89 DEC 26 AM 10:47

December 21, 1989

Mrs. Barbara B. Hagen
East Bay Municipal Utility District
Special District No. 1
Post Office Box 24055
Oakland, California 94623

RE: Wastewater Discharge Permit Application for the Groundwater Treatment System at the Carnation Dairy Facility in Oakland

AGE Project Numbers: 004-88-059, 004-89-093, 004-89-096

Dear Mrs. Hagen:

Enclosed is the laboratory analyses for the groundwater treatment system pilot test, performed at the subject facility on December 19, 1989. The analyses were performed by Curtis and Tompkins, Ltd., Analytical Laboratories. Sample number 12029 refers to the influent wastewater stream, sample number 12030 refers to the effluent stream from carbon column 1, and sample number 12031 refers to the effluent stream from carbon column 2. The samples were analyzed for volatile organics (EPA 8240), semi-volatile organics (EPA 8270), CAM metals, oil and grease, pH, total suspended solids, total dissolved solids, and PCBs (EPA 8080).

The effluent samples (12030, 12031) indicate higher levels of arsenic, barium, molybdenum, and oil and grease than the influent sample (12029). The CAM metals increase may be attributed to the parts per billion concentrations naturally occuring in activated carbon. The increase in oil and grease may be attributed to the oil contained in any metal equipment and should decrease with the continued use of the treatment system. Although the effluent samples (12030, 123031) are higher than the influent sample they are significantly lower than the discharge requirements.

Enclosed is also a list of contact personnel at the Oakland Facility and a daily check log for maintenance of the system.

If you have any questions concerning this information, please feel free to contact Mary Scruggs or myself at (916) 631-0154.

Sincerely,

Todd M. Galati
Project Manager

Enclosure

cc: Mr. Howard Shmuckler, Carnation
Mr. Jim Person, Carnation
Ms. Katherine Chesick, Alameda County Health Department

ANANIA GEOLOGIC ENGINEERING

AGE Nº 142

PROJECT NO.	LAB REPORT NO.
004-88-059	

P.O. NO.	SAMPLERS: (signature)
	Jim Wallace

LAB LOG NO.	DATE	TIME	SAMPLE I.D.	NO. OF CONTAINERS	SAMPLE TYPE: SOIL COMP	SOIL GRAB	WATER	8240	8270	17 Cam Metals	Oil & Grease	pH	Total Diss. Solids	Total Susp. Solids	8080 PCB's	REMARKS
"	1989 12/19	1015	12029	#6			X	X	X	X	X	X	X	X	X	24 HR TAT
	1989 12/19	1135	12030	#6			X	X	X	X	X	X	X	X	X	" " "
	1989 12/19	1130	12031	#6			X	X	X	X	X	X	X	X	X	" " "

RELINQUISHED BY: (signature)	DATE/TIME	RECEIVED BY: (signature)
Jim Wallace	12-19-89 1158	Robyn McKinney
Robyn McKinney	12-19-89 1220	
RELINQUISHED BY: (signature)	DATE/TIME	RECEIVED BY: (signature)

REMARKS:

24 HR TAT
Verbal results to
TODD GALATI
916-631-0154

SEND RESULTS TO: AGE

ATTN: Jim Wallace
11330 Sunrise Park Dr
Rancho Cordova, CA

PHONE NO. (916) ~~451-0921~~ 631-0154

CHAIN OF CUSTODY

White- AGE Yellow – LAB Copy Pink- File

Curtis & Tompkins, Ltd

LAB NUMBER: 18993
CLIENT: ANANIA GEOLOGIC ENGINEERING
PROJECT #: 004-88-059

DATE RECEIVED: 12/19/89
DATE ANALYZED: 12/19/89
DATE REPORTED: 12/20/89

POLYCHLORINATED BIPHENYLS (PCBs)
ANALYSIS METHOD: EPA 608
EXTRACTION METHOD: EPA 3510

LAB ID	CLIENT ID	AROCLOR	CONCENTRATION (ug/L)	MDL (ug/L)
18993-1	12029	---	ND	1.0
18993-2	12030	---	ND	1.0
18993-3	12031	---	ND	1.0

ND = NONE DETECTED; LIMIT OF DETECTION IS INDICATED IN LAST COLUMN.

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 18993-1
CLIENT: ANANIA GEOLOGIC ENGINEERING
JOB #: 004-88-059
SAMPLE ID: 12029

DATE RECEIVED: 12/19/89
DATE ANALYZED: 12/20/89
DATE REPORTED: 12/20/89

EPA METHOD 624: VOLATILE ORGANICS IN WATER

COMPOUND	Result ug/L	Detection Limit ug/L
chloromethane	ND	10
bromomethane	ND	10
vinyl chloride	ND	10
chloroethane	ND	10
methylene chloride	ND	5
trichlorofluoromethane	ND	5
1,1-dichloroethene	ND	5
1,1-dichloroethane	ND	5
trans-1,2-dichloroethene	ND	5
chloroform	ND	5
1,2-dichloroethane	ND	5
1,1,1-trichloroethane	ND	5
carbon tetrachloride	ND	5
bromodichloromethane	ND	5
1,2-dichloropropane	ND	5
cis-1,3-dichloropropene	ND	5
trichloroethylene	ND	5
dibromochloromethane	ND	5
1,1,2-trichloroethane	ND	5
benzene	1,400	5
trans-1,3-dichloropropene	ND	5
2-chloroethylvinyl ether	ND	10
bromoform	ND	5
1,1,2,2-tetrachloroethane	ND	5
tetrachloroethylene	ND	5
toluene	3,600	5
chlorobenzene	ND	5
ethyl benzene	22	5

Non-Priority Hazardous Pollutant Substances List Compounds

acetone	ND	10
carbon disulfide	ND	5
2-butanone	ND	10
vinyl acetate	ND	10
2-hexanone	ND	10
4-methyl-2-pentanone	ND	10
styrene	ND	5
total xylenes	3,300	5

QA/QC SUMMARY: SURROGATE RECOVERIES

1,2-Dichloroethane-d4	102%
Toluene-d8	105%
Bromofluorobenzene	103%

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 18993-2
CLIENT: ANANIA GEOLOGIC ENGINEERING
JOB #: 004-88-059
SAMPLE ID: 12030

DATE RECEIVED: 12/19/89
DATE ANALYZED: 12/20/89
DATE REPORTED: 12/20/89

EPA METHOD 624: VOLATILE ORGANICS IN WATER

COMPOUND	Result ug/L	Detection Limit ug/L
chloromethane	ND	10
bromomethane	ND	10
vinyl chloride	ND	10
chloroethane	ND	10
methylene chloride	ND	5
trichlorofluoromethane	ND	5
1,1-dichloroethene	ND	5
1,1-dichloroethane	ND	5
trans-1,2-dichloroethene	ND	5
chloroform	ND	5
1,2-dichloroethane	ND	5
1,1,1-trichloroethane	ND	5
carbon tetrachloride	ND	5
bromodichloromethane	ND	5
1,2-dichloropropane	ND	5
cis-1,3-dichloropropene	ND	5
trichloroethylene	ND	5
dibromochloromethane	ND	5
1,1,2-trichloroethane	ND	5
benzene	ND	5
trans-1,3-dichloropropene	ND	5
2-chloroethylvinyl ether	ND	10
bromoform	ND	5
1,1,2,2-tetrachloroethane	ND	5
tetrachloroethylene	ND	5
toluene	ND	5
chlorobenzene	ND	5
ethyl benzene	ND	5
Non-Priority Hazardous Pollutant Substances List Compounds		
acetone	ND	10
carbon disulfide	ND	5
2-butanone	ND	10
vinyl acetate	ND	10
2-hexanone	ND	10
4-methyl-2-pentanone	ND	10
styrene	ND	5
total xylenes	ND	5

QA/QC SUMMARY: SURROGATE RECOVERIES

1,2-Dichloroethane-d4	101%
Toluene-d8	101%
Bromofluorobenzene	94%

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 18993-3
CLIENT: ANANIA GEOLOGIC ENGINEERING
JOB #: 004-88-059
SAMPLE ID: 12031

DATE RECEIVED: 12/19/89
DATE ANALYZED: 12/20/89
DATE REPORTED: 12/20/89

EPA METHOD 624: VOLATILE ORGANICS IN WATER

COMPOUND	Result ug/L	Detection Limit ug/L
chloromethane	ND	10
bromomethane	ND	10
vinyl chloride	ND	10
chloroethane	ND	10
methylene chloride	ND	5
trichlorofluoromethane	ND	5
1,1-dichloroethene	ND	5
1,1-dichloroethane	ND	5
trans-1,2-dichloroethene	ND	5
chloroform	ND	5
1,2-dichloroethane	ND	5
1,1,1-trichloroethane	ND	5
carbon tetrachloride	ND	5
bromodichloromethane	ND	5
1,2-dichloropropane	ND	5
cis-1,3-dichloropropene	ND	5
trichloroethylene	ND	5
dibromochloromethane	ND	5
1,1,2-trichloroethane	ND	5
benzene	ND	5
trans-1,3-dichloropropene	ND	5
2-chloroethylvinyl ether	ND	10
bromoform	ND	5
1,1,2,2-tetrachloroethane	ND	5
tetrachloroethylene	ND	5
toluene	ND	5
chlorobenzene	ND	5
ethyl benzene	ND	5

Non-Priority Hazardous Pollutant Substances List Compounds

acetone	ND	10
carbon disulfide	ND	5
2-butanone	ND	10
vinyl acetate	ND	10
2-hexanone	ND	10
4-methyl-2-pentanone	ND	10
styrene	ND	5
total xylenes	ND	5

QA/QC SUMMARY: SURROGATE RECOVERIES

1,2-Dichloroethane-d4	102%
Toluene-d8	101%
Bromofluorobenzene	97%

LABORATORY NUMBER: 18993-1
CLIENT: ANANIA GEOLOGIC ENGINEERING
JOB #: 004-88-059
CLIENT ID: 12029

DATE RECEIVED: 12/19/89
DATE EXTRACTED: 12/19/89
DATE ANALYZED: 12/20/89
DATE REPORTED: 12/20/89

EPA 625: Base/Neutral and Acid Extractables in Water
Extraction Method: EPA 3510 Liquid/Liquid

ACID COMPOUNDS	RESULT ug/L	LOD ug/L
Phenol	74	10
2-Chlorophenol	ND	10
2-Nitrophenol	ND	50
2,4-Dimethylphenol	ND	10
2,4-Dichlorophenol	ND	10
4-Chloro-3-methylphenol	ND	20
2,4,6-Trichlorophenol	ND	10
2,4-Dinitrophenol	ND	50
4-Nitrophenol	ND	50
4,6-Dinitro-2-methylphenol	ND	50
Pentachlorophenol	ND	50
BASE/NEUTRAL COMPOUNDS		
N-Nitrosodimethylamine	ND	10
Bis(2-chloroethyl)ether	ND	10
1,3-Dichlorobenzene	ND	10
1,4-Dichlorobenzene	ND	10
1,2-Dichlorobenzene	ND	10
Bis(2-chloroisopropyl)ether	ND	10
N-Nitroso-di-n-propylamine	ND	10
Hexachloroethane	ND	10
Nitrobenzene	ND	10
Isophorone	ND	10
Bis(2-chloroethoxy)methane	ND	10
1,2,4-Trichlorobenzene	ND	10
Naphthalene	200	10
Hexachlorobutadiene	ND	10
Hexachlorocyclopentadiene	ND	10
2-Chloronaphthalene	ND	10
Dimethylphthalate	ND	10
Acenaphthylene	ND	10
2,6-Dinitrotoluene	ND	10
Acenaphthene	ND	10
2,4-Dinitrotoluene	ND	10
Diethylphthalate	ND	10
4-Chlorophenyl-phenylether	ND	10
Fluorene	ND	10
N-Nitrosodiphenylamine	ND	10

LABORATORY NUMBER: 18993-1
CLIENT ID: 12029

BASE/NEUTRAL COMPOUNDS	RESULT ug/L	LOD ug/L
Azobenzene	ND	10
4-Bromophenyl-phenylether	ND	10
Hexachlorobenzene	ND	10
Phenanthrene	15	10
Anthracene	ND	10
Di-n-butylphthalate	ND	10
Fluoranthene	ND	10
Benzidine	ND	10
Pyrene	ND	10
Butylbenzylphthalate	ND	10
3,3'-Dichlorobenzidine	ND	50
Benzo (a) anthracene	ND	10
Chrysene	ND	10
Bis (2-ethylhexyl)phthalate	ND	10
Di-n-octylphthalate	ND	10
Benzo (b) fluoranthene	ND	10
Benzo (k) fluoranthene	ND	10
Benzo (a) pyrene	ND	10
Indeno (1,2,3-cd) pyrene	ND	20
Dibenzo (a,h) anthracene	ND	20
Benzo (g,h,i) perylene	ND	20

HSL COMPOUNDS		
Aniline	ND	10
Benzoic Acid	ND	50
2-Methylphenol	33	10
4-Methylphenol	ND	10
2,4,5-Trichlorophenol	ND	50
Benzyl Alcohol	ND	10
4-Chloroaniline	ND	10
2-Methylnaphthalene	91	10
2-Nitroaniline	ND	50
3-Nitroaniline	ND	50
Dibenzofuran	ND	10
4-Nitroaniline	ND	50

ND = None Detected, Limit of Detection (LOD) appears in right column

QA/QC SUMMARY: SURROGATE RECOVERIES

Compound	%Recovery	Compound	%Recovery
2-Fluorophenol	65	Nitrobenzene-d5	85
Phenol-d5	75	2-Fluorobiphenyl	107
2,4,6-tribromophenol	105	Terphenyl	60

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 18993-2
CLIENT: ANANIA GEOLOGIC ENGINEERING
JOB #: 004-88-059
CLIENT ID: 12030

DATE RECEIVED: 12/19/89
DATE EXTRACTED: 12/19/89
DATE ANALYZED: 12/20/89
DATE REPORTED: 12/20/89

EPA 625: Base/Neutral and Acid Extractables in Water
Extraction Method: EPA 3510 Liquid/Liquid

	RESULT ug/L	LOD ug/L
ACID COMPOUNDS		
Phenol	ND	5
2-Chlorophenol	ND	5
2-Nitrophenol	ND	25
2,4-Dimethylphenol	ND	5
2,4-Dichlorophenol	ND	5
4-Chloro-3-methylphenol	ND	10
2,4,6-Trichlorophenol	ND	5
2,4-Dinitrophenol	ND	25
4-Nitrophenol	ND	25
4,6-Dinitro-2-methylphenol	ND	25
Pentachlorophenol	ND	25
BASE/NEUTRAL COMPOUNDS		
N-Nitrosodimethylamine	ND	10
Bis(2-chloroethyl)ether	ND	5
1,3-Dichlorobenzene	ND	5
1,4-Dichlorobenzene	ND	5
1,2-Dichlorobenzene	ND	5
Bis(2-chloroisopropyl)ether	ND	5
N-Nitroso-di-n-propylamine	ND	5
Hexachloroethane	ND	5
Nitrobenzene	ND	5
Isophorone	ND	5
Bis(2-chloroethoxy)methane	ND	5
1,2,4-Trichlorobenzene	ND	5
Naphthalene	ND	5
Hexachlorobutadiene	ND	5
Hexachlorocyclopentadiene	ND	5
2-Chloronaphthalene	ND	5
Dimethylphthalate	ND	5
Acenaphthylene	ND	5
2,6-Dinitrotoluene	ND	5
Acenaphthene	ND	5
2,4-Dinitrotoluene	ND	5
Diethylphthalate	ND	5
4-Chlorophenyl-phenylether	ND	5
Fluorene	ND	5
N-Nitrosodiphenylamine	ND	5

LABORATORY NUMBER: 18993-2
CLIENT ID: 12030

BASE/NEUTRAL COMPOUNDS	RESULT ug/L	LOD ug/L
Azobenzene	ND	10
4-Bromophenyl-phenylether	ND	5
Hexachlorobenzene	ND	5
Phenanthrene	ND	5
Anthracene	ND	5
Di-n-butylphthalate	ND	5
Fluoranthene	ND	5
Benzidine	ND	10
Pyrene	ND	5
Butylbenzylphthalate	ND	5
3,3'-Dichlorobenzidine	ND	25
Benzo (a) anthracene	ND	5
Chrysene	ND	5
Bis (2-ethylhexyl)phthalate	ND	5
Di-n-octylphthalate	ND	5
Benzo (b) fluoranthene	ND	5
Benzo (k) fluoranthene	ND	5
Benzo (a) pyrene	ND	5
Indeno (1,2,3-cd) pyrene	ND	10
Dibenzo (a,h) anthracene	ND	10
Benzo (g,h,i) perylene	ND	10
HSL COMPOUNDS		
Aniline	ND	10
Benzoic Acid	ND	25
2-Methylphenol	ND	5
4-Methylphenol	ND	5
2,4,5-Trichlorophenol	ND	25
Benzyl Alcohol	ND	5
4-Chloroaniline	ND	5
2-Methylnaphthalene	ND	5
2-Nitroaniline	ND	25
3-Nitroaniline	ND	25
Dibenzofuran	ND	5
4-Nitroaniline	ND	25

ND = None Detected, Limit of Detection (LOD) appears in right column

QA/QC SUMMARY: SURROGATE RECOVERIES

Compound	%Recovery	Compound	%Recovery
2-Fluorophenol	55	Nitrobenzene-d5	93
Phenol-d5	61	2-Fluorobiphenyl	103
2,4,6-tribromophenol	86	Terphenyl	65

LABORATORY NUMBER: 18993-3
CLIENT: ANANIA GEOLOGIC ENGINEERING
JOB #: 004-88-059
CLIENT ID: 12031

DATE RECEIVED: 12/19/89
DATE EXTRACTED: 12/19/89
DATE ANALYZED: 12/20/89
DATE REPORTED: 12/20/89

EPA 625: Base/Neutral and Acid Extractables in Water
Extraction Method: EPA 3510 Liquid/Liquid

	RESULT ug/L	LOD ug/L
ACID COMPOUNDS		
Phenol	ND	5
2-Chlorophenol	ND	5
2-Nitrophenol	ND	25
2,4-Dimethylphenol	ND	5
2,4-Dichlorophenol	ND	5
4-Chloro-3-methylphenol	ND	10
2,4,6-Trichlorophenol	ND	5
2,4-Dinitrophenol	ND	25
4-Nitrophenol	ND	25
4,6-Dinitro-2-methylphenol	ND	25
Pentachlorophenol	ND	25
BASE/NEUTRAL COMPOUNDS		
N-Nitrosodimethylamine	ND	10
Bis(2-chloroethyl)ether	ND	5
1,3-Dichlorobenzene	ND	5
1,4-Dichlorobenzene	ND	5
1,2-Dichlorobenzene	ND	5
Bis(2-chloroisopropyl)ether	ND	5
N-Nitroso-di-n-propylamine	ND	5
Hexachloroethane	ND	5
Nitrobenzene	ND	5
Isophorone	ND	5
Bis(2-chloroethoxy)methane	ND	5
1,2,4-Trichlorobenzene	ND	5
Naphthalene	ND	5
Hexachlorobutadiene	ND	5
Hexachlorocyclopentadiene	ND	5
2-Chloronaphthalene	ND	5
Dimethylphthalate	ND	5
Acenaphthylene	ND	5
2,6-Dinitrotoluene	ND	5
Acenaphthene	ND	5
2,4-Dinitrotoluene	ND	5
Diethylphthalate	ND	5
4-Chlorophenyl-phenylether	ND	5
Fluorene	ND	5
N-Nitrosodiphenylamine	ND	5

Curtis & Tompkins, Ltd

LABORATORY NUMBER: 18993-3
CLIENT ID: 12031

EPA 625

BASE/NEUTRAL COMPOUNDS	RESULT ug/L	LOD ug/L
Azobenzene	ND	10
4-Bromophenyl-phenylether	ND	5
Hexachlorobenzene	ND	5
Phenanthrene	ND	5
Anthracene	ND	5
Di-n-butylphthalate	ND	5
Fluoranthene	ND	5
Benzidine	ND	10
Pyrene	ND	5
Butylbenzylphthalate	ND	5
3,3'-Dichlorobenzidine	ND	25
Benzo (a) anthracene	ND	5
Chrysene	ND	5
Bis (2-ethylhexyl)phthalate	ND	5
Di-n-octylphthalate	ND	5
Benzo (b) fluoranthene	ND	5
Benzo (k) fluoranthene	ND	5
Benzo (a) pyrene	ND	5
Indeno (1,2,3-cd) pyrene	ND	10
Dibenzo (a,h) anthracene	ND	10
Benzo (g,h,i) perylene	ND	10
HSL COMPOUNDS		
Aniline	ND	10
Benzoic Acid	ND	25
2-Methylphenol	ND	5
4-Methylphenol	ND	5
2,4,5-Trichlorophenol	ND	25
Benzyl Alcohol	ND	5
4-Chloroaniline	ND	5
2-Methylnaphthalene	ND	5
2-Nitroaniline	ND	25
3-Nitroaniline	ND	25
Dibenzofuran	ND	5
4-Nitroaniline	ND	25

ND = None Detected, Limit of Detection (LOD) appears in right column

QA/QC SUMMARY: SURROGATE RECOVERIES

Compound	%Recovery	Compound	%Recovery
2-Fluorophenol	55	Nitrobenzene-d5	99
Phenol-d5	61	2-Fluorobiphenyl	109
2,4,6-tribromophenol	91	Terphenyl	67

Curtis & Tompkins, Ltd.

RECEIVED DEC 2 0 1989

LAB NUMBER: 18993
CLIENT: ANANIA GEOLOGIC ENGINEERING
PROJECT # : 004-88-059

DATE RECEIVED: 12/19/89
DATE ANALYZED: 12/20/89
DATE REPORTED: 12/20/89

ANALYSIS: OIL AND GREASE
METHOD: SMWW 503E

LAB ID	SAMPLE ID	RESULT	UNITS	DETECTION LIMIT
18993-1	12029	ND	mg/L	20
18993-2	12030	64	mg/L	20
18993-3	12031	70	mg/L	20

ND = NONE DETECTED

QA/QC SUMMARY

RPD, %	5
RECOVERY, %	91

Curtis & Tompkins, Ltd

RECEIVED DEC 2 0 1989

LABORATORY NUMBER: 18993
CLIENT: ANANIA GEOLOGIC ENGINEERING
PROJECT #: 004-88-059

DATE RECEIVED: 12/19/89
DATE ANALYZED: 12/19/89
DATE REPORTED: 12/20/89

ANALYSIS: pH
METHOD REFERENCE: EPA 9040

LAB ID	SAMPLE ID	RESULT
18993-1	12029	7.1
18993-2	12030	9.7
18993-3	12031	10.2

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 18993
CLIENT: ANANIA GEOLOGIC ENGINEERING
PROJECT #: 004-88-059

DATE RECEIVED: 12/19/89
DATE ANALYZED: 12/20/89
DATE REPORTED: 12/20/89

ANALYSIS: TOTAL DISSOLVED SOLIDS
METHOD REFERENCE: EPA 160.1

LAB ID	SAMPLE ID	RESULT	UNITS	DETECTION LIMIT
18993-1	12029	470	mg/L	25
18993-2	12030	400	mg/L	25
18993-3	12031	450	mg/L	25

QA/QC:

RPD, %	4

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 18993
CLIENT: ANANIA GEOLOGIC ENGINEERING
PROJECT #: 004-88-059

DATE RECEIVED: 12/19/89
DATE ANALYZED: 12/20/89
DATE REPORTED: 12/20/89

ANALYSIS: TOTAL SUSPENDED SOLIDS
METHOD REFERENCE: EPA 160.2

LAB ID	SAMPLE ID	RESULT	UNITS	DETECTION LIMIT
18993-1	12029	ND	mg/L	5
18993-2	12030	ND	mg/L	5
18993-3	12031	ND	mg/L	5

ND = NONE DETECTED

QA/QC:

RPD, %	<1

Curtis & Tompkins, Ltd.

RECEIVED [illegible]

LAB NUMBER: 18993
CLIENT: ANANIA GEOLOGIC ENGINEERING
PROJECT #: 004-88-059

DATE RECEIVED: 12/19/89
DATE ANALYZED: 12/19/89
DATE REPORTED: 12/20/89

POLYCHLORINATED BIPHENYLS (PCBs)
ANALYSIS METHOD: EPA 608
EXTRACTION METHOD: EPA 3510

LAB ID	CLIENT ID	AROCLOR	CONCENTRATION (ug/L)	MDL (ug/L)
18993-1	12029	---	ND	1.0
18993-2	12030	---	ND	1.0
18993-3	12031	---	ND	1.0

ND = NONE DETECTED; LIMIT OF DETECTION IS INDICATED IN LAST COLUMN.

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 18993-1
CLIENT: ANANIA GEOLOGIC ENGINEERING
JOB #: 004-88-059
SAMPLE ID: 12029

DATE RECEIVED: 12/19/89
DATE ANALYZED: 12/20/89
DATE REPORTED: 12/20/89

Title 26 Metals in Aqueous Solutions

METAL	RESULT mg/L	DETECTION LIMIT mg/L	METHOD
Antimony	ND	0.10	EPA 6010
Arsenic	0.05	0.05	EPA 7060
Barium	0.07	0.01	EPA 6010
Beryllium	ND	0.01	EPA 6010
Cadmium	ND	0.01	EPA 6010
Chromium (total)	ND	0.01	EPA 6010
Cobalt	ND	0.01	EPA 6010
Copper	ND	0.02	EPA 6010
Lead	ND	0.05	EPA 6010
Mercury	ND	0.001	EPA 7470
Molybdenum	ND	0.01	EPA 6010
Nickel	ND	0.01	EPA 6010
Selenium	ND	0.05	EPA 6010
Silver	ND	0.01	EPA 6010
Thallium	ND	0.10	EPA 6010
Vanadium	ND	0.01	EPA 6010
Zinc	ND	0.01	EPA 6010

ND = Not Detected

QA/QC SUMMARY

	%RPD	%RECOVERY		%RPD	%RECOVERY
Antimony	2	85	Mercury	<1	96
Arsenic	2	82	Molybdenum	<1	90
Barium	3	79	Nickel	22	77
Beryllium	<1	81	Selenium	3	86
Cadmium	2	82	Silver	9	100
Chromium	1	86	Thallium	1	101
Cobalt	2	104	Vanadium	3	79
Copper	1	86	Zinc	3	84
Lead	10	97			

Curtis & Tompkins, Ltd

RECEIVED DEC 2 0 1989

LABORATORY NUMBER: 18993-2
CLIENT: ANANIA GEOLOGIC ENGINEERING
JOB #: 004-88-059
SAMPLE ID: 12030

DATE RECEIVED: 12/19/89
DATE ANALYZED: 12/20/89
DATE REPORTED: 12/20/89

Title 26 Metals in Aqueous Solutions

METAL	RESULT mg/L	DETECTION LIMIT mg/L	METHOD
Antimony	ND	0.10	EPA 6010
Arsenic	0.15	0.05	EPA 7060
Barium	0.19	0.01	EPA 6010
Beryllium	ND	0.01	EPA 6010
Cadmium	ND	0.01	EPA 6010
Chromium (total)	ND	0.01	EPA 6010
Cobalt	ND	0.01	EPA 6010
Copper	ND	0.02	EPA 6010
Lead	ND	0.05	EPA 6010
Mercury	ND	0.001	EPA 7470
Molybdenum	0.01	0.01	EPA 6010
Nickel	ND	0.01	EPA 6010
Selenium	ND	0.05	EPA 6010
Silver	ND	0.01	EPA 6010
Thallium	ND	0.10	EPA 6010
Vanadium	ND	0.01	EPA 6010
Zinc	ND	0.01	EPA 6010

ND = Not Detected

QA/QC SUMMARY

	%RPD	%RECOVERY
Antimony	2	85
Arsenic	2	82
Barium	3	79
Beryllium	<1	81
Cadmium	2	82
Chromium	1	86
Cobalt	2	104
Copper	1	86
Lead	10	97
Mercury	<1	96
Molybdenum	<1	90
Nickel	22	77
Selenium	3	86
Silver	9	100
Thallium	1	101
Vanadium	3	79
Zinc	3	84

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 18993-3
CLIENT: ANANIA GEOLOGIC ENGINEERING
JOB #: 004-88-059
SAMPLE ID: 12031

DATE RECEIVED: 12/19/89
DATE ANALYZED: 12/20/89
DATE REPORTED: 12/20/89

Title 26 Metals in Aqueous Solutions

METAL	RESULT mg/L	DETECTION LIMIT mg/L	METHOD
Antimony	ND	0.10	EPA 6010
Arsenic	0.34	0.05	EPA 7060
Barium	0.22	0.01	EPA 6010
Beryllium	ND	0.01	EPA 6010
Cadmium	ND	0.01	EPA 6010
Chromium (total)	ND	0.01	EPA 6010
Cobalt	ND	0.01	EPA 6010
Copper	ND	0.02	EPA 6010
Lead	ND	0.05	EPA 6010
Mercury	ND	0.001	EPA 7470
Molybdenum	0.03	0.01	EPA 6010
Nickel	ND	0.01	EPA 6010
Selenium	ND	0.05	EPA 6010
Silver	ND	0.01	EPA 6010
Thallium	ND	0.10	EPA 6010
Vanadium	ND	0.01	EPA 6010
Zinc	ND	0.01	EPA 6010

ND = Not Detected

QA/QC SUMMARY

	%RPD	%RECOVERY		%RPD	%RECOVERY
Antimony	2	85	Mercury	<1	96
Arsenic	2	82	Molybdenum	<1	90
Barium	3	79	Nickel	22	77
Beryllium	<1	81	Selenium	3	86
Cadmium	2	82	Silver	9	100
Chromium	1	86	Thallium	1	101
Cobalt	2	104	Vanadium	3	79
Copper	1	86	Zinc	3	84
Lead	10	97			

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P.O. BOX 161148 • SACRAMENTO, CA 95816 • PHONE (916) 631-0154 FAX (916) 631-0528

Groundwater Treatment System Check Log

Date: _____ Project No. _____

Name: _____

TIME (Hourly)	FLOW RATE (GPM)	TOTAL GALLONS	P1	P2	P3	P4	P5	P6	REMARKS

Groundwater Treatment System Check Log

Date: _____ Project No. _____

Name: _____

EQUIPMENT	REMARKS
Pump 1	
Pump 2	
Pump 3	
Separator	
Filter	
Effluent Tank	
Surge Tank	
Sewer Grate	