

CALGARY, ALBERTA

APEX ANALYTICAL LABORATORIES LTD.
ESTEVAN, SASK.

TD.

GRANDE PRAIRIE, ALBERTA

CONTAINER IDENTITY

PLASTIC

OIL ANALYSIS

LABORATORY NUMBER

84-0205-5191

LICENCE NO

OPERATOR NAME AND ADDRESS

ROXY PETROLEUM

CPA NUMBER

WELL NAME

MOUNTSIDE 11-16-2-21W1M

KB

ELEVATIONS
METERS

GRD

FIELD OF AREA

MOUNTSIDE

POOL OR ZONE

NAME OF SAMPLER

LLOYD HILLMAN

COMPANY

TEST RECOVERY

TEST TYPE

NO.

MULTIPLE RECOVERY

SAMPLING POINT

WELLHEAD

AMT & TYPE OF CUSHION

MUD RESISTIVITY

@25° C

TEST INTERVAL
FROM

m

TO

m

PERFORATIONS
FROM

m

TO

m

TYPE OF PRODUCTION

PUMPING

FLOWING

GAS LIFT

SWAB

PRODUCTION RATES

WATER

m³/d

OIL

m³/d

GAS

10³m³/d

GAUGE PRESSURE - KPa

SEPARATOR

TREATER

AS RECEIVED

TEMPERATURES °C

SEPARATOR

TREATER

AS RECEIVED

DATE SAMPLED

DATE RECEIVED

DATE REPORTED

ANALYST

84-09-24

84-09-25

84-09-25

SM/BD

SAMPLE PROPERTIES

VOLUME FRACTION

COLOR OF CLEAN OIL

BROWN

WATER

BS

TOTAL BS & W

DENSITY

RELATIVE

ABSOLUTE kg.m⁻³

AS RECEIVED

AFTER CLEANING

0.865

AS RECEIVED

AFTER CLEANING

865

TOTAL SULPHUR
MASS FRACTION

0.0042

TOTAL SALT
g.m.⁻³

POUR POINT °C

USBM

ASTM

CARBON RESIDUE

RVP

CONRADSON

RAMSBOTTOM

VISCOSITY

TEMP °C	DYNAMIC mPa.s	KINEMATIC mm ² s. ⁻¹

DISTILLATION

BAROM PRESS

kPa

METHOD

ASTM D-86

ROOM TEMP °C

INITIAL BOIL PT °C

DISTILLATION SUMMARY
VOLUME FRACTION

204 °C NAPHTHA

274 °C KEROSENE

343 °C LIGHT GAS/OIL

RECOVERED

RESIDUE

DISTILLATION LOSS

RELATIVE DENSITY

DISTILLATE

RESIDUE

BASE TYPE

CHARACTERIZATION
FACTOR

FBP

CRACKED

23.53% FREE H2O

API GRAVITY=32.00



AGAT Engineering

BAY 1, 3650 - 21 ST. N.E.
CALGARY, ALTA. T2E 6V6
230-2477

CONTAINER IDENTIFICATION

P.B. #4

OIL ANALYSIS

LABORATORY NUMBER

5869

OPERATOR NAME

ROXY PETROLEUM LIMITED

UNIQUE WELL IDENTIFIER

9-31-2-23 WPM

WELL NAME

ROXY-ANDEX ET AL DELORAINE 9-31-2-23 WPM

ELEVATIONS

KB m GRD m

FIELD OR AREA

POOL OR ZONE

NAME OF SAMPLER

COMPANY

K. RYAN

ROXY

TEST TYPE

NO

TEST RECOVERY

TEST INTERVAL OR PERFS

SAMPLING POINT

WELL HEAD

AMT & TYPE OF CUSHION

MUD RESISTIVITY/11 m

@ 25° C

TYPE OF PRODUCTION

PUMPING

FLOWING

GAS LIFT

SWAB

PRODUCTION RATES

WATER

W/S

OIL

W/S

GAS

W/S

GAUGE PRESSURE MPa

TEMPERATURE °C

SEPARATOR

TREATER

RESERVOIR

SOURCE

SAMPLED

RECEIVED

DATE SAMPLED (Y-M-D)

83-11-08

DATE RECEIVED (Y-M-D)

83-11-22

DATE REPORTED (Y-M-D)

83-11-24

ANALYST

S.J.

OTHER INFORMATION

SAMPLE PROPERTIES

S.S. & W. (VOLUME FRACTION)

COLOR OF CLEAN OIL

BROWN

WATER

0.100

SEDIMENT

0.040

TOTAL

0.140

COLOR NUMBER ASTM D-155

D₈ A.S.T.M.

RELATIVE

AS RECEIVED

AFTER CLEANING

DENSITY

ABSOLUTE $\rho_{40} \times 10^3$

AS RECEIVED

AFTER CLEANING

848.1

API GRAVITY @ 15°C = 35.19

TOTAL SULPHUR
(MASS FRACTION)

0.00897

TOTAL SALT g/m³

POUR POINT /°C

U.S.B.M.

A.S.T.M.

3

CARBON RESIDUE

(MASS FRACTION)

CONRADSON

RAMSBOTTOM

RVSP%

VISCOSITY

TEMP/°C	ABSOLUTE $\eta_{40} \times 10^3$	KINEMATIC $\nu_{40} \times 10^4$
25	5.53	6.57
30	3.91	4.69
35	3.07	3.72

DISTILLATION

METHOD

A.S.T.M. - D - 86*

INITIAL BOILING POINT: 52.0°C

ABS BAROM PRESS/kPa

87.7

ROOM TEMP./°C

22.5

DISTILLATION SUMMARY (VOLUME FRACTION)

200°C
NAPHTHA

0.25

275°C
KEROSENE

0.38

350°C
LIGHT GAS OIL

0.55

RECOVERED

0.87

RESIDUE

0.11

DISTILLATION
LOSS

0.02

RELATIVE DENSITY

DISTILLATE

RESIDUE

VOLUME FRACTION	TEMP./°C
0.05	93.5
0.10	115.5
0.15	145.0
0.20	201.0
0.25	230.0
0.30	257.5
0.35	280.5
0.40	305.0
0.45	327.5
0.50	350.5
0.55	371.0
0.60	384.5
0.65	394.0
0.70	402.0
0.75	407.0
0.80	
0.85	
0.90	
0.95	
1.00	
F.B.P.	407.0
CRACKED	

BASE TYPE:

CHARACTERIZATION FACTOR: 11.9

REMARKS:

* The distillation temperatures have been corrected to 101.3 kPa (abs).

CHARACTERIZATION
FACTOR

REMARKS



CORE LABORATORIES - CANADA LTD.
Petroleum Reservoir Engineering
CALGARY ALBERTA



WATER ANALYSIS

Plastic
CONTAINER IDENTITY

7022-83-807
LABORATORY NUMBER

2 of 2
PAGE

LSD 9-31-2-23 W1M
LOCATION

Roxy Petroluem Ltd.
OPERATOR

Roxy-Andex et al DeLoraine 9-31-2-23
WELL OR SAMPLE LOCATION NAME

501.8
KB ELEV.

497.8
GRD. ELEV.

DeLoraine, Manitoba
FIELD OR AREA

Mississippian
POOL OR ZONE

A+A Coring
SAMPLER

DST 1
TEST TYPE & NO.

TEST RECOVERY

Sampler
POINT OF SAMPLE

820 - 830
TEST INTERVALS OR PERFS.

PUMPING FLOWING GAS LIFT SWAB

WATER m³/d OIL m³/d GAS m³/d

SEPARATOR RESERVOIR CONTAINER WHEN SAMPLED CONTAINER WHEN RECEIVED SEPARATOR

PRESSURES, kPa

TEMPERATURES, °C

83 10 10 83 10 12 83 10 20
DATE SAMPLED (Y/M/D) DATE RECEIVED (Y/M/D) DATE ANALYSED (Y/M/D)

ANALYST

REMARKS

ION	mg/L	mg Fraction	MEQ/L
Na	16300.	0.3358	709.0
K	155.	0.0032	4.0
Ca	1451.	0.0299	72.4
Mg	256.	0.0053	21.0
Ba			
Sr			
Fe	NOT DETECTED		

ION	mg/L	mg Fraction	MEQ/L
Cl	23596.	0.4862	665.5
Br			
I			
HCO ₃	670.	0.0138	11.0
SO ₄	6108.	0.1259	127.3
CO ₃	0.	0.0000	0.0
OH	0.	0.0000	0.0
H ₂ S		PRESENT	

TOTAL SOLIDS mg/L

BY EVAPORATION @ 110°C BY EVAPORATION @ 180°C

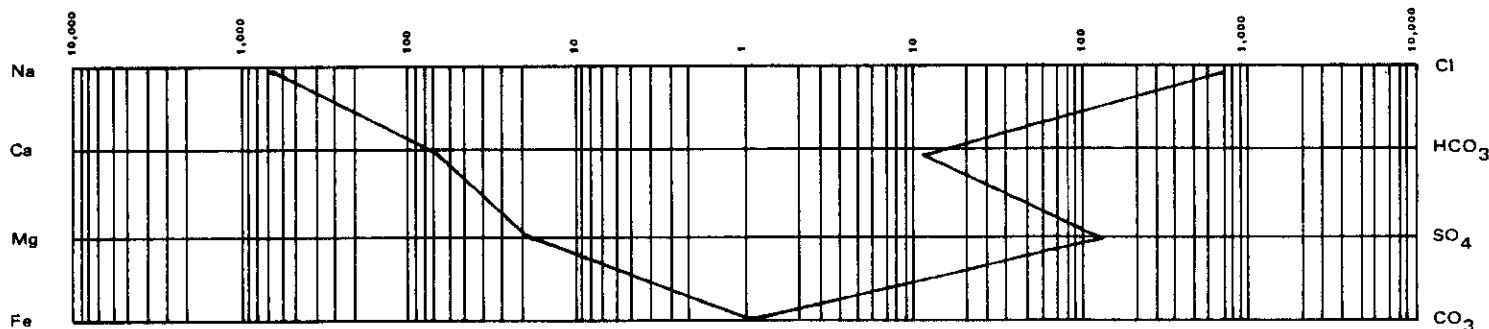
48535.
CALCULATED

AT IGNITION

1.0368 @ 15.4°C 1.3393 @ 21.
SPECIFIC GRAVITY REFRACTIVE INDEX

6.9 0.160 @ 25°C
pH RESISTIVITY (OHM/METERS)

LOGARITHMIC PATTERN MEQ PER LITRE



REMARKS NaCl equiv. 45175.

CHEMICAL & GEOLOGICAL LABORATORIES LTD.

EDMONTON FORT ST. JOHN CALGARY



OIL ANALYSIS

LABORATORY NUMBER

E83-11605-1

LICENCE NUMBER

OPERATOR NAME

ROXY PETROLEUM LTD.

LOCATION

12-32-2-23 W1

WELL NAME

ROXY DELORIANE 12-32-2-23

ELEVATIONS
L.S. (meters) ORD.

502.54

498

FIELD OR AREA

DELORIANE

POOL OR ZONE

MISSISSIPPI

NAME OF SAMPLER

COMPANY

CANADIAN

FORMATION

TESTERS LTD.

TEST TYPE

DST

NO.

1

TEST RECOVERY

251.6 m

MULTIPLE
RECOVERY

Y N

X

Test Interval (meters)

825-833

Perforations (meters)

SAMPLING POINT

TOP

AMT. & TYPE OF CUSHION

MUD RESISTIVITY

@ 27°C

TYPE OF PRODUCTION

PUMPING

FLOWING

GAS LIFT

SWAB

PRODUCTION RATES

WATER

m³/d

OIL

m³/d

GAS

10³ m³/d

SEPARATOR

TREATER

RESERVOIR

SOURCE

GAUGE PRESSURE

kPa

SEPARATOR

TREATER

RESERVOIR

SOURCE

TEMPERATURE

°C

DATE SAMPLED (Y-M-D)

83/03/15

DATE RECEIVED (Y-M-D)

83/03/25

DATE REPORTED (Y-M-D)

83/04/14

ANALYST

E.S.

OTHER INFORMATION

SAMPLE PROPERTIES

COLOR OF CLEAN OIL

B.S. & W. (VOLUME FRACTION)

WATER

0.5200

SEDIMENT

0.2800

TOTAL

0.8000

DENSITY

RELATIVE

AS RECEIVED

AFTER CLEANING

0.865

ABSOLUTE g/cm³

AS RECEIVED

AFTER CLEANING

864

TOTAL SULFUR
(MASS FRACTION)TOTAL SALT
(g/m³)POUR POINT
°C

U.S.M.

A.S.T.M.

CARBON RESIDUE
(MASS FRACTION)

CONRADSON

RAMSBOTTOM

RVP kPa

VISCOSITY

TEMP.
°C

ABSOLUTE mPa.s

KINEMATIC mm²/s

DISTILLATION

VOLUME
FRACTION
DISTILLEDTEMP.
°C

METHOD

I.B.P.

0.05

0.10

0.15

0.20

0.25

0.30

0.35

0.40

0.45

0.50

0.55

0.60

0.65

0.70

0.75

0.80

0.85

0.90

0.95

1.00

F.B.P.

BAROM. PRESS kPa (mm.Hg)

ROOM TEMP. °C

DISTILLATION SUMMARY

(VOLUME FRACTION)

200°C
NAPHTHA270°C
KEROSENE360°C
LIGHT GAS OIL

RECOVERED

RESIDUE

DISTILLATION
LOSS

RELATIVE DENSITY

DISTILLATE

RESIDUE

BASE TYPE:

CHARACTERIZATION FACTOR:

H₂S PRESENT.

CRACKED



CHEMICAL & GEOLOGICAL LABORATORIES LTD.

EDMONTON FORT ST. JOHN CALGARY



OIL ANALYSIS

LABORATORY NUMBER

E83-11605-4

CONTAINER IDENTITY

LICENCE NUMBER

OPERATOR NAME

ROXY PETROLEUM LTD.

LOCATION

12-32-2-23 W1

WELL NAME

ROXY DELORIANE 12-32-2-23

ELEVATIONS
E.S. (meters) GRD.

502.54 498

FIELD OR AREA

DELORIANE

POOL OR ZONE

MISSISSIPPI

NAME OF SAMPLER

COMPANY

CANADIAN

FORMATION

TESTERS LTD.

TEST TYPE

DST

NO

1

TEST RECOVERY

251.6 m

MULTIPLE
RECOVERY

Y N

X

SAMPLING POINT

DOWNHOLE SAMPLER

AMT. & TYPE OF CUSHION

MUD RESISTIVITY

@ 20°C

Test Interval (meters)

825-833

Perforations (meters)

TYPE OF PRODUCTION

PUMPING

FLOWING

GAS LIFT

SWAB

PRODUCTION RATES

WATER

m³/d

OIL

m³/d

GAS

10³ m³/d

SEPARATOR

TREATER

RESERVOIR

SOURCE

GAUGE PRESSURE

MPa

SEPARATOR

TREATER

RESERVOIR

SOURCE

TEMPERATURE

°C

DATE SAMPLED (Y-M-D)

83/03/15

DATE RECEIVED (Y-M-D)

83/03/25

DATE REPORTED (Y-M-D)

83/04/14

ANALYST

E.S.

OTHER INFORMATION

SAMPLE PROPERTIES

COLOR OF CLEAN OIL

S.E. & W. (VOLUME FRACTION)

WATER

SEDIMENT

TOTAL

0.0700

0.0100

0.0800

DENSITY

RELATIVE

AS RECEIVED

AFTER CLEANING

0.867

ABSOLUTE (kgm⁻³)

AS RECEIVED

AFTER CLEANING

866

TOTAL SULFUR
(MASS FRACTION)TOTAL SALT
(g/m³)POUR POINT
°C

U.S.B.M.

A.S.T.M.

CARBON RESIDUE
(MASS FRACTION)

RVP

TEMP.
°C

VISCOSITY

ABSOLUTE mPa.s

KINEMATIC mm²/s

CONRADSON

RAMSBOTTOM

DISTILLATION

METHOD

VOLUME
FRACTION
DISTILLEDTEMP.
°C

I.S.P.

0.05

0.10

0.15

0.20

0.25

0.30

0.35

0.40

0.45

0.50

0.55

0.60

0.65

0.70

0.75

0.80

0.85

0.90

0.95

1.00

F.B.P.

CRACKED

BAROM. PRESS (kPa/abs.)

ROOM TEMP. °C

DISTILLATION SUMMARY

(VOLUME FRACTION)

20°C
NAPHTHA27°C
KEROSENE99°C
LIGHT GAS OIL

RECOVERED

RESIDUE

DISTILLATION
LOSS

RELATIVE DENSITY

DISTILLATE

RESIDUE

BASE TYPE:

CHARACTERIZATION FACTOR:



CHEMIC & GEOLOGICAL LABORATORIES LTD.

FORT ST. JOHN CALGARY



OIL ANALYSIS

LABORATORY NUMBER

E83-11605-5

CONTAINER IDENTITY

LICENCE NUMBER

OPERATOR NAME

ROXY PETROLEUM LTD.

LOCATION

12-32-2-23 W1

WELL NAME

ROXY DELORIANE 12-32-2-23

ELEVATIONS
E.S. (metres) GRD

502.54

498

FIELD OR AREA

DELORIANE

POOL OR ZONE

MISSISSIPPI

NAME OF SAMPLER

COMPANY

CANADIAN

FORMATION

TESTERS LTD.

TEST TYPE

DST

NO.

1

TEST RECOVERY

251.6 m

MULTIPLE
RECOVERY

Y/N

X

SAMPLING POINT

DOWNHOLE SAMPLER

AMT. & TYPE OF CUSHION

MUD RESISTIVITY

@ 29°C

Test Interval (metres)

825-833

Perforations (metres)

TYPE OF PRODUCTION

PUMPING

FLOWING

GAS LIFT

SWAB

PRODUCTION RATES

WATER

m³/d

OIL

m³/d

GAS

10³ m³/d

GAUGE PRESSURE

kPa

SEPARATOR

TREATER

RESERVOIR

SOURCE

SEPARATOR

TREATER

RESERVOIR

SOURCE

TEMPERATURE

°C

DATE SAMPLED (Y-M-D)

83/03/15

DATE RECEIVED (Y-M-D)

83/03/25

DATE REPORTED (Y-M-D)

83/04/14

ANALYST

E.S.

OTHER INFORMATION

SAMPLE PROPERTIES

COLOR OF CLEAN OIL

BLACKISH BROWN

S.S. & W. (VOLUME FRACTION)

WATER

0.0520

SEDIMENT

0.0080

TOTAL

0.0600

DENSITY

RELATIVE

AS RECEIVED

AFTER CLEANING

0.866

ABSOLUTE g/cm³

AS RECEIVED

AFTER CLEANING

865

TOTAL SULFUR
(MASS FRACTION)

0.0097

TOTAL SALT
(g/m³)POUR POINT
°C

U.S.M.

A.S.T.M.

+1

CARBON RESIDUE
(MASS FRACTION)

CONRADSON

RAMSBOTTOM

0.0451

VISCOSITY

TEMP.
°C

ABSOLUTE mPa.s

KINEMATIC mm²/s

10

42.2

48.5

20

16.2

18.8

40

5.72

6.73

DISTILLATION

METHOD

HEMPEL

BAROM. PRESS (kPa/abs.)

93.36

ROOM TEMP. °C

23

DISTILLATION SUMMARY

(VOLUME FRACTION)

100°C NAPHTHA

0.28

270°C KEROSENE

0.18

340°C LIGHT GAS OIL

—

RECOVERED

RESIDUE

DISTILLATION
LOSS

RELATIVE DENSITY

DISTILLATE

RESIDUE

BASE TYPE: MIXED

CRACKED

347

CHARACTERIZATION FACTOR:

11.8

TOTAL SULPHUR = 9.7 g/kg