GROUNDWATER MONITORING
DATA SUMMARY REPORT
FIRST QUARTER, 1993

DOUGLAS AIRCRAFT COMPANY C-6 FACILITY
TORRANCE, CALIFORNIA

K/J 924010.00
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Kennedy/Jenks Consultants

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1.0 INTRODUCTION

The Douglas Aircraft Company (DAC) C-6 Facility is located at 19503 South Normandie Avenue, Torrance, California (Figure 1). Quarterly groundwater sampling is being conducted in response to the California Regional Water Quality Control Board - Los Angeles Region correspondence to DAC, dated 7 April 1992. This report summarizes laboratory analytical data generated through the chemical analysis of groundwater samples collected during the period of 16-18 March 1993, First Quarter 1993.

2.0 QUARTERLY MONITORING PROGRAM

First Quarter 1993 groundwater sampling was performed in accordance with standard sampling procedures. Static water level depths were measured on 16 March 1993 prior to initiating purging of groundwater from any observation wells. However, several of the water levels measurements were anomalous due an equipment malfunction. Water level measurements were repeated on 9 April 1993.

Groundwater samples were collected from the following wells and chemically analyzed for volatile organic compounds (VOCs) by EPA Method 8240:

> WCC-1S, WCC-2S, WCC-3S, WCC-4S, WCC-5S, WCC-6S, WCC-7S, WCC-8S, WCC-9S, WCC-10S, WCC-11S, WCC-12S, WCC-1D, WCC-3D, and DAC-P1.

Table 1 summarizes observation well construction details. Table 2 summarizes the results of chemical analysis of groundwater samples and duplicates. Table 3 summarizes available measured groundwater elevations to date. Copies of laboratory data sheets, groundwater purge and sample forms, and Chain-of-Custody records are included in Appendices A, B, and C, respectively.

2.1 Groundwater Sampling Procedures

Prior to collecting groundwater samples from each well, groundwater was purged by using an electrical submersible pump that was temporarily installed into the observation well. After lowering the pump to the approximate mid-point of the saturated well screen, approximately three to five wetted casing volumes of groundwater were purged from the well until the following groundwater monitoring parameters had stabilized to within 10% of preceding readings: pH, electrical conductivity, temperature and clarity. Purged groundwater was stored onsite in DOT approved 55 gallon barrels pending the results of laboratory analysis of samples.

Following groundwater purging, the submersible pump was removed from the well and a representative groundwater sample was collected using a steam-cleaned stainless steel point-source bailer equipped with top and bottom ball-check valves. The bailer was lowered to the approximate mid-point of the saturated well screen interval and retrieved to ground surface. The contents of the bailer were discharged into three labelled 40-ml capacity vials and preserved with HCL.

2.2 Field QA/QC Procedures

One blind duplicate groundwater sample was collected each day from selected observation wells for Quality Control purposes. Duplicates were collected in four HCL-preserved vials and identified by inserting the collection date after "DW-". For example, a duplicate sample collected on 16 March 1993 was identified as "DW-031693". No further sample identification was provided to the laboratory.

To verify that the groundwater samples were not exposed to analytes during storage and transportation to the analytical laboratory and that decontamination of sampling equipment was satisfactory to prevent cross-contamination of groundwater samples, trip blanks and field (equipment) blanks were chemically analyzed for VOCs. One trip blank was placed in the ice-cooled storage/transportation chest when the first groundwater sample was collected, and transported to the laboratory with the day's samples. Trip blanks were identified following a similar protocol to that used for duplicate water samples. For example, a trip blank prepared on 16 March 1993 was identified as "TB-031693".

Following decontamination of the bailer by steam-cleaning, and prior to collection of groundwater samples from successive wells, a field blank was prepared for laboratory analysis. Each field blank was prepared by pouring Reagent Grade II (Milli-Que) water, prepared by the analytical laboratory, through the bailer and discharge spigot and collecting the rinsate in one 40-ml vial preserved with HCL. Field blanks were identified following a similar protocol to that used for duplicate water samples. For example, a field blank prepared on 16 March 1993 was identified as "FB-031693". The wells sampled before and after field blank preparation were recorded.

All groundwater, duplicate, trip blank and field blank samples were transported in ice-cooled chests to Del Mar Analytical, Irvine, California using U.S. EPA-recommended Chain-of-Custody procedures.

3.0 EVALUATION OF ANALYTICAL RESULTS

3.1 Groundwater Gradient

Groundwater levels were measured prior to sampling on 16 March 1993 and again on 9 April 1993 due to an equipment malfunction during the March sampling event (Table 3 and Appendix B). An estimated potentiometric surface map for the shallow zone is presented as Figure 4. The groundwater gradient in the shallow zone was generally south-southeast with a southerly trough-like depression in the vicinity of observation wells WCC-7S and WCC-12S based on April 1993 measurements. Insufficient data (two wells) are available to define the groundwater gradient in the deeper zone.

BOE-C6-0015909

3.2 Analytical Data

The results of chemical analysis of groundwater and duplicate samples are summarized on Table 2. Duplicate groundwater samples are indicated by an asterisk and are presented with the "original" groundwater sample. This table includes cumulative analytical data for all monitoring wells and includes detection limits (where available) for the listed chemicals.

Due to the relatively high concentrations of the chemical compounds found in wells 1S, 3S, 4S, 6S, 8S, 12S, 3D, and DAC-P1, the samples collected from these wells were analyzed twice by the laboratory. The first analytical run was an undiluted sample and certain constituents exceeded the calibration range of the instrument. Subsequently the samples were diluted and reanalyzed thus obtaining the quantification of the high concentration constituents. Thus, for each of these samples, two analytical reports are included in Appendix A. Sample reports for the analytical runs with low detection limits indicate some chemicals at ">4,000 ppb". The chemical concentrations are quantified in the subsequent analytical runs with higher detection limits.

The following observations are noted:

- Data for groundwater samples collected from well DAC-P1, located at the upgradient property boundary, indicate that TCE concentrations have decreased from 29,000 micrograms per liter (ug/L) to 21,000 ug/L coming onto DAC's property. DAC-P1 is screened in the shallow zone.

- Background concentrations of TCE in the shallow zone upgradient well WCC-11S has increased from 83 ug/L to 160 ug/L. TCE concentration in the upgradient well WCC-10S measured from 110 ug/L to 130 ug/L while the TCE concentration in well WCC-2S has decreased from 140 ug/L to 110 ug/L. One additional chemical was detected for the first time in well WCC-3S (Vinyl Acetate 55 ug/L). This is denoted by a double asterisk in Table 2. Vinyl Acetate is a non-priority pollutant. Prior non-detectors are due to higher detection limits in previous sample rounds.

- Groundwater elevation data (Figure 4) and chemical concentration data (Figure 3) indicate that chemical transport in the shallow zone is in a generally southerly direction in the vicinity of buildings 36 and 41. Chemical concentration data from the eastern boundary observation wells (WCC-5S, WCC-9S and WCC-12S) are the same level of magnitude as upgradient "background level" wells (WCC-10S;, WCC-2S). Therefore, the data do not suggest chemical migration offsite from an onsite source.

- VOC concentrations (Table 2), in duplicate samples collected from the deeper zone well WCC-3D indicate a significant increase in the concentration of 1,1,1 TCA. 1,1,1 TCA was also reported significantly higher in groundwater from shallow well WCC-3S while MEK concentrations have dropped significantly. The analytical laboratory has stated their belief that these results are accurate. These data need to be compared with results of future quarters to determine if these concentrations are questionable or accurate before speculating on causes.

OBSERVATION WELL CONSTRUCTION DETAILS
GROUNDWATER MONITORING DATA SUMMARY REPORT
FIRST QUARTER, 1993
DOUGLAS AIRCRAFT C-6 FACILITY
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Well	Date Constructed	Well Diameter (Inches)	Total Depth of Borehole (Feet)	Depth of Screened Interval (Feet)	Depth to top of Sand Filter Pack (Feet)	Well Casing Material and Slot Size	Hydrogeologic Unit Screened
WCC-1S[1]	03-26-87	2	91	78-88	72	Schedule 40 PVC 0.020-Inch Slots	Shallow
WCC-2S[1]	10-28-87	4	90.5	70-90	63	Schedule 40 PVC 0.010-Inch Slots	Shallow
WCC-3S[1]	10-26-87	4	92.0	69-89	64	Schedule 40 PVC 0.010-Inch Slots	Shallow
WCC-4S[1]	10-27-87	4	91.5	70.5-90.5	65	Schedule 40 PVC 0.010-Inch Slots	Shallow
WCC-5S[1]	11-24-87	4	91	60.5-91	58.5	Schedule 40 PVC 0.010-Inch Slots	Shallow
WCC-6S[2]	09-22-89	4	91	60-90	N/A[3]	Schedule 40 PVC 0.010-Inch Slots	Shallow
WCC-7S[2]	06-08-89	4	90.5	60-90	54	Schedule 40 PVC 0.010-Inch Slots	Shallow
WCC-8S[2]	06-12-89	4	90	59.5-89.5	54	Schedule 40 PVC 0.010-Inch Slots	Shallow
WCC-9S[2]	09/21/89	4	91.5	60-90	55	Schedule 40 PVC 0.010-Inch Slots	Shallow
WCC-10S[2]	06-07-89	4	90.8	60-90	54	Schedule 40 PVC 0.010-Inch Slots	Shallow
WCC-11S	N/A	4	N/A	60-90(?)	N/A	Schedule 40 PVC 0.010-Inch Slots	Shallow
WCC-12S	N/A	4	N/A	60-90(?)	N/A	Schedule 40 PVC 0.010-Inch Slots	Shallow
DAC-P1	09-25-89	4	N/A	60-90(?)	N/A	Schedule 40 PVC 0.010-Inch Slots	Shallow
WCC-1D[2]	06-30-89	4	140	120-140	115	Schedule 40 PVC 0.010-Inch Slots	Deeper
WCC-3D[2]	06-27-89	4	140	120-140	114	Schedule 40 PVC 0.010-Inch Slots	Deeper

Notes:
1. Data taken from Woodward-Clyde Consultants Phase II Report, May 1988
2. Data taken from Woodward-Clyde Consultants Phase III Report, March 1990
3. Not Available

TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL DATA
GROUNDWATER MONITORING DATA SUMMARY REPORT - FIRST QUARTER 1993

		COMPOUNDS DETECTED BY EPA METHOD 8240 - All results are reported in µg/L (ppb)																						
WELL I.D.	SAMPLE DATE	1,1-DCE	1,1-DCA	1,1,1-TCA	TCE	MBK	trans-1,2-DCE	Chloroform	Toluene	Benzene	cis-1,2-DCE	MBK	Acetone	Total Xylenes	Freon-TF***	Methylene Chloride***	Tetra-*** Hydrofuran	Carbon Tetra-Chloride	1,1,2-TCA	PCE	Carbon Disulfide	Ethyl-Benzene	1,2-DCA	Vinyl Acetate***
WCC-1S	03/27/87	2,800		300	4,600	-[1]	-	-	-	85	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	*[2]04/13/87	3,700/2,500	-/-	260/120	5,500/3,600	-/-	-/-	-/-	-/-	110/-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	11/12/87	3,000	23	160	5,200	-	75	39	-	160	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	07/13/89	900	<20	67	2,400	<100	<20	<20	<20	<20	<20	-	-	-	-	-	-	-	-	-	-	-	-	-
	08/23/89	1,500	30	<30	2,800	<100	<30	<30	<30	<30	41	-	-	-	-	-	-	-	-	-	-	-	-	-
	11/18/91	1,300	-	-	3,700	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	06/17/92	1,700	<50	<50	3,800	<100	<50	<50	<50	<50	<5	<100	<300	-	-	-	-	-	-	-	-	-	-	-
	09/23/92	1,500	13	16	3,400	<5	14	13	1	37	<1	<5	<5	<1	<1	4	<5	<1	<1	<1	22	<1	<1	-
	12/09/92	1,500	<30	<30	3,100	<100	<30	<30	<30	30	<30	<100	<100	<30	<30	40	<100	<30	<30	<30	<30	<30	<30	-
	3/18/93	1,000	13	15	2,100	<5	15	14	<2	33	27	<10	<10	<2	<5	<10	-	<5	<2	<2	<5	<2	<2	<5
WCC-2S	11/02/87	5	-	5	14	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	11/12/87	2	-	1	4	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	07/13/89	<1	<1	<1	5	<5	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
	08/23/89	<1	<1	<1	3	<5	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
	11/19/91	30	-	8	110	-	-	-	75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	06/16/92	30	<5	<5	100	<10	<5	<5	<5	<5	<5	<10	<10	-	-	-	-	-	-	-	-	-	-	-
	*09/22/92	18/19	<1/<1	<1/<1	110/97	<5/<5	<1/<1	<1/<1	1/1	<1/<1	<1/<1	<5/<5	<5/<5	<1/<1	<1/1	11/9	<5/<5	<1/<1	<1/<1	<1/<1	<1/<1	<1/<1	<1/<1	-
	*12/08/92	49/27	<1/<1	2/2	140/89	<5/<5	<1/<1	<1/2	<1/<1	<1/<1	<1/<1	<5/<5	6/<5	<1/<1	<1/<1	5/2	<5/<5	<1/<1	<1/<1	<1/<1	<1/<1	<1/<1	<1/<1	-
	*03/17/93	32/33	<2/<2	<2/<2	110/100	<5/<5	<2/<2	<2/<2	<2/<2	<2/<2	<2/<2	<10/<10	<10/<10	<2/<2	<5/<5	<10/<10	-	<5/<5	<2/<2	<2/<2	<5/<5	<2/<2	<2/<2	<5/<5
WCC-3S	11/02/87	38,000	-	110,000	10,000	54,000	-	-	80,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	11/12/87	88,000	1,000	54,000	11,000	70,000	1,000	-	140,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	07/13/89	18,000	<500	56,000	7,700	<3,000	660	<500	32,000	<500	<500	-	-	-	-	-	-	-	-	-	-	-	-	-
	08/23/89	56,000	<1,000	78,000	6,000	<5,000	<1,000	<1,000	56,000	<1,000	<1,000	-	-	-	-	-	-	-	-	-	-	-	-	-
	11/14/91	12,000	400	6,900	7,900	70,000	550	250	27,000	-	550	12,000	-	-	-	-	-	-	-	-	-	-	-	-
	06/17/92	25,000	<5,000	13,000	13,000	100,000	<5,000	<5,000	51,000	<5,000	<5,000	<10,000	<30,000	-	-	-	-	-	-	-	-	-	-	-
	09/23/92	22,000	<500	7,800	12,000	82,000	<500	<500	52,000	<500	<500	<3,000	<3,000	<500	<500	900	<3,000	<500	<500	<500	<500	<500	<500	-
	12/09/92	21,000	<500	5,800	11,000	90,000	600	<500	44,000	<500	700	4,000	<3,000	<500	<500	<500	<3,000	<500	<500	<500	<500	<500	<500	-
	*03/18/93	20,000/20,000	650/510	21,000/22,000	8,800/8,800	44000/45000	640/670	120/110	42,000/42,000	240/260	650/640	<50/<50	<50/<50	120/110	<25/<25	<50/<50	-/-	<25/<25	55/60	<10/<10	<25/<25	<10/<10	100/85	55/45
WCC-4S	11/02/87	360	-	14	700	-	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	11/12/87	1,200	-	35	690	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	07/13/89	170	<3	11	270	-	<3	<3	<3	<3	10	-	-	-	-	-	-	-	-	-	-	-	-	-
	08/23/89	360	<5	7	410	<20	<5	<5	<5	<5	15	-	-	-	-	-	-	-	-	-	-	-	-	-
	11/18/91	1,000	-	20	2,200	<30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	06/17/92	920	<25	<25	1,500	<50	<25	<25	<25	<25	<25	<50	<150	-	-	-	-	-	-	-	-	-	-	-
	09/23/92	1,400	<10	20	1,900	<50	<10	10	<10	<10	<10	<50	<50	<10	<10	20	<50	<10	<10	<10	<10	<10	<10	-
	12/08/92	1,000	<10	20	1,600	<50	<10	10	<10	<10	10	<50	<50	<10	<10	50	<50	<10	<10	<10	<10	<10	<10	-
	03/17/93	810	8	14	1,200	<5	5	5	<2	6	8	<10	<10	<2	<5	<10	-	<5	<2	<2	<5	<2	<2	<5

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WELL I.D.	SAMPLE DATE	1,1-DCE	1,1-DCA	1,1,1-TCA	TCE	MIBK	trans-1,2-DCE	Chloroform	Toluene	Benzene	cis-1,2-DCE	MEK	Acetone	Total Xylenes	Freon-TF***4	Methylene*** Chloride	Tetra-*** Hydrofuran	Carbon Tetra-Chloride	1,1,2-TCA	PCE	Carbon Disulfide	Ethyl-Benzene	1,2-DCA	Vinyl Acetate ***3
WCC-5S	11/30/87	7	-	1	-	-	-	-	1	-	-		-	-	-	-	-	-	-	-	-	-	-	-
	01/08/88	4	-	10	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
	*07/13/89	3/3	<1/<1	13/12	<5/<5	<1/<1	<1/<1	<1/<1	<1/<1	<1/<1	6/6		-	-	-	-	-	-	-	-	-	-	-	-
	08/23/89	<1	<1	12	<5	<1	<1	<1	<1	<1	4		-	-	-	-	-	-	-	-	-	-	-	-
	11/19/91	20	-	-	8	-	-	-	7	-	-		-	-	-	-	-	-	-	-	-	-	-	-
	06/15/92	28	<5	<5	7	<10	<5	<5	<5	<5	<5	<10	<10	-	-	-	-	-	-	-	-	-	-	-
	09/21/92	21	<1	<1	5	<5	<1	<1	<1	<1	<1	<5	<5	<1	3	8	<5	<1	<1	<1	<1	<1	<1	-
	12/07/92	21	<1	<1	5	<5	<1	<1	<1	<1	<1	<5	<5	<1	<1	3	<5	<1	<1	<1	<1	<1	<1	-
	03/16/93	18	<2	<2	4	<5	<2	<2	<2	<2	<2	<10	<10	<2	<5	<10	-	<5	<2	<2	<5	<2	<2	<5
WCC-6S	10/06/89	210	4	130	140	<5	7	<1	<1	<1	12	-	-	-	-	-	-	-	-	-	-	-	-	-
	11/19/91	5,800	-	5,000	3,000	17,000	-	-	35,000	-	-	21,000	-	-	-	-	-	-	-	-	-	-	-	-
	06/17/92	5,400	<500	2,100	3,000	7,600	<500	<500	15,000	<500	<500	6,300	<3,000	-	-	-	-	-	-	-	-	-	-	-
	09/23/92	5,900	94	1,300	3,100	7,500	170	20	10,000	67	200	3,600	78	26	<1	5	<5	<1	96	<1	<1	5	5	-
	*12/08/92	3,700/5,600	80/<100	680/1,400	2,700/3,200	3,400/<500	100/200	<50/<100	5,000/10,000	80/<100	200/200	3,000/5,000	<300/<500	<50/<100	<50/<100	100/200	<300/<50	<50/<100	60/<100	<50/<10	<50/<100	<50/<10	<80/<100	-
	03/17/93	3,200	50	1,200	1,400	3,900/<500	80	15	10,000	40	<10	3,800	<50	20	<25	<50	-	<25	<10	<10	<25	<10	50	<25
WCC-7S	07/13/89	850	<10	110	1,300	<50	11	<10	<10	<10	26	-	-	-	-	-	-	-	-	-	-	-	-	-
	08/23/89	1,100	<30	66	1,400	<100	<30	<30	<30	<30	31	-	-	-	-	-	-	-	-	-	-	-	-	-
	11/18/91	390	-	-	1,200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	06/17/92	230	<5	<5	560	<10	<5	<5	<5	<5	<5	<10	<30	-	-	-	-	-	-	-	-	-	-	-
	09/23/92	140	<5	<5	570	<30	<5	<5	<5	<5	<5	<30	<30	<5	<5	10	30	<5	<5	<5	<5	<5	<5	-
	12/08/92	140	<5	<5	430	<30	<5	<5	<5	<5	<5	<30	<30	<5	<5	10	<30	<5	<5	<5	<5	<5	<5	-
	03/17/93	77	<2	<2	200	<5	<2	<2	<2	<2	4	<10	<10	<5	<5	<10	-	<5	<2	<2	<5	<2	<2	<5
WCC-8S	07/13/89	430	<5	160	240	<30	9	<5	<5	<5	7	-	-	-	-	-	-	-	-	-	-	-	-	-
	08/23/89	820	<5	130	430	<30	<5	<5	<5	<5	7	-	-	-	-	-	-	-	-	-	-	-	-	-
	11/15/91	2,600	-	400	3,000	-	40	25	120	-	40	-	-	-	-	-	-	-	-	-	-	-	-	-
	*06/17/92	2,200/2,300	<25/<50	180/180	2,400/2,600	<50/<100	<25/<50	<25/<50	<25/<50	<25/<50	<25/<50	<50/<100	<150/<300	-	-	-	-	-	-	-	-	-	-	-
	09/23/92	2,800	<20	200	3,100	<100	20	20	<20	<20	<20	<100	<100	<20	<20	40	<100	<20	<20	<20	<20	<20	<20	-
	12/08/92	2,000	<20	100	2,500	<100	30	20	<20	20	20	<100	<100	<20	<20	30	<100	<20	<20	<20	<20	<20	<20	-
	03/17/93	1,800	11	180	1,500	<5	26	10	<2	15	15	<10	<10	<2	<5	<10	-	<5	<2	<2	<5	<2	<2	<5
WCC-9S	10/06/89	<1	<1	<1	15	<5	<1	<1	<1	<1	7	-	-	-	-	-	-	-	-	-	-	-	-	-
	11/19/91	-	-	-	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	06/15/92	7	<5	<5	42	<10	<5	<5	<5	<5	<5	<10	<30	-	-	-	-	-	-	-	-	-	-	-
	09/21/92	6	<1	<1	45	<5	<1	6	<1	<1	2	<5	<5	<1	1	10	<5	<1	<1	<1	<1	<1	<1	-
	12/07/92	10	<1	<1	51	<5	<1	12	<1	<1	<1	<5	<5	<1	<1	3	<5	<1	<1	<1	<1	<1	<1	-
	03/16/93	6	<2	<2	23	<5	<2	11	<2	<2	3	<10	<10	<2	<5	<10	-	<5	<2	<2	<5	<2	<2	<5

TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL DATA
GROUNDWATER MONITORING DATA SUMMARY REPORT - FIRST QUARTER 1993

		COMPOUNDS DETECTED BY EPA METHOD 8240 - All results are reported in µg/L (ppb)																					
WELL I.D.	SAMPLE DATE	1,1-DCE	1,1-DCA	1,1,1-TCA	TCE	MEK	trans-1,2-DCE	Chloroform	Toluene	Benzene	cis-1,2-DCE	MEK	Acetone	Total Xylenes	Freon-TF***4	Methylene Chloride***	Tetra-Hydrofuran***	Carbon Tetra-Chloride***	1,1,2-TCA	PCE	Carbon Disulfide	Ethyl-Benzene	1,2-DCA	Vinyl Acetate***3
WCC-10S	*07/13/89	2/1	<1/<1	<1/<1	86/87	<5/<5	<1/<1	3/3	<1/<1	<1/<1	<1/<1	-	-	-	-	-	-	-	-	-	-	-	-	-
	08/23/89	4	<1	<1	81	5	<1	4	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
	11/20/91	-	-	-	87	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	06/16/92	10	<5	<5	120	<10	<5	<5	<5	<5	<5	13	35	<1/<1	<1/<1	8/8	<5/<5	1/1	<1/<1	<1/<1	<1/<1	<1/<1	<1/<1	-
	*09/21/92	9/9	<1/<1	<1/<1	120/110	<5/<5	<1/<1	4/4	<1/<1	<1/<1	<1/<1	<5/<5	<5/<5	<1	<1	3	<5	<1	<1	<1	<1	<1	<1	-
	12/08/92	8	<1	<1	110	<5	<1	5	<1	<1	<1	<5	<5	<2	<5	<10	-	<5	<2	<2	<5	<2	<2	<5
	03/16/93	9	<2	<2	130	<5	<2	6	<2	<2	<2	<10	<10											
WCC-11S	11/15/91	10	-	-	80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	06/16/92	21	<5	<5	120	<10	<5	<5	<5	<5	<5	<10	<10	-	-	-	-	-	-	-	-	-	-	-
	09/21/92	17	<1	<1	140	<5	<1	<1	<1	<1	2	<5	<5	<1	2	9	<5	<1	<1	<1	<1	<1	<1	-
	12/08/92	13	<1	<1	83	<5	<1	<1	<1	<1	6	<5	<5	<1	<1	4	<5	<1	<1	<1	<1	<1	<1	-
	03/16/93	25	<2	<2	160	<5	<2	<2	<2	<2	4	<10	<10	<2	<5	<10	-	<5	<2	<2	<5	<2	<2	<5
WCC-12S	11/18/91	300	-	17	900	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	*06/16/92	250/260	<5/5	<5/<5	660/710	<10/<10	<5/<5	<5/<5	<5/<5	<5/<5	<5/<5	<10/<10	<10/<10	-	-	-	-	-	-	-	-	-	-	-
	09/22/92	130	7	1	500	<5	<1	3	<1	<1	3	<5	<5	<1	4	7	<5	<1	<1	<1	<1	<1	<1	-
	12/08/92	160	<5	<5	550	<30	<5	<5	<5	<5	5	<30	<30	<5	<5	20	<30	<5	<5	<5	<5	<5	<5	-
	03/17/93	100	7	<2	410	<5	8	3	<2	<2	4	<10	<10	<2	<5	<10	-	<5	<2	<2	<5	<2	<2	<5

TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL DATA
GROUNDWATER MONITORING DATA SUMMARY REPORT - FIRST QUARTER 1993

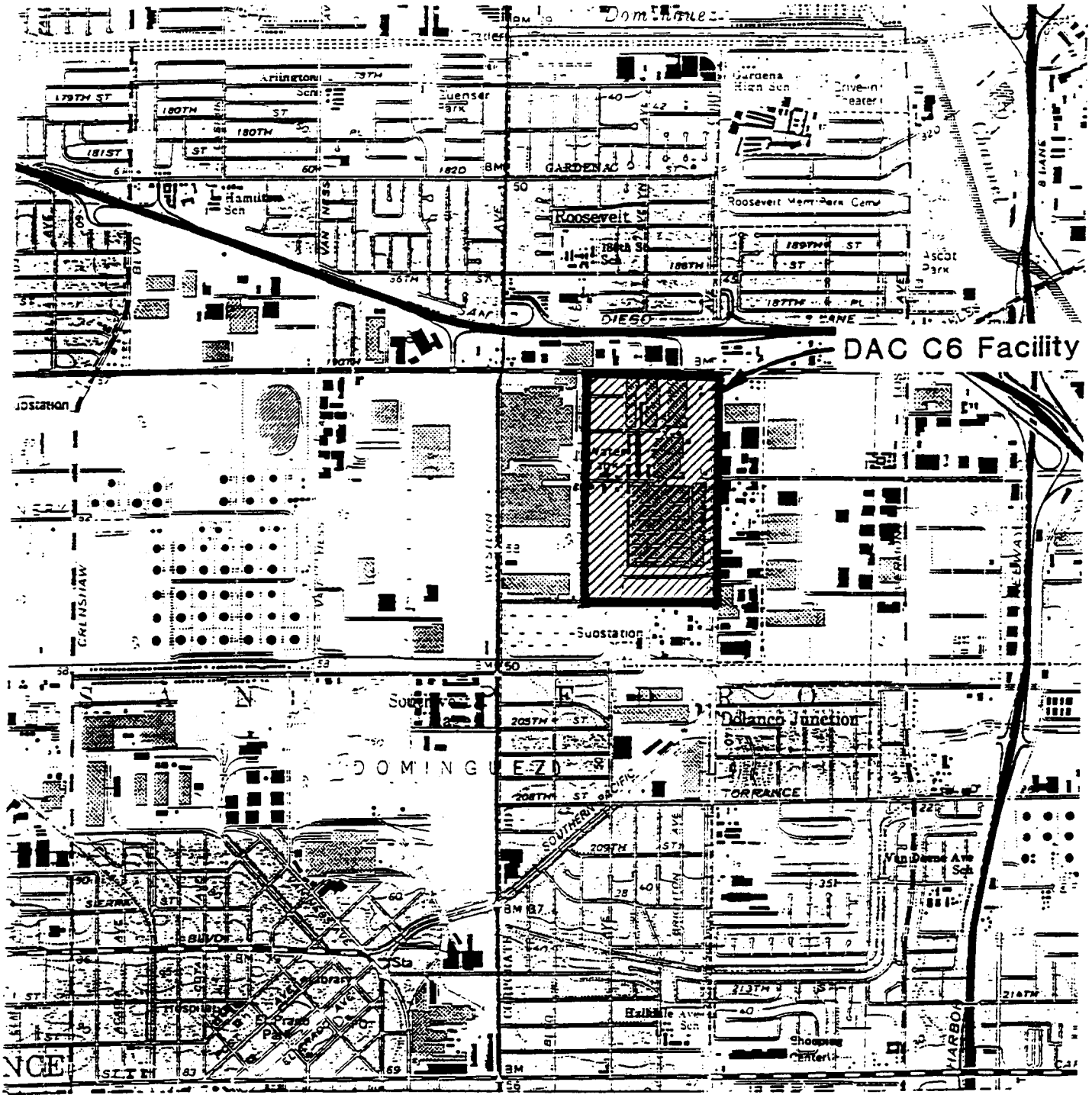
		COMPOUNDS DETECTED BY EPA METHOD 8240 - All results are reported in µg/L (ppb)																					
WELL I.D.	SAMPLE DATE	1,1-DCE	1,1-DCA	1,1,1-TCA	TCE	MIBK	trans-1,2-DCE	Chloroform	Toluene	Benzene	cis-1,2-DCE	MEK	Acetone	Total Xylenes	Freon-TF***4	Methylene*** Chloride	Tetra*** Hydrofuran	Carbon Tetra-Chloride	1,1,2-TCA	PCE	Carbon Disulfide	Ethyl-Benzene	1,2-DCA	Vinyl Acetate ***3
DAC-P1	10/09/89	<200	<200	<200	17,000	<1,000	<200	<200	<200	<200	<200	<1,000	<1,000	-	-	-	-	-	-	-	-	-	-	-
	06/17/92	<5	<5	<5	21,000	<10	<5	10	<5	<5	13	<10	<30	-	-	-	-	-	-	-	-	-	-	-
	*09/23/92	4/4	<1/<1	<1/<1	28,000/28,000	<5/<5	1/2	54/51	<1/<1	5/5	71/70	<5/<5	<5/<5	<1/<1	1/1	4/4	<5/<5	4/4	9/9	13/13	<1/<1	<1/<1	<1/<1	-
	12/09/92	<300	<500	<500	29000	<3,000	<500	<500	<500	<500	<500	<3,000	<3,000	<500	<500	2000	<3000	<500	<500	<500	<500	<500	<500	-
	03/18/93	21	<2	44	21,000	7	2	44	260	5	68	<10	<10	<2	<5	<10	-	<5	5	10	<5	<2	<2	<5
WCC-1D	07/25/89	<1	<1	<1	2	<5	<1	<1	1	<1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
	08/23/89	<1	<1	1	2	<5	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
	11/15/91	90	-	8	40	-	-	-	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	*06/15/92	1,500/1,300	<25/<25	63/64	230/210	<50/65	<25/<25	<25/<25	<25/<25	<25/<25	<25/<25	<50/<50	<50/<50	-	-	-	-	-	-	-	-	-	-	-
	09/22/92	180	<1	8	44	<5	<1	<1	<1	<1	2	<5	<5	<1	4	11	<5	<1	<1	<1	<1	<1	<1	-
	*12/07/92	160/150	<1/<1	8/160	41/6	<5/<5	<1/<1	1/1	<1/3	<1/<1	2/<1	<5/<5	<5/<5	<1/<1	<1/<1	2/2	<5/<5	<1/<1	<1/<1	<1/<1	<1/<1	<1/<1	<1/<1	-
	03/16/93	200	<2	19	23	<5	<2	<2	<2	<2	3	<10	<10	<2	<5	<10	-	<5	<2	<2	<5	<2	<2	<5
WCC-3D	07/25/89	<1	<1	49	4	<5	<1	<1	3	<1	11	-	-	-	-	-	-	-	-	-	-	-	-	-
	08/23/89	<10	<10	32	<10	<50	<10	<10	<10	<10	<10	-	-	-	-	-	-	-	-	-	-	-	-	-
	11/14/91	20	-	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	06/16/92	510	<5	880	23	<10	<5	<5	8	<5	<5	<10	<30	-	-	-	-	-	-	-	-	-	-	-
	09/22/92	21	<1	27	2	<5	<1	<1	<1	<1	<1	<5	<5	<1	1	8	<5	<1	<1	<1	<1	<1	<1	-
	12/07/92	120	<1	130	5	<5	<1	1	3	<1	<1	<5	<5	<1	<1	1	<5	<1	<1	<1	<1	<1	<1	-
	*03/16/93	950/1,000	6/6	2,000/2,000	50/47	<5/<5	9/9	<2/<2	6/6	<2/<2	2/2	<10/<10	<10/<10	<2/<2	<5/<5	<10/<10	-/-	<5/<5	<2/<2	<2/<2	<5/<5	<2/<2	<2/<2	<5/<5

Notes:
1 -Not Detected (Detection limit not specified)
2 *Duplicate sample also analyzed
3 **Compounds first detected March 1993 sampling
4 ***Potential Laboratory Contaminants
5 > 4,000 - Analyses exceed calibration range of the detectors reported by analytical laboratory.

TABLE 3
SUMMARY OF GROUNDWATER ELEVATION DATA
GROUNDWATER MONITORING DATA SUMMARY REPORT
FIRST QUARTER 1993
DOUGLAS AIRCRAFT C-6 FACILITY
TORRANCE, CALIFORNIA
K/J 924010.00

Observation Well	Reference Point[1] Elevation (*Feet Above MSL)	Water Level Elevation (*Feet Above Mean Sea Level)					
		11/13/87[2]	10/18/89[3]	06/15/92	09/21/92	01/05/93	04/09/93
WCC-1S	50.70	-21.63	-19.48	-19.20	-19.42	-19.34	-18.79
WCC-2S	50.59	-19.72	-19.06	-19.15	-19.41	-19.51	-18.64
WCC-3S	51.19	-21.56	-19.42	-19.24	-19.52	-19.73	-18.83
WCC-4S	49.69	-21.77	-19.59	-19.22	-19.49	-19.34	-18.86
WCC-5S	48.22	NA[4]	-19.70	-19.13	-19.42	-19.32	-18.83
WCC-6S	50.95	NA	-19.70	-19.40	-19.64	-19.50	-19.03
WCC-7S	48.29	NA	-20.07	-19.63	-19.93	-19.76	-19.30
WCC-8S	50.56	NA	-19.35	-19.11	-19.34	-19.19	-18.69
WCC-9S	47.01	NA	-20.07	-19.44	-19.66	-19.56	-19.09
WCC-10S	51.12	NA	-18.42	-18.94	-19.33	-19.10	-18.42
WCC-11S	49.97	NA	NA	-17.62	-18.81	-18.69	-18.13
WCC-12S	46.92	NA	NA	-19.60	-19.90	-19.74	-19.26
DAC-P1	52.44	NA	NA	-17.76	-17.88	-18.02	-17.46
WCC-1D	50.45	NA	-19.51	-19.55	-19.92	-19.61	-19.10
WCC-3D	51.18	NA	-19.38	-19.39	-19.71	-20.52	-18.87

Notes:
1 Reference point is north side, top of well casing
2 Data taken from Woodward-Clyde Consultants Phase II Report, May 1988
3 Data taken from Woodward-Clyde Consultants Phase III Report, March, 1990
4 Not available



N

0 1,000 2,000 FEET

Base Map: U.S.G.S. 7.5 Minute Topographic Map, Torrance, California Quadrangle, 1981.

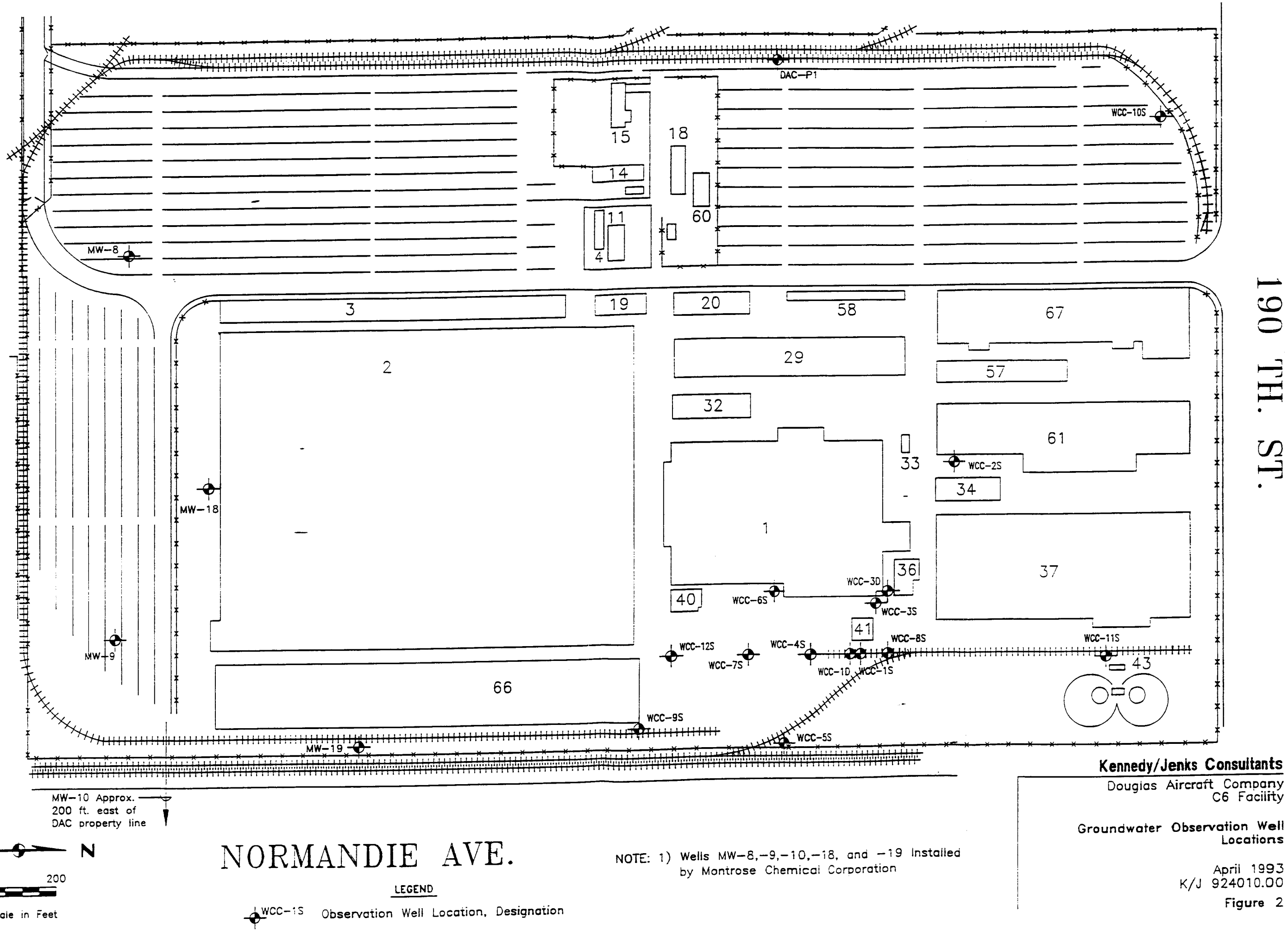
Kennedy/Jenks Consultants

McDonnell Douglas Corporation
DAC C6 Facility

Site Vicinity Map

April 1993
K/J 924010.00

Figure 1



NOTE: 1) Wells MW-8,-9,-10,-18, and -19 Installed by Montrose Chemical Corporation

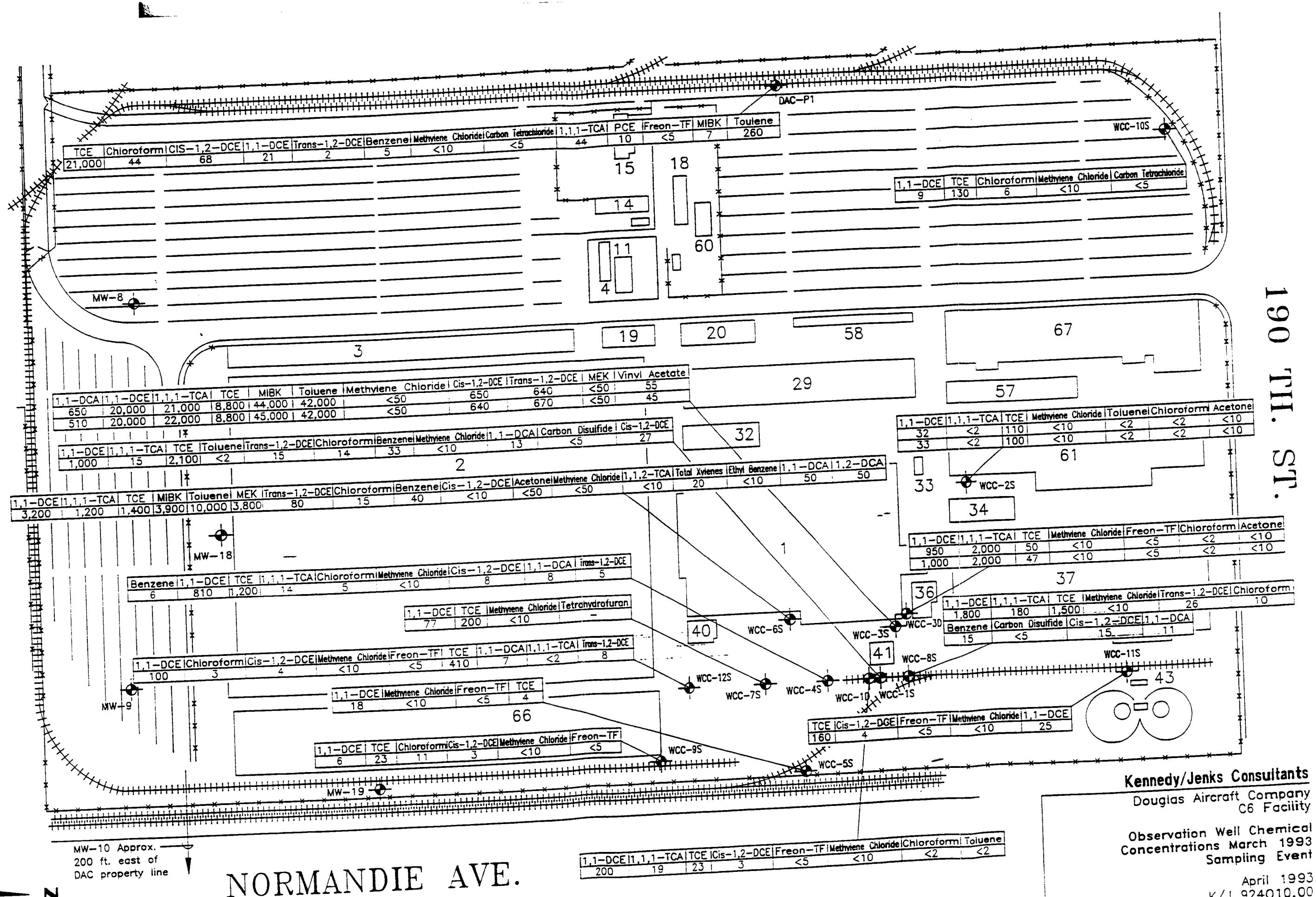
Kennedy/Jenks Consultants

Douglas Aircraft Company
C6 Facility

Groundwater Observation Well Locations

April 1993
K/J 924010.00

Figure 2



TCE	Chloroform	CIS-1,2-DCE	1,1-DCE	Trans-1,2-DCE	Benzene	Methylene Chloride	Carbon Tetrachloride	1,1,1-TCA	PCE	Freon-TF	MIBK	Toulene
21,000	44	68	21	2	5	<10	<5	44	10	<5	7	260

1,1-DCE	TCE	Chloroform	Methylene Chloride	Carbon Tetrachloride
9	130	6	<10	<5

1,1-DCA	1,1-DCE	1,1,1-TCA	TCE	MIBK	Toluene	Methylene Chloride	Cis-1,2-DCE	Trans-1,2-DCE	MEK	Vinyl Acetate
650	20,000	21,000	8,800	44,000	42,000	<50	650	640	<50	55
510	20,000	22,000	8,800	45,000	42,000	<50	640	670	<50	45

1,1-DCE	1,1,1-TCA	TCE	Methylene Chloride	Toluene	Chloroform	Acetone
32	<2	110	<10	<2	<2	<10
33	<2	100	<10	<2	<2	<10

1,1-DCE	1,1,1-TCA	TCE	Toluene	Trans-1,2-DCE	Chloroform	Benzene	Methylene Chloride	1,1-DCA	Carbon Disulfide	Cis-1,2-DCE
1,000	15	2,100	<2	15	14	33	<10	13	<5	27

1,1-DCE	1,1,1-TCA	TCE	MIBK	Toluene	MEK	Trans-1,2-DCE	Chloroform	Benzene	Cis-1,2-DCE	Acetone	Methylene Chloride	1,1,2-TCA	Total Xylenes	Ethyl Benzene	1,1-DCA	1,2-DCA
3,200	1,200	1,400	3,900	10,000	3,800	80	15	40	<10	<50	<50	<10	20	<10	50	50

1,1-DCE	1,1,1-TCA	TCE	Methylene Chloride	Freon-TF	Chloroform	Acetone
950	2,000	50	<10	<5	<2	<10
1,000	2,000	47	<10	<5	<2	<10

Benzene	1,1-DCE	TCE	1,1,1-TCA	Chloroform	Methylene Chloride	Cis-1,2-DCE	1,1-DCA	Trans-1,2-DCE
6	810	1,200	14	5	<10	8	8	5

1,1-DCE	TCE	Methylene Chloride	Tetrahydrofuran
77	200	<10	–

1,1-DCE	1,1,1-TCA	TCE	Methylene Chloride	Trans-1,2-DCE	Chloroform
1,800	180	1,500	<10	26	10

Benzene	Carbon Disulfide	Cis-1,2-DCE	1,1-DCA
15	<5	15	11

1,1-DCE	Chloroform	Cis-1,2-DCE	Methylene Chloride	Freon-TF	TCE	1,1-DCA	1,1,1-TCA	Trans-1,2-DCE
100	3	4	<10	<5	410	7	<2	8

1,1-DCE	Methylene Chloride	Freon-TF	TCE
18	<10	<5	4

1,1-DCE	TCE	Chloroform	Cis-1,2-DCE	Methylene Chloride	Freon-TF
6	23	11	3	<10	<5

TCE	Cis-1,2-DCE	Freon-TF	Methylene Chloride	1,1-DCE
160	4	<5	<10	25

1,1-DCE	1,1,1-TCA	TCE	Cis-1,2-DCE	Freon-TF	Methylene Chloride	Chloroform	Toluene
200	19	23	3	<5	<10	<2	<2

NOTES:

1. Samples Analyzed by EPA Method 8240
2. Results Reported in ug/L (ppb)

4. Duplicate samples were analyzed for wells WCC-2S, WCC-3S and WCC-3D

Kennedy/Jenks Consultants

Douglas Aircraft Company
C6 Facility

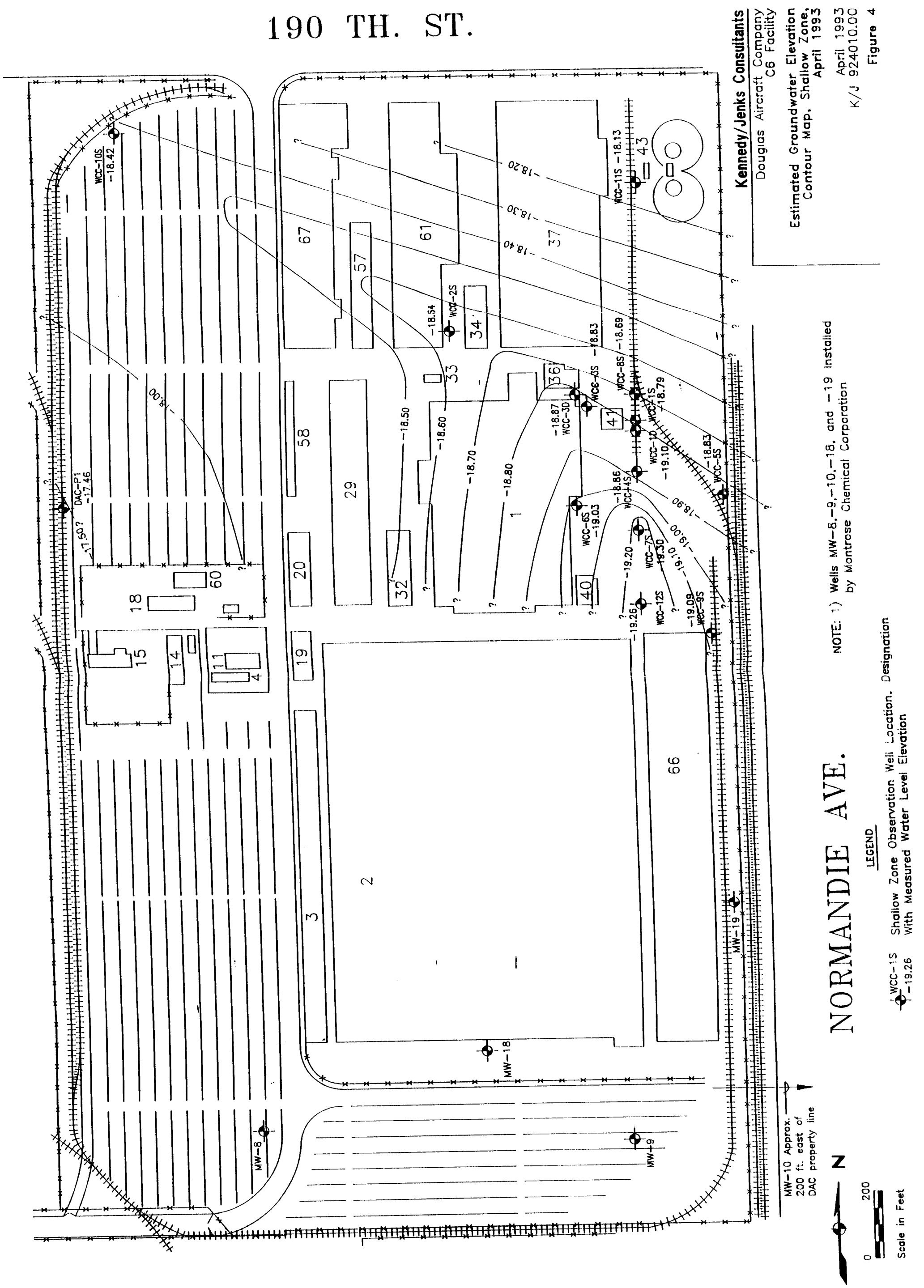
Observation Well Chemical Concentrations March 1993 Sampling Event

April 1993
K/J 924010.00

Figure 3

190 TH. ST.

BOE-C6-0015920


190 TH. ST.
NORMANDIE AVE.
Kennedy/Jenks Consultants
Douglas Aircraft Company
C6 Facility
Estimated Groundwater Elevation
Contour Map, Shallow Zone,
April 1993
April 1993
K/J 924010.00
Figure 4
NOTE: 1) Wells MW-8,-9,-10,-18, and -19 Installed by Montrose Chemical Corporation
LEGEND
WCC-1S -19.26 Shallow Zone Observation Well Location, Designation With Measured Water Level Elevation
MW-10 Approx. 200 ft. east of DAC property line
N
0 200
Scale in Feet
WCC-10S -18.42
DAC-P1 -17.46
-17.50?
-18.00
-18.20
-18.30
-18.40
-18.50
-18.60
-18.70
-18.80
-18.90
-19.00
-19.10
-19.20
-19.30
-19.26
-19.09
-19.03
-18.54
-18.83
-18.69
-18.87
-18.86
-18.79
-19.10
-18.83
-18.13
WCC-2S
WCC-3D
WCC-3S
WCC-8S
WCC-1S
WCC-10
WCC-5S
WCC-4S
WCC-6S
WCC-7S
WCC-12S
WCC-9S
WCC-11S
MW-8
MW-9
MW-18
MW-19
67
61
57
37
43
34
33
36
41
58
29
20
32
40
1
60
18
15
14
11
4
19
2
3
66

Del Mar Analytical

2852 Alton Avenue, Irvine California 92714 (714) 261-1022 FAX (714) 261-1228

Duplicate of sample [illegible]

Kennedy Jenks Consultants
17310 Redhill, Suite 220
Irvine, CA 92714
Attention: Bill Blazen

Client Project ID: DAC

Sample Descript: Water, DW031893
Lab Number: CC01893

Sampled: Mar 18, 1993
Received: Mar 18, 1993
Analyzed: Mar 23, 1993
Reported: Mar 30, 1993

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)
Acetone	50	N.D.
Benzene	10	**260**
Bromodichloromethane	10	N.D.
Bromoform	10	N.D.
Bromomethane	25	N.D.
2-Butanone	50	N.D.
Carbon disulfide	25	N.D.
Carbon tetrachloride	25	N.D.
Chlorobenzene	10	N.D.
Chlorodibromomethane	10	N.D.
Chloroethane	25	N.D.
2-Chloroethyl vinyl ether	10	N.D.
Chloroform	10	**110**
Chloromethane	25	N.D.
1,1-Dichloroethane	10	**510**
1,2-Dichloroethane	10	**95**
1,1-Dichloroethene	25	**>4,000**
cis-1,2-Dichloroethene	10	**640**
trans-1,2-Dichloroethene	10	**670**
1,2-Dichloropropane	10	N.D.
cis-1,3-Dichloropropene	10	N.D.
trans-1,3-Dichloropropene	10	N.D.
Ethylbenzene	10	N.D.
2-Hexanone	50	N.D.
Methylene chloride	50	N.D.
4-Methyl-2-pentanone	25	**>4,000**
Styrene	10	N.D.
1,1,2,2-Tetrachloroethane	10	N.D.
Tetrachloroethene	10	N.D.
Toluene	10	**>4,000**
1,1,1-Trichloroethane	10	**>4,000**
1,1,2-Trichloroethane	10	**60**
Trichloroethene	10	**>4,000**
Trichlorofluoromethane	25	N.D.
Vinyl acetate	25	**45**
Vinyl chloride	25	N.D.
Total Xylenes	10	**110**

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised. High Concentration analytes which exceed the calibration range of the detector are reported as >4,000 µg/L. Due to instrument saturation, the above results are semi-quantitative and not reproducible.

DEL MAR ANALYTICAL, IRVINE (ELAP #1197)

Gary Steube
Laboratory Director

CC01611.KKK <8>

Del Mar Analytical

2852 Alton Avenue Irvine California 92714 (714) 261-1022 FAX (714) 261-1228

Kennedy Jenks Consultants
17310 Redhill, Suite 220
Irvine, CA 92714
Attention: Bill Blazen

Client Project ID: DAC

Sample Descript: Water, WCC-4S-4
Lab Number: CC01696

Sampled: Mar 17, 1993
Received: Mar 17, 1993
Analyzed: Mar 22, 1993
Reported: Mar 30, 1993

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)
Acetone	10	N.D.
Benzene	**2.0**	**6.0**
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	5.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	5.0	N.D.
2-Chloroethyl vinyl ether	2.0	N.D.
Chloroform	**2.0**	**5.0**
Chloromethane	5.0	N.D.
1,1-Dichloroethane	**2.0**	**8.0**
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	**5.0**	**>400**
cis-1,2-Dichloroethene	**2.0**	**8.0**
trans-1,2-Dichloroethene	**2.0**	**5.0**
1,2-Dichloropropane	2.0	N.D.
cis-1,3-Dichloropropene	2.0	N.D.
trans-1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	10	N.D.
4-Methyl-2-pentanone	5.0	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	**2.0**	**14**
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	**2.0**	**>400**
Trichlorofluoromethane	5.0	N.D.
Vinyl acetate	5.0	N.D.
Vinyl chloride	5.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. High concentration analytes which exceed the calibration range of the detector are reported as >400 µg/L. Due to instrument saturation, the above results are semi-quantitative and not reproducible.

DEL MAR ANALYTICAL, IRVINE (ELAP #1197)

Gary Steube
Laboratory Director

CC01611.KKK <4>

Del Mar Analytical

2852 Alton Avenue, Irvine California 92714 (714) 261-1022 FAX (714) 261-1228

Kennedy Jenks Consultants
17310 Redhill, Suite 220
Irvine, CA 92714
Attention: Bill Blazen

Client Project ID: DAC

Sample Descript: Water, WCC-4S-4
Lab Number: CC01696

Sampled: Mar 17, 1993
Received: Mar 17, 1993
Analyzed: Mar 23, 1993
Reported: Mar 25, 1993

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Result µg/L
Acetone	70.0	N.D.
Benzene	14.0	N.D.
Bromodichloromethane	14.0	N.D.
Bromoform	14.0	N.D.
Bromomethane	35.0	N.D.
2-Butanone	70.0	N.D.
Carbon disulfide	35.0	N.D.
Carbon tetrachloride	35.0	N.D.
Chlorobenzene	14.0	N.D.
Chlorodibromomethane	14.0	N.D.
Chloroethane	35.0	N.D.
2-Chloroethyl vinyl ether	14.0	N.D.
Chloroform	14.0	N.D.
Chloromethane	35.0	N.D.
1,1-Dichloroethane	14.0	N.D.
1,2-Dichloroethane	14.0	N.D.
1,1-Dichloroethene	35.0	810
cis-1,2-Dichloroethene	14.0	N.D.
trans 1,2-Dichloroethene	14.0	N.D.
1,2-Dichloropropane	14.0	N.D.
cis 1,3-Dichloropropene	14.0	N.D.
trans 1,3-Dichloropropene	14.0	N.D.
Ethylbenzene	14.0	N.D.
2-Hexanone	70.0	N.D.
Methylene chloride	70.0	N.D.
4-Methyl-2-pentanone	35.0	N.D.
Styrene	14.0	N.D.
1,1,2,2-Tetrachloroethane	14.0	N.D.
Tetrachloroethene	14.0	N.D.
Toluene	14.0	N.D.
1,1,1-Trichloroethane	14.0	14
1,1,2-Trichloroethane	14.0	N.D.
Trichloroethene	14.0	1,200
Trichlorofluoromethane	35.0	N.D.
Vinyl acetate	35.0	N.D.
Vinyl chloride	35.0	N.D.
Total Xylenes	14.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

DEL MAR ANALYTICAL

Gary Steube
Laboratory Director

Surrogate Standard Recoveries:	
1,2-Dichloroethane-d4	92%
Toluene-d8	96%
4-Bromofluorobenzene	94%

CC01692.KKK <5>

Del Mar Analytical

2852 Alton Avenue, Irvine, California 92714 (714) 261-1022 FAX (714) 261-1228

Kennedy Jenks Consultants
17310 Redhill Ave., Suite 220
Irvine, CA 92714
Attention: Bill Bazlen

Client Project ID: DAC

Sample Descript: Water, WCC-5S-4
Lab Number: CC01613

Sampled: Mar 16, 1993
Received: Mar 16, 1993
Analyzed: Mar 22, 1993
Reported: Mar 24, 1993

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Result µg/L
Acetone	10.0	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	5.0	N.D.
Carbon disulfide	10.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	5.0	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
cis-1,2-Dichloroethene	5.0	18
trans 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	2.0	N.D.
Methylene chloride	10.0	N.D.
4-Methyl-2-pentanone	10.0	N.D.
Styrene	5.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	4.0
Vinyl acetate	5.0	N.D.
Vinyl chloride	5.0	N.D.
Total Xylenes	5.0	N.D.
	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL

Gary Steube
Laboratory Director

Surrogate Standard Recoveries:	
1,2-Dichloroethane-d4	101%
Toluene-d8	98%
4-Bromofluorobenzene	106%

CC01610.KKK <4>

Del Mar Analytical

2852 Alton Avenue Irvine California 92714 714. 261 1022 FAX 714. 261 1228

Kennedy Jenks Consultants
17310 Redhill. Suite 220
Irvine. CA 92714
Attention: Bill Blazen

Client Project ID: DAC

Sample Descript: Water. WCC-6S-4
Lab Number: CC01698

Sampled: Mar 17. 1993
Received: Mar 17. 1993
Analyzed: Mar 24. 1993
Reported: Mar 25. 1993

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Result µg/L
Acetone	500.0	N.D.
Benzene	100.0	N.D.
Bromodichloromethane	100.0	N.D.
Bromoform	100.0	N.D.
Bromomethane	250.0	N.D.
2-Butanone	**500.0**	**3,800**
Carbon disulfide	250.0	N.D.
Carbon tetrachloride	250.0	N.D.
Chlorobenzene	100.0	N.D.
Chlorodibromomethane	100.0	N.D.
Chloroethane	250.0	N.D.
2-Chloroethyl vinyl ether	100.0	N.D.
Chloroform	100.0	N.D.
Chloromethane	250.0	N.D.
1,1-Dichloroethane	100.0	N.D.
1,2-Dichloroethane	100.0	N.D.
1,1-Dichloroethene	**250.0**	**3,200**
cis-1,2-Dichloroethene	100.0	N.D.
trans 1,2-Dichloroethene	100.0	N.D.
1,2-Dichloropropane	100.0	N.D.
cis 1,3-Dichloropropene	100.0	N.D.
trans 1,3-Dichloropropene	100.0	N.D.
Ethylbenzene	100.0	N.D.
2-Hexanone	500.0	N.D.
Methylene chloride	500.0	N.D.
4-Methyl-2-pentanone	**250.0**	**3,900**
Styrene	100.0	N.D.
1,1,2,2-Tetrachloroethane	100.0	N.D.
Tetrachloroethene	100.0	N.D.
Toluene	**100.0**	**10,000**
1,1,1-Trichloroethane	**100.0**	**1,200**
1,1,2-Trichloroethane	100.0	N.D.
Trichloroethene	**100.0**	**1,400**
Trichlorofluoromethane	250.0	N.D.
Vinyl acetate	250.0	N.D.
Vinyl chloride	250.0	N.D.
Total Xylenes	100.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

DEL MAR ANALYTICAL

Gary Steube
Laboratory Director

Surrogate Standard Recoveries:	
1,2-Dichloroethane-d4	100%
Toluene-d8	100%
4-Bromofluorobenzene	98%

CC01692.KKK <7>

Del Mar Analytical

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Kennedy Jenks Consultants
17310 Redhill, Suite 220
Irvine, CA 92714
Attention: Bill Blazen

Client Project ID: DAC

Sample Descript: Water, WCC-6S-4
Lab Number: CC01698

Sampled: Mar 17, 1993
Received: Mar 17, 1993
Analyzed: Mar 23, 1993
Reported: Mar 30, 1993

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)
Acetone	50	N.D.
Benzene	**10**	**40**
Bromodichloromethane	10	N.D.
Bromoform	10	N.D.
Bromomethane	25	N.D.
2-Butanone	**50**	**>500**
Carbon disulfide	25	N.D.
Carbon tetrachloride	25	N.D.
Chlorobenzene	10	N.D.
Chlorodibromomethane	10	N.D.
Chloroethane	25	N.D.
2-Chloroethyl vinyl ether	10	N.D.
Chloroform	**10**	**15**
Chloromethane	25	N.D.
1,1-Dichloroethane	**10**	**50**
1,2-Dichloroethane	**10**	**50**
1,1-Dichloroethene	**25**	**>500**
cis-1,2-Dichloroethene	10	N.D.
trans-1,2-Dichloroethene	**10**	**80**
1,2-Dichloropropane	10	N.D.
cis-1,3-Dichloropropene	10	N.D.
trans-1,3-Dichloropropene	10	N.D.
Ethylbenzene	10	N.D.
2-Hexanone	50	N.D.
Methylene chloride	50	N.D.
4-Methyl-2-pentanone	**25**	**>500**
Styrene	10	N.D.
1,1,2,2-Tetrachloroethane	10	N.D.
Tetrachloroethene	10	N.D.
Toluene	**10**	**>500**
1,1,1-Trichloroethane	**10**	**>500**
1,1,2-Trichloroethane	10	N.D.
Trichloroethene	**10**	**>500**
Trichlorofluoromethane	25	N.D.
Vinyl acetate	25	N.D.
Vinyl chloride	25	N.D.
Total Xylenes	**10**	**20**

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised. High Concentration analytes which exceed the calibration range of the detector are reported as >500 µg/L. Due to instrument saturation, the above results are semi-quantitative and not reproducible.

DEL MAR ANALYTICAL, IRVINE (ELAP #1197)

Gary Steube
Laboratory Director

CC01611.KKK <6>

Del Mar Analytical

2852 Alton Avenue, Irvine, California 92714 (714) 261-1022 FAX (714) 261-1228

Kennedy Jenks Consultants
17310 Redhill, Suite 220
Irvine, CA 92714
Attention: Bill Blazen

Client Project ID: DAC

Sample Descript: Water, WCC-7S-4
Lab Number: CC01695

Sampled: Mar 17, 1993
Received: Mar 17, 1993
Analyzed: Mar 22, 1993
Reported: Mar 25, 1993

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Result µg/L
Acetone	10.0	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	5.0	N.D.
2-Butanone	10.0	N.D.
Carbon disulfide	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	5.0	N.D.
2-Chloroethyl vinyl ether	2.0	N.D.
Chloroform	2.0	N.D.
Chloromethane	5.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	**5.0**	**77**
cis-1,2-Dichloroethene	**2.0**	**4.0**
trans 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10.0	N.D.
Methylene chloride	10.0	N.D.
4-Methyl-2-pentanone	5.0	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	**2.0**	**200**
Trichlorofluoromethane	5.0	N.D.
Vinyl acetate	5.0	N.D.
Vinyl chloride	5.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL

Gary Steube
Laboratory Director

Surrogate Standard Recoveries:	
1,2-Dichloroethane-d4	108%
Toluene-d8	105%
4-Bromofluorobenzene	109%

CC01692.KKK <4>

Del Mar Analytical

2852 Alton Avenue, Irvine, California 92714 (714) 261-1022 FAX (714) 261-1228

Kennedy Jenks Consultants
17310 Redhill, Suite 220
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Attention: Bill Blazen

Client Project ID: DAC

Sample Descript: Water, WCC-8S-4
Lab Number: CC01697

Sampled: Mar 17, 1993
Received: Mar 17, 1993
Analyzed: Mar 24, 1993
Reported: Mar 25, 1993

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Result µg/L
Acetone	100.0	N.D.
Benzene	20.0	N.D.
Bromodichloromethane	20.0	N.D.
Bromoform	20.0	N.D.
Bromomethane	50.0	N.D.
2-Butanone	100.0	N.D.
Carbon disulfide	50.0	N.D.
Carbon tetrachloride	50.0	N.D.
Chlorobenzene	20.0	N.D.
Chlorodibromomethane	20.0	N.D.
Chloroethane	50.0	N.D.
2-Chloroethyl vinyl ether	20.0	N.D.
Chloroform	20.0	N.D.
Chloromethane	50.0	N.D.
1,1-Dichloroethane	20.0	N.D.
1,2-Dichloroethane	20.0	N.D.
1,1-Dichloroethene	**50.0**	**1,800**
cis-1,2-Dichloroethene	20.0	N.D.
trans 1,2-Dichloroethene	**20.0**	**26**
1,2-Dichloropropane	20.0	N.D.
cis 1,3-Dichloropropene	20.0	N.D.
trans 1,3-Dichloropropene	20.0	N.D.
Ethylbenzene	20.0	N.D.
2-Hexanone	100.0	N.D.
Methylene chloride	100.0	N.D.
4-Methyl-2-pentanone	50.0	N.D.
Styrene	20.0	N.D.
1,1,2,2-Tetrachloroethane	20.0	N.D.
Tetrachloroethene	20.0	N.D.
Toluene	20.0	N.D.
1,1,1-Trichloroethane	**20.0**	**180**
1,1,2-Trichloroethane	20.0	N.D.
Trichloroethene	**20.0**	**1,500**
Trichlorofluoromethane	50.0	N.D.
Vinyl acetate	50.0	N.D.
Vinyl chloride	50.0	N.D.
Total Xylenes	20.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

DEL MAR ANALYTICAL

Gary Steube
Laboratory Director

Surrogate Standard Recoveries:	
1,2-Dichloroethane-d4	94%
Toluene-d8	94%
4-Bromofluorobenzene	94%

CC01692.KKK <6>

Del Mar Analytical

2852 Alton Avenue Irvine California 92714 (714) 261 1022 FAX (714) 261 1228

Kennedy Jenks Consultants
17310 Redhill, Suite 220
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Attention: Bill Blazen

Client Project ID: DAC

Sample Descript: Water, WCC-8S-4
Lab Number: CC01697

Sampled: Mar 17, 1993
Received: Mar 17, 1993
Analyzed: Mar 23, 1993
Reported: Mar 30, 1993

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)
Acetone	10	N.D.
Benzene	**2.0**	**15**
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	5.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	5.0	N.D.
2-Chloroethyl vinyl ether	2.0	N.D.
Chloroform	**2.0**	**10**
Chloromethane	5.0	N.D.
1,1-Dichloroethane	**2.0**	**11**
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	**5.0**	**>500**
cis-1,2-Dichloroethene	**2.0**	**15**
trans-1,2-Dichloroethene	**2.0**	**26**
1,2-Dichloropropane	2.0	N.D.
cis-1,3-Dichloropropene	2.0	N.D.
trans-1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	10	N.D.
4-Methyl-2-pentanone	5.0	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	**2.0**	**180**
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	**2.0**	**>500**
Trichlorofluoromethane	5.0	N.D.
Vinyl acetate	5.0	N.D.
Vinyl chloride	5.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. High concentration analytes which exceed the calibration range of the detector are reported as >500 µg/L. Due to instrument saturation, the above results are semi-quantitative and not reproducible.

DEL MAR ANALYTICAL, IRVINE (ELAP #1197)

Gary Steube
Laboratory Director

CC01611.KKK <5>

Del Mar Analytical

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Kennedy Jenks Consultants
17310 Redhill Ave., Suite 220
Irvine, CA 92714
Attention: Bill Bazlen

Client Project ID: DAC

Sample Descript: Water, WCC-9S-4
Lab Number: CC01614

Sampled: Mar 16, 1993
Received: Mar 16, 1993
Analyzed: Mar 22, 1993
Reported: Mar 24, 1993

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Result µg/L
Acetone	10.0	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	5.0	N.D.
2-Butanone	10.0	N.D.
Carbon disulfide	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	5.0	N.D.
2-Chloroethyl vinyl ether	2.0	N.D.
Chloroform	2.0	11
Chloromethane	5.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	5.0	6.0
cis-1,2-Dichloroethene	2.0	3.0
trans 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10.0	N.D.
Methylene chloride	10.0	N.D.
4-Methyl-2-pentanone	5.0	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	23
Trichlorofluoromethane	5.0	N.D.
Vinyl acetate	5.0	N.D.
Vinyl chloride	5.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL

Gary Steube
Laboratory Director

Surrogate Standard Recoveries:	
1,2-Dichloroethane-d4	104%
Toluene-d8	99%
4-Bromofluorobenzene	104%

CC01610.KKK <5>

Del Mar Analytical

2852 Alton Avenue Irvine California 92714 (714) 261-1022 FAX (714) 261-1228

Kennedy Jenks Consultants
17310 Redhill Ave., Suite 220
Irvine, CA 92714
Attention: Bill Bazlen

Client Project ID: DAC

Sample Descript: Water, WCC-10S-4
Lab Number: CC01616

Sampled: Mar 16, 1993
Received: Mar 16, 1993
Analyzed: Mar 19, 1993
Reported: Mar 24, 1993

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Result µg/L
Acetone	10.0	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	5.0	N.D.
2-Butanone	10.0	N.D.
Carbon disulfide	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	5.0	N.D.
2-Chloroethyl vinyl ether	2.0	N.D.
Chloroform	2.0	6.0
Chloromethane	5.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	5.0	9.0
cis-1,2-Dichloroethene	2.0	N.D.
trans 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10.0	N.D.
Methylene chloride	10.0	N.D.
4-Methyl-2-pentanone	5.0	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	130
Trichlorofluoromethane	5.0	N.D.
Vinyl acetate	5.0	N.D.
Vinyl chloride	5.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL

Gary Steube
Laboratory Director

Surrogate Standard Recoveries:	
1,2-Dichloroethane-d4	109%
Toluene-d8	101%
4-Bromofluorobenzene	109%

CC01610.KKK <7>

Del Mar Analytical

2852 Alton Avenue, Irvine, California 92714 714 261 1022 FAX 714 261 1228

Kennedy Jenks Consultants
17310 Redhill Ave., Suite 220
Irvine, CA 92714
Attention: Bill Bazlen

Client Project ID: DAC

Sample Descript: Water, WCC-11S-4
Lab Number: CC01615

Sampled: Mar 16, 1993
Received: Mar 16, 1993
Analyzed: Mar 19, 1993
Reported: Mar 24, 1993

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Result µg/L
Acetone	10.0	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	5.0	N.D.
2-Butanone	10.0	N.D.
Carbon disulfide	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	5.0	N.D.
2-Chloroethyl vinyl ether	2.0	N.D.
Chloroform	2.0	N.D.
Chloromethane	5.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	5.0	25
cis-1,2-Dichloroethene	2.0	4.0
trans 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10.0	N.D.
Methylene chloride	10.0	N.D.
4-Methyl-2-pentanone	5.0	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	160
Trichlorofluoromethane	5.0	N.D.
Vinyl acetate	5.0	N.D.
Vinyl chloride	5.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL

Gary Steube
Laboratory Director

Surrogate Standard Recoveries:	
1,2-Dichloroethane-d4	108%
Toluene-d8	102%
4-Bromofluorobenzene	108%

CC01610.KKK <6>

Del Mar Analytical

2852 Alton Avenue, Irvine California 92714 (714) 261-1022, FAX (714) 261-1228

Kennedy Jenks Consultants
17310 Redhill, Suite 220
Irvine, CA 92714
Attention: Bill Blazen

Client Project ID: DAC

Sample Descript: Water, WCC-12S-4
Lab Number: CC01694

Sampled: Mar 17, 1993
Received: Mar 17, 1993
Analyzed: Mar 23, 1993
Reported: Mar 25, 1993

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Result µg/L
Acetone	25.0	N.D.
Benzene	5.0	N.D.
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	12.5	N.D.
2-Butanone	25.0	N.D.
Carbon disulfide	12.5	N.D.
Carbon tetrachloride	12.5	N.D.
Chlorobenzene	5.0	N.D.
Chlorodibromomethane	5.0	N.D.
Chloroethane	12.5	N.D.
2-Chloroethyl vinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	12.5	N.D.
1,1-Dichloroethane	5.0	7.0
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	12.5	100
cis-1,2-Dichloroethene	5.0	N.D.
trans 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis 1,3-Dichloropropene	5.0	N.D.
trans 1,3-Dichloropropene	5.0	N.D.
Ethylbenzene	5.0	N.D.
2-Hexanone	25.0	N.D.
Methylene chloride	25.0	N.D.
4-Methyl-2-pentanone	12.5	N.D.
Styrene	5.0	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
Toluene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	410
Trichlorofluoromethane	12.5	N.D.
Vinyl acetate	12.5	N.D.
Vinyl chloride	12.5	N.D.
Total Xylenes	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

DEL MAR ANALYTICAL

Gary Steube
Laboratory Director

Surrogate Standard Recoveries:	
1,2-Dichloroethane-d4	88%
Toluene-d8	96%
4-Bromofluorobenzene	94%

CC01692.KKK <3>

Del Mar Analytical

2852 Alton Avenue, Irvine, California 92714 (714) 261-1022, FAX (714) 261-1228

Kennedy Jenks Consultants
17310 Redhill, Suite 220
Irvine, CA 92714
Attention: Bill Blazen

Client Project ID: DAC
Sample Descript: Water, WCC-12S-4
Lab Number: CC01694

Sampled: Mar 17, 1993
Received: Mar 17, 1993
Analyzed: Mar 22, 1993
Reported: Mar 30, 1993

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	5.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	5.0	N.D.
2-Chloroethyl vinyl ether	2.0	N.D.
Chloroform	**2.0**	**3.0**
Chloromethane	5.0	N.D.
1,1-Dichloroethane	**2.0**	**7.0**
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	**5.0**	**>50**
cis-1,2-Dichloroethene	**2.0**	**4.0**
trans-1,2-Dichloroethene	**2.0**	**8.0**
1,2-Dichloropropane	2.0	N.D.
cis-1,3-Dichloropropene	2.0	N.D.
trans-1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	10	N.D.
4-Methyl-2-pentanone	5.0	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	**2.0**	**>50**
Trichlorofluoromethane	5.0	N.D.
Vinyl acetate	5.0	N.D.
Vinyl chloride	5.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. High concentration analytes which exceed the calibration range of the detector are reported as >50 µg/L. Due to instrument saturation, the above results are semi-quantitative and not reproducible.

DEL MAR ANALYTICAL, IRVINE (ELAP #1197)

Gary Steube
Laboratory Director

CC01611.KKK <3>

Del Mar Analytical

2852 Alton Avenue, Irvine, California 92714 (714) 261-1022 FAX (714) 261-1228

Kennedy Jenks Consultants
17310 Redhill Ave., Suite 220
Irvine, CA 92714
Attention: Bill Bazlen

Client Project ID: DAC

Sample Descript: Water, WCC-1D-4
Lab Number: CC01612

Sampled: Mar 16, 1993
Received: Mar 16, 1993
Analyzed: Mar 22, 1993
Reported: Mar 24, 1993

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Result µg/L
Acetone	10.0	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	5.0	N.D.
2-Butanone	10.0	N.D.
Carbon disulfide	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	5.0	N.D.
2-Chloroethyl vinyl ether	2.0	N.D.
Chloroform	2.0	N.D.
Chloromethane	5.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	5.0	200
cis-1,2-Dichloroethene	2.0	3.0
trans 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10.0	N.D.
Methylene chloride	10.0	N.D.
4-Methyl-2-pentanone	5.0	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	19
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	23
Trichlorofluoromethane	5.0	N.D.
Vinyl acetate	5.0	N.D.
Vinyl chloride	5.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL

Gary Steube
Laboratory Director

Surrogate Standard Recoveries:	
1,2-Dichloroethane-d4	91%
Toluene-d8	93%
4-Bromofluorobenzene	102%

CC01610.KKK <3>

Del Mar Analytical

2852 Alton Avenue, Irvine California 92714 714.261.1022 FAX 714.261.1228

Kennedy Jenks Consultants
17310 Redhill Ave., Suite 220
Irvine, CA 92714
Attention: Bill Bazlen

Client Project ID: DAC
Sample Descript: Water, WCC-3D-4
Lab Number: CC01610

Sampled: Mar 16, 1993
Received: Mar 16, 1993
Analyzed: Mar 23, 1993
Reported: Mar 24, 1993

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Result µg/L
Acetone	200.0	N.D.
Benzene	40.0	N.D.
Bromodichloromethane	40.0	N.D.
Bromoform	40.0	N.D.
Bromomethane	100.0	N.D.
2-Butanone	200.0	N.D.
Carbon disulfide	100.0	N.D.
Carbon tetrachloride	100.0	N.D.
Chlorobenzene	40.0	N.D.
Chlorodibromomethane	40.0	N.D.
Chloroethane	100.0	N.D.
2-Chloroethyl vinyl ether	40.0	N.D.
Chloroform	40.0	N.D.
Chloromethane	100.0	N.D.
1,1-Dichloroethane	40.0	N.D.
1,2-Dichloroethane	40.0	N.D.
1,1-Dichloroethene	100.0	950
cis-1,2-Dichloroethene	40.0	N.D.
trans 1,2-Dichloroethene	40.0	N.D.
1,2-Dichloropropane	40.0	N.D.
cis 1,3-Dichloropropene	40.0	N.D.
trans 1,3-Dichloropropene	40.0	N.D.
Ethylbenzene	40.0	N.D.
2-Hexanone	200.0	N.D.
Methylene chloride	200.0	N.D.
4-Methyl-2-pentanone	100.0	N.D.
Styrene	40.0	N.D.
1,1,2,2-Tetrachloroethane	40.0	N.D.
Tetrachloroethene	40.0	N.D.
Toluene	40.0	N.D.
1,1,1-Trichloroethane	40.0	2,000
1,1,2-Trichloroethane	40.0	N.D.
Trichloroethene	40.0	50
Trichlorofluoromethane	100.0	N.D.
Vinyl acetate	100.0	N.D.
Vinyl chloride	100.0	N.D.
Total Xylenes	40.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

DEL MAR ANALYTICAL

Gary Steube
Laboratory Director

Surrogate Standard Recoveries:	
1,2-Dichloroethane-d4	88%
Toluene-d8	99%
4-Bromofluorobenzene	95%

CC01610.KKK <1>

Del Mar Analytical

2852 Alton Avenue, Irvine, California 92714 (714) 261-1022 FAX (714) 261-1228

Kennedy Jenks Consultants
17310 Redhill, Suite 220
Irvine, CA 92714
Attention: Bill Blazen

Client Project ID: DAC

Sample Descript: Water, WCC-3D-4
Lab Number: CC01610

Sampled: Mar 16, 1993
Received: Mar 16, 1993
Analyzed: Mar 19, 1993
Reported: Mar 30, 1993

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L, (ppb)	Sample Result µg/L, (ppb)
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	5.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	5.0	N.D.
2-Chloroethyl vinyl ether	2.0	N.D.
Chloroform	2.0	N.D.
Chloromethane	5.0	N.D.
1,1-Dichloroethane	**2.0**	**6.0**
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	**5.0**	**>500**
cis-1,2-Dichloroethene	**2.0**	**2.0**
trans-1,2-Dichloroethene	**2.0**	**9.0**
1,2-Dichloropropane	2.0	N.D.
cis-1,3-Dichloropropene	2.0	N.D.
trans-1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	10	N.D.
4-Methyl-2-pentanone	5.0	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	**2.0**	**6.0**
1,1,1-Trichloroethane	**2.0**	**>500**
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	**2.0**	**50**
Trichlorofluoromethane	5.0	N.D.
Vinyl acetate	5.0	N.D.
Vinyl chloride	5.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. High concentration analytes which exceed the calibration range of the detector are reported as >500 µg/L. Due to instrument saturation, the above results are semi-quantitative and not reproducible.

DEL MAR ANALYTICAL, IRVINE (ELAP #1197)

Gary Steube
Laboratory Director

CC01611.KKK <2>

Del Mar Analytical

2852 Alton Avenue Irvine California 92714 (714) 261-1022 FAX (714) 261-1228

Duplicate of Sample WCC-3D-4

Kennedy Jenks Consultants
17310 Redhill Ave., Suite 220
Irvine, CA 92714
Attention: Bill Bazlen

Client Project ID: DAC

Sample Descript: Water, DW031693
Lab Number: CC01611

Sampled: Mar 16, 1993
Received: Mar 16, 1993
Analyzed: Mar 23, 1993
Reported: Mar 24, 1993

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Result µg/L
Acetone	200.0	N.D.
Benzene	40.0	N.D.
Bromodichloromethane	40.0	N.D.
Bromoform	40.0	N.D.
Bromomethane	100.0	N.D.
2-Butanone	200.0	N.D.
Carbon disulfide	100.0	N.D.
Carbon tetrachloride	100.0	N.D.
Chlorobenzene	40.0	N.D.
Chlorodibromomethane	40.0	N.D.
Chloroethane	100.0	N.D.
2-Chloroethyl vinyl ether	40.0	N.D.
Chloroform	40.0	N.D.
Chloromethane	100.0	N.D.
1,1-Dichloroethane	40.0	N.D.
1,2-Dichloroethane	40.0	N.D.
1,1-Dichloroethene	100.0	1,000
cis-1,2-Dichloroethene	40.0	N.D.
trans 1,2-Dichloroethene	40.0	N.D.
1,2-Dichloropropane	40.0	N.D.
cis 1,3-Dichloropropene	40.0	N.D.
trans 1,3-Dichloropropene	40.0	N.D.
Ethylbenzene	40.0	N.D.
2-Hexanone	200.0	N.D.
Methylene chloride	200.0	N.D.
4-Methyl-2-pentanone	100.0	N.D.
Styrene	40.0	N.D.
1,1,2,2-Tetrachloroethane	40.0	N.D.
Tetrachloroethene	40.0	N.D.
Toluene	40.0	N.D.
1,1,1-Trichloroethane	40.0	2,000
1,1,2-Trichloroethane	40.0	N.D.
Trichloroethene	40.0	47
Trichlorofluoromethane	100.0	N.D.
Vinyl acetate	100.0	N.D.
Vinyl chloride	100.0	N.D.
Total Xylenes	40.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

DEL MAR ANALYTICAL

Gary Steube
Laboratory Director

Surrogate Standard Recoveries:	
1,2-Dichloroethane-d4	93%
Toluene-d8	96%
4-Bromofluorobenzene	96%

CC01610.KKK <2>

Del Mar Analytical

2852 Alton Avenue Irvine California 92714 (714) 261 1022 FAX (714) 261 1228

Duplicate of Sample [illegible]-4

Kennedy Jenks Consultants
17310 Redhill, Suite 220
Irvine, CA 92714
Attention: Bill Blazen

Client Project ID: DAC

Sample Descript: Water, DW031693
Lab Number: CC01611

Sampled: Mar 16, 1993
Received: Mar 16, 1993
Analyzed: Mar 19, 1993
Reported: Mar 30, 1993

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	5.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	5.0	N.D.
2-Chloroethyl vinyl ether	2.0	N.D.
Chloroform	2.0	N.D.
Chloromethane	5.0	N.D.
1,1-Dichloroethane	**2.0**	**6.0**
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	**5.0**	**>500**
cis-1,2-Dichloroethene	**2.0**	**2.0**
trans-1,2-Dichloroethene	**2.0**	**9.0**
1,2-Dichloropropane	2.0	N.D.
cis-1,3-Dichloropropene	2.0	N.D.
trans-1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	10	N.D.
4-Methyl-2-pentanone	5.0	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	**2.0**	**6.0**
1,1,1-Trichloroethane	**2.0**	**>500**
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	**2.0**	**47**
Trichlorofluoromethane	5.0	N.D.
Vinyl acetate	5.0	N.D.
Vinyl chloride	5.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. High concentration analytes which exceed the calibration range of the detector are reported as >500 µg/L. Due to instrument saturation, the above results are semi-quantitative and not reproducible.

DEL MAR ANALYTICAL, IRVINE (ELAP #1197)

Gary Steube
Laboratory Director

CC01611.KKK <1>

Del Mar Analytical

2852 Alton Avenue, Irvine, California 92714 (714) 261-1022 FAX (714) 261-1228

Kennedy Jenks Consultants
17310 Redhill Ave., Suite 220
Irvine, CA 92714
Attention: Bill Bazlen

Client Project ID: DAC

Sample Descript: Water, DAC-P1-4
Lab Number: CC01895

Sampled: Mar 18, 1993
Received: Mar 18, 1993
Analyzed: Mar 25, 1993
Reported: Mar 26, 1993

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Result µg/L
Acetone	1,250.0	N.D.
Benzene	250.0	N.D.
Bromodichloromethane	250.0	N.D.
Bromoform	250.0	N.D.
Bromomethane	625.0	N.D.
2-Butanone	1,250.0	N.D.
Carbon disulfide	625.0	N.D.
Carbon tetrachloride	625.0	N.D.
Chlorobenzene	250.0	N.D.
Chlorodibromomethane	250.0	N.D.
Chloroethane	625.0	N.D.
2-Chloroethyl vinyl ether	250.0	N.D.
Chloroform	250.0	N.D.
Chloromethane	625.0	N.D.
1,1-Dichloroethane	250.0	N.D.
1,2-Dichloroethane	250.0	N.D.
1,1-Dichloroethene	625.0	N.D.
cis-1,2-Dichloroethene	250.0	N.D.
trans 1,2-Dichloroethene	250.0	N.D.
1,2-Dichloropropane	250.0	N.D.
cis 1,3-Dichloropropene	250.0	N.D.
trans 1,3-Dichloropropene	250.0	N.D.
Ethylbenzene	250.0	N.D.
2-Hexanone	1,250.0	N.D.
Methylene chloride	1,250.0	N.D.
4-Methyl-2-pentanone	625.0	N.D.
Styrene	250.0	N.D.
1,1,2,2-Tetrachloroethane	250.0	N.D.
Tetrachloroethene	250.0	N.D.
Toluene	250.0	260
1,1,1-Trichloroethane	250.0	N.D.
1,1,2-Trichloroethane	250.0	N.D.
Trichloroethene	250.0	21,000
Trichlorofluoromethane	625.0	N.D.
Vinyl acetate	625.0	N.D.
Vinyl chloride	625.0	N.D.
Total Xylenes	250.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

DEL MAR ANALYTICAL

Gary Steube
Laboratory Director

Surrogate Standard Recoveries:	
1,2-Dichloroethane-d4	107%
Toluene-d8	98%
4-Bromofluorobenzene	89%

CC01891.KKK <5>

Del Mar Analytical

2852 Alton Avenue Irvine California 92714 (714) 261-1022 FAX (714) 261-1228

Kennedy Jenks Consultants
17310 Redhill, Suite 220
Irvine, CA 92714
Attention: Bill Blazen

Client Project ID: DAC

Sample Descript: Water, DAC-P1-4
Lab Number: CC01895

Sampled: Mar 18, 1993
Received: Mar 18, 1993
Analyzed: Mar 23, 1993
Reported: Mar 30, 1993

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)
Acetone	10	N.D.
Benzene	**2.0**	**5.0**
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	5.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	5.0	N.D.
2-Chloroethyl vinyl ether	2.0	N.D.
Chloroform	**2.0**	**44**
Chloromethane	5.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	**5.0**	**21**
cis-1,2-Dichloroethene	**2.0**	**68**
trans-1,2-Dichloroethene	**2.0**	**2.0**
1,2-Dichloropropane	2.0	N.D.
cis-1,3-Dichloropropene	2.0	N.D.
trans-1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	10	N.D.
4-Methyl-2-pentanone	**5.0**	**7.0**
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	**2.0**	**10**
Toluene	**2.0**	**>100**
1,1,1-Trichloroethane	**2.0**	**44**
1,1,2-Trichloroethane	**2.0**	**5.0**
Trichloroethene	**2.0**	**>100**
Trichlorofluoromethane	5.0	N.D.
Vinyl acetate	5.0	N.D.
Vinyl chloride	5.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. High concentration analytes which exceed the calibration range of the detector are reported as >100 µg/L. Due to instrument saturation, the above results are semi-quantitative and not reproducible.

DEL MAR ANALYTICAL, IRVINE (ELAP #1197)

Gary Steube
Laboratory Director

CC01611.KKK <10>

Del Mar Analytical

2852 Alton Avenue, Irvine, California 92714 (714) 261-1022 FAX (714) 261-1228

Kennedy Jenks Consultants
17310 Redhill, Suite 220
Irvine, CA 92714
Attention: Bill Bazlen

Client Project ID: DAC

Sample Descript: Water, TB #2
Lab Number: CC01699

Sampled: Mar 17, 1993
Received: Mar 17, 1993
Analyzed: Mar 22, 1993
Reported: Mar 25, 1993

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Result µg/L
Acetone	10.0	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	5.0	N.D.
2-Butanone	10.0	N.D.
Carbon disulfide	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	5.0	N.D.
2-Chloroethyl vinyl ether	2.0	N.D.
Chloroform	2.0	N.D.
Chloromethane	5.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	5.0	N.D.
cis-1,2-Dichloroethene	2.0	N.D.
trans 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10.0	N.D.
Methylene chloride	10.0	N.D.
4-Methyl-2-pentanone	5.0	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl acetate	5.0	N.D.
Vinyl chloride	5.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL

Gary Steube
Laboratory Director

Surrogate Standard Recoveries:	
1,2-Dichloroethane-d4	103%
Toluene-d8	109%
4-Bromofluorobenzene	91%

CC01692.KKK <8>

LABORATORY QUALITY CONTROL
DATA SHEETS

Del Mar Analytical

2852 Alton Avenue, Irvine California 92714 (714) 261-1022, FAX (714) 261-1228

QC DATA REPORT

EPA METHOD 624
Matrix: water

DATE: 3/22/93

SAMPLE # CC02015

Analyte	R1	Sp	MS	MSD	PR1	PR2	RPD	MEAN PR
	ppb	ppb	ppb	ppb	%	%	%	%
1,1-Dichloroethene	4	50	51	51	94%	94%	0.0%	94%
Trichloroethene	0	50	49	51	98%	102%	4.0%	100%
Chlorobenzene	0	50	48	50	96%	100%	4.1%	98%
Benzene	0	50	52	51	104%	102%	1.9%	103%
Toluene	0	50	52	52	104%	104%	0.0%	104%

Definition of Terms:

R1..... Result of Sample Analysis

Sp..... Spike Concentration Added to Sample

MS..... Matrix Spike Result

MSD..... Matrix Spike Duplicate Result

PR1..... Percent Recovery of MS; ((MS-R1) / SP) X 100

PR2..... Percent Recovery of MSD; ((MSD-R1) / SP) X 100

RPD..... Relative Percent Difference; ((MS-MSD)/(MS+MSD)/2)) X 100

Del Mar Analytical

Del Mar Analytical

2852 Alton Avenue, Irvine California 92714 714/261-1022 FAX 714/261-1228

QC DATA REPORT

EPA METHOD 624
Matrix: water

DATE: 3/22/93

SAMPLE # CC02015

Analyte	R1	Sp	MS	MSD	PR1	PR2	RPD	MEAN PR
	ppb	ppb	ppb	ppb	%	%	%	%
1,1-Dichloroethene	4	50	51	51	94%	94%	0.0%	94%
Trichloroethene	0	50	49	51	98%	102%	4.0%	100%
Chlorobenzene	0	50	48	50	96%	100%	4.1%	98%
Benzene	0	50	52	51	104%	102%	1.9%	103%
Toluene	0	50	52	52	104%	104%	0.0%	104%

Definition of Terms:

R1..... Result of Sample Analysis

Sp..... Spike Concentration Added to Sample

MS..... Matrix Spike Result

MSD..... Matrix Spike Duplicate Result

PR1..... Percent Recovery of MS; ((MS-R1) / SP) X 100

PR2..... Percent Recovery of MSD; ((MSD-R1) / SP) X 100

RPD..... Relative Percent Difference; ((MS-MSD)/(MS+MSD)/2)) X 100

Del Mar Analytical

GROUNDWATER SAMPLING RECORD

Facility Name DAC Date 3/16/93

Well Number WCC-105 Well Depth 90 Well Diameter 4" Casing Material PVC

Sampling Crew MW, Beylik, _____

Type of Pump Submersible Sampler SS Bailer

Weather Conditions clear, 70's

Time	Water Level	Pump	Volume Pumped (gal)	Pumping Rate (gpm)	Sample Collection	Temp (°C)	pH	Cond (µS)	Clarity
	69.76								
1520		ON							
1525			2			24	7.94	960	clear
1527			10			24	7.82	830	clear
1529			20			24	7.82	820	clear
1530			25			24	7.61	820	clear
1531			30			24	7.61	820	clear
1532			35			24	7.62	820	clear
1533			40			24	7.61	810	clear
1534			45			24	7.59	810	clear
1548					WCC-105-A				

3 Well Volumes = (90 - 69.76) x 0.65 x 3 = 39.5 gal.

Reference Well Volumes
2" well=0.16 gal/ft
4" well=0.65 gal/ft
6" well=1.5 gal/ft

GROUNDWATER SAMPLING RECORD

Facility Name DAC Date 3/17/93

Well Number WCC-2S Well Depth 90.5 Well Diameter 4" Casing Material PVC

Sampling Crew MW, Berlik, ____, ____

Type of Pump Submersible Sampler SS bailer

Weather Conditions clear, 60's

Time	Water Level	Pump	Volume Pumped (gal)	Pumping Rate (gpm)	Sample Collection	Temp (°C)	pH	Cond (µS)	Clarity
	69.56								
738		ON							
739			2			26	9.10	1160	Sl. silty
742			10			24	8.46	1140	Sl. silty
744			20			24	8.18	1100	Sl. silty
746			25			24	8.07	1080	Sl. silty
747			30			24	7.99	1080	Sl. silty
749			35			24	7.94	1060	Sl. silt
750			40			24	7.90	1050	Clear
752			45			24	7.90	1050	Clear
753		off							
810					WCC-2S-4				
					DUP031793				
	66.59								

3 Well Volumes = $(90.5 - 69.56) \times 0.65 \times 3 = 41$ gal.

Reference Well Volumes
2" well=0.16 gal/ft
4" well=0.65 gal/ft
6" well=1.5 gal/ft

GROUNDWATER SAMPLING RECORD

Facility Name DAC Date 3/17/93

Well Number WCC-12S Well Depth 90.5 Well Diameter 4" Casing Material PVC

Sampling Crew MW, Beylik, ____, ____

Type of Pump Submersible Sampler SS bailer

Weather Conditions Clear, 70's

Time	Water Level	Pump	Volume Pumped (gal)	Pumping Rate (gpm)	Sample Collection	Temp (°C)	pH	Cond (µS)	Clarity
	66.47								
848		ON							
843			2			24	7.81	1100	Silty
850			10			24	7.93	980	Silty
857			20			25	7.83	950	Sl. Silty
902			25			25	7.78	940	Sl. Silty
907			30			25	7.77	950	Sl. Silty
909			35			25	7.77	990	Clear
911			40			25	7.75	990	Clear
913			45			25	7.73	1000	Clear
915			50			25	7.71	990	Clear
	66.54								
930					WCC-12S-4				

3 Well Volumes = (90.5 - 66.47) x 0.65 x 3 = 47 gal

Reference Well Volumes
2" well=0.16 gal/ft
4" well=0.65 gal/ft
6" well=1.5 gal/ft

GROUNDWATER SAMPLING RECORD

Facility Name DAL Date 3-17-93

Well Number WCC-7S Well Depth 90' Well Diameter 4" Casing Material PVC

Sampling Crew MW, Beylik, ____, ____

Type of Pump submersible Sampler SS bailer

Weather Conditions Clear, 70's

Time	Water Level	Pump	Volume Pumped (gal)	Pumping Rate (gpm)	Sample Collection	Temp (°C)	pH	Cond (µS)	Clarity
	67.90								
959		ON							
1000			2			26	7.82	950	Silty
1006			10			25	7.84	830	clear
1011			20			25	7.85	810	clear
1015			25			25	7.81	810	clear
1018			30			25	7.79	810	clear
1021			35			25	7.77	810	clear
1024			40			25	7.75	800	clear
1027			45			25	7.75	800	clear
1028	67.96	off							
1045					WCC-7S-4				

3 Well Volumes = (90 - 67.90) x 0.65 x 3 = 43 gal.

Reference Well Volumes
2" well=0.16 gal/ft
4" well=0.65 gal/ft
6" well=1.5 gal/ft

GROUNDWATER SAMPLING RECORD

Facility Name DAC Date 3-17-93

Well Number WCC-4S Well Depth 90.5' Well Diameter 4" Casing Material PVC

Sampling Crew MW, Beylik, ____, ____

Type of Pump Submersible Sampler SS Bailer

Weather Conditions Clear, 70's

Time	Water Level	Pump	Volume Pumped (gal)	Pumping Rate (gpm)	Sample Collection	Temp (°C)	pH	Cond (µS)	Clarity
	68.85								
1108		ON							
1109			2			27	7.79	1250	Silty
1112			10			25	7.73	1260	clear
1115			20			25	7.73	1150	clear
1118			25 30			25	7.76	1150	clear
1120			30			25	7.74	1060	clear
1123			35			25	7.72	1040	clear
1125			40			25	7.72	1010	clear
1127			45			26	7.71	1010	clear
1128	68.89	off							
1144					WCC-4S-4				

3 Well Volumes = $(90.5 - 68.85) \times 0.65 \times 3 = 42$ gal.

Reference Well Volumes
2" well=0.16 gal/ft
4" well=0.65 gal/ft
6" well=1.5 gal/ft

GROUNDWATER SAMPLING RECORD

Facility Name DAC Date 3-17-93

Well Number WCC-8S Well Depth 89.5 Well Diameter 4" Casing Material PVC

Sampling Crew MW, Beylik, ____, ____

Type of Pump Submersible Sampler SS bailer

Weather Conditions Clear, 70's

Time	Water Level	Pump	Volume Pumped (gal)	Pumping Rate (gpm)	Sample Collection	Temp (°C)	pH	Cond (µS)	Clarity
	68.93								
1306		ON							
1306			2			26	7.23	1520	Silty
1309			10			25	7.57	1530	Clear
1314			20			25	7.55	1420	clear
1316			25			25	7.52	1360	clear
1318			30			25	7.48	1350	clear
1320			35			25	7.50	1370	clear
1322			40			25	7.57	1350	Clear
1323	69.45	off							
1347					WCC-8S-A				

3 Well Volumes = (89.5-68.93)x0.65x3 = 40 gal.

Reference Well Volumes
2" well=0.16 gal/ft
4" well=0.65 gal/ft
6" well=1.5 gal/ft

GROUNDWATER SAMPLING RECORD

Facility Name DAC Date 3-17-93

Well Number UCC-6S Well Depth 91 Well Diameter 4" Casing Material PVC

Sampling Crew MW, Beylik, _____

Type of Pump Submersible Sampler SS bailer

Weather Conditions clear, 70's

Time	Water Level	Pump	Volume Pumped (gal)	Pumping Rate (gpm)	Sample Collection	Temp (°C)	pH	Cond (µS)	Clarity
	67.80								
1410		ON							
1411			2			25	7.52	1310	Black, silty, solvent odor med.
1414			10			24	7.57	1180	"
1418			20			25	7.51	1120	clear, solvent odor
1420			25			25	7.44	1110	"
1422			30			25	7.31	1090	"
1424			35			25	7.29	1090	"
1426			40			25	3.30	1090	"
1428			45			25	7.30	1090	"
1429	70.18	off							

3 Well Volumes = (91 - 67.80) x 0.65 ÷ 3 = 45 gal.

Reference Well Volumes
2" well = 0.16 gal/ft
4" well = 0.65 gal/ft
6" well = 1.5 gal/ft

GROUNDWATER SAMPLING RECORD

Facility Name DAC Date 3-18-93

Well Number WCC-1S Well Depth 88.5 Well Diameter 2" Casing Material PVC

Sampling Crew MW, Beylik

Type of Pump SS Bailer Sampler SS Bailer

Weather Conditions Clear, 60's

Time	Water Level	Pump	Volume Pumped (gal)	Pumping Rate (gpm)	Sample Collection	Temp (°C)	pH	Cond (µS)	Clarity
	68.77								
716	Start bailing								
724			1			24	8.45	1360	Silty, *sandy
732			2			24	7.85	1360	Silty, Sandy
741			3			24	7.84	1360	Silty, Sandy
746			4			24	7.84	1360	Silty, Sandy
757			5			24	7.78	1410	Silty, sandy
805			6			23	7.75	1360	Silty, sandy
810			7			24	7.74	1350	Silty, sandy
815			8			24	7.75	1340	Silty, sandy
817			9			24	7.74	1350	Silty, sandy
822			10			24	7.75	1350	Silty, sandy
	70.16								

3 Well Volumes = (88.5 - 68.77) × 0.16 × 3 = 9.5 gal.

Reference Well Volumes
2" well=0.16 gal/ft
4" well=0.65 gal/ft
6" well=1.5 gal/ft

* Sand in the well.
well depth = 84.30' bgs

GROUNDWATER SAMPLING RECORD

Facility Name DAC Date 3-18-93

Well Number WCC-3S Well Depth 89 Well Diameter 4" Casing Material PVC

Sampling Crew MW, Beylik, ____, ____

Type of Pump Submersible Sampler SS bailer

Weather Conditions Clear, 60's

Time	Water Level	Pump	Volume Pumped (gal)	Pumping Rate (gpm)	Sample Collection	Temp (°C)	pH	Cond (µS)	Clarity
	70.33								
849		ON	2			~~23~~	~~7.64~~	~~1890~~	~~Sl. silty~~
851			2			23	7.64	1890	Sl. silty, mod solvent odor
855			10			24	7.45	1720	" "
859			15			24	7.27	1700	clear, solvent odor
901			20			24	7.73	1690	clear, solvent odor
904			25			24	7.15	1680	clear, solvent odor
907			30			24	7.20	1680	clear, solvent odor
909			35			24	7.21	1670	clear, odor
913			40			24	7.19	1670	clear, solvent odor
914	70.35	off							
920					WCC-3S-4				

3 Well Volumes = (89-70.33)x0.65x3 = 36 gal.

Reference Well Volumes
2" well=0.16 gal/ft
4" well=0.65 gal/ft
6" well=1.5 gal/ft

GROUNDWATER SAMPLING RECORD

Facility Name DAC Date 3-18-93

Well Number DAC-P1 Well Depth 90' Well Diameter 4" Casing Material PVC

Sampling Crew mw, Berlik, ____, ____

Type of Pump Submersible Sampler SS Bailer

Weather Conditions Clear, 70's

Time	Water Level	Pump	Volume Pumped (gal)	Pumping Rate (gpm)	Sample Collection	Temp (°C)	pH	Cond (µS)	Clarity
	70.20								
1013		on							
1014			2			29	7.72	1400	silty; solvent odor
1019			10			25	7.78	1310	sl. silty, solvent odor
1025			20			25	7.72	1300	sl. silty, solvent odor
1029			25			25	7.73	1300	clear, solvent odor
1034			30			25	7.68	1340	clear, solvent odor
1038			35			25	7.75	1330	clear, solvent odor
1044			40			25	7.74	1330	clear, solvent odor
1044	70.38	off							
1100					DAC-P1-4				

3 Well Volumes = (90 - 70.20) x 0.65 x 3 = 39 gal.

Reference Well Volumes
2" well=0.16 gal/ft
4" well=0.65 gal/ft
6" well=1.5 gal/ft

APPENDIX C

CHAIN-OF-CUSTODY RECORDS

Del Mar Analytical

2852 Alton Avenue
Irvine, California 92714
(714) 261-1022
FAX (714) 261-1228

1014 E. Cooley Dr., Suite A
Colton, California 92324
(909) 370-4667
FAX (909) 370-1046

16525 Sherman Way, Suite C-11
Van Nuys, California 91406
(818) 779-1844
FAX (818) 779-1843

12341

CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

Client Name/Address: Kennedy/Jenks Consul. 17310 Red Hill Ave #220 Irvine, CA 92714

Project: DAC

Project Manager: Bill Bazlen

Sampler: Mark Walden

Analysis Required: 8240

Sample Description	Sample Matrix	Container Type	# of Cont	Sampling Date/Time	Preservatives	8240								Special Instructions
WCC-3D-4	Water	40ml VOA	3	3/16/93/1015	HCl	X								Please use lowest detection limit possible
DW031693	Water	40ml VOA	3	3/16/93	HCl	X								"
WCC-1D-4	Water	40ml VOA	3	3/16/93/1143	HCl	X								"
WCC-5S-0	Water	40ml VOA	3	3/16/93/1243	HCl	X								"
WCC-9S-4	Water	40ml VOA	3	3/16/93/1345	HCl	X								"
WCC-11S-4	Water	40ml VOA	3	3/16/93/1448	HCl	X								"
WCC-10S-4	Water	40ml VOA	3	3/16/93/1548	HCl	X								"
FB031693	Water	40ml VOA	1	3/16/93/1453	HCl	X								"
TB #1	Water	40ml VOA	1	3/16/93		X								"

Relinquished By: Mark Walden — Date/Time: 3/16/93/500

Relinquished By: — Date/Time:

Relinquished By: — Date/Time:

Note: Samples will be disposed of after 30 days

Received By: — Date/Time:

Received By: — Date/Time:

Received in Lab By: Kim Martel — Date/Time: 3/16/93 500

Turnaround Time (check)
same day ____ 72 hours ____
24 hours ____ 5 days ____
48 hours ____ normal X

Sample Integrity (check)
intact X — office X

Del Mar Analytical

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(714) 261-1022
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16525 Sherman Way, Suite C-11
Van Nuys, California 91406
(818) 779-1844
FAX (818) 779-1843

12351

CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

Client Name/Address: Kennedy Jenks Consultants, 17310 Red Hill #220, Irvine, CA 92714

Project: DAC

Project Manager: Bill Bazlen

Sampler: Mark Walden

Analysis Required: 8240

Sample Description	Sample Matrix	Container Type	# of Cont	Sampling Date/Time	Preservatives	8240								Special Instructions
WCC-25-4	Water	VOA(40ml)	3	3-17-93/830	HCl	X								Please use lowest detection limit possible
DW031793	Water	40ml VOA	3	3-17-93/	HCl	X								"
WCC-125-4	Water	40ml VOA	3	3-17-93/930	HCl	X								"
WCC-75-4	Water	40ml VOA	3	3-17-93/1045	HCl	X								"
WCC-05-4	Water	40ml VOA	3	3-17-93/1144	HCl	X								"
WCC-85-4	Water	40ml VOA	3	3-17-93/1317	HCl	X								"
WCC-65-4	Water	40ml VOA	3	3-17-93/1445	HCl	X								"
TB#2	Water	40ml VOA	1	3-17-93/		X								"
FB31793	Water	40ml VOA	1	3-17-93/1410	HCl	X								"

Relinquished By	Date/Time	Received By	Date/Time
Mark L. Walden	3-17-93 1600		
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received in Lab By	Date/Time
		Kimi Martell	3/17/93 16:00

Note: Samples will be disposed of after 30 days

Turnaround Time (check)
same day ____ 72 hours ____
24 hours ____ 5 days ____
48 hours ____ normal X

Sample Integrity (check)
intact X on ice X

Del Mar Analytical

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16525 Sherman Way, Suite C-11
Van Nuys, California 91406
(818) 779-1844
FAX (818) 779-1843

12337

CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

Client Name/Address: Kennedy Jenks Consultants, 17310 Red Hill Ave #320, Irvine, CA 92714

Project: DAC

Project Manager: Bill Bazlen

Sampler: Mark Walden

Analysis Required: 8240

Sample Description	Sample Matrix	Container Type	# of Cont	Sampling Date/Time	Preservatives	8240	Special Instructions
WCC-15-4	Water	40ml VOA	3	3-18-93/830	HCl	X	Please use lowest detection limit possible
FB031893	Water	40ml VOA	1	3-18-93/849	HCl	X	"
DUP031893	Water	40ml VOA	3	3-18-93	HCl	X	"
WCC-35-4	Water	40ml VOA	3	3-18-93/970	HCl	X	"
DAC-P1-4	Water	40ml VOA	3	3-18-93/1100	HCl	X	"
TB#3	Water	40ml VOA	1	3-18-93		X	"

Relinquished By: Mark Walden Date/Time: 3-18-93/1300

Relinquished By: Date/Time:

Relinquished By: Date/Time:

Note: Samples will be disposed of after 30 days

Received By: Date/Time:

Received By: Date/Time:

Received in Lab By: [illegible] Date/Time: 3/18/93 1300

Turnaround Time (check): Same day ___ 72 hours ___ 24 hours ___ 5 days ___ 48 hours ___ normal X

Sample Integrity (check): intact ✓ on ice ✓

SUPPLY REQUISITION

TO: SERVICE SECTION

TE: 11/13/96 DUE DATE:

CLIENT: TELE EXT.: 6706

QUESTED BY: R. Protho EMP. NUM: 5733

CHARGE TO
JOB NUMBER:
OR
COST CENTER: 11540 .8604

ITEM	QUAN.	DESCRIPTION	(FOR SERVICES SECTION USE)
1	30	3 hole Punched Paper	
2			
3			
4			
5			
6			
7			
8			
9			
10			
1			
12			
13			
4			
15			
16			
7			
18			
19			
0			

completed

SPECIAL INSTRUCTIONS:

PLEASE INCLUDE FORM NO. IN REQUESTING FORMS

COMPLETED BY:

SO-41 (REV. 6/86)

BOE-C6-0015961