs.

RE: **Accident Notification Procedures (Revised)**

The reporting of any Schlumberger incidents involving **explosives or radioactive materials** should be managed via the procedures outlined in the Explosives or Radiation Field Control Manuals. The notification procedures shown below are required for all other incidents.

Environmental incidents involving spills/ discharges/ releases must be called in to and managed via the **Schlumberger Emergency Response system. The new number is:**

281-595-3518

Type of Event	Phone Call Sequence	E-mail Distribution
1) Fatality*, hospitalization of 3 or more employees/contractors*. 2) Involvement/interest by news media in any incident (including environmental) 3) any other **Catastrophic** accident.	**Immediate** phone call to: **Dowell:** Area Manager**, Kuntz, Osborn, (Turner, Accardo if Kuntz not available). **W&T:** Division Manager**, Kuntz, Dijols, (Turner, Accardo if Kuntz not available).	**Within 2 hrs,** the **Preliminary Accident Report** must be e-mailed to all persons on the **Emergency Contact Phone List (except E. Brown)**
1) Any vehicle rollover 2) Any accident with the potential to become a **Major** (either MVA or LTI)	**Within 2 hrs,** phone call to: Area/Division Manager**, Kuntz, (Turner, Accardo if Kuntz not available).	**Within 12 hrs, the Preliminary Accident Report** must be e-mailed to all persons on the **Emergency Contact Phone List. (except E. Brown)**

Serious MVA or LTI	**Within 24 hrs,** phone call to: Area/Division Manager**	**Within 24 hrs, the Preliminary Accident Report** must be e-mailed to all persons on the **Emergency Contact Phone List. (except E. Brown)**
Environmental Incident	**Call the E/R number immediately, then call:** Area/Division Manager**	**Within 24 hrs, the Preliminary Accident Report** must be e-mailed to all persons on the **Emergency Contact Phone List.**

* These two situations require NAM HSE to contact OSHA within 8 hrs.
** Area/Division Manager is responsible for notification of appropriate Area/Division Operations and HSE personnel

Emergency Contact Phone List:

Contact	Office Number	Home Number	Mobile (M) - Pager (P)
Maurice Dijols	281-285-8771	713-781-0114	713-202-7629 (M)
Frank Osborn	281-285-8421	281-242-2231	713-304-8716 (M)
Rod Kuntz	281-285-8773	281-344-9369	713-628-5140 (M)
Ken Turner	281-285-8775	281-360-9332	713-818-3296 (M)
Tony Accardo	281-285-8490	281-550-6668	713-765-0295 (P)
Neil Campbell	281-285-8495	281-277-6505	713-206-4869 (M)
Elani Gray Brown	281-285-8496	281-265-5566	713-828-3224 (M)
Debbie Carrillo	281-285-8492	-----	-----

Preliminary Accident Report:

The following information must be included in the e-mail:

Date and Time of accident/incident:_____
District and Location Code:_____
Type of accident: (identify one) Motor Vehicle, Injury, Environmental, or Loss_____
Potential severity of accident: (identify one) Catastrophic, Major, or Serious_____
Name(s) of person(s) involved in the accident, including third parties:_____
Name(s) of supervisor(s): _____
Client name and wellsite location if applicable:_____
Time/date drug & alcohol test performed:_____

For Motor Vehicle Accidents:

CADEC installed?_____
CADEC working?_____
Type of vehicle(s) involved:_____
Did our driver receive a citation?_____
Estimated accident cost:_____

For Injury accidents:

Estimated number of days lost:_____
OSHA reportable?_____
First Aid?_____

Brief description of accident:_____
_____
_____
_____
_____
_____

Name of manager leading investigation:_____

ATTACHMENT 7

OIL SPILL/EMERGENCY RESPONSE EQUIPMENT AND DECONTAMINATION EQUIPMENT

ITEM	QUANTITY	PURPOSE	LOCATION
20# Dry Chemical	10	Fire-fighting	At least 1 at all storage areas
Hand-held Radios	5	Communications	Main Office Building
Intercom Systems	1	Communications & Alarm On-Site	
Shovels & Rakes	4	Spill Cleanup	Emergency Response Kit
Absorbent "Soil"	2 sacks	Spill Cleanup	Emergency Response Kit
Trucks	1	Transport	On-Site
Overpack Drum	1	Spill Control	Drum Storage Pad
Drum Patch Kit	1	Spill Control	Drum Storage Pad
2 Gal. Sprayer		Decontamination	Emergency Response Kit

ATTACHMENT 8

DISCHARGE PLAN GW-114
RENEWAL APPLICATION
ATTACHMENT #9

GEOLOGICAL/HYDROLOGICAL INFORMATION.

GROUND WATER BENEATH THE ARTESIA FACILITY IS FOUND FROM 17-19 FEET GROUND SURFACE AS DETERMINED FROM MONITORING WELL INSTALLATIONS. STATIC WATER LEVELS IN THE MONITORING WELLS RANGE FROM 12-17 FEET BELOW THE TOP OF CASING MEASURING POINT. WATER LEVEL DATA IS PRESENTED IN TABLE 1. A POTIENTIOMETRIC SURFACE MAP UTILIZING THE MOST RECENT WATER LEVELS IS PROVIDED ON FIGURE 1.

GROUND WATER SAMPLES WERE COLLECTED AND ANALYZED FOR MAJOR CATIONS AND ANIONS BY ENERGY LABORATORIES OF CASPER, WYOMING. THE RESULTS ARE PRESENTED IN TABLE 2. A SUMMATION OF THE CATIONS AND ANIONS PROVIDES A TOTAL DISSOLVED SOLIDS RANGE OF 2800-8600 MG/L.

MORE DETAILED GEOMORPHIC AND GEOLOGIC INFORMATION HAS BEEN SUBMITTED IN PREVIOUS SITE INVESTIGATION REPORTS.

TABLE 1. GROUND-WATER MEASUREMENTS AND ELEVATIONS, DOWELL, ARTESIA, NEW MEXICO.

WELL NUMBER	DATE MEASURED	TOTAL WELL DEPTH (Ft)	MEASURING POINT	MEASURING POINT ELEVATION* (ft)	DEPTH TO GROUND WATER (ft)	STATIC WATER ELEVATION (Ft)	DIFFERENCE FROM PRIOR MEASUREMENT
MW-1	01/23/91	30.00	Protective Casing	100.56	17.41	83.15	
	09/13/91				16.04	84.52	1.37
	11/22/91				14.50	86.06	1.54
	03/16/93				13.72	86.84	0.78
	01/09/94				14.62	85.94	-0.90
	04/19/94				14.48	86.08	0.14
	07/20/94				14.38	86.18	0.10
	10/24/94				14.73	85.83	-0.35
	01/24/95				14.20	86.36	0.53
	04/02/95				14.37	86.19	-0.17
	07/31/95				14.76	85.80	-0.39
	10/16/95				14.64	85.92	0.12
	01/10/96				14.59	85.97	0.05
	04/09/96				14.77	85.79	-0.18
	07/20/96				15.84	84.72	-1.07
	10/21/96				14.07	86.49	1.77
	01/21/97				13.24	87.32	0.83
	04/08/97				12.97	87.59	0.27
MW-2	01/23/91	30.00	Protective Casing	99.56	16.95	82.61	
	09/13/91				15.01	84.55	1.94
	11/22/91				13.76	85.80	1.25
	03/16/93				13.16	86.40	0.60
	01/09/94				13.91	85.65	-0.75
	04/19/94				13.80	85.76	0.11
	07/20/94				13.65	85.91	0.15
	10/24/94				13.88	85.68	-0.23
	01/24/95				13.41	86.15	0.47
	04/02/95				13.67	85.89	-0.26
	07/31/95				13.81	85.75	-0.14
	10/16/95				13.78	85.78	0.03
	01/10/96				13.80	85.76	-0.02
	04/09/96				13.98	85.58	-0.18
	07/20/96				14.92	84.64	-0.94
	10/21/96				13.15	86.41	1.77
	01/21/97				12.41	87.15	0.74
	04/08/97				12.21	87.35	0.20
MW-3	01/23/91	30.00	Protective Casing	98.33	17.28	81.05	
	09/13/91				14.66	83.67	2.62
	11/22/91				13.63	84.70	1.03
	03/16/93				12.89	85.44	0.74
	01/09/94				13.66	84.67	-0.77
	04/19/94				NM	NM	NM
	07/20/94				13.18	85.15	na
	10/24/94				13.27	85.06	-0.09
	01/24/95				13.23	85.10	0.04
	04/02/95				13.60	84.73	-0.37
	07/31/95				13.34	84.99	0.26
	10/16/95				13.38	84.95	-0.04
	01/10/96				13.85	84.48	-0.47
	04/09/96				13.91	84.42	-0.06
	07/20/96				14.55	83.78	-0.64
	10/21/96				12.90	85.43	1.65
	01/21/97				12.42	85.91	0.48
	04/08/97				12.43	85.90	-0.01
MW-4	01/23/91	50.00	Protective Casing	103.18	20.17	83.01	
	09/13/91				18.54	84.64	1.63
	11/22/91				17.15	86.03	1.39
	03/16/93				16.49	86.69	0.66
	01/09/94				17.28	85.90	-0.79
	04/19/94				17.15	86.03	0.13
	07/20/94				16.99	86.19	0.16
	10/24/94				17.25	85.93	-0.26
	01/24/95				16.78	86.40	0.47
	04/02/95				16.98	86.20	-0.20
	07/31/95				17.26	85.92	-0.28
	10/16/95				17.01	86.17	0.25

TABLE 1. GROUND-WATER MEASUREMENTS AND ELEVATIONS, DOWELL, ARTESIA, NEW MEXICO.

WELL NUMBER	DATE MEASURED	TOTAL WELL DEPTH (Ft)	MEASURING POINT	MEASURING POINT ELEVATION* (ft)	DEPTH TO GROUND WATER (ft)	STATIC WATER ELEVATION (Ft)	DIFFERENCE FROM PRIOR MEASUREMENT
MW-4 Cont.	01/10/96				16.95	86.23	0.06
	04/09/96				17.15	86.03	-0.20
	07/20/96				18.08	85.10	-0.93
	10/21/96				16.28	86.90	1.80
	01/21/97				15.37	87.81	0.91
	04/08/97				15.14	88.04	0.23
MW-5	01/23/91	30.00	Protective Casing	99.87	17.20	82.67	
	09/13/91				15.52	84.35	1.68
	11/22/91				14.19	85.68	1.33
	03/16/93				13.47	86.40	0.72
	01/09/94				14.31	85.56	-0.84
	04/19/94				14.17	85.70	0.14
	07/20/94				13.97	85.90	0.20
	10/24/94				14.21	85.66	-0.24
	01/24/95				13.78	86.09	0.43
	04/02/95				14.05	85.82	-0.27
	07/31/95				14.17	85.70	-0.12
	10/16/95				14.07	85.80	0.10
	01/10/96				14.11	85.76	-0.04
	04/09/96				14.31	85.56	-0.20
	07/20/96				15.20	84.67	-0.89
	10/21/96				13.44	86.43	1.76
	01/21/97				12.69	87.18	0.75
	04/08/97				12.52	87.35	0.17
MW-6	01/23/91	35.00	Protective Casing	100.84	19.59	81.25	
	09/13/91				17.43	83.41	2.16
	11/21/91				16.30	84.54	1.13
	03/16/93				15.57	85.27	0.73
	01/09/94				16.42	84.42	-0.85
	04/19/94				16.29	84.55	0.13
	07/19/94				15.79	85.05	0.50
	10/24/94				15.83	85.01	-0.04
	01/24/95				15.94	84.90	-0.11
	04/02/95				16.38	84.46	-0.44
	07/31/95				15.88	84.96	0.50
	10/16/95				16.01	84.83	-0.13
	01/10/96				16.52	84.32	-0.51
	04/09/96				16.70	84.14	-0.18
	07/21/96				17.26	83.58	-0.56
	10/21/96				15.62	85.22	1.64
	01/21/97				15.21	85.63	0.41
	04/08/97				15.30	85.54	-0.09
MW-7	01/23/91	35.00	Protective Casing	100.23	19.01	81.22	
	09/13/91				17.43	82.80	1.58
	11/21/91				16.00	84.23	1.43
	03/16/93				14.91	85.32	1.09
	01/09/94				15.99	84.24	-1.08
	04/19/94				15.83	84.40	0.16
	07/19/94				15.24	84.99	0.59
	10/24/94				15.32	84.91	-0.08
	01/24/95				15.54	84.69	-0.22
	04/02/95				16.00	84.23	-0.46
	07/31/95				15.57	84.66	0.43
	10/16/95				15.61	84.62	-0.04
	01/10/96				16.13	84.10	-0.52
	04/09/96				16.30	83.93	-0.17
	07/21/96				16.81	83.42	-0.51
	10/21/96				15.15	85.08	1.66
	01/21/97				14.81	85.42	0.34
	04/08/97				14.91	85.32	-0.10
MW-8	01/23/91	35.00	Protective Casing	101.47	20.16	81.31	
	09/13/91				18.80	82.67	1.36
	11/21/91				17.29	84.18	1.51
	03/16/93				16.03	85.44	1.26
	01/09/94				17.23	84.24	-1.20

TABLE 1. GROUND-WATER MEASUREMENTS AND ELEVATIONS, DOWELL, ARTESIA, NEW MEXICO.

WELL NUMBER	DATE MEASURED	TOTAL WELL DEPTH (Ft)	MEASURING POINT	MEASURING POINT ELEVATION* (ft)	DEPTH TO GROUND WATER (ft)	STATIC WATER ELEVATION (Ft)	DIFFERENCE FROM PRIOR MEASUREMENT
MW-8 Cont.	04/19/94				17.05	84.42	0.18
	07/19/94				16.50	84.97	0.55
	10/24/94				16.56	84.91	-0.06
	01/24/95				16.79	84.68	-0.23
	04/02/95				17.24	84.23	-0.45
	07/31/95				16.94	84.53	0.30
	10/16/95				16.88	84.59	0.06
	01/10/96				17.38	84.09	-0.50
	04/09/96				17.54	83.93	-0.16
	07/21/96				18.10	83.37	-0.56
	10/21/96				16.40	85.07	1.70
	11/22/96				16.42	85.05	-0.02
	01/21/97				16.05	85.42	0.37
	04/08/97				16.11	85.36	-0.06
MW-9	01/26/91	30.00	Protective Casing	102.18	20.08	82.10	
	09/13/91				18.93	83.25	1.15
	11/21/91				17.35	84.83	1.58
	03/16/93				16.19	85.99	1.16
	01/09/94				17.31	84.87	-1.12
	04/19/94				17.33	84.85	-0.02
	07/19/94				16.85	85.33	0.48
	10/24/94				17.05	85.13	-0.20
	01/24/95				16.92	85.26	0.13
	04/02/95				17.23	84.95	-0.31
	07/31/95				17.30	84.88	-0.07
	10/16/95				17.16	85.02	0.14
	01/10/96				17.39	84.79	-0.23
	04/09/96				17.58	84.60	-0.19
	07/21/96				18.38	83.80	-0.80
	10/21/96				16.65	85.53	1.73
	01/21/97				16.12	86.06	0.53
	04/08/97				16.04	86.14	0.08
MW-10	01/26/91	30.00	Protective Casing	101.34	19.68	81.66	
	09/13/91				18.56	82.78	1.12
	11/21/91				16.96	84.38	1.60
	03/16/93				15.64	85.70	1.32
	01/09/94				16.89	84.45	-1.25
	04/19/94				16.73	84.61	0.16
	07/19/94				16.29	85.05	0.44
	10/24/94				16.39	84.95	-0.10
	01/24/95				16.48	84.86	-0.09
	04/02/95				16.88	84.46	-0.40
	07/31/95				16.82	84.52	0.06
	10/16/95				16.65	84.69	0.17
	01/10/96				17.01	84.33	-0.36
	04/09/96				17.20	84.14	-0.19
	07/21/96				17.85	83.49	-0.65
	10/21/96				16.13	85.21	1.72
	01/21/97				15.73	85.61	0.40
	04/08/97				15.70	85.64	0.03
MW-11	01/26/91	30.00	Protective Casing	100.60	19.27	81.33	
	09/13/91				17.81	82.79	1.46
	11/21/91				16.35	84.25	1.46
	03/16/93				15.20	85.40	1.15
	01/09/94				16.31	84.29	-1.11
	04/19/94				16.17	84.43	0.14
	07/19/94				15.63	84.97	0.54
	10/24/94				15.72	84.88	-0.09
	01/24/95				15.89	84.71	-0.17
	04/02/95				16.33	84.27	-0.44
	07/31/95				16.03	84.57	0.30
	10/16/95				16.00	84.60	0.03
	01/10/96				16.45	84.15	-0.45
	04/09/96				16.62	83.98	-0.17
	07/21/96				17.21	83.39	-0.59
	10/21/96				15.52	85.08	1.69

TABLE 1. GROUND-WATER MEASUREMENTS AND ELEVATIONS, DOWELL, ARTESIA, NEW MEXICO.

WELL NUMBER	DATE MEASURED	TOTAL WELL DEPTH (Ft)	MEASURING POINT	MEASURING POINT ELEVATION* (ft)	DEPTH TO GROUND WATER (ft)	STATIC WATER ELEVATION (Ft)	DIFFERENCE FROM PRIOR MEASUREMENT
MW-11 Cont.	01/21/97				15.15	85.45	0.37
	04/08/97				15.19	85.41	-0.04
MW-12	01/26/91	34.00	Protective Casing	100.69	19.24	81.45	
	09/13/91				17.59	83.10	1.65
	11/21/91				16.21	84.48	1.38
	03/16/93				15.22	85.47	0.99
	01/09/94				16.25	84.44	-1.03
	04/19/94				16.13	84.56	0.12
	07/19/94				15.63	85.06	0.50
	10/24/94				15.73	84.96	-0.10
	01/24/95				15.80	84.89	-0.07
	04/02/95				16.23	84.46	-0.43
	07/31/95				15.96	84.73	0.27
	10/16/95				15.93	84.76	0.03
	01/10/96				16.35	84.34	-0.42
	04/09/96				16.52	84.17	-0.17
	07/21/96				17.15	83.54	-0.63
	10/21/96				15.48	85.21	1.67
	01/21/97				15.04	85.65	0.44
	04/08/97				15.10	85.59	-0.06
MW-13	09/13/91	45.00	Protective Casing	99.25	15.10	84.15	
	11/21/91				13.95	85.30	1.15
	03/16/93				13.22	86.03	0.73
	01/09/94				14.03	85.22	-0.81
	04/19/94				13.90	85.35	0.13
	07/20/94				13.70	85.55	0.20
	10/24/94				13.86	85.39	-0.16
	01/24/95				13.56	85.69	0.30
	04/02/95				13.87	85.38	-0.31
	07/31/95				13.84	85.41	0.03
	10/16/95				13.83	85.42	0.01
	01/10/96				14.02	85.23	-0.19
	04/09/96				14.20	85.05	-0.18
	07/20/96				15.04	84.21	-0.84
	10/21/96				13.31	85.94	1.73
	01/21/97				12.70	86.55	0.61
	04/08/97				12.48	86.77	0.22
MW-14	09/13/91	35.00	Protective Casing	98.74	14.60	84.14	
	11/21/91				13.61	85.13	0.99
	03/16/93				13.00	85.74	0.61
	01/09/94				13.71	85.03	-0.71
	04/19/94				13.63	85.11	0.08
	07/20/94				13.39	85.35	0.24
	10/24/94				13.48	85.26	-0.09
	01/25/95				13.26	85.48	0.22
	04/02/95				13.61	85.13	-0.35
	07/31/95				13.44	85.30	0.17
	10/16/95				13.52	85.22	-0.08
	01/10/96				13.76	84.98	-0.24
	04/09/96				13.96	84.78	-0.20
	07/20/96				14.74	84.00	-0.78
	10/21/96				13.03	85.71	1.71
	01/21/97				12.47	86.27	0.56
	04/08/97				12.44	86.30	0.03
MW-15	09/13/91	34.00	Protective Casing	100.05	16.30	83.75	
	11/21/91				15.01	85.04	1.29
	03/16/93				13.95	86.10	1.06
	01/09/94				14.91	85.14	-0.96
	04/19/94				14.80	85.25	0.11
	07/20/94				14.56	85.49	0.24
	10/24/94				14.73	85.32	-0.17
**	01/24/95				16.00	84.05	-1.27
	04/02/95				14.80	85.25	1.20
	07/31/95				14.82	85.23	-0.02
	10/16/95				14.74	85.31	0.08

TABLE 1. GROUND-WATER MEASUREMENTS AND ELEVATIONS, DOWELL, ARTESIA, NEW MEXICO.

WELL NUMBER	DATE MEASURED	TOTAL WELL DEPTH (Ft)	MEASURING POINT	MEASURING POINT ELEVATION* (ft)	DEPTH TO GROUND WATER (ft)	STATIC WATER ELEVATION (Ft)	DIFFERENCE FROM PRIOR MEASUREMENT
MW-15 Cont.	01/10/96				14.95	85.10	-0.21
	04/09/96				15.11	84.94	-0.16
	07/20/96				15.96	84.09	-0.85
	10/21/96				14.22	85.83	1.74
	01/21/97				13.64	86.41	0.58
	04/08/97				13.53	86.52	0.11
MW-17D	04/02/95	19.00	Protective Casing	101.29	16.80	84.49	
	07/31/95				16.48	84.81	0.32
	10/16/95				16.51	84.78	-0.03
	01/10/96				16.90	84.39	-0.39
	04/09/96				17.10	84.19	-0.20
	07/21/96				17.70	83.59	-0.60
	10/21/96				16.02	85.27	1.68
	01/21/97				15.60	85.69	0.42
	04/08/97				15.64	85.65	-0.04
MW-17A	04/02/95	26.00	Protective Casing	100.57	16.05	84.52	
	07/31/95				15.75	84.82	0.30
	10/16/95				15.77	84.80	-0.02
	01/10/96				16.18	84.39	-0.41
	04/09/96				16.37	84.20	-0.19
	07/21/96				16.98	83.59	-0.61
	10/21/96				15.30	85.27	1.68
	01/21/97				14.88	85.69	0.42
	04/08/97				14.92	85.65	-0.04
MW-17B	04/02/95	34.00	Protective Casing	101.28	16.79	84.49	
	07/31/95				16.50	84.78	0.29
	10/16/95				16.51	84.77	-0.01
	01/10/96				16.92	84.36	-0.41
	04/09/96				17.10	84.18	-0.18
	07/21/96				17.71	83.57	-0.61
	10/21/96				16.02	85.26	1.69
	01/21/97				15.64	85.64	0.38
	04/08/97				15.67	85.61	-0.03
MW-17C	04/02/95	61.00	Protective Casing	101.33	16.93	84.40	
	07/31/95				16.66	84.67	0.27
	10/16/95				16.64	84.69	0.02
	01/10/96				17.08	84.25	-0.44
	04/09/96				17.25	84.08	-0.17
	07/21/96				17.85	83.48	-0.60
	10/21/96				16.17	85.16	1.68
	01/21/97				15.75	85.58	0.42
	04/08/97				15.80	85.53	-0.05
MW-18	04/02/95	28.00	Protective Casing	98.72	14.77	83.95	
	07/31/95				14.21	84.51	0.56
	10/16/95				14.25	84.47	-0.04
	01/10/96				14.90	83.82	-0.65
	04/09/96				15.05	83.67	-0.15
	07/21/96				15.44	83.28	-0.39
	10/21/96				13.78	84.94	1.66
	11/22/96				13.84	84.88	-0.06
	01/21/97				13.54	85.18	0.30
	04/08/97				13.66	85.06	-0.12
MW-19	04/02/95	28.00	Protective Casing	99.08	14.86	84.22	
	07/31/95				14.29	84.79	0.57
	10/16/95				14.39	84.69	-0.10
	01/10/96				14.98	84.10	-0.59
	04/09/96				15.14	83.94	-0.16
	07/21/96				15.62	83.46	-0.48
	10/21/96				14.00	85.08	1.62
	11/22/96				14.03	85.05	-0.03
	01/21/97				13.69	85.39	0.34
	04/08/97				13.76	85.32	-0.07

TABLE 1. GROUND-WATER MEASUREMENTS AND ELEVATIONS, DOWELL, ARTESIA, NEW MEXICO.

WELL NUMBER	DATE MEASURED	TOTAL WELL DEPTH (Ft)	MEASURING POINT	MEASURING POINT ELEVATION* (ft)	DEPTH TO GROUND WATER (ft)	STATIC WATER ELEVATION (Ft)	DIFFERENCE FROM PRIOR MEASUREMENT
MW-20	11/22/96	28.00	Protective Casing	101.09	16.28	84.81	
	01/21/97				16.08	85.01	0.20
	04/08/97				16.04	85.05	0.04
MW-21	11/22/96	25.00	Protective Casing	98.88	14.36	84.52	
	01/21/97				14.26	84.62	0.10
	04/08/97			98.89	14.41	84.48	-0.14
MW-22	11/22/96	24.50	Protective Casing	97.16	12.88	84.28	
	01/21/97				12.94	84.22	-0.06
	04/08/97			97.14	13.42	83.72	-0.50
MW-23	11/22/96	25.00	Protective Casing	97.33	12.72	84.61	
	01/21/97				12.59	84.74	0.13
	04/08/97			97.30	13.07	84.23	-0.51
MW-24	11/22/96	27.00	Protective Casing	103.42	17.91	85.51	
	01/21/97				17.56	85.86	0.35
	04/08/97			103.41	17.40	86.01	0.15
MW-25	04/08/97	25.00	Protective Casing	97.64	14.23	83.41	-
MW-26	04/08/97	25.00	Protective Casing	96.11	13.06	83.05	-
MW-27	04/08/97	25.00	Protective Casing	96.17	13.06	83.11	-

NOTES:

NM = not measured

* = measured from a temporary benchmark of arbitrary elevation = 100.00 feet. Benchmark is located on the concrete right up against the east shop wall, at the northeast corner of the shop.

** = water level measurement may be in error

TABLE 2. RESULTS FROM LABORATORY ANALYSES OF GROUND-WATER SAMPLES, MAJOR CATIONS AND ANIONS (DISSOLVED), DOWELL, ARTESIA, NEW MEXICO

WELL NUMBER	SAMPLE DATE	MAJOR CATIONS				MAJOR ANIONS			
		CALCIUM (mg/L)	SODIUM (mg/L)	POTASSIUM (mg/L)	MAGNESIUM (mg/L)	CARBONATE (mg/L)	BICARBONATE (mg/L)	SULFATE (mg/L)	CHLORIDE (mg/L)
MW-1	01/10/96	455	91.7	1.1	241	ND(2)	248	1700	157
MW-9	11/16/95	201	237	0.68 J	329	ND(10)	592	844	1260
	01/10/96	545	217	ND(1)	336	ND(4)	606	786	1250
	04/13/96	467	239	ND(1)	312	ND(4)	540	887	1050
	07/22/96	508	236	ND(1)	328	ND(5)	626	751	1520
MW-10	11/16/95	122	215	1.25	246	ND(2)	190	2170	208
	01/10/96	548	204	1.15	253	ND(2)	187	2200	192
	04/13/96	506	215	1.01	237	ND(2)	195	2120	201
	07/22/96	482	199	1.01	234	ND(2)	190	2310	227
MW-15	11/16/95	93	132	0.48 J	241	ND(4)	422	1330	286
	01/10/96	407	122	0.38J	252	ND(4)	443	1450	344
	04/13/96	355	122	ND(1)	222	ND(4)	443	1200	210
	07/21/96	335	114	ND(1)	215	ND(5)	452	1330	270
MW-17A	07/22/96	581	526	ND(1)	281	ND(2)	354	2410	955
MW-17B	07/22/96	570	397	1.39	354	ND(2)	256	2730	800
MW-17C	07/22/96	1390	448	2.51	640	ND(5)	420	916	4810
MW-17D	07/22/96	593	506	7.57	219	ND(2)	375	2110	877

Notes:
mg/L = milligrams per liter (equivalent to parts per million)
ND(2) = ion not detected at concentration above method detection limit in parentheses
J = ion detected at concentration above instrument detection limit but below method detection limit

K:\172040\80-125L\PS-497 05/08/97 08:59

MW-24 86.01
MW-20 85.05
MW-21 84.48
MW-25 83.41
MW-26 83.05
MW-22 83.72
MW-27 83.11
MW-18 85.06
MW-10 85.64
MW-8 85.36
MW-7 85.32
MW-11 85.41
MW-12 85.59
MW-17C 85.53
MW-17B 85.61
MW-17A/D 85.65/85.65
MW-19 85.32
MW-23 84.23
MW-9 86.14
MW-3 85.90
MW-6 85.54
MW-15 86.52
MW-13 86.77
MW-14 86.30
MW-5 87.35
MW-1 87.59
MW-16
MW-2 87.35
MW-4 88.04

DOWELL
50 FT. COUNTY RIGHT-OF-WAY
60 FT. COUNTY RIGHT-OF-WAY
PROPERTY LINE
SECURITY FENCE
SOUTHEAST READY MIX
GRAVEL PARKING AREA
DOWELL FACILITY
EXISTING FENCE
RICHEY AVENUE
CITY WATER LINE
GAS LINE
COMPRESSOR
FIRE SAND SILOS
BULK POWER
CHEMICAL HOUSE
DRUM STORAGE
WASTEWATER TANK
FORMER ACID PLANT
ACID LOADING SLAB
WELL EQUIPMENT STORAGE
FORMER SUMP
WASH BAY
WASH BAY SVE SYSTEM
ABOVE GROUND OIL STORAGE
FORMER FUEL USER
FORMER FUEL ISLAND
MAINTENANCE SHOP
MAINTENANCE SHOP SVE SYSTEM
SEPTIC TANKS
PILOT HOLE
TBM

86.0 85.5 85.0 84.5 84.0 83.5 87.5 87.0 86.5

EXPLANATION

- MW-12 85.59 — WWC MONITORING WELL LOCATION AND IDENTIFICATION GROUND-WATER ELEVATION
- MW-6 85.54 — REED AND ASSOCIATES MONITORING WELL LOCATION AND IDENTIFICATION GROUND-WATER ELEVATION
- TBM — TEMPORARY BENCH MARK
- 85.0 — POTENTIOMETRIC SURFACE CONTOUR
- AIR PIPING
- SVE EXTRACTION WELL

0 120 FT.
SCALE

BASE MAP MODIFIED FROM REED & ASSOCIATES

FIGURE 1

POTENTIOMETRIC SURFACE
(APRIL 8, 1997)

DOWELL, A DIVISION OF
SCHLUMBERGER TECHNOLOGY CORPORATION
ARTESIA, NEW MEXICO

Western Water Consultants, Inc. WWC Engineering
Engineering Environmental Mining Water Resources

DISCHARGE PLAN GW-114
RENEWAL APPLICATION
ATTACHMENT #10

FACILITY CLOSURE PLAN, AND OTHER INFORMATION AS IS NECESSARY TO DEMONSTRATE COMPLIANCE WITH ANY OTHER OCD RULES, REGULATIONS AND/OR ORDERS.

SPILL REPORTING WILL BE ACCOMPLISHED IN ACCORDANCE WITH NMOCD RULE 116 ANS WQCC SECTION 1203 SPILL REPORTING.

THE FACILITY CLOSURE PLAN INCLUDES VADOSE REMEDIATION BY SOIL VAPOR EXTRACTION (SVE) AND GROUNDWATER REMEDIATION BY NATURAL ATTENUATION (RNA) TO INCLUDE COMPLIANCE GROUNDWATER MONITORING.

A "STAGE II" OR REMEDIAL ACTION PLAN (RAP) WILL BE INCLUDED WITH THE RENEWAL OF DISCHARGE PLAN GW-114. THE "STAGE II" OR RAP WILL BE SUBMITTED WITH THE OCTOBER 1997 QUARTERLY MONITORING REPORT. THE PARAMETERS FOR MONITORING RNA WILL BE INCLUDED IN THE RAP.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☒ Telephone ☐ Personal	Time 8:15 AM (MST)	Date 7-25-97

Originating Party	Other Parties
Pat Sanchez NMOCD	Mr. John Miller Schlumberger Oilfield Services.

Subject: DS Artesia - Discharge Plan Renewal GW-114 and "STAGE II" or Rem. Action Plan.

Discussion: DS will submit the discharge Plan renewal application for GW-114 on/before August 2, 1997. (Note: Permit expires December 2, 1997) - under section 13 of the renewal application a statement regarding the "Stage II" or Rem. Action Plan will be included, the Section will also say that the "Stage II" or Rem Action Plan will be submitted with the October 1997 Quarterly monitoring report - The parameters for monitoring the RNA (Remediation by Natural Attenuation) will be included.

Conclusions or Agreements

Mr. Miller and I agreed that this was what was decided in the July 10, 1997 meeting in Santa Fe, NM between OCD and DS.

Distribution: File, OCD Artesia
Mr. John Miller - Via Fax

Signed: Patricia V. Sanchez

Pat Sanchez

From: Roger Anderson
Sent: Monday, June 23, 1997 1:38 PM
To: Pat Sanchez
Subject: Read: DS - Artesia - Groundwater investigation and natural attenuation meeting.
Importance: High

Your message

To: Roger Anderson
Cc: Bill Olson
Subject: DS - Artesia - Groundwater investigation and natural attenuation meeting.
Sent: 6/20/97 8:59:00 AM

was read on 6/23/97 1:38:00 PM

Pat Sanchez

From: Bill Olson
Sent: Friday, June 20, 1997 9:26 AM
To: Pat Sanchez
Subject: Read: DS - Artesia - Groundwater investigation and natural attenuation meeting.
Importance: High

Your message

To: Roger Anderson
Cc: Bill Olson
Subject: DS - Artesia - Groundwater investigation and natural attenuation meeting.
Sent: 6/20/97 8:59:00 AM

was read on 6/20/97 9:26:00 AM

Pat Sanchez

From: System Administrator
Sent: Friday, June 20, 1997 8:59 AM
To: Roger Anderson
Cc: Bill Olson
Subject: Delivered: DS - Artesia - Groundwater investigation and natural attenuation meeting.
Importance: High

Your message

To: Roger Anderson
Cc: Bill Olson
Subject: DS - Artesia - Groundwater investigation and natural attenuation meeting.
Sent: 6/20/97 8:59:31 AM

was delivered to the following recipient(s):

Roger Anderson on 6/20/97 8:59:34 AM
Bill Olson on 6/20/97 8:59:34 AM

Pat Sanchez

From: Pat Sanchez
Sent: Friday, June 20, 1997 8:59 AM
To: Roger Anderson
Cc: Bill Olson
Subject: DS - Artesia - Groundwater investigation and natural attenuation meeting.
Importance: High

Roger and Bill,

Mr. John Miller with DS will be here on Thursday July 10, 1997 at 9:00 AM to discuss the ongoing investigation and remedial options evaluation for the DS Artesia facility. Please plan on attending the meeting, I have reserved the small conference room for the meeting.

Thanks for you attention to this matter.

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

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

June 20, 1997

CERTIFIED MAIL
RETURN RECEIPT NO. P-326-936-618

Mr. John Miller
Remediation Manager
Schlumberger Oilfield Services (DS)
300 Schlumberger Drive
Sugar Land, TX 77478

RE: Quarterly Report - dated May 29, 1997 and Initial Evaluation of Natural Attenuation - dated May 1997.
Dowell Schlumberger - Artesia Facility (GW-114)

Dear Mr. Miller:

The New Mexico Oil Conservation Division (OCD) has reviewed **Dowell Schlumbergers'** two above captioned reports for the DS GW-114 facility in Artesia, NM. The two above mentioned reports discuss the ongoing groundwater monitoring, vadose zone remediation by SVE, and groundwater contamination delineation, and RNA (Remediation by Natural Attenuation) feasibility for groundwater at the site.

1. The OCD approves of the location of three proposed delineation/monitor wells shown in the May 29, 1997 report from DS shown in Figure 1. The construction of the wells will be as previously approved by the OCD.

2. Regarding the results of the RNA evaluation the OCD request that DS provide the OCD with the relevant technical references sited in Section 7 of the RMT, Inc. report. Also, the OCD would like to meet with DS at our Santa Fe Division Office on July 10, 1997 to discuss the RNA report, and also the approach(es) that DS is in the process of evaluating for remediation at the site other than/in addition to RNA and compliance monitoring.

Note, that OCD approval of the construction of the three additional monitor wells proposed in the May 29, 1997 report from DS does not relieve DS of liability should the plan fail to adequately characterize and monitor the nature of the groundwater and vadose zone contamination. Also, OCD approval does not relieve DS from responsibility to comply with other federal, state, and local rules/regulations that may apply to this project.

If you have any questions regarding this matter feel free to call me at (505)-827-7156.

Sincerely,

Patricio W. Sanchez
Petroleum Engineering Specialist
Environmental Bureau - OCD

c: OCD Artesia Office

P 326 936 618

US Postal Service
Receipt for Certified Mail
No Insurance Coverage Provided.
Do not use for International Mail *(See reverse)*

Sent to DS - Artesia, GW-114	
Street & Number NATATTN CERMAN. May 29, 1997	
Post Office, State, & ZIP Code Mr. Miller.	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date	

PS Form **3800**, April 1995

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

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

June 11, 1997

CERTIFIED MAIL
RETURN RECEIPT NO. P-410-431-405

Mr. John Miller
Remediation Manager
Schlumberger Oilfield Services
300 Schlumberger Drive
Sugar Land, TX 77478

RE: Discharge Plan GW-114
Dowell Schlumberger
Artesia facility
Eddy County, New Mexico

Dear Mr. Miller:

On December 2, 1992, the groundwater discharge plan, GW-114, for the **Artesia Facility** located in the SE/4 SE/4, Section 4, Township 17 South, Range 26 East, NMPM, Eddy County, New Mexico, was approved by the Director of the New Mexico Oil Conservation Division (OCD). This discharge plan was required and submitted pursuant to Water Quality Control Commission (WQCC) regulations and was renewed for a period of five years. **The approval will expire on December 2, 1997.**

If the facility continues to have potential or actual effluent or leachate discharges and Dowell Schlumberger wishes to continue operation, the discharge plan must be renewed. **Pursuant to WQCC Section 3106.F, if an application for renewal is submitted at least 120 days before the discharge plan expires (on or before August 2, 1997), then the existing approved discharge plan for the same activity shall not expire until the application for renewal has been approved or disapproved.** The OCD is reviewing discharge plan submittals and renewals carefully and the review time can extend for several weeks to months. Please indicate whether Dowell Schlumberger has made, or intends to make, any changes in the system, and if so, please include these modifications in the application for renewal.

The discharge plan renewal application for the **Artesia Facility** is subject to WQCC Regulation 3114. Every billable facility submitting a discharge plan renewal will be assessed a fee equal to the filing fee of $50 and a flat fee of $690 for service companies. The $50 filing fee is to be submitted with the discharge plan renewal application and is nonrefundable.

Please make all checks payable to: **NMED-Water Quality Management** and addressed to the OCD Santa Fe Office.

Please submit the original discharge plan renewal application and one copy to the OCD Santa Fe Office and one copy to the OCD Artesia District Office. **Note that the completed and signed application form must be submitted with your discharge plan renewal request.** A copy of the WQCC regulations, discharge plan application form, and guidelines are enclosed. (If you require additional copies of these items notify the OCD at (505)-827-7152. A complete copy of the regulations is also available on OCD's website at **www.emnrd.state.nm.us/ocd.htm**.)

If Dowell Schlumberger no longer has any actual or potential discharges and a discharge plan is not needed, please notify this office. If Dowell Schlumberger has any questions, please do not hesitate to contact Pat Sanchez at (505) 827-7156.

Sincerely,

pws for Roger C. Anderson.

Roger C. Anderson
Environmental Bureau Chief

RCA/pws

c: OCD Hobbs District

P 410 431 405

US Postal Service
Receipt for Certified Mail
No Insurance Coverage Provided.
Do not use for International Mail *(See reverse)*

Sent to DS. GW-114	
Street & Number 6 Man. Reg. Nat.	
Post Office, State, & ZIP Code	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date	

PS Form **3800**, April 1995

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

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

April 29, 1997

CERTIFIED MAIL
RETURN RECEIPT NO. P-288-258-803

Mr. John Miller
Remediation Manager
Schlumberger Oilfield Services
300 Schlumberger Drive
Sugar Land, TX 77478

RE: Quarterly Report - dated March 31, 1997 and Results of Additional Fieldwork - dated April 18, 1997 for the GW-114, Dowell Schlumberger - Artesia Facility

Dear Mr. Miller:

The New Mexico Oil Conservation Division (OCD) has reviewed **Dowell Schlumbergers'** two above captioned reports for the DS GW-114 facility in Artesia, NM. The reports discuss the ongoing groundwater monitoring, vadose zone remediation by SVE, and groundwater contamination delineation at the site.

The report dated April 18, 1997 from DS recommends (3. Proposed Future Fieldwork) that confirmation of the sampling of the three newly installed monitor wells (MW-25, MW-26, and MW-27) be rolled into the second quarter sampling event. According to the March 31, 1997 letter the second quarter sampling event should have taken place April 7-9, 1997. Based on the second Quarter sampling event having taken place, the OCD requires that DS submit a plan to further delineate the extent of the contamination as MW-21, and MW-25, both appear to be contaminated, and thus the lateral extent of the contamination has not been defined. **The proposal for additional groundwater monitor/delineation wells will be submitted to the OCD for review by May 30, 1997 and will include all confirmation sampling that should have taken place on April 7-9, 1997.**

Note, that OCD approval does not relieve Dowell Schlumberger of liability should Dowell Schlumbergers' plan fail to adequately characterize and monitor the nature of the groundwater and vadose zone contamination. Also, OCD approval does not relieve Dowell Schlumberger from responsibility to comply with other federal, state, and local rules/regulations that may apply to this project.

Sincerely,

Patricio W. Sanchez
Petroleum Engineering Specialist
Environmental Bureau
(505)-827-7156

c: OCD Artesia Office

PS Form **3800**, April 1995

US Postal Service
Receipt for Certified Mail
No Insurance Coverage Provided.
Do not use for International Mail *(See reverse)*

Sent to: Miller - DS - Artesia
Street & Number: GW-114
Post Office, State, & ZIP Code:

Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date	

P 288 258 803

Schlumberger Oilfield Services

Oilfield Services Shared Resources

John A. Miller
Remediation Manager

November 4, 1996

Mr. Pat Sanchez
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

Re: Quarterly Activities Report
Dowell Facility, Artesia, New Mexico

Dear Mr. Sanchez:

Enclosed please find two copies of the report of the third quarter monitoring activities of 1996 at the Dowell facility in Artesia, New Mexico.

If you have any questions, or require additional information, please call me at 713 275-8498.

Sincerely,

John A. Miller

JAM:slw
Via Fed-Ex

Enclosure

cc: WWC, Laramie

<See Report DATED Oct. 29, 1996 In Accordian File from WWC>

P.O. Box 2727, Houston, Texas 77252-2727
300 Schlumberger Drive, Sugar Land, Texas 77478
(713) 275-8498 (713) 275-8526 (fax)

Schlumberger

HEALTH, SAFETY & ENVIRONMENT
OILFIELD SERVICES SHARED RESOURCES

DATE: 10/18/96 **NO. PAGES (Including Cover):** 2

TO: PAT SANCHEZ, OCD **FROM:** John A. Miller
Remediation Manager

FAX NO: 505-827-8177 **FAX:** (713) 275-8526

LOCATION: _____ **PHONE:** (713) 275-8498

CC: RICK DEUELL, WWC

MESSAGE ARTESIA SEP 1991 MONITOR WELL COMMENTS FROM NOV 1991 REPORT

1. NOTE FREE PRODUCT IN MW-3
2. SVE INSTALLED IN FEB 1994.
3. SVE EXPANDED IN JAN 3, 1995 REPORT
4. NOTE THE SIGNIFICANT CHANGES IN MONITOR WELL DATA OCCURRING IN 1996. IT TAKES TIME TO SHOW RESULTS.
5. THANKS A LOT FOR THE NOV 8 MEETING

☐ **RESPONSE REQUESTED BY (DATE):** _____

300 Schlumberger Drive
Sugar Land, TX 77478

P.O. Box 2727
Houston, TX 77252

Table 2-1. Ground-Water Measurements and Elevations, Dowell Schlumberger Facility, Artesia, New Mexico.

WELL #	DATE	DEPTH TO GROUND WATER (ft)	MEASURING POINT ELEVATION* (ft)	GROUND-WATER ELEVATION* (ft)	COMMENTS
MW-1	9-13-91	16.04	100.56	84.52	No hydrocarbon odor.
MW-2	9-13-91	15.01	99.56	84.55	Strong hydrocarbon odor; hydrocarbon sheen present.
MW-3	9-13-91	14.66	98.33	83.67	Strong hydrocarbon odor; developed 0.1 ft of product during pump test; only a thin film of product present during bailing.
MW-4	9-13-91	18.54	103.18	84.64	Very slight hydrocarbon odor.
MW-5	9-13-91	15.52	99.87	84.35	Slight hydrocarbon odor.
MW-6	9-13-91	17.43	100.84	83.41	Slight hydrocarbon odor.
MW-7	9-13-91	17.43	100.23	82.80	Slight hydrocarbon odor.
MW-8	9-13-91	18.80	101.47	82.67	Slight hydrocarbon odor.
MW-9	9-13-91	18.93	102.18	83.25	Slight hydrocarbon odor.
MW-10	9-13-91	18.56	101.34	82.78	No hydrocarbon odor.
MW-11	9-13-91	17.81	100.60	82.79	Moderate hydrocarbon odor.
MW-12	9-13-91	17.59	100.69	83.10	Strong hydrocarbon odor.
MW-13	9-13-91	15.10	99.25	84.15	Slight hydrocarbon odor.
MW-14	9-13-91	14.60	98.74	84.14	Moderate hydrocarbon odor.
MW-15	9-13-91	16.30	100.05	83.75	Moderate hydrocarbon odor.
MW-16	9-13-91	18.83	103.37	84.54	No hydrocarbon odor.

NOTE:

* = measured from a temporary benchmark of arbitrary elevation = 100.00 feet. Benchmark is located on the concrete right up against the east shop wall, at the northeast corner of the shop.

Schlumberger

HEALTH, SAFETY & ENVIRONMENT
OILFIELD SERVICES SHARED RESOURCES

DATE: 10/18/96 **NO. PAGES (Including Cover):** 2

TO: PAT SANCHEZ **FROM:** John A. Miller
Remediation Manager

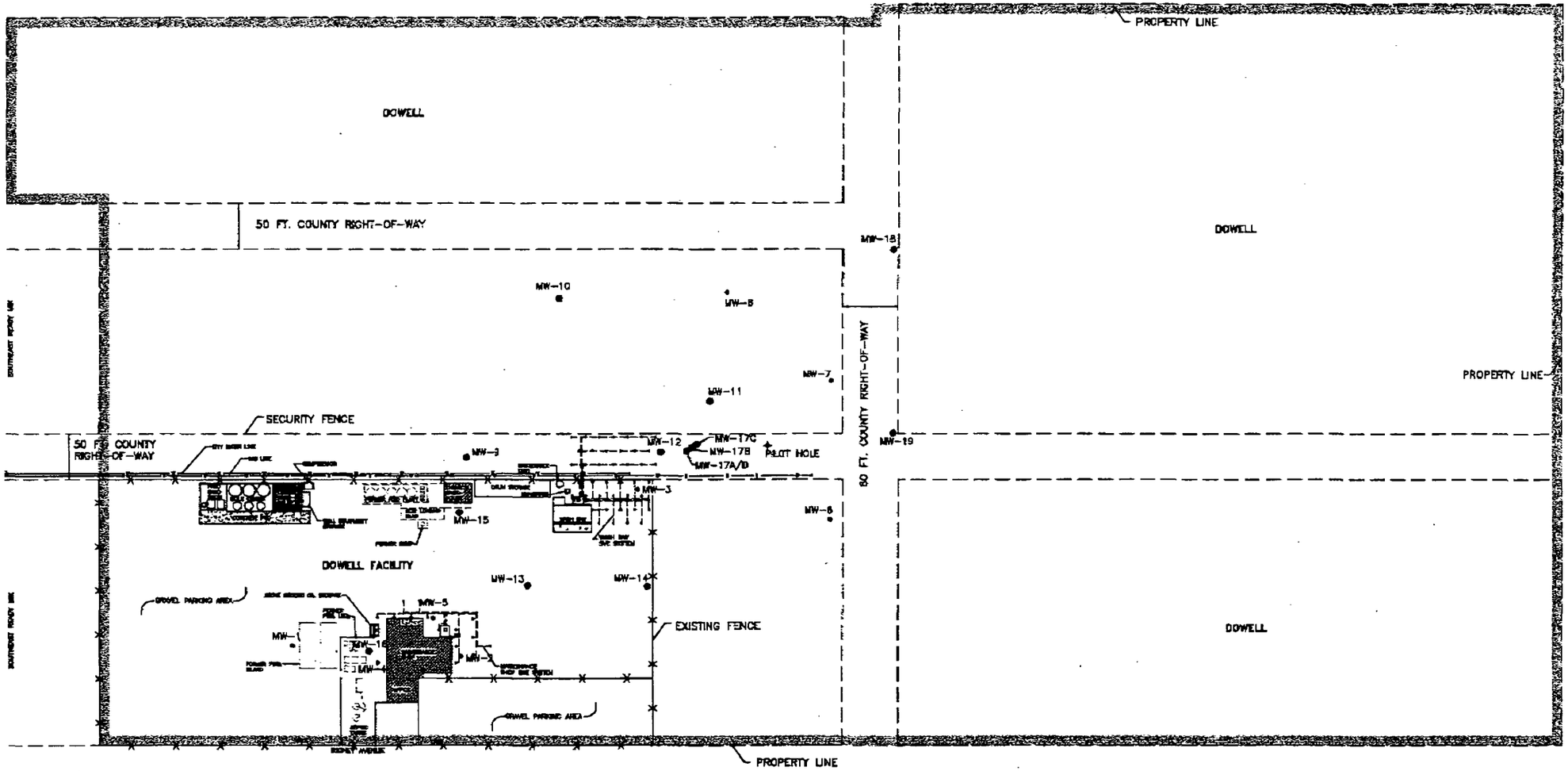
FAX NO: 505-827-8177 **FAX:** (713) 275-8526

LOCATION: **PHONE:** (713) 275-8498
cc: RICK DEVELL, WWC

MESSAGE ARTESIA PROPERTY BOUNDARY.

PAT - THIS SITE MAP SHOWS the ADDITIONAL PROPERTY WE PURCHASED IN 1995.

☐ **RESPONSE REQUESTED BY (DATE):** _____



EXPLANATION

- MW-14 — WWC MONITORING WELL LOCATION, IDENTIFICATION, AND GROUND-WATER ELEVATION
- MW-8 — REED AND ASSOCIATES MONITORING WELL LOCATION, IDENTIFICATION, AND GROUND-WATER ELEVATION
- TEMPORARY BENCH MARK
- AIR PIPING
- SVE EXTRACTION WELL

0 120 FT.

SCALE

BASE MAP MODIFIED FROM REED & ASSOCIATES

SITE MAP

DOWELL, A DIVISION OF SCHLUMBERGER TECHNOLOGY CORPORATION
ARTESIA, NEW MEXICO

Western Water Consultants, Inc.

Schlumberger

HEALTH, SAFETY & ENVIRONMENT
OILFIELD SERVICES SHARED RESOURCES

DATE: 10/18/96 **NO. PAGES (Including Cover):** 3

TO: Pat Sanchez, OCD **FROM:** John A. Miller
Remediation Manager

FAX NO: _____ **FAX:** (713) 275-8526

LOCATION: _____ **PHONE:** (713) 275-8498
cc: Rick Deuell, WWC

MESSAGE Artesia Chlorinated And Aromatic Hydrocarbon Distribution In Sept 1991.

- Note MW-3 = 16.6 ppm Aromatic
- Note MW-3 = 4.03 ppm Chlorinated

These figures are from the Additional Assessment and Remediation Feasibility Testing Report Nov 1991. The Report Included An Aquifer Test And An SVE Pilot Test.

☐ **RESPONSE REQUESTED BY (DATE):** _____

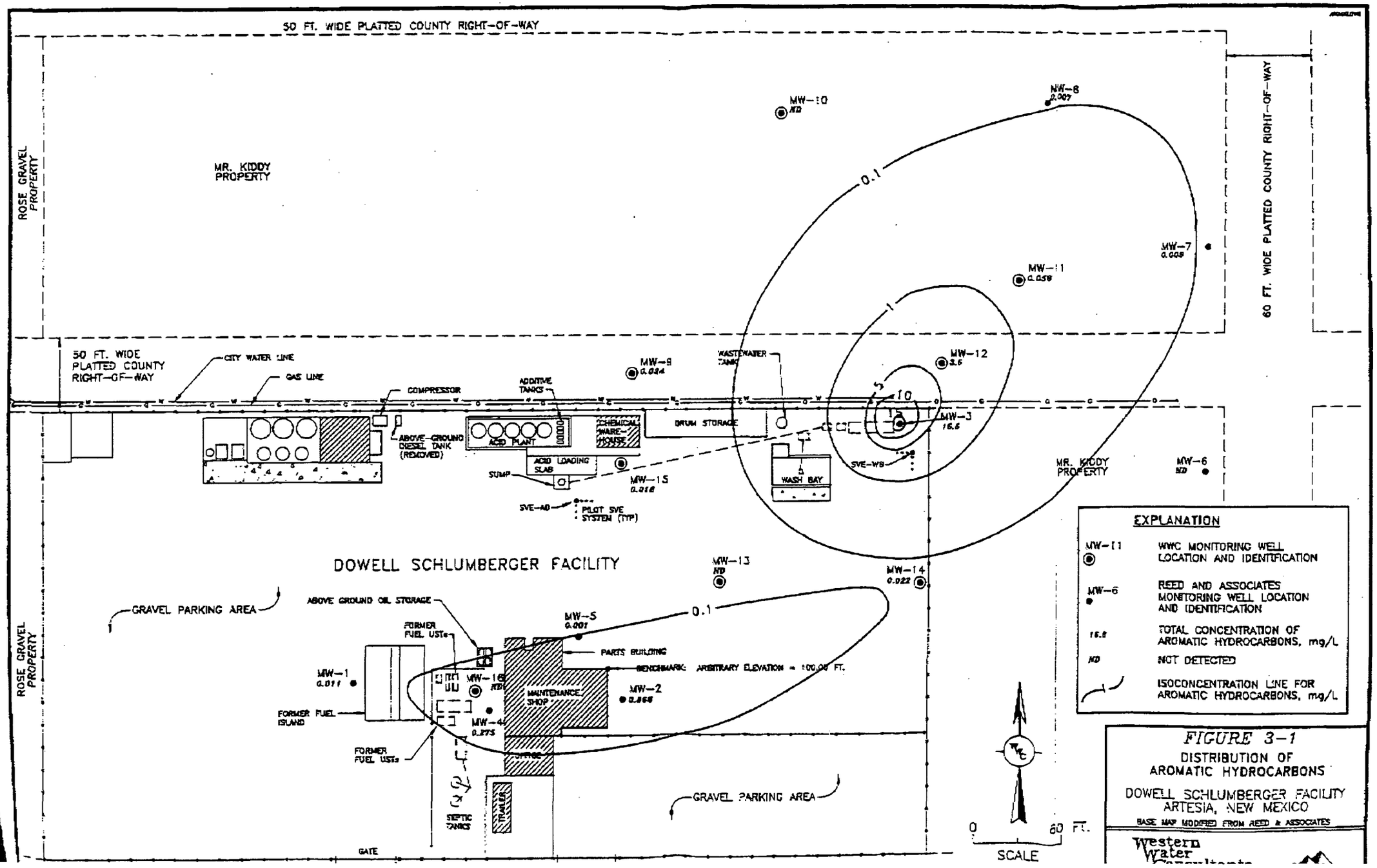


FIGURE 3-1

DISTRIBUTION OF AROMATIC HYDROCARBONS

DOWELL SCHLUMBERGER FACILITY
ARTESIA, NEW MEXICO

BASE MAP MODIFIED FROM REED & ASSOCIATES

Western Water

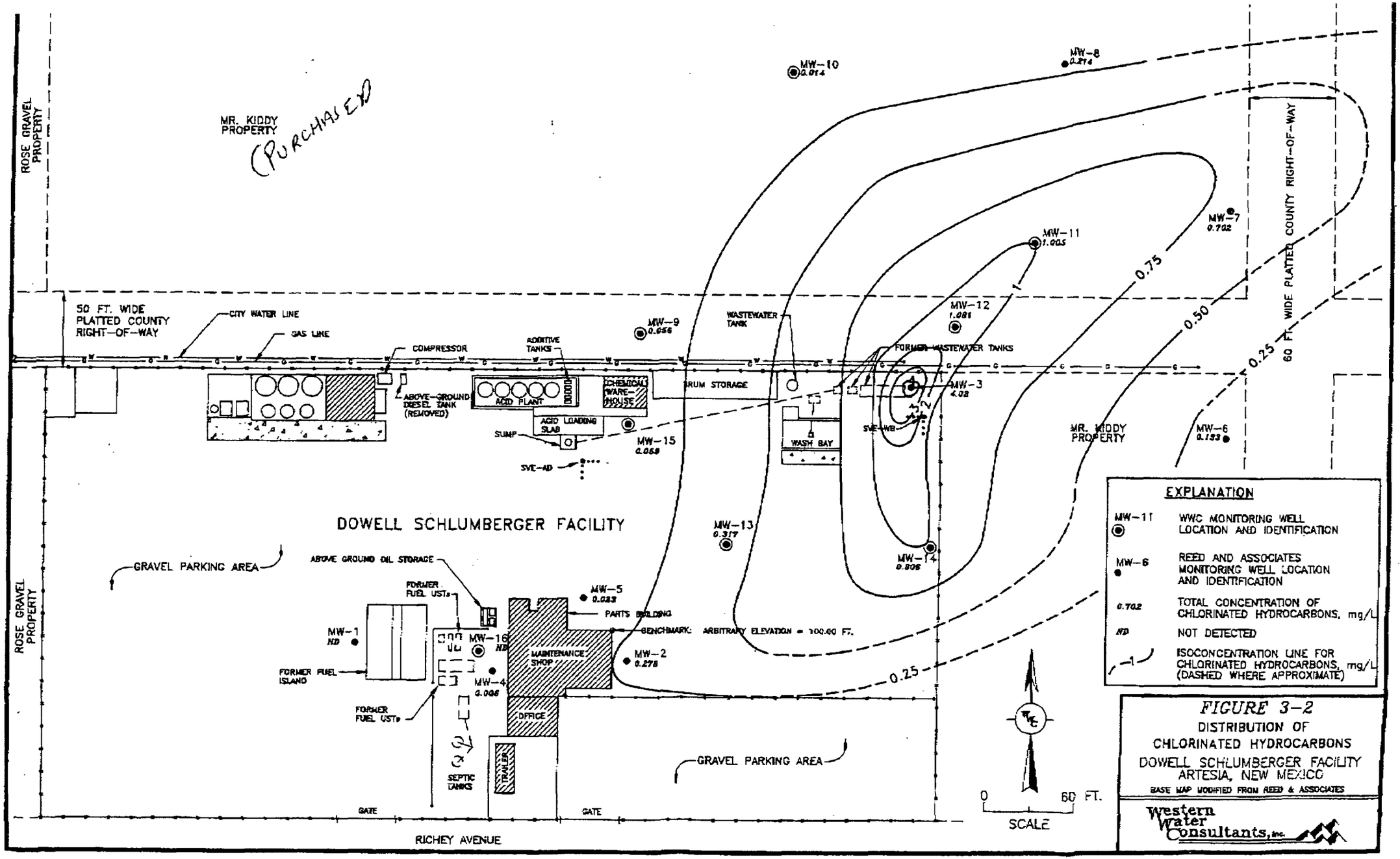


FIGURE 3-2

DISTRIBUTION OF CHLORINATED HYDROCARBONS

DOWELL SCHLUMBERGER FACILITY

ARTESIA, NEW MEXICO

BASE MAP MODIFIED FROM REED & ASSOCIATES

Western Water Consultants, Inc.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☒ Telephone ☐ Personal	Time 8:00 AM	Date 10-18-96

Originating Party	Other Parties
Pat Sanchez - OCD (Returning Voice Mail from yesterday)	John Miller - Dowell Schlumberger 713-275-8498

Subject Dowell - Artesia, Letter from OCD dated Oct. 17, 1996 and conditions (No. 3)

Discussion John said he would like to meet w/ OCD on Friday Nov. 8, 1996 to present more data and give us a status update. I requested that John as prepare the following: ① A Graph of time vs. Ground elev.'s Chlorinated Solvent Concentration for each well. ② And a map for each Quarter of the Potenti. Surface with an isoconcentration map of the chlorinated solvent concentration superimposed on it.

Conclusions or Agreements John will meet w/OCD on Friday November 8, 1996 at 9:00 AM — He will present their findings and ① & ② from Above. I let John know that the delineation was not complete, and that the deadlines from the letter dated Oct. 17, 1996 from OCD still apply.

Distribution File

Signed Patricia W. Sanchez

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

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

October 17, 1996

CERTIFIED MAIL
RETURN RECEIPT NO. P-288-258-670

Mr. John Miller
Remediation Manager
Schlumberger Oilfield Services
300 Schlumberger Drive
Sugar Land, TX 77478

RE: Quarterly Sampling
GW-114, Dowell Schlumberger - Artesia
Groundwater Monitor Wells

Dear Mr. Miller:

The New Mexico Oil Conservation Division (OCD) has reviewed **Dowell Schlumbergers** "Quarterly Groundwater Sampling and Soil Vapor Extraction System Operation" report dated July 1, 1996 prepared by Western Water Consultants, and submitted to the OCD by DS on August 27, 1996. The quarterly report summarizes the ongoing groundwater monitoring and vadose zone remediation by SVE at the site.

The report requests (on page 2) that quarterly groundwater sampling method be limited to EPA SW-846 method 8260 (volatile aromatic and chlorinated hydrocarbons) for all the groundwater monitoring wells - including MW-9, MW-10, and MW-15. OCD in a letter dated August 22, 1995 had required that MW-9,MW-10, and MW-15 also be sampled quarterly for TPH, PAH's, General Chemistry (Major Cations/Anions), and Heavy Metals until discharge plan renewal, and upon renewal of the discharge plan the sampling requirements would be reviewed. **The requested change in quarterly sampling is hereby approved**, with the following conditions:

1. Upon renewal of the discharge plan (due to expire on December 2, 1997) Dowell Schlumberger will sample MW-1, MW-4,MW-2, MW-14, MW-6, MW-19, MW-18, MW-8,MW-10, and MW-9 for the entire suite of 20 NMAC 6.2.3103 constituents using approved methods as listed in 20 NMAC 6.2.3107.B.

2. This approval may be administratively changed by the OCD should investigation and de--lineation of the groundwater contamination at the site require that more or less extensive sampling methods.

3. Dowell Schlumberger will fully delineate the area extent of the chlorinated solvent in the groundwater within 60 days of receipt of this letter. Upon completion of the delineation Dowell Schlumberger will submit a report within 30 days of completion of field data sampling and collection (No later than January 30, 1997) " Area Delineation of Groundwater Contamination and Remedial Options" outlining the findings characterizing the area extent of the plume. The report will also propose what remedial actions Dowell Schlumberger will evaluate to remediate the groundwater to 20 NMAC 6.2.3103 standards. Dowell Schlum--berger will 30 days after (No later than March 3, 1997) the submittal of the above required report submit a modification pursuant to 20 NMAC 6.2.3109.E modifying the discharge plan GW-114. The modification will include the groundwater remedial method to be used at the site based on the information collected in the "Area Delineation of Ground water Contamination and Remedial Options " report.The modification will also include reasonable time frames in which Dowell Schlumberger will install and begin groundwater remediation.

Note, that OCD approval does not relieve Dowell Schlumberger of liability should Dowell Schlumbergers sampling fail to adequately characterize and monitor the nature of the groundwater and vadose zone contamination. Also, OCD approval does not relieve Dowell Schlumberger from responsibility to comply with other federal, state, and local rules/regulations that may apply to this project.

If you have any questions please feel free to give me a call at (505)-827-7156.

Sincerely,

Patricio W. Sanchez
Petroleum Engineering Specialist,
Environmental Bureau

xc: OCD Artesia Office
Mr. Rick Deuell - WWC, via fax (307)-721-2913
Mr. Benito Garcia - Bureau Chief, NMED-HRMB

P 288 258 670

US Postal Service
Receipt for Certified Mail
No Insurance Coverage Provided.
Do not use for International Mail *(See reverse)*

Sent to Mr. Miller	
Street & Number DS - GW-114.	
Post Office, State, & ZIP Code Groundwater Monitoring.	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date	

PS Form **3800**, April 1995

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

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

MEMORANDUM

October 16, 1996

TO: Mr. Benito Garcia, Bureau Chief
NMED, Hazardous and Radioactive Materials Bureau

FROM: Roger Anderson, Bureau Chief
NMOCD, Environmental Bureau

SUBJECT: Dowell Schlumberger, Artesia Facility GW-114

Dear Mr. Garcia,

The OCD has recently taken over the lead on a groundwater investigation/remediation at the above named facility, and upon review of the data collected it appears that the groundwater has been impacted by chlorinated solvents. The oversite at the facility had previously been managed by the NMED, Groundwater Protection and Remediation Bureau, and the NMED, Underground Storage Tank Bureau.

Upon review of the information provided to the OCD from GWPRB and USTB, the OCD is not certain if HRMB has been informed and provided with the information regarding this site. Attached you will find a copy of a letter from NMED, GWPRB with HRMB copied on the letter dated September 8, 1994. One of my staff members is currently in the process of reviewing the information and requiring that Dowell submit plans to complete the delineation and propose and begin a method of groundwater remediation.

Your time and attention to this matter is greatly appreciated, and should you have any questions regarding this matter please give me a call at 827-7152 or stop by our office.

Thanks!

attachment

xc: Mr. Coby Muckelroy - NMED, HRMB

STATE OF NEW MEXICO
ENVIRONMENT DEPARTMENT

September 8, 1994

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

John A. Miller
Environmental Remediation Manager
Dowell Schlumberger Incorporated
P.O. Box 4378
Houston, Texas 77210-4378

RE: NOTIFICATION OF REGULATED DISCHARGE, DOWELL SCHLUMBERGER INCORPORATED FACILITY, ARTESIA, NEW MEXICO.

Dear Mr. Miller:

The Remediation Section of the Ground Water Protection and Remediation Bureau (GWPRB) of the New Mexico Environment Department (NMED) has completed its review of ground water monitoring data supplied to us through your office as part of the ongoing UST Bureau site investigation and remediation. The GWPRB understands that a UST removal action and soil and ground water investigations have led to a soil vapor extraction system (SVES) recently being installed at the Dowell Schlumberger (DS) facility to address the remediation of petroleum hydrocarbon contaminants (BTEX) associated with the former USTs. While the SVES will address BTEX contamination in the on-site soils and ground water, the GWPRB is very concerned about the off-site, down-gradient monitor wells which continue to show chlorinated solvents at concentrations significantly above New Mexico Water Quality Control Commission (WQCC) regulation standards. This letter shall serve as Notification of Discharge applicable under WQCC regulation 1-203.

Harold Runnels Building
1190 St. Francis Drive
P.O. Box 26110
Santa Fe, NM 87502
(505) 827-2850
FAX (505) 827-2836

Recent ground water monitoring data indicates that, while the SVES appears to be having a positive affect on remediation of on-site BTEX contamination, it is not affecting chlorinated solvent contamination in ground water down-gradient and off-site of the facility. WQCC regulation 1-203.A.6 requires that DS submit to GWPRB a preliminary Corrective Action Plan. An approvable plan will include, at a minimum, a proposal to investigate, monitor and remediate the chlorinated solvent plume emanating from the DS facility.

DS must submit a corrective action plan to GWPRB within 45 days of receipt of this letter which addresses the following:

1) A plan to: a) define the horizontal and vertical extent and magnitude of chlorinated solvent ground water contamination, b) quarterly monitor contamination identified by the investigation and c) design and implement ground water remediation both on and off-site.

2) Water supply well inventory down-gradient from the site within a 2-mile radius.

3) Proposed schedule of implementation of above items.

Monitoring and reporting on a quarterly basis may be combined with on-going UST submittals to avoid duplication of effort in the future.

Please notify NMED at least five working days prior to any planned field activities so that we may be present to observe and obtain split samples. Should you have any questions regarding this letter, please contact Mr. Jeff Walker of my staff at (505) 841-9466. Your continued voluntary cooperation in this matter is greatly appreciated.

Sincerely,

Dale M. Doremus for Marcy Leavitt

Marcy Leavitt, Chief
Ground Water Protection and Remediation Bureau

ML/JW/jw

cc: Garrison McCaslin, NMED District IV Manager
Dennis McQuillan, Remediation Section Manager
Coby Muckelroy, HRMB
Tony Moreland, USTB
Ronald M. Eddy

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

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

September 12, 1996

CERTIFIED MAIL
RETURN RECEIPT NO. P-288-258-622

Mr. John Miller
Remediation Manager
Schlumberger Oilfield Services
300 Schlumberger Drive
Sugar Land, TX 77478

RE: Minor Modification
GW-114, Dowell Schlumberger - Artesia
Soil Remmediation Cell

Dear Mr. Miller:

The New Mexico Oil Conservation Division (OCD) has received **Dowell Schlumbergers (DS)** letter submitted by Western Water Consultants on behalf of DS dated August 16, 1996 and the fax from DS dated September 6, 1996 requesting the onsite bioremmediation non-hazardous TPH contaminated soil on a synthetic liner. The **DS** request is considered a minor modification to the above referenced discharge plan and public notice will not be issued. **The requested minor modification is hereby approved**, with the following conditions:

1. **DS** will notify the Santa Fe Division office in writing of the finished remedial status of the soil, the soil shall be remmediated to a level of no more than 100 mg/Kg total TPH. The written notification will include the lab results with proper QA/QC information attached. The method of soil analysis will be a proper EPA approved method such as those included in SW-846. Any enhanced bioremmediation products to be used on the soil will have to receive prior approval from the OCD Santa Fe Division Office, any proposed enhanced bioremmediation request will include application rates, MSD Sheet(s), and application procedures.

2. **DS** upon approval from the OCD Santa Fe Office for (1.) above shall close the bio-remmediation cell and dispose of any solid waste generated from the closure at an OCD approved facility.

The Application for modification was submitted pursuant to Water Quality Control Commission (WQCC) Regulation 3107.C and is approved pursuant to WQCC Regulation 3109.

Please note that "When a plan has been approved, discharges must be consistent with the terms and conditions of the plan". Pursuant to Section 3107.C DS is required to notify the Director of any facility expansion, production increase or process modification that would result in a significant modification in the discharge of potential ground water contaminants.

Note, that OCD approval does not relieve DS of liability should DS' operation result in contamination of surface waters, ground waters or the environment. Also, OCD approval does not relieve DS from responsibility to comply with other Federal, State, and Local rules/regulations that may apply to this project.

If you have any questions please feel free to call Pat Sanchez at (505)-827-7156.

Sincerely,

Roger C. Anderson
Environmental Bureau Chief

RCA/pws

XC: OCD Artesia Office
Mr. Darwin Thompson - DS, P-288-258-624

Schlumberger

HEALTH, SAFETY & ENVIRONMENT
OILFIELD SERVICES SHARED RESOURCES

DATE: 9/6/96 **NO. PAGES (Including Cover):** 4

TO: PAT SANCHEZ **FROM:** John A. Miller
Remediation Manager

FAX NO: 505-827-8177 **FAX:** (713) 275-8526

LOCATION: NM OCD **PHONE:** (713) 275-8498

RECEIVED
SEP 06 1996
Environmental Bureau
Oil Conservation Division

MESSAGE ARTESIA SOILS

MR SANCHEZ:

PER THE ATTACHED RESEARCH EFFORT, THE SOIL STOCKPILED FOR LAND FARMING IS NON-HAZARDOUS FOR SULFIDE REACTIVITY.

John A Miller

☐ **RESPONSE REQUESTED BY (DATE):** _____

300 Schlumberger Drive
Sugar Land, TX 77478

P.O. Box 2727
Houston, TX 77252

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Job Number 90-125.8
Task Number _____

COMPANY: Dowell

ATTENTION: John Miller

FACSIMILE NO: 1-713-276-8526

This page and the following 2 ***Pages, totaling*** 3 ***Pages, are***

FROM: Ruth Dowell

DATE: 9/06/96

If there are any problems with this transaction, please

Telephone: (307) 742-0031
Fax: (307) 721-2913

OTHER LOCATIONS

1949 SUGARLAND DRIVE, SUITE 134
SHERIDAN, WYOMING 82801
(307) 672-0761
FAX (307) 674-4265

1901 ENERGY COURT, SUITE 270
GILLETTE, WYOMING 82718
(307) 682-1880
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September 6, 1996

John A. Miller
Remediation Manager
Dowell, a division of Schlumberger Technology Corporation
300 Schlumberger Drive
Sugar Land, TX 77478

Re: Artesia Landfarm

Dear John:

As you are aware, the soil samples analyzed from the stockpile of soil to be landfarmed show sulfide levels up to 40 mg/kg. CFR 40 Part 261.23 requires that sulfide bearing waste that can generate toxic gases, when exposed to pH conditions between 2 and 12.5, in a quantity sufficient to present a danger to human health or the environment be considered hazardous. No guideline is given for what the level of sulfide may be.

EPA Publication SW-846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" [Third Edition (November, 1986) as amended by Updates I (July, 1992), II (September, 1994), and IIA (August, 1993)] addresses the sulfide issue, Section 7.3.4 provides Interim Guidance For Reactive Sulfide. The current EPA action level for total releasable sulfide is 500 mg H_2S/kg waste. A copy of Section 7.3.4 is enclosed.

The highest sulfide measurement of 40 mg/kg in the Artesia soil is well below the action level. These soils are not a hazard for sulfide reactivity.

Please give me a call if there are any questions.

Sincerely,

Rick Deuell

Rick Deuell, P.E.

RD:gh
enclosure
File: 90-125L.8

7.3.4 Interim Guidance For Reactive Sulfide

7.3.4.1 The current EPA action level is:

Total releasable sulfide: 500 mg H_2S/kg waste.

7.3.4.2 Test Method to Determine Hydrogen Sulfide Released from Wastes

1.0 SCOPE AND APPLICATION

1.1 This method is applicable to all wastes, with the condition that waste that are combined with acids do not form explosive mixtures.

1.2 This method provides a way to determine the specific rate of release of hydrogen sulfide upon contact with an aqueous acid.

1.3 This procedure releases only the evolved hydrogen sulfide at the test conditions. It is not intended to measure forms of sulfide other then those that are evolvable under the test conditions.

2.0 SUMMARY OF METHOD

2.1 An aliquot of the waste is acidified to pH 2 in a closed system. The gas generated is swept into a scrubber. The analyte is quantified. The procedure for quantifying the sulfide is given in Method 9030A, Chapter Five starting with Step 7.3 of that method.

3.0 INTERFERENCES

3.1 Interferences are undetermined.

4.0 APPARATUS (See Figure 2)

4.1 Round-bottom flask - 500-mL, three-neck, with 24/40 ground-glass joints.

4.2 Stirring apparatus - To achieve approximately 30 rpm. This may be either a rotating magnet and stirring bar combination or an overhead motor-driven propeller stirrer.

4.3 Separatory funnel - With pressure-equalizing tube and 24/40 ground-glass joint and Teflon sleeve.

4.4 Flexible tubing - For connection from nitrogen supply to apparatus.

4.5 Water-pumped or oil-pumped nitrogen gas - With two-stage regulator.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☒ Telephone ☐ Personal	Time 11:30 AM	Date 8-27-96
Originating Party		Other Parties
Pat Sanchez - OCD		John Miller - DS

Subject DS Artesia facility.

Discussion (1.) Contaminated Soil - Need to certify that the soil is not Hazardous per 40CFR261 - more specifically 40CFR261.23 (Reactivity to Sulfides) Note: Had Non-detect for other parameters of 40 CFR 261 - w/ low level Sulfides, i.e. ≤ 40 mg/kg. - Note: this w/ Recommended per verbal conversation w/ Cory Muckelroy of NMED HRMB at 10:30 AM on 8/27/96.
(2) Groundwater results / report for April 1996, OCD has not received.

Conclusions or Agreements Mr. Miller will follow-up on Number (1) & (2) above. OCD can then issue a "minor modification" and approve soil farming as previously proposed. Also, OCD can also look at sampling constituent requirements per No. 2 above.

Distribution File.

Signed Daniel W. Sanchez

Schlumberger Oilfield Services

Oilfield Services Shared Resources

John A. Miller
Remediation Manager

August 27, 1996

Mr. Pat Sanchez
New Mexico Energy, Minerals and
Natural Resources Department
Oil Conservation division
2040 S. Pacheco
Santa Fe, NM 87505

Re: Quarterly Report for Activities at Dowell, a division of Schlumberger Technology Corporation (Dowell) Facility, Artesia, New Mexico

Dear Mr. Sanchez:

Enclosed please find the report of activities for the second quarter of 1996 a the Dowell facility in Artesia, New Mexico. If you have questions, please contact me (Dowell) at 713 275-8498.

Sincerely,

John A. Miller

JAM:slw

Enclosure

cc: WWC, Laramie, w/o encl.

P.O. Box 2727, Houston, Texas 77252-2727
300 Schlumberger Drive, Sugar Land, Texas 77478
(713) 275-8498 (713) 275-8526 (fax)

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July 1, 1996

John A. Miller
Remediation Manager
Dowell, a division of Schlumberger Technology Corporation
300 Schlumberger Drive
Sugar Land, TX 77478

RE: Draft quarterly report for Artesia, New Mexico (second quarter, 1996).
WWC JN 90-125 (Report in Brown accordian file)
Dated July 1, 1996

Dear John:

Enclosed for your review is the draft of the second quarterly report for 1996 for the Dowell facility in Artesia. When we receive your comments we will finalize the report for your submittal to Mr. Tony Moreland (NMED-UST) and to Mr. Chris Eustice (OCD). If you have questions, please call.

Sincerely,

Robin Daley
Geologist

RD:sb
Enclosures
cc: Karen Lauzon
File: 90-125L-96

OTHER LOCATIONS

1949 SUGARLAND DRIVE, SUITE 134
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August 16, 1996

Mr. Pat Sanchez
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

RE: Dowell, a division of Schlumberger Technology Corporation (Dowell) facility, Artesia, New Mexico.

Dear Mr. Sanchez:

Enclosed is a copy of the Artesia bioremediation plan you requested per your telephone conversation with John Miller of Dowell on August 15, 1996. If you have questions please feel free to contact me at (307) 742-0031.

Sincerely,

Kevin Mattson

Kevin Mattson
Geologist

KM:sb
Enclosure
cc: John Miller
File: 90-125L.A

OTHER LOCATIONS

1949 SUGARLAND DRIVE, SUITE 134
SHERIDAN, WYOMING 82801
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CASPER, WYOMING 82601
(307) 473-2707
FAX (307) 237-0828

WWC

FILE 90-125 A

Schlumberger

Oilfield Services Shared Resources

John A. Miller
Remediation Manager

January 24, 1996

VIA 2-Day FEDEX

Chris E. Eustice
New Mexico Energy, Minerals, and Natural Resources Department
Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

RE: Dowell, Artesia, New Mexico

Dear Mr. Eustice:

Dowell, a Division of Schlumberger Technology Corporation (Dowell) requests authorization to treat approximately 1,700 cubic yards of soil currently stockpiled at our Artesia, New Mexico facility. This facility is located at 500 E. Richey Avenue just outside the city limits of Artesia. The soil was generated during closure of the former acid plant in November of 1994. Closure of the acid plant is documented in a report by Western Water Consultants, Inc. (WWC) titled "Closure Report For the Acid Plant at The Dowell Schlumberger Incorporated Facility, Artesia, New Mexico." This report was submitted to New Mexico Oil Conservation Division in January of 1995. The proposed soil treatment is discussed below.

Stockpiled Soils

Approximately 1,700 cubic yards of soil has been stockpiled on plastic sheeting with berms around the soil in the southwest corner of the facility. The soil has been stockpiled since November of 1994 and been weathering since that time. A composite soil sample was collected at the time the soil was stockpiled and the analyses are attached. Analyses include TPH by EPA Method 8015 Modified for gasoline range organics, TCLP extraction metals, and ZHE Extraction Method 8240 for volatile organics. All analyses were below detection limits except TPH which was 320 mg/kg. These values are representative of the samples taken from the excavation where all analytes were below detection limits except TPH which ranged from 320 to 2,300 mg/kg.

For verification, four additional composite samples were collected in January 1996. These results will be available in 2-3 weeks.

Treatment Area

The treatment area is a flat parcel of property just north of the facility which was recently purchased by Dowell (Figure 1). Environmental investigations have been performed at the site. The most recent and complete investigation report is "Quarterly Report and Additional Investigation and Remediation, Dowell Schlumberger, Artesia, New Mexico, July 13, 1995" prepared by WWC.

Included in the report are hydrogeologic information, monitoring well details, and sampling analyses. From monitoring well measurements the depth to groundwater in the treatment area is between 16-18 feet. Soils are silts and clays of low permeability.

P.O. Box 2727, Houston, Texas 77252-2727
300 Schlumberger Drive, Sugar Land, Texas 77478
(713) 275-8498 (713) 275-8526 (fax)

The site is flat with no defined drainage patterns. Overall surface water flow is east toward the Pecos River, approximately 2 miles away.

Treatment Process

Treatment of the soils is a landfarming process in a soil-bermed area lined with 12-mil HDPE (Figure 2). The treatment area is proposed to be 130 x 360 ft. At the treatment area the topsoil will be stripped and stockpiled. Excavation will continue to a depth of 12 inches. With the excavation and berm constructed, the HDPE liner will be installed. Six inches of excavated soil will be placed on the liner for protection. It is proposed to place two 6 inch treatment lifts in the cell simultaneously. The top lift will be actively treated through discing and watering. Once the top lift is completely treated it will be removed and active treatment will begin on the lower lift. Removal of the top lift will be accomplished with a motor grader so removal depth can be controlled accurately.

Active treatment will include discing the soils to a depth of 6 inches at seven day intervals. Water will be applied by sprinkler heads connected to the facility municipal water service using hoses. Water will be applied as necessary to maintain the moisture content at approximately 20%.

Sampling

Two composite soil samples will be collected from the lift being treated every month. The samples will be analyzed for total petroleum hydrocarbons using EPA Method 8015.

Treatment Standards

Treatment of soils will continue until total TPH is less than 100 mg/kg. It is anticipated that treatment of each lift will require 6-8 weeks. If necessary, additional nutrients may be added to enhance biodegradation.

Soil Disposal

It is proposed to use the treated soils as fill material on the facility. The configuration of the fill has yet to be determined.

Dowell would like to begin treatment of these soils as soon as possible. If you have any questions please give me a call.

Sincerely,

John A. Miller

JAM:

Enclosures

cc: Karen Lauzon

K:\172040\90-125L\NEW-SITE 01/19/96 14:14

DOWELL

50 FT. COUNTY RIGHT-OF-WAY

DOWELL

SOUTHEAST READY MIX

130'x360' LANDFARM AREA

8' BERM AREA

SECURITY FENCE

TOPSOIL STOCKPILE

MW-10

MW-8

MW-7

MW-11

MW-18

MW-19

60 FT. COUNTY RIGHT-OF-WAY

50 FT. COUNTY RIGHT-OF-WAY

CITY WATER LINE

GAS LINE

COMPRESSOR

MW-9

MW-12

MW-17C

MW-17B

MW-17A/D

PILOT HOLE

WASTEWATER TANK

DRUM STORAGE

MW-3

MW-6

FRAC SAND SILO

BULK TANKS

CHEMICAL WAREHOUSE

CONCRETE PAD

WELL EQUIPMENT STORAGE

FORMER ACID PLANT

ACID LOADING SLAB

MW-15

WASH BAY

WASH BAY SVE SYSTEM

FORMER SUMP

DOWELL FACILITY

MW-13

MW-14

GRAVEL PARKING AREA

ABOVE GROUND OIL STORAGE

FORMER FUEL LINES

MW-5

MW-1

MW-16

MW-4

MW-2

MAINTENANCE SHOP

MAINTENANCE SHOP SVE SYSTEM

FORMER FUEL ISLAND

OFFICE

SEPTIC TANKS

GRAVEL PARKING AREA

GATE

GATE

RICHEY AVENUE

DOWELL

EXPLANATION

MW-14	WWC MONITORING WELL LOCATION, IDENTIFICATION, AND GROUND-WATER ELEVATION
MW-6	REED AND ASSOCIATES MONITORING WELL LOCATION, IDENTIFICATION, AND GROUND-WATER ELEVATION
TBM	TEMPORARY BENCH MARK
----------	AIR PIPING
•	SVE EXTRACTION WELL

0 120 FT.

SCALE

BASE MAP MODIFIED FROM REED & ASSOCIATES

FIGURE 1

SITE MAP
LANDFARM

DOWELL
ARTESIA, NEW MEXICO

Western Water Consultants, Inc.

K:\172040\90-125L\X-SECT 01/19/96 14:20

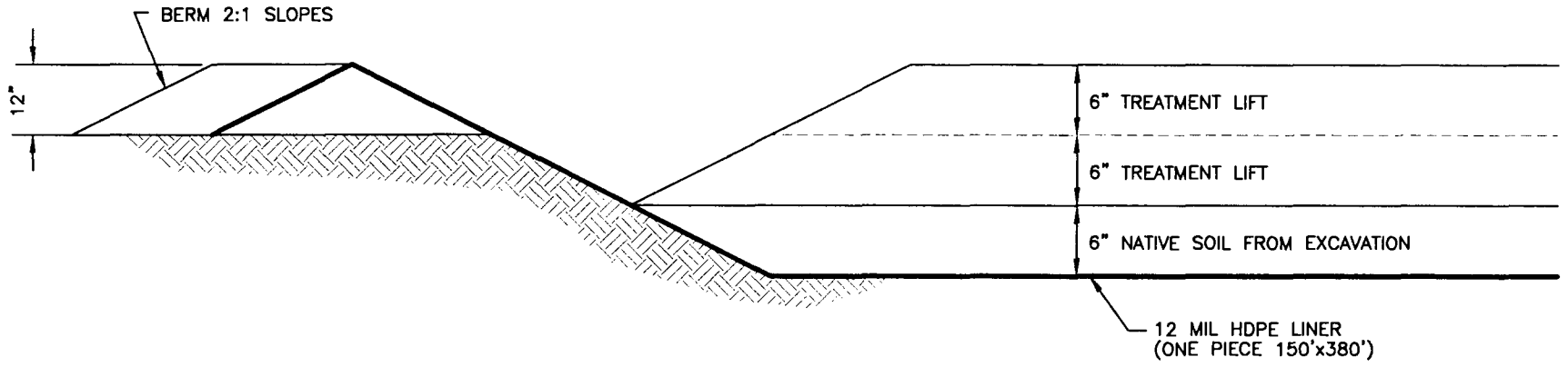

FIGURE 2

TYPICAL CROSS-SECTION
LANDFARM

DOWELL
ARTESIA, NEW MEXICO

Western Water Consultants, Inc.

COMPANY NAME: Western Water Consultants

CENREF PROJECT NUMBER: PR941864
CENREF SAMPLE NUMBER: 8057
SAMPLE IDENTIFICATION: #90125-StkPl.11/94
DATE SAMPLED: 11/13/94
DATE EXTRACTED: 11/17/94
DATE/TIME ANALYZED: 11/21/94 @ 1739

Stockpiled material

ZHE EXTRACTION
METHOD EPA 8240

ANALYSIS	CAS NO.	SDL (ug/L)	RESULT (ug/L)
Benzene	71-43-2	50	BDL
Carbon Tetrachloride	56-23-5	50	BDL
Chlorobenzene	108-90-7	50	BDL
Chloroform	67-66-3	50	BDL
1,2-Dichloroethane	107-06-2	50	BDL
1,1-Dichloroethene	75-35-4	50	BDL
2-Butanone	78-93-3	1000	BDL
Tetrachloroethene	127-18-4	50	BDL
Trichloroethene	79-01-6	50	BDL
Vinyl Chloride	75-01-4	100	BDL

BDL = Below Sample Detection Limit
SDL = Sample Detection Limit

COMMENTS: _____

COMPANY NAME: Western Water Consultants

Stockpiled Soil

CENREF PROJECT NUMBER: PR941864
CENREF SAMPLE NUMBER: 8057
SAMPLE IDENTIFICATION: #90125-StkPl.11/94
DATE SAMPLED: 11/13/94

ANALYSIS	DATE/TIME EXTRACTED	DATE/TIME ANALYZED	METHOD	UNITS	SDL	RESULT
TCLP extraction			1311			
Arsenic-TCLP	11-23/0744	12-01/1912	6010	mg/L	0.1	BDL
Barium-TCLP	11-23/0744	12-01/1235	6010	mg/L	10.0	BDL
Cadmium-TCLP	11-23/0744	12-01/1912	6010	mg/L	0.1	BDL
Chromium-TCLP	11-23/0744	12-01/1235	6010	mg/L	0.5	BDL
Lead-TCLP	11-23/0744	12-01/1235	6010	mg/L	0.5	BDL
Mercury-TCLP	11-28/1203	11-23/1821	7470	mg/L	0.0005	BDL
Selenium-TCLP	11-23/0744	12-01/1235	6010	mg/L	0.1	BDL
Silver-TCLP	11-23/0744	12-01/1912	6010	mg/L	0.5	BDL
pH		11-15/1613	9045	pH	—	7.96

BDL = Below Sample Detection Limit
SDL = Sample Detection Limit

COMMENTS: _____

COMPANY NAME: Western Water Consultants

Stockpiled Soil

CENREF PROJECT NUMBER: PR941864
CENREF SAMPLE NUMBER: 8057
SAMPLE IDENTIFICATION: #90125-StkP1.11/94
DATE SAMPLED: 11/13/94
DATE/TIME ANALYZED: 11/20/94 @ 0708

METHOD Mod. 8015

ANALYSIS	SDL (mg/kg)	RESULT (mg/kg)
Total Extractable Hydrocarbons	10	320

BDL = Below Sample Detection Limit
SDL = Sample Detection Limit

COMMENTS: _____

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

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

June 6, 1996

CERTIFIED MAIL
RETURN RECEIPT NO.P-269-269-397

Mr. Darwin Thompson
Dowell Sclumberger Inc.
P.O. Box 640
Hobbs, New Mexico 88240

RE: MODIFICATION PROPOSAL
(GW-73) DOWELL SCHLUMBERGER HOBBS SERVICE FACILITY
LEA COUNTY, NEW MEXICO

Dear Mr. Thompson:

The New Mexico Oil Conservation Division has received Dowell Schlumberger, Inc.'s (Dowell) March 11, 1996 request to modify the existing discharge plan for the above referenced facility. The modification request is for replacing the existing cement revetment at the acid loading facility and filling the two sumps, on the north side of the facility, with concrete. Based upon the information provided the modification request is hereby approved.

This modification is considered minor because there will not be any additional discharge or leachate. Therefore, public notice was not issued and there will be no fees.

Please be advised that this approval does not relieve Dowell of liability should their operation result in pollution of surface water, ground water or the environment actionable under other laws and/or regulations. In addition, this approval does not relieve Dowell of responsibility for compliance with other federal, state or local laws and/or regulations.

Sincerely,

Roger C. Anderson
Environmental Bureau Chief

RCA/cee
xc: OCD Artesia Office

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

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

June 6, 1996

CERTIFIED MAIL
RETURN RECEIPT NO.P-269-269-397

Mr. Darwin Thompson
Dowell Sclumberger Inc.
P.O. Box 640
Hobbs, New Mexico 88240

RE: MODIFICATION PROPOSAL
(GW-73) DOWELL SCHLUMBERGER HOBBS SERVICE FACILITY
LEA COUNTY, NEW MEXICO

Dear Mr. Thompson:

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Sincerely,

Roger C. Anderson
Environmental Bureau Chief

RCA/cee
xc: OCD Artesia Office

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April 30, 1996

Mr. Chris E. Eustice
Environmental Geologist
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

Re: Reports of Activities at the Dowell Facility, Artesia, New Mexico.

Dear Mr. Eustice:

Enclosed are copies of previous reports of activities at the Dowell facility in Artesia, New Mexico, as you requested.

If you have questions, please contact John Miller (Dowell) at (713) 275-8498.

Sincerely,

Robin Daley
Geologist

RD:gh
Enclosures
cc: WWC, Laramie

OTHER LOCATIONS

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TITLE	DATE OF REPORT
Site Investigation Dowell Schlumberger Incorporated Artesia, New Mexico	April 5, 1991
Additional Assessment and Remediation Feasibility Testing, Dowell Schlumberger Incorporated, Artesia, New Mexico	November 20, 1991
Results of the November 1991 Ground-Water Monitoring Event, Dowell Schlumberger Facility, Artesia, New Mexico	February 13, 1992
Results of the March 1993 Groundwater Monitoring Event, Dowell Schlumberger Incorporated Facility, Artesia, New Mexico	June 2, 1993
Groundwater Monitoring Activities at the Dowell Schlumberger Incorporated Facility in Artesia, New Mexico	August 25, 1993
Report of Installation and Initial Operation of the Soil Vapor Extraction Systems at Artesia, New Mexico	March 29, 1994
Results of the April 1994 Ground-water Monitoring Event, Artesia, New Mexico	July 25, 1994
Quarterly Report Soil Vapor Extraction System Dowell Schlumberger Incorporated Artesia, New Mexico	August, 1994
Work Plan for Additional Investigation at the Dowell Schlumberger Facility, Artesia, New Mexico	November 28, 1994
Third Quarterly Reporting of Activities at the Dowell Schlumberger Incorporated Facility in Artesia, New Mexico	December 22, 1994
Soil Vapor Extraction System Expansion at the Dowell Schlumberger Incorporated Facility, Artesia, New Mexico	January 3, 1995

Quarterly Report for Additional Investigation and Remediation, Dowell Schlumberger, Artesia, New Mexico	July 13, 1995
Quarterly Report for Activities at the Dowell Schlumberger Facility, Artesia, New Mexico	November 22, 1995
Quarterly Report for Activities at the Dowell Facility, Artesia, New Mexico	January 17, 1996
Quarterly Report for Activities at the Dowell Facility, Artesia, New Mexico	February 27, 1996

Schlumberger Oilfield Services

Oilfield Services Shared Resources

John A. Miller
Remediation Manager

February 26, 1996

Via 2-Day Fedex

Mr. Chris E. Eustice
Environmental Geologist
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

Re: Ground-water samples from three monitoring wells downgradient from the acid dock, Dowell facility, Artesia, New Mexico.

Dear Mr. Eustice:

Ground-water samples were collected in January 1996 from three wells downgradient from the acid dock at the Dowell facility in Artesia, New Mexico. The wells sampled were MW-9, MW-10, and MW-15 (Figure 1). Additionally, the same samples were collected from a well upgradient from the acid dock (MW-1), to provide data from a background well.

Sample Collection

Samples for laboratory analyses were collected on January 10, 1996, as part of ongoing environmental investigation and remediation activities at the facility which are directed by the New Mexico Department of Environmental Quality. Static ground-water levels were also measured at this time. Analytes and laboratory analytical methods used were:

- volatile aromatic and chlorinated hydrocarbons by EPA Method 8260;
- base-neutral polyaromatic hydrocarbons (PAHs) by EPA Method 8270;
- gasoline-range and diesel-range total petroleum hydrocarbons (TPH) by modified EPA Method 8015 (gasoline-range organics) GRO and diesel-range organics (DRO);
- dissolved barium, cadmium, calcium, chromium, lead, magnesium, potassium, silver, and sodium by EPA Method 6010;
- dissolved arsenic by EPA Method 7060;
- dissolved selenium by EPA Method 7740;
- dissolved mercury by EPA Method 7470;
- dissolved carbonate and bicarbonate by Standard Method 403; and
- dissolved sulfate and chloride by MCAWW Method 300.0.

Results

The potentiometric surface map generated from the January 1996 static water level measurements is presented on Figure 1. Water level elevations are referenced to an on-site datum with an arbitrary

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300 Schlumberger Drive, Sugar Land, Texas 77478
(713) 275-8498 (713) 275-8526 (fax)

elevation of 100.00 feet. The ground-water flow direction is to the northeast, consistent with previous flow directions which range from northeast to north-northeast.

The results of the chemical analyses for monitoring wells MW-9, MW-10, and MW-15 are presented in Table 1 (volatile aromatic and chlorinated hydrocarbons), Table 2 (TPH by both GRO and DRO, and base-neutral PAHs), Table 3 (major dissolved cations and anions), and Table 4 (dissolved RCRA metals). Laboratory analytical reports are appended to this letter. The volatile aromatic and chlorinated hydrocarbons have been monitored since 1991 and current values are within historic concentration ranges. Diesel-range TPH was not detected in any of the wells, however gasoline-range TPH was present in MW-9 in low concentrations in both November 1995 and January 1996. The PAHs detected in MW-10 in November 1995 are suspect because the well is farther away from the former acid dock than is MW-9, in which no PAHs were detected. No PAHs were present in MW-10 in January 1996. Of the RCRA metals, only barium (all 4 wells), silver (MW-1 and MW-15), arsenic (MW-9 and MW-15), and selenium (MW-10) were detected. All concentrations of these metals are below New Mexico standards for ground water.

Proposed Ground-water Sampling

The next quarterly ground-water monitoring event is scheduled for April 1996. Due to the low concentrations of those analytes which were detected in ground-water samples, Dowell proposes to cease sampling for any parameters other than volatile aromatic and chlorinated hydrocarbons (EPA Method 8260). Dowell believes that this analysis allows adequate monitoring of ground-water contamination in the vicinity of the former acid dock. Sampling of wells MW-9, MW-10, and MW-15 is being accomplished within the scope of on-going investigation and remediation currently supervised by New Mexico Department of Environmental Quality. Quarterly reports presenting the analytical results for volatile aromatic and chlorinated hydrocarbons from these three wells can be submitted to you for your records.

If you have questions, please contact me at (713) 275-8498.

Sincerely,

John A. Miller

cc: WWC, Laramie
B. Curtis
P. Archer
C. Brannan

K:\172040\90-125\P0111098 02/05/98 11:10

50 FT. WIDE PLATTED COUNTY RIGHT-OF-WAY

SOUTHEAST READY MIX

60 FT. WIDE PLATTED COUNTY RIGHT-OF-WAY

50 FT. WIDE PLATTED COUNTY RIGHT-OF-WAY

CITY WATER LINE

GAS LINE

COMPRESSOR

WASTEWATER TANK

FRAC SAND SILOS

BULK CEMENT

CEMENT WARE-HOUSE

CONCRETE PAD

WELL EQUIPMENT STORAGE

FORMER ACID PLANT

CHEMICAL WARE-HOUSE

ACID LOADING SLAB

FORMER SUMP

DRUM STORAGE

SEPARATOR

WASH BAY

WASH BAY SVE SYSTEM

PILOT HOLE

DOWELL SCHLUMBERGER FACILITY

GRAVEL PARKING AREA

ABOVE GROUND OIL STORAGE

FORMER FUEL USTs

FORMER FUEL ISLAND

MAINTENANCE SHOP

MAINTENANCE SHOP SVE SYSTEM

OFFICE

SEPTIC TANKS

GATE

GATE

RICHEY AVENUE

MW-1 85.97

MW-2 85.76

MW-3 84.48

MW-4 86.23

MW-5 85.76

MW-6 84.32

MW-7 84.10

MW-8 84.09

MW-9 84.79

MW-10 84.33

MW-11 84.15

MW-12 84.34

MW-13 85.23

MW-14 84.98

MW-15 85.10

MW-16

MW-17A/D 84.39/94.39

MW-17B 84.36

MW-17C 84.25

MW-18 83.82

MW-19 84.10

BM

84.00

84.20

84.40

84.60

84.80

85.00

85.20

85.40

85.60

85.80

86.00

86.20

EXPLANATION

MW-14 84.98	WWC MONITORING WELL LOCATION, IDENTIFICATION, AND GROUND-WATER ELEVATION
MW-6 84.32	REED AND ASSOCIATES MONITORING WELL LOCATION, IDENTIFICATION, AND GROUND-WATER ELEVATION
TBM	TEMPORARY BENCH MARK
85.00	POTENTIOMETRIC SURFACE CONTOUR
	GROUND-WATER FLOW DIRECTION
	AIR PIPING
	SVE EXTRACTION WELL

0 60 FT.

SCALE

BASE MAP MODIFIED FROM REED & ASSOCIATES

FIGURE 1

POTENTIOMETRIC SURFACE (1/10/96)

DOWELL
ARTESIA, NEW MEXICO

Western Water Consultants, Inc.

TABLE 1. RESULTS FROM LABORATORY ANALYSES OF GROUND-WATER SAMPLES FROM MW-1 (BACKGROUND), MW-9, MW-10, AND MW-15; VOLATILE HYDROCARBONS, DOWELL, ARTESIA, NEW MEXICO

WELL NUMBER	SAMPLE DATE	BENZENE (mg/L)	ETHYL-BENZENE (mg/L)	TOLUENE (mg/L)	XYLENES (mg/L)	1,1-DCA (mg/L)	1,2-DCA (mg/L)	1,1-DCE (mg/L)	1,1,1-TCA (mg/L)	TCE (mg/L)	PCE (mg/L)
MW-1	01/26/91	0.033	ND(0.005)	0.029	0.13	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
	09/15/91	ND(0.001)	ND(0.001)	0.002	0.009	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
	11/22/91	0.026	ND(0.001)	0.007	0.014	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
	03/16/93	0.016	ND(0.001)	ND(0.001)	ND(0.005)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
	01/10/94	0.006	ND(0.001)	ND(0.001)	ND(0.005)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
	04/19/94	0.035	0.001J	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
	07/20/94	0.008	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
	10/25/94	0.027	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
	01/25/95	0.025	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
	04/03/95	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
	08/01/95	0.082	0.0075	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
#	10/18/95	0.064	0.0037J	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
	01/10/96	0.076	0.0066	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
MW-9	01/26/91	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.005)	0.022	ND(0.001)	0.002	ND(0.001)	ND(0.001)	0.001
	09/15/91	0.002	0.032	ND(0.001)	ND(0.005)	0.035	ND(0.001)	0.002	ND(0.001)	ND(0.001)	ND(0.001)
	11/22/91	0.004	0.17	ND(0.001)	ND(0.005)	0.029	ND(0.001)	0.002	ND(0.001)	ND(0.001)	0.001
	03/16/93	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.005)	0.012	ND(0.001)	0.001	ND(0.001)	ND(0.001)	ND(0.001)
	01/10/94	ND(0.001)	ND(0.001)	0.002	ND(0.005)	0.012	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
	04/19/94	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.01	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
	07/20/94	ND(0.005)	ND(0.005)	ND(0.005)	0.001J	0.017	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
	10/25/94	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.014	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
	01/25/95	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.014	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
	04/03/95	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.015	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)

TABLE 1. RESULTS FROM LABORATORY ANALYSES OF GROUND-WATER SAMPLES FROM MW-1 (BACKGROUND), MW-9, MW-10, AND MW-15; VOLATILE HYDROCARBONS, DOWELL, ARTESIA, NEW MEXICO

WELL NUMBER	SAMPLE DATE	BENZENE (mg/L)	ETHYL-BENZENE (mg/L)	TOLUENE (mg/L)	XYLENES (mg/L)	1,1-DCA (mg/L)	1,2-DCA (mg/L)	1,1-DCE (mg/L)	1,1,1-TCA (mg/L)	TCE (mg/L)	PCE (mg/L)
MW-9 cont.	08/01/95	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.022	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
#	10/18/95	ND(0.005)	0.016	ND(0.005)	ND(0.005)	0.017	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
	01/10/96	ND(0.005)	0.032	ND(0.005)	ND(0.005)	0.02	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
MW-10	01/26/91	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.005)	ND(0.001)	ND(0.001)	0.004	ND(0.001)	ND(0.001)	ND(0.001)
	09/15/91	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.005)	ND(0.001)	ND(0.001)	0.012	0.002	ND(0.001)	ND(0.001)
	11/22/91	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.005)	ND(0.001)	ND(0.001)	0.029	0.005	ND(0.001)	ND(0.001)
	03/16/93	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.005)	ND(0.001)	ND(0.001)	0.025	0.001	ND(0.001)	ND(0.001)
	01/10/94	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.005)	ND(0.001)	ND(0.001)	0.021	ND(0.001)	ND(0.001)	ND(0.001)
	04/19/94	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.022	0.001J	ND(0.005)	ND(0.005)
	07/20/94	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.052	0.004J	ND(0.005)	ND(0.005)
	10/25/94	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.051	ND(0.005)	ND(0.005)	ND(0.005)
	01/25/95	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.042	ND(0.005)	ND(0.005)	ND(0.005)
dup.	01/25/95	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.057	0.005	ND(0.005)	ND(0.005)
	04/03/95	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.07	ND(0.005)	ND(0.005)	ND(0.005)
	08/01/95	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.13	0.0072	ND(0.005)	ND(0.005)
	10/18/95	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.13	0.0062	ND(0.005)	ND(0.005)
	01/10/96	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.063	ND(0.005)	ND(0.005)	ND(0.005)
MW-15	09/15/91	0.002	0.01	ND(0.001)	0.006	0.026	0.001	0.005	ND(0.001)	ND(0.001)	0.004
	11/22/91	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.005)	0.033	0.001	0.009	ND(0.001)	0.003	0.006
*	03/16/93	0.001	0.002	ND(0.001)	ND(0.005)	0.082	0.001	0.013	ND(0.001)	0.006	0.009
	01/10/94	ND(0.001)	0.008	ND(0.001)	ND(0.005)	0.048	ND(0.001)	0.009	ND(0.001)	0.004	0.013
dup.	01/10/94	0.001	0.009	0.002	ND(0.005)	0.054	ND(0.001)	0.01	ND(0.001)	0.004	0.015
	04/19/94	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.027	ND(0.005)	0.005J	ND(0.005)	0.003J	0.008

TABLE 1. RESULTS FROM LABORATORY ANALYSES OF GROUND-WATER SAMPLES FROM MW-1 (BACKGROUND), MW-9, MW-10, AND MW-15; VOLATILE HYDROCARBONS, DOWELL, ARTESIA, NEW MEXICO

WELL NUMBER	SAMPLE DATE	BENZENE (mg/L)	ETHYL-BENZENE (mg/L)	TOLUENE (mg/L)	XYLENES (mg/L)	1,1-DCA (mg/L)	1,2-DCA (mg/L)	1,1-DCE (mg/L)	1,1,1-TCA (mg/L)	TCE (mg/L)	PCE (mg/L)
MW-15 cont.	07/20/94	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.049	0.001J	0.006	ND(0.005)	0.004J	0.005
	10/25/94	0.001J	ND(0.005)	ND(0.005)	ND(0.005)	0.029	ND(0.005)	0.006	ND(0.005)	0.004J	0.006
	01/25/95	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.027	ND(0.005)	0.006	ND(0.005)	0.005	0.008
	04/03/95	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.02	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
	08/01/95	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.022	ND(0.005)	0.0057	ND(0.005)	ND(0.005)	ND(0.005)
	10/18/95	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.015	ND(0.005)	0.0031J	ND(0.005)	0.004J	0.0018J
	01/10/96	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.013	ND(0.005)	0.0025J	ND(0.005)	ND(0.005)	ND(0.005)

NOTES:

mg/L = milligrams per liter (equivalent to parts per million)

dup. = duplicate sample

* = minor amounts of other chemicals also detected

ND(0.001) = chemical not detected at concentration above detection limit shown in parentheses

J = chemical detected at concentration above instrument detection limit but below method detection limit

= also detected in MW-9:

sec-butylbenzene (0.0076 mg/l - below method detection limit of 0.01 mg/L)

n-butylbenzene (0.0086 mg/l - below method detection limit of 0.01 mg/L)

isopropylbenzene (0.0036 mg/l - below method detection limit of 0.01 mg/l)

CHEMICAL ABBREVIATIONS:

1,1-DCA = 1,1-dichloroethane

1,2-DCA = 1,2-dichloroethane

1,1-DCE = 1,1-dichloroethene

1,1,1-TCA = 1,1,1-trichloroethane

1,1,2-TCA = 1,1,2-trichloroethane

TCE = trichloroethene

PCE = tetrachloroethene

TABLE 2. RESULTS FROM LABORATORY ANALYSES OF GROUND-WATER SAMPLES, TOTAL PETROLEUM HYDROCARBONS AND BASE-NEUTRAL POLYAROMATIC HYDROCARBONS, DOWELL, ARTESIA, NEW MEXICO

WELL NUMBER	*SAMPLE DATE*	*TOTAL PETROLEUM HYDROCARBONS*		*BASE-NEUTRAL POLYAROMATIC HYDROCARBONS*		
		GRO (mg/L)	*DRO (mg/L)*	*NAPTHALENE (mg/L)*	*PHENANTHRENE (mg/L)*	*PYRENE (mg/L)*
MW-1	01/10/96	ND(0.1)	ND(1)	ND(0.005)	ND(0.005)	ND(0.005)
MW-9	11/16/95	0.18	ND(1)	ND(0.005)	ND(0.005)	ND(0.005)
	01/10/96	0.16	ND(1)	ND(0.005)	ND(0.005)	ND(0.005)
MW-10	11/16/95	ND(0.1)	ND(1)	0.022	0.022	0.0041J
	01/10/96	ND(0.1)	ND(1)	ND(0.005)	ND(0.005)	ND(0.005)
MW-15	11/16/95	ND(0.1)	ND(1)	ND(0.005)	ND(0.005)	ND(0.005)
	01/10/96	ND(0.1)	ND(1)	ND(0.005)	ND(0.005)	ND(0.005)

Notes:

GRO = gasoline range organics

DRO = diesel range organics

mg/L = milligrams per liter (equivalent to parts per million)

ND(0.1) = constituent not detected at concentration above method detection limit in parentheses

J = constituent detected at concentration above instrument detection limit but below method detection limit

TABLE 3. RESULTS FROM LABORATORY ANALYSES OF GROUND-WATER SAMPLES, MAJOR CATIONS AND ANIONS (DISSOLVED), DOWELL, ARTESIA, NEW MEXICO

WELL NUMBER	SAMPLE DATE	MAJOR CATIONS				MAJOR ANIONS			
		CALCIUM (mg/L)	SODIUM (mg/L)	POTASSIUM (mg/L)	MAGNESIUM (mg/L)	CARBONATE (mg/L)	BICARBONATE (mg/L)	SULFATE (mg/L)	CHLORIDE (mg/L)
MW-1	01/10/96	455	91.7	1.1	241	ND(2)	248	1700	157
MW-9	11/16/95	201	237	0.68 J	329	ND(10)	592	844	1260
	01/10/96	545	217	ND(1)	336	ND(4)	606	786	1250
MW-10	11/16/95	122	215	1.25	246	ND(2)	190	2170	208
	01/10/96	548	204	1.15	253	ND(2)	187	2200	192
MW-15	11/16/95	93	132	0.48 J	241	ND(4)	422	1330	286
	01/10/96	407	122	0.38J	252	ND(4)	443	1450	344

Notes:

mg/L = milligrams per liter (equivalent to parts per million)

ND(2) = ion not detected at concentration above method detection limit in parentheses

J = ion detected at concentration above instrument detection limit but below method detection limit

TABLE 4. RESULTS FROM LABORATORY ANALYSES OF GROUND-WATER SAMPLES, RCRA METALS (DISSOLVED), DOWELL, ARTESIA, NEW MEXICO

WELL NUMBER	*SAMPLE DATE*	*BARIUM (mg/L)*	*CADMIUM (mg/L)*	*CHROMIUM (mg/L)*	*LEAD (mg/L)*	*SILVER (mg/L)*	*ARSENIC (mg/L)*	*SELENIUM (mg/L)*	*MERCURY (mg/L)*
MW-1	01/10/96	0.01J	ND(0.005)	ND(0.01)	ND(0.1)	0.0036J	ND(0.005)	ND(0.005)	ND(0.0002)
MW-9	11/16/95	0.0483	ND(0.005)	ND(0.01)	ND(0.1)	ND(0.01)	0.028	ND(0.005)	ND(0.0002)
	01/10/96	0.0462	ND(0.005)	ND(0.01)	ND(0.1)	ND(0.01)	0.022	ND(0.005)	ND(0.0002)
MW-10	11/16/95	0.015 J	ND(0.005)	ND(0.01)	ND(0.1)	ND(0.01)	ND(0.01)	ND(0.005)	ND(0.0002)
	01/10/96	ND(0.02)	ND(0.005)	ND(0.01)	ND(0.1)	ND(0.01)	ND(0.01)	0.011	0.0003
MW-15	11/16/95	0.0227	ND(0.005)	ND(0.01)	ND(0.1)	ND(0.01)	0.0055	ND(0.005)	ND(0.0002)
	01/10/96	0.0225	ND(0.005)	ND(0.01)	ND(0.1)	0.003J	ND(0.01)	ND(0.005)	ND(0.0002)

Notes:

mg/L = milligrams per liter (equivalent to parts per million)

ND(0.005) = ion not detected at concentration above method detection limit in parentheses

J = ion detected at concentration above instrument detection limit but below method detection limit

Laboratory Analytical Reports

1/10/96

Western Water Consultants, Inc.

Form [redacted]ata Summary Report
Prepared By: HydroLogic Laboratories, Inc.

MW-1

Client ID: 90125-1.1/96
Project Number: 90-125
Sample ID: L2451-1
Site / Project ID: Not Reported
Run ID: R2982
Collection Date: 10-JAN-96
Received Date: 12-JAN-96
Report Date: 18-JAN-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
SW846 Method 8260 (5 ml)							
Preparation Date: 16-JAN-96							
Analysis Date: 16-JAN-96 15:19							
Workgroup Number: WG5459							
Benzene	71-43-2	1	76	ug/L		.39	5
Bromobenzene	108-86-1	1	ND	ug/L	U	.57	5
Bromochloromethane	74-97-5	1	ND	ug/L	U	.69	5
Bromodichloromethane	75-27-4	1	ND	ug/L	U	.64	5
Bromoform	75-25-2	1	ND	ug/L	U	.47	5
Bromomethane	74-83-9	1	ND	ug/L	U	.49	10
tert-Butylbenzene	98-06-6	1	ND	ug/L	U	.59	10
sec-Butylbenzene	135-98-8	1	ND	ug/L	U	.63	10
n-Butylbenzene	104-51-8	1	ND	ug/L	U	.59	10
Carbon tetrachloride	56-23-5	1	ND	ug/L	U	1.4	5
Chlorobenzene	108-90-7	1	ND	ug/L	U	.44	5
Chloroethane	75-00-3	1	ND	ug/L	U	.54	10
Chloroform	67-66-3	1	ND	ug/L	U	1.4	5
Chloromethane	74-87-3	1	ND	ug/L	U	2	10
2-Chlorotoluene	95-49-8	1	ND	ug/L	U	.51	10
4-Chlorotoluene	106-43-4	1	ND	ug/L	U	.51	10
1,2-Dibromo-3-chloropropane	96-12-8	1	ND	ug/L	U	.61	100
Dibromochloromethane	124-48-1	1	ND	ug/L	U	.5	5
1,2-Dibromoethane	106-93-4	1	ND	ug/L	U	.5	5
Dibromomethane	74-95-3	1	ND	ug/L	U	1.4	5
1,3-Dichlorobenzene	541-73-1	1	ND	ug/L	U	.7	10
1,4-Dichlorobenzene	106-46-7	1	ND	ug/L	U	.56	10
1,2-Dichlorobenzene	95-50-1	1	ND	ug/L	U	.73	10
Dichlorodifluoromethane	75-71-8	1	ND	ug/L	U	.43	10
1,1-Dichloroethane	75-34-3	1	ND	ug/L	U	1.7	5
1,2-Dichloroethane	107-06-2	1	ND	ug/L	U	2.1	5
1,1-Dichloroethene	75-35-4	1	ND	ug/L	U	.48	5
trans-1,2-Dichloroethene	156-60-5	1	ND	ug/L	U	.55	5
cis-1,2-Dichloroethene	156-59-2	1	ND	ug/L	U	1.8	5
2,2-Dichloropropane	590-20-7	1	ND	ug/L	U	3.3	5
1,2-Dichloropropane	78-87-5	1	ND	ug/L	U	.51	5
1,3-Dichloropropane	142-28-9	1	ND	ug/L	U	1.5	5

Review By: Ty Garber Report Approved By: Randy Greaves

Qual - U = Analyte Not Detected above the Method Detection Limit
- J = Estimated Concentration, B = Analyte Detected in the Blank
- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

Form Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: 90125-1.1/96
Project Number: 90-125
Sample ID: L2451-1 MW-1
Site / Project ID: Not Reported
Run ID: R2982
Collection Date: 10-JAN-96
Received Date: 12-JAN-96
Report Date: 18-JAN-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
1,1-Dichloropropene	563-58-6	1	ND	ug/L	U	1.7	5
cis-1,3-Dichloropropene	10061-01-5	1	ND	ug/L	U	.78	5
trans-1,3-Dichloropropene	10061-02-6	1	ND	ug/L	U	.55	5
Ethylbenzene	100-41-4	1	6.6	ug/L		.75	5
Hexachlorobutadiene	87-68-3	1	ND	ug/L	U	1.1	10
Isopropylbenzene	98-82-8	1	ND	ug/L	U	.54	10
p-Isopropyltoluene	99-87-6	1	ND	ug/L	U	.64	10
Methylene chloride	75-09-2	1	ND	ug/L	U	.75	5
Naphthalene	91-20-3	1	6.8	ug/L	J	1	10
n-Propylbenzene	103-65-1	1	ND	ug/L	U	.62	10
Styrene	100-42-5	1	ND	ug/L	U	.72	5
1,1,1,2-Tetrachloroethane	630-20-6	1	ND	ug/L	U	.45	5
1,1,2,2-Tetrachloroethane	79-34-5	1	ND	ug/L	U	.63	5
Tetrachloroethene	127-18-4	1	ND	ug/L	U	.49	5
Toluene	108-88-3	1	ND	ug/L	U	.85	5
1,2,4-Trichlorobenzene	120-82-1	1	ND	ug/L	U	.84	10
1,2,3-Trichlorobenzene	87-61-6	1	ND	ug/L	U	.94	10
1,1,1-Trichloroethane	71-55-6	1	ND	ug/L	U	1.7	5
1,1,2-Trichloroethane	79-00-5	1	ND	ug/L	U	1.2	5
Trichloroethene	79-01-6	1	ND	ug/L	U	.42	5
Trichlorofluoromethane	75-69-4	1	ND	ug/L	U	.62	5
1,2,3-Trichloropropane	96-18-4	1	ND	ug/L	U	1.1	5
1,3,5-Trimethylbenzene	108-67-8	1	2.2	ug/L	J	.55	10
1,2,4-Trimethylbenzene	95-63-6	1	ND	ug/L	U	.56	10
Vinyl chloride	75-01-4	1	ND	ug/L	U	.47	2
(m+p)-Xylene	NA	1	ND	ug/L	U	2.3	5
o-Xylene	95-47-6	1	ND	ug/L	U	1.4	5
Dibromofluoromethane	SURROGATE	1	97	%			
Toluene-d8	SURROGATE	1	96	%			
4-Bromofluorobenzene	SURROGATE	1	89	%			

Review By: Ty Garber Report Approved By: Randy Greaves

Qual - U = Analyte Not Detected above the Method Detection Limit
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- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

Form [redacted] Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: 90125-1.1/96
Project Number: 90-125
Sample ID: L2451-1 MW-1
Site / Project ID: Not Reported
Run ID: R2963
Collection Date: 10-JAN-96
Received Date: 12-JAN-96
Report Date: 18-JAN-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
SW846 Method 3520/8270							
Preparation Date: 15-JAN-96							
Analysis Date: 23-JAN-96 22:05							
Workgroup Number: WG5396							
Acenaphthene	83-32-9	1	ND	ug/L	U	4.2	5
Acenaphthylene	208-96-8	1	ND	ug/L	U	3.5	5
Anthracene	120-12-7	1	ND	ug/L	U	2.6	5
Benzo(a)anthracene	56-55-3	1	ND	ug/L	U	2.8	5
Benzo(a)pyrene	50-32-8	1	ND	ug/L	U	3.5	5
Benzo(b)fluoranthene	205-99-2	1	ND	ug/L	U	2.6	5
Benzo(g,h,i)perylene	191-24-2	1	ND	ug/L	U	3.1	5
Benzo(k)fluoranthene	207-08-9	1	ND	ug/L	U	3.9	5
Chrysene	218-01-9	1	ND	ug/L	U	4.2	5
Dibenz(a,h)anthracene	53-70-3	1	ND	ug/L	U	3.4	5
Dibenz(a,j)acridine	224-42-0	1	ND	ug/L	U	5.3	25
Dibenzofuran	132-64-9	1	ND	ug/L	U	4	5
Fluoranthene	206-44-0	1	ND	ug/L	U	4	5
Fluorene	86-73-7	1	ND	ug/L	U	3.3	5
Indeno(1,2,3-cd)pyrene	193-39-5	1	ND	ug/L	U	3.1	5
2-Methylnaphthalene	91-57-6	1	ND	ug/L	U	2.8	5
Naphthalene	91-20-3	1	ND	ug/L	U	2.4	5
Phenanthrene	85-01-8	1	ND	ug/L	U	2.5	5
Pyrene	129-00-0	1	ND	ug/L	U	3.5	5
Nitrobenzene-d5	SURROGATE	1	62	%			
2-Fluorobiphenyl	SURROGATE	1	60	%			
p-Terphenyl-d14	SURROGATE	1	46	%			

Review By: Ty Garber Report Approved By: Randy Greaves

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- J = Estimated Concentration, B = Analyte Detected in the Blank
- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

Form [redacted] Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: 90125-1.1/96
Project Number: 90-125
Sample ID: L2451-1 MW-1
Site / Project ID: Not Reported
Run ID: R2963
Collection Date: 10-JAN-96
Received Date: 12-JAN-96
Report Date: 18-JAN-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
SW846 Method 5030/8015 Mod.							
Preparation Date: 15-JAN-96							
Analysis Date: 15-JAN-96 13:33							
Workgroup Number: WG5399							
GRO	N/A	1	ND	mg/L	U	.05	.1
Bromofluorobenzene	SURROGATE	1	114	%			
SW846 Method 8015M							
Preparation Date: 19-JAN-96							
Analysis Date: 20-JAN-96 07:45							
Workgroup Number: WG5418							
DRO	N/A	1	ND	mg/L	U	.1	1

Review By: Ty Garber Report Approved By: Randy Greaves

Qual - U = Analyte Not Detected above the Method Detection Limit
- J = Estimated Concentration, B = Analyte Detected in the Blank
- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

Form Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: 90125-1.1/96
Project Number: 90-125
Sample ID: L2451-1 MW-1
Site / Project ID: Not Reported
Run ID: R2963
Collection Date: 10-JAN-96
Received Date: 12-JAN-96
Report Date: 18-JAN-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
SW846 Method 6010							
Preparation Date: 17-JAN-96							
Analysis Date: 19-JAN-96 11:19							
Workgroup Number: WG5415							
Barium (diss.)	7440-39-3	1	.01	mg/L	J	.00026	.02
Cadmium (diss.)	7440-43-9	1	ND	mg/L	U	.0019	.005
Calcium (diss.)	7440-70-2	1	455	mg/L		.01	1
Chromium (diss.)	7440-47-3	1	ND	mg/L	U	.0045	.01
Lead (diss.)	7439-92-1	1	ND	mg/L	U	.037	.1
Magnesium (diss.)	7439-95-4	1	241	mg/L		.012	1
Potassium (diss.)	7440-09-7	1	1.1	mg/L		.021	1
Silver (diss.)	7440-22-4	1	.0036	mg/L	J	.0019	.01
Sodium (diss.)	7440-23-5	1	91.7	mg/L		.027	1
SW7060 Dissolved							
Analysis Date: 19-JAN-96 12:14							
Workgroup Number: WG5416							
Arsenic (diss.)	7440-38-2	1	ND	mg/L	U	.00073	.005
SW7740 Dissolved							
Analysis Date: 19-JAN-96 09:55							
Workgroup Number: WG5417							
Selenium (diss.)	7782-49-2	1	ND	mg/L	U	.00074	.005
SW846 7470 (dissolved)							
Analysis Date: 17-JAN-96 17:18							
Workgroup Number: WG5410							
Mercury (diss)	7439-97-6	1	ND	mg/L	U	.00005	.0002

Review By: Ty Garber Report Approved By: Randy Greaves

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- J = Estimated Concentration, B = Analyte Detected in the Blank
- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

Form Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: 90125-1.1/96
Project Number: 90-125
Sample ID: L2451-1 MW-1
Site / Project ID: Not Reported
Run ID: R2963
Collection Date: 10-JAN-96
Received Date: 12-JAN-96
Report Date: 18-JAN-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
Standard Method 403							
Analysis Date: 15-JAN-96 09:15							
Workgroup Number: WG5390							
Bicarbonate	N/A	1	248	mg/L		1.4	2
Standard Method 403							
Analysis Date: 15-JAN-96 09:15							
Workgroup Number: WG5391							
Carbonate	N/A	1	ND	mg/L	U	1.4	2
MCAWW, Method 300.0							
Analysis Date: 15-JAN-96 11:11							
Workgroup Number: WG5411							
Chloride	N/A	50	157	mg/L		3.2	50
MCAWW, Method 300.0							
Analysis Date: 15-JAN-96 14:18							
Workgroup Number: WG5412							
Sulfate	N/A	100	1700	mg/L		14	100

Review By: Ty Garber Report Approved By: Randy Greaves

Qual - U = Analyte Not Detected above the Method Detection Limit
- J = Estimated Concentration, B.= Analyte Detected in the Blank
- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

Form Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: 90125-9.1/96
Project Number: 90-125
Sample ID: L2451-3 MW-9
Site / Project ID: Not Reported
Run ID: R2963
Collection Date: 10-JAN-96
Received Date: 12-JAN-96
Report Date: 18-JAN-96

Analyte	CAS No.	Dil	Sample Conc.	Units	RL
SW846 Method 8260 (5 ml)					
Preparation Date: 16-JAN-96					
Analysis Date: 16-JAN-96 16:37					
Workgroup Number: WG5459					
Benzene	71-43-2	1	ND	ug/L	5
Bromobenzene	108-86-1	1	ND	ug/L	5
Bromochloromethane	74-97-5	1	ND	ug/L	5
Bromodichloromethane	75-27-4	1	ND	ug/L	5
Bromoform	75-25-2	1	ND	ug/L	5
Bromomethane	74-83-9	1	ND	ug/L	10
tert-Butylbenzene	98-06-6	1	ND	ug/L	10
sec-Butylbenzene	135-98-8	1	ND	ug/L	10
n-Butylbenzene	104-51-8	1	13	ug/L	10
Carbon tetrachloride	56-23-5	1	ND	ug/L	5
Chlorobenzene	108-90-7	1	ND	ug/L	5
Chloroethane	75-00-3	1	ND	ug/L	10
Chloroform	67-66-3	1	ND	ug/L	5
Chloromethane	74-87-3	1	ND	ug/L	10
2-Chlorotoluene	95-49-8	1	ND	ug/L	10
4-Chlorotoluene	106-43-4	1	ND	ug/L	10
1,2-Dibromo-3-chloropropane	96-12-8	1	ND	ug/L	100
Dibromochloromethane	124-48-1	1	ND	ug/L	5
1,2-Dibromoethane	106-93-4	1	ND	ug/L	5
Dibromomethane	74-95-3	1	ND	ug/L	5
1,3-Dichlorobenzene	541-73-1	1	ND	ug/L	10
1,4-Dichlorobenzene	106-46-7	1	ND	ug/L	10
1,2-Dichlorobenzene	95-50-1	1	ND	ug/L	10
Dichlorodifluoromethane	75-71-8	1	ND	ug/L	10
1,1-Dichloroethane	75-34-3	1	20	ug/L	5
1,2-Dichloroethane	107-06-2	1	ND	ug/L	5
1,1-Dichloroethene	75-35-4	1	ND	ug/L	5
trans-1,2-Dichloroethene	156-60-5	1	ND	ug/L	5
cis-1,2-Dichloroethene	156-59-2	1	ND	ug/L	5
2,2-Dichloropropane	590-20-7	1	ND	ug/L	5
1,2-Dichloropropane	78-87-5	1	ND	ug/L	5
1,3-Dichloropropane	142-28-9	1	ND	ug/L	5
1,1-Dichloropropene	563-58-6	1	ND	ug/L	5
cis-1,3-Dichloropropene	10061-01-5	1	ND	ug/L	5
trans-1,3-Dichloropropene	10061-02-6	1	ND	ug/L	5
Ethylbenzene	100-41-4	1	32	ug/L	5

Review By: Ty Garber Report Approved By: Randy Greaves

"Dil" - Sample Dilution Factor
"ND" - Sample Concentration Not Detected above RL
"RL" - Method Report Limit

Form Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: 90125-9.1/96
Project Number: 90-125
Sample ID: L2451-3 MW-9
Site / Project ID: Not Reported
Run ID: R2963
Collection Date: 10-JAN-96
Received Date: 12-JAN-96
Report Date: 18-JAN-96

Analyte	CAS No.	Dil	Sample Conc.	Units	RL
Hexachlorobutadiene	87-68-3	1	ND	ug/L	10
Isopropylbenzene	98-82-8	1	ND	ug/L	10
p-Isopropyltoluene	99-87-6	1	ND	ug/L	10
Methylene chloride	75-09-2	1	ND	ug/L	5
Naphthalene	91-20-3	1	ND	ug/L	10
n-Propylbenzene	103-65-1	1	ND	ug/L	10
Styrene	100-42-5	1	ND	ug/L	5
1,1,1,2-Tetrachloroethane	630-20-6	1	ND	ug/L	5
1,1,2,2-Tetrachloroethane	79-34-5	1	ND	ug/L	5
Tetrachloroethene	127-18-4	1	ND	ug/L	5
Toluene	108-88-3	1	ND	ug/L	5
1,2,4-Trichlorobenzene	120-82-1	1	ND	ug/L	10
1,2,3-Trichlorobenzene	87-61-6	1	ND	ug/L	10
1,1,1-Trichloroethane	71-55-6	1	ND	ug/L	5
1,1,2-Trichloroethane	79-00-5	1	ND	ug/L	5
Trichloroethene	79-01-6	1	ND	ug/L	5
Trichlorofluoromethane	75-69-4	1	ND	ug/L	5
1,2,3-Trichloropropane	96-18-4	1	ND	ug/L	5
1,3,5-Trimethylbenzene	108-67-8	1	ND	ug/L	10
1,2,4-Trimethylbenzene	95-63-6	1	ND	ug/L	10
Vinyl chloride	75-01-4	1	ND	ug/L	2
(m+p)-Xylene	NA	1	ND	ug/L	5
o-Xylene	95-47-6	1	ND	ug/L	5
Dibromofluoromethane	SURROGATE	1	100	%	
Toluene-d8	SURROGATE	1	104	%	
4-Bromofluorobenzene	SURROGATE	1	95	%	

Review By: Ty Garber

Report Approved By: Randy Greaves

"Dil" - Sample Dilution Factor
"ND" - Sample Concentration Not Detected above RL
"RL" - Method Report Limit

Form I Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: 90125-9.1/96
Project Number: 90-125
Sample ID: L2451-3 MW-9
Site / Project ID: Not Reported
Run ID: R2963
Collection Date: 10-JAN-96
Received Date: 12-JAN-96
Report Date: 18-JAN-96

Analyte	CAS No.	Dil	Sample Conc.	Units	RL
SW846 Method 3520/8270					
Preparation Date: 15-JAN-96					
Analysis Date: 23-JAN-96 23:37					
Workgroup Number: WG5396					
Acenaphthene	83-32-9	1	ND	ug/L	5
Acenaphthylene	208-96-8	1	ND	ug/L	5
Anthracene	120-12-7	1	ND	ug/L	5
Benzo(a)anthracene	56-55-3	1	ND	ug/L	5
Benzo(a)pyrene	50-32-8	1	ND	ug/L	5
Benzo(b)fluoranthene	205-99-2	1	ND	ug/L	5
Benzo(g,h,i)perylene	191-24-2	1	ND	ug/L	5
Benzo(k)fluoranthene	207-08-9	1	ND	ug/L	5
Chrysene	218-01-9	1	ND	ug/L	5
Dibenz(a,h)anthracene	53-70-3	1	ND	ug/L	5
Dibenz(a,j)acridine	224-42-0	1	ND	ug/L	25
Dibenzofuran	132-64-9	1	ND	ug/L	5
Fluoranthene	206-44-0	1	ND	ug/L	5
Fluorene	86-73-7	1	ND	ug/L	5
Indeno(1,2,3-cd)pyrene	193-39-5	1	ND	ug/L	5
2-Methylnaphthalene	91-57-6	1	ND	ug/L	5
Naphthalene	91-20-3	1	ND	ug/L	5
Phenanthrene	85-01-8	1	ND	ug/L	5
Pyrene	129-00-0	1	ND	ug/L	5
Nitrobenzene-d5	SURROGATE	1	72	%	
2-Fluorobiphenyl	SURROGATE	1	70	%	
p-Terphenyl-d14	SURROGATE	1	62	%	

Review By: Ty Garber Report Approved By: Randy Greaves

"Dil" - Sample Dilution Factor
"ND" - Sample Concentration Not Detected above RL
"RL" - Method Report Limit

Form Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID:	90125-9.1/96
Project Number:	90-125
Sample ID:	L2451-3 MW-9
Site / Project ID:	Not Reported
Run ID:	R2963
Collection Date:	10-JAN-96
Received Date:	12-JAN-96
Report Date:	18-JAN-96

Analyte	CAS No.	Dil	Sample Conc.	Units	RL
SW846 Method 5030/8015 Mod.					
Preparation Date: 15-JAN-96					
Analysis Date: 15-JAN-96 12:13					
Workgroup Number: WG5399					
GRO	N/A	1	.16	mg/L	.1
Bromofluorobenzene	SURROGATE	1	100	%	
SW846 Method 8015M					
Preparation Date: 19-JAN-96					
Analysis Date: 20-JAN-96 08:36					
Workgroup Number: WG5418					
DRO	N/A	1	ND	mg/L	1

Review By: Ty Garber Report Approved By: Randy Greaves

"Dil" - Sample Dilution Factor
"ND" - Sample Concentration Not Detected above RL
"RL" - Method Report Limit

Form Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: 90125-9.1/96
Project Number: 90-125
Sample ID: L2451-3 MW-9
Site / Project ID: Not Reported
Run ID: R2963
Collection Date: 10-JAN-96
Received Date: 12-JAN-96
Report Date: 18-JAN-96

Analyte	CAS No.	Dil	Sample Conc.	Units	RL
SW846 Method 6010					
Preparation Date: 17-JAN-96					
Analysis Date: 19-JAN-96 11:37					
Workgroup Number: WG5415					
Barium (diss.)	7440-39-3	1	.0462	mg/L	.02
Cadmium (diss.)	7440-43-9	1	ND	mg/L	.005
Calcium (diss.)	7440-70-2	1	545	mg/L	1
Chromium (diss.)	7440-47-3	1	ND	mg/L	.01
Lead (diss.)	7439-92-1	1	ND	mg/L	.1
Magnesium (diss.)	7439-95-4	1	336	mg/L	1
Potassium (diss.)	7440-09-7	1	ND	mg/L	1
Silver (diss.)	7440-22-4	1	ND	mg/L	.01
Sodium (diss.)	7440-23-5	1	217	mg/L	1
SW7060 Dissolved					
Analysis Date: 19-JAN-96 14:07					
Workgroup Number: WG5416					
Arsenic (diss.)	7440-38-2	2	.022	mg/L	.01
SW7740 Dissolved					
Analysis Date: 19-JAN-96 10:20					
Workgroup Number: WG5417					
Selenium (diss.)	7782-49-2	1	ND	mg/L	.005
SW846 7470 (dissolved)					
Analysis Date: 17-JAN-96 17:22					
Workgroup Number: WG5410					
Mercury (diss)	7439-97-6	1	ND	mg/L	.0002

Review By: Ty Garber Report Approved By: Randy Greaves

"Dil" - Sample Dilution Factor
"ND" - Sample Concentration Not Detected above RL
"RL" - Method Report Limit

Form Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: 90125-9.1/96
Project Number: 90-125
Sample ID: L2451-3 MW-9
Site / Project ID: Not Reported
Run ID: R2963
Collection Date: 10-JAN-96
Received Date: 12-JAN-96
Report Date: 18-JAN-96

Analyte	CAS No.	Dil	Sample Conc.	Units	RL
Standard Method 403					
Analysis Date: 15-JAN-96 09:15					
Workgroup Number: WG5390					
Bicarbonate	N/A	1	606	mg/L	4
Standard Method 403					
Analysis Date: 15-JAN-96 09:15					
Workgroup Number: WG5391					
Carbonate	N/A	1	ND	mg/L	4
MCAWW, Method 300.0					
Analysis Date: 15-JAN-96 13:45					
Workgroup Number: WG5411					
Chloride	N/A	250	1250	mg/L	250
MCAWW, Method 300.0					
Analysis Date: 15-JAN-96 12:56					
Workgroup Number: WG5412					
Sulfate	N/A	50	786	mg/L	50

Review By: Ty Garber Report Approved By: Randy Greaves

"Dil" - Sample Dilution Factor
"ND" - Sample Concentration Not Detected above RL
"RL" - Method Report Limit

Form I - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: 90125-10.1/96
Project Number: 90-125
Sample ID: L2451-4 MW-10
Site / Project ID: Not Reported
Run ID: R2963
Collection Date: 10-JAN-96
Received Date: 12-JAN-96
Report Date: 18-JAN-96

Analyte	CAS No.	Dil	Sample Conc.	Units	RL
SW846 Method 8260 (5 ml)					
Preparation Date: 24-JAN-96					
Analysis Date: 22-JAN-96 13:35					
Workgroup Number: WG5461					
Benzene	71-43-2	1	ND	ug/L	5
Bromobenzene	108-86-1	1	ND	ug/L	5
Bromochloromethane	74-97-5	1	ND	ug/L	5
Bromodichloromethane	75-27-4	1	ND	ug/L	5
Bromoform	75-25-2	1	ND	ug/L	5
Bromomethane	74-83-9	1	ND	ug/L	10
tert-Butylbenzene	98-06-6	1	ND	ug/L	10
sec-Butylbenzene	135-98-8	1	ND	ug/L	10
n-Butylbenzene	104-51-8	1	ND	ug/L	10
Carbon tetrachloride	56-23-5	1	ND	ug/L	5
Chlorobenzene	108-90-7	1	ND	ug/L	5
Chloroethane	75-00-3	1	ND	ug/L	10
Chloroform	67-66-3	1	ND	ug/L	5
Chloromethane	74-87-3	1	ND	ug/L	10
2-Chlorotoluene	95-49-8	1	ND	ug/L	10
4-Chlorotoluene	106-43-4	1	ND	ug/L	10
1,2-Dibromo-3-chloropropane	96-12-8	1	ND	ug/L	100
Dibromochloromethane	124-48-1	1	ND	ug/L	5
1,2-Dibromoethane	106-93-4	1	ND	ug/L	5
Dibromomethane	74-95-3	1	ND	ug/L	5
1,3-Dichlorobenzene	541-73-1	1	ND	ug/L	10
1,4-Dichlorobenzene	106-46-7	1	ND	ug/L	10
1,2-Dichlorobenzene	95-50-1	1	ND	ug/L	10
Dichlorodifluoromethane	75-71-8	1	ND	ug/L	10
1,1-Dichloroethane	75-34-3	1	ND	ug/L	5
1,2-Dichloroethane	107-06-2	1	ND	ug/L	5
1,1-Dichloroethene	75-35-4	1	63	ug/L	5
trans-1,2-Dichloroethene	156-60-5	1	ND	ug/L	5
cis-1,2-Dichloroethene	156-59-2	1	ND	ug/L	5
2,2-Dichloropropane	590-20-7	1	ND	ug/L	5
1,2-Dichloropropane	78-87-5	1	ND	ug/L	5
1,3-Dichloropropane	142-28-9	1	ND	ug/L	5
1,1-Dichloropropene	563-58-6	1	ND	ug/L	5
cis-1,3-Dichloropropene	10061-01-5	1	ND	ug/L	5
trans-1,3-Dichloropropene	10061-02-6	1	ND	ug/L	5
Ethylbenzene	100-41-4	1	ND	ug/L	5

Review By: Ty Garber Report Approved By: Randy Greaves

"Dil" - Sample Dilution Factor
"ND" - Sample Concentration Not Detected above RL
"RL" - Method Report Limit

Form - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: 90125-10.1/96
Project Number: 90-125
Sample ID: L2451-4 MW-10
Site / Project ID: Not Reported
Run ID: R2963
Collection Date: 10-JAN-96
Received Date: 12-JAN-96
Report Date: 18-JAN-96

Analyte	CAS No.	Dil	Sample Conc.	Units	RL
Hexachlorobutadiene	87-68-3	1	ND	ug/L	10
Isopropylbenzene	98-82-8	1	ND	ug/L	10
p-Isopropyltoluene	99-87-6	1	ND	ug/L	10
Methylene chloride	75-09-2	1	ND	ug/L	5
Naphthalene	91-20-3	1	ND	ug/L	10
n-Propylbenzene	103-65-1	1	ND	ug/L	10
Styrene	100-42-5	1	ND	ug/L	5
1,1,1,2-Tetrachloroethane	630-20-6	1	ND	ug/L	5
1,1,2,2-Tetrachloroethane	79-34-5	1	ND	ug/L	5
Tetrachloroethene	127-18-4	1	ND	ug/L	5
Toluene	108-88-3	1	ND	ug/L	5
1,2,4-Trichlorobenzene	120-82-1	1	ND	ug/L	10
1,2,3-Trichlorobenzene	87-61-6	1	ND	ug/L	10
1,1,1-Trichloroethane	71-55-6	1	ND	ug/L	5
1,1,2-Trichloroethane	79-00-5	1	ND	ug/L	5
Trichloroethene	79-01-6	1	ND	ug/L	5
Trichlorofluoromethane	75-69-4	1	ND	ug/L	5
1,2,3-Trichloropropane	96-18-4	1	ND	ug/L	5
1,3,5-Trimethylbenzene	108-67-8	1	ND	ug/L	10
1,2,4-Trimethylbenzene	95-63-6	1	ND	ug/L	10
Vinyl chloride	75-01-4	1	ND	ug/L	2
(m+p)-Xylene	NA	1	ND	ug/L	5
o-Xylene	95-47-6	1	ND	ug/L	5
Dibromofluoromethane	SURROGATE	1	100	%	
Toluene-d8	SURROGATE	1	92	%	
4-Bromofluorobenzene	SURROGATE	1	90	%	

Review By: Ty Garber

Report Approved By: Randy Greaves

"Dil" - Sample Dilution Factor
"ND" - Sample Concentration Not Detected above RL
"RL" - Method Report Limit

Form - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: 90125-10.1/96
Project Number: 90-125
Sample ID: L2451-4 MW-10
Site / Project ID: Not Reported
Run ID: R2963
Collection Date: 10-JAN-96
Received Date: 12-JAN-96
Report Date: 18-JAN-96

Analyte	CAS No.	Dil	Sample Conc.	Units	RL
SW846 Method 3520/8270					
Preparation Date: 15-JAN-96					
Analysis Date: 24-JAN-96 00:24					
Workgroup Number: WG5396					
Acenaphthene	83-32-9	1	ND	ug/L	5
Acenaphthylene	208-96-8	1	ND	ug/L	5
Anthracene	120-12-7	1	ND	ug/L	5
Benzo(a)anthracene	56-55-3	1	ND	ug/L	5
Benzo(a)pyrene	50-32-8	1	ND	ug/L	5
Benzo(b)fluoranthene	205-99-2	1	ND	ug/L	5
Benzo(g,h,i)perylene	191-24-2	1	ND	ug/L	5
Benzo(k)fluoranthene	207-08-9	1	ND	ug/L	5
Chrysene	218-01-9	1	ND	ug/L	5
Dibenz(a,h)anthracene	53-70-3	1	ND	ug/L	5
Dibenz(a,j)acridine	224-42-0	1	ND	ug/L	25
Dibenzofuran	132-64-9	1	ND	ug/L	5
Fluoranthene	206-44-0	1	ND	ug/L	5
Fluorene	86-73-7	1	ND	ug/L	5
Indeno(1,2,3-cd)pyrene	193-39-5	1	ND	ug/L	5
2-Methylnaphthalene	91-57-6	1	ND	ug/L	5
Naphthalene	91-20-3	1	ND	ug/L	5
Phenanthrene	85-01-8	1	ND	ug/L	5
Pyrene	129-00-0	1	ND	ug/L	5
Nitrobenzene-d5	SURROGATE	1	62	%	
2-Fluorobiphenyl	SURROGATE	1	66	%	
p-Terphenyl-d14	SURROGATE	1	62	%	

Review By: Ty Garber Report Approved By: Randy Greaves

"Dil" - Sample Dilution Factor
"ND" - Sample Concentration Not Detected above RL
"RL" - Method Report Limit

Form - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: 90125-10.1/96
Project Number: 90-125
Sample ID: L2451-4 MW-10
Site / Project ID: Not Reported
Run ID: R2963
Collection Date: 10-JAN-96
Received Date: 12-JAN-96
Report Date: 18-JAN-96

Analyte	CAS No.	Dil	Sample Conc.	Units	RL
SW846 Method 5030/8015 Mod.					
Preparation Date: 15-JAN-96					
Analysis Date: 15-JAN-96 12:54					
Workgroup Number: WG5399					
GRO	N/A	1	ND	mg/L	.1
Bromofluorobenzene	SURROGATE	1	106	%	
SW846 Method 8015M					
Preparation Date: 19-JAN-96					
Analysis Date: 20-JAN-96 09:02					
Workgroup Number: WG5418					
DRO	N/A	1	ND	mg/L	1

Review By: Ty Garber
Report Approved By: Randy Greaves

"Dil" - Sample Dilution Factor
"ND" - Sample Concentration Not Detected above RL
"RL" - Method Report Limit

Form - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: 90125-10.1/96
Project Number: 90-125
Sample ID: L2451-4 MW-10
Site / Project ID: Not Reported
Run ID: R2963
Collection Date: 10-JAN-96
Received Date: 12-JAN-96
Report Date: 18-JAN-96

Analyte	CAS No.	Dil	Sample Conc.	Units	RL
SW846 Method 6010					
Preparation Date: 17-JAN-96					
Analysis Date: 19-JAN-96 11:41					
Workgroup Number: WG5415					
Barium (diss.)	7440-39-3	1	ND	mg/L	.02
Cadmium (diss.)	7440-43-9	1	ND	mg/L	.005
Calcium (diss.)	7440-70-2	1	548	mg/L	1
Chromium (diss.)	7440-47-3	1	ND	mg/L	.01
Lead (diss.)	7439-92-1	1	ND	mg/L	.1
Magnesium (diss.)	7439-95-4	1	253	mg/L	1
Potassium (diss.)	7440-09-7	1	1.15	mg/L	1
Silver (diss.)	7440-22-4	1	ND	mg/L	.01
Sodium (diss.)	7440-23-5	1	204	mg/L	1
SW7060 Dissolved					
Analysis Date: 19-JAN-96 14:11					
Workgroup Number: WG5416					
Arsenic (diss.)	7440-38-2	1	ND	mg/L	.01
SW7740 Dissolved					
Analysis Date: 19-JAN-96 10:24					
Workgroup Number: WG5417					
Selenium (diss.)	7782-49-2	1	.011	mg/L	.005
SW846 7470 (dissolved)					
Analysis Date: 17-JAN-96 17:25					
Workgroup Number: WG5410					
Mercury (diss)	7439-97-6	1	.0003	mg/L	.0002

Review By: Ty Garber Report Approved By: Randy Greaves

"Dil" - Sample Dilution Factor
"ND" - Sample Concentration Not Detected above RL
"RL" - Method Report Limit

Form - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: 90125-10.1/96
Project Number: 90-125
Sample ID: L2451-4 MW-10
Site / Project ID: Not Reported
Run ID: R2963
Collection Date: 10-JAN-96
Received Date: 12-JAN-96
Report Date: 18-JAN-96

Analyte	CAS No.	Dil	Sample Conc.	Units	RL
Standard Method 403					
Analysis Date: 15-JAN-96 09:15					
Workgroup Number: WG5390					
Bicarbonate	N/A	1	187	mg/L	2
Standard Method 403					
Analysis Date: 15-JAN-96 09:15					
Workgroup Number: WG5391					
Carbonate	N/A	1	ND	mg/L	2
MCAWW, Method 300.0					
Analysis Date: 15-JAN-96 13:56					
Workgroup Number: WG5411					
Chloride	N/A	50	192	mg/L	50
MCAWW, Method 300.0					
Analysis Date: 15-JAN-96 15:13					
Workgroup Number: WG5412					
Sulfate	N/A	250	2200	mg/L	250

Review By: Ty Garber Report Approved By: Randy Greaves

"Dil" - Sample Dilution Factor
"ND" - Sample Concentration Not Detected above RL
"RL" - Method Report Limit

Form - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: 90125-15.1/96
Project Number: 90-125
Sample ID: L2451-2 MW-15
Site / Project ID: Not Reported
Run ID: R2963
Collection Date: 10-JAN-96
Received Date: 12-JAN-96
Report Date: 18-JAN-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
SW846 Method 8260 (5 ml)							
Preparation Date: 16-JAN-96							
Analysis Date: 16-JAN-96 15:58							
Workgroup Number: WG5459							
Benzene	71-43-2	1	ND	ug/L	U	.39	5
Bromobenzene	108-86-1	1	ND	ug/L	U	.57	5
Bromochloromethane	74-97-5	1	ND	ug/L	U	.69	5
Bromodichloromethane	75-27-4	1	ND	ug/L	U	.64	5
Bromoform	75-25-2	1	ND	ug/L	U	.47	5
Bromomethane	74-83-9	1	ND	ug/L	U	.49	10
tert-Butylbenzene	98-06-6	1	ND	ug/L	U	.59	10
sec-Butylbenzene	135-98-8	1	ND	ug/L	U	.63	10
n-Butylbenzene	104-51-8	1	ND	ug/L	U	.59	10
Carbon tetrachloride	56-23-5	1	ND	ug/L	U	1.4	5
Chlorobenzene	108-90-7	1	ND	ug/L	U	.44	5
Chloroethane	75-00-3	1	ND	ug/L	U	.54	10
Chloroform	67-66-3	1	ND	ug/L	U	1.4	5
Chloromethane	74-87-3	1	ND	ug/L	U	2	10
2-Chlorotoluene	95-49-8	1	ND	ug/L	U	.51	10
4-Chlorotoluene	106-43-4	1	ND	ug/L	U	.51	10
1,2-Dibromo-3-chloropropane	96-12-8	1	ND	ug/L	U	.61	100
Dibromochloromethane	124-48-1	1	ND	ug/L	U	.5	5
1,2-Dibromoethane	106-93-4	1	ND	ug/L	U	.5	5
Dibromomethane	74-95-3	1	ND	ug/L	U	1.4	5
1,3-Dichlorobenzene	541-73-1	1	ND	ug/L	U	.7	10
1,4-Dichlorobenzene	106-46-7	1	ND	ug/L	U	.56	10
1,2-Dichlorobenzene	95-50-1	1	ND	ug/L	U	.73	10
Dichlorodifluoromethane	75-71-8	1	ND	ug/L	U	.43	10
1,1-Dichloroethane	75-34-3	1	13	ug/L		1.7	5
1,2-Dichloroethane	107-06-2	1	ND	ug/L	U	2.1	5
1,1-Dichloroethene	75-35-4	1	2.5	ug/L	J	.48	5
trans-1,2-Dichloroethene	156-60-5	1	ND	ug/L	U	.55	5
cis-1,2-Dichloroethene	156-59-2	1	ND	ug/L	U	1.8	5
2,2-Dichloropropane	590-20-7	1	ND	ug/L	U	3.3	5
1,2-Dichloropropane	78-87-5	1	ND	ug/L	U	.51	5
1,3-Dichloropropane	142-28-9	1	ND	ug/L	U	1.5	5

Review By: Ty Garber Report Approved By: Randy Greaves

Qual - U = Analyte Not Detected above the Method Detection Limit
- J = Estimated Concentration, B = Analyte Detected in the Blank
- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

For - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: 90125-15.1/96
Project Number: 90-125
Sample ID: L2451-2 MW-15
Site / Project ID: Not Reported
Run ID: R2963
Collection Date: 10-JAN-96
Received Date: 12-JAN-96
Report Date: 18-JAN-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
1,1-Dichloropropene	563-58-6	1	ND	ug/L	U	1.7	5
cis-1,3-Dichloropropene	10061-01-5	1	ND	ug/L	U	.78	5
trans-1,3-Dichloropropene	10061-02-6	1	ND	ug/L	U	.55	5
Ethylbenzene	100-41-4	1	ND	ug/L	U	.75	5
Hexachlorobutadiene	87-68-3	1	ND	ug/L	U	1.1	10
Isopropylbenzene	98-82-8	1	ND	ug/L	U	.54	10
p-Isopropyltoluene	99-87-6	1	ND	ug/L	U	.64	10
Methylene chloride	75-09-2	1	ND	ug/L	U	.75	5
Naphthalene	91-20-3	1	ND	ug/L	U	1	10
n-Propylbenzene	103-65-1	1	ND	ug/L	U	.62	10
Styrene	100-42-5	1	ND	ug/L	U	.72	5
1,1,1,2-Tetrachloroethane	630-20-6	1	ND	ug/L	U	.45	5
1,1,2,2-Tetrachloroethane	79-34-5	1	ND	ug/L	U	.63	5
Tetrachloroethene	127-18-4	1	ND	ug/L	U	.49	5
Toluene	108-88-3	1	ND	ug/L	U	.85	5
1,2,4-Trichlorobenzene	120-82-1	1	ND	ug/L	U	.84	10
1,2,3-Trichlorobenzene	87-61-6	1	ND	ug/L	U	.94	10
1,1,1-Trichloroethane	71-55-6	1	ND	ug/L	U	1.7	5
1,1,2-Trichloroethane	79-00-5	1	ND	ug/L	U	1.2	5
Trichloroethene	79-01-6	1	ND	ug/L	U	.42	5
Trichlorofluoromethane	75-69-4	1	ND	ug/L	U	.62	5
1,2,3-Trichloropropane	96-18-4	1	ND	ug/L	U	1.1	5
1,3,5-Trimethylbenzene	108-67-8	1	ND	ug/L	U	.55	10
1,2,4-Trimethylbenzene	95-63-6	1	ND	ug/L	U	.56	10
Vinyl chloride	75-01-4	1	ND	ug/L	U	.47	2
(m+p)-Xylene	NA	1	ND	ug/L	U	2.3	5
o-Xylene	95-47-6	1	ND	ug/L	U	1.4	5
Dibromofluoromethane	SURROGATE	1	96	%			
Toluene-d8	SURROGATE	1	101	%			
4-Bromofluorobenzene	SURROGATE	1	89	%			

Review By: Ty Garber Report Approved By: Randy Greaves

Qual - U = Analyte Not Detected above the Method Detection Limit
- J = Estimated Concentration, B = Analyte Detected in the Blank
- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

Form - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: 90125-15.1/96
Project Number: 90-125
Sample ID: L2451-2 MW-15
Site / Project ID: Not Reported
Run ID: R2963
Collection Date: 10-JAN-96
Received Date: 12-JAN-96
Report Date: 18-JAN-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
SW846 Method 3520/8270							
Preparation Date: 15-JAN-96							
Analysis Date: 23-JAN-96 22:51							
Workgroup Number: WG5396							
Acenaphthene	83-32-9	1	ND	ug/L	U	4.2	5
Acenaphthylene	208-96-8	1	ND	ug/L	U	3.5	5
Anthracene	120-12-7	1	ND	ug/L	U	2.6	5
Benzo(a)anthracene	56-55-3	1	ND	ug/L	U	2.8	5
Benzo(a)pyrene	50-32-8	1	ND	ug/L	U	3.5	5
Benzo(b)fluoranthene	205-99-2	1	ND	ug/L	U	2.6	5
Benzo(g,h,i)perylene	191-24-2	1	ND	ug/L	U	3.1	5
Benzo(k)fluoranthene	207-08-9	1	ND	ug/L	U	3.9	5
Chrysene	218-01-9	1	ND	ug/L	U	4.2	5
Dibenz(a,h)anthracene	53-70-3	1	ND	ug/L	U	3.4	5
Dibenz(a,j)acridine	224-42-0	1	ND	ug/L	U	5.3	25
Dibenzofuran	132-64-9	1	ND	ug/L	U	4	5
Fluoranthene	206-44-0	1	ND	ug/L	U	4	5
Fluorene	86-73-7	1	ND	ug/L	U	3.3	5
Indeno(1,2,3-cd)pyrene	193-39-5	1	ND	ug/L	U	3.1	5
2-Methylnaphthalene	91-57-6	1	ND	ug/L	U	2.8	5
Naphthalene	91-20-3	1	ND	ug/L	U	2.4	5
Phenanthrene	85-01-8	1	ND	ug/L	U	2.5	5
Pyrene	129-00-0	1	ND	ug/L	U	3.5	5
Nitrobenzene-d5	SURROGATE	1	2	%			
2-Fluorobiphenyl	SURROGATE	1	68	%			
p-Terphenyl-d14	SURROGATE	1	30	%			

Review By: Ty Garber Report Approved By: Randy Greaves

Qual - U = Analyte Not Detected above the Method Detection Limit
- J = Estimated Concentration, B = Analyte Detected in the Blank
- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

Form - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: 90125-15.1/96
Project Number: 90-125
Sample ID: L2451-2 MW-15
Site / Project ID: Not Reported
Run ID: R2963
Collection Date: 10-JAN-96
Received Date: 12-JAN-96
Report Date: 18-JAN-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
SW846 Method 5030/8015 Mod.							
Preparation Date: 15-JAN-96							
Analysis Date: 15-JAN-96 11:32							
Workgroup Number: WG5399							
GRO	N/A	1	ND	mg/L	U	.05	.1
Bromofluorobenzene	SURROGATE	1	102	%			
SW846 Method 8015M							
Preparation Date: 19-JAN-96							
Analysis Date: 20-JAN-96 08:11							
Workgroup Number: WG5418							
DRO	N/A	1	ND	mg/L	U	.1	1

Review By: Ty Garber Report Approved By: Randy Greaves

Qual - U = Analyte Not Detected above the Method Detection Limit
- J = Estimated Concentration, B = Analyte Detected in the Blank
- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

Form - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: 90125-15.1/96
Project Number: 90-125
Sample ID: L2451-2 MW-15
Site / Project ID: Not Reported
Run ID: R2963
Collection Date: 10-JAN-96
Received Date: 12-JAN-96
Report Date: 18-JAN-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
SW846 Method 6010							
Preparation Date: 17-JAN-96							
Analysis Date: 19-JAN-96 11:34							
Workgroup Number: WG5415							
Barium (diss.)	7440-39-3	1	.0225	mg/L		.00026	.02
Cadmium (diss.)	7440-43-9	1	ND	mg/L	U	.0019	.005
Calcium (diss.)	7440-70-2	1	407	mg/L		.01	1
Chromium (diss.)	7440-47-3	1	ND	mg/L	U	.0045	.01
Lead (diss.)	7439-92-1	1	ND	mg/L	U	.037	.1
Magnesium (diss.)	7439-95-4	1	252	mg/L		.012	1
Potassium (diss.)	7440-09-7	1	.38	mg/L	J	.021	1
Silver (diss.)	7440-22-4	1	.003	mg/L	J	.0019	.01
Sodium (diss.)	7440-23-5	1	122	mg/L		.027	1
SW7060 Dissolved							
Analysis Date: 19-JAN-96 14:03							
Workgroup Number: WG5416							
Arsenic (diss.)	7440-38-2	2	ND	mg/L	U	.0015	.01
SW7740 Dissolved							
Analysis Date: 19-JAN-96 10:16							
Workgroup Number: WG5417							
Selenium (diss.)	7782-49-2	1	ND	mg/L	U	.00074	.005
SW846 7470 (dissolved)							
Analysis Date: 17-JAN-96 17:20							
Workgroup Number: WG5410							
Mercury (diss)	7439-97-6	1	ND	mg/L	U	.00005	.0002

Review By: Ty Garber Report Approved By: Randy Greaves

Qual - U = Analyte Not Detected above the Method Detection Limit
- J = Estimated Concentration, B = Analyte Detected in the Blank
- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

Form - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: 90125-15.1/96
Project Number: 90-125
Sample ID: L2451-2 MW-15
Site / Project ID: Not Reported
Run ID: R2963
Collection Date: 10-JAN-96
Received Date: 12-JAN-96
Report Date: 18-JAN-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
Standard Method 403							
Analysis Date: 15-JAN-96 09:15							
Workgroup Number: WG5390							
Bicarbonate	N/A	1	443	mg/L		2.8	4
Standard Method 403							
Analysis Date: 15-JAN-96 09:15							
Workgroup Number: WG5391							
Carbonate	N/A	1	ND	mg/L	U	2.8	4
MCAWW, Method 300.0							
Analysis Date: 15-JAN-96 11:22							
Workgroup Number: WG5411							
Chloride	N/A	50	344	mg/L		3.2	50
MCAWW, Method 300.0							
Analysis Date: 15-JAN-96 14:29							
Workgroup Number: WG5412							
Sulfate	N/A	100	1450	mg/L		14	100

Review By: Ty Garber Report Approved By: Randy Greaves

Qual - U = Analyte Not Detected above the Method Detection Limit
- J = Estimated Concentration, B = Analyte Detected in the Blank
- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

Schlumberger

HEALTH, SAFETY & ENVIRONMENT
OILFIELD SERVICES SHARED RESOURCES

DATE: 2/26/96 **NO. PAGES (Including Cover):** 6

TO: CHRIS FUSTICE **FROM:** John A. Miller
Remediation Manager

FAX NO: 505-827-8177 **FAX:** (713) 275-8526

LOCATION: _____ **PHONE:** (713) 275-8498

MESSAGE ARTESIA ADDITONAL SOIL SAMPLES.

☐ **RESPONSE REQUESTED BY (DATE):** _____

300 Schlumberger Drive
Sugar Land, TX 77478

P.O. Box 2727
Houston, TX 77252

JN 90-1252.0

CARDINAL LABORATORIES

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

TOTAL PETROLEUM HYDROCARBONS

Company	: Western Water Consultants, Inc	Date	: 01/17/96
Address	: 611 Skyline Rd.	Lab #	: H2373
City, State	: Laramie, Wyoming		
Project Name	: 90125		
Location	: not given		
Sampled by	: RD	Date:	01/11/96
Analyzed by	: NI	Date:	01/17/96
Sample Type	: soil	Sample Condition:	intact

Units: mg/Kg

Sample#	FIELD CODE	TRPHC
1	North End	249
2	North Middle	< 1.0
3	South Middle	34.2
4	South End	11.6
	QC Recovery	2037.0
	QC Spike	2000.0
	Accuracy	102.0%

WESTERN WATER CONSULTANTS, INC
FEB 14 [illegible]
LARAMIE, WY 82070

METHODS - INFRARED SPECTROSCOPY
- EPA SW-846; 418.1, 3510, 3540 or 8015 M

Mitch Irvin

Mitch Irvin

1/17/96

Date

CARDINAL LABORATORIES

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

TCLP ANALYSIS REPORT

Company:	Western Water Consultants	Date:	02/06/96
Address:	PO Box 4128	Lab #:	H2373
City, State:	Laramie, Wyoming 82070		
Project Name:	90125		
Location:	not given		
Sampled by:	RD	Date:	01/11/96
Sample Type:	soil	Sample Condition:	intact

Sample ID #1: North End
#2: North Middle
#3: South Middle
#4: South End

HAZARDOUS WASTE CHARACTERISATION

PARAMETER	RESULT 1	RESULT 2	RESULT 3	RESULT 4	UNITS
Ignitability (Pensky-Martens Closed Cup)	>140	>140	>140	>140	F
Corrositivity (pH)	7.29	7.57	7.48	7.59	
Reactivity-S	< 40 1.0	< 2.0 1.0	< 4.0 1.0	< 40 1.0	mg/kg
Reactivity-CN					

METHODS: HWC - EPA SW 846-7.3, 7.2, 1010

Nitch Irvin

2-7-96
Date

CARDINAL LABORATORIES

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

FINAL ANALYSIS REPORT

Company: Western Water Consultants
Address: PO Box 4128
City, State: Laramie, Wyoming 82070
Project Name: 90125
Location: not given
Sampled by: MD
Sample type: Soil

Date: 01/17/96
Lab #: H2373-1-4

Sample Condition: intact

Sample ID #1: North End 15:15
Sample ID #2: North Middle 15:30
Sample ID #3: South Middle 15:45
Sample ID #4: South End 16:00

TCLP ANALYSIS SEMI-VOLATILES

PARAMETER	RESULT 1	RESULT 2	RESULT 3	RESULT 4
Pyridine	<0.02	<0.02	<0.02	<0.02
1,4-Dichlorobenzene	<0.02	<0.02	<0.02	<0.02
o-Cresol	<0.02	<0.02	<0.02	<0.02
m,p-Cresol	<0.04	<0.04	<0.04	<0.04
Hexachloroethane	<0.02	<0.02	<0.02	<0.02
Nitrobenzene	<0.02	<0.02	<0.02	<0.02
Hexachloroethane	<0.02	<0.02	<0.02	<0.02
2,4,6-Trichlorophene	<0.02	<0.02	<0.02	<0.02
2,4,5-Trichlorophenol	<0.02	<0.02	<0.02	<0.02
2,4-Dinitrotoluene	<0.02	<0.02	<0.02	<0.02
Hexachlorobenzene	<0.02	<0.02	<0.02	<0.02
4-Aminobiphenyl	<0.02	<0.02	<0.02	<0.02
Pentachlorophenol	<0.02	<0.02	<0.02	<0.02

METHODS: EPA SW 846-8270

Mitch Irvin

2-7-96
Date

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E MARLAND • HOBBS, NM 88240
PHONE (505) 326-4668 • 118 S. COMMERCIAL AVE. • FARMINGTON, NM 87401

FINAL ANALYSIS REPORT

Company: Western Water Consultants
Address: PO Box 4128
City, State: Laramie, Wyoming 82070
Project Name: 901251
Location: not given
Sampled by: RD
Sample Type: soil

Date: 01/16/96
Lab #: H2373-1-4

Date: 01/11/96
Sample Condition: intact
Units: mg/kg

TCLP ANALYSIS VOLATILES

PARAMETER	RESULT 1	RESULT 2	RESULT 3	RESULT 4
Vinyl Chloride	<0.001	<0.001	<0.001	<0.001
1,1-Dichloroethylene	<0.001	<0.001	<0.001	<0.001
Methyl ethyl ketone	<0.001	<0.001	<0.001	<0.001
Chloroform	0.028	<0.001	<0.001	<0.001
1,2 Dichloroethane	<0.001	<0.001	<0.001	<0.001
Benzene	<0.001	<0.001	<0.001	<0.001
Carbon tetrachloride	<0.001	<0.001	<0.001	<0.001
Trichloroethene	<0.001	<0.001	<0.001	<0.001
Tetrachloroethylene	<0.001	<0.001	<0.001	<0.001
Chlorobenzene	<0.001	<0.001	<0.001	<0.001
1,4,-Dichlorobenzene	<0.001	<0.001	<0.001	<0.001

METHOD: VOLATILES - EPA 8260

Mitch Irvin

2-7-96
Date

CARDINAL LABORATORIES

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

FINAL ANALYSIS

Company: Western Water Consultants
Address: PO Box 4120
City, State: Laramie, Wyoming 82070
Project Name: 90125
Location: not given
Sampled by: RD
Sample Type: soil

Date: 02/07/96
Lab #: H2373

Date: 01/11/96
Sample Condition: intact

Sample

TCLP INORGANICS (Leachate)

PARAMETER	SAMPLE 1	SAMPLE 2	SAMPLE 3	SAMPLE 4	EPA LIMIT	UNITS
Silver	<0.1	<0.1	<0.1	<0.1	5	ppm
Arsenic	<0.1	<0.1	<0.1	<0.1	5	ppm
Barium	0.3	0.3	0.3	0.3	100	ppm
Cadmium	<0.1	<0.1	<0.1	<0.1	1	ppm
Chromium	<0.1	<0.1	<0.1	<0.1	5	ppm
Mercury	<0.002	<0.002	<0.002	<0.002	0.2	ppm
Lead	<0.1	<0.1	<0.1	<0.1	5	ppm
Selenium	<0.1	<0.1	<0.1	<0.1	1	ppm

METHODS: TCLP METAL (Leachate) - EPA 1311, 600/4-91/010

Mitch Irvin

2/9/96
Date

MEMORANDUM OF CONVERSATION

✓ TELEPHONE __ PERSONAL TIME 930AM DATE 2/22/96

ORIGINATTING PARTY CHRIS EUSTICE

OTHER PARTIES JOHN MILLER
DOWELL/SCHLUMBERGER

DISCUSSION

RE: ARTESIA SERVICE FACILITY - DOWELL/SCHLUMBERGER
ACID PLANT CLOSURE

John had the most recent closure report for the facility sent to me, at my request, w/ analytical data from 3 down gradient wells.

Chlorinated solvents & PAH's

CONCLUSIONS

CHRIS EUSTICE

Schlumberger Oilfield Services

Oilfield Services Shared Resources

John A. Miller
Remediation Manager

January 24, 1996

VIA 2-Day FEDEX

Chris E. Eustice
New Mexico Energy, Minerals, and Natural Resources Department
Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

RE: Dowell, Artesia, New Mexico

Dear Mr. Eustice:

Dowell, a Division of Schlumberger Technology Corporation (Dowell) requests authorization to treat approximately 1,700 cubic yards of soil currently stockpiled at our Artesia, New Mexico facility. This facility is located at 500 E. Richey Avenue just outside the city limits of Artesia. The soil was generated during closure of the former acid plant in November of 1994. Closure of the acid plant is documented in a report by Western Water Consultants, Inc. (WWC) titled "Closure Report For the Acid Plant at The Dowell Schlumberger Incorporated Facility, Artesia, New Mexico." This report was submitted to New Mexico Oil Conservation Division in January of 1995. The proposed soil treatment is discussed below.

Stockpiled Soils

Approximately 1,700 cubic yards of soil has been stockpiled on plastic sheeting with berms around the soil in the southwest corner of the facility. The soil has been stockpiled since November of 1994 and been weathering since that time. A composite soil sample was collected at the time the soil was stockpiled and the analyses are attached. Analyses include TPH by EPA Method 8015 Modified for gasoline range organics, TCLP extraction metals, and ZHE Extraction Method 8240 for volatile organics. All analyses were below detection limits except TPH which was 320 mg/kg. These values are representative of the samples taken from the excavation where all analytes were below detection limits except TPH which ranged from 320 to 2,300 mg/kg.

For verification, four additional composite samples were collected in January 1996. These results will be available in 2-3 weeks.

Treatment Area

The treatment area is a flat parcel of property just north of the facility which was recently purchased by Dowell (Figure 1). Environmental investigations have been performed at the site. The most recent and complete investigation report is "Quarterly Report and Additional Investigation and Remediation, Dowell Schlumberger, Artesia, New Mexico, July 13, 1995" prepared by WWC.

Included in the report are hydrogeologic information, monitoring well details, and sampling analyses. From monitoring well measurements the depth to groundwater in the treatment area is between 16-18 feet. Soils are silts and clays of low permeability.

P.O. Box 2727, Houston, Texas 77252-2727
300 Schlumberger Drive, Sugar Land, Texas 77478
(713) 275-8498 (713) 275-8526 (fax)

The site is flat with no defined drainage patterns. Overall surface water flow is east toward the Pecos River, approximately 2 miles away.

Treatment Process

Treatment of the soils is a landfarming process in a soil-bermed area lined with 12-mil HDPE (Figure 2). The treatment area is proposed to be 130 x 360 ft. At the treatment area the topsoil will be stripped and stockpiled. Excavation will continue to a depth of 12 inches. With the excavation and berm constructed, the HDPE liner will be installed. Six inches of excavated soil will be placed on the liner for protection. It is proposed to place two 6 inch treatment lifts in the cell simultaneously. The top lift will be actively treated through discing and watering. Once the top lift is completely treated it will be removed and active treatment will begin on the lower lift. Removal of the top lift will be accomplished with a motor grader so removal depth can be controlled accurately.

Active treatment will include discing the soils to a depth of 6 inches at seven day intervals. Water will be applied by sprinkler heads connected to the facility municipal water service using hoses. Water will be applied as necessary to maintain the moisture content at approximately 20%.

Sampling

Two composite soil samples will be collected from the lift being treated every month. The samples will be analyzed for total petroleum hydrocarbons using EPA Method 8015.

Treatment Standards

Treatment of soils will continue until total TPH is less than 100 mg/kg. It is anticipated that treatment of each lift will require 6-8 weeks. If necessary, additional nutrients may be added to enhance biodegradation.

Soil Disposal

It is proposed to use the treated soils as fill material on the facility. The configuration of the fill has yet to be determined.

Dowell would like to begin treatment of these soils as soon as possible. If you have any questions please give me a call.

Sincerely,

John A. Miller

JAM:

Enclosures

cc: Karen Lauzon

K:\1720040\90-125L\NEW-SITE 01/19/96 14:14

DOWELL

50 FT. COUNTY RIGHT-OF-WAY

DOWELL

MW-18

MW-19

SOUTHEAST READY MIX

130'x360' LANDFARM AREA

8' BERM AREA

SECURITY FENCE

TOPSOIL STOCKPILE

MW-10

MW-8

MW-7

MW-11

MW-12

MW-17C

MW-17B

MW-17A/D

PILOT HOLE

50 FT. COUNTY RIGHT-OF-WAY

60 FT. COUNTY RIGHT-OF-WAY

CITY WATER LINE

GAS LINE

COMPRESSOR

MW-9

WASTEWATER TANK

DRUM STORAGE

SEPARATOR

MW-3

MW-6

FRAC SAND SILOS

SOLVENT WASTE TANK

CONCRETE PAD

WELL EQUIPMENT STORAGE

FORMER ACID PLANT

CHEMICAL WARE-HOUSE

ACID LOADING SUMP

MW-15

WASH BAY

WASH BAY SVE SYSTEM

FORMER SUMP

DOWELL FACILITY

MW-13

MW-14

GRAVEL PARKING AREA

ABOVE GROUND OIL STORAGE

FORMER FUEL USTs

MW-5

MW-1

MW-16

MW-4

MW-2

FORMER FUEL ISLAND

MAINTENANCE SHOP

MAINTENANCE SHOP SVE SYSTEM

OFFICE

GRAVEL PARKING AREA

SEPTIC TANKS

GATE

GATE

RICHEY AVENUE

DOWELL

EXPLANATION

MW-14	WWC MONITORING WELL LOCATION, IDENTIFICATION, AND GROUND-WATER ELEVATION
MW-6	REED AND ASSOCIATES MONITORING WELL LOCATION, IDENTIFICATION, AND GROUND-WATER ELEVATION
TBM	TEMPORARY BENCH MARK
	AIR PIPING
	SVE EXTRACTION WELL

0 120 FT.

SCALE

BASE MAP MODIFIED FROM REED & ASSOCIATES

FIGURE 1

SITE MAP
LANDFARM

DOWELL
ARTESIA, NEW MEXICO

Western Water Consultants, Inc.

K:\172040\90-125L\X-SECT 01/19/96 14:20

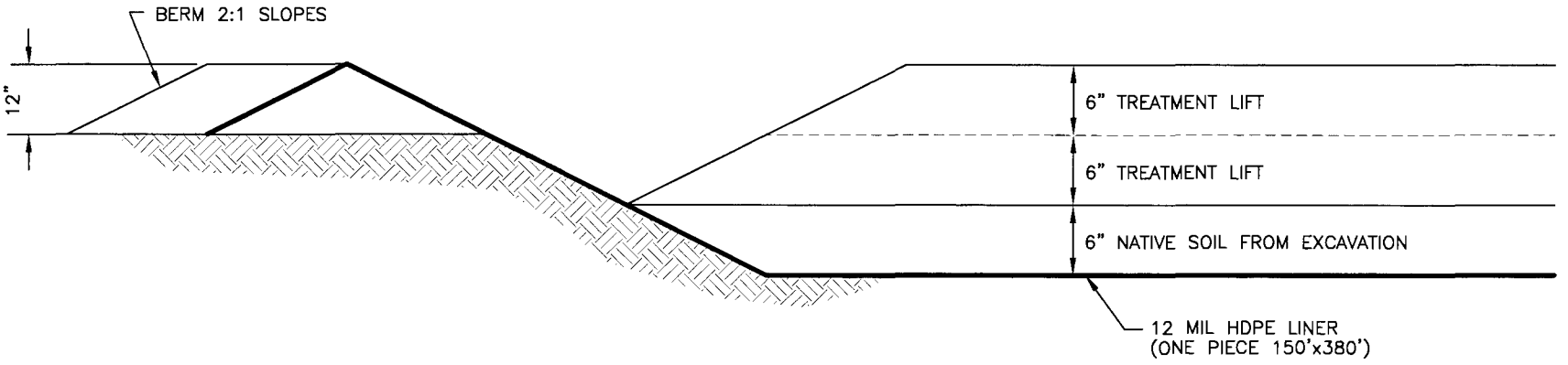

FIGURE 2

TYPICAL CROSS-SECTION
LANDFARM

DOWELL
ARTESIA, NEW MEXICO

Western Water Consultants, Inc.

COMPANY NAME: Western Water Consultants

CENREF PROJECT NUMBER: PR941864
CENREF SAMPLE NUMBER: 8057
SAMPLE IDENTIFICATION: #90125-StkPl.11/94
DATE SAMPLED: 11/13/94
DATE EXTRACTED: 11/17/94
DATE/TIME ANALYZED: 11/21/94 @ 1739

Stockpiled material

ZHE EXTRACTION
METHOD EPA 8240

ANALYSIS	CAS NO.	SDL (ug/L)	RESULT (ug/L)
Benzene	71-43-2	50	BDL
Carbon Tetrachloride	56-23-5	50	BDL
Chlorobenzene	108-90-7	50	BDL
Chloroform	67-66-3	50	BDL
1,2-Dichloroethane	107-06-2	50	BDL
1,1-Dichloroethene	75-35-4	50	BDL
2-Butanone	78-93-3	1000	BDL
Tetrachloroethene	127-18-4	50	BDL
Trichloroethene	79-01-6	50	BDL
Vinyl Chloride	75-01-4	100	BDL

BDL = Below Sample Detection Limit
SDL = Sample Detection Limit

COMMENTS: _____

COMPANY NAME: Western Water Consultants

Stockpiled Soil

CENREF PROJECT NUMBER: PR941864
CENREF SAMPLE NUMBER: 8057
SAMPLE IDENTIFICATION: #90125-StkPl.11/94
DATE SAMPLED: 11/13/94

ANALYSIS	DATE/TIME EXTRACTED	DATE/TIME ANALYZED	METHOD	UNITS	SDL	RESULT
TCLP extraction			1311			
Arsenic-TCLP	11-23/0744	12-01/1912	6010	mg/L	0.1	BDL
Barium-TCLP	11-23/0744	12-01/1235	6010	mg/L	10.0	BDL
Cadmium-TCLP	11-23/0744	12-01/1912	6010	mg/L	0.1	BDL
Chromium-TCLP	11-23/0744	12-01/1235	6010	mg/L	0.5	BDL
Lead-TCLP	11-23/0744	12-01/1235	6010	mg/L	0.5	BDL
Mercury-TCLP	11-28/1203	11-23/1821	7470	mg/L	0.0005	BDL
Selenium-TCLP	11-23/0744	12-01/1235	6010	mg/L	0.1	BDL
Silver-TCLP	11-23/0744	12-01/1912	6010	mg/L	0.5	BDL
pH		11-15/1613	9045	pH	—	7.96

BDL = Below Sample Detection Limit
SDL = Sample Detection Limit

COMMENTS: _____

COMPANY NAME: Western Water Consultants

Stockpiled Soil

CENREF PROJECT NUMBER: PR941864
CENREF SAMPLE NUMBER: 8057
SAMPLE IDENTIFICATION: #90125-StkP1.11/94
DATE SAMPLED: 11/13/94
DATE/TIME ANALYZED: 11/20/94 @ 0708

METHOD Mod. 8015

ANALYSIS	SDL (mg/kg)	RESULT (mg/kg)
Total Extractable Hydrocarbons	10	320

BDL = Below Sample Detection Limit
SDL = Sample Detection Limit

COMMENTS: _____

Schlumberger Oilfield Services

Oilfield Services Shared Resources

John A. Miller
Remediation Manager

RECEIVED

JAN 26 1996

Environmental Bureau
Oil Conservation Division

January 15, 1996

Mr. Chris E. Eustice
Environmental Geologist
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

RE: Ground-water samples from three monitoring wells downgradient from Former Acid Plant, Dowell facility, Artesia, New Mexico

Dear Mr. Eustice:

As requested in your letter to me of August 22, 1995, ground-water samples were collected in October and November, 1995 from three wells downgradient from the former acid plant at the Dowell facility in Artesia, New Mexico. The wells sampled were MW-9, MW-10, and MW-15 (Figure 1).

Sample Collection

Samples for analysis of volatile aromatic and chlorinated hydrocarbons were collected on October 18, 1995, as part of ongoing environmental investigation and remediation activities at the facility. Static ground-water levels were also measured at this time. On November 16, 1995, samples were collected for base-neutral polyaromatic hydrocarbons (PAHs), gasoline-range (GRO) and diesel-range (DRO) total petroleum hydrocarbons (TPH), major dissolved cations (calcium, sodium, potassium, and magnesium) and dissolved anions (carbonate, bicarbonate, sulfate, and chloride), and dissolved RCRA metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver).

Laboratory analytical methods used were:

- volatile aromatic and chlorinated hydrocarbons by EPA Method 8260;
- base-neutral PAHs by EPA Method 8270;
- gasoline-range and diesel-range TPH by modified EPA Method 8015 GRO and DRO;
- dissolved barium, cadmium, calcium, chromium, lead, magnesium, potassium, silver, and sodium by EPA Method 6010;
- dissolved arsenic by EPA Method 7060;
- dissolved selenium by EPA Method 7740;
- dissolved mercury by EPA Method 7470;
- dissolved carbonate and bicarbonate by Standard Method 403; and
- dissolved sulfate and chloride by MCAWW Method 300.0

P.O. Box 2727, Houston, Texas 77252-2727
300 Schlumberger Drive, Sugar Land, Texas 77478
(713) 275-8498 (713) 275-8526 (fax)

Results

The potentiometric surface map generated from the October 1995 static water level measurements is presented on Figure 1. Water level elevations are referenced to an on-site datum with an arbitrary elevation of 100.00 feet. The ground-water flow direction is to the north-northeast, consistent with previous flow directions which range from northeast to north-northeast.

The results of the chemical analyses for monitoring wells MW-9, MW-10, and MW-15 are presented in Table 1 (volatile aromatic and chlorinated hydrocarbons), Table 2 (TPH by both GRO and DRO, and base-neutral PAHs), Table 3 (major dissolved cations and anions), and Table 4 (dissolved RCRA metals). In the October 1995 samples, ethylbenzene was the only volatile aromatic hydrocarbon detected (MW-9). Volatile chlorinated hydrocarbons detected included 1,1-dichloroethane (1,1-DCA) in MW-9 and MW-15, and 1,1-dichloroethene (1,1-DCE) in MW-10. The latter chemical plus trichloroethene and tetrachloroethene were detected in MW-15 at concentrations below the EPA-specified method detection limit but above the instrument detection limit (Table 1). TPH was detected solely in MW-9, and in this well only gasoline range organics were present above the detection limit. MW-10 was the only monitoring well in which base-neutral PAHs were detected. PAHs detected in MW-10 included naphthalene and phenanthrene; pyrene was present at a concentration below the method detection limit (Table 2). The concentrations of the RCRA metals were below detection limits except for barium and arsenic in MW-9 and MW-15. Barium was present below the method detection limit in MW-10 (Table 4).

The four major cations were detected in all three wells, although concentrations of potassium were below the method detection limit in MW-9 and MW-15. The major anions bicarbonate, sulfate, and chloride also were detected in all three wells, whereas carbonate was not present (Table 3). At the pH of the ground-water in these three wells (6.6 to 6.9), dissolved carbon dioxide is present as bicarbonate and carbonic acid rather than as carbonate (Drever, 1982).

Ground-water Sampling Schedule

The next quarterly ground-water monitoring event is scheduled for January 10 - 12, 1996. Monitoring wells MW-9, MW-10, and MW-15 will be analyzed for the full suite of organics, major cations and anions, and RCRA metals as specified in your August 22, 1995 letter.

If you have questions, please contact me at (713) 275-8498.

Sincerely,

John A. Miller

cc: WWC, Laramie

K:\V72040\90-125L\POT-1016 12/28/95 10:26

50 FT. WIDE PLATTED COUNTY RIGHT-OF-WAY

SOUTHEAST READY MIX

MW-10
84.69

MW-8
84.59

MW-18
84.47

84.80

85.00

MW-11
84.60

84.60

MW-7
84.62

60 FT. WIDE PLATTED COUNTY RIGHT-OF-WAY

MW-19
84.69

50 FT. WIDE
PLATTED COUNTY
RIGHT-OF-WAY

CITY WATER LINE

GAS LINE

COMPRESSOR

MW-9
85.02

WASTEWATER
TANK

MW-12
84.76

MW-17C
84.69

MW-17B
84.77

MW-17A/D
84.80/84.78

PILOT HOLE

FRAC
SAND
SILOS

BULK CEMENT

CEMENT
WARE-
HOUSE

CONCRETE PAD

WELL EQUIPMENT
STORAGE

FORMER ACID PLANT

CHEMICAL
WARE-
HOUSE

ACID LOADING
SLAB

MW-15
85.31

FORMER SUMP

DRUM STORAGE

SEPARATOR

MW-3
84.95

WASH BAY

WASH BAY
SVE SYSTEM

MW-6
84.83

85.20

85.40

85.60

DOWELL SCHLUMBERGER FACILITY

MW-13
85.42

MW-14
85.22

GRAVEL PARKING AREA

ABOVE GROUND OIL STORAGE

85.80

FORMER
FUEL USTs

MW-5
85.8

MW-1
85.92

86.00

BM

MW-16

MAINTENANCE
SHOP

MW-2
85.78

FORMER FUEL
ISLAND

MW-4
86.16

MAINTENANCE
SHOP SVE SYSTEM

OFFICE

SEPTIC
TANKS

GRAVEL PARKING AREA

GATE

GATE

RICHEY AVENUE

SOUTHEAST READY MIX

EXPLANATION

MW-14 85.42	WWC MONITORING WELL LOCATION, IDENTIFICATION, AND GROUND-WATER ELEVATION
MW-6 84.83	REED AND ASSOCIATES MONITORING WELL LOCATION, IDENTIFICATION, AND GROUND-WATER ELEVATION
TBM	TEMPORARY BENCH MARK
85.00	POTENTIOMETRIC SURFACE CONTOUR
	GROUND-WATER FLOW DIRECTION
	AIR PIPING
	SVE EXTRACTION WELL

0 60 FT.

SCALE

BASE MAP MODIFIED FROM REED & ASSOCIATES

FIGURE 1

POTENTIOMETRIC SURFACE
(10/16/95)

DOWELL SCHLUMBERGER
ARTESIA, NEW MEXICO

Western Water Consultants, Inc.

TABLE 1. RESULTS FROM LABORATORY ANALYSES OF GROUND-WATER SAMPLES FROM MW-9, MW-10, AND MW-15, VOLATILE HYDROCARBONS BY EPA METHOD 8260, DOWELL, ARTESIA, NEW MEXICO

WELL NUMBER	SAMPLE DATE	BENZENE (mg/L)	ETHYL-BENZENE (mg/L)	TOLUENE (mg/L)	XYLENES (mg/L)	1,1-DCA (mg/L)	1,2-DCA (mg/L)	1,1-DCE (mg/L)	1,1,1-TCA (mg/L)	TCE (mg/L)	PCE (mg/L)	ACETONE (mg/L)
MW-9	01/26/91	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.005)	0.022	ND(0.001)	0.002	ND(0.001)	ND(0.001)	0.001	ND(0.01)
	09/15/91	0.002	0.032	ND(0.001)	ND(0.005)	0.035	ND(0.001)	0.002	ND(0.001)	ND(0.001)	ND(0.001)	0.019
	11/22/91	0.004	0.17	ND(0.001)	ND(0.005)	0.029	ND(0.001)	0.002	ND(0.001)	ND(0.001)	0.001	0.014
	03/16/93	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.005)	0.012	ND(0.001)	0.001	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.01)
	01/10/94	ND(0.001)	ND(0.001)	0.002	ND(0.005)	0.012	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.01)
	04/19/94	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.01	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.1)
	07/20/94	ND(0.005)	ND(0.005)	ND(0.005)	0.001J	0.017	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.009J
	10/25/94	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.014	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.1)
	01/25/95	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.014	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.1)
	04/03/95	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.015	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.1)
	08/01/95	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.022	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.1)
#	10/18/95	ND(0.005)	0.016	ND(0.005)	ND(0.005)	0.017	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	NA
MW-10	01/26/91	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.005)	ND(0.001)	ND(0.001)	0.004	ND(0.001)	ND(0.001)	ND(0.001)	0.017
	09/15/91	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.005)	ND(0.001)	ND(0.001)	0.012	0.002	ND(0.001)	ND(0.001)	ND(0.01)
	11/22/91	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.005)	ND(0.001)	ND(0.001)	0.029	0.005	ND(0.001)	ND(0.001)	ND(0.01)
	03/16/93	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.005)	ND(0.001)	ND(0.001)	0.025	0.001	ND(0.001)	ND(0.001)	ND(0.01)
	01/10/94	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.005)	ND(0.001)	ND(0.001)	0.021	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.01)
	04/19/94	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.022	0.001J	ND(0.005)	ND(0.005)	ND(0.1)
	07/20/94	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.052	0.004J	ND(0.005)	ND(0.005)	ND(0.1)
	10/25/94	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.051	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.1)
	01/25/95	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.042	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.1)
dup.	01/25/95	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.057	0.005	ND(0.005)	ND(0.005)	ND(0.1)
	04/03/95	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.07	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.1)
	08/01/95	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.13	0.0072	ND(0.005)	ND(0.005)	ND(0.1)
	10/18/95	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.13	0.0062	ND(0.005)	ND(0.005)	NA
MW-15	09/15/91	0.002	0.01	ND(0.001)	0.006	0.026	0.001	0.005	ND(0.001)	ND(0.001)	0.004	0.024
	11/22/91	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.005)	0.033	0.001	0.009	ND(0.001)	0.003	0.006	ND(0.01)
*	03/16/93	0.001	0.002	ND(0.001)	ND(0.005)	0.082	0.001	0.013	ND(0.001)	0.006	0.009	ND(0.01)
	01/10/94	ND(0.001)	0.008	ND(0.001)	ND(0.005)	0.048	ND(0.001)	0.009	ND(0.001)	0.004	0.013	ND(0.01)
dup.	01/10/94	0.001	0.009	0.002	ND(0.005)	0.054	ND(0.001)	0.01	ND(0.001)	0.004	0.015	ND(0.01)
	04/19/94	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.027	ND(0.005)	0.005J	ND(0.005)	0.003J	0.008	ND(0.1)
	07/20/94	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.049	0.001J	0.006	ND(0.005)	0.004J	0.005	ND(0.1)
	10/25/94	0.001J	ND(0.005)	ND(0.005)	ND(0.005)	0.029	ND(0.005)	0.006	ND(0.005)	0.004J	0.006	ND(0.1)

TABLE 1. RESULTS FROM LABORATORY ANALYSES OF GROUND-WATER SAMPLES FROM MW-9, MW-10, AND MW-15, VOLATILE HYDROCARBONS BY EPA METHOD 8260, DOWELL, ARTESIA, NEW MEXICO

WELL NUMBER	SAMPLE DATE	BENZENE (mg/L)	ETHYL-BENZENE (mg/L)	TOLUENE (mg/L)	XYLENES (mg/L)	1,1-DCA (mg/L)	1,2-DCA (mg/L)	1,1-DCE (mg/L)	1,1,1-TCA (mg/L)	TCE (mg/L)	PCE (mg/L)	ACETONE (mg/L)
MW-15 cont.	01/25/95	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.027	ND(0.005)	0.006	ND(0.005)	0.005	0.008	ND(0.1)
	04/03/95	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.02	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.1)
	08/01/95	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.022	ND(0.005)	0.0057	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.1)
	10/18/95	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	0.015	ND(0.005)	0.0031J	ND(0.005)	0.004J	0.0018J	NA

NOTES:
mg/L = milligrams per liter (equivalent to parts per million)
dup. = duplicate sample
* = minor amounts of other chemicals also detected
ND(0.001) = chemical not detected at concentration above detection limit shown in parentheses
J = chemical detected at concentration above instrument detection limit but below method detection limit
# = also detected in MW-9:
sec-butylbenzene (0.0076 mg/l - below method detection limit of 0.01 mg/L)
n-butylbenzene (0.0086 mg/l - below method detection limit of 0.01 mg/L)
isopropylbenzene (0.0036 mg/l - below method detection limit of 0.01 mg/l)

CHEMICAL ABBREVIATIONS:
1,1-DCA = 1,1-dichloroethane
1,2-DCA = 1,2-dichloroethane
1,1-DCE = 1,1-dichloroethene
1,1,1-TCA = 1,1,1-trichloroethane
1,1,2-TCA = 1,1,2-trichloroethane
TCE = trichloroethene
PCE = tetrachloroethene

TABLE 2. RESULTS FROM LABORATORY ANALYSES OF GROUND-WATER SAMPLES, TOTAL PETROLEUM HYDROCARBONS AND BASE-NEUTRAL POLYAROMATIC HYDROCARBONS, DOWELL, ARTESIA, NEW MEXICO

WELL NUMBER	*SAMPLE DATE*	*TOTAL PETROLEUM HYDROCARBONS*		*BASE-NEUTRAL POLYAROMATIC HYDROCARBONS*		
		GRO (mg/L)	*DRO (mg/L)*	*NAPTHALENE (mg/L)*	*PHENANTHRENE (mg/L)*	*PYRENE (mg/L)*
MW-9	11/16/95	0.18	ND(1)	ND(0.005)	ND(0.005)	ND(0.005)
MW-10	11/16/95	ND(0.1)	ND(1)	0.022	0.022	0.0041J
MW-15	11/16/95	ND(0.1)	ND(1)	ND(0.005)	ND(0.005)	ND(0.005)

Notes:

GRO = gasoline range organics

DRO = diesel range organics

mg/L = milligrams per liter (equivalent to parts per million)

ND(0.1) = constituent not detected at concentration above method detection limit in parentheses

J = constituent detected at concentration above instrument detection limit but below method detection limit

TABLE 3. RESULTS FROM LABORATORY ANALYSES OF GROUND-WATER SAMPLES, MAJOR CATIONS AND ANIONS (DISSOLVED), DOWELL, ARTESIA, NEW MEXICO

WELL NUMBER	SAMPLE DATE	MAJOR CATIONS				MAJOR ANIONS			
		CALCIUM (mg/L)	SODIUM (mg/L)	POTASSIUM (mg/L)	MAGNESIUM (mg/L)	CARBONATE (mg/L)	BICARBONATE (mg/L)	SULFATE (mg/L)	CHLORIDE (mg/L)
MW-9	11/16/95	201	237	0.68 J	329	ND(10)	592	844	1260
MW-10	11/16/95	122	215	1.25	246	ND(2)	190	2170	208
MW-15	11/16/95	93	132	0.48 J	241	ND(4)	422	1330	286

Notes:

mg/L = milligrams per liter (equivalent to parts per million)

ND(2) = ion not detected at concentration above method detection limit in parentheses

J = ion detected at concentration above instrument detection limit but below method detection limit

TABLE 4. RESULTS FROM LABORATORY ANALYSES OF GROUND-WATER SAMPLES, RCRA METALS (DISSOLVED), DOWELL, ARTESIA, NEW MEXICO

WELL NUMBER	*SAMPLE DATE*	*BARIUM (mg/L)*	*CADMIUM (mg/L)*	*CHROMIUM (mg/L)*	*LEAD (mg/L)*	*SILVER (mg/L)*	*ARSENIC (mg/L)*	*SELENIUM (mg/L)*	*MERCURY (mg/L)*
MW-9	11/16/95	0.0483	ND(0.005)	ND(0.01)	ND(0.1)	ND(0.01)	0.028	ND(0.005)	ND(0.0002)
MW-10	11/16/95	0.015 J	ND(0.005)	ND(0.01)	ND(0.1)	ND(0.01)	ND(0.01)	ND(0.005)	ND(0.0002)
MW-15	11/16/95	0.0227	ND(0.005)	ND(0.01)	ND(0.1)	ND(0.01)	0.0055	ND(0.005)	ND(0.0002)

Notes:

mg/L = milligrams per liter (equivalent to parts per million)

ND(0.005) = ion not detected at concentration above method detection limit in parentheses

J = ion detected at concentration above instrument detection limit but below method detection limit

Form 1 - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: 90125-9.11/95
Project Number: 90-125L-95.9
Sample ID: L2275-2
Site / Project ID: Not Reported
Run ID: R2570
Collection Date: 16-NOV-95
Received Date: 17-NOV-95
Report Date: 27-NOV-95

Analyte	CAS No.	Dil	Sample Conc. *	Units	Qual	MDL	RL
SW846 Method 3520/8270							
Preparation Date: 19-NOV-95							
Analysis Date: 28-NOV-95 19:31							
Workgroup Number: WG4814							
Acenaphthene	83-32-9	1	ND	ug/L	U	4.2	5
Acenaphthylene	208-96-8	1	ND	ug/L	U	3.5	5
Anthracene	120-12-7	1	ND	ug/L	U	2.6	5
Benzo(a)anthracene	56-55-3	1	ND	ug/L	U	2.8	5
Benzo(a)pyrene	50-32-8	1	ND	ug/L	U	3.5	5
Benzo(b)fluoranthene	205-99-2	1	ND	ug/L	U	2.6	5
Benzo(g,h,i)perylene	191-24-2	1	ND	ug/L	U	3.1	5
Benzo(k)fluoranthene	207-08-9	1	ND	ug/L	U	3.9	5
Chrysene	218-01-9	1	ND	ug/L	U	4.2	5
Dibenz(a,h)anthracene	53-70-3	1	ND	ug/L	U	3.4	5
Dibenz(a,j)acridine	224-42-0	1	ND	ug/L	U	5.3	25
Dibenzofuran	132-64-9	1	ND	ug/L	U	4	5
Fluoranthene	206-44-0	1	ND	ug/L	U	4	5
Fluorene	86-73-7	1	ND	ug/L	U	3.3	5
Indeno(1,2,3-cd)pyrene	193-39-5	1	ND	ug/L	U	3.1	5
2-Methylnaphthalene	91-57-6	1	ND	ug/L	U	2.8	5
Naphthalene	91-20-3	1	ND	ug/L	U	2.4	5
Phenanthrene	85-01-8	1	ND	ug/L	U	2.5	5
Pyrene	129-00-0	1	ND	ug/L	U	3.5	5
Nitrobenzene-d5	SURROGATE	1	0	%			
2-Fluorobiphenyl	SURROGATE	1	69	%			
p-Terphenyl-d14	SURROGATE	1	18	%			
SW846 Method 5030/8015 Mod.							
Preparation Date: 21-NOV-95							
Analysis Date: 21-NOV-95 12:29							
Workgroup Number: WG4835							
GRO	N/A	1	.18	mg/L		.05	.1
Bromofluorobenzene	SURROGATE	1	105	%			
SW846 Method 8015M							

Review By: Ty Garber Report Approved By: Randy Greaves

Qual - U = Analyte Not Detected above the Method Detection Limit
- J = Estimated Concentration, B = Analyte Detected in the Blank
- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
* - Soil Samples Corrected for Percent Moisture
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

Form 1 - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: 90125-9.11/95
Project Number: 90-125L-95.9
Sample ID: L2275-2
Site / Project ID: Not Reported
Run ID: R2570
Collection Date: 16-NOV-95
Received Date: 17-NOV-95
Report Date: 27-NOV-95

Analyte	CAS No.	Dil	Sample Conc. *	Units	Qual	MDL	RL
Preparation Date: 21-NOV-95							
Analysis Date: 23-NOV-95 00:11							
Workgroup Number: WG4828							
DRO	N/A	1	ND	mg/L	U	.1	1

Review By: Ty Garber Report Approved By: Randy Greaves

Qual - U = Analyte Not Detected above the Method Detection Limit
- J = Estimated Concentration, B = Analyte Detected in the Blank
- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
* - Soil Samples Corrected for Percent Moisture
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

Form 1 - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: 90125-9.11/95
Project Number: 90-125L-95.9
Sample ID: L2275-2
Site / Project ID: Not Reported
Run ID: R2570
Collection Date: 16-NOV-95
Received Date: 17-NOV-95
Report Date: 14-DEC-95

Analyte	CAS No.	Dil	Sample Conc. *	Units	Qual	MDL	RL
SW846 Method 6010							
Preparation Date: 20-NOV-95							
Analysis Date: 22-NOV-95 11:45							
Workgroup Number: WG4808							
Barium (diss.)	7440-39-3	1	.0483	mg/L		.00026	.02
Cadmium (diss.)	7440-43-9	1	ND	mg/L	U	.0019	.005
Calcium (diss.)	7440-70-2	1	201	mg/L		.01	1
Chromium (diss.)	7440-47-3	1	ND	mg/L	U	.0045	.01
Lead (diss.)	7439-92-1	1	ND	mg/L	U	.037	.1
Magnesium (diss.)	7439-95-4	1	329	mg/L		.012	1
Potassium (diss.)	7440-09-7	1	.68	mg/L	J	.021	1
Silver (diss.)	7440-22-4	1	ND	mg/L	U	.0019	.01
Sodium (diss.)	7440-23-5	1	237	mg/L		.027	1

Review By: Ty Garber Report Approved By: Randy Greaves

Qual - U = Analyte Not Detected above the Method Detection Limit
- J = Estimated Concentration, B = Analyte Detected in the Blank
- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
* - Soil Samples Corrected for Percent Moisture
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

Form 1 - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: 90125-9.11/95
Project Number: 90-125L-95.9
Sample ID: L2275-2
Site / Project ID: Not Reported
Run ID: R2570
Collection Date: 16-NOV-95
Received Date: 17-NOV-95
Report Date: 27-NOV-95

Analyte	CAS No.	Dil	Sample Conc. *	Units	Qual	MDL	RL
Standard Method 403							
Analysis Date: 27-NOV-95 09:50							
Workgroup Number: WG4865							
Bicarbonate	N/A	1	592	mg/L		7	10
Standard Method 403							
Analysis Date: 27-NOV-95 09:50							
Workgroup Number: WG4866							
Carbonate	N/A	1	ND	mg/L	U	7	10
MCAWW, Method 300.0							
Analysis Date: 20-NOV-95 13:39							
Workgroup Number: WG4820							
Chloride	N/A	250	1260	mg/L		16	250
MCAWW, Method 300.0							
Analysis Date: 20-NOV-95 12:39							
Workgroup Number: WG4820							
Sulfate	N/A	100	844	mg/L		14	100

Review By: Ty Garber Report Approved By: Randy Greaves

Qual - U = Analyte Not Detected above the Method Detection Limit
- J = Estimated Concentration, B = Analyte Detected in the Blank
- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
* - Soil Samples Corrected for Percent Moisture
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

Form 1 - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: 90125-10.11/95
Project Number: 90-125L-95.9
Sample ID: L2275-1
Site / Project ID: Not Reported
Run ID: R2570
Collection Date: 16-NOV-95
Received Date: 17-NOV-95
Report Date: 27-NOV-95

Analyte	CAS No.	Dil	Sample Conc. *	Units	Qual	MDL	RL
SW846 Method 3520/8270							
Preparation Date: 19-NOV-95							
Analysis Date: 29-NOV-95 17:02							
Workgroup Number: WG4814							
Acenaphthene	83-32-9	1	ND	ug/L	U	4.2	5
Acenaphthylene	208-96-8	1	ND	ug/L	U	3.5	5
Anthracene	120-12-7	1	ND	ug/L	U	2.6	5
Benzo(a)anthracene	56-55-3	1	ND	ug/L	U	2.8	5
Benzo(a)pyrene	50-32-8	1	ND	ug/L	U	3.5	5
Benzo(b)fluoranthene	205-99-2	1	ND	ug/L	U	2.6	5
Benzo(g,h,i)perylene	191-24-2	1	ND	ug/L	U	3.1	5
Benzo(k)fluoranthene	207-08-9	1	ND	ug/L	U	3.9	5
Chrysene	218-01-9	1	ND	ug/L	U	4.2	5
Dibenz(a,h)anthracene	53-70-3	1	ND	ug/L	U	3.4	5
Dibenz(a,j)acridine	224-42-0	1	ND	ug/L	U	5.3	25
Dibenzofuran	132-64-9	1	ND	ug/L	U	4	5
Fluoranthene	206-44-0	1	ND	ug/L	U	4	5
Fluorene	86-73-7	1	ND	ug/L	U	3.3	5
Indeno(1,2,3-cd)pyrene	193-39-5	1	ND	ug/L	U	3.1	5
2-Methylnaphthalene	91-57-6	1	ND	ug/L	U	2.8	5
Naphthalene	91-20-3	1	22	ug/L		2.4	5
Phenanthrene	85-01-8	1	22	ug/L		2.5	5
Pyrene	129-00-0	1	4.1	ug/L	J	3.5	5
Nitrobenzene-d5	SURROGATE	1	0	%			
2-Fluorobiphenyl	SURROGATE	1	0	%			
p-Terphenyl-d14	SURROGATE	1	0	%			
SW846 Method 8015M							
Preparation Date: 21-NOV-95							
Analysis Date: 22-NOV-95 23:45							
Workgroup Number: WG4828							
DRO	N/A	1	ND	mg/L	U	.1	1
SW846 Method 5030/8015 Mod.							
Preparation Date: 21-NOV-95							

Review By: Ty Garber Report Approved By: Randy Greaves

Qual - U = Analyte Not Detected above the Method Detection Limit
- J = Estimated Concentration, B = Analyte Detected in the Blank
- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
* - Soil Samples Corrected for Percent Moisture
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

Form Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: 90125-10.11/95
Project Number: 90-125L-95.9
Sample ID: L2275-1
Site / Project ID: Not Reported
Run ID: R2570
Collection Date: 16-NOV-95
Received Date: 17-NOV-95
Report Date: 27-NOV-95

Analyte	CAS No.	Dil	Sample Conc. *	Units	Qual	MDL	RL
Analysis Date: 21-NOV-95 11:50							
Workgroup Number: WG4835							
GRO	N/A	1	ND	mg/L	U	.05	.1
Bromofluorobenzene	SURROGATE	1	103	%			

Review By: Ty Garber

Report Approved By: Randy Greaves

Qual - U = Analyte Not Detected above the Method Detection Limit
- J = Estimated Concentration, B = Analyte Detected in the Blank
- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
* - Soil Samples Corrected for Percent Moisture
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

Form 1 - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: 90125-10.11/95
Project Number: 90-125L-95.9
Sample ID: L2275-1
Site / Project ID: Not Reported
Run ID: R2570
Collection Date: 16-NOV-95
Received Date: 17-NOV-95
Report Date: 14-DEC-95

Analyte	CAS No.	Dil	Sample Conc. *	Units	Qual	MDL	RL
SW846 Method 6010							
Preparation Date: 20-NOV-95							
Analysis Date: 22-NOV-95 11:34							
Workgroup Number: WG4808							
Barium (diss.)	7440-39-3	1	.015	mg/L	J	.00026	.02
Cadmium (diss.)	7440-43-9	1	ND	mg/L	U	.0019	.005
Calcium (diss.)	7440-70-2	1	122	mg/L		.01	1
Chromium (diss.)	7440-47-3	1	ND	mg/L	U	.0045	.01
Lead (diss.)	7439-92-1	1	ND	mg/L	U	.037	.1
Magnesium (diss.)	7439-95-4	1	246	mg/L		.012	1
Potassium (diss.)	7440-09-7	1	1.25	mg/L		.021	1
Silver (diss.)	7440-22-4	1	ND	mg/L	U	.0019	.01
Sodium (diss.)	7440-23-5	1	215	mg/L		.027	1

Review By: Ty Garber Report Approved By: Randy Greaves

Qual - U = Analyte Not Detected above the Method Detection Limit
- J = Estimated Concentration, B = Analyte Detected in the Blank
- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
* - Soil Samples Corrected for Percent Moisture
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

Form 1 - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: 90125-10.11/95
Project Number: 90-125L-95.9
Sample ID: L2275-1
Site / Project ID: Not Reported
Run ID: R2570
Collection Date: 16-NOV-95
Received Date: 17-NOV-95
Report Date: 27-NOV-95

Analyte	CAS No.	Dil	Sample Conc. *	Units	Qual	MDL	RL
Standard Method 403							
Analysis Date: 27-NOV-95 09:50							
Workgroup Number: WG4865							
Bicarbonate	N/A	1	190	mg/L		1.4	2
Standard Method 403							
Analysis Date: 27-NOV-95 09:50							
Workgroup Number: WG4866							
Carbonate	N/A	1	ND	mg/L	U	1.4	2
MCAWW, Method 300.0							
Analysis Date: 20-NOV-95 13:28							
Workgroup Number: WG4820							
Chloride	N/A	100	208	mg/L		6.4	100
MCAWW, Method 300.0							
Analysis Date: 20-NOV-95 12:28							
Workgroup Number: WG4820							
Sulfate	N/A	250	2170	mg/L		35	250

Review By: Ty Garber Report Approved By: Randy Greaves

Qual - U = Analyte Not Detected above the Method Detection Limit
- J = Estimated Concentration, B = Analyte Detected in the Blank
- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
* - Soil Samples Corrected for Percent Moisture
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

Form 1 - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: 90125-15.11/95
Project Number: 90-125L-95.9
Sample ID: L2275-3
Site / Project ID: Not Reported
Run ID: R2570
Collection Date: 16-NOV-95
Received Date: 17-NOV-95
Report Date: 27-NOV-95

Analyte	CAS No.	Dil	Sample Conc. *	Units	Qual	MDL	RL
SW846 Method 3520/8270							
Preparation Date: 19-NOV-95							
Analysis Date: 28-NOV-95 20:14							
Workgroup Number: WG4814							
Acenaphthene	83-32-9	1	ND	ug/L	U	4.2	5
Acenaphthylene	208-96-8	1	ND	ug/L	U	3.5	5
Anthracene	120-12-7	1	ND	ug/L	U	2.6	5
Benzo(a)anthracene	56-55-3	1	ND	ug/L	U	2.8	5
Benzo(a)pyrene	50-32-8	1	ND	ug/L	U	3.5	5
Benzo(b)fluoranthene	205-99-2	1	ND	ug/L	U	2.6	5
Benzo(g,h,i)perylene	191-24-2	1	ND	ug/L	U	3.1	5
Benzo(k)fluoranthene	207-08-9	1	ND	ug/L	U	3.9	5
Chrysene	218-01-9	1	ND	ug/L	U	4.2	5
Dibenz(a,h)anthracene	53-70-3	1	ND	ug/L	U	3.4	5
Dibenz(a,j)acridine	224-42-0	1	ND	ug/L	U	5.3	25
Dibenzofuran	132-64-9	1	ND	ug/L	U	4	5
Fluoranthene	206-44-0	1	ND	ug/L	U	4	5
Fluorene	86-73-7	1	ND	ug/L	U	3.3	5
Indeno(1,2,3-cd)pyrene	193-39-5	1	ND	ug/L	U	3.1	5
2-Methylnaphthalene	91-57-6	1	ND	ug/L	U	2.8	5
Naphthalene	91-20-3	1	ND	ug/L	U	2.4	5
Phenanthrene	85-01-8	1	ND	ug/L	U	2.5	5
Pyrene	129-00-0	1	ND	ug/L	U	3.5	5
Nitrobenzene-d5	SURROGATE	1	73	%			
2-Fluorobiphenyl	SURROGATE	1	81	%			
p-Terphenyl-d14	SURROGATE	1	50	%			
SW846 Method 5030/8015 Mod.							
Preparation Date: 21-NOV-95							
Analysis Date: 21-NOV-95 13:10							
Workgroup Number: WG4835							
GRO	N/A	1	ND	mg/L	U	.05	.1
Bromofluorobenzene	SURROGATE	1	110	%			
SW846 Method 8015M							

Review By: Ty Garber Report Approved By: Randy Greaves

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- J = Estimated Concentration, B = Analyte Detected in the Blank
- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
* - Soil Samples Corrected for Percent Moisture
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

Form 1 - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: 90125-15.11/95
Project Number: 90-125L-95.9
Sample ID: L2275-3
Site / Project ID: Not Reported
Run ID: R2570
Collection Date: 16-NOV-95
Received Date: 17-NOV-95
Report Date: 27-NOV-95

Analyte	CAS No.	Dil	Sample Conc. *	Units	Qual	MDL	RL
Preparation Date: 21-NOV-95							
Analysis Date: 23-NOV-95 00:36							
Workgroup Number: WG4828							
DRO	N/A	1	ND	mg/L	U	.1	1

Review By: Ty Garber Report Approved By: Randy Greaves

Qual - U = Analyte Not Detected above the Method Detection Limit
- J = Estimated Concentration, B = Analyte Detected in the Blank
- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
* - Soil Samples Corrected for Percent Moisture
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

Form 1 Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: 90125-15.11/95
Project Number: 90-125L-95.9
Sample ID: L2275-3
Site / Project ID: Not Reported
Run ID: R2570
Collection Date: 16-NOV-95
Received Date: 17-NOV-95
Report Date: 14-DEC-95

Analyte	CAS No.	Dil	Sample Conc. *	Units	Qual	MDL	RL
SW846 Method 6010							
Preparation Date: 20-NOV-95							
Analysis Date: 22-NOV-95 11:47							
Workgroup Number: WG4808							
Barium (diss.)	7440-39-3	1	.0227	mg/L		.00026	.02
Cadmium (diss.)	7440-43-9	1	ND	mg/L	U	.0019	.005
Calcium (diss.)	7440-70-2	1	93	mg/L	U	.01	1
Chromium (diss.)	7440-47-3	1	ND	mg/L	U	.0045	.01
Lead (diss.)	7439-92-1	1	ND	mg/L	U	.037	.1
Magnesium (diss.)	7439-95-4	1	241	mg/L		.012	1
Potassium (diss.)	7440-09-7	1	.48	mg/L	J	.021	1
Silver (diss.)	7440-22-4	1	ND	mg/L	U	.0019	.01
Sodium (diss.)	7440-23-5	1	132	mg/L		.027	1

Review By: Ty Garber Report Approved By: Randy Greaves

Qual - U = Analyte Not Detected above the Method Detection Limit
- J = Estimated Concentration, B = Analyte Detected in the Blank
- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
* - Soil Samples Corrected for Percent Moisture
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

Form I - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: 90125-15.11/95
Project Number: 90-125L-95.9
Sample ID: L2275-3
Site / Project ID: Not Reported
Run ID: R2570
Collection Date: 16-NOV-95
Received Date: 17-NOV-95
Report Date: 27-NOV-95

Analyte	CAS No.	Dil	Sample Conc. *	Units	Qual	MDL	RL
Standard Method 403							
Analysis Date: 27-NOV-95 09:50							
Workgroup Number: WG4865							
Bicarbonate	N/A	1	422	mg/L		2.8	4
Standard Method 403							
Analysis Date: 27-NOV-95 09:50							
Workgroup Number: WG4866							
Carbonate	N/A	1	ND	mg/L	U	2.8	4
MCAWW, Method 300.0							
Analysis Date: 20-NOV-95 13:50							
Workgroup Number: WG4820							
Chloride	N/A	10	286	mg/L		.64	10
MCAWW, Method 300.0							
Analysis Date: 20-NOV-95 13:01							
Workgroup Number: WG4820							
Sulfate	N/A	250	1330	mg/L		35	250

Review By: Ty Garber Report Approved By: Randy Greaves

Qual - U = Analyte Not Detected above the Method Detection Limit
- J = Estimated Concentration, B = Analyte Detected in the Blank
- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
* - Soil Samples Corrected for Percent Moisture
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

PHASE 5 (1996-1997): FILE INFORMATION

Company Name:	Western Water Consultants, Inc.
Address:	611 Skyline Road, Laramie, Wyoming 82070
Telephone Number:	307/742-0031
Contact:	Lisa Jarvis

Client's Name:	Dowell, a division of Schlumberger Technology Corporation (Dowell)
Address:	300 Schlumberger Drive, Sugarland, Texas 77478
Telephone Number:	713/275-8498
Fax Number:	713/275-8526
Contact:	John Miller
Vendor's Federal Tax ID#:	38-2397173

Name of Site: Dowell, a division of Schlumberger Technology Corporation (Dowell), Artesia, New Mexico

Phase #: Phase 5 (1996-1997)

Task #: 1 - Soil Vapor Extraction System Operation and Maintenance
2 - Quarterly Ground-water Monitoring and Reporting

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October 15, 1996

Tony Moreland, Project Manager
New Mexico Environment Department
Underground Storage Tank Bureau, Remedial Action Section
Harold Runnels Building, Room N 2150
1190 St. Francis Drive
Santa Fe, New Mexico 87502

RE: Phase 5 (1996-1997) Work Plan and Cost Detail Forms
Dowell, a division of Schlumberger Technology Corporation (Dowell)
Artesia, New Mexico 88210

Dear Mr. Moreland:

The following documents are submitted on behalf of Dowell Schlumberger for your review and approval:

- a proposed work plan for "Operation and Maintenance of Two Soil Vapor Extraction Systems", at the Dowell Facility located at 500 East Richey Avenue, Artesia, New Mexico, and

- Cost Detail Forms (CDFs) for proposed Phase 5 (1996-1997) work, Tasks 1 "Soil Vapor Extraction System Operation and Maintenance", and Task 2, "Quarterly Ground-Water Monitoring and Reporting".

Proposed work will be conducted during the following four quarters:

November 1996	}	
December 1996	}	first quarter
January 1997	}	
February 1997	}	
March 1997	}	second quarter
April 1997	}	
May 1997	}	
June 1997	}	third quarter
July 1997	}	

OTHER LOCATIONS

1949 SUGARLAND DRIVE, SUITE 134
SHERIDAN, WYOMING 82801
(307) 672-0761
FAX (307) 674-4265

1901 ENERGY COURT, SUITE 270
GILLETTE, WYOMING 82718
(307) 682-1880
FAX (307) 682-2257

701 ANTLER DRIVE, SUITE 233
CASPER, WYOMING 82601
(307) 473-2707
FAX (307) 237-0828

August 1997	}	
September 1997	}	fourth quarter
October 1997	}	

Projected costs are based on actual costs incurred under the approved 1995-1996 work plan.

The "Senior Engineer's" and "Project Scientists" working on the project passed the New Mexico "Certified Scientist" examination on January 13, 1996. Their certification is valid for three (3) years.

If you have any questions, please call me at 307/742-0031.

Sincerely,

Rick Dewell for

Lisa Jarvis
Geologist

LJ:sb
Enclosures
cc: John Miller, Dowell Schlumberger
Pat Sanchez, NM Oil Conservation Department/Env. Division
File: 90-125L-E

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PHASE 5 (1996-1997)

WORK PLAN FOR OPERATION AND MAINTENANCE OF THE TWO ORIGINAL SOIL VAPOR EXTRACTION SYSTEMS

Dowell, a division of Schlumberger
Technology Corporation (Dowell)
500 East Richey Avenue
Artesia, New Mexico 88210

October 15, 1996

Task	Description
1	Soil Vapor Extraction System Operation and Maintenance:
	- Conduct quarterly site visits to check and record operations.
	- Check air emissions with PID.
	- Repair or replace parts (e.g., air filters, valve actuators, flexible hoses, etc.).
	- Document site visit.
2	Quarterly Ground-water Monitoring and Reporting:
	- Conduct quarterly ground-water monitoring activities.
	- Prepare quarterly status reports and submit to the New Mexico Underground Storage Tank Bureau (assume four submittals under this work plan).

OTHER LOCATIONS

1949 SUGARLAND DRIVE, SUITE 134
SHERIDAN, WYOMING 82801
(307) 672-0761
FAX (307) 674-4265

1901 ENERGY COURT, SUITE 270
GILLETTE, WYOMING 82718
(307) 682-1880
FAX (307) 682-2257

701 ANTLER DRIVE, SUITE 233
CASPER, WYOMING 82601
(307) 473-2707
FAX (307) 237-0828

NEW MEXICO CORRECTIVE A[CTION] FUND COST DETAIL FORM--SUMMARY SHEET

Site Name Dowell, a division of Schlumberger Technology Corporation (Dowell) Site Address 500 East Richey Avenue, Artesia, New Mexico 88210

Circle only one: *Workplan* *Claim*

Circle only one:
Minimum Site Assessment
Phase 1--Hydrogeo Investigation
Phase 2--Free Product/ Saturated Soil Recovery
Phase 3--Reclamation Proposal
Phase 4--Reclamation Implementation
Phase 5--Operations and Maintenance

TASK # 1 : (brief description) Soil Vapor Extraction System Operation and Maintenance

NMED Use Only: Project Manager | Auditor

SUMMARY SHEET	TOTAL
PROFESSIONAL SERVICES	$4,584.00
TAXABLE EXPENSES	440.00
TAXABLE SUBCONTRACTORS	-0-
TAXABLE SUBTOTAL	$5,024.00
NMGRT RATE 5% X TAXABLE SUBTOTAL =	251.20
TOTAL	$5,275.20
NONTAXABLE EXPENSES	-0-
NONTAXABLE SUBCONTRACTORS	-0-
NONTAXABLE SUBTOTAL	-0-
GRAND TOTAL OF CLAIM	$5,275.20

10/13/04/K7

NEW MEXICO CORRECTIVE ACTIO 'D COST DETAIL FORM--PROFESSIONAL SERVICES

Site Name: Dowell, a division of Schlumberger Technology Corporation (Dowell)

Site Address: 500 East Richey Avenue, Artesia, New Mexico 88210

Circle only one: *Workplan* *Claim*

Circle only one:
Minimum Site Assessment
Phase 1--Hydrogeo Investigation
Phase 2--Free Product/ Saturated Soil Recovery
Phase 3--Reclamation Proposal
Phase 4--Reclamation Implementation
Phase 5--Operations and Maintenance

TASK # 1 : (brief description) Soil Vapor Extraction System Operation and Maintenance

NMED Use Only: Project Manager | Auditor

PROFESSIONAL SERVICES	Invoice #	Rate	Unit	# of Units	Total
Senior Engineer	N/A	$68	Hour	12	$ 816.00
Project Scientist	N/A	$55	Hour	6	330.00
					$1,146/ Sampling Event
Subtotal					$4,584.00/ (4) Sampling Events

NEW MEXICO CORRECTIVE ON FUND COST DETAIL FORM--EXPENSES

Site Name Dowell, a division of Schlumberger Technology Corporation (Dowell) Site Address 500 East Richey Avenue, Artesia, New Mexico 88210

Circle only one: *Workplan* *Claim*

Circle only one:
Minimum Site Assessment
Phase 1--Hydrogeo Investigation
Phase 2--Free Product/ Saturated Soil Recovery
Phase 3--Reclamation Proposal
Phase 4--Reclamation Implementation
Phase 5--Operations and Maintenance

TASK # 1 : (brief description) Soil Vapor Extraction System Operation and Maintenance

NMED Use Only

EXPENSES	Invoice #	Rate	Unit	# of Units	Total	Project Manager	Auditor
Nontaxable							
Nontaxable subtotal							
Taxable							
Postage	N/A	At Cost	-----	-----	$ 10.00		
Supplies	N/A	At Cost	-----	-----	$ 100.00		
					$ 110.00/ Sampling Event		
Taxable subtotal					$440.00/ (4) Sampling Events		

10/13/04/X7

NEW MEXICO CORRECTIVE ACTION) COST DETAIL FORM--SUBCONTRACTOR CHARGES

Site Name Dowell, a division of Schlumberger Technology Corporation

Site Address 500 East Richey Avenue, Artesia, New Mexico 88210

Circle only one: *Workplan* *Claim*

Circle only one:

Minimum Site Assessment

Phase 1--Hydrogeo Investigation

Phase 2--Free Product/ Saturated Soil Recovery

Phase 3--Reclamation Proposal

Phase 4--Reclamation Implementation

Phase 5--Operations and Maintenance

TASK # 1 : (brief description) Soil Vapor Extraction System Operation and Maintenance

NMED Use Only

SUBCONTRACTORS	Invoice #	Rate	Unit	# of Units	Total
Nontaxable					
Nontaxable subtotal					-0-
Taxable					
Taxable subtotal					-0-

Project Manager	Auditor

NEW MEXICO CORRECTIVE A[illegible] FUND COST DETAIL FORM--SUMMARY SHEET

Site Name: Dowell, a division of Schlumberger Technology Corporation (Dowell)

Site Address: 500 East Richey Avenue, Artesia, New Mexico 88210

Circle only one: *Workplan* *Claim*

Circle only one:
Minimum Site Assessment
Phase 1--Hydrogeo Investigation
Phase 2--Free Product/ Saturated Soil Recovery
Phase 3--Reclamation Proposal
Phase 4--Reclamation Implementation
Phase 5--Operations and Maintenance

TASK # 2 : (brief description) Quarterly Ground-Water Monitoring and Reporting

NMED Use Only: Project Manager | Auditor

SUMMARY SHEET	TOTAL
PROFESSIONAL SERVICES	$ 7,136.00
TAXABLE EXPENSES	$ 5,660.00
TAXABLE SUBCONTRACTORS	$ 20,000.00
TAXABLE SUBTOTAL	$32,796.00
NMGRT RATE 5% X TAXABLE SUBTOTAL =	$ 1,639.80
TOTAL	$34,435.80
NONTAXABLE EXPENSES	-0-
NONTAXABLE SUBCONTRACTORS	-0-
NONTAXABLE SUBTOTAL	-0-
GRAND TOTAL OF CLAIM	$34,435.80

10/13/94/KF

NEW MEXICO CORRECTIVE ACTIO 'D COST DETAIL FORM--PROFESSIONAL SERVICES

Site Name Dowell, a division of Schlumberger Technology Corporation (Dowell) Site Address 500 East Richey Avenue, Artesia, New Mexico 88210

Circle only one: *Workplan* *Claim*

Circle only one:
Minimum Site Assessment
Phase 1--Hydrogeo Investigation
Phase 2--Free Product/ Saturated Soil Recovery
Phase 3--Reclamation Proposal
Phase 4--Reclamation Implementation
Phase 5--Operations and Maintenance

TASK # 2 : (brief description) Quarterly Ground-Water Monitoring and Reporting

NMED Use Only

PROFESSIONAL SERVICES	Invoice #	Rate	Unit	# of Units	Total	Project Manager	Auditor
Senior Engineer	N/A	$68.00	Hour	8	$ 544.00		
Project Scientist	N/A	$55.00	Hour	16	880.00		
Draftsperson	N/A	$34.00	Hour	4	136.00		
Secretary	N/A	$28.00	Hour	8	224.00		
					$ 1,784.00/ Sampling Event		
Subtotal					$7,136.00/ (4) Sampling Events		

NEW MEXICO CORRECTIVE ON FUND COST DETAIL FORM--EXPENSES

Site Name Dowell, a division of Schlumberger Technology Corporation (Dowell) Site Address 500 East Richey Avenue, Artesia, New Mexico 88210

Circle only one: *Workplan* *Claim*

Circle only one:
Minimum Site Assessment
Phase 1--Hydrogeo Investigation
Phase 2--Free Product/ Saturated Soil Recovery
Phase 3--Reclamation Proposal
Phase 4--Reclamation Implementation
Phase 5--Operations and Maintenance

TASK # 2 : (brief description) Quarterly Ground-Water Monitoring and Reporting

NMED Use Only

EXPENSES	Invoice #	Rate	Unit	# of Units	Total
Nontaxable					
Nontaxable subtotal					
Taxable					
Mileage	N/A	$ 0.25	Mile	800	$ 200.00
Per Diem	N/A	65.00	Day	4	260.00
Personal Protection Equip.	N/A	25.00	Day	4	100.00
Disposable Bailers	N/A	9.00	Bailer	25	225.00
PID	N/A	40.00	Day	2	80.00
Fluid Level Detector	N/A	25.00	Day	2	50.00
Copies	N/A	0.05	Page	3000	150.00
Telephone	N/A	At Cost	------	------	25.00
Shipping	N/A	At Cost	------	------	150.00
Fax	N/A	2.00	Page	5	10.00
Postage	N/A	At Cost	------	------	25.00
Combination Meter	N/A	20.00	Day	2	40.00
Supplies	N/A	At Cost	------	------	100.00
Taxable subtotal					$1,415.00/Sampling Event $5,660.00/(4) Sampling Events

Project Manager

Auditor

10/13/94:K/

NEW MEXICO CORRECTIVE ACTION) COST DETAIL FORM--SUBCONTRACTOR CHARGES

Site Name Dowell, a division of Schlumberger Technology Corporation (Dowell)

Site Address 500 East Richey Avenue, Artesia, New Mexico 88210

Circle only one: *Workplan* *Claim*

Circle only one:
Minimum Site Assessment
Phase 1--Hydrogeo Investigation
Phase 2--Free Product/ Saturated Soil Recovery
Phase 3--Reclamation Proposal
Phase 4--Reclamation Implementation
Phase 5--Operations and Maintenance

TASK # 2 : (brief description) Quarterly Ground-Water Monitoring and Reporting

NMED Use Only

SUBCONTRACTORS	Invoice #	Rate	Unit	# of Units	Total	Project Manager	Auditor
Nontaxable							
Nontaxable subtotal							
Taxable							
Hydrologic Laboratories	N/A	200	Sample	25	$5,000/Sampling Event		
Taxable subtotal					$20,000/(4) Sampling Events		

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August 30, 1996

SEP 03 1996

Tony Moreland, Project Manager
New Mexico Environment Department
Underground Storage Tank Bureau, Reimbursement Program
P.O. Box 26110
Santa Fe, New Mexico 87502

RECEIVED
SEP 25 1996
Environmental
Oil Conservation

RE: Second Quarter Phase 5 Claim Submittal

Dear Tony:

This letter and its attachments comprise the second quarter Phase 5 claim submittal for work conducted at the Dowell facility, located at 500 East Richey Avenue, Artesia, New Mexico. In accordance with the New Mexico Corrective Action Fund Reimbursement Application General Instructions, the following documents are attached:

- completed claim forms,
- cost detail forms,
- invoices in the standard format requested by NMED,
- receipts for expenses and subcontractors,
- copies of Dowell's canceled checks (front and back) for invoices #9012596002 (check #450753), #9012596003 (check #457364), and #9012596004 (check #469627),
- signed and notarized affirmation forms (two originals are provided).

All Phase 5 work was conducted in accordance with the 1995-1996 fixed price workplan which was approved by the New Mexico Environment Department (NMED) on October 30, 1995. Work was conducted either under the supervision of, or by New Mexico "Certified Scientists" Rick Deuell (Senior Engineer), Robin Daley (Project Scientist), and/or Kevin Mattson (Staff Scientist). Phase 5 work includes the following tasks:

Task 1: "Soil Vapor Extraction System Operation and Maintenance", and

Task 2: "Quarterly Ground-water Monitoring and Reporting".

The first quarter includes work conducted from January 21, 1996 through April 20, 1996. Western Water Consultants, Inc. (WWC) invoiced Dowell for this work on March 11, 1996, April 10, 1996, and May 8, 1996.

The two original soil vapor extraction (SVE) systems at the Dowell site remediate petroleum contamination in the vicinity of the wash bay and maintenance shop. An expansion of one of the original SVE systems located near the wash bay remediates benzene, toluene, ethylbenzene, and xylene (BTEX) and chlorinated hydrocarbon contamination. Operation and maintenance of the expanded SVE system is not included in this work plan. Operation and maintenance of the original SVE system and the expanded SVE system are conducted under separate WWC project task numbers to facilitate tracking of each project.

In accordance with the NMED Corrective Action Fund Reimbursement Program Claim Form Instructions, a W-9 form is not provided since Dowell has previously received a payment from the state.

A July 11, 1995 letter from NMED classified the Dowell facility a "third priority site", subject to 60% reimbursement. Reimbursement is also subject to the workplan and cost schedule approved on October 30, 1995.

Your consideration of this claim is greatly appreciated. If you have any questions or need additional information or documentation, please feel free to call me at 307/742-0031.

Sincerely,

Lisa Jarvis

Lisa Jarvis, Geologist

LJ:gh
Enclosures
cc: John Miller, Dowell
Jeff Walker, NMED/Ground-water Bureau w/out attachments
File: 90-125L-96 A & E

Document File Certification

I, Ray Montes, with the New Mexico Environment Department, USTB, certify that the Dowell Schlumberger - Artesia file has not been altered, or tampered with in any way by Pat Sanchez of the New Mexico Oil Conservation Division, this the 24th day of September, 1996

Witness, _____ 9/24/96

NMED Staff member certifying, R. Montes 9/24/96

Pat Sanchez - NMOCD, _____ 9/24/96

9-24-96

Note: All original records regarding the UST closure/Rem. are on file at the NMED, USTB.

P.W.S.

Document/File Request Form

Fill out the following:

1) Date 9-24-96

2) Name Pat Sanchez - NMOCD

Address 2040 S. Pacheco, Santa Fe, NM 87505

Phone No. (505)-827-7156

3) Firm/person you represent State of NM.

Address Same as above

Phone No. ( ) Same as above

4) Document/data requested Information regarding the UST/related items for Dowell Schlumberger - Artesia Facility.

5) Staff member processing request Ray Montes

I (name) Pat Sanchez, will not destroy, alter, or remove information or documents from state files without permission of the New Mexico Environment Department.

Requestor signature Patricia A. Sanchez

Manager/Supervisor signature R. Montes

The cost of requestor copying is .35 cents per page.