

**HARRISON**



Harrison Division  
General Motors Corporation  
200 Upper Mountain Road  
Lockport, New York 14094

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JUL 6 1994

01-Jul-94 WESTERN NY PROGRAM  
DIVISION OF HAZARDOUS  
SUBSTANCES REGULATION

Mr. Stan Radon  
New York State of Environmental Conservation  
270 Michigan Avenue  
Buffalo, New York 14203

Dear Mr. Radon:

Enclosed is the quarterly groundwater monitoring report for June 1994. The report form indicates the sample date, the groundwater elevations, and the as-analyzed concentration of certain parameters.

The parameter and sample point data have been modified to reflect the changes summarized in Harrison correspondence dated August 3, 1993 and accepted in New York State Department of Environmental Conservation correspondence dated August 18, 1993.

Sample collection and on-site analyses for pH, specific conductance, and temperature were performed by GZA GeoEnvironmental of New York. All other analyses were by Free-Col Laboratories, Inc. in Meadville, Pennsylvania.

Harrison believes the June, 1994 sampling data completes the obligation of the modified plan outlined in Ms. Luanne Whitbeck's letter of April 2, 1993. The annual report, due August 1, 1994, will include the 1993 and 1994 data summary.

If you have any questions regarding this monitoring report, please contact Cathy Ver at 439-2942.

Sincerely,

Roy D. Knapp  
Supervisor -  
Environmental Activities

cc: Mr. P. Counterman - NYSDEC, Albany  
Mr. J. DeVald - NCHD



Lets Get It Together  
SAFETY BELTS SAVE LIVES

QUARTERLY GROUNDWATER MONITORING REPORT

HARRISON DIVISION, GMC  
LOCKPORT, NY 14094

SAMPLE DATE: 02-Jun-94

REPORT DATE: 01-Jul-94

BEDROCK WELL ID #	I-1R	I-2R	I-5R	I-6R	I-7R	TRIP BLANK
Water Elev, (feet)	624.0	623.9	612.0	611.3	611.4	N.A.
Specific Cond. (uMHOS/cm)	400	520	1800	740	620	N.A.
pH (standard units)	7.1	7.3	7.2	7.3	7.5	N.A.
Temperature (degree C)	10	11	15	13	13	N.A.
Chromium, Total	0.001	<0.001	0.002	0.012	0.004	0.001
Zinc, Total	0.770	0.009	0.041	0.416	0.022	0.034

TOP OF ROCK WELL ID #	I-1T	I-2T	I-5T	I-7T	% MATRIX RECOVERY	
					SPIKE I-2R	DUPLICATE I-2R
Water Elev, (feet)	622.9	623.5	612.2	611.7	N.A.	N.A.
Specific Cond. (uMHOS/cm)	700	700	2000	580	N.A.	N.A.
pH (standard units)	7.0	7.4	7.4	7.6	N.A.	N.A.
Temperature (degree C)	15	16	17	15	N.A.	N.A.
Chromium, Total	0.002	0.002	0.012	0.002	93	93
Zinc, Total	0.052	0.026	0.112	0.022	105	104

OBSERVATION WELL ID #	II-AR	II-AT	II-BT	II-CT	II-DR	II-DT	I-3R	I-4R	I-3T	I-4T
Water Elev, (feet)	615.6	616.9	617.7	613.8	615.4	615.4	616.5	612.4	616.4	614.2

NOTES:

- 1) Groundwater elevation expressed in feet above mean sea level.
- 2) Specific conductance expressed in uMHOS/cm at 25 degrees C.
- 3) Metals expressed in mg/L.
- 4) < Denotes concentration as analyzed was below detection limit.
- 5) Monitoring at Wells II-AR, II-AT, II-BT, II-CT, II-DR, and II-DT is for water elevation only.
- 6) \* Denotes erratic spike duplicate results. See lab report.
- 7) N/C - NOT COLLECTED FOR ANALYSIS. Wells I-3R, I-3T, I-4R, I-4T only physical data is collected.

GZA  
GeoEnvironmental  
of New York

Engineers and  
Scientists

June 29, 1994  
File: 5805

Ms. Catherine Ver  
Harrison, Division of  
General Motors Corporation  
200 Upper Mountain Road  
Lockport, New York 14094



Re: Long-Term Groundwater Monitoring  
Field Measurements and Equipment  
Calibration Records

364 Nagel Drive  
Buffalo, New York  
14225  
716-685-2300  
FAX 716-685-3629

Dear Ms. Ver:

Enclosed is a summary of groundwater field measurements, equipment calibration measurements and a copy of the chain-of-custody form completed by GZA GeoEnvironmental of New York (GZA) during the sampling event of May 31 and June 2, 1994. Nine wells were sampled, as part of the monitoring program, including I-1T, I-1R, I-2T, I-2R, I-5T, I-5R, I-6R, I-7T and I-7R. Each sample was submitted to Free-Col Laboratories, Inc. for sampling of chromium and zinc.

The water levels in all I- and II-series wells were measured on May 31, 1994. The nine wells specified above were purged and sampled on June 2, 1994.

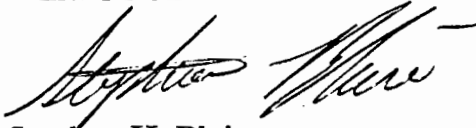
The matrix spike/matrix spike duplicate sample for this round was collected from I-2R. Additionally, a trip blank was prepared by Free-Col Laboratories, Inc. and accompanied the samples during the sample round.

Stanley Radon of the Region 9 New York State Department of Environmental Conservation visited the site in the morning of June 2, 1994.

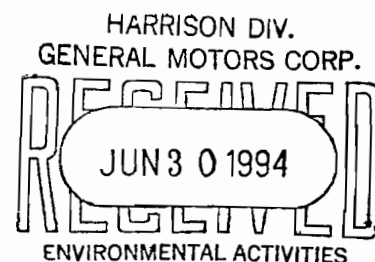
If you have any questions or require additional information, please do not hesitate to contact the undersigned.

Very truly yours,

GZA GEOENVIRONMENTAL OF NEW YORK

  
Stephen H. Blair  
Project Engineer

Enclosures



### Summary of In-Situ Field Measurements

<b>Project:</b> Harrison Facility Groundwater Monitoring Program	<b>GZA File:</b> R5805.00
<b>Location:</b> Lockport, New York	<b>Sample Collection Date:</b> June 2, 1994

#### Group 1: Bedrock Monitoring Wells

Sample Location	Sample Date	Water Elevation (feet)	pH (Standard Units)	Specific Conductance (uMHOS/cm)	Temp. (C)	Turbidity (NTU)
I-1R	6/2/94	624.0	7.1	400	10	13
I-2R	6/2/94	623.9	7.3	520	11	3
I-5R	6/2/94	612.0	7.2	1800	15	8
I-6R	6/2/94	611.3	7.3	740	13	11
I-7R	6/2/94	611.4	7.5	620	13	10

#### Group 2: Top of Rock Monitoring Wells

Sample Location	Sample Date	Water Elevation (feet)	pH (Standard Units)	Specific Conductance (uMHOS/cm)	Temp. (C)	Turbidity (NTU)
I-1T	6/2/94	622.9	7.0	700	15	30
I-2T	6/2/94	623.5	7.4	700	16	25
I-5T	6/2/94	612.2	7.4	2000	17	27
I-7T	6/2/94	611.7	7.6	580	15	52

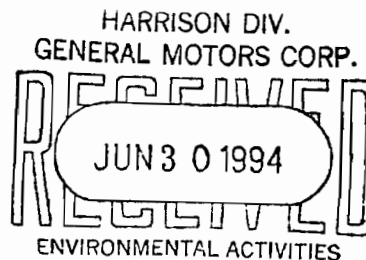
#### Group 3: Groundwater Observation Wells

Sample Location	Sample Date	Water Elevation (feet)		Sample Location	Sample Date	Water Elevation (feet)
I-3T	5/31/94	616.4		II-AR	5/31/94	615.6
I-3R	5/31/94	616.5		II-BT	5/31/94	617.7
I-4T	5/31/94	614.2		II-CT	5/31/94	613.8
I-4R	5/31/94	612.4		II-DR	5/31/94	615.4
II-AT	5/31/94	616.9		II-DT	5/31/94	615.4

GZA GeoEnvironmental of New York

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Note: All groundwater elevations measured on 5/31/94



## pH METER CALIBRATION WORKSHEET

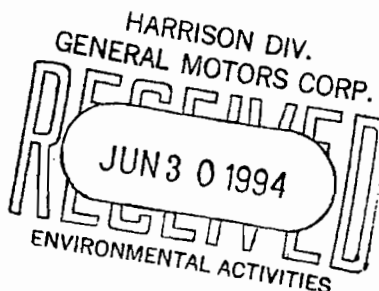
<b>Project:</b> Harrison Facility Groundwater Monitoring Program	<b>GZA File:</b> R5805.00
<b>Location:</b> Lockport, New York	<b>Sample Collection Date:</b> June 2, 1994
<b>Thermometer Model:</b> Exttech pH-T Meter with Corning calomel combination electrode	

### Calibration (1)

Date	Set Points (2) (pH units)	Target (3) Value (pH units)	Actual (4) Reading (pH units)	Analyst's Initials	Remarks
5/31/94	7.00	4.20 10.20	4.01 10.00	GJK	One point calibration prior to sampling event
6/2/94	7.00	4.18 10.17	4.01 10.00	SHB	Two point calibration in field prior to sampling event.

**Notes:**

- (1) These calibrations were done in accordance with the NYSDOH's Environmental Laboratory Approval Program (ELAP manual, item 231 revised as of April 1, 1986.
- (2) For a one point calibration, the set point is the pH of the standard buffer solution used to initially calibrate the pH meter. For a two point calibration, the set points are the pH of the standard buffers used to initially calibrate the slope of the pH meter.
- (3) For a one point calibration, the target values are the pH of the standard buffers used to check the slope of the pH meter. For a two point calibration, the target value is the pH of the standard buffer used to check the initial calibration.
- (4) The accepted accuracy for the actual readings using a one point calibration is  $\pm 0.2$  pH units of the target value. The accepted accuracy for the actual reading using a two point calibration is  $\pm 0.05$  pH units of the target value.



## CONDUCTIVITY METER CALIBRATION WORKSHEET

<b>Project:</b> Harrison Facility Groundwater Monitoring Program	<b>GZA File:</b> R5805.00
<b>Location:</b> Lockport, New York	<b>Sample Collection Date:</b> June 2, 1994
<b>Thermometer Model:</b> Fisher C-T Meter Model 152	

### Calibration (1)

Date	Temperature (C)	Target (2) Value (uMHOS/cm)	Actual (3) Reading (uMHOS/cm)	Analyst's Initials	Remarks
6/2/94	16	1419	1200	SHB	Calibrated in field prior to sampling using 0.01 N KCL solution.
6/2/94	16	147	160	SHB	Calibrated in field prior to sampling using 0.001 N KCL solution.

**Notes:**

- (1) These calibrations were done in accordance with the NYSDOH's Environmental Laboratory Approval Program (ELAP manual, item 231 revised as of April 1, 1986.
- (2) Target value is the concentration of the potassium chloride (KCL) standard solution.
- (3) Accepted accuracy for the actual reading is +/- 20 percent of the target value.

## THERMOMETER CALIBRATION WORKSHEET

**Project:** Harrison Facility  
Groundwater Monitoring Program

**GZA File:** R5805.00

**Location:** Lockport, New York

**Sample Collection Date:**  
June 2, 1994

**Thermometer Model:** Fisher C-T Meter Model 152

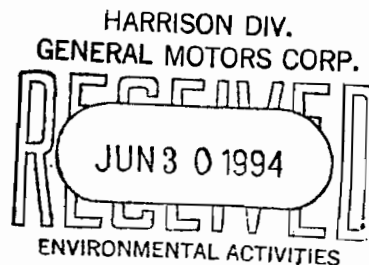
### Calibration (1)

Date	Target Temperature (C)	Observed Temperature (C)	Analyst's Initials	Remarks
5/11/94	5.2 14.6 23.8	5.3 14.9 24	DJS	See Note 4.

**Notes:**

- (1) These calibrations were done in accordance with the NYSDOH's Environmental Laboratory Approval Program (ELAP manual, item 231 revised as of April 1, 1986.
- (2) Target temperature is the temperature reading of the National Bureau of Standards (NBS) traceable thermometer. The NBS thermometer was certified on July 11, 1985 and checked at the ice point on September 19, 1988.
- (3) Actual temperature is the temperature of the calibrated thermometer.
- (4) The correction factor of the calibrated thermometer is:

$$\text{Corrected Temperature} = 1.0 \times \text{Actual Temperature} - 0.2$$



## TURBIDOMETER CALIBRATION WORKSHEET

**Project:** Harrison Facility  
Groundwater Monitoring Program

**GZA File:** R5805.00

**Location:** Lockport, New York

**Sample Collection Date:**  
June 2, 1994

**Turbidometer Model:** Cole Parmer Model 8391 – 85

### Calibration (1)

Date	Target Value (NTU)	Observed Value (NTU)	Analyst's Initials	Remarks
6/2/94	40	40	SHB	Measured in field prior to sampling event.

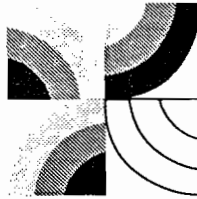
**Notes:**

- (1) These calibrations were done in accordance with the NYSDOH's Environmental Laboratory Approval Program (ELAP manual, item 231 revised as of April 1, 1986.
- (2) Target value of primary AMCO–AEPA–1 standards



**FREE-COL LABORATORIES, INC.**

P.O. Box 557, Cotton Road  
Meadville, Pennsylvania 16335-0557  
Phone: Area Code 814/724-6242  
FAX: Area Code 814/333-1466



ENVIRONMENTAL  
OCCUPATIONAL HEALTH  
FOOD SCIENCE  
SPECIALISTS

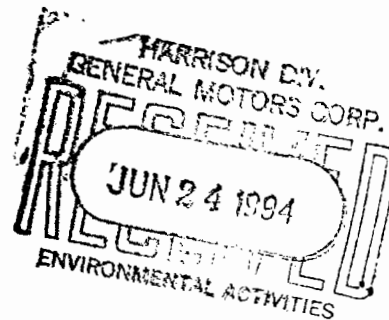
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WESTERN HW PROGRAMS  
DIVISION OF HAZARDOUS  
SUBSTANCES REGULATION

HARRISON DIVISION  
GENERAL MOTORS CORPORATION  
ROAD 7 LONG TERM MONITORING

SAMPLE DATE: 06/02/94  
P.O.# RPB00186

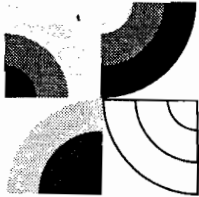


METHODS

<u>PARAMETER</u>	<u>METHOD</u>	<u>SOURCE</u>
Acid Digestion Prep	3005A	2
Zinc	7950	2
Chromium G.F.	7191	2

SOURCE

2 - "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods", SW-846, Third Edition, U.S. Environmental Protection Agency. Revised 1986.



# FREE-COL LABORATORIES, INC.

P.O. BOX 557, COTTON ROAD  
MEADVILLE, PENNSYLVANIA 16335  
PHONE: (814) 724-6242  
FAX: (814) 333-1466

5815 AIRPORT ROAD  
ROANOKE, VIRGINIA 24012  
PHONE: (703) 265-2544  
FAX: (703) 362-1663

06/14/94

TO:

HARRISON DIVISION GMC  
ATTN: MS. CATHERINE VER  
200 UPPER MOUNTAIN RD.  
LOCKPORT NY 14094

P.O. # RPB00186

ACCOUNT NO. 01220

## ANALYTICAL REPORT FORM

PAGE 1

LAB ID	SAMPLE ID		PARAMETER	RESULT
40607400	I-1T	06/02/94	ACID DIGESTION PREP	COMPLETE
40607401	I-1R	06/02/94	ACID DIGESTION PREP	COMPLETE
40607402	I-2T	06/02/94	ACID DIGESTION PREP	COMPLETE
40607403	I-2R	06/02/94	ACID DIGESTION PREP	COMPLETE
40607404	I-5T	06/02/94	ACID DIGESTION PREP	COMPLETE
40607405	I-5R	06/02/94	ACID DIGESTION PREP	COMPLETE
40607406	I-7T	06/02/94	ACID DIGESTION PREP	COMPLETE
40607407	I-7R	06/02/94	ACID DIGESTION PREP	COMPLETE
40607408	I-6R	06/02/94	ACID DIGESTION PREP	COMPLETE
40607409	TRIP BLANK	06/02/94	ACID DIGESTION PREP	COMPLETE
40607410	DUP.	06/02/94	ACID DIGESTION PREP	COMPLETE

DATE AND ANALYST  
06/08/94 CONLEY

### HARRISON DIVISION

A.I.H.A. Accreditation No. 98  
U.S. Public Health Services Approved Facility  
PA D.E.R. Laboratory I.D. No. 20-073  
PA Dept. of Agriculture Approved Dairy Laboratory  
NY Dept. of Health Laboratory I.D. No. 10552  
NY Dept. of Env. Conservation Approved Facility

ND Dept. of Health Cert. No. R-083  
MD Dept. of Health Cert. No. 130  
VA Dept. of Health Laboratory I.D. No. 00145  
WV Dept. of Health Certification No. 9907C  
NC Dept. of Natural Resources Cert. No. 236  
MI Dept. of Public Health Approved Facility  
U.S. Office of Surface Mining Approved Facility

### ROANOKE DIVISION

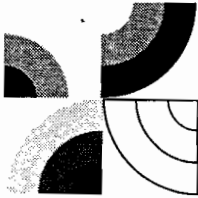
VA Dept. of Health Laboratory I.D. No. 00143

KEY:

< = LESS THAN

> = GREATER THAN

w.f. = WILL FOLLOW



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5815 AIRPORT ROAD  
ROANOKE, VIRGINIA 24012  
PHONE: (703) 265-2544  
FAX: (703) 362-1663

06/14/94

TO:

HARRISON DIVISION GMC  
ATTN: MS. CATHERINE VER  
200 UPPER MOUNTAIN RD.  
LOCKPORT NY 14094

P.O. # RPB00186

ACCOUNT NO. 01220

## ANALYTICAL REPORT FORM

PAGE 2

LAB ID	SAMPLE ID	DATE	TEST	PARAMETER	RESULT
40607411	I-1T	06/02/94	DIGESTION	ZINC MG/L	0.052
40607412	I-1R	06/02/94	DIGESTION	ZINC MG/L	0.770
40607413	I-2T	06/02/94	DIGESTION	ZINC MG/L	0.026
40607414	I-2R	06/02/94	DIGESTION	ZINC MG/L	0.009
40607415	I-5T	06/02/94	DIGESTION	ZINC MG/L	0.112
40607416	I-5R	06/02/94	DIGESTION	ZINC MG/L	0.041
40607417	I-7T	06/02/94	DIGESTION	ZINC MG/L	0.022
40607418	I-7R	06/02/94	DIGESTION	ZINC MG/L	0.022
40607419	I-6R	06/02/94	DIGESTION	ZINC MG/L	0.416
40607420	TRIP BLANK	06/02/94	DIGESTION	ZINC MG/L	0.034
40607421	DUP.	06/02/94	DIGESTION	ZINC MG/L	0.399

DATE AND ANALYST  
06/10/94 LIM/BAKER

HARRISON DIVISION  
A.I.H.A. Accreditation No. 98  
U.S. Public Health Services Approved Facility  
PA D.E.R. Laboratory I.D. No. 20-073  
PA Dept. of Agriculture Approved Dairy Laboratory  
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U.S. Office of Surface Mining Approved Facility

ROANOKE DIVISION  
VA Dept. of Health Laboratory I.D. No. 00143



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06/14/94

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NY 14094

P.O. # RPB00186

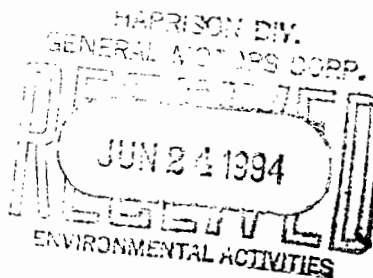
ACCOUNT NO. 01220

## ANALYTICAL REPORT FORM

PAGE 3

LAB ID	SAMPLE ID		PARAMETER	RESULT
40607411	I-1T	06/02/94	DIGESTION CHROMIUM G.F. MG/L	0.002
40607412	I-1R	06/02/94	DIGESTION CHROMIUM G.F. MG/L	0.001
40607413	I-2T	06/02/94	DIGESTION CHROMIUM G.F. MG/L	0.002
40607414	I-2R	06/02/94	DIGESTION CHROMIUM G.F. MG/L	<0.001
40607415	I-5T	06/02/94	DIGESTION CHROMIUM G.F. MG/L	0.012
40607416	I-5R	06/02/94	DIGESTION CHROMIUM G.F. MG/L	0.002
40607417	I-7T	06/02/94	DIGESTION CHROMIUM G.F. MG/L	0.002
40607418	I-7R	06/02/94	DIGESTION CHROMIUM G.F. MG/L	0.004
40607419	I-6R	06/02/94	DIGESTION CHROMIUM G.F. MG/L	0.012
40607420	TRIP BLANK	06/02/94	DIGESTION CHROMIUM G.F. MG/L	0.001
40607421	DUP.	06/02/94	DIGESTION CHROMIUM G.F. MG/L	0.080

DATE AND ANALYST  
06/09/94 PRUTZMAN



MEADVILLE DIVISION

A.I.A. Accreditation No. 98  
U.S. Public Health Services Approved Facility  
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ROANOKE DIVISION

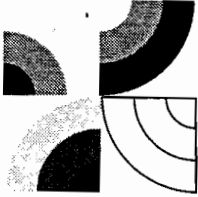
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5815 AIRPORT ROAD  
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06/14/94

TO:

HARRISON DIVISION GMC  
ATTN: MS CATHERINE VER  
200 UPPER MOUNTAIN RD.  
LOCKPORT

NY 14094-1896

P.O. # RPB00186

ACCOUNT NO. 01220

**ANALYTICAL REPORT FORM**

PAGE 4

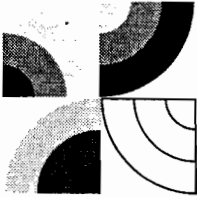
LAB ID	SAMPLE ID	PARAMETER	RESULT
40607422	MATRIX SPK I-2R	% RECOVERY ACID DIGESTION PREP	COMPLETE
40607423	MATRIX DUP I-2R	% RECOVERY ACID DIGESTION PREP	COMPLETE

DATE AND ANALYST  
06/08/94 CONLEY

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VA Dept. of Health Laboratory I.D. No. 00143



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FAX: (703) 362-1663

06/14/94

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ATTN: MS. CATHERINE VER  
200 UPPER MOUNTAIN RD.  
LOCKPORT

NY 14094-1896

P.O. # RPB00186

ACCOUNT NO. 01220

**ANALYTICAL REPORT FORM**

PAGE 5

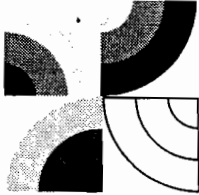
SAMPLE ID : MATRIX SPK  
I-2R  
DIGEST AS%  
LAB ID 40607424  
DATE RECEIVED: 06/07/94

PARAMETER	RESULTS	UNITS	DATE AND	ANALYST
Chromium G.F.	93	%	06/10/94	LIM/ BAKER
Zinc	105	%	06/09/94	PRUTZMAN

MEADVILLE DIVISION  
A. Accreditation No. 98  
U.S. Public Health Services Approved Facility  
PA D.E.R. Laboratory I.D. No. 20-073  
PA Dept. of Agriculture Approved Dairy Laboratory  
NY Dept. of Health Laboratory I.D. No. 10552  
NY Dept. of Env. Conservation Approved Facility

ND Dept. of Health Cert. No. R-083  
MD Dept. of Health Cert. No. 130  
VA Dept. of Health Laboratory I.D. No. 00145  
WV Dept. of Health Certification No. 9907C  
NC Dept. of Natural Resources Cert. No. 236  
MI Dept. of Public Health Approved Facility  
U.S. Office of Surface Mining Approved Facility

ROANOKE DIVISION  
VA Dept. of Health Laboratory I.D. No. 00143



**FREE-COL LABORATORIES, INC.**

P.O. BOX 557, COTTON ROAD  
MEADVILLE, PENNSYLVANIA 16335  
PHONE: (814) 724-6242  
FAX: (814) 333-1466

5815 AIRPORT ROAD  
ROANOKE, VIRGINIA 24012  
PHONE: (703) 265-2544  
FAX: (703) 362-1663

06/14/94

TO:

HARRISON DIVISION GMC  
ATTN: MS. CATHERINE VER  
200 UPPER MOUNTAIN RD.  
LOCKPORT

NY 14094-1896

P.O. # RPB00186

ACCOUNT NO. 01220

**ANALYTICAL REPORT FORM**

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SAMPLE ID : MATRIX DUP  
I-2R  
DIGEST AS%  
LAB ID 40607425  
DATE RECEIVED: 06/07/94

PARAMETER	RESULTS	UNITS	DATE AND	ANALYST
Chromium G.F.	93	%	06/10/94	LIM/ BAKER
Zinc	104	%	06/09/94	PRUTZMAN

*Andrew K. Ecklund*  
ASST. LABORATORY DIRECTOR

MEADVILLE DIVISION  
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ENVIRONMENTAL SAMPLE DESCRIPTION  
AND  
CHAIN OF CUSTODY RECORD

ATTACHMENT #2

pg 1 of 2

DATE: 6/2/94

RESULTS REQUIRED BY: 1-7A  
VERBAL RESULTS NEEDED? \_\_\_\_\_

LABORATORY: Free-61

HARRISON DIVISION, GMC  
200 UPPER MOUNTAIN ROAD  
LOCKPORT, NEW YORK 14094  
PHONE: (716) ~~439~~

CONTACT: Steve Blair (1-7A)  
(716) 685-2300

- TYPE: (CIRCLE)
- 1) WASTEWATER
  - 2) DRINKING WATER
  - 3) MONITORING WELL
  - 4) SOIL
  - 5) SLUDGE
  - 6) SOLID WASTE
  - 7) OIL
  - 8) INDUSTRIAL HYGIENE
  - 9) OTHER

DESCRIPTION: Crunchwater - Road 7 Long Term Monitoring

SAMPLE #	LOCATION	TIME	PARAMETERS	SAMPLE BOTTLE LOT # (OPTIONAL)
	I-1T	1 <sup>16</sup>	Chromium & Zinc	
	I-1R	1 <sup>20</sup>		
	T-2T	1 <sup>00</sup>		
	I-2R (MS/MSD)	1 <sup>30</sup>		
	I-5T	2 <sup>00</sup>		
	I-5R	2 <sup>10</sup>		
	I-7T	1 <sup>45</sup>		

MINIMUM DETECTION LEVELS REQUIRED? \_\_\_\_\_

POSSIBLE INTERFERENCES: \_\_\_\_\_

REASON FOR TEST (COMPARISON OF AREAS, BACKGROUND, ETC.) \_\_\_\_\_

TITLES RECEIVED BY: (DATE/TIME) [HRD PERSONNEL]	BOTTLES RELINQUISHED BY: (DATE/TIME) [HRD PERSONNEL]
	<u>Sam Blair 6/7/94 11<sup>54</sup> AM GZA</u>
TITLES RELINQUISHED BY: (DATE/TIME) [HRD PERSONNEL]	BOTTLES RECEIVED BY: (DATE/TIME) [LAB PERSONNEL]
<u>Robert Walk 6-7-94 F.C.L. 12:00</u>	<u>Janie Kearns 6-7-94</u>
SAMPLE COLLECTED BY:	RECEIVED BY: (DATE, TIME, LAB SIGNATURE)
<u>Janie</u>	

ENVIRONMENTAL SAMPLE DESCRIPTION  
AND  
CHAIN OF CUSTODY RECORD

ATTACHMENT #2

pg 2 of 2

DATE: 6/2/94

RESULTS REQUIRED BY: GZA  
VERBAL RESULTS NEEDED? \_\_\_\_\_

LABORATORY: Free-Co1

HARRISON DIVISION, GMC  
200 UPPER MOUNTAIN ROAD  
LOCKPORT, NEW YORK 14094  
PHONE: (716) ~~438~~

CONTACT: Steve Blair (GZA)  
(716) 685-2300

- SAMPLE TYPE: (CIRCLE)
- 1) WASTEWATER
  - 2) DRINKING WATER
  - 3) MONITORING WELL
  - 4) SOIL
  - 5) SLUDGE
  - 6) SOLID WASTE
  - 7) OIL
  - 8) INDUSTRIAL HYGIENE
  - 9) OTHER \_\_\_\_\_

SAMPLE DESCRIPTION: Groundwater - Road 7 Long Term Monitoring

SAMPLE #	LOCATION	TIME	PARAMETERS	SAMPLE BOTTLE LOT # (OPTIONAL)
	I-7R	1:50	(Premium + Fine ↓	
	I-6R	2:35		
	Trip Blank Dup			
			Total	13

MINIMUM DETECTION LEVELS REQUIRED? \_\_\_\_\_

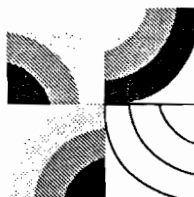
POSSIBLE INTERFERENCES: \_\_\_\_\_

REASON FOR TEST (COMPARISON OF AREAS, BACKGROUND, ETC.) \_\_\_\_\_

BOTTLES RECEIVED BY: (DATE/TIME) [HRD PERSONNEL] _____	BOTTLES RELINQUISHED BY: (DATE/TIME) [HRD PERSONNEL] <u>Bar J. Klum</u> 6/7/94 11:54 <u>GZA</u>
BOTTLES RELINQUISHED BY: (DATE/TIME) [HRD PERSONNEL] <u>Robert Walsh</u> 6-7-94 12:00 <u>F.C.L.</u>	BOTTLES RECEIVED BY: (DATE/TIME) [LAB PERSONNEL] <u>Joni Kearns</u> 6-7-94
SAMPLE COLLECTED BY: _____	RECEIVED BY: [DATE, TIME, LAB SIGNATURE] _____

**FREE-COL LABORATORIES, INC.**

P.O. Box 557, Cotton Road  
Meadville, Pennsylvania 16335-0557  
Phone: Area Code 814/724-6242  
FAX: Area Code 814/333-1466

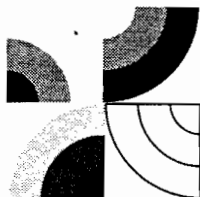


ENVIRONMENTAL  
OCCUPATIONAL HEALTH  
FOOD SCIENCE  
SPECIALISTS

**QUALITY CONTROL INFORMATION**

Free-Col Laboratories analyzes control samples at specified frequencies during the analyses for the purpose of evaluating and documenting the precision and accuracy of the results. The attached quality control data, prepared at the time of analysis, reflect the results obtained for the various types of controls from the batch of samples described as follows:

<u>General Motors Sample Identification</u>	<u>Free-Col ID</u>
I-1T 06/02/94	40607400
I-1R 06/02/94	40607401
I-2T 06/02/94	40607402
I-2R 06/02/94	40607403
I-5T 06/02/94	40607404
I-5R 06/02/94	40607405
I-7T 06/02/94	40607406
I-7R 06/02/94	40607407
I-6R 06/02/94	40607408
TRIP BLANK 06/02/94	40607409
DUP. 06/02/94	40607410
I-1T 06/02/94 DIGESTION	40607411
I-1R 06/02/94 DIGESTION	40607412
I-2T 06/02/94 DIGESTION	40607413
I-2R 06/02/94 DIGESTION	40607414
I-5T 06/02/94 DIGESTION	40607415
I-5R 06/02/94 DIGESTION	40607416
I-7T 06/02/94 DIGESTION	40607417
I-7R 06/02/94 DIGESTION	40607418
I-6R 06/02/94 DIGESTION	40607419
TRIP BLANK 06/02/94 DIGESTION	40607420
DUP. 06/02/94 DIGESTION	40607421



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5815 AIRPORT ROAD  
ROANOKE, VIRGINIA 24012  
PHONE: (703) 265-2544  
FAX: (703) 362-1663

06/14/94

TO:

FREE-COL LABORATORIES

P.O. #

P.O. BOX 557, COTTON RD.  
MEADVILLE

PA 16335-0557

ACCOUNT NO. 1

**ANALYTICAL REPORT FORM**

PAGE 1

LAB ID	SAMPLE ID	PARAMETER	RESULT
40607426	BLANK	ACID DIGESTION PREP	COMPLETE
40607427	PRC%	ACID DIGESTION PREP	COMPLETE

DATE AND ANALYST  
06/08/94 CONLEY

MEADVILLE DIVISION  
A.I.A.A. Accreditation No. 98  
U.S. Public Health Services Approved Facility  
PA D.E.R. Laboratory I.D. No. 20-073  
PA Dept. of Agriculture Approved Dairy Laboratory  
NY Dept. of Health Laboratory I.D. No. 10552  
NY Dept. of Env. Conservation Approved Facility

ND Dept. of Health Cert. No. R-083  
MD Dept. of Health Cert. No. 130  
VA Dept. of Health Laboratory I.D. No. 00145  
WV Dept. of Health Certification No. 9907C  
NC Dept. of Natural Resources Cert. No. 236  
MI Dept. of Public Health Approved Facility  
U.S. Office of Surface Mining Approved Facility

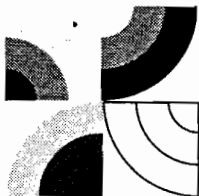
ROANOKE DIVISION  
VA Dept. of Health Laboratory I.D. No. 00143

KEY:

< = LESS THAN

> = GREATER THAN

w.f. = WILL FOLLOW



**FREE-COL LABORATORIES, INC.**

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PHONE: (703) 265-2544  
FAX: (703) 362-1663

06/14/94

TO: FREE-COL LABORATORIES

P.O. #

P.O. BOX 557, COTTON RD.  
MEADVILLE PA 16335-0557

ACCOUNT NO. 1

**ANALYTICAL REPORT FORM**

PAGE 2

SAMPLE ID : BLANK  
DIGESTION

LAB ID 40607428  
DATE RECEIVED: 06/07/94

PARAMETER	RESULTS	UNITS	DATE AND	ANALYST
Chromium G.F.	<0.001	MG/L	06/10/94	LIM/ BAKER
Zinc	<0.005	MG/L	06/09/94	PRUTZMAN

MEADVILLE DIVISION  
A.I.M.A. Accreditation No. 98  
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ROANOKE DIVISION  
VA Dept. of Health Laboratory I.D. No. 00143



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5815 AIRPORT ROAD  
ROANOKE, VIRGINIA 24012  
PHONE: (703) 265-2544  
FAX: (703) 362-1663

06/14/94

TO:

FREE-COL LABORATORIES

P.O. #

P.O. BOX 557, COTTON RD.  
MEADVILLE

PA 16335-0557

ACCOUNT NO. 1

**ANALYTICAL REPORT FORM**

PAGE 3

SAMPLE ID : PRC%  
DIGESTION

LAB ID 40607429  
DATE RECEIVED: 06/07/94

PARAMETER	RESULTS	UNITS	DATE AND	ANALYST
Chromium G.F.	94	%	06/10/94	LIM/ BAKER
Zinc	107	%	06/09/94	PRUTZMAN

**WILMINGTON DIVISION**

A.I.A.A. Accreditation No. 98  
U.S. Public Health Services Approved Facility  
PA D.E.R. Laboratory I.D. No. 20-073  
PA Dept. of Agriculture Approved Dairy Laboratory  
NY Dept. of Health Laboratory I.D. No. 10552  
NY Dept. of Env. Conservation Approved Facility

ND Dept. of Health Cert. No. R-083  
MD Dept. of Health Cert. No. 130  
VA Dept. of Health Laboratory I.D. No. 00145  
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MI Dept. of Public Health Approved Facility  
U.S. Office of Surface Mining Approved Facility

**ROANOKE DIVISION**

VA Dept. of Health Laboratory I.D. No. 00143

KEY:

< = LESS THAN

> = GREATER THAN

w.f. = WILL FOLLOW

QUALITY CONTROL DATA I

PARAMETER: Zinc ANALYST: W. Stufman DATE: 6-9-94

REFERENCE CONTROL UNITS: mg/L  
 Acceptance Limits  
0.08 0.063 to 0.095 0.092, 0.076, \_\_\_\_\_  
0.8 0.716 to 0.874 0.810, 0.807, \_\_\_\_\_  
 \_\_\_\_\_ to \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

PREPARATION REFERENCE CONTROL Units: mg/L  
 Target Acceptance Limits Assayed Value: \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_  
0.500 \_\_\_\_\_ to \_\_\_\_\_ Date Prepped: \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

REPEAT CONTROL AD = Absolute Difference RPD = Relative Percent Difference  
 Units: mg/L Acceptable AD: 0.01 Acceptable RPD: 3.8 %

Sample I.D.	Sample Result	Repeat Result	AD	RPD
<u>406-07-087</u>	<u>0.237</u>	<u>0.241</u>	<u>0.004</u>	<u>—</u> %
<u>406-07-413</u>	<u>0.026</u>	<u>0.024</u>	<u>0.002</u>	<u>—</u> %
<u>406-07-425</u>	<u>0.529</u>	<u>0.544</u>	<u>0.015</u>	<u>2.8</u> %
_____	_____	_____	_____	_____ %
_____	_____	_____	_____	_____ %
_____	_____	_____	_____	_____ %

SPIKE CONTROL Units: mg/L  
 Acceptable Limits for Percent Recovery: 76 % to 120 %

Sample ID	Spike Added	Spike Result	Sample Result	% Recovery
<u>406-07-418</u>	<u>0.515</u>	<u>0.513</u>	<u>0.022</u>	<u>95</u> %
<u>406-07-420</u>	<u>0.515</u>	<u>0.574</u>	<u>0.034</u>	<u>105</u> %
_____	_____	_____	_____	_____ %
_____	_____	_____	_____	_____ %

BLANK Units: mg/L Lab Blank 0.009, 0.00  
 Result: 0.001, -0.007, -0.008 Date Prepped 6/8/94

DETECTION LIMIT Units: mg/L  
 Limit Value: 0.005 Assayed Value: 0.009

FREE-COL LABORATORIES, INC.  
 P.O. Box 557, Cotton Road  
 Meadville, PA 16335  
 (814)-724-6242

PARAMETER: Chromium - GP ANALYST: Ljm DATE: 6.10.94

REFERENCE CONTROL UNITS: ug/L  
Target Acceptance Limits  
30 27 to 34 28, 30 29  
\_\_\_\_ to \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_  
\_\_\_\_ to \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

PREPARATION REFERENCE CONTROL Units: ug/L  
Target Acceptance Limits Assayed Value: 28, 28, 28  
30 \_\_\_\_\_ to \_\_\_\_\_ Date Prepped: 406-06-PRC, 406-07-PRC, 406-09-PRC

REPEAT CONTROL AD = Absolute Difference RPD = Relative Percent Difference  
Units: mg/L Acceptable AD: 0.002 Acceptable RPD: 20.3%

Sample I.D.	Sample Result	Repeat Result	AD	RPD
<u>406-02-727</u>	<u>0.007</u>	<u>0.008</u>	<u>0.001</u>	<u>-</u> %
<u>406-07-414</u>	<u>&lt;0.001</u>	<u>0.001</u>	<u>0.000</u>	<u>-</u> %
<u>406-07-428</u>	<u>&lt;0.001</u>	<u>0.001</u>	<u>-</u>	<u>-</u> %
_____	_____	_____	_____	<u>-</u> %
_____	_____	_____	_____	<u>-</u> %
_____	_____	_____	_____	<u>-</u> %

SPIKE CONTROL Units: mg/L  
Acceptable Limits for Percent Recovery: 90% to 110%

Sample ID	Spike Added	Spike Result	Sample Result	% Recovery
<u>406-07-411</u>	<u>*0.0250</u> <u>0.0247</u>	<u>0.0272</u>	<u>0.0017</u>	<u>103</u> %
<u>406-07-412</u>	<u>0.0247</u>	<u>0.0261</u>	<u>0.0010</u>	<u>102</u> %
<u>406-07-413</u>	<u>0.0247</u>	<u>0.0259</u>	<u>0.0017</u>	<u>98</u> %
<u>406-07-414</u>	<u>0.0247</u>	<u>0.0256</u>	<u>0.0003</u>	<u>102</u> %

BLANK Units: mg/L Lab Blank 0.0005  
Result: 0.0002, 0.0005, 0.0004, 0.0004 Date Prepped 406-08.1

DETECTION LIMIT Units: mg/L  
Limit Value: 0.001 Assayed Value: 0.0008

FREE-COL LABORATORIES, INC.  
P.O. Box 557, Cotton Road  
Meadville, PA 16335  
(814) 724-6242

406-06-BL: 0.0005  
406-07-BL: 0.0001  
406-09-BL: 0.0000



QUALITY CONTROL DATA

PARAMETER: Cr GF

ANALYST: BAKER

DATE: 6-13-94

SPIKE CONTROL

UNITS: MG/L

Acceptable Limits for Percent Recovery; 90% to 110%

Sample I.D.	Spike Added	Spiked Result	Sample Result	% Recovery
<u>406-07-415</u>	<u>0.0247</u>	<u>0.0360</u>	<u>0.0122</u>	<u>96</u>
<u>416</u>		<u>0.0254</u>	<u>0.0019</u>	<u>95</u>
<u>417</u>		<u>0.0252</u>	<u>0.0024</u>	<u>95</u>
<u>418</u>		<u>0.0269</u>	<u>0.0039</u>	<u>93</u>
<u>419</u>		<u>0.0363</u>	<u>0.0118</u>	<u>99</u>
<u>420</u>		<u>0.0249</u>	<u>0.0013</u>	<u>95</u>
<u>421<sup>st</sup></u>		<u>0.0389</u>	<u>0.0161</u>	<u>92</u>
<u>422</u>		<u>0.0256</u>	<u>0.0009</u>	<u>100</u>
<u>406-09-401<sup>2+</sup></u>	<u>✓</u>	<u>0.0426</u>	<u>0.0194</u>	<u>94</u>

Form II

INITIAL AND CONTINUING CALIBRATION VERIFICATION

LAB NAME Free-Col Labs

SAMPLE BATCH: LAB ID 406-07-400\429

Units: mg/L

Compound	<u>Initial Calib.</u> <sup>1</sup>			<u>Continuing Calib.</u> <sup>2</sup>			Found	%R	Method <sup>4</sup>
	True Value	Found	%R	True Value	Found	%R			
<b>Metals:</b>									
<u>Chromium</u>	0.0300	0.0280	93	0.0300	0.0300	100	0.0290	97	F
<u>Zinc</u>	0.080	0.092	115	0.080	0.076	95			A
	0.800	0.810	101	0.800	0.807	101			A

<sup>1</sup>Initial Calibration  
Source Fisher Scientific

<sup>2</sup>Continuing Calibration  
Source Fisher Scientific

<sup>4</sup>Indicate Analytical Method Used: P - ICP; A - Flame AA;  
F - Furnace AA; CV-Cold Vapor

Form III

BLANKS

LAB NAME Free-Col Labs

SAMPLE BATCH: LAB ID 406-07-400\429

Units mg/L

<u>Compound</u>	<u>Initial Calibration Blank Value</u>	<u>Continuing Calibration Blank Value</u>
Chromium	0.0005	0.0002, 0.0005, 0.0004 0.0004
Zinc	0.001	-0.007, -0.008

Form V

SPIKE SAMPLE RECOVERY

LAB NAME Free-Col Labs

Free-Col Laboratories spikes each sample digested for metals run by graphite furnace AFTER the sample has been digested. If the recovery is not between 90-110%, the method of standard additions is performed in order to obtain the result (see Form VIII).

Lab ID	Percent Recovery	
	Chromium	Zinc
406-07-411	103	
406-07-412	102	
406-07-413	98	
406-07-414	102	
406-07-415	96	
406-07-416	95	
406-07-417	95	
406-07-418	93	
406-07-419	99	
406-07-420	95	
406-07-421	92	
406-07-428	101	

\* Result obtained by method of standard addition.

Zinc analysis performed by AA.

## FORM VI

## DUPLICATES

LAB NAME Free-Col LabsSAMPLE BATCH: LAB ID 406-07-400\429

Units: mg/L unless noted

Lab ID	Compound	AD/RPD <sup>1</sup>		Duplicate(D)	RPD <sup>2</sup>
		Control Limit	Sample(S)		
406-07-414	Chromium	0.002/20.3	<0.001	0.001	NA
406-07-428	Chromium	0.002/20.3	<0.001	0.001	NA
406-07-413	Zinc	0.01/3.8	0.026	0.024	NA
406-07-425	Zinc	0.01/3.8	0.529	0.544	2.8

<sup>1</sup> AD = Absolute Difference Control Limit which is established by plus or minus two times the detection limit. The RPD Control Limit is statistically established based on past data. Data must be acceptable according to one of the limits.

<sup>2</sup> RPD =  $[\text{abs}(S-D)/((S+D)/2)] \times 100$

NC = Non calculable RPD due to value(s) less than detection limit

NA = Not Applicable because acceptability is determined by meeting the AD limit (see footnote 1).

FORM VII

LABORATORY REFERENCE CONTROL SAMPLE

LAB NAME Free-Col Labs

SAMPLE BATCH: LAB ID 406-07-400/429

Units mg/L

<u>Compound</u>	<u>True Value</u>	<u>Found</u>	<u>% Recovery</u>
Chromium	0.0300	0.0280	93
Zinc	0.080	0.092	115
	0.800	0.810	101

Acceptance limits are 80% - 120% recovery.