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VRCA ENVIRONMENTAL SERVICES

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January 27, 1992

INTERPRETATION OF ANALYTICAL RESULTS FOR INSPECTION TESTING SERVICES

The following explanation is in reference to " BTEX,GRO,DRO, and Trace Metal Analyses of Soil and Water Samples for Inspection Testing Services", a report of analyses by VRCA Environmental Services Laboratory, issued on January 27, 1992.

QUESTION TO BE ANSWERED BY THE INTERPRETATION: Are the concentrations of contaminants detected in the samples from Inspection Testing Services below the regulatory levels set by the state of Alaska?

TABLE # 1: COMPARISON OF FOUND CONCENTRATIONS OF ORGANIC CONTAMINANTS WITH REGULATORY MAXIMUM CONTAMINANT CONCENTRATIONS

ANALYSIS	MATRIX	FOUND CONCENTRATION	REGULATORY MCC	COMPLIANCE?
DRO	Water	< 2 ppm	No MCC(a)	Yes
GRO	Water	10.3,8.4	No MCC(a)	Yes
Benzene	Water	< 5 ppb	5 ppb(b)	Yes
Toluene	Water	< 5 ppb	No MCC(c)	Yes
EBenzene	Water	< 5 ppb	No MCC(c)	Yes
Xylenes	Water	< 5 ppb	No MCC(c)	Yes

(a) The state of Alaska has not set a regulatory limit or maximum contaminant concentration for gas-range or diesel-range organics in water. Only benzene, a known carcinogen and a component of both gas and diesel, is regulated. The benzene maximum contaminant concentration in ground or surface waters is the same as that for drinking water, 5 ppb.
(b) 18 AAC 80.070 (2)(b),page 10 of State of Alaska Drinking Water Regulations.
(c) These substances require monitoring in drinking water, but no maximum contaminant concentration has currently been set. See table H of 18 AAC 80.070, page 35.

TABLE # 2:
COMPARISON OF FOUND CONCENTRATIONS OF INORGANIC CONTAMINANTS
WITH REGULATORY MAXIMUM CONTAMINANT CONCENTRATIONS

ANALYSIS	MATRIX	FOUND CONCENTRATION	REGULATORY MCC	COMPLIANCE?
Pb	Water	<1ppb,2.4ppb	50 ppb(a)	Yes
Ag	Water	<1ppb	50 ppb(a)	Yes
Pb	Soil	1.4ppm,2.2ppm	5 ppm(b)	Yes
Ab	Soil	0.1ppm	5 ppm(b)	Yes
Cd	Soil	<0.1ppm	1 ppm(b)	Yes
Hg	Soil	<0.1ppm,0.1ppm	0.2 ppm(b)	Yes

(a) Table (1), State of Alaska Drinking Water Regulations,18 AAC 80.070, page 9.
(b) 40 CFR 261 TCLP maximum contaminant concentrations. These soils were analyzed for total metals: TCLP concentrations for these samples will be equal to or less than the total metal concentrations.

CONCLUSION: Tables 1 and 2 show that all of the contaminant concentrations of the analytes for which analyses were requested are below the most stringent regulatory limits applicable to these contaminants.

Tim Thomas
Laboratory Manager

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Fairbanks, Alaska
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January 26, 1992

BTEX, GRO, DRO, AND TRACE METAL ANALYSES OF SOIL AND WATER SAMPLES FOR INSPECTION TESTING SERVICES

SAMPLE IDENTIFICATION

SAMPLE ARRIVAL DATE:	1/14/92 ; 1538.
SAMPLING DATE/TIME:	1/14/92 ; 1200.
SAMPLE CONTACT PERSON:	Mr. Robb Cahoon.
SAMPLE MATRIX:	Soil and Water.
CLIENT ADDRESS:	Inspection Testing Service 30th Street Fairbanks, Alaska.

LAB ID #	CLIENT ID #	MATRIX	TESTS	SAMPLE CONTAINER
92011401	ITS-S-01	Soil	Pb,Ag,Cd,Hg	250 mL glass/teflon.
92011402	ITS-S-02	Soil	Pb,Ag,Cd,Hg	250 mL glass/teflon.
92011403	ITS-MW-01	Water	m8100	1 Lter glass/teflon.
92011404	ITS-MW-02	Water	8020	40 mL VOA vial.
92011405	ITS-MW-03	Water	m8015	40 mL VOA vial.
92011406	ITS-MW-04	Water	Pb,Ag	250 mL glass/teflon.
92011407	ITS-WW-05	Water	Pb,Ag	250 mL glass/teflon.
92011408	ITS-WW-06	Water	m8100	1 Lter glass/teflon.
92011409	ITS-WW-07	Water	m8015	40 mL VOA vial.
92011410	ITS-WW-08	Water	8020	40 mL VOA vial.

SAMPLE HANDLING

ANALYSIS	PRESERVATION TREATMENT	HOLDING TIME
Trace Metal/Soil	Cooled to 4 C.	Six months.
Trace Metal/Water	pH < 2, Cooled to 4 C.	Six months.
DRO	HCl, Cooled to 4 C.	40 days.
GRO	HCl, Cooled to 4 C.	14 days.
BTEX	HCl, Cooled to 4 C.	14 days.

PRESERVATION STARTED: 1/14/92.

Inspection Testing Services, BTEX,GRO,DRO,Trace Metals

ANALYSIS SCHEDULE

EXTRACTION/PREPARATION:

ANALYSIS	DATE
DRO	1/16/92.
GRO,BTEX	1/20/92.
Trace Metal/Soil	1/16/92.
Trace Metal/Water	1/20/92.

ANALYSIS DATES:

ANALYSIS	DATE
DRO	1/22/92.
GRO	1/26/92.
BTEX	1/25/92.
Trace Metals	1/23/92-1/25/92.

REPORT DATE: 1/26/92.

SPECIAL INSTRUCTIONS No special instructions.

RESULTS OF DIESEL-RANGE ORGANICS IN WATER ANALYSES IN PARTS PER MILLION (mg/L)

LAB ID #	CLIENT ID #	DRO CONCENTRATION
92011403	ITS-MW-01	< 2
92011408	ITS-WW-06	< 2

RESULTS OF BTEX ANALYSES OF WATER IN PARTS PER BILLION (ug/L)

LAB ID #	CLIENT ID #	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES
92011404	ITS-MW-04	< 5	< 5	< 5	< 5
92011410	ITS-WW-10	< 5	< 5	< 5	< 5

RESULTS OF GAS-RANGE ANALYSES OF WATER IN PARTS PER BILLION (ug/L)

LAB ID #	CLIENT ID #	GRO	% SURROGATE RECOVERY
92011405	ITS-MW-03	10.3	93.6
92011409	ITS-WW-07	8.4	96.6

Inspection Testing Services, BTEX,GRO,DRO,Trace Metals

RESULTS OF TRACE METAL ANALYSES OF WATER IN PARTS PER BILLION (ug/L)

LAB ID #	CLIENT ID #	LEAD	SILVER
92011406	ITS-MW-04	< 1	< 1
92011407	ITS-WW-05	2.4	< 1

RESULTS OF TRACE METAL ANALYSES OF SOIL IN PARTS PER MILLION (mg/dry kg)

LAB ID #	CLIENT ID #	LEAD	SILVER	CADMIUM	MERCURY
92011401	ITS-S-01	1.4	0.1	< 0.1	0.1
92011402	ITS-S-02	2.2	0.1	< 0.1	<0.1

QUALITY CONTROL DATA

RELATIVE PER CENT DIFFERENCES FOR DUPLICATES

ANALYSIS	RPD
DRO	3.2 %

ABSOLUTE DIFFERENCES FOR DUPLICATES

ANALYSIS	SOIL(mg/kg)	WATER(ug/L)
SILVER	0.043	< 1
CADMIUM	0.010	
LEAD	0.699	1.5
MERCURY	0.22	

BTEX % SURROGATE RECOVERY VALUES

LAB ID #	% SURROGATE RECOVERY
92011404	80.1
92011410	115.3

Inspection Testing Services, BTEX, GRO, DRO, Trace Metals

SPIKE RECOVERY VALUES

ANALYSIS	% RECOVERY
DRO	74.0 %
SILVER	97.9 %
LEAD	95.7 %
CADMIUM	108.0 %
MERCURY	73.0 %

METHODS

DRO EXTRACTION:	SW-846 # 3520.
DRO ANALYSIS:	m8100/WTPH-D/revision 2.
BTEX EXTRACTION:	SW-846 # 5030.
BTEX ANALYSIS:	SW-846 # 8020.
GRO EXTRACTION:	SW-846 # 5030.
GRO ANALYSIS:	m8015/WTPH-G/revision 2.
METAL WATER DIGEST:	SW-846 # 3020.
METAL SOIL DIGEST:	SW-846 # 3050.

TRACE METAL ANALYSIS METHODS

ANALYTE	SW-846 #
Cadmium	7131
Lead	7421
Mercury	7471
Silver	7761

ABBREVIATIONS

DRO = Diesel Range Organics.
RPD = Relative Per Cent Difference.
BTEX = Benzene, Toluene, Ethylbenzene, and Xylenes.
GRO = Gas Range Organics.

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