



## CHEMICAL &amp; GEOLOGICAL LABORATORIES LTD.

EDMONTON FORT ST JOHN CALGARY

## SUMP FLUID ANALYSIS



COMPANY

PARAMOUNT RESOURCES LTD.

LABORATORY No.

EB-81-14648-1

LOCATION

PARAMOUNT HB ET AL CAMERON J-7<sup>6</sup> N.W.T.

SAMPLE POINT

SUMP

SAMPLED BY

OTHER SAMPLE DATA

THREE SAMPLES WERE COMBINED BEFORE TESTING

DATE SAMPLED:

DATE RECEIVED

MARCH 9, 1981

DATE REPORTED:

MARCH 16, 1981

FLUID CHEMISTRY

pH @ 20°C

TOTAL DISSOLVED SOLIDS (g.m.<sup>-3</sup>):CHLORIDE (g.m.<sup>-3</sup>):

DRIED @ 105°C

SULPHATE (g.m.<sup>-3</sup>):

IGNITED @ 550°C

CALCIUM (g.m.<sup>-3</sup>):BIOASSAY ANALYSIS

APPROXIMATELY 1 LITRE OF FLUID, AFTER THE TREATMENT DESCRIBED BELOW, WAS HELD AT 15°C AND GENTLY AERATED TO INSURE A MINIMUM DISSOLVED OXYGEN CONTENT OF 8mg/L. THE TEST ORGANISMS WERE RAINBOW TROUT FINGERLINGS. APPROXIMATE AVERAGE FISH SIZE:

LENGTH 3 cm; WEIGHT 1 g.

SAMPLE APPEARANCE AS RECEIVED:

MUDDY WATER

SAMPLE FILTERED PRIOR TO BIOASSAY:

☐ YES ☒ NO

LABORATORY TREATMENT\*:

☐ YES ☒ NO

(\* THIS TREATMENT MAY BE SUBJECT TO PATENTS HELD BY WILSON MUD SERVICES LTD. CANADA)

BIOASSAY RESULTS

TIME	% MORTALITY	TIME	% MORTALITY
IMMEDIATE	NIL	24 HOURS	
1 HOUR	NIL	48 HOURS	
4 HOURS	NIL	72 HOURS	
8 HOURS	100	96 HOURS	





## CHEMICAL &amp; GEOLOGICAL LABORATORIES LTD.

EDMONTON FORT ST. JOHN CALGARY

## SUMP FLUID ANALYSIS



COMPANY PARAMOUNT RESOURCES LTD. LABORATORY No EB-81-14648-2

LOCATION PARAMOUNT HB ET AL CAMERON J-7<sup>6</sup> N.W.T.

SAMPLE POINT SUMP

SAMPLED BY

OTHER SAMPLE DATA THREE SAMPLES WERE COMBINED BEFORE TESTING

DATE SAMPLED DATE RECEIVED: MARCH 9, 1981 DATE REPORTED: MARCH 16, 1981

FLUID CHEMISTRY

pH @ 20°C TOTAL DISSOLVED SOLIDS (g.m.<sup>-3</sup>):

CHLORIDE (g.m.<sup>-3</sup>) DRIED @ 105°C

SULPHATE (g.m.<sup>-3</sup>) IGNITED @ 550°C

CALCIUM (g.m.<sup>-3</sup>)

BIOASSAY ANALYSIS

APPROXIMATELY 1 LITRE OF FLUID, AFTER THE TREATMENT DESCRIBED BELOW, WAS HELD AT 15°C AND GENTLY AERATED TO INSURE A MINIMUM DISSOLVED OXYGEN CONTENT OF 8mg/L. THE TEST ORGANISMS WERE RAINBOW TROUT FINGERLINGS. APPROXIMATE AVERAGE FISH SIZE:

LENGTH 3 cm; WEIGHT 1 g.

SAMPLE APPEARANCE AS RECEIVED:

SAMPLE FILTERED PRIOR TO BIOASSAY: ☒ YES ☐ NO

LABORATORY TREATMENT\*: ☒ YES ☐ NO

SAMPLE TREATED WITH 0.1 lb/bbl HYDRO DARCO B ACTIVATED CARBON AND MIXED FOR 6 HOURS. SAMPLE WAS FLOCCULATED WITH 70 lb/1000 bbl ALUMINUM SULPHATE AND 1 lb/1000 bbl CROSFLOC CFN-10, PRODUCING 80% SETTLING IN 1 HOUR. THE RESULTING pH OF 9.0 WAS ADJUSTED TO 8.4 WITH 10 lb/1000 bbl SAPP.

\*\*\*\*\*THIS TREATMENT SHOULD DETOXYFY THIS SUMP\*\*\*\*\*

(\* THIS TREATMENT MAY BE SUBJECT TO PATENTS HELD BY WILSON MUD SERVICES LTD. CANADA)

BIOASSAY RESULTS

TIME	% MORTALITY	TIME	% MORTALITY
IMMEDIATE	NIL	24 HOURS	NIL
1 HOUR	NIL	48 HOURS	NIL
4 HOURS	NIL	72 HOURS	NIL
8 HOURS	NIL	96 HOURS	NIL





## CHEMICAL &amp; GEOLOGICAL LABORATORIES LTD.

EDMONTON FORT ST. JOHN CALGARY

## SUMP FLUID ANALYSIS



COMPANY PARAMOUNT RESOURCES LTD. LABORATORY No. EB-81-14648-3

LOCATION PARAMOUNT HB ET AL CAMERON J-7<sup>6</sup> N.W.T.

SAMPLE POINT SUMP

SAMPLED BY

OTHER SAMPLE DATA THREE SAMPLES WERE COMBINED BEFORE TESTING

DATE SAMPLED DATE RECEIVED: MARCH 9, 1981 DATE REPORTED MARCH 16, 1981

FLUID CHEMISTRY

pH @ 20°C TOTAL DISSOLVED SOLIDS (g.m.<sup>-3</sup>):

CHLORIDE (g.m.<sup>-3</sup>): DRIED @ 105°C

SULPHATE (g.m.<sup>-3</sup>): IGNITED @ 550°C

CALCIUM (g.m.<sup>-3</sup>):

BIOASSAY ANALYSIS

APPROXIMATELY 1 LITRE OF FLUID, AFTER THE TREATMENT DESCRIBED BELOW, WAS HELD AT 15°C AND GENTLY AERATED TO INSURE A MINIMUM DISSOLVED OXYGEN CONTENT OF 8mg/L. THE TEST ORGANISMS WERE RAINBOW TROUT FINGERLINGS. APPROXIMATE AVERAGE FISH SIZE:

LENGTH 3 cm; WEIGHT 1 g.

SAMPLE APPEARANCE AS RECEIVED:

SAMPLE FILTERED PRIOR TO BIOASSAY: ☒ YES ☐ NO

LABORATORY TREATMENT\*: ☒ YES ☐ NO

SAMPLE TREATED WITH 0.2 lb/bbl HYDRO DARCO B ACTIVATED CARBON AND MIXED FOR 6 HOURS. SAMPLE WAS FLOCCULATED WITH 70 lb/1000 bbl ALUMINUM SULPHATE AND 1 lb/1000 bbl CROSFLOC CFN-10, PRODUCING 80% SETTLING IN 1 HOUR. THE RESULTING pH OF 9.0 WAS ADJUSTED TO 8.5 WITH 10 lb/1000 bbl SAPP.

(\* THIS TREATMENT MAY BE SUBJECT TO PATENTS HELD BY WILSON MUD SERVICES LTD. CANADA)

BIOASSAY RESULTS

TIME	% MORTALITY	TIME	% MORTALITY
IMMEDIATE	NIL	24 HOURS	NIL
1 HOUR	NIL	48 HOURS	NIL
4 HOURS	NIL	72 HOURS	NIL
8 HOURS	NIL	96 HOURS	NIL



# CHEMICAL & GEOLOGICAL LABORATORIES LTD.

EDMONTON FORT ST. JOHN CALGARY

## SUMP FLUID ANALYSIS



COMPANY PARAMOUNT RESOURCES LTD. LABORATORY No. EB-81-14648-4  
LOCATION PARAMOUNT HB ET AL CAMERON J-71<sup>6</sup> N.W.T.  
SAMPLE POINT SUMP  
SAMPLED BY  
OTHER SAMPLE DATA THREE SAMPLES WERE COMBINED BEFORE TESTING  
DATE SAMPLED: DATE RECEIVED: MARCH 9, 1981 DATE REPORTED: MARCH 16, 1981

### FLUID CHEMISTRY

pH @ 20°C

TOTAL DISSOLVED SOLIDS (g.m.<sup>-3</sup>):

CHLORIDE (g.m.<sup>-3</sup>):

DRIED @ 105°C

SULPHATE (g.m.<sup>-3</sup>):

IGNITED @ 550°C

CALCIUM (g.m.<sup>-3</sup>):

### BIOASSAY ANALYSIS

APPROXIMATELY 1 LITRE OF FLUID, AFTER THE TREATMENT DESCRIBED BELOW, WAS HELD AT 15°C AND GENTLY AERATED TO INSURE A MINIMUM DISSOLVED OXYGEN CONTENT OF 8mg/L. THE TEST ORGANISMS WERE RAINBOW TROUT FINGERLINGS. APPROXIMATE AVERAGE FISH SIZE:

LENGTH 3 cm, WEIGHT 1 g.

SAMPLE APPEARANCE AS RECEIVED:

SAMPLE FILTERED PRIOR TO BIOASSAY: ☒ YES ☐ NO

LABORATORY TREATMENT\*: ☒ YES ☐ NO

SAMPLE TREATED WITH 0.3 lb/bbl HYDRO DARCO B ACTIVATED CARBON AND MIXED FOR 6 HOURS. SAMPLE WAS FLOCCULATED WITH 70 lb/1000 bbl ALUMINUM SULPHATE AND 1 lb/1000 bbl CROSFLOC CFN-10, PRODUCING 80% SETTLING IN 1 HOUR. THE RESULTING pH OF 9.0 WAS ADJUSTED TO 8.5 WITH 10 lb/1000 bbl SAPP.

(\* THIS TREATMENT MAY BE SUBJECT TO PATENTS HELD BY WILSON MUD SERVICES LTD. CANADA)

### BIOASSAY RESULTS

TIME	% MORTALITY	TIME	% MORTALITY
IMMEDIATE	NIL	24 HOURS	NIL
1 HOUR	NIL	48 HOURS	NIL
4 HOURS	NIL	72 HOURS	NIL
8 HOURS	NIL	96 HOURS	NIL





## CHEMICAL &amp; GEOLOGICAL LABORATORIES LTD.

EDMONTON FORT ST. JOHN CALGARY

## SUMP FLUID ANALYSIS



COMPANY PARAMOUNT RESOURCES LTD. LABORATORY No. EB-81-14648-5

LOCATION PARAMOUNT HB ET AL CAMERON J-7<sup>6</sup> N.W.T.

SAMPLE POINT SUMP

SAMPLED BY

OTHER SAMPLE DATA THREE SAMPLES WERE COMBINED BEFORE TESTING

DATE SAMPLED DATE RECEIVED: MARCH 9, 1981 DATE REPORTED: MARCH 16, 1981

FLUID CHEMISTRY

pH @ 20°C TOTAL DISSOLVED SOLIDS (g.m.<sup>-3</sup>):

CHLORIDE (g.m.<sup>-3</sup>): DRIED @ 105°C

SULPHATE (g.m.<sup>-3</sup>): IGNITED @ 550°C

CALCIUM (g.m.<sup>-3</sup>):

BIOASSAY ANALYSIS

APPROXIMATELY 1 LITRE OF FLUID, AFTER THE TREATMENT DESCRIBED BELOW, WAS HELD AT 15°C AND GENTLY AERATED TO INSURE A MINIMUM DISSOLVED OXYGEN CONTENT OF 8mg/L. THE TEST ORGANISMS WERE RAINBOW TROUT FINGERLINGS. APPROXIMATE AVERAGE FISH SIZE:

LENGTH 3 cm; WEIGHT 1 g.

SAMPLE APPEARANCE AS RECEIVED:

SAMPLE FILTERED PRIOR TO BIOASSAY:

☒ YES ☐ NO

LABORATORY TREATMENT\*:

☒ YES ☐ NO

SAMPLE TREATED WITH 0.4 lb/bbl HYDRO DARCO B ACTIVATED CARBON AND MIXED FOR 6 HOURS. SAMPLE WAS FLOCCULATED WITH 70 lb/1000 bbl ALUMINUM SULPHATE AND 1 lb/1000 bbl CROSFLOC CFN-10, PRODUCING 80% SETTLING IN 1 HOUR. THE RESULTING pH OF 8.9 WAS ADJUSTED TO 8.5 WITH 10 lb/1000 bbl SAPP.

(\* THIS TREATMENT MAY BE SUBJECT TO PATENTS HELD BY WILSON MUD SERVICES LTD. CANADA)

BIOASSAY RESULTS

TIME	% MORTALITY	TIME	% MORTALITY
IMMEDIATE	NIL	24 HOURS	NIL
1 HOUR	NIL	48 HOURS	NIL
4 HOURS	NIL	72 HOURS	NIL
8 HOURS	NIL	96 HOURS	NIL





# CHEMICAL & GEOLOGICAL LABORATORIES LTD.

EDMONTON FORT ST. JOHN CALGARY

## SUMP FLUID ANALYSIS



COMPANY PARAMOUNT RESOURCES LTD. LABORATORY No. EB-81-14648-6  
LOCATION PARAMOUNT HB ET AL CAMERON J-7<sup>6</sup> N.W.T.  
SAMPLE POINT SUMP  
SAMPLED BY  
OTHER SAMPLE DATA THREE SAMPLES WERE COMBINED BEFORE TESTING  
DATE SAMPLED DATE RECEIVED: MARCH 9, 1981 DATE REPORTED: MARCH 16, 1981

### FLUID CHEMISTRY

pH @ 20°C TOTAL DISSOLVED SOLIDS (g.m.<sup>-3</sup>):  
CHLORIDE (g.m.<sup>-3</sup>) DRIED @ 105°C  
SULPHATE (g.m.<sup>-3</sup>) IGNITED @ 550°C  
CALCIUM (g.m.<sup>-3</sup>)

### BIOASSAY ANALYSIS

APPROXIMATELY 1 LITRE OF FLUID, AFTER THE TREATMENT DESCRIBED BELOW, WAS HELD AT 15°C AND GENTLY AERATED TO INSURE A MINIMUM DISSOLVED OXYGEN CONTENT OF 8mg/L. THE TEST ORGANISMS WERE RAINBOW TROUT FINGERLINGS. APPROXIMATE AVERAGE FISH SIZE:

LENGTH 3 cm; WEIGHT 1 g.

SAMPLE APPEARANCE AS RECEIVED:

SAMPLE FILTERED PRIOR TO BIOASSAY: ☒ YES ☐ NO

LABORATORY TREATMENT\*: ☒ YES ☐ NO

SAMPLE TREATED WITH 0.5 lb/bbl HYDRO DARCO B ACTIVATED CARBON AND MIXED FOR 6 HOURS. SAMPLE WAS FLOCCULATED WITH 70 lb/1000 bbl ALUMINUM SULPHATE AND 1 lb/1000 bbl CROSFLOC CFN-10, PRODUCING 80% SETTLING IN 1 HOUR. THE RESULTING pH OF 8.9 WAS ADJUSTED TO 8.5 WITH 10 lb/1000 bbl SAPP.

(\* THIS TREATMENT MAY BE SUBJECT TO PATENTS HELD BY WILSON MUD SERVICES LTD. CANADA)

### BIOASSAY RESULTS

TIME	% MORTALITY	TIME	% MORTALITY
IMMEDIATE	NIL	24 HOURS	NIL
1 HOUR	NIL	48 HOURS	NIL
4 HOURS	NIL	72 HOURS	NIL
8 HOURS	NIL	96 HOURS	NIL

Total Solids	7,222	mg/L
Total suspended solids	2,904	mg/L
Oil & grease	12	mg/L
pH	7.7	
Chloride	210	mg/L

	<u>TOTAL</u>		<u>DISSOLVED</u>	
Mercury	0.13	ppb	0.13	ppb
Chromium	<0.01	ppm	<0.01	ppm
Zinc	1.15	ppm	<0.02	ppm
Lead	0.43	ppm	<0.02	ppm
Cadmium	<0.01	ppm	<0.01	ppm
Nickel	<0.02	ppm	<0.02	ppm
Copper	0.060	ppm	0.006	ppm
Iron	14.1	ppm	0.09	ppm



