WAREHAM DEVELOPMENT

9110147

January 29, 1990

Mr. Dennis Byrne
Alameda County
Department of Health
499 Fifth Street
Oakland, CA 94607

Re: 1600 63rd Street, Emeryville, California

Dear Dennis:

Enclosed for your review and records is a copy of the Third Quarterly Ground-Water Quality Monitoring report from Harding Lawson Associates regarding 1600 63rd Street in Emeryville.

Please do not hesitate to contact me if you have any questions or comments.

Sincerely,

Daniel Nourse BC

Daniel M. Nourse, for
Wareham Development

DNM/bc
enclosure

1120 Nye Street, Suite 400, San Rafael, CA 94901 (415) 457-4964 FAX (415) 459-4605

Harding Lawson Associates

January 22, 1990

18452,016.02

1600 63rd Street Associates, Inc.
c/o Wareham Development Group
1120 Nye Street, Suite 400
San Rafael, California 94901

JAN 25 1990

Attention: Richard K. Robbins

Gentlemen:

Third Quarterly Ground-Water Quality Monitoring
1600 63rd Street
Emeryville, California

This report presents the results of the third quarterly ground-water quality monitoring conducted by Harding Lawson Associates (HLA) at 1600 63rd Street, Emeryville, California. HLA installed five ground-water monitoring wells at this site in May and June 1989. The results of initial ground-water sampling and analyses and water-level measurements are presented in HLA's October 2, 1989 report, *Ground-Water Quality Investigation, 1600 63rd Street, Emeryville, California*, together with a summary of investigations and remediation of the site performed by HLA and others.

In the October 2, 1989 report HLA recommended that ground-water monitoring continue at the site for one year to document site ground-water and chemical distribution conditions. Monitoring comprises quarterly water-level and product thickness (if present) measurement and ground-water sampling and chemical analyses for a suite of analytes.

The third quarterly monitoring and sampling was conducted on December 20, 1989. This work was performed in accordance with the procedures and recommendations outlined in the October 2, 1989 report.

GROUND-WATER LEVEL MONITORING AND SAMPLING

An electronic oil-water interface probe was used to measure ground-water level and product thickness in the monitoring wells. The ground water surface in each well was also visually inspected for the presence of floating product by carefully lowering a clear lucite bailer into the well, removing it, and observing the water/product in the bailer. No product was observed in any of the wells.

After water levels were measured, the wells were purged using a centrifugal pump. Measurements of pH, conductivity, turbidity, and temperature were taken during well purging. Approximately 24 gallons of water were removed from Well MW-1 (approximately three well casing volumes). Wells MW-2, MW-3, MW-4, and MW-5 were purged of 9, 15, 15, and 17 gallons of water, respectively (approximately 1 well casing volume), at which point they became evacuated. Wells MW-2 through MW-5 were allowed to recover between 0.5 to 2.75 hours, until the water level had risen to within 90 to 99 percent of the initial water level. All purge water was placed in 55-gallon steel drums and stored on site in a steel containment structure. The wells were then sampled.

Water samples were then collected from the wells using a stainless steel bailer and decanted in four 40-milliliter volatile organic analysis vials, three 1-liter amber glass bottles, and, for the metals analyses, one 1-liter -plastic bottle containing nitric acid. These sample bottles were labeled, placed in a refrigerated environment, and transported under chain of custody to the analytical laboratory.

All water-level measurement and sampling equipment was decontaminated prior to use by washing in a low-phosphorous soap and double rinsed in tap water. Water used to clean and rinse the equipment was contained and stored on site within the containment structure.

GROUND-WATER GRADIENT AND FLOW DIRECTION

Ground-water elevations and product thicknesses measured throughout this investigation are presented in Table 1. In Wells MW-1, and MW-3 the water level elevations have risen 0.15 foot and 0.17 foot, respectively, since the previous monitoring on October 20, 1989. Water level elevations in Wells MW-2, MW-4 and MW-5 have declined 0.54, 0.29 and 0.11 foot, respectively, since the previous monitoring. The change in water level elevations probably represents a typical seasonal fluctuation of the water table.

Review of water-level elevations measured during the December 1989 sampling indicate that ground water flows onto the site from the east. Ground-water flow diverges in the central area of the site and discharges from the site toward the west and northwest. The ground-water gradient throughout the site on December 20, 1989 was 0.012 foot/foot. The discharge flow direction and discharge gradient are generally consistent with those calculated throughout this investigation.

LABORATORY ANALYSIS AND RESULTS

The third quarterly ground-water samples were analyzed for total petroleum hydrocarbons (TPH) as gasoline, by EPA Test Method 8015/5030; TPH as diesel, and

kerosene by EPA Test Method 8015/3510; volatile organics by EPA Test Method 8240; organochlorine pesticides and PCBs by EPA Test Method 8080; base/neutral and acid extractable semivolatile organics by EPA Test Method 8270; and the 17 priority pollutant metals. Sample analyses were performed by Curtis & Tompkins, Ltd., Analytical Laboratories of Berkeley, California, a state-certified laboratory for these analyses. Ground-water sample analytical results for all analyses performed during this investigation are presented in Table 2. Copies of the laboratory analytical data sheets and chain of custody forms for the third quarterly sampling are included as an appendix to this report.

Results of Analyses for Organic Compounds

During the third quarterly sampling no volatile organic compounds (EPA Test Method 8240) or organochlorine pesticides and PCB's (EPA Test Method 8080) were detected in any of the ground water samples. No TPH as gasoline, diesel or kerosene, or semivolatile organic compounds (EPA Test Method 8270) were detected in the samples collected from Wells MW-1, MW-3, MW-4 and MW-5. Additionally, no TPH as diesel was detected in the sample from MW-2.

Review of analytical data indicates organic compounds were detected in the water sample from Well MW-2 during the third quarterly sampling. TPH as gasoline and kerosene were detected at 0.53 and 2.2 parts per million (ppm), respectively, and 2-methyl-naphthalene at 0.012 ppm. The analytical laboratory reported that the kerosene fingerprint pattern did not match the hydrocarbon standard, and the qualification was based on the area sum within the C10 to C16 boiling range (see laboratory data sheets).

Results of the third quarterly sampling differ somewhat from the second quarterly sampling. Fluorene and bis(2 ethylhexyl) phthalate, detected at just above the detection limit in the sample from Well MW-2 during the second quarterly sampling, were not detected in the third quarterly sampling. Concentrations of 2-methyl naphthalene in the sample from Well MW-2 have doubled in the third quarterly sampling from that detected in the second quarterly sampling.

Heptchlor and 4-4' DDD, detected in Well MW-2 during the second quarterly sampling, were not detected in the third quarterly sampling. Endrin Aldehyde and PCB 1260 detected in Wells MW-1 and MW-5, during the second quarterly sampling were not detected in the third quarterly sampling.

Results of Analyses for Metals

During the third quarterly sampling, six priority pollutant metals were detected at the site. Barium was detected in the samples from all five wells at concentrations ranging

from 0.06 to 0.21 ppm. Barium levels were equal to or slightly higher than those measured in second quarter sampling. In addition to barium, nickel was detected in the sample from Well MW-1 at 0.11 ppm; and zinc, molybdenum, arsenic and thallium were detected in Well MW-2 at 0.01, 0.01, 0.05 and 0.11 ppm, respectively. Copper, detected in Wells MW-4 and cadmium detected in Wells MW-1 and MW-3, during the second quarterly sampling, were not detected in any of the well samples during the third quarterly sampling. Thallium has not been detected in samples from the wells before. All of the metals concentrations detected are below the state action levels for drinking water set by the California Department of Health Services, and probably represent naturally occurring background concentrations.

A duplicate sample was collected from Well MW-4 and analyzed for volatile organics, as a QA/QC check. No volatile organics were detected in this sample.

HLA anticipates conducting the fourth quarterly sampling in March 1990.

A copy of this report should be sent to the California Regional Water Quality Control Board, San Francisco Bay Region and the Alameda County Department of Health.

If you have any questions, please call.

Yours very truly,

HARDING LAWSON ASSOCIATES

Wayne D. Haydon
Senior Geologist

Michael L. Siembieda
Associate Geologist - RG 4007

WDH/MLS/mbt/G11604-H

cc: Mark Scher
Sheldon Barch
David Mishell
Dennis Byrne (Dept. of Health, Alameda Co.)

Attachments: Table 1 Ground-Water Elevations
Table 2 Ground-Water Sample Analysis Results
Plate 1 Site Map
Appendix - Laboratory Report

TABLE 1. 1600 63rd Street, Emeryville
Groundwater Elevations

LAST UPDATE 18-Oct-89

WELL	TOP OF CASING ELEVATION (FT)	DATE	DEPTH TO PRODUCT FROM TOP OF CASING (FT)	DEPTH TO WATER FROM TOP OF CASING (FT)	PRODUCT THICKNESS (FT)	PRODUCT LEVEL ELEVATION (FT)	WATER LEVEL ELEVATION, CORR. FOR PRODUCT (FT)	CHANGE IN WATER LEVEL ELEVATION (FT) (-)=DECLINE	NOTES
MW-1	15.12	03-Aug-89	NO PRODUCT	5.99	0.00	NO PRODUCT	9.13		
MW-2	14.43	03-Aug-89	NO PRODUCT	6.66	0.00	NO PRODUCT	7.77		
MW-3	15.90	03-Aug-89	NO PRODUCT	4.06	0.00	NO PRODUCT	11.84		
MW-4	14.04	03-Aug-89	NO PRODUCT	7.10	0.00	NO PRODUCT	6.94		
MW-5	15.21	03-Aug-89	NO PRODUCT	4.35	0.00	NO PRODUCT	10.86		
MW-1	15.12	21-Sep-89	NO PRODUCT	5.81	0.00	NO PRODUCT	9.31	0.18	SECOND QUARTERLY SAMPLING OF WELLS
MW-2	14.43	21-Sep-89	NO PRODUCT	6.32	0.00	NO PRODUCT	8.11	0.34	
MW-3	15.90	21-Sep-89	NO PRODUCT	3.77	0.00	NO PRODUCT	12.13	0.29	
MW-4	14.04	21-Sep-89	NO PRODUCT	6.90	0.00	NO PRODUCT	7.14	0.20	
MW-5	15.21	21-Sep-89	NO PRODUCT	4.38	0.00	NO PRODUCT	10.83	-0.03	
MW-1	15.12	20-Oct-89	NO PRODUCT	6.24	0.00	NO PRODUCT	8.88	-0.43	
MW-2	14.43	20-Oct-89	NO PRODUCT	6.78	0.00	NO PRODUCT	7.65	-0.46	
MW-3	15.90	20-Oct-89	NO PRODUCT	4.49	0.00	NO PRODUCT	11.41	-0.72	
MW-4	14.04	20-Oct-89	NO PRODUCT	6.95	0.00	NO PRODUCT	7.09	-0.05	
MW-5	15.21	20-Oct-89	NO PRODUCT	4.37	0.00	NO PRODUCT	10.84	0.01	
MW-1	15.12	20-Dec-89	NO PRODUCT	6.09	0.00	NO PRODUCT	9.03	0.15	THIRD QUARTERLY SAMPLING OF WELLS
MW-2	14.43	20-Dec-89	NO PRODUCT	7.32	0.00	NO PRODUCT	7.11	-0.54	
MW-3	15.90	20-Dec-89	NO PRODUCT	4.32	0.00	NO PRODUCT	11.58	0.17	
MW-4	14.04	20-Dec-89	NO PRODUCT	7.24	0.00	NO PRODUCT	6.80	-0.29	
MW-5	15.21	20-Dec-89	NO PRODUCT	4.48	0.00	NO PRODUCT	10.73	-0.11	

Table 2. 1600 63rd Street, Emeryville
Ground-water Sample Analyses Results
Concentrations in mg/l (ppm)

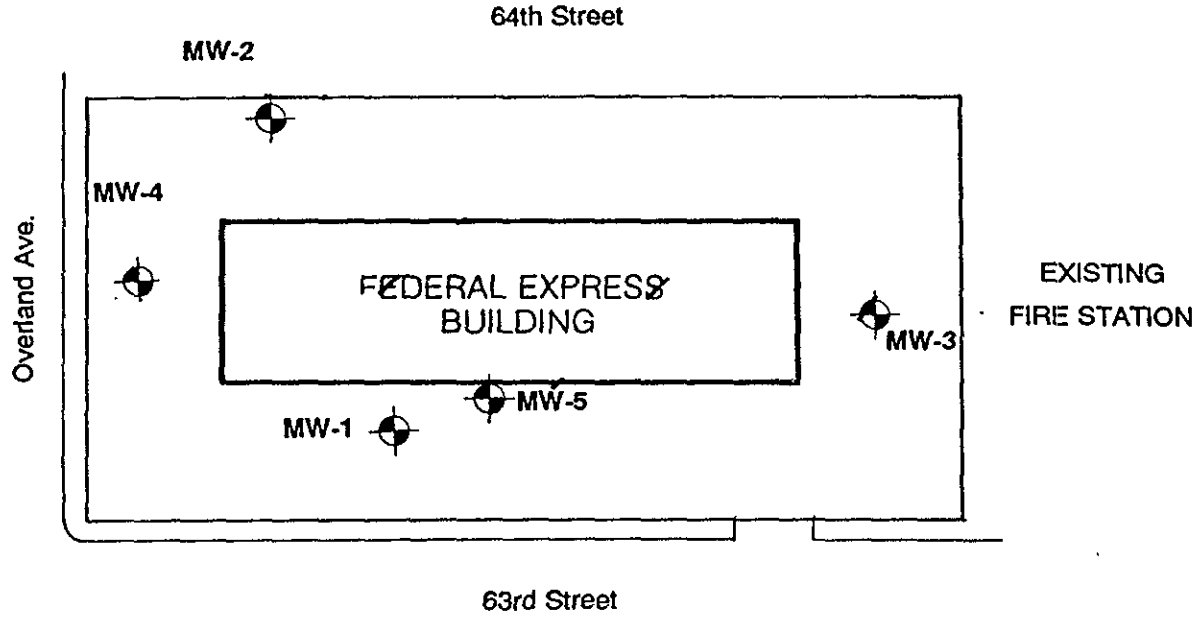
Well	Sampling Date	Sampling Event	Benzene EPA 8240	Toluene EPA 8240	Ethyl-benzene EPA 8240	Xylenes EPA 8240	TPH (gasoline) EPA 8015/ 3510-5030	TPH (diesel) EPA 8015/ 3510	TPH (kerosene) EPA 8015/ 3510	Barium EPA 6010	Copper EPA 6010	Nickel EPA 6010	Zinc EPA 6010	Molybdenum EPA 6010	Arsenic EPA 6010	Cadmium EPA 6010
MW-1	18-Jun-89	INITIAL SAMPLING	<0.001	<0.001	<0.001	<0.001	<0.5	<0.5	<0.5	0.13	0.01	0.08	0.06	<0.01	<0.10	<0.01
	21-Sep-89	2ND QTR SAMPLING	<0.005	<0.005	<0.005	<0.005	<0.5	<0.5	<0.5	0.15	<0.01	0.10	0.03	<0.01	<0.05	0.03
	20-Dec-89	3RD QTR SAMPLING	<0.005	<0.005	<0.005	<0.005	<0.05	<0.5	<0.5	0.19	<0.02	0.11	<0.01	<0.01	<0.05	<0.01
MW-2	25-Jun-89	INITIAL SAMPLING	<0.005	<0.005	<0.005	<0.005	0.3	<0.5	<0.5	0.12	<0.01	<0.01	0.07	<0.01	<0.10	<0.01
	21-Sep-89	2ND QTR SAMPLING	<0.005	<0.005	<0.005	<0.005	<0.5	1.0	<0.5	0.16	<0.01	<0.01	0.05	0.02	<0.05	<0.01
	20-Dec-89	3RD QTR SAMPLING	<0.005	<0.005	<0.005	<0.005	0.53	<0.5	2.2	0.17	<0.02	<0.01	0.01	0.01	0.05	<0.01
MW-3	18-Jun-89	INITIAL SAMPLING	<0.001	<0.001	<0.001	<0.001	<0.5	<0.5	<0.5	0.06	0.01	<0.01	0.07	<0.01	<0.10	<0.01
	21-Sep-89	2ND QTR SAMPLING	<0.005	<0.005	<0.005	<0.005	<0.5	<0.5	<0.5	0.06	<0.01	<0.01	0.05	<0.01	<0.05	0.03
	20-Dec-89	3RD QTR SAMPLING	<0.005	<0.005	<0.005	<0.005	<0.05	<0.5	<0.5	0.06	<0.02	<0.01	<0.01	<0.01	<0.05	<0.01
MW-4	25-Jun-89	INITIAL SAMPLING	<0.005	<0.005	<0.005	<0.005	<0.05	<0.5	<0.5	0.17	0.02	<0.01	0.10	<0.01	<0.10	<0.01
	21-Sep-89	2ND QTR SAMPLING	<0.005	<0.005	<0.005	<0.005	<0.5	<0.5	<0.5	0.19	0.01	0.01	0.04	<0.01	<0.05	<0.01
	20-Dec-89	3RD QTR SAMPLING	<0.005	<0.005	<0.005	<0.005	<0.05	<0.5	<0.5	0.20	<0.02	<0.01	<0.01	<0.01	<0.05	<0.01
MW-5	30-Jun-89	INITIAL SAMPLING	<0.005	<0.005	<0.005	<0.005	<0.05	<0.5	<0.5	NT	<0.01	<0.01	0.09	NT	<0.10	<0.01
	21-Sep-89	2ND QTR SAMPLING	<0.005	<0.005	<0.005	<0.005	<0.5	<0.5	<0.5	0.15	<0.01	<0.01	0.05	<0.01	0.1	<0.01
	20-Dec-89	3RD QTR SAMPLING	<0.005	<0.005	<0.005	<0.005	<0.05	<0.5	<0.5	0.21	<0.02	<0.01	0.02	<0.01	<0.05	<0.01
FB	30-Jun-89	INITIAL SAMPLING	<0.005	<0.005	<0.005	<0.005	<0.05	<0.5	<0.5	NT	<0.01	<0.01	<0.01	NT	<0.10	<0.01
FB	21-Sep-89	2ND QTR SAMPLING	<0.005	<0.005	<0.005	<0.005	<0.5	<0.5	<0.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01
MW-4DUP	20-Dec-89	3RD QTR SAMPLING	<0.005	<0.005	<0.005	<0.005	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT

NOTES:
NT = Not tested
All unlisted 8240 analytes not-detected.
All unlisted 8080 analytes not-detected.
All unlisted 8270 analytes not-detected.
All unlisted Priority Pollutant metals analytes not-detected.
FB-Field Blank
DUP-Duplicate

Table 2.(cont.) 1600 63rd Street, Emeryville
Ground-water Sample Analyses Results
Concentrations in mg/l (ppm)

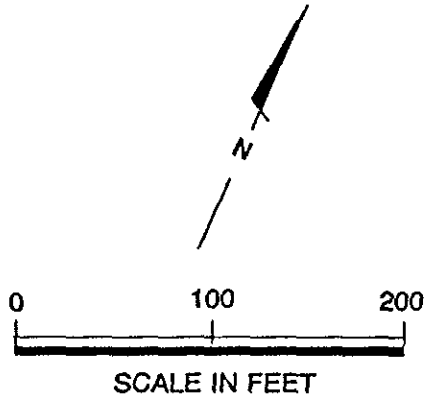
Well	Sampling Date	Sampling Event	Thallium EPA 7841	Aroclor EPA 8080	Endrin Aldehyde EPA 8080	PCB 1260 EPA 8080	Heptachlor EPA 8080	4,4'-DDD EPA 8080	Fluorene EPA 8270	Bis (2-ethyl-hexyl) phthalate EPA 8270	2-Methyl-nephthalene EPA 8270
MW-1	18-Jun-89	INITIAL SAMPLING	<0.01	<0.0005	NT	NT	NT	NT	<0.005	<0.005	<0.005
	21-Sep-89	2ND QTR SAMPLING	<0.10	NT	0.00010	0.00050	<0.00005	<0.00005	<0.005	<0.005	<0.005
	20-Dec-89	3RD QTR SAMPLING	<0.10	NT	<0.00005	<0.00005	<0.00005	<0.00005	<0.005	<0.005	<0.005
MW-2	25-Jun-89	INITIAL SAMPLING	<0.10	NT	NT	<0.0005	<0.00005	NT	trace	<0.005	<0.005
	21-Sep-89	2ND QTR SAMPLING	<0.10	NT	<0.00005	<0.0005	0.00016	0.00015	0.006	0.005	0.0061
	20-Dec-89	3RD QTR SAMPLING	0.11	NT	<0.00005	<0.00005	<0.00005	<0.00005	<0.005	<0.005	0.012
MW-3	18-Jun-89	INITIAL SAMPLING	<0.10	<0.0005	NT	NT	NT	NT	<0.005	<0.005	<0.005
	21-Sep-89	2ND QTR SAMPLING	<0.05	NT	<0.00005	<0.0005	<0.00005	<0.00005	<0.005	<0.005	<0.005
	20-Dec-89	3RD QTR SAMPLING	<0.10	NT	<0.00005	<0.00005	<0.00005	<0.00005	<0.005	<0.005	<0.005
MW-4	25-Jun-89	INITIAL SAMPLING	<0.10	NT	NT	<0.0005	<0.00005	NT	<0.005	<0.005	<0.005
	21-Sep-89	2ND QTR SAMPLING	<0.05	NT	<0.00005	<0.0005	<0.00005	<0.00005	<0.005	<0.005	<0.005
	20-Dec-89	3RD QTR SAMPLING	<0.10	NT	<0.00005	<0.00005	<0.00005	<0.00005	<0.005	<0.005	<0.005
MW-5	30-Jun-89	INITIAL SAMPLING	<0.1	<0.0005	NT	NT	NT	NT	<0.005	<0.005	<0.005
	21-Sep-89	2ND QTR SAMPLING	<0.05	NT	0.00015	0.00090	<0.00005	<0.00005	<0.005	<0.005	<0.005
	20-Dec-89	3RD QTR SAMPLING	<0.10	NT	<0.00005	<0.00005	<0.00005	<0.00005	<0.005	<0.005	<0.005
FB	30-Jun-89	INITIAL SAMPLING	NT	<0.00005	NT	NT	NT	NT	<0.005	<0.005	<0.005
FB	21-Sep-89	2ND QTR SAMPLING	<0.05	NT	<0.00005	<0.00050	<0.00005	<0.00005	<0.005	<0.005	<0.005
MW-4DUP	20-Dec-89	3RD QTR SAMPLING	NT	NT	NT	NT	NT	NT	NT	NT	NT

14011



EXPLANATION

MW-1 Monitoring Well



Harding Lawson Associates
Engineering and
Environmental Services

Site Plan
1600 63rd Street Association
Emeryville, California

PLATE
1

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
EH	18452,020.02		8/89	

Harding Lawson Associates
200 Rush Landing Road
P.O. Box 6107
Novato, California 94948
415/892-0821
Telecopy: 415/892-1586

CHAIN OF CUSTODY FORM

Lab: CURTIS & TOMPKINS, LTD.

Samplers: [illegible]

Job Number: [illegible]

Name/Location: [illegible]

Project Manager: [illegible] **Recorder:** [illegible] *(Signature Required)*

SOURCE CODE	MATRIX: Water	Sediment	Soil	Oil	#CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	SAMPLE NUMBER OR LAB NUMBER: Yr	Wk	Seq	DATE: Yr	Mo	Dy	Time	STATION DESCRIPTION/ NOTES
23	X				6			89	12	2600 1	89	12	22	1200	MW-1
										2602				1300	MW-3
										2603				1345	MW-4
										2604				1345	MW-4 DUP
										2605				1400	MW-5
										2606				1415	MW-2

ANALYSIS REQUESTED

EPA 601/8010	EPA 602/8020	8240	EPA 624/8240	EPA 625/8270	Priority Pllnt. Metals	Benzene/Toluene/Xylene	Total Petrol. Hydrocarb.	5015
X	X		X	X	X		X	X
X	X		X	X	X		X	X
X	X		X	X	X		X	X
	X							
X	X		X	X	X		X	X
X	X		X	X	X		X	X

LAB NUMBER: Yr	Wk	Seq	DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
						[illegible]

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: *(Signature)*	RECEIVED BY: *(Signature)*	DATE/TIME
RELINQUISHED BY: *(Signature)*	RECEIVED BY: *(Signature)*	DATE/TIME
RELINQUISHED BY: *(Signature)*	RECEIVED BY: *(Signature)*	DATE/TIME
RELINQUISHED BY: *(Signature)*	RECEIVED BY: *(Signature)*	DATE/TIME
DISPATCHED BY: *(Signature)* DATE/TIME	RECEIVED FOR LAB BY: *(Signature)* DATE/TIME	

METHOD OF SHIPMENT [illegible]

Laboratory Copy White | Project Office Copy Yellow | Field or Office Copy Pink

6533