HALEY & ALDRICH

BOEING REALTY CORPORATION
FORMER C-6 FACILITY
LOS ANGELES, CALIFORNIA

TECHNICAL MEMORANDUM

TEMPORARY GROUNDWATER MONITORING WELL CONVERSION

To: **Mr. Brian Mossman**
Boeing Realty Corporation
3855 Lakewood Blvd.
Building 1A MC D001-0097
Long Beach, CA 90846

From: **Haley & Aldrich, Inc.**

Date: **March 29, 2002**

Re: **Temporary Groundwater Monitoring Well Conversion Report, Boeing Realty Corporation, Former C-6 Facility, Los Angeles, California**

Haley & Aldrich, Inc. has prepared this technical memorandum summarizing field activities during the conversion of nine Temporary Monitoring Wells (TMWs) to permanent groundwater monitoring wells at the former Boeing C-6 Facility (subject property), in Los Angeles, California (Figure 1).

Wells TMW-1 through TMW-9 were installed as temporary groundwater monitoring wells by Kennedy/Jenks Consultants (Kennedy/Jenks) in 1998 as part of a program to obtain preliminary groundwater quality data at locations within Parcel C of the subject property. The locations of the wells and former locations of the buildings are shown on Figure 2. Since the wells were intended to be temporary, the annular space between the filter pack bentonite seal and the surface seal was not grouted. These wells, however, have become part of the site-wide groundwater monitoring program and were converted to permanent groundwater monitoring wells on 20 November 2001 by grouting the annualr space. The following sections discuss the well conversion activities.

1.0 BACKGROUND

1.1 SITE LOCATION AND DESCRIPTION

The subject property comprises approximately 170 acres at 19503 South Normandie Avenue in Los Angeles, California. The subject property is bordered on the north by West 190th Street; on the east by South Normandie Avenue; on the south by Montrose Chemical Company; and on the west by Western Avenue, the former Capitol Metals, and International Light Metals facilities.

The Douglas Aircraft Company used the facility to manufacture aircraft and aircraft components from 1952 until approximately 1992. The site was purchased by the Boeing Company in 1997 and was vacated in 1998 to facilitate redevelopment. Aboveground and underground structures have been removed and the site has been graded.

Boeing Realty Corporation
3760 Kilroy Airport Way, Suite 500
Long Beach, CA 90806
Telephone: 562-627-4900
FAX: 562-627-4906

04 April 2002
C6-BRC-T-02-006

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
Los Angeles Region
320 W. 4th Street, Suite 200
Los Angeles, CA 90013

BOEING

Attention: John Geroch

Subject: **TEMPORARY GROUNDWATER MONITORING WELL CONVERSION REPORT, FOR BOEING REALTY CORPORATION, FORMER C-6 FACILITY, 19503 SOUTH NORMANDIE AVENUE, LOS ANGELES, CA**

Dear Mr. Geroch:

Please find enclosed for your review, a copy of the subject document prepared by Haley & Aldrich for Boeing Realty Corporation.

If you have any questions concerning this document, please contact the undersigned at 562-593-8623.

Sincerely,

Stephanie Sibbett
Boeing Realty Corporation

Cc: Mario Stavale, Boeing Realty Corporation

enclosure

1.2 HYDROGEOLOGY/GEOLOGY

The hydrogeologic units relevant to this scope of work are comprised of Holocene and Pleistocene-age alluvium deposits. The upper portions of the subject property geology from ground surface to approximately 140 feet below ground surface (bgs) are composed of the Bellflower Aquiclude consisting of clays, silts, and fine sands (Montgomery Watson, 1994).

At the subject property, groundwater occurs at approximately 60 to 70 feet bgs in a semi-perched aquifer flowing south-southeast at an approximate hydraulic gradient of 0.0007 feet per foot (ft/ft) to 0.0027 ft/ft (Kennedy/Jenks 2000b). Groundwater at the subject property is primarily impacted with the volatile organic compounds trichloroethene (TCE), 1,1-dichloroethylene (1,1-DCE), and 1,1,1-trichloroethane (1,1,1-TCA).

2.0 WELL CONVERSION SCOPE OF WORK

The nine TMWs were designed and installed to evaluate shallow groundwater quality within Parcel C of the subject property. As such, the wells were designed to penetrate no deeper than 20 feet into the water table. The annular spaces of the boreholes were left open from approximately 56-feet bgs to within approximately two feet of the surface. The upper two feet of the boreholes were reportedly packed and filled with hydrated bentonite pellets to the surface as described in the Kennedy/Jenks TMW boring logs in Appendix A (Kennedy/Jenks, 1999).

The subject property is currently being redeveloped, however, these wells are part of a continuing groundwater monitoring program. To minimize the potential for surface water infiltration through the ungrouted annular spaces, Haley & Aldrich converted the TMWs to permanent groundwater monitoring wells according to a Work Plan verbally approved by the California Regional Water Quality Control Board, Los Angeles Region (LARWQCB) on November 12, 2001. A copy of the LARWQCB approval letter is included in Appendix C.

Activities associated with the conversion included the removal and inspection of the well vaults and existing surface seal, grouting the annular spaces, and providing surface protection for the nine TMWs. Well conversion activities were performed in general accordance with State of California Water Well Standards as described in Bulletins 74-81 and 74-90.

2.1 WELL HEAD REMOVAL AND INSPECTION

Prior to grouting, existing well vaults and/or the upper bentonite surface seal were removed to expose the well annulus. All of the TMWs are constructed of 2-inch inside diameter (ID), Schedule 40, PVC screen and casing. TMW-2, TMW-4, and TMW-8 had partially buried well vaults that were held in place with concrete and did not have an upper bentonite seal. TMW-1 and TMW-5 had a well vault embedded tightly into the soil around the well casing, with no concrete or bentonite surface seal. TMW-3 had a concrete slab and a piece of black plastic tarp pressed into the well annulus, but the well vault had been removed previously. TMW-7 had a piece of clear plastic sheeting pressed into the well annulus with approximately three inches of bentonite pellets above it forming a surface seal. TMW-6 and TMW-9 were covered with 55-gallon drums, but the well vaults had been removed previously and there was no upper plastic or bentonite surface seal.

Each PVC well casing was checked for competency. This involved lightly pulling on the casing to determine if the casing was cracked or broken. None of the casings appeared to be cracked. The depth of the open annulus was measured to verify the accuracy of the well construction log and to assist in calculating the volume of annular seal grout needed. The well annulus measurements are summarized below:

BOE-C6-0049169

WELL ID	Reported Open Annulus* (feet bgs)	Measured Open Annulus (feet bgs)
TMW-1	56	26
TMW-2	51	23
TMW-3	58	37
TMW-4	56	30
TMW-5	56	40
TMW-6	56.5	35
TMW-7	56	38
TMW-8	56	40
TMW-9	56.5	40

* Value Reported in Kennedy/Jenks Well Construction Logs when installed in 1998.

Current open annular space measurements indicate that the TMW boreholes have partially collapsed since installation in 1998.

2.2 ANNULAR SPACE GROUTING

The approximate volume of grout required to fill the annulus from the filter pack bentonite seal to approximately two feet below expected final grade was calculated prior to mixing grout. Neat cement grout (ASTM C150 – Type I/II Portland Cement) was mixed at a ratio of one 94-pound sack of Portland cement to 5 to 6 gallons of potable water. The grout was mixed in a clean 55-gallon drum using a pneumatic mixing device to provide uniformity and ensure that no lumps exist. The grout was then pumped through a 1.5-inch PVC tremie pipe lowered to the bottom of the well annulus, filling the annulus from the bottom up. The volume of grout placed in the well annulus was recorded. The grout seal was observed for subsidence and "topped-off" as needed to maintain the grout seal within two feet of the ground surface. A summary of the calculated grout volume and total grout used is provided below:

Well ID	Calculated Volume of Grout (cubic feet)	Total Volume of Grout Used (cubic feet)
TMW-1	7.8	8.4
TMW-2	6.9	10.0
TMW-3	11.4	13.4
TMW-4	9.2	10.0
TMW-5	12.4	11.7
TMW-6	10.8	13.4
TMW-7	11.8	13.4
TMW-8	12.4	13.4
TMW-9	12.4	15.0

With the exception of TMW-5, each borehole required more than the estimated amount of grout to fill to 2 feet bgs. It is assumed that the additional grout used was due to filling in the voids of the partially collapsed borehole and loss of grout to the geologic formation. The grout was allowed to settle for several hours. The upper annulus was then filled with hydrated bentonite chips to present site grade.

2.3 SURFACE COMPLETION

Due to continued grading and redevelopment activities on the subject property, the tops of several TMW well casings were below present site grade in surface depressions. To prevent surface water from infiltrating the

well casing or the newly-grouted annular space, the existing PVC well casings were extended to approximately one foot above present site grade using matching diameter, schedule 40, PVC well casing secured with PVC slip couplers and stainless steel screws. Well casing elevations will be were surveyed to an accuracy of 0.01 foot relative to mean sea level by Tait & Associates, Inc. prior to the March 2002 groundwater sampling event. Well casing extension lengths are summarized below:

WELL ID	Approximate PVC Well Casing Extension Added (Feet)
TMW-1	6'
TMW-2	7'
TMW-5	2'
TMW-6	7'
TMW-8	3'

Ten-inch diameter Sonotube forms were placed around the PVC well casing from the ground surface to present site grade. The Sonotubes were then filled with bentonite chips to provide a surface seal and structural support during the compaction of soil around the well. Depressions around the wells were backfilled and compacted by a backhoe with a wheel compactor on November 27 and 28, 2001. Since subject property grading and redevelopment activities are continuing, temporary surface completions were installed. These temporary surface completions consist of a mounded bentonite surface seal to divert surface water, locking well caps, and safety-orange barricade fencing to protect them from truck and equipment. A typical temporary surface completion is shown in Figure 3.

At the completion of subject property redevelopment and establishment of final surface grade, permanent surface protection will be installed consisting of a flush-mount well vault for wells within traffic areas or an aboveground locking protective casing for wells in landscaped areas. A typical flush-mount well vault and aboveground protective casing is shown in Figure 3.

3.0 PERMITTING

Installation of the temporary monitoring wells (TMW-1 through TMW-9) was approved by the LARWQCB on May 20, 1998 (Appendix B). Installation of the nine temporary wells (TMW-1 through TMW-9) was permitted by the County of Los Angeles Department of Health on June 25, 1998. Conversion of the nine temporary monitoring wells was verbally approved by the LARWQCB on November 12, 2001 (Appendix C). No further permitting was required for the conversion of these wells.

4.0 CONCLUSION

Nine temporary groundwater monitoring wells were converted to permanent groundwater monitoring wells on 20 November 2001. The annular spaces of the boreholes above the filter pack screen were grouted with Portland cement grout to prevent water migration through the open annulus. Wells casings were extended to present site grade where necessary, and soil depressions were backfilled and compacted. Temporary surface protection has been provided for the nine TMWs. Permanent well vaults or locking protective casings will be installed as part of future site development.

BOE-C6-0049171

We appreciate this opportunity to be of service. If you have any questions, please do not hesitate to contact the undersigned.

Sincerely yours,
HALEY & ALDRICH, INC.

Richard M. Farson, P.E.
Senior Engineer

Scott P. Zachary
Vice President

REGISTERED PROFESSIONAL ENGINEER
RICHARD M. FARSON
47269
EXPIRES 12/31/03
CIVIL
STATE OF CALIFORNIA

Figures: Figure 1 – Site Location Map
Figure 2 – Site Plan
Figure 3 – Well Completion Details

Appendices: Appendix A – TMW Boring Logs
Appendix B – TMW Installation Approval Letter
Appendix C – TMW Conversion Approval Letter

References: Kennedy/Jenks. 1999. Installation of Temporary Monitoring Wells Area of Buildings 1 and 2. Volume 1. Boeing Realty Corporation, C-6 Facility. Los Angeles, California. October.

Kennedy/Jenks. 2000b. Groundwater Monitoring Report, 2nd Quarter 2000, Boeing Realty Corporation's C-6 Facility, Los Angeles, CA. July.

Montgomery Watson. 1994. Conceptual Design of Final Soil and Groundwater Remediation System at the Douglas Aircraft Company. March.

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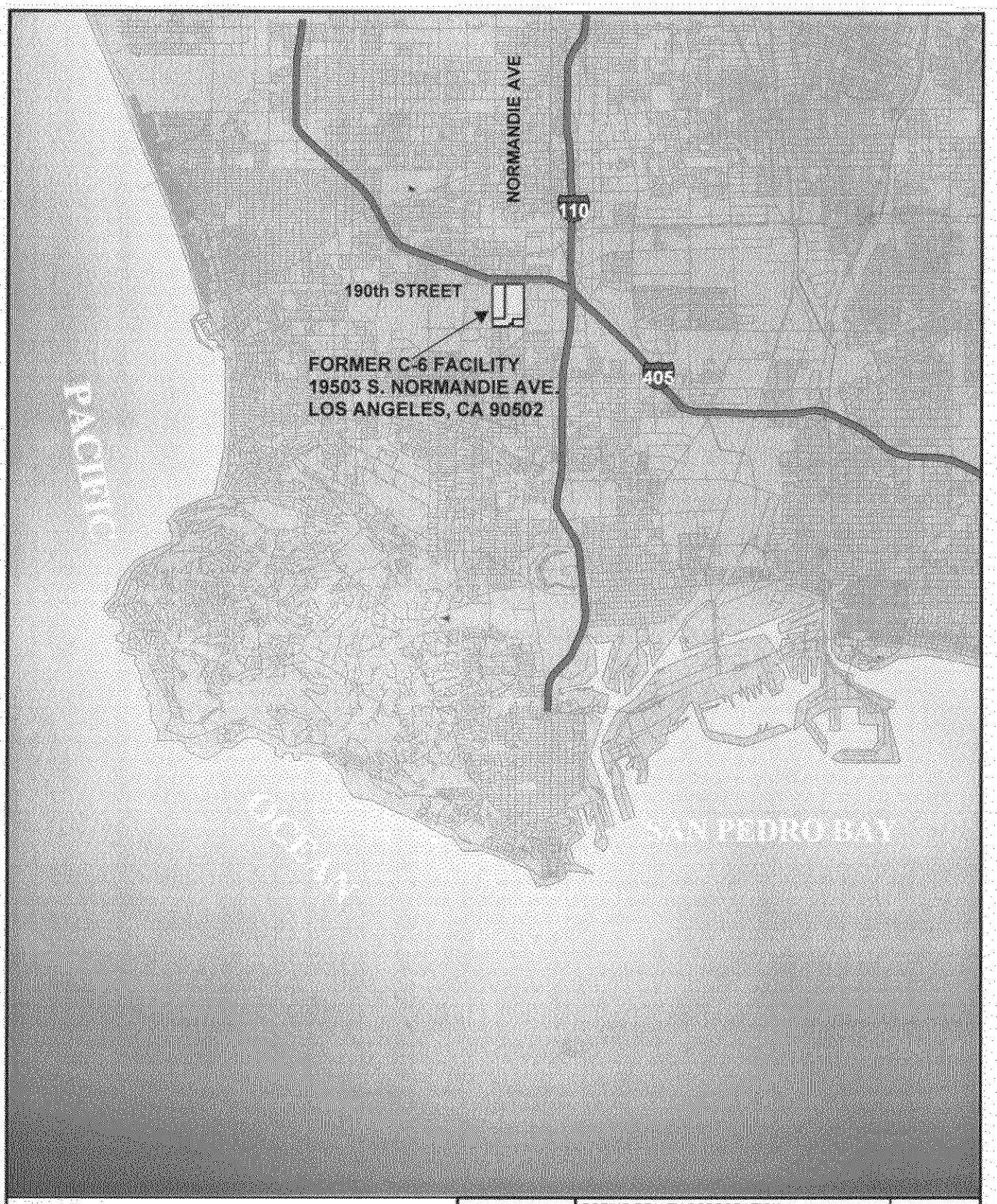
Confidential

Figures



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2 1 0 2 Miles

HALEY & ALDRICH

UNDERGROUND ENGINEERING & ENVIRONMENTAL SOLUTIONS

BOEING REALTY CORPORATION
FORMER C-6 FACILITY
LOS ANGELES, CALIFORNIA

FIGURE : 1

SITE LOCATION PLAN

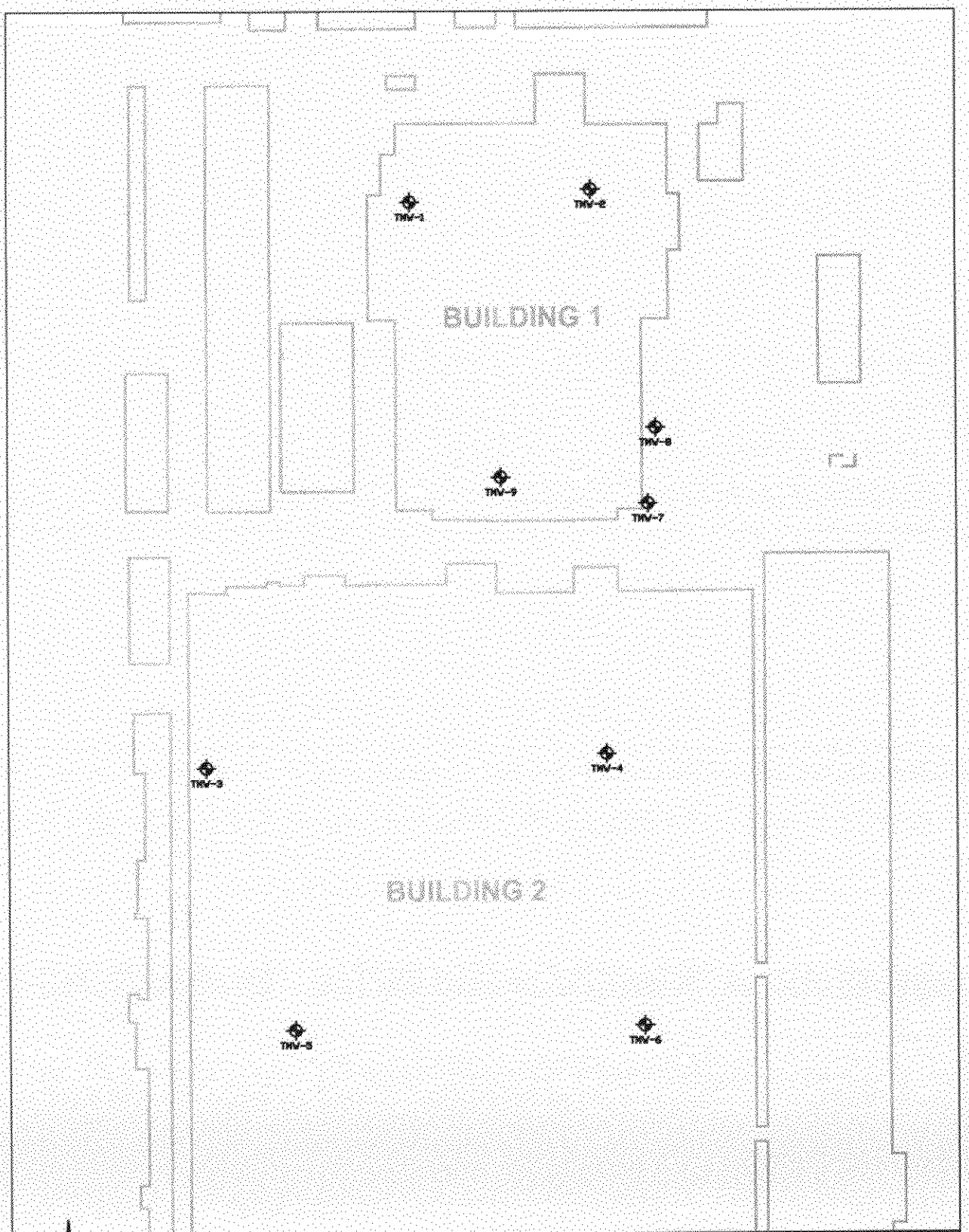
SCALE : AS SHOWN

PROJECT : 27285 - 014

DRAWN : DFM

REVIEWD : -

DATE : 1 APRIL, 2002



HALEY & ALDRICH
SOLUTIONS
UNDERGROUND
ENGINEERING &
ENVIRONMENTAL

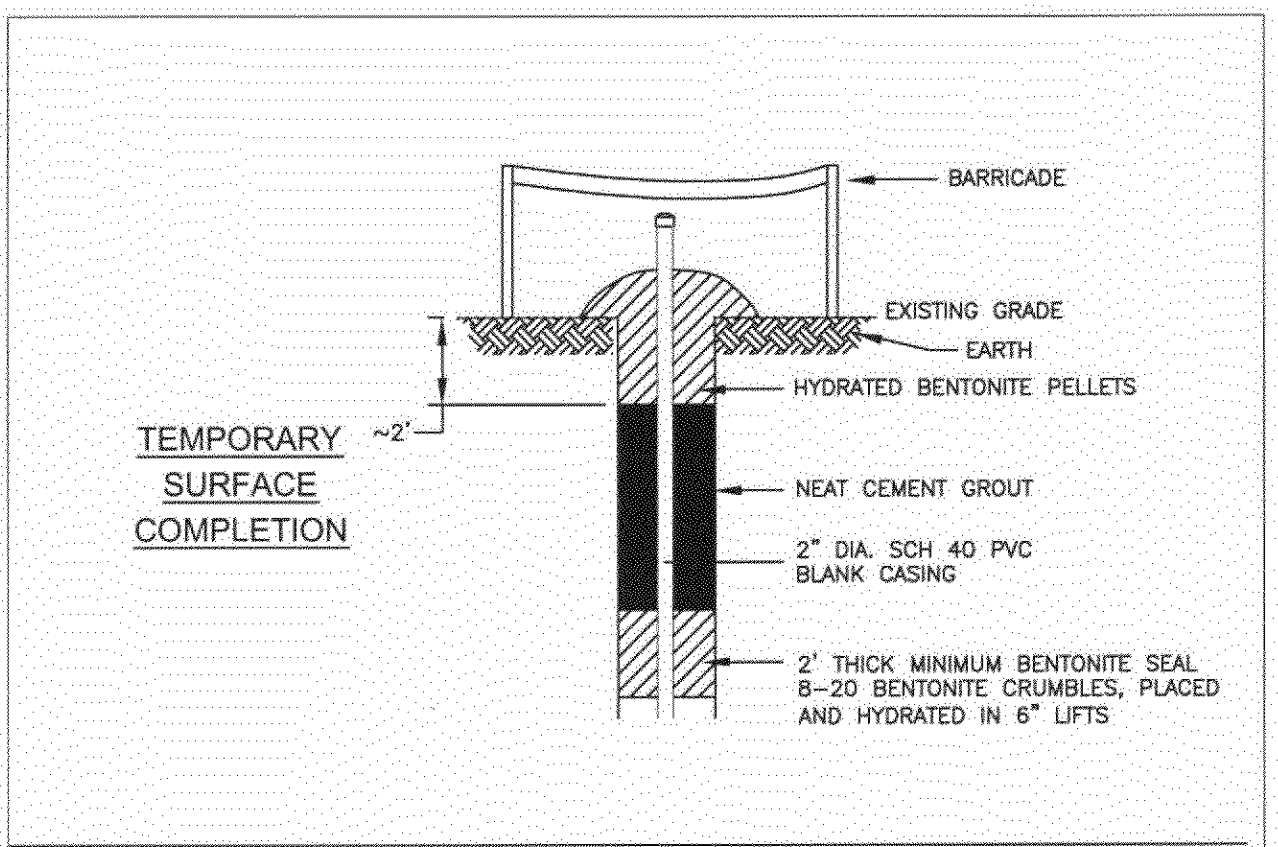
BOEING REALTY CORPORATION
FORMER C-6 FACILITY
LOS ANGELES, CALIFORNIA

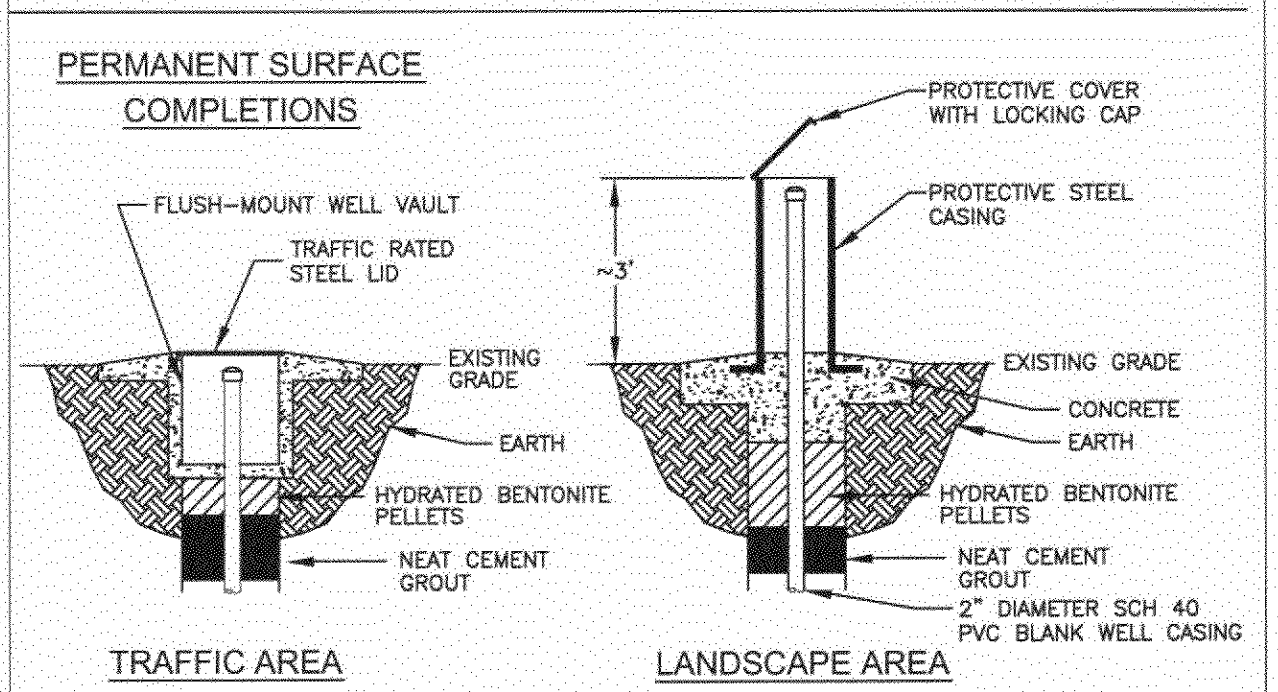
TMW CONVERSION SUMMARY REPORT
SITE PLAN

FIGURE: 2

SCALE: AS SHOWN | PROJECT: 27285-014

DRAWN: SAL | REVIEWED: SPZ | DATE: 15 MAR, 2002





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BOEING REALTY CORPORATION
FORMER C-6 FACILITY
LOS ANGELES, CALIFORNIA

FIGURE: 3

TMW CONVERSION SUMMARY REPORT
TYPICAL WELL COMPLETION DIAGRAM

SCALE: NTS | PROJECT: 27285-014
DRAWN: SAL | REVIEWED: RMF | DATE: 15 MAR, 2002

Appendix A

BOE-C6-0049178

Appendix A

Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: Building 1		Boring/Well Name: TMW-1	
DRILLING COMPANY: West Hazmat	DRILLER: Ruben Lares	Project Name: Boeing C-6	
DRILLING METHOD (S): CME 75, Hollow Stem Auger (LAR)	DRILL BIT (S) SIZE: 8"	Project Number: 984006.00	
BLANK CASING: 2" PVC Schedule 40	FROM +1 TO 61 FT	ELEVATION: Not Surveyed	TOTAL DEPTH: 86 ft.
PERFORATED CASING: 2" PVC Schedule 40, 0.010" slot	FROM 61 TO 81 FT	DATE STARTED: 6/28/98	DATE COMPLETED: 6/28/98
SIZE AND TYPE OF FILTER PACK: Lonestar 2/12 Sand	FROM 59 TO 86 FT	DEPTH TO WATER: 66.0 ft.	
SEAL: Enviroplug Medium Bentonite Chips	FROM 56 TO 59 FT	LOGGED BY: M. Balderman	
GROUT: No Grout (Temporary Well)	FROM TO FT	SAMPLING METHODS: 2" Split Barrel Sampler, 140 lb. Hammer	WELL COMPLETION: ☐ SURFACE HOUSING NONE ☐ STAND PIPE ____ FT

SAMPLES: Driven	Recovered	Collected	Blows per 6"	Head Space Reading (mg/L)	Depth (feet)	WELL CONSTRUCTION	Graphic Log	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
										Concrete, 8"
			9 12 15 14							
			14 21	0.2				CL	7.5YR 3/3	Fine Sandy CLAY: dark brown, damp, medium stiff to stiff, mottled with CaCO3
			12 17 18	0.8	5			CL	7.5YR 3/3	hard nodules of carbonate up to 1/4", damp, medium stiff
			18 37 40	0.9	10			CL	7.5YR 4/4	Silty CLAY: brown, trace of fine sand, damp, stiff
					15					
			9 30 32	1.0	20			SM	7.5YR 4/4	Fine Silty SAND: brown, 60% sand, trace of fine mica, damp, dense
					25	No Grout				
			8 30 33	1.4	30					
					35					

Well Construction Log

Kennedy/Jenks Consultants

Boring/Well Name TMW-1
Project Name Boeing C-6
Project Number 984006.00

SAMPLES: Driven	Recovered	Collected	Blows per 6"	Head Space Reading (mg/L)	Depth (feet)	WELL CONSTRUCTION	Graphic Log	USCS Log	Munsell Color	
					35					
			11 38 40		40			SM	7.5YR 5/3	Fine Silty SAND: brown, 80% sand, trace of fine mica, damp, dense
					45	No Grout				
			8 40 45	2.0	50	Blank Casing		SM	7.5YR 4/2	brown, 65% sand, minor clay, very dense
					55	Bentonite Seal				
					60	Sand Filter Screened Casing				
			22 43 50 21 37 50	3.9 5.1	65	Depth to Water		SM/ SP &CL	7.5YR 4/2	interbedded with fine sand, moist water at 66 feet interbedded with fine sandy clay
					70					
					75					
					80	Bottom of Screen				

Well Construction Log

Kennedy/Jenks Consultants

Boring/Well Name TMW-1
Project Name Boeing C-6
Project Number 984006.00

SAMPLES: Driven	Recovered	Collected	Blows per 6"	Head Space Reading (mg/L)	Depth (feet)	WELL CONSTRUCTION	Graphic Log	USCS Log	Munsell Color	
					80					Fine Silty SAND (continued)
						Bottom of Screen				
					85	Bottom of Well				
										Boring Terminated at 86 feet.
					90					
					95					
					100					
					105					
					110					
					115					
					120					
					125					

Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: Building 1		Boring/Well Name: TMW-2	
DRILLING COMPANY: West Hazmat	DRILLER: Tracy	Project Name: Boeing C-6	
DRILLING METHOD (S): CME 75, Hollow Stem Auger	DRILL BIT (S) SIZE: 8"	Project Number: 984006.00	
BLANK CASING: 2" PVC Schedule 40	FROM +1 TO 62 FT	ELEVATION: Not Surveyed	TOTAL DEPTH: 87 ft.
PERFORATED CASING: 2" PVC Schedule 40, 0.010" slot	FROM 62 TO 82 FT	DATE STARTED: 6/28/98	DATE COMPLETED: 6/28/98
SIZE AND TYPE OF FILTER PACK: Lonestar 2/12 Sand	FROM 57 TO 87 FT	DEPTH TO WATER: 67.0 ft.	
SEAL: Enviroplug Medium Bentonite Chips	FROM 51 TO 57 FT	LOGGED BY: J. Knight	
GROUT: No Grout (Temporary Well)	FROM TO FT	SAMPLING METHODS: 2" Split Barrel Sampler, 140 lb. Hammer	WELL COMPLETION: ☐ SURFACE HOUSING NONE ☐ STAND PIPE ____ FT

SAMPLES: Driven	Recovered	Collected	Blows per 6"	Head Space Reading (mg/L)	Depth (feet)	WELL CONSTRUCTION	Graphic Log	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
										Concrete, 6"
								CL	2.5Y 4/4	Silty CLAY: olive brown, slightly moist, stiff
					5			ML	10YR 4/6	Clayey SILT: dark yellowish brown, slightly moist, stiff
			17 26 31	100	10				2.5Y 4/4	olive brown, hard
					15					
			10 13 30	104	20				2.5Y 5/4	decreasing clay, very stiff
					25	No Grout				
			12 21 31	190	30					
					35					

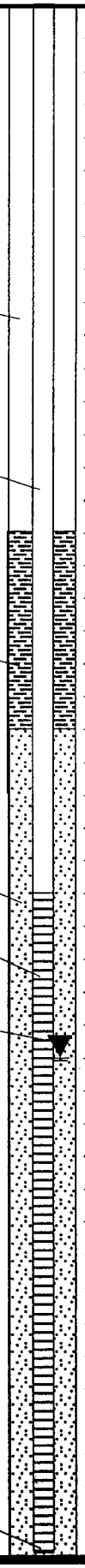
Well Construction Log

Kennedy/Jenks Consultants

Boring/Well Name TMW-2
Project Name Boeing C-6
Project Number 984006.00

Depth (feet)	Samples: Driven	Recovered	Collected	Blows per 6"	Head Space Reading (mg/L)	Graphic Log	USCS Log	Munsell Color	Description
35									Clayey SILT (continued)
40	✓	✓	✓	5 15 17	183				some fine sand, and some thin sand lenses, very stiff
									change noted by driller at 43'
45									
50	✓	✓	✓	17 25 32	354		SM	2.5Y 5/6	Silty SAND: light olive brown, fine, slightly moist, dense
55									change noted by driller at 58'
60	✓	✓		18 50 50 50 50			ML	2.5Y 5/6	Sandy SILT: light olive brown, fine, moist, hard
									increasing sand
65	✓	✓	✓	20 23 30	2025				very moist, hard, some clayey lenses
	✓			50			SM	2.5Y 4/3	water at 67' Silty SAND: olive brown, fine, wet, with lenses of clayey silt
70									
75									
80									

WELL CONSTRUCTION



Well Construction Log

Kennedy/Jenks Consultants

Boring/Well Name TMW-2
Project Name Boeing C-6
Project Number 984006.00

SAMPLES: Driven	Recovered	Collected	Blows per 6"	Head Space Reading (mg/L)	Depth (feet)	WELL CONSTRUCTION	Graphic Log	USCS Log	Munsell Color	
					80	Bottom of Screen				Silty CLAY (continued)
					85	Bottom of Well				
					90					Boring Terminated at 87 feet.
					95					
					100					
					105					
					110					
					115					
					120					
					125					

Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: Building 2, Patio 11 West		Boring/Well Name: TMW-3	
DRILLING COMPANY: West Hazmat	DRILLER: Ruben Lares	Project Name: Boeing C-6	
DRILLING METHOD (S): CME 75, Hollow Stem Auger (LAR)	DRILL BIT (S) SIZE: 8"	Project Number: 984006.00	
BLANK CASING: 2" PVC Schedule 40	FROM +0.5 TO 62.5 FT	ELEVATION: Not Surveyed	TOTAL DEPTH: 87 ft.
PERFORATED CASING: 2" PVC Schedule 40, 0.010" slot	FROM 62.5 TO 82.5 FT	DATE STARTED: 7/21/98	DATE COMPLETED: 7/21/98
SIZE AND TYPE OF FILTER PACK: Lonestar 2/12 Sand	FROM 60 TO 85.6 FT	DEPTH TO WATER: 67 ft.	
SEAL: Enviroplug Medium Bentonite Chips	FROM 60 TO 58 FT	LOGGED BY: M. Balderman	
GROUT: No Grout (Temporary Well)	FROM TO FT	SAMPLING METHODS: 2" Split Barrel Sampler, 140 lb. Hammer	WELL COMPLETION: ☐ SURFACE HOUSING NONE ☐ STAND PIPE ____ FT

Depth (feet)	Blows per 6"	Head Space Reading (mg/L)	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
					Concrete, 8"
	6, 8, 10		CL	2.5YR 3/1	Silty CLAY: dark reddish gray, minor fine sand, damp, medium stiff
	6, 9, 20	10.8			
5	20, 22, 28	9.7		7.5YR 4/3	brown, stiff, mottled with light tan CaCO3
10	5, 9, 20	13.9	ML	2.5Y 3/3	Fine Sandy SILT: dark olive brown, 40% sand, minor clay, damp, very stiff
15					
20	25, 35, 40	6.2	CL	2.5Y 4/3	Fine Sandy CLAY: olive brown, 30% sand, damp, stiff
25					
30	12, 22, 45	10.4	SM	10YR 6/4	Fine Silty SAND: light yellowish brown, 70% sand, trace of fine mica, damp, dense
35					

WELL CONSTRUCTION: No Grout

Well Construction Log

Kennedy/Jenks Consultants

Boring/Well Name TMW-3
Project Name Boeing C-6
Project Number 984006.00

SAMPLES: Driven	Recovered	Collected	Blows per 6"	Head Space Reading (mg/L)	Depth (feet)	WELL CONSTRUCTION	Graphic Log	USCS Log	Munsell Color	
					35					Fine Silty SAND (continued)
			12 24 30	17.5	40			SM	10YR 6/2	light brownish gray, 75% sand, damp, dense
					45	No Grout				
			24 21 30	6.3	50	Blank Casing		SM	10YR 5/4	yellowish brown, 70% sand, trace of fine mica, damp, dense
					55					
					60	Bentonite Seal Sand Filter Screened Casing				
			12 28 50 14 25 50	7.2	65	Depth to Water		CL	5GY 6/1	Silty CLAY: greenish gray, minor fine sand, moist, very stiff water at 67'
					70					
					75					sandy
					80					

Well Construction Log

Kennedy/Jenks Consultants

Boring/Well Name TMW-3
Project Name Boeing C-6
Project Number 984006.00

SAMPLES: Driven	Recovered	Collected	Blows per 6"	Head Space Reading (mg/L)	Depth (feet)	WELL CONSTRUCTION	Graphic Log	USCS Log	Munsell Color	
					80	Bottom of Screen				Silty CLAY (continued)
					85	Bottom of Well				
					90					Boring Terminated at 87 feet.
					95					
					100					
					105					
					110					
					115					
					120					
					125					

Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: Building 2, Patio 11 East		Boring/Well Name: TMW-4	
DRILLING COMPANY: West Hazmat	DRILLER: Ruben Lares	Project Name: Boeing C-6	
DRILLING METHOD (S): CME 75, Hollow Stem Auger (LAR)	DRILL BIT (S) SIZE: 8"	Project Number: 984006.00	
BLANK CASING: 2" PVC Schedule 40	FROM +1 TO 61 FT	ELEVATION: Not Surveyed	TOTAL DEPTH: 86 ft.
PERFORATED CASING: 2" PVC Schedule 40, 0.010" slot	FROM 60 TO 80 FT	DATE STARTED: 6/30/98	DATE COMPLETED: 6/30/98
SIZE AND TYPE OF FILTER PACK: Lonestar 2/12 Sand	FROM 58 TO 86 FT	DEPTH TO WATER: 66.0 ft.	
SEAL: Enviroplug Medium Bentonite Chips	FROM 55.5 TO 58 FT	LOGGED BY: M. Balderman/ J. Knight	
GROUT: No Grout (Temporary Well)	FROM TO FT	SAMPLING METHODS: 2" Split Barrel Sampler, 140 lb. Hammer	WELL COMPLETION: ☐ SURFACE HOUSING NONE ☐ STAND PIPE ____ FT

SAMPLES: Driven	Recovered	Collected	Blows per 6"	Head Space Reading (mg/L)	Depth (feet)	WELL CONSTRUCTION	Graphic Log	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
										Concrete, 4"
■			20 30 30	1.1				CL	7.5YR 4/4	Silty CLAY: brown, minor fine sand, damp, stiff
■	■	■	30 50	0.6	5			CL	2.5Y 4/4	Fine Sandy CLAY: olive brown, 30% fine sand, dry, hard
■	■	■	17 20 30	0.7	10			CL	10YR 5/4	Fine Sandy CLAY: yellowish brown, 35% fine sand, damp, stiff
					15					
■	■	■		0.9	20			ML	10YR 5/4	Clayey SILT: yellowish brown, minor fine sand, damp, stiff
					25	No Grout				
■	■	■	18 32 50	0.9	30			ML	10YR 5/3	Fine Sandy SILT with Clay: brown, 35% fine sand, damp, stiff
					35					

Well Construction Log

Kennedy/Jenks Consultants

Boring/Well Name TMW-4
Project Name Boeing C-6
Project Number 984006.00

SAMPLES: Driven	Recovered	Collected	Blows per 6"	Head Space Reading (mg/L)	Depth (feet)	WELL CONSTRUCTION	Graphic Log	USCS Log	Munsell Color	Description
					35					Fine Sandy SILT with Clay (continued)
			22 50	1.0	40			SM	10YR 4/3	Fine Silty SAND: brown, 70% fine sand, trace of fine mica, damp, dense
					45	No Grout				
			20 50	0	50	Blank Casing		ML	2.5Y 4/4	Fine Sandy SILT with Clay: olive brown, micaceous, moist, hard
					55	Bentonite Seal				
					60	Sand Filter Screened Casing				
			18 45 50	17.1	65	Depth to Water		SM	2.5Y 4/3	Silty SAND: olive brown, fine, wet, very dense, with lenses of clayey silt water at 66'
					70					
					75					
					80	Bottom of Screen				

Well Construction Log

Kennedy/Jenks Consultants

Boring/Well Name TMW-4
Project Name Boeing C-6
Project Number 984006.00

SAMPLES: Drives	Recovered	Collected	Blows per 6"	Head Space Reading (mg/L)	Depth (feet)	WELL CONSTRUCTION	Graphic Log	USCS Log	Munsell Color	
					80					Silty SAND (continued)
					85	Bottom of Well				
										Boring Terminated at 86 feet.
					90					
					95					
					100					
					105					
					110					
					115					
					120					
					125					

Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: Building 2, Patio 31 West		Boring/Well Name: TMW-5	
DRILLING COMPANY: West Hazmat	DRILLER: Ruben Lares	Project Name: Boeing C-6	
DRILLING METHOD (S): CME 75, Hollow Stem Auger (LAR)	DRILL BIT (S) SIZE: 8"	Project Number: 984006.00	
BLANK CASING: 2" PVC Schedule 40	FROM +1 TO 61.3 FT	ELEVATION: Not Surveyed	TOTAL DEPTH: 86 ft.
PERFORATED CASING: 2" PVC Schedule 40, 0.010" slot	FROM 61.3 TO 81.3 FT	DATE STARTED: 7/2/98	DATE COMPLETED: 7/2/98
SIZE AND TYPE OF FILTER PACK: Lonestar 2/12 Sand	FROM 58.9 TO 86 FT	DEPTH TO WATER: 65.0 ft.	
SEAL: Enviroplug Medium Bentonite Chips	FROM 56.2 TO 58.9 FT	LOGGED BY: M. Balderman	
GROUT: No Grout (Temporary Well)	FROM TO FT	SAMPLING METHODS: 2" Split Barrel Sampler, 140 lb. Hammer	WELL COMPLETION: ☐ SURFACE HOUSING NONE ☐ STAND PIPE ____ FT

SAMPLES: Driven	Recovered	Collected	Blows per 6"	Head Space Reading (mg/L)	Depth (feet)	WELL CONSTRUCTION	Graphic Log	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
										Concrete, 6"
■	■	■	7 10 14	3.2				CL	5YR 4/2	Silty CLAY: dark reddish gray, minor fine sand, damp, medium stiff
■	■		25 50	7.9	5			CL	7.5YR 4/3	Fine Sandy CLAY: brown, 30% fine sand, damp, hard
■	■	■	12 17 20	22.2	10			SC/ CL	7.5YR 5/2	Fine Sandy CLAY/ Clayey SAND: brown, 50% fine sand, damp dense
					15					
■	■	■	20 50	28.0	20			CL	7.5YR 5/2	Fine Sandy CLAY: brown, 35% fine sand, damp, hard
					25	No Grout				
■	■	■	20 25 45	90	30			SP	5GY 6/1 10YR 5/6	Fine SAND with minor Silt: mottled gray and yellowish brown, trace of fine mica, damp, dense
					35					

Well Construction Log

Kennedy/Jenks Consultants

Boring/Well Name TMW-5
Project Name Boeing C-6
Project Number 984006.00

SAMPLES: Driven	Recovered	Collected	Blows per 6"	Head Space Reading (mg/L)	Depth (feet)	WELL CONSTRUCTION	Graphic Log	USCS Log	Munsell Color	
					35					Fine SAND with Minor Silt (continued)
			23 50	112	40				10YR 7/6	yellow
					45	No Grout				
			20 50	160	50	Blank Casing		SC	7.5YR 5/4	Fine Clayey SAND: brown, increasing clay
								CL	2.5Y 5/3	Silty CLAY: light olive brown, minor fine sand, damp, hard
					55					
						Bentonite Seal				
					60	Sand Filter				
						Screened Casing				
						Depth to Water				
			20 50 5 20 38	250	65			SM	2.5Y 5/3	Fine Silty SAND:light olive brown, 80% sand, trace of fine mica, wet, dense water at 65'
					70					
					75					
					80	Bottom of Screen				

Well Construction Log

Kennedy/Jenks Consultants

Boring/Well Name TMW-5

Project Name Boeing C-6

Project Number 984006.00

SAMPLES: Driven	Recovered	Collected	Blows per 6"	Head Space Reading (mg/L)	Depth (feet)	WELL CONSTRUCTION	Graphic Log	USCS Log	Munsell Color	
					80	Bottom of Screen				Fine Silty SAND (continued)
					85	Bottom of Well				
										Boring Terminated at 86 feet.
					90					
					95					
					100					
					105					
					110					
					115					
					120					
					125					

Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: Building 2, Patio 31 East		Boring/Well Name: TMW-6	
DRILLING COMPANY: West Hazmat	DRILLER: Ruben Lares	Project Name: Boeing C-6	
DRILLING METHOD (S): CME 75, Hollow Stem Auger (LAR)	DRILL BIT (S) SIZE: 8"	Project Number: 984006.00	
BLANK CASING: 2" PVC Schedule 40	FROM +1 TO 61.2 FT	ELEVATION: Not Surveyed	TOTAL DEPTH: 86 ft.
PERFORATED CASING: 2" PVC Schedule 40, 0.010" slot	FROM 61.2 TO 81.2 FT	DATE STARTED: 7/1/98	DATE COMPLETED: 7/1/98
SIZE AND TYPE OF FILTER PACK: Lonestar 2/12 Sand	FROM 59.1 TO 86 FT	DEPTH TO WATER: 65.5 ft.	
SEAL: Enviroplug Medium Bentonite Chips	FROM 56.5 TO 59.1 FT	LOGGED BY: M. Balderman	
GROUT: No Grout (Temporary Well)	FROM TO FT	SAMPLING METHODS: 2" Split Barrel Sampler, 140 lb. Hammer	WELL COMPLETION: ☐ SURFACE HOUSING NONE ☐ STAND PIPE ____ FT

SAMPLES: Driven	Recovered	Collected	Blows per 6"	Head Space Reading (mg/L)	Depth (feet)	WELL CONSTRUCTION	Graphic Log	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
										Concrete, 6"
■	■	■	3 4 8	280				CL	7.5YR 3/2	Fine Sandy CLAY: dark brown, 30% fine sand, wet, medium stiff
■	■	■	7 22 24	2900	5			SC	7.5YR 4/4	Fine Clayey SAND: brown, 60% fine sand, moist, dense
■	■	■	11 24 30	0	10			ML	10YR 5/3	Clayey SILT: brown, 20% fine sand, moist, stiff
					15					
■	■	■	12 15 17	0	20			SC	10YR 4/4	Fine Clayey SAND: dark yellowish brown, 55% sand, damp, dense
					25	No Grout				
■	■	■	31 33 50	4.3	30			SC SM	7.5YR 5/3	Fine Clayey/Silty SAND: brown, 70% sand, trace of fine mica, damp, dense
					35					

Well Construction Log

Kennedy/Jenks Consultants

Boring/Well Name TMW-6
Project Name Boeing C-6
Project Number 984006.00

SAMPLES: Driven	Recovered	Collected	Blows per 6"	Head Space Reading (mg/L)	Depth (feet)	WELL CONSTRUCTION	Graphic Log	USCS Log	Munsell Color	
					35					Fine Clayey/Silty SAND (continued)
			11 14 22	2.9	40			SM	10YR 5/6	Fine Silty SAND: yellowish brown, 75% fine sand, trace of fine mica, damp, dense
					45	No Grout				
			23 50	1.4	50	Blank Casing		SM	10YR 5/4	yellowish brown
					55	Bentonite Seal				
					60	Sand Filter				
						Screened Casing				
			22 50 25 50	0	65	Depth to Water		ML	2.5Y 5/2	Clayey SILT: grayish brown, 30% fine sand, moist, hard, grading to gray sand at 65'
								SM	5Y 4/2	Fine Silty SAND: olive gray, 85% sand, trace of fine mica, wet, dense water at 65.5'
					70					
					75					
					80	Bottom of Screen				

Well Construction Log

Kennedy/Jenks Consultants

Boring/Well Name TMW-6
Project Name Boeing C-6
Project Number 984006.00

SAMPLES: Driven	Recovered	Collected	Blows per 6"	Head Space Reading (mg/L)	Depth (feet)	WELL CONSTRUCTION	Graphic Log	USCS Log	Munsell Color	
					80					Fine Silty SAND (continued)
						Bottom of Screen				
					85	Bottom of Well				
										Boring Terminated at 86 feet.
					90					
					95					
					100					
					105					
					110					
					115					
					120					
					125					

Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: Outside the Southeast Corner of Building 1		Boring/Well Name: TMW-7	
DRILLING COMPANY: West Hazmat	DRILLER: Ruben Lares	Project Name: Boeing C-6	
DRILLING METHOD (S): CME 75, Hollow Stem Auger (LAR)	DRILL BIT (S) SIZE: 8"	Project Number: 984006.00	
BLANK CASING: 2" PVC Schedule 40	FROM +1 TO 64 FT	ELEVATION: Not Surveyed	TOTAL DEPTH: 89.5 ft.
PERFORATED CASING: 2" PVC Schedule 40, 0.010" slot	FROM 64 TO 84 FT	DATE STARTED: 6/29/98	DATE COMPLETED: 6/29/98
SIZE AND TYPE OF FILTER PACK: Lonestar 2/12 Sand	FROM 62 TO 89.5 FT	DEPTH TO WATER: 66 ft.	
SEAL: Enviroplug Medium Bentonite Chips	FROM 56 TO 62 FT	LOGGED BY: M. Balderman	
GROUT: No Grout (Temporary Well)	FROM TO FT	SAMPLING METHODS: 2" Split Barrel Sampler, 140 lb. Hammer	WELL COMPLETION: ☐ SURFACE HOUSING NONE ☐ STAND PIPE ____ FT

SAMPLES: Driven	Recovered	Collected	Blows per 6"	Head Space Reading (mg/L)	Depth (feet)	WELL CONSTRUCTION	Graphic Log	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
										Asphalt, 3"
■	■	■	5 5 6	2.3				CL	7.5YR 4/2	Silty CLAY: brown, minor fine sand, damp, soft
■	■	■	12 50	0.7	5			ML	7.5YR 4/4	Clayey SILT: brown, 20% fine sand, damp, stiff
■	■	■	12 30 42	0.4	10			CL	2.5Y 5/3	Silty CLAY: light olive brown, minor fine sand and carbonate, damp, stiff
					15					
■	■	■	13 10 15	0.5	20			ML	2.5Y 4/3	Clayey SILT: olive brown, minor fine sand, trace of fine mica and carbonate, damp, medium stiff
					25	No Grout				
■	■	■	14 12 20	1.3	30			ML	2.5Y 5/4	Clayey SILT: light olive brown, minor fine sand, carbonate nodules to 3/8", damp, stiff
					35					

Well Construction Log

Kennedy/Jenks Consultants

Boring/Well Name TMW-7
Project Name Boeing C-6
Project Number 984006.00

SAMPLES: Driven	Recovered	Collected	Blows per 6"	Head Space Reading (mg/L)	Depth (feet)	WELL CONSTRUCTION	Graphic Log	USCS Log	Munsell Color	
					35					Clayey SILT (continued)
			12 18 31	1.7	40					
					45	No Grout				
			20 50	1.4	50			SM	10YR 6/4	Silty SAND: light yellowish brown, 70% fine sand, damp, dense
						Blank Casing				
					55					
						Bentonite Seal				
					60					
			12 17 19 11 17 21		65	Depth to Water		SM	2.5Y 4/2	Silty SAND: dark grayish brown, 75% fine sand, trace of fine mica, wet dense, with a clayey silt lense from 65 to 65.5'
						Sand Filter		SM ML	2.5Y 4/3	Fine Sandy SILT/Silty SAND: olive brown, laminated with clayey silt, wet, dense Water at 66'
						Screened Casing				
					70					
					75					
					80					

Well Construction Log

Kennedy/Jenks Consultants

Boring/Well Name TMW-7

Project Name Boeing C-6

Project Number 984006.00

SAMPLES: Driven	Recovered	Collected	Blows per 6"	Head Space Reading (mg/L)	Depth (feet)	WELL CONSTRUCTION	Graphic Log	USCS Log	Munsell Color	
					80					Fine Sandy SILT/ Silty SAND (continued)
					85	Bottom of Screen Bottom of Well				
					90					Boring Terminated at 89.5 feet.
					95					
					100					
					105					
					110					
					115					
					120					
					125					

Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: Outside and East of Building 1		Boring/Well Name: TMW-8	
DRILLING COMPANY: West Hazmat	DRILLER: Ruben Lares	Project Name: Boeing C-6	
DRILLING METHOD (S): CME 75, Hollow Stem Auger	DRILL BIT (S) SIZE: 8"	Project Number: 984006.00	
BLANK CASING: 2" PVC Schedule 40	FROM +1 TO 61 FT	ELEVATION: Not Surveyed	TOTAL DEPTH: 86 ft.
PERFORATED CASING: 2" PVC Schedule 40, 0.010" slot	FROM 61 TO 81 FT	DATE STARTED: 6/29/98	DATE COMPLETED: 6/29/98
SIZE AND TYPE OF FILTER PACK: Lonestar 2/12 Sand	FROM 59 TO 85.5 FT	DEPTH TO WATER: 66.4 ft.	
SEAL: Enviroplug Medium Bentonite Chips	FROM 55.8 TO 59 FT	LOGGED BY: M. Balderman	
GROUT: No Grout (Temporary Well)	FROM TO FT	SAMPLING METHODS: 2" Split Barrel Sampler, 140 lb. Hammer	WELL COMPLETION: ☐ SURFACE HOUSING NONE ☐ STAND PIPE ____ FT

SAMPLES: Driven	Recovered	Collected	Blows per 6"	Head Space Reading (mg/L)	Depth (feet)	WELL CONSTRUCTION	Graphic Log	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
										Asphalt, 3"
■	■	■	6 30 32					CL	7.5YR 4/3	Silty CLAY with minor Fine Sand: brown, local fine to coarse sand partings, damp, stiff
■			8 18 40		5					
■	■	■	27 50		10			CL	7.5YR 4/4	brown, hard
					15					
■	■	■	8 20 23		20			ML	2.5Y 4/3	Clayey SILT: olive brown, 20% fine sand, damp, stiff
					25	No Grout				
■	■	■	7 14 30		30					scattered carbonate nodules to 1/4"
					35					

Well Construction Log

Kennedy/Jenks Consultants

Boring/Well Name TMW-8
Project Name Boeing C-6
Project Number 984006.00

SAMPLES: Driven	Recovered	Collected	Blows per 6"	Head Space Reading (mg/L)	Depth (feet)	WELL CONSTRUCTION	Graphic Log	USCS Log	Munsell Color	Description
					35					Sandy SILT (continued)
			12 20 30		40			ML	2.5Y 5/3	Fine Sandy SILT: light olive brown, minor clay, 30% fine sand, damp, dense
					45	No Grout				
			13 22 33		50	Blank Casing		SM	2.5Y 5/4	Fine Silty SAND: light olive brown, 70% sand, trace of fine mica, damp, dense
					55	Bentonite Seal				
					60	Sand Filter Screened Casing				
			15 34 45 18 23 50		65	Depth to Water			2.5Y 4/4	olive brown, moist to wet water at 66' interbedded clayey silt from 66.5 to 67.5, then silty sand as above
					70					
					75					
					80	Bottom of Screen				

Well Construction Log

Kennedy/Jenks Consultants

Boring/Well Name TMW-8

Project Name Boeing C-6

Project Number 984006.00

SAMPLES: Driven	Recovered	Collected	Blows per 6"	Head Space Reading (mg/L)	Depth (feet)	WELL CONSTRUCTION	Graphic Log	USCS Log	Munsell Color	
					80					Fine Silty SAND (continued)
						Bottom of Screen				
					85	Bottom of Well				
										Boring Terminated at 85.5 feet.
					90					
					95					
					100					
					105					
					110					
					115					
					120					
					125					

Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: Building 1		Boring/Well Name: TMW-9	
DRILLING COMPANY: West Hazmat	DRILLER: Ruben Lares	Project Name: Boeing C-6	
DRILLING METHOD (S): CME 75, Hollow Stem Auger	DRILL BIT (S) SIZE: 8"	Project Number: 984006.00	
BLANK CASING: 2" PVC Schedule 40	FROM +1 TO 61 FT	ELEVATION: Not Surveyed	TOTAL DEPTH: 86 ft.
PERFORATED CASING: 2" PVC Schedule 40, 0.010" slot	FROM 61 TO 81 FT	DATE STARTED: 6/30/98	DATE COMPLETED: 6/30/98
SIZE AND TYPE OF FILTER PACK: Lonestar 2/12 Sand	FROM 59 TO 86 FT	DEPTH TO WATER: 66 ft.	
SEAL: Enviroplug Medium Bentonite Chips	FROM 56.5 TO 59 FT	LOGGED BY: J. Knight	
GROUT: No Grout (Temporary Well)	FROM TO FT	SAMPLING METHODS: 2" Split Barrel Sampler, 140 lb. Hammer	WELL COMPLETION: ☐ SURFACE HOUSING NONE ☐ STAND PIPE ____ FT

SAMPLES: Driven	Recovered	Collected	Blows per 6"	Head Space Reading (mg/L)	Depth (feet)	WELL CONSTRUCTION	Graphic Log	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
										Concrete, 8"
■	■	■	12 14 21	52.0				ML	10YR 4/6	Clayey SILT: dark yellowish brown, trace of fine sand, slightly moist, very stiff
■	■	■	12 22 40	86.0	5			CL	10YR 3/6	Silty CLAY: dark yellowish brown, some fine sandy lenses, slightly moist, hard
■	■	■	27 30 30	85.7	10				10YR 5/4	yellowish brown, dry, hard
					15					
■	■	■	12 17 23	48.2	20			ML	2.5Y 5/4	Clayey SILT: light olive brown, trace of fine sand, dry, very stiff
					25	No Grout				
■	■	■	21 28 50	51.4	30			ML	2.5Y 5/6	Sandy SILT: light olive brown, fine sand, sligtly moist, hard
					35					

Well Construction Log

Kennedy/Jenks Consultants

Boring/Well Name TMW-9
Project Name Boeing C-6
Project Number 984006.00

SAMPLES: Driven	Recovered	Collected	Blows per 6"	Head Space Reading (mg/L)	Depth (feet)	WELL CONSTRUCTION	Graphic Log	USCS Log	Munsell Color	Description
					35					Sandy SILT (continued)
			20 25 30	74.1	40			SM	2.5Y 5/6	Silty Fine SAND: light olive brown, slightly moist, dense
					45	No Grout				
			23 50	114	50	Blank Casing				increasing silt content, very dense
					55					
					60	Bentonite Seal Sand Filter Screened Casing				
			12 32 50 42 30 32	159	65	Depth to Water		SM	2.5Y 4/3	SAND with Silt: olive brown, fine, very moist, very dense, with silt lenses water at 66'
					70					
					75					
					80	Bottom of Screen				

Well Construction Log

Kennedy/Jenks Consultants

Boring/Well Name TMW-9
Project Name Boeing C-6
Project Number 984006.00

SAMPLES: Driven	Recovered	Collected	Blows per 6"	Head Space Reading (mg/L)	Depth (feet)	WELL CONSTRUCTION	Graphic Log	USCS Log	Munsell Color	
					80					SAND with Silt (continued)
						Bottom of Screen				
					85	Bottom of Well				
										Boring Terminated at 86 feet.
					90					
					95					
					100					
					105					
					110					
					115					
					120					
					125					

Appendix B

Appendix B

STATE OF CALIFORNIA—ENVIRONMENTAL PROTECTION AGENCY

PETE WILSON, G

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION
101 CENTRE PLAZA DRIVE
MONTEREY PARK, CA 91754-2156
(213) 266-7500
FAX: (213) 266-7600

May 20, 1998

Mr. Chris Stoker
Integrated Environmental Services, Inc.
3990 Westerly Place, Suite 210
Newport Beach, CA 92660

TECHNICAL WORKPLAN, INSTALLATION OF TEMPORARY GROUNDWATER MONITORING WELLS - BOEING C-6 FACILITY, LOS ANGELES, CALIFORNIA (FILE NO. 100.315)

We have received and reviewed your Technical Workplan, Installation of Temporary Groundwater Monitoring Wells - Boeing C-6 Facility, Los Angeles, California, dated April 20, 1998. Our comments are as follows:

1) Include a contingency plan to collect and analyze soil samples if visible contamination, odors or PID readings indicate that contamination is present. Samples should be analyzed for the same suite of chemicals for which the groundwater is being tested.

2) Collect and analyze a soil sample from the capillary fringe in each boring. Samples should be analyzed for the same suite of chemicals for which the groundwater is being tested.

3) The workplan indicates that the annulus above the bentonite sanitary seal will be left open. The annulus must be filled should visible contamination, odors or PID readings indicate that soil contamination is present.

Should you have any questions regarding the above, please contact Hugh Marley at (213) 266-7669.

J.E. ROSS, Unit Chief
Site Cleanup Unit

cc: Ms. Karen Baker, DTSC, Long Beach
Ms. Debbie Oudiz, Office of Scientific Affairs
Mr. Mario Stavale, Boeing Realty Corporation
Mr. Jeff Dhont, Federal EPA

Rec'd 5/26/98

Appendix C

Appendix C

California Regional Water Quality Control Board

Los Angeles Region

Over 50 Years Serving Coastal Los Angeles and Ventura Counties

Recipient of the 2001 *Environmental Leadership Award* from Keep California Beautiful

320 W. 4th Street, Suite 200, Los Angeles, California 90013

Phone (213) 576-6600 FAX (213) 576-6640 - Internet Address: http://www.swrcb.ca.gov/rwqcb4

Winston H. Hickox
Secretary for Environmental Protection

Gray Davis
Governor

December 17, 2001

Brain Mossman
3855 Lakewood Boulevard
Building 1A, MCD001-0097
Long Beach, CA 90846

WORK PLAN APPROVAL – CONVERSION OF TEMPORARY GROUNDWATER MONITORING WELLS, FORMER C-6 FACILITY, 19503 SOUTH NORMANDIE AVENUE, LOS ANGELES (FILE NO. 95-036)

Dear Mr. Mossman:

We have received the "Temporary Groundwater Monitoring Well Conversion Work Plan" (Work Plan) prepared by Haley & Aldrich dated November 14, 2001. Regional Board staff verbally approved implementation of the Work Plan during a meeting on November 12, 2001, and this letter documents that approval.

The Work Plan presents the rationale and specifications for the conversion of temporary groundwater monitoring wells (previously installed) to permanent monitoring wells. We have completed our review of the Work Plan and approve its implementation.

Please submit one copy of the report presenting the results of the conversion by March 31, 2002. Please call me at (213) 576-6737 if you have any questions.

Sincerely,

John Geroch
Associate Engineering Geologist
Site Cleanup Unit I

cc: Scott Zachary, Haley & Aldrich