GLENN SPRINGS HOLDINGS, INC.

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Director - Operations ***Facsimile (859) 543-2171***

March 29, 2001

Mr. Gerald J Rider, P.E.
Chief, Operation, Maintenance and Support Section
New York State Department of Environmental Conservation
Bureau of Water Compliance Programs
50 Wolf Road,
Albany, NY 12233-3056

Re: Love Canal 2000 Annual Report

Dear Mr. Rider:

On behalf of Occidental Chemical Corporation and Miller Springs Remediation Management, Inc., enclosed are three (3) copies of:

- Love Canal 2000 Annual Report; and
- Love Canal 2000 Operations/Monitoring Report

The Annual Report is a brief summary of the Operation/Monitoring Report that we distribute to individuals on the mailing list, in accordance with Section 4. of Appendix B of the Consent Judgment between Occidental Chemical Corporation (OCC) and the State of New York.

An electronic copy of the full text, figures and tables associated with this report are included on the attached CD as Adobe Acrobat pdf files. If you have any questions please do not hesitate to call.

Sincerely,

George Luxbacher, P.E., Ph.D.

c.c. D. Duda, EPA Region 2
D. King, NYSDEC
D. Tubridy, MSRM
B. Downie, MSRM

GLENN SPRINGS HOLDINGS, INC.

MILLER SPRINGS REMEDIATION MANAGEMENT, INC.

2000 OPERATION AND MONITORING REPORT SIXTH YEAR

Love Canal
Occidental Chemical Corporation
Niagara Falls, New York

2000 OPERATION/MONITORING REPORT
OCCIDENTAL CHEMICAL CORPORATION
LOVE CANAL
NIAGARA FALLS, NEW YORK

Miller Springs Remediation Management, Inc.

Glenn Springs Holdings, Inc.

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1.0 INTRODUCTION

Operation of the Love Canal Site (Site) was transferred from the New York State Department of Environmental Conservation (NYSDEC) to Occidental Chemical Corporation (OxyChem) in April 1995.

Effective July 1, 1998 site responsibility for the Love Canal Site was assigned by Occidental Chemical Corporation to Miller Springs Remediation Management, Inc. (MSRM), a Glenn Springs Holdings, Inc. (GSHI) affiliate. GSHI is a subsidiary of Occidental Petroleum Corporation. This report is the sixth annual report prepared by Occidental Chemical and covers operating and monitoring activities for 2000.

2.0 REMEDIAL SYSTEMS

Operational of remedial systems to prevent the off-site migration of chemical contaminants from the Site began in October 1978 with the installation of a barrier drain along the east and west sides of the south section of the Canal; the barrier drain was later extended to completely encompass the Canal. The barrier drain, intended to intercept the shallow lateral groundwater flow, consists of a trench 15 to 25 feet deep and 4 feet wide. Installed within the trench is an 8-inch-diameter perforated clay tile drain centered in 2 feet of uniformly sized gravel which is overlain to the surface with sand. Lateral trenches filled with sand were excavated perpendicular to the barrier drain in the direction of the canal. The tile drain is graded towards a series of manholes and wet wells (PC-1A / PC-2A North / Central & PC-1 / PC-2 South) where the leachate is collected. The leachate is pumped from the wet wells to two underground holding tanks (PC-3A North / Central & PC-3 South) where it is held prior to being treated at on-site treatment facility and discharged into the City of Niagara Falls sewer system.

2.1 OPERATIONS OF THE BARRIER DRAIN AND WELL COLLECTION SYSTEMS

2.1.1 Barrier Drain System

During 2000 there was no maintenance performed on the Barrier Drain system. The system functioned without any problems or irregularities during the year.

2.1.2 Wet Well Collection System

The collection well system consists of two sectors, the Northern / Central and the Southern Collection System. In 2000 the collection systems were operational and functioned properly throughout the year.

The 102nd Street Landfill Site leachate line connection into the Love Canal Treatment Facility (LCTF) at the southern storage tank (PC-3) was completed in March of 1999. This provides for treatment of the 102nd Street leachate through the LCTF.

During 2000 several upgrades and maintenance activities occurred; a list of these activities is presented below:

- Replacement of a coupling on the PC-1A North pump.
- Replacement of the level float within the DCF pump chamber.
- Replacement of the PC-1 line flange within the PC-2 dry pump chamber, and installation of new line supports for the PC-1 & PC-2 lines in same chamber.

3.0 GROUND-WATER TREATMENT AND MONITORING

3.1 GROUND-WATER TREATMENT

3.1.1 Treatment System

The treatment system consists of bag filtration and carbon treatment prior to discharge to the City of Niagara Falls sanitary sewer system. A modification of the Love Canal Discharge Permit (No. 44) from the City of Niagara Falls was granted and implemented in March of 1999. The modification increased the discharge flow limitation (effluent discharge) from a maximum of 100,000 gallons / day to a maximum of 300,000-gallons / day. The City of Niagara Falls re-issued a wastewater discharge permit to Occidental Chemical Corp on January 6, 2000.

One carbon bed change (lead bed) was performed in 2000, which included an internal visual inspection of the bed at the time of the change. During 2000 several routine maintenance activities were performed; a list of the major activities is presented in bullet form below (see attached table 4.1 for a detailed list of site activities for the year 2000):

- Replaced bottom discharge valve on the Main Carbon Bed (V-1) and replacement of an isolation valve on the same carbon bed system.
- PLC control system upgraded from Bristol Babcock to new Allen Bradley and replacement of supporting equipment at all wet wells (PC-1, PC-2, PC-3, PC-1A, PC-2A & PC-3A). The update greatly improves system reliability.
- Installation of a Radio Modem Network to allow communication between the wetwells and the treatment plant control systems. The modem system replaced the existing controller communication cable. Installation of a new Radio Modem system (modem antenna). The new antenna is affixed on top of eastern side of the treatment building. The modem transfers control data to and from the remote PLCs. The wireless modem system replaced the control communication cable, which was found to be in marginal operating condition.
- Replacement of the effluent flow transmitter with new Controlatron transmitter (FIT-107).

3.1.2 Effluent Discharge

The LCTF discharged to the Niagara Falls sanitary sewer system on 242 days in 2000. Periodically wet weather flow in the area around Love Canal results in surcharged sewers. The resultant surcharge requires overflow at combined sewer and storm sewer overflow points. Other points in the sewer shed require manual bypass pumping. Consequently, to minimize this overflow, the City of Niagara Falls will require the permitte to cease discharge from the LCTF during these surcharge events. During 2000, 6 requests from the city to stop discharging occurred. During 2000, groundwater treated at the Love Canal Leachate Treatment Facility was as follows:

Total treated at LCTF (including 102nd Street):	5,281,200 gallons
Pumped from 102nd Street Site:	1,729,597
Net Love Canal Collection:	3,551,603

Table 3.1 shows the monthly total and average treated groundwater quantities for the 1995 to 2000 periods, additionally for 2000 are the total days of discharge per month.

In March of 1999, the 102nd Street Landfill Site leachate collection system was connected to the Love Canal Site to transfer the 102nd Street leachate into the Love Canal southern storage system (PC-3). For the year, the four-well system at 102nd Street pumped 1,729,597 gallons to Love Canal (PC3), were it was then treated along with ground water accumulated on site.

3.1.3 Sampling

Sampling of the effluent discharge to City of Niagara Falls sewer system occurred quarterly as required under the city of Niagara Falls Discharge Permit #44. As part of the permit requirements, City and MSRM personnel completed a joint annual verification sampling during the second quarter sampling event. Throughout the year sample results were submitted to the City; analytical results were below required limits for all sampled parameters.

3.1.4 Precipitation

Precipitation for the year in Niagara Falls totaled 42.2 inches (Buffalo Airport, National Weather Service data), compared to the average of 39.2 inches (1995 through 1999). Resulting in increased infiltration into the shallow overburden groundwater system. Table 3.1 provides historic precipitation data.

3.2 GROUND-WATER MONITORING

3.2.1 Groundwater Quality

Sampling and analytical protocols for the sampling program have been established and are set forth in the "Sampling Manual, Love Canal Site, Long-Term Groundwater Monitoring Program".

3.2.2 Chemical Monitoring

The 2000 chemical sampling event was performed during the second quarter of 2000; 35 samples were collected (29 wells, 1 Resample / DEC Split, 3 duplicates, 1 Field Blank and 1 Rinse Blank). Well 10278 was sampled on June 23, 2000 and again on June 29, 2000 to accommodate with NYSDEC. Figure 3.1 identifies the wells sampled and their locations. Table 3.2 provides a summary of the wells (12 overburden & 18 bedrock) selected by the NYSDEC for the 2000 Long-Term Monitoring Program and the number of compounds found at or above detection limits in each. One well (10178) was deemed "Dry" based on the protocol set forth in the "Sampling Manual, Love Canal Site, Long-Term Groundwater Monitoring Program".

Table 3.3 presents the data for the 28 (23 wells, 1 Resample, 3 Duplicates & 1 DI-Water) samplings that had analytical results above compound detection levels. There were forty-four discrete compounds detected: eighteen VOCs, fifteen SVOCs and eleven pesticides. The majority of these compounds (fifteen VOCs, twelve SVOCs and nine pesticides) were detected in well 10135, which historically has the highest number and concentration of compounds. Well 10135 is located within the boundaries of the remedial site; the well is situated in the southwestern zone of the Site. Table 3.4 presents a summary of detected compounds of the four long-term monitoring wells (10210A, 10210B, 10210C &

10135) from 1990 to 2000. This data shows that the compounds detected in 2000 were at similar concentrations to those compounds detected in previous years.

A Rinse Blank and a Deionized Water Blank (Field Blank) were collected and analyzed with the samples. Generally, Field Blank results were non-detect with the exception of the following compounds present at low levels: phthalates, acetone, 2-butanone, bromodichloromethane, alpha, delta and gamma-BHC. All Sample results with similar concentrations as in the blanks were qualified as non-detect.

H2M Labs Inc., Melville, New York, conducted the sample analyses. Conestoga-Rovers & Associates (CRA), Niagara Falls, New York performed the analytical Quality Assurance / Quality Control (QA / QC). Both the analytical data and the QA / QC report are on file at the MSRM Western New York Office at Love Canal and are available for review upon request.

The Quality Assurance / Quality Controls (QA / QC) criteria by which these data have been assessed are outlined in:

- Methods 95-1, 95-2 and 95-3 referenced in the New York State Department of Environmental Conservation (NYSDEC) Analytical Services Protocol (ASP) (10 / 95 Rev) and
- "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review" EPA 540 / R-94 / 012, February 1994.

The QA / QC evaluation concluded all sample results were acceptable.

The 2000 chemical analytical results are consistent with previous Long-Term Monitoring analytical results; there was minimal detection of chemicals in the wells sampled. Detected chemicals were at low levels and do not indicate a failure in the barrier drain or pose an immediate threat to groundwater quality.

3.2.3 Hydraulic Containment

Water levels were measured at six-nested piezometer strings in March, June, September and December 2000. Figures 3.2 to 3.7, ordered from the well furthest from the outside of the barrier drain to the barrier drain and the well inside the area enclosed by the barrier drain, show the overburden groundwater flow conditions for June 2000 along the six piezometer strings. The water level data is presented in Tables 3.5A to 3.5F.

The groundwater level data shows that groundwater flow was toward the barrier drain. The barrier drain is drawing groundwater from outside the drain and successfully capturing horizontal groundwater flow from the Site.

4.0 OTHER ACTIVITIES

Summaries of normal activities and repairs performed in 2000 are listed in Table 4.1. A brief description of major activities is presented below.

4.1 PROCESS ACTIVITIES

MSRM has continued to upgrade the process system software and programming. The upgrades provide improved monitoring, logging, and control of the site collection and treatment plant process parameters.

4.2 NON-PROCESS ACTIVITIES

Activities that occurred throughout the year include the following:

- Renovations to the office building including conversion of storage and open areas into office workspace.
- Removal of out-of-service utility poles, including obsolete wiring.
- Repairs to the treatment building roof, areas on the roof around flashing and valleys were re-sealed with tar.

4.3 COMMUNITY OUTREACH

Community Outreach programs during 2000 included such activities as beautification of the neighborhood, tours of the facility and informational correspondences to the community.

4.3.1 Beautification

- Planting of new shrubbery and flowerbeds along the southwest fence line.
- Continue up keep and landscaping of the site and surrounding areas.
- Maintain and up keep of flowerbeds and shrubs along Colvin Blvd.
- Additional flowers, shrubs and birdbaths around the administration and process buildings.
- Cleanup of discarded debris around fence line and adjacent lots.
- Communication with neighbors and local officials on patrol and monitor for illegal dumping of debris along roadsides.

4.3.2 Tours

A total of 6 tours of the facility were given throughout the year, to approximately 53 guests. The tours included both an informational oration accompanied with visual aids followed by a guided tour of the treatment facility and landfill. Tours of the facility were provided throughout the year to representatives of environmental agencies and students of various educational levels. Tours given during the year included:

- Students enrolled in Masters program at University of Nottingham of the U.K. The students consisted of a mixture of regulators (Local authorities, Environmental Agencies) and consultants. Additionally included were students from the University of Waterloo, Canada.
- World-Connect South Asian delegates from India and Nepal, which included the Project Associate, Madras Institute of Development; Principal Correspondent, The Kindu, Kochi; Coordinator, North East Network, Shillong; Mayor, Pokhara Sub-Metropolitan City, Gandki Zone, Nepal; Town Planning Inspector, Ahmedabad Municipal Corporation, Ahmedabad; Deputy Transport Commissioner, Regional Transport Office, Mumbai and translators.
- Several students and their professor from the University of Toronto, ON, Canada.
- Dr. Chen Ying Director of Guangdong Department of Environmental Pollution Survey and Monitoring Center (EPA Director of China) (Sponsored by the U.S. Department of State and the International Visitors Program).
- Several students and their professor from Sir Sandford Fleming College of Cobourg, ON, Canada
- Students and their professor from Dickinson College of Carlisle, PA.

4.3.3 Communications

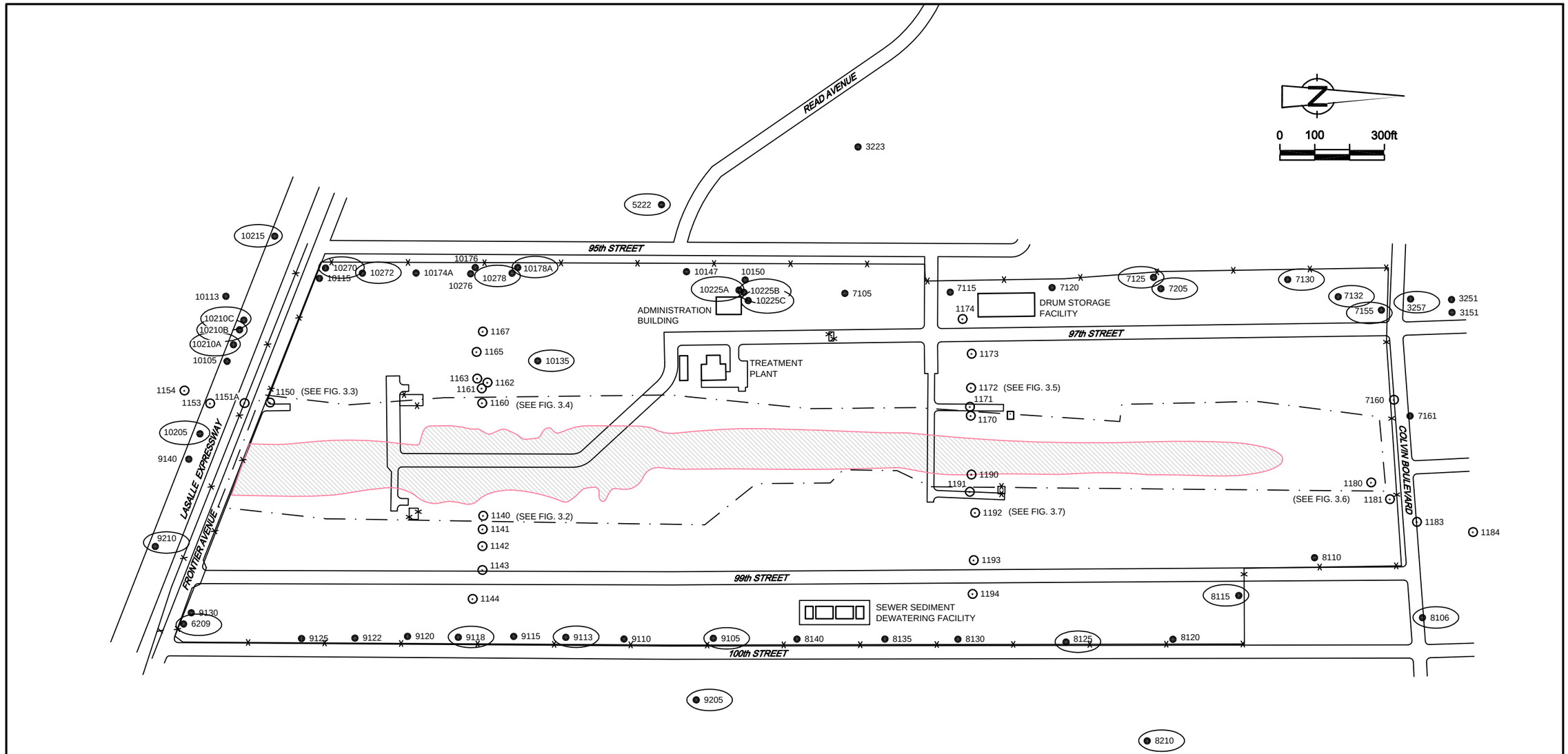
The City of Niagara Falls Fire Department toured the Site and reviewed Emergency Response Plan which included accessing of property during any emergency responses, layout of site and location of buildings, storage areas of equipment and reactive materials (gasoline, paints etc.) and personnel responders list.

The annual Operations and Maintenance summary report for 1999 was issued to 27 citizens and agencies last year. The report summarizes items such as, the amount of groundwater treated on site and then discharged to city's sanitary sewer, maintenance activities and other non-operational activities for the year.

5.0 CONCLUSION

The 2000 data indicate that there was no significant change in chemical and hydrological conditions at the Site. The barrier drain is successfully capturing leachate from the Site and preventing off-Site migration of chemicals. The remediation system is functioning as designed: 5,281,200 gallons of leachate were treated and discharged from the Site. The 102nd Street Landfill Site leachate line connection into the Love Canal Treatment Facility (LCTF) at the southern storage tank (PC-3) was completed in March of 1999. This provides for treatment of the 102nd Street leachate through the LCTF. 1,729,597 gallons of leachate were pumped from the 102nd Street Site to and treated through the LCTF during 2000.

FIGURES

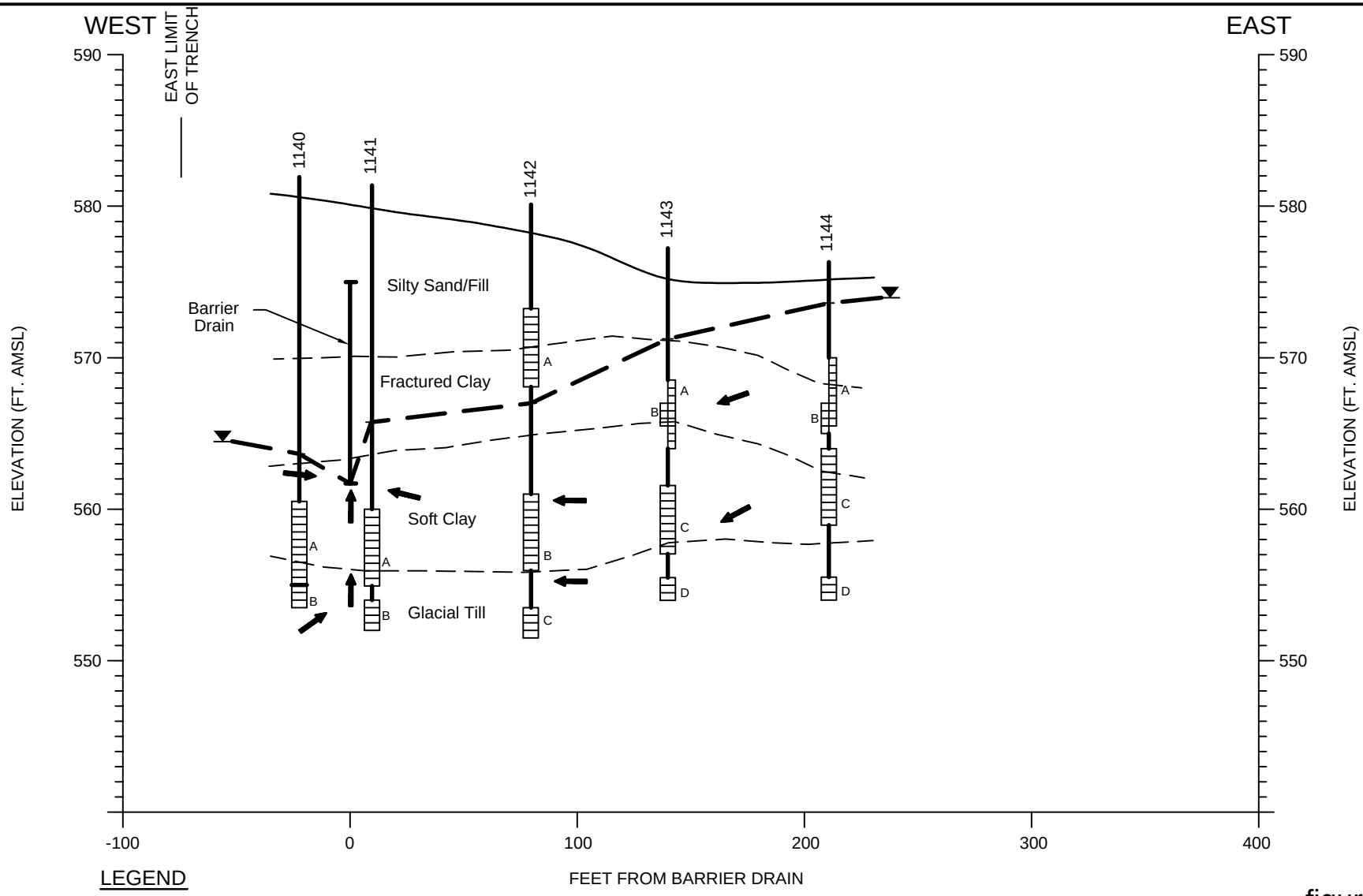


LEGEND

- FENCE LINE
- BARRIER DRAIN
- 7105 PIEZOMETER WELL
- 1167 OBSERVATION WELL
- WELLS SAMPLED IN JUNE 2000
- APPROXIMATE LIMITS OF DISPOSED WASTE

figure 3.1

2000 GROUNDWATER SAMPLE COLLECTION PROGRAM
LOVE CANAL
Miller Springs Remediation Management



LEGEND

- A — PIEZOMETER DESIGNATION
- GROUNDWATER LEVEL
- FLOW DIRECTION
- SCREENED INTERVAL

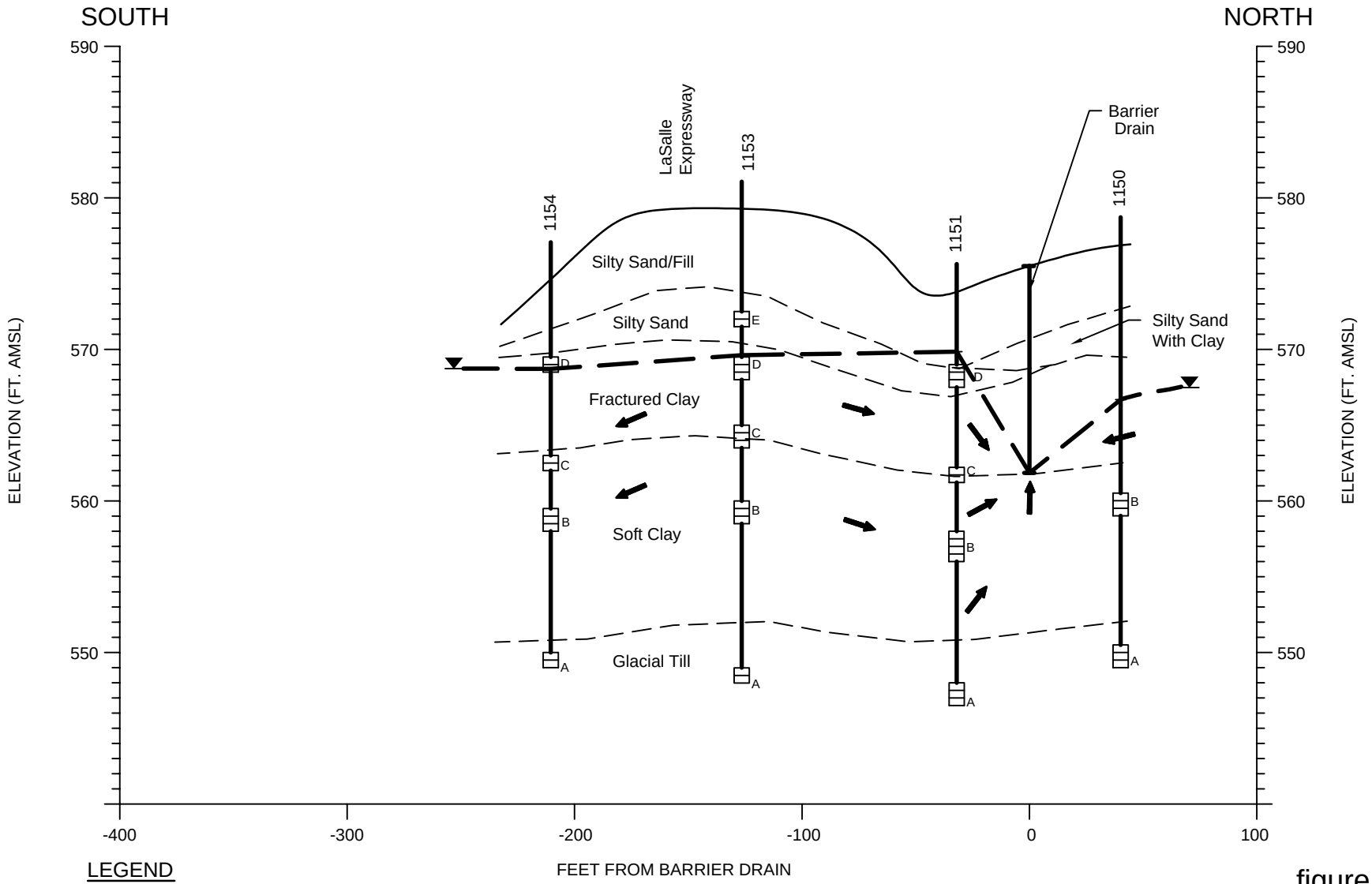
NOTE: (1) GROUNDWATER LEVEL SHOWN IS FOR UPPERMOST MONITORED INTERVAL

(2) PIEZOMETERS WERE INSTALLED IN SEPARATE BOREHOLES.

figure 3.2

JUNE 2000 FLOW DIAGRAM
1140 SERIES PIEZOMETERS
LOVE CANAL

Miller Springs Remediation Management



LEGEND

A PIEZOMETER DESIGNATION

GROUNDWATER LEVEL

FLOW DIRECTION

SCREENED INTERVAL

NOTE: (1) GROUNDWATER LEVEL SHOWN IS FOR UPPERMOST MONITORED INTERVAL

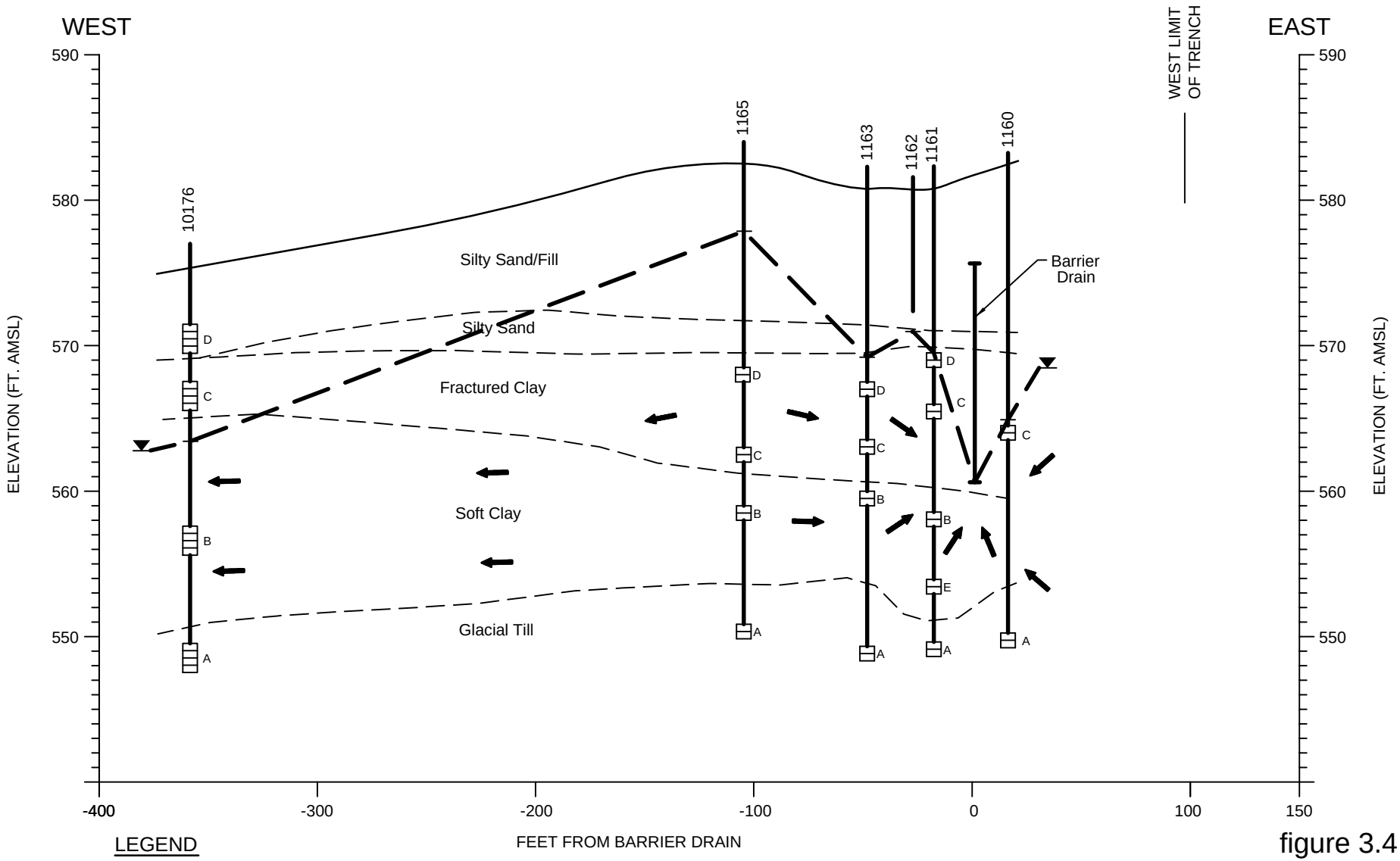
(2) PIEZOMETERS WERE INSTALLED IN SEPARATE BOREHOLES.

figure 3.3

JUNE 2000 FLOW DIAGRAM
1150 SERIES PIEZOMETERS
LOVE CANAL

Miller Springs Remediation Management

09954-02(005)GN-WA002 FEB 09/2001



LEGEND

A PIEZOMETER DESIGNATION

GROUNDWATER LEVEL

FLOW DIRECTION

SCREENED INTERVAL

NOTE: (1) GROUNDWATER LEVEL SHOWN IS FOR UPPERMOST MONITORED INTERVAL

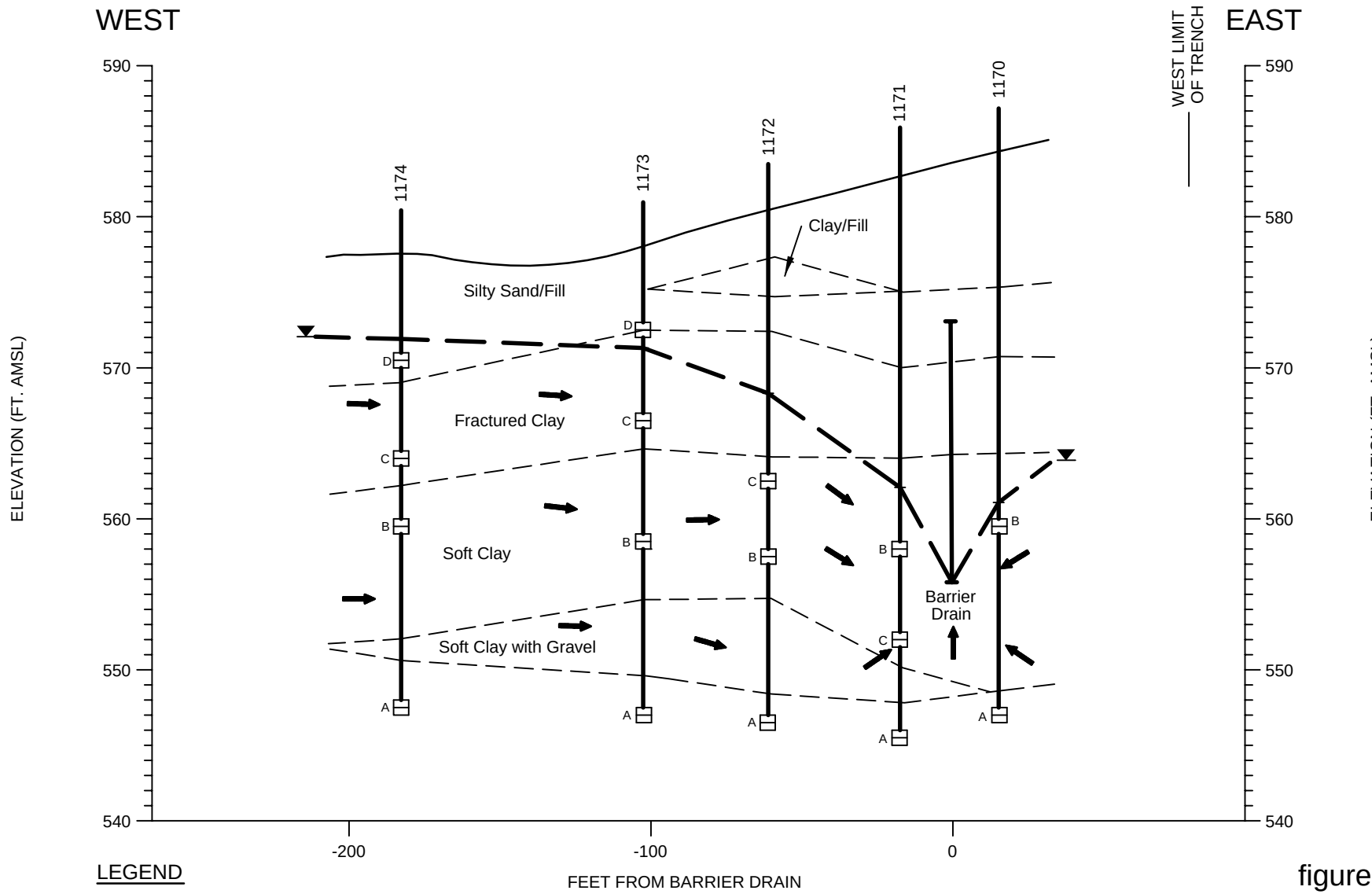
(2) PIEZOMETERS WERE INSTALLED IN SEPARATE BOREHOLES.

figure 3.4

JUNE 2000 FLOW DIAGRAM
1160 SERIES PIEZOMETER
LOVE CANAL

Miller Springs Remediation Management

09954-02(005)GN-WA003 FEB 09/2001



LEGEND

- A — PIEZOMETER DESIGNATION
- GROUNDWATER LEVEL
- FLOW DIRECTION
- SCREENED INTERVAL

NOTE: (1) GROUNDWATER LEVEL SHOWN IS FOR UPPERMOST MONITORED INTERVAL

(2) PIEZOMETERS WERE INSTALLED IN SEPARATE BOREHOLES.

figure 3.5

JUNE 2000 FLOW DIAGRAM
1170 SERIES PIEZOMETERS
LOVE CANAL

Miller Springs Remediation Management

09954-02(005)GN-WA004 FEB 07/2001

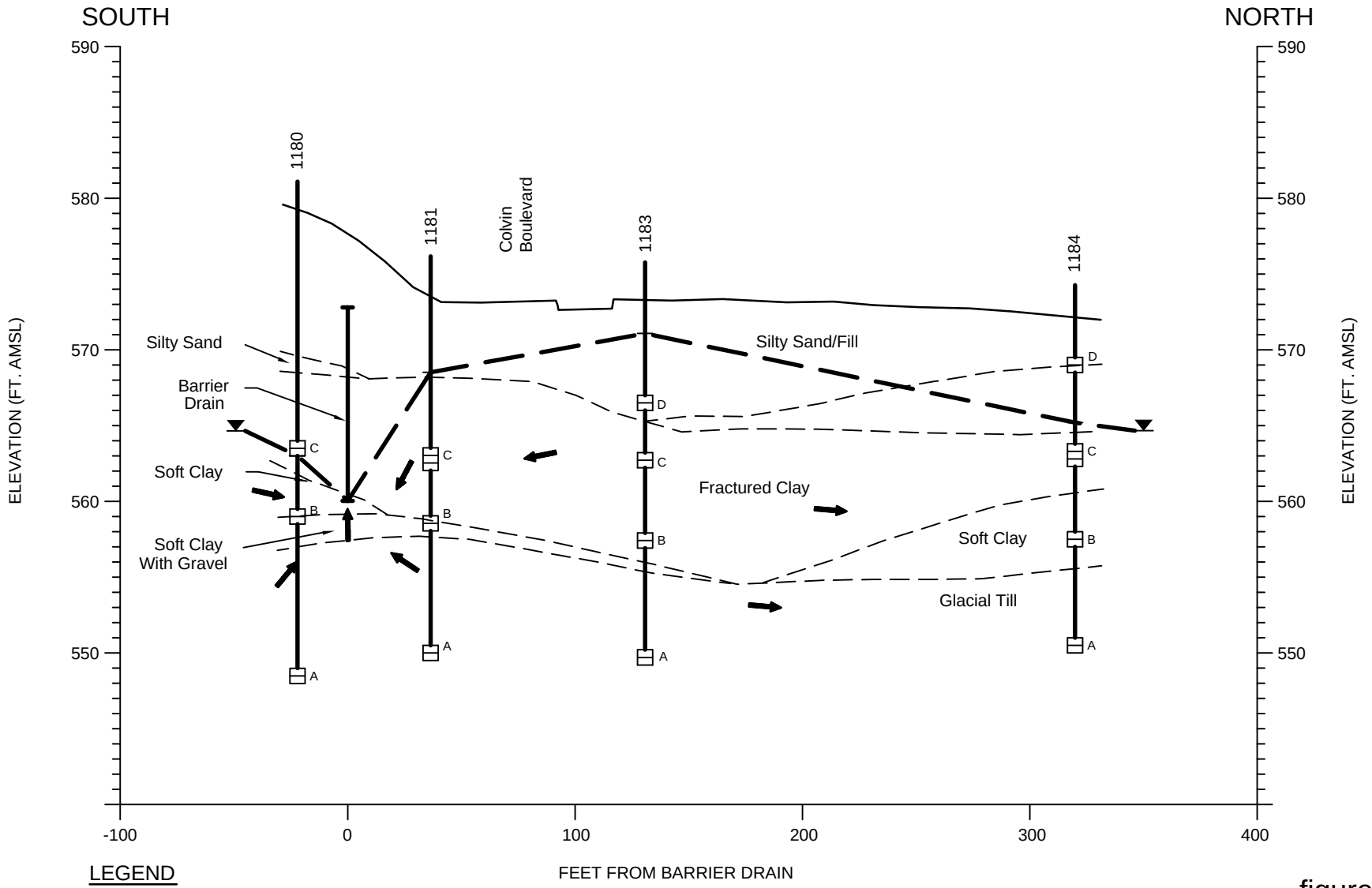


figure 3.6

JUNE 2000 FLOW DIAGRAM
1180 SERIES PIEZOMETERS
LOVE CANAL
Miller Springs Remediation Management

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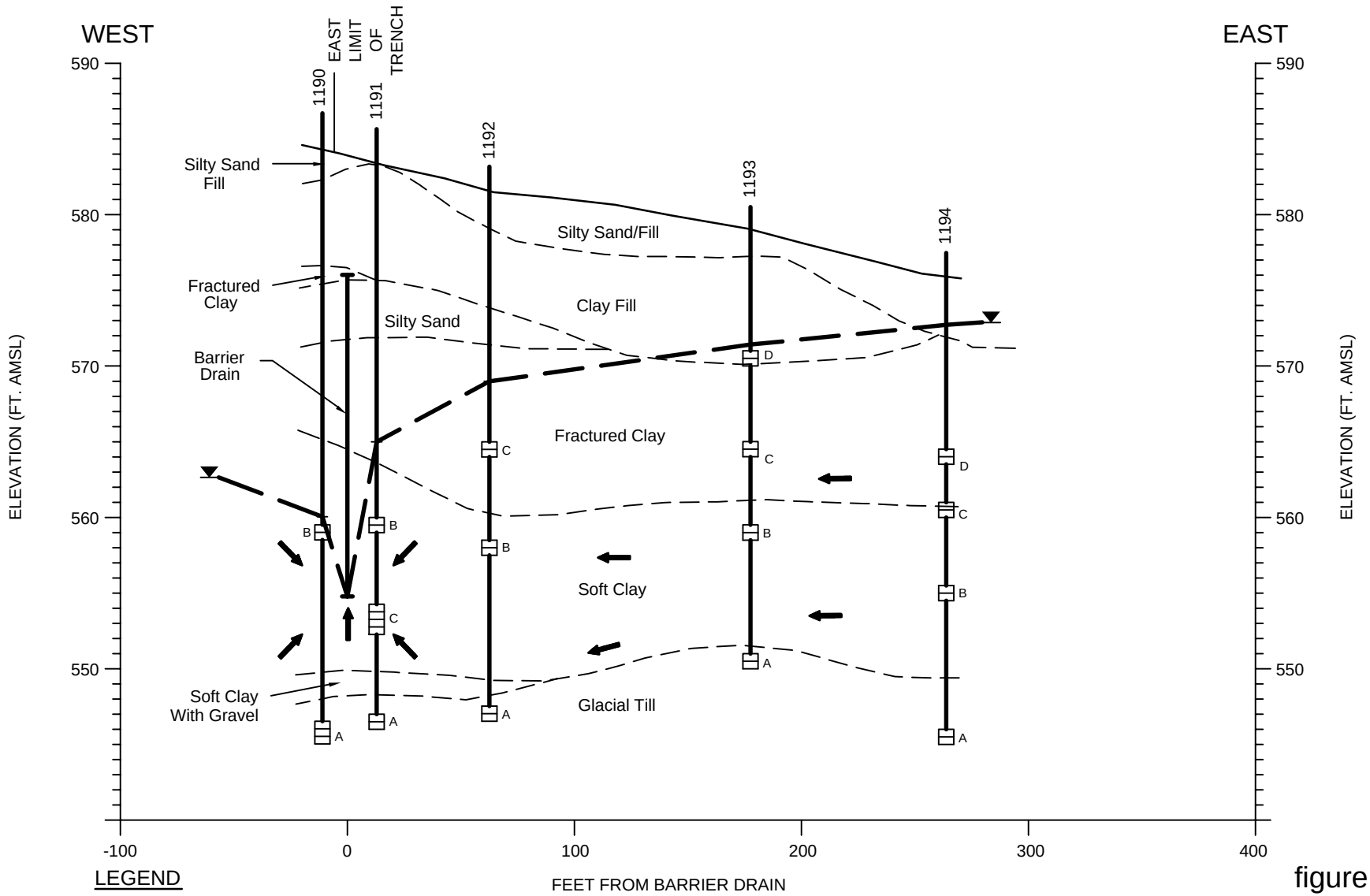

LEGEND

A PIEZOMETER DESIGNATION

GROUNDWATER LEVEL

FLOW DIRECTION

SCREENED INTERVAL

NOTE: (1) GROUNDWATER LEVEL SHOWN IS FOR UPPERMOST MONITORED INTERVAL

(2) PIEZOMETERS WERE INSTALLED IN SEPARATE BOREHOLES.

figure 3.7

JUNE 2000 FLOW DIAGRAM
1190 SERIES PIEZOMETERS
LOVE CANAL

Miller Springs Remediation Management

TABLES

TABLE 3.1

MONTHLY VOLUMES OF GROUNDWATER TREATED
LOVE CANAL LEACHATE TREATMENT FACILITY
OCCIDENTAL CHEMICAL CORPORATION

Month	*Volume (gal)*								
	1995	*1996*	*1997*	*1998*	*1999*		*2000*		
					Total Treated (1)	LC Treated (2)	Total Treated (1)	LC Treated (2)	Days Discharged
January	**597,650**	**474,330**	**337,720**	**700,070**	***335,700***	**335,700**	***495,800***	**280,364**	**21**
February	**202,235**	**252,450**	**456,800**	**539,838**	***270,100***	**270,100**	***480,400***	**368,492**	**21**
March	**385,910**	**331,690**	**520,600**	**615,133**	***409,300***	**321,558**	***505,500***	**290,501**	**23**
April	**132,790**	**615,350**	**184,400**	**437,817**	***555,200***	**296,535**	***675,600***	**547,926**	**20**
May	**123,140**	**513,310**	**126,850**	**139,600**	***401,500***	**123,790**	***473,300***	**335,331**	**20**
June	**125,300**	**251,400**	**210,630**	**99,800**	***323,500***	**63,658**	***632,200***	**486,721**	**20**
July	**132,400**	**113,300**	**96,810**	**130,200**	***143,600***	**104,649**	***333,900***	**184,955**	**20**
August	**112,910**	**146,700**	**223,390**	**138,300**	***230,600***	**97,423**	***437,100***	**286,925**	**23**
September	**111,200**	**310,550**	**116,790**	**95,200**	***232,100***	**62,759**	***209,600***	**82,263**	**20**
October	**491,440**	**532,360**	**326,100**	**71,500**	***283,400***	**175,837**	***264,300***	**134,248**	**20**
November	**641,210**	**393,730**	**346,550**	**46,200**	***491,800***	**344,145**	***250,900***	**132,728**	**17**
December	**235,900**	**499,540**	**524,760**	**73,800**	***695,500***	**397,912**	***522,600***	**421,149**	**17**
Total	**3,292,085**	**4,434,710**	**3,471,400**	**3,087,458**	***4,372,300***	**2,594,066**	***5,281,200***	**3,551,603**	**242**
Monthly Average	**274,340**	**369,560**	**289,280**	**257,288**	***364,358***	**216,172**	***440,100***	**295,967**	**20**
Rainfall Inches	**33.99**	**48.22**	**41.17**	**38.77**	**34.08**			**42.2**	

NOTES: (1) Total Treated: As of March 1999 Treatment at LCTF included leachate collected from 102nd Street Landfill Site.
(2) LC (Love Canal) Treated: Total treated less received from 102nd Street.

TABLE 3.2

SUMMARY OF DETECTED COMPOUNDS
2000 LONG-TERM MONITORING PROGRAM
LOVE CANAL
OCCIDENTAL CHEMICAL CORPORATION

Overburden Wells	***VOCs***	***SVOCs***	***Pesticides/PCBs***
7115	ND	ND	ND
7125	ND	2	ND
7130	ND	ND	ND
7132	ND	ND	ND
8106	ND	1	ND
8115	ND	ND	ND
8125	ND	1	ND
9105	ND	2	ND
9113	ND	1	ND
9118	ND	1	ND
10135	15/16	12/11	9/8
10178	DRY	DRY	DRY
	15	**20**	**9**
Bedrock Wells			
3257	ND	1	ND
5222	1/1	1/1	ND/ND
6209	1	ND	ND
7205	ND	ND	ND
8210	1	ND	ND
9205	2	1	1
9210	2	1	ND
10205	ND	ND	4
10215	3	ND	ND
10270	1/1	1/ND	ND/ND
10272	ND	1	ND
10278	1/1	1/2	ND/ND
10210A	ND	ND	ND
10210B	1	ND	ND
10210C	2	ND	ND
10225A	1	ND	ND
10225B	1	ND	3
10225C	1	1	ND
	18	**8**	**8**
Total # of Detections	**33**	**28**	**17**
DI-Water (Field Blank)	2	ND	3

Notes:
44 - Number of parameters detected.
ND/ND - Duplicate analyses.
ND - No parameters detected at or above detection limits.

TABLE 3.3
ANALYTICAL RESULTS SUMMARY ANNUAL GROUNDWATER SAMPLING
SUMMARY OF COMPOUNDS DETECTED
LOVE CANAL-2000

Sample Location:		10135	10135	10205	10210B	10210C	10215	10225A	10225B	10225C	10270	10270	10272	10278	10278
Sample ID:		10135	8260	10205	10210B	10210C	10215	10225A	10225B	10225C	10270	10315	10272	10278 6/29/00	10278
Sample Date:		6/22/2000	6/22/2000	6/21/2000	6/15/2000	6/15/2000	6/28/2000	6/21/2000	6/21/2000	6/28/2000	6/28/2000	6/28/2000	6/23/2000	6/29/2000	6/23/2000
Parameter	**Unit**														
Volatiles															
1,1,2,2-Tetrachloroethane	ug/l	27 J	26 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	ug/l	14 J	16 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethene	ug/l	4 J	4 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Butanone	ug/l	10 UJ	10 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	ug/l	28 J	46 J	10 U	10 U	8 J	1 J	10 U	14	10 U	10 U	10 U	10 U	5 J	6 J
Benzene	ug/l	6400	6900 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane	ug/l	10 UJ	10 UJ	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon disulfide	ug/l	10 UJ	10 UJ	10 U	10 U	3 J	4 J	2 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	ug/l	2300 J	2300 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroform	ug/l	100 J	130 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Ethylbenzene	ug/l	12 J	12 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylene chloride	ug/l	24 J	24 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene	ug/l	16 J	14 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Toluene	ug/l	21000	21000 J	10 U	1 J	10 U	1 J	10 U	10 U	10 U	2 J	10 J	10 U	10 U	10 U
trans-1,2-Dichloroethene	ug/l	67 J	70 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethene	ug/l	60 J	72 J	10 U	10 U	10 U	10 U	10 U	10 U	7 J	10 U	10 U	10 U	10 U	10 U
Vinyl chloride	ug/l	110 J	85 J	10 U	10 U	10 U	10 UJ	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U	10 UJ	10 U
Xylene (total)	ug/l	42 J	44 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Semi-Volatiles															
1,2,4-Trichlorobenzene	ug/L	45 J	36 J	10 U	10 U	10 U	10 U	10 U	10 U	6 J	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	ug/L	22 J	18 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	ug/L	59 J	52 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	ug/L	0.9 J	10000 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
2,4,6-Trichlorophenol	ug/L	1 J	4000 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	ug/L	1400 J	470 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	ug/L	5000 U	2 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylphenol	ug/L	160 J	4000 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitrophenol	ug/L	5000 U	1 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methylphenol	ug/L	99 J	300 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzoic acid	ug/L	19000 J	4700 J	12 U	12 U	12 U	25 U	12 U	12 U	25 U	25 U	25 U	25 U	25 U	6 J
Benzyl Alcohol	ug/L	14000	3200 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Ethylhexyl)phthalate	ug/L	41 J	24 J	17 U	12 U	10 U	5 U	10 U	12 U	5 U	1 J	5 U	5	2 J	3 J
Diethyl phthalate	ug/L	5000 U	4000 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	ug/L	4000 J	1800 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

TABLE 3.3
ANALYTICAL RESULTS SUMMARY ANNUAL GROUNDWATER SAMPLING
SUMMARY OF COMPOUNDS DETECTED
LOVE CANAL-2000

Sample Location:		***10135***	***10135***	***10205***	***10210B***	***10210C***	***10215***	***10225A***	***10225B***	***10225C***	***10270***	***10270***	***10272***	***10278***	***10278***
Sample ID:		***10135***	***8260***	***10205***	***10210B***	***10210C***	***10215***	***10225A***	***10225B***	***10225C***	***10270***	***10315***	***10272***	***10278 6/29/00***	***10278***
Sample Date:		***6/22/2000***	***6/22/2000***	***6/21/2000***	***6/15/2000***	***6/15/2000***	***6/28/2000***	***6/21/2000***	***6/21/2000***	***6/28/2000***	***6/28/2000***	***6/28/2000***	***6/23/2000***	***6/29/2000***	***6/23/2000***
Parameter	***Unit***														
Pesticides															
4,4-DDD	ug/L	0.071 J	0.13 J	0.10 U	0.10 R	0.10 U	0.10 UJ	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Aldrin	ug/L	5.0 UJ	0.050 UJ	0.16 J	0.050 R	0.050 U	0.050 UJ	0.050 R	0.028 J	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
alpha-BHC	ug/L	50	50	0.050 U	0.050 R	0.082 U	0.050 UJ	0.050 U	0.18 U	U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
beta-BHC	ug/L	15	16	0.026 J	0.050 R	0.050 U	0.050 UJ	0.050 U	0.056	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
delta-BHC	ug/L	14	13	0.050 U	0.050 R	0.050 U	0.050 UJ	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Endosulfan I	ug/L	0.050 UJ	0.050 UJ	0.046 J	0.050 R	0.050 U	0.050 UJ	0.050 U	0.074 J	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Endosulfan II	ug/L	0.52 J	0.69 J	0.10 U	0.10 R	0.10 U	0.10 UJ	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Endosulfan sulfate	ug/L	0.17 J	0.10 UJ	0.10 U	0.10 R	0.10 U	0.10 UJ	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
gamma-BHC (Lindane)	ug/L	8.0	6.4	0.050 U	0.050 R	U	0.050 UJ	0.050 U	U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
gamma-Chlordane	ug/L	0.16 J	0.18 J	0.026 J	0.050 R	0.050 U	0.050 UJ	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Heptachlor epoxide	ug/L	0.029 J	0.031 J	0.050 U	0.050 R	0.050 U	0.050 UJ	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U

Notes:

-	Not applicable.
J	Estimated.
PCBs	Polychlorinated Biphenyls.
U	Non-detect at associated value.

TABLE 3.3
ANALYTICAL RESULTS SUMMARY ANNUAL GROUNDWATER SAMPLING
SUMMARY OF COMPOUNDS DETECTED
LOVE CANAL-2000

Sample Location:		*3257*	*5222*	*5222*	*6209*	*7125*	*8106*	*8125*	*8210*	*9105*	*9113*	*9118*	*9205*	*9210*	*DI-WATER*
Sample ID:		*3257*	*5222-ANN*	*6250-ANN*	*6209-ANN*	*7125*	*8106*	*8125*	*8210*	*9105*	*9113*	*9118*	*9205*	*9210*	*DI-WATER*
Sample Date:		*6/20/2000*	*6/13/2000*	*6/13/2000*	*6/13/2000*	*6/19/2000*	*6/23/2000*	*6/22/2000*	*6/20/2000*	*6/22/2000*	*6/22/2000*	*6/22/2000*	*4/27/2000*	*6/15/2000*	*4/26/2000*
Parameter	*Unit*			*Duplicate*											
Volatiles															
1,1,2,2-Tetrachloroethane	ug/l	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	ug/l	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethene	ug/l	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Butanone	ug/l	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	2 J
Acetone	ug/l	10 U	10 U	10 U	2 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	2 J	4 J	10 UJ
Benzene	ug/l	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane	ug/l	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9 J
Carbon disulfide	ug/l	10 U	10 U	10 U	10 U	10 U	10 U	10 U	2 J	10 U	10 U	10 U	10 U	2 J	10 U
Chlorobenzene	ug/l	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-
Chloroform	ug/l	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-
Ethylbenzene	ug/l	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-
Methylene chloride	ug/l	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-
Tetrachloroethene	ug/l	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-
Toluene	ug/l	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	15	10 U	-
trans-1,2-Dichloroethene	ug/l	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-
Trichloroethene	ug/l	10 U	1 J	1 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-
Vinyl chloride	ug/l	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-
Xylene (total)	ug/l	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-
Semi-Volatiles															
1,2,4-Trichlorobenzene	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	ug/L	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
2,4,6-Trichlorophenol	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylphenol	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitrophenol	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methylphenol	ug/L	10 U	10 U	10 U	10 U	30	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzoic acid	ug/L	12 U	12 U	12 U	12 U	36	25 U	25 U	12 U	1 J	25 U	25 U	25 UJ	12 U	25 U
Benzyl Alcohol	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Ethylhexyl)phthalate	ug/L	330	10 U	10 U	10 U	10 U	1 J	5	450 U	38	18	5	49	10 U	5 U
Diethyl phthalate	ug/L	10 U	1 J	1 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	1 J	10 U
Naphthalene	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

TABLE 3.3
ANALYTICAL RESULTS SUMMARY ANNUAL GROUNDWATER SAMPLING
SUMMARY OF COMPOUNDS DETECTED
LOVE CANAL-2000

Parameter	Unit	Sample Location:	3257	5222	5222	6209	7125	8106	8125	8210	9105	9113	9118	9205	9210	DI-WATER
		Sample ID:	3257	5222-ANN	6250-ANN	6209-ANN	7125	8106	8125	8210	9105	9113	9118	9205	9210	DI-WATER
		Sample Date:	6/20/2000	6/13/2000	6/13/2000 Duplicate	6/13/2000	6/19/2000	6/23/2000	6/22/2000	6/20/2000	6/22/2000	6/22/2000	6/22/2000	4/27/2000	6/15/2000	4/26/2000
Pesticides																
4,4-DDD	ug/L		0.10 U	0.10 U	0.10 UJ	0.10 U	0.10 UJ	0.10 U	0.10 U	0.10 UJ	0.10 U	0.10 U	0.10 U	0.10 UJ	0.10 U	0.10 U
Aldrin	ug/L		0.050 U	0.050 U	0.050 UJ	0.050 U	0.050 UJ	0.050 U	0.050 U	0.050 UJ	0.050 U	0.050 U	0.050 U	0.050 UJ	0.050 U	0.050 U
alpha-BHC	ug/L		0.050 U	0.050 U	0.050 UJ	0.050 U	0.050 UJ	0.050 U	0.050 U	0.050 UJ	0.050 U	0.050 U	0.050 U	0.091 U	0.050 U	0.088
beta-BHC	ug/L		0.050 U	0.050 U	0.050 UJ	0.050 U	0.050 UJ	0.050 U	0.050 U	0.050 UJ	0.050 U	0.050 U	0.050 U	0.050 UJ	0.050 U	0.050 U
delta-BHC	ug/L		0.050 U	0.050 U	0.050 UJ	0.050 U	0.050 UJ	0.050 U	0.050 U	0.050 UJ	0.050 U	0.050 U	0.050 U	0.10 U	0.050 U	0.035 J
Endosulfan I	ug/L		0.050 U	0.050 U	0.050 UJ	0.050 U	0.050 UJ	0.050 U	0.050 U	0.050 UJ	0.050 U	0.050 U	0.050 U	0.057 J	0.050 U	0.050 U
Endosulfan II	ug/L		0.10 U	0.10 U	0.10 UJ	0.10 U	0.10 UJ	0.10 U	0.10 U	0.10 UJ	0.10 U	0.10 U	0.10 U	0.10 UJ	0.10 U	0.10 U
Endosulfan sulfate	ug/L		0.10 U	0.10 U	0.10 UJ	0.10 U	0.10 UJ	0.10 U	0.10 U	0.10 UJ	0.10 U	0.10 U	0.10 U	0.10 UJ	0.10 U	0.10 U
gamma-BHC (Lindane)	ug/L		0.050 U	0.050 U	0.050 UJ	0.050 UJ	0.050 UJ	0.050 U	0.050 U	0.050 UJ	0.050 U	0.050 U	0.050 U	U	0.050 U	0.064
gamma-Chlordane	ug/L		0.050 U	0.050 U	0.050 UJ	0.050 U	0.050 UJ	0.050 U	0.050 U	0.050 UJ	0.050 U	0.050 U	0.050 U	0.050 UJ	0.050 U	0.050 U
Heptachlor epoxide	ug/L		0.050 U	0.050 U	0.050 UJ	0.050 U	0.050 UJ	0.050 U	0.050 U	0.050 UJ	0.050 U	0.050 U	0.050 U	0.050 UJ	0.050 U	0.050 U

Notes:

-	Not applicable.
J	Estimated.
PCBs	Polychlorinated Biphenyls.
U	Non-detect at associated value.

TABLE 3.4

SUMMARY OF DETECTED COMPOUNDS FOR SELECTED WELLS, 1990 TO 2000
LOVE CANAL LONG-TERM MONITORING PROGRAM
OCCIDENTAL CHEMICAL CORPORATION

Well Number:	***10210A***									
Sample Date:	07/24/1990	08/22/1991	08/26/1992	08/11/1993	05/25/1995	07/01/1996	07/10/1997	06/26/1998	06/23/1999	06/21/2000
Volatiles (ug/L)										
Vinyl Chloride										
Methylene Chloride										
Acetone	14C			13B				120J		
Toluene									2J	
1,1-Dichloroethane										
1,2-Dichloroethene (total)										
Carbon Disulfide					20	310				
2-Butanone									2J	
Chloroform										
Trichloroethene										
1,1,2-Trichloroethane										
Benzene										
Chlorobenzene										
Xylene (total)										
1,1,2,2-Tetrachloroethane										
Vinyl Acetate										
Ethylbenzene										
Tetrachloroethene										
2-Hexanone									3J	
Semi-volatiles (ug/L)										
Pentachlorophenol										
Phenol									1J	
bis(2-Ethylhexyl)Phthalate		12	21	31	51					
2,4-Dichlorophenol										
2,4,5-Trichlorophenol										
2,4,6-Trichlorophenol										
2,4-Dimethylphenol										
2-Methylphenol										
4-Methylphenol										
2-Chloronaphthalene										
Benzyl Alcohol										
Benzoic Acid							12J			
Di-n-Octyl Phthalate	3B									
Dimethyl Phthalate	16									
1,2-Dichlorobenzene										
1,4-Dichlorobenzene										
1,2,4-Trichlorobenzene										
Bis(2-Chloroethyl)Ether										
2-Chlorophenol										
Napththalene										
2-Nitrophenol										
4-Chloro-3-methylphenol										
Pesticides/PCBs (ug/L)										
Alpha-BHC									0.28	
Beta-BHC									0.035J	
Delta-BHC										
Gamma-BHC (Lindane)									0.10J	
Gamma-Chlordane										
Heptachlor										
Aldrin										
Heptachlor epoxide										
Endosulfan I									0.046J	
Endosulfan II										
4,4'-DDD										
Endosulfan Sulfate										
Endrin										

Notes:
B - Found in Blank
U - Non-Detected at the associated estimated value
C - Confirmed data.
J - Estimated Concentration.
JN - Presumptively present at the associated estimated value
D - Diluted Sampled.
E - Exceeded calibration range of the instrument
P - Greater than 25% difference for detected concentrations between the two GC columns in the pesticide target analyte. Lower of two values is repc

TABLE 3.4

SUMMARY OF DETECTED COMPOUNDS FOR SELECTED WELLS, 1990 TO 2000
LOVE CANAL LONG-TERM MONITORING PROGRAM
OCCIDENTAL CHEMICAL CORPORATION

Well Number:	***10210B***										
Sample Date:	07/24/1990	08/22/1991	08/26/1992	08/11/1993	06/15/1994	06/01/1995	07/05/1996	07/01/1997	06/18/1998	06/24/1999	06/15/2000
Volatiles (ug/L)											
Vinyl Chloride											
Methylene Chloride											
Acetone			31		12B	23					
Toluene										2J	1J
1,1-Dichloroethane											
1,2-Dichloroethene (total)											
Carbon Disulfide									8J	2J	
2-Butanone											
Chloroform											
Trichloroethene											
1,1,2-Trichloroethane											
Benzene											
Chlorobenzene											
Xylene (total)											
1,1,2,2-Tetrachloroethane											
Vinyl Acetate											
Ethylbenzene											
Tetrachloroethene											
2-Hexanone											
Semi-volatiles (ug/L)											
Pentachlorophenol											
Phenol		3									
bis(2-Ethylhexyl)Phthalate	7B	13		11				55	6J		
2,4-Dichlorophenol											
2,4,5-Trichlorophenol											
2,4,6-Trichlorophenol											
2,4-Dimethylphenol											
2-Methylphenol											
4-Methylphenol											
2-Chloronaphthalene											
Benzyl Alcohol											
Benzoic Acid											
Di-n-Octyl Phthalate											
Dimethyl Phthalate											
1,2-Dichlorobenzene											
1,4-Dichlorobenzene											
1,2,4-Trichlorobenzene											
Bis(2-Chloroethyl)Ether											
2-Chlorophenol											
Napththalene											
2-Nitrophenol											
4-Chloro-3-methylphenol											
Pesticides/PCBs (ug/L)											
Alpha-BHC											
Beta-BHC											
Delta-BHC											
Gamma-BHC (Lindane)											
Gamma-Chlordane											
Heptachlor											
Aldrin											
Heptachlor epoxide											
Endosulfan I											
Endosulfan II											
4,4'-DDD											
Endosulfan Sulfate											
Endrin											

Notes:
B - Found in Blank
U - Non-Detected at the associated
C - Confirmed data.
J - Estimated Concentration.
JN - Presumptively present at the ass
D - Diluted Sampled.
E - Exceeded calibration range of th
P - Greater than 25% difference for rted.

TABLE 3.4

SUMMARY OF DETECTED COMPOUNDS FOR SELECTED WELLS, 1990 TO 2000
LOVE CANAL LONG-TERM MONITORING PROGRAM
OCCIDENTAL CHEMICAL CORPORATION

Well Number:	***10210C***										
Sample Date:	07/25/1990	08/22/1991	08/26/1992	08/11/1993	06/08/1994	06/01/1995	07/01/1996	07/01/1997	06/22/1998	06/24/1999	06/15/2000
Volatiles (ug/L)											
Vinyl Chloride											
Methylene Chloride											
Acetone			10B	23B	19B					2100	8J
Toluene											
1,1-Dichloroethane											
1,2-Dichloroethene (total)											
Carbon Disulfide											3J
2-Butanone											
Chloroform											
Trichloroethene											
1,1,2-Trichloroethane											
Benzene											
Chlorobenzene											
Xylene (total)											
1,1,2,2-Tetrachloroethane											
Vinyl Acetate											
Ethylbenzene											
Tetrachloroethene											
2-Hexanone											
Semi-volatiles (ug/L)											
Pentachlorophenol											
Phenol		6				22		22			
bis(2-Ethylhexyl)Phthalate	7B	13		38							
2,4-Dichlorophenol											
2,4,5-Trichlorophenol											
2,4,6-Trichlorophenol											
2,4-Dimethylphenol											
2-Methylphenol											
4-Methylphenol						29	110	62	0.6J		
2-Chloronaphthalene											
Benzyl Alcohol											
Benzoic Acid											
Di-n-Octyl Phthalate											
Dimethyl Phthalate											
1,2-Dichlorobenzene											
1,4-Dichlorobenzene											
1,2,4-Trichlorobenzene											
Bis(2-Chloroethyl)Ether											
2-Chlorophenol											
Napththalene											
2-Nitrophenol											
4-Chloro-3-methylphenol											
Pesticides/PCBs (ug/L)											
Alpha-BHC											
Beta-BHC											
Delta-BHC											
Gamma-BHC (Lindane)											
Gamma-Chlordane											
Heptachlor											
Aldrin											
Heptachlor epoxide											
Endosulfan I											
Endosulfan II											
4,4'-DDD											
Endosulfan Sulfate											
Endrin											

Notes:
B - Found in Blank
U - Non-Detected at the associated
C - Confirmed data.
J - Estimated Concentration.
JN - Presumptively present at the ass
D - Diluted Sampled.
E - Exceeded calibration range of th
P - Greater than 25% difference for

TABLE 3.4

SUMMARY OF DETECTED COMPOUNDS FOR SELECTED WELLS, 1990 TO 2000
LOVE CANAL LONG-TERM MONITORING PROGRAM
OCCIDENTAL CHEMICAL CORPORATION

Well Number:	***10135***								
Sample Date:	08/26/1992	08/19/1993	06/22/1994	06/01/1995	06/27/1996	07/07/1997	06/17/1998	06/16/1999	06/22/2000
Volatiles (ug/L)									
Vinyl Chloride					50		48J	62 / 61	110J / 85J
Methylene Chloride		41			11				24J / 24J
Acetone		270	100B		60		110J		28J / 46J
Toluene	2700	1700E	21500BE	18000D	14000	19000 / 17000	16000J	16000 / 17000	21000J / 21000J
1,1-Dichloroethane		15						4J / 3J	4J / 4J
1,2-Dichloroethene (total)	700	840			560		58J	67 / 70	67J / 70J
Carbon Disulfide								ND / 2J	
2-Butanone		5200							10UJ / 10J
Chloroform		100			110		150J	120 / 110	100J / 130J
Trichloroethene		24			36		170J	70 / 58	60J / 72J
1,1,2-Trichloroethane					14		29J	15 / 12	14J / 16J
Benzene			6000E	4900D	4800	5600 / 5000	5300J	5600 / 5700	6400 / 6900J
Chlorobenzene	2600	1700		2000D	1500	2300 / ND	1900J	1800 / 1900	2300J / 2300J
Xylene (total)		47	10B		28		55J	43 / 44	42J / 44J
1,1,2,2-Tetrachloroethane		12			26		94J	32 / 29	27J / 26J
Vinyl Acetate	6800		12B						
Ethylbenzene		13					12	10J / 9J	12J / 12J
Tetrachloroethene							40J	13 / 12	16J / 14J
2-Hexanone									
Semi-volatiles (ug/L)									
Pentachlorophenol		52							
Phenol		96	91	140				120 / 96J	
bis(2-Ethylhexyl)Phthalate		50							41J / 24 / J
2,4-Dichlorophenol	1200B	420	610	150		2100 / 2100	2000	610 / 690	1400J / 470J
2,4,5-Trichlorophenol		70					38J		0.9J / ND
2,4,6-Trichlorophenol									1J / ND
2,4-Dimethylphenol									ND / 2J
2-Methylphenol		51					55J	35J / 42J	160J / ND
4-Methylphenol		80					130J	120 / 95J	99J / 300J
2-Chloronaphthalene				150					
Benzyl Alcohol				380		1900 / 1600	2700	540 / 680	14000 / 3200J
Benzoic Acid				6400D	4000	30000J / 27000J	23000J	5000 / 4300	19000J / 4700J
Di-n-Octyl Phthalate									
Dimethyl Phthalate									
1,2-Dichlorobenzene		35						30J / 24J	22J / 18J
1,4-Dichlorobenzene	110	94	91					74J / 61J	59J / 52J
1,2,4-Trichlorobenzene		74	87B				78J	65J / 45J	45J / 36J
Bis(2-Chloroethyl)Ether		23					24J	26J / 25J	
2-Chlorophenol							28J	25J / ND	
Napththalene								2000J / 1400J	4000J / 1800J
2-Nitrophenol									ND / 1J
4-Chloro-3-methylphenol								33J / 25J	
Pesticides/PCBs (ug/L)									
Alpha-BHC	84	42C	24CEP	28D	29	39 / 39	59	37J / 40	50 / 50
Beta-BHC				10D	11	8.1 / 8.6	12	11J / 12	15 / 16
Delta-BHC	15	9.8P	7.5CE	4.7	5.2	ND / 5.1	8.9	9.6J / 11	14 / 13
Gamma-BHC (Lindane)	33	19.5	20.4CE			13.2 / 14.8	6.5J	4.1J / 5.5	8.0 / 6.4
Gamma-Chlordane									0.16J / 0.18J
Heptachlor								0.68JN / 0.63	
Aldrin	0.53	0.24P						0.21J / 0.74JN	
Heptachlor epoxide								0.058J / 0.043J	0.029J / 0.031J
Endosulfan I								0.43J / 0.34	
Endosulfan II									0.52J / 0.69J
4,4'-DDD								0.020J / 0.21	0.071J / 0.13J
Endosulfan Sulfate		0.43P						0.17J / 0.18	0.17J / 0.10UJ
Endrin			0.15P						

Notes:
B - Found in Blank
U - Non-Detected at the associated
C - Confirmed data.
J - Estimated Concentration.
JN - Presumptively present at the ass
D - Diluted Sampled.
E - Exceeded calibration range of th
P - Greater than 25% difference for

TABLE 3.5A

1140 SERIES PIEZOMETERS WATER LEVELS
LOVE CANAL LONG-TERM MONITORING PROGRAM
OCCIDENTAL CHEMICAL CORPORATION

A WELLS

Well (1)	***1144***	***1143***	***1142***	***1141***	***Tile Drain***	***1140***
Date	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***
March 00	574.30	571.38	572.50	565.45	561.70	563.70
June 00	573.61	571.24	567.00	565.75	561.70	563.65
September 00	573.02	570.58	567.78	566.71	561.70	564.89
December 00	574.00	570.01	567.00	565.52	561.70	563.78

B WELLS

Well (1)	***1144***	***1143***	***1142***	***1141***	***Tile Drain***	***1140***
Date	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***
March 00	571.82	570.80	564.92	566.15	561.70	563.77
June 00	571.16	570.95	567.32	566.67	561.70	563.88
September 00	570.60	570.59	568.20	567.22	561.70	564.99
December 00	572.27	569.48	566.88	565.85	561.70	564.00

C WELLS

Well (1)	***1144***	***1143***	***1142***	***Tile Drain***
Date	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***
March 00	571.04	569.59	565.18	561.70
June 00	570.72	569.50	565.60	561.70
September 00	570.12	569.98	566.56	561.70
December 00	570.15	568.50	565.52	561.70

D WELLS

Well (1)	***1144***	***1143***	***Tile Drain***
Date	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***
March 00	568.10	566.80	561.70
June 00	568.96	567.70	561.70
September 00	569.60	568.30	561.70
December 00	568.52	567.27	561.70

Note:
(1) Wells listed in order from most distant outside of tile drain, to tile drain, then inside of tile drain.

TABLE 3.5B

1150 SERIES PIEZOMETERS WATER LEVELS
LOVE CANAL LONG-TERM MONITORING PROGRAM
OCCIDENTAL CHEMICAL CORPORATION

A WELLS

Well (1)	***1154***	***1153***	***1151***	***Tile Drain***
Date	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***
March 00	567.84	571.11	567.23	561.85
June 00	567.37	569.36	567.13	561.85
September 00	567.37	569.08	567.48	561.85
December 00	567.92	572.36	567.56	561.85

B WELLS

Well (1)	***1154***	***1153***	***1151***	***Tile Drain***
Date	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***
March 00	567.91	568.87	567.78	561.85
June 00	568.23	568.47	568.13	561.85
September 00	568.63	568.97	568.26	561.85
December 00	568.23	575.37	568.28	561.85

C WELLS

Well (1)	***1154***	***1153***	***1151***	***Tile Drain***
Date	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***
March 00	568.93	574.23	569.38	561.85
June 00	568.63	570.58	569.35	561.85
September 00	569.54	569.95	568.67	561.85
December 00	568.78	575.78	567.87	561.85

D WELLS

Well (1)	***1154***	***1153***	***1151***	***Tile Drain***
Date	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***
March 00	DRY	569.91	571.76	561.85
June 00	568.71	571.16	569.86	561.85
September 00	568.63	570.09	570.57	561.85
December 00	569.21	571.51	572.26	561.85

E WELLS

Well (1)	***1153***	***Tile Drain***
Date	***(ft. AMSL)***	***(ft. AMSL)***
March 00	569.28	561.85
June 00	569.60	561.85
September 00	569.35	561.85
December 00	570.10	561.85

Note:
(1) Wells listed in order from most distant outside of tile drain, to tile drain, then inside of tile drain.

TABLE 3.5C

1160 SERIES PIEZOMETERS WATER LEVELS
LOVE CANAL LONG-TERM MONITORING PROGRAM
OCCIDENTAL CHEMICAL CORPORATION

A WELLS

Well (1)	*10176*	*1165*	*1163*	*1162*	*1161*	*Tile Drain*	*1160*
Date	*(ft. AMSL)*	*(ft. AMSL)*	*(ft. AMSL)*	*(ft. AMSL)*	*(ft. AMSL)*	*(ft. AMSL)*	*(ft. AMSL)*
March 00	568.50	575.20	568.45	565.95	564.05	560.60	564.00
June 00	566.56	575.28	568.36	565.80	563.87	560.60	563.74
September 00	567.15	576.07	569.37	566.81	564.57	560.60	564.50
December 00	566.90	575.17	568.55	566.21	564.36	560.60	563.80

B WELLS

Well (1)	*10176*	*1165*	*1163*	*1161*	*Tile Drain*
Date	*(ft. AMSL)*	*(ft. AMSL)*	*(ft. AMSL)*	*(ft. AMSL)*	*(ft. AMSL)*
March 00	568.38	579.20	569.45	566.01	560.60
June 00	566.00	579.30	569.70	566.16	560.60
September 00	566.75	579.92	570.10	566.58	560.60
December 00	567.35	579.16	569.00	565.91	560.60

C WELLS

Well (1)	*10176*	*1165*	*1163*	*1162*	*1161*	*Tile Drain*	*1160*
Date	*(ft. AMSL)*	*(ft. AMSL)*	*(ft. AMSL)*	*(ft. AMSL)*	*(ft. AMSL)*	*(ft. AMSL)*	*(ft. AMSL)*
March 00	565.09	579.70	569.90	569.45	568.22	560.60	564.80
June 00	564.90	579.75	570.55	569.40	568.78	560.60	564.90
September 00	565.92	580.47	570.88	570.17	569.01	560.60	566.01
December 00	565.20	578.99	569.30	568.65	568.15	560.60	565.30

D WELLS

Well (1)	*10176*	*1165*	*1163*	*1162*	*1161*	*Tile Drain*
Date	*(ft. AMSL)*	*(ft. AMSL)*	*(ft. AMSL)*	*(ft. AMSL)*	*(ft. AMSL)*	*(ft. AMSL)*
March 00	563.55	577.45	DRY	570.59	568.87	560.60
June 00	563.42	577.87	569.20	570.96	569.53	560.60
September 00	564.60	578.14	DRY	571.09	569.72	560.60
December 00	564.02	576.95	568.93	569.69	569.10	560.60

E WELLS

Well (1)	*1161*	*Tile Drain*
Date	*(ft. AMSL)*	*(ft. AMSL)*
March 00	564.75	560.60
June 00	564.73	560.60
September 00	565.45	560.60
December 00	564.56	560.60

Note:
(1) Wells listed in order from most distant outside of tile drain, to tile drain, then inside of tile drain.

TABLE 3.5D

1170 SERIES PIEZOMETERS WATER LEVELS
LOVE CANAL LONG-TERM MONITORING PROGRAM
OCCIDENTAL CHEMICAL CORPORATION

A WELLS

Well (1)	***1174***	***1173***	***1172***	***1171***	***Tile Drain***	***1170***
Date	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***
March 00	575.90	567.14	565.98	563.83	555.60	562.26
June 00	575.83	567.16	566.13	563.97	555.60	562.40
September 00	575.64	567.76	566.25	563.92	555.60	562.28
December 00	575.15	567.83	565.73	563.64	555.60	562.18

B WELLS

Well (1)	***1174***	***1173***	***1172***	***1171***	***Tile Drain***	***1170***
Date	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***
March 00	575.08	569.00	567.82	562.43	555.60	560.96
June 00	575.58	568.81	569.32	562.08	555.60	561.07
September 00	575.43	569.31	569.67	562.56	555.60	560.71
December 00	574.73	569.16	568.09	562.16	555.60	561.04

C WELLS

Well (1)	***1174***	***1173***	***1172***	***1171***	***Tile Drain***
Date	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***
March 00	574.34	570.53	567.89	561.58	555.60
June 00	576.01	570.92	568.31	561.96	555.60
September 00	578.14	570.91	568.33	562.13	555.60
December 00	FROZEN	570.36	568.07	561.86	555.60

D WELLS

Well (1)	***1174***	***1173***	***Tile Drain***
Date	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***
March 00	571.78	571.45	555.60
June 00	571.91	571.30	555.60
September 00	577.78	570.50	555.60
December 00	575.78	570.75	555.60

Note:
(1) Wells listed in order from most distant outside of tile drain, to tile drain, then inside of tile drain.

TABLE 3.5E

1180 SERIES PIEZOMETERS WATER LEVELS
LOVE CANAL LONG-TERM MONITORING PROGRAM
OCCIDENTAL CHEMICAL CORPORATION

A WELLS

Well (1)	***1184***	***1183***	***1181***	***Tile Drain***	***1180***
Date	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***
March 00	564.38	565.94	566.61	560.00	562.81
June 00	563.88	564.14	566.84	560.00	562.89
September 00	564.63	565.94	566.78	560.00	563.13
December 00	564.60	566.29	566.81	560.00	562.69

B WELLS

Well (1)	***1184***	***1183***	***1181***	***Tile Drain***	***1180***
Date	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***
March 00	564.64	565.14	567.50	560.00	560.97
June 00	564.12	565.82	567.06	560.00	561.11
September 00	564.52	565.47	566.70	560.00	561.37
December 00	565.46	565.19	567.10	560.00	560.99

C WELLS

Well (1)	***1184***	***1183***	***1181***	***Tile Drain***	***1180***
Date	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***
March 00	569.60	568.10	570.07	560.00	DRY
June 00	568.15	567.96	568.52	560.00	DRY
September 00	566.55	566.71	569.07	560.00	DRY
December 00	567.78	567.81	570.22	560.00	DRY

D WELLS

Well (1)	***1184***	***1183***	***Tile Drain***
Date	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***
March 00	569.45	567.08	560.00
June 00	565.19	571.07	560.00
September 00	565.89	566.63	560.00
December 00	569.43	567.23	560.00

Note:
(1) Wells listed in order from most distant outside of tile drain, to tile drain, then inside of tile drain.

TABLE 3.5F

1190 SERIES PIEZOMETERS WATER LEVELS
LOVE CANAL LONG-TERM MONITORING PROGRAM
OCCIDENTAL CHEMICAL CORPORATION

A WELLS

Well (1)	***1194***	***1193***	***1192***	***1191***	***Tile Drain***	***1190***
Date	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***
March 00	563.92	565.25	564.17	565.29	554.80	572.48
June 00	563.90	565.07	563.79	565.36	554.80	565.27
September 00	564.34	565.50	564.33	565.21	554.80	564.09
December 00	565.17	565.27	564.83	565.17	554.80	569.83

B WELLS

Well (1)	***1194***	***1193***	***1192***	***1191***	***Tile Drain***	***1190***
Date	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***
March 00	569.13	567.62	568.01	565.05	554.80	560.69
June 00	569.41	568.25	567.96	565.00	554.80	560.05
September 00	569.33	568.60	568.06	565.68	554.80	559.62
December 00	569.93	568.45	568.02	565.32	554.80	559.57

C WELLS

Well (1)	***1194***	***1193***	***1192***	***1191***	***Tile Drain***
Date	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***
March 00	572.44	569.77	569.72	563.81	554.80
June 00	572.22	570.42	568.99	564.00	554.80
September 00	571.22	570.30	569.53	563.79	554.80
December 00	571.36	569.90	569.32	563.63	554.80

D WELLS

Well (1)	***1194***	***1193***	***Tile Drain***
Date	***(ft. AMSL)***	***(ft. AMSL)***	***(ft. AMSL)***
March 00	572.84	570.56	554.80
June 00	572.72	571.41	554.80
September 00	572.12	570.96	554.80
December 00	572.44	570.18	554.80

Note:
(1) Wells listed in order from most distant outside of tile drain, to tile drain, then inside of tile drain.

TABLE 4.1

2000 LOVE CANAL SYSTEM REPAIRS
OCCIDENTAL CHEMICAL CORPORATION
GLENN SPRINGS HOLDINGS, INC.
MILLER SPRINGS REMEDIATION MANAGEMENT, INC.

- Replacement of coupling on the PC-1A North pump, coupling worn out.
- Replacement of the level float within the DCF pump chamber, crack in float.
- Replacement of the PC-1 line flange within the PC-2 dry pump chamber and installation of new line supports for the PC-1 & PC-2 lines in same the chamber.
- PLC upgraded from Bristol Babcock to new Allen Bradley and replacement of supporting equipment at all wet wells (PC-1, PC-2, PC-3, PC-1A, PC-2A & PC-3A). The update makes the system a more reliable.
- Installation of a Radio Modem Network to allow communication between the wetwells and the treatment plant control systems. The modem system replaced the existing controller communication cable. Installation of a new Radio Modem system (modem antenna). The new antenna is affixed on top of eastern side of the treatment building. The modem transfers control data to and from the remote PLCs. The wireless modem system replaced the control communication cable, which was found to be in marginal operating condition.
- Replaced bottom discharge valve, on the Main Carbon Bed (V-1) and an isolation valve.
- Installation of a new automatic electric actuated valve on the raw influent line as part of the process control upgrade. This will help maintain a constant flow through the treatment system and therefore reduce system cycling.
- Replacement of two sections of 3” line with a new on piece spool line on the raw influent line, the new configurations was needed to help accommodate the installation of the new control valve.
- Replacement of the effluent flow transmitter with new Control-Atron transmitter (FIT-107); old transmitter no longer was serviceable additionally new transmitter, which straps onto the out side of the piping has better reliability and parts are more readily available.
- Replacement of two sections of 3” line and removal of the old flow transmitter with a new on piece spool line on the effluent line, the new configurations was needed to help accommodate the installation of the new flow transmitter.

- Replacement of the Hypalon Seals within the Sludge Dike at each of the three expansion joints of the dike.
- One Main Carbon Bed (Lead Bed) changed out.
- Main Carbon Bed (V-1) internal visual inspection done.
- Back-flow Preventers Annual Inspection done.