

| LOG AND RUN NO. | DATE | MEASURED | BIT SIZE | BHT OF | MUD | | | MUD FILTRATE |
|-----------------|----------|--------------------------------------|----------|--------|----------------|------|----------------|----------------|
| | | | | | TYPE | SG | RESISTIVITY/°F | RESISTIVITY/°F |
| DIFL/ACL/GR 1 | 08.01.86 | 278-808 | 14 3/4 | 116 | Seawater/ Bent | 1.12 | 0.096/65 | 0.080/65 |
| CDL/CN/GR 1 | 08.01.86 | 365-807 | 14 3/4 | 118 | II | 1.12 | II | II |
| DIFL/ACL/SP 2 | 19.01.86 | 675-1607 | 17 1/2 | 112 | KCL/POLYMER | 1.39 | 0.085/68 | 0.055/71 |
| CDL/CN/GR 2 | 19.01.86 | 785-1603 | 17 1/2 | 117 | II | 1.39 | II | II |
| DIFL/ACL/GR 3 | 28.01.86 | 1572-1799 | 12 1/4 | 110 | Chalk mud | 1.21 | 0.073/68 | 0.064/68 |
| CDL/CN/GR 3 | 28.01.86 | 1572-1799 | 12 1/4 | 120 | II | 1.21 | II | II |
| DLL/MLL/GR 1 | 28.01.86 | 1612-1795 | 12 1/4 | 129 | II | 1.21 | II | II |
| Diplog 1 | 29.01.86 | 1616-1794 | 12 1/4 | 134 | II | 1.21 | II | II |
| FMT-HP 1 | 29.01.86 | 12 pre-tests. Sample at 1652.5 m bdf | | | | | | |
| Velocity survey | | | | | | | | |
| SWS 1 | 29.01.86 | Recovered 26 | | | | | | |
| SWS 2 | 30.01.86 | Recovered 3 | | | | | | |
| SWS 3 | 30.01.86 | Recovered 11 | | | | | | |

OPERATOR NORSKE SHELL

RIG BORNGNY DOLPHIN

WELL 6407/9-6

SHEET NO. 1

MUD TYPE KCL&POLYMER

MUD CONTRACTOR HUGHES

| | DATE | 1/1/86 | 2/1 | 3/1 | 4/1 | 5/1 | 6/1 | 7/1 | 8/1 | 9/1 | 10/1 |
|-----|---|---------|-------|-------|-------|-------|-------|-------|-------|-----------|-------|
| | TIME | 19:00 | 19:00 | 19:00 | 18:30 | 19:30 | 19:00 | 18:00 | 18:00 | 19:00 | 19:00 |
| | DEPTH <input type="checkbox"/> (ft) <input checked="" type="checkbox"/> (m) | | | 382 | 382 | 431 | 573 | 811 | 810 | 810 | 812 |
| MW | WEIGHT <input type="checkbox"/> (lb/gal) <input type="checkbox"/> (g/cc) | 1.05 | 1.04 | 1.04 | 1.06 | 1.09 | 1.11 | 1.12 | 1.13 | 1.11 | 1.10 |
| MG | MUD GRADIENT (psi/ft) | | | | | 0.472 | 0.481 | 0.485 | 0.49 | 0.481 | 0.47 |
| V | FUNNEL VISCOSITY (sec/qt) | 100+ | 100+ | 100+ | 33 | 39 | 39 | 39 | 42 | 100 | 65 |
| PV | PLASTIC VISCOSITY (cps) | SEA | WATER | 8 | 8 | 11 | 11 | 11 | 12 | SEA | WATER |
| YP | YIELD POINT (lb/100 sq ft) | VISCOUS | PILLS | 8 | 8 | 16 | 17 | 17 | 21 | & VISCOUS | |
| GEL | GEL STRENGTH (lb/100 sq ft) 10"/10' | / | / | / | 2/3 | 5/8 | 7/9 | 6/8 | 8/11 | /PILLS | / |
| pH | pH | | | | 8.3 | 9.3 | 9.2 | 9.2 | 9.1 | | |
| F | FILTRATE (ml/30 min) | | | | 13.5 | 7.7 | 9.0 | 9.9 | 9.5 | | |
| CK | CAKE THICKNESS (32nd in) | | | | 1 | 1 | 1 | 1 | 1 | | |
| pf | ALKALINITY | | | | 0.1 | 0.2 | 0.2 | 0.25 | 0.25 | | |
| S | <input type="checkbox"/> ppm SALT <input type="checkbox"/> gpg <input type="checkbox"/> ppm CHLORIDE <input type="checkbox"/> gpg | | | | 63000 | 63000 | 64000 | 66000 | 65000 | | |
| Ca | CALCIUM (% vol) | | | | 2400 | 2600 | 2600 | 2600 | 2600 | | |
| Sd | SAND CONTENT (% vol) | | | | 0 | 0.5 | 1 | 0.5 | 0.5 | | |
| Sol | SOLIDS CONTENT (% vol) | | | | 1 | 2 | 2 | 3 | 3 | | |
| O | OIL CONTENT (% vol) | | | | 0 | 0 | 0 | 0 | 0 | | |

Well 6407/9-6
PT-1 Samples Collected

| No. | Test | Time | Date | Fluid | S.G. | Sampling Point | Container (Description /Volume) | Serial Number | Remarks |
|-----|-------|--------------|---------|-------|------------------|----------------|---------------------------------|---------------|----------------------|
| 1 | PT-1D | 0015 0035 | 17.2.86 | Gas | 0.812 (Air=1) | Separator | PVT-gas | 1965A | |
| 2 | PT-1D | 0030 0040 | 17.2.86 | Oil | 0.812 | " | PVT-oil 675 c.c. | 811507 | |
| 3 | PT-1D | 0113 0127 | 17.2.86 | Gas | 0.810 (Air=1) | | | 2106A | |
| 4 | PT-1D | 0113 0137 | 17.2.86 | Oil | 0.810 | " | PVT-oil 675 c.c. | 811090 | |
| 5 | PT-1D | 0154 0210 | 17.2.86 | Oil | 0.810 | " | PVT-oil 670 c.c. | 811976 | |
| 6 | PT-1D | 0154 0210 | 17.2.86 | Gas | 0.810 (Air=1) | " | PVT-gas | 1012 | |
| 7 | PT-1D | 0610 0615 | 17.2.86 | Oil | | | Bbl-drum 45 gal | | 3 Bulk samples taken |

Well 6407/9-6
PT-1 Samples Collected

| No. | Test | Time | Date | Fluid | S.G. | Sampling Point | Container (Description /Volume) | Serial Number | Shipping Conditions |
|-----|-------|------|---------|-------|------|----------------|---------------------------------|---------------|-------------------------------|
| 8 | PT-1E | 1538 | 19-2-86 | BHS | - | 1633.5 m BDF | " | 311501 | 425psig at 58 ⁰ F |
| 9 | PT-1E | 1538 | 19-2-86 | BHS | - | 1036 m BDF | 600 c.c. | 811502 | 475psig at 65 ⁰ F |
| 10 | PT-1E | 1538 | 19-2-86 | BHS | - | 1631.1 m BDF | " | 811081 | 400 psig at 68 ⁰ |
| 11 | PT-1E | 2122 | 19-2-86 | BHS | - | 1631.1 m BDF | " | 811501 | 400 psig at 56 ⁰ F |
| 12 | PT-1E | 2122 | 19-2-86 | BHS | - | 1633.5 m BDF | " | 811079 | 400 psig at 56 ⁰ F |



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Title

GEOCHEMICAL DATA REPORT FOR WELL 6407/9-6

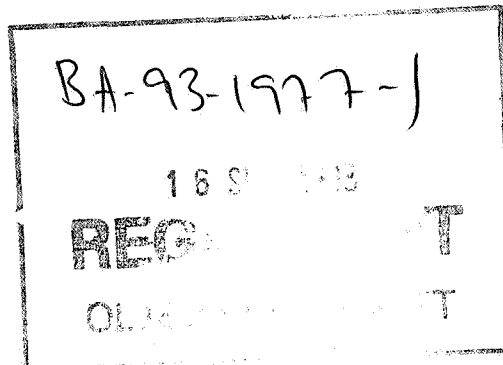
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VENCHE BJERKREIM PEDERSEN

Abstract

33 samples from the cored interval in well 6407/9-6 have been analysed by Iatroscan (TCL-FID).
 1 sample was analysed by GC-FID and GC/MS.

NOT INCLUDED IN WELL TRADE.



Key Words

6407/9-6, geochemistry, Iatroscan, GC-FID, GC/MS

Classification: Free Saga and partners Internal Confidential Strictly confidential

| Org. Unit | EUG | | | | |
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1 Objectives

The objective of this study was to characterise the extractable hydrocarbons in 33 core samples from well 6407/9-6.

2 General well information

The well was drilled by Shell as operator of licence 093 from 2.1.86 to 13.3.86 and reached a total depth of 1800 mRKB. The KB of the rig was 25 metres and the water depth was 276 metres.

3 Samples and analytical scheme

33 samples were picked from the cored interval in the period 29th to 30th July 1991. All samples were analysed by Iatroscan (TLC-FID), and the saturated hydrocarbon fractions from 3 samples were analysed by GC-FID and GC/MS.

4 Vitrinite reflectance

No samples were analysed.

5 TOC and Rock Eval

No samples were analysed.

6 Iatroscan (TLC-FID)

33 samples were analysed, and the results are tabulated in Table 1.

7 GC-FID

The saturated hydrocarbon fractions from 3 samples were analysed by Saga Petroleum a.s.. The GC-FID chromatograms are shown in figure 1.

8 GC/MS

The GC/MS analyses were performed by Saga Petroleum a.s. The saturated hydrocarbon fractions from the samples were analysed by GC/MS and the mass chromatograms for m/z 191, 177, 217 and 218 are shown in figure 2. Selected biological marker parameters manually measured by Saga are given in table 2.

9 Stable carbon isotopes

No samples were analysed.

Table 1.

SAGLAB RESULTS MANAGEMENT : EXTRACTION ANALYSIS RESULTS in mg/g Rock

Data for Well 6407/9-6

Page 1

| Type | St.Depth | En.Depth | Weight (g) | EOM mg/g Rock | EOM mg/g TOC | Sat (mg/g) | Aro (mg/g) | NSO (mg/g) | Asph (mg/g) | Polars (mg/g) | TOC (%) | M/I |
|------|----------|----------|---------------|------------------|-----------------|---------------|---------------|---------------|----------------|------------------|------------|-----|
| CCP | 1646.00 | 1646.00 | 3.14 | 10.78 | | 5.34 | 2.08 | | | 3.35 | | I |
| CCP | 1647.00 | 1647.00 | 3.11 | 6.86 | | 3.35 | 1.04 | | | 2.46 | | I |
| CCP | 1648.00 | 1648.00 | 2.11 | 4.83 | | 2.28 | 0.82 | | | 1.72 | | I |
| CCP | 1649.00 | 1649.00 | 3.18 | 9.40 | | 4.81 | 1.57 | | | 3.01 | | I |
| CCP | 1650.00 | 1650.00 | 2.79 | 7.03 | | 3.52 | 1.23 | | | 2.28 | | I |
| CCP | 1652.00 | 1652.00 | 3.52 | 8.23 | | 4.24 | 1.30 | | | 2.69 | | I |
| CCP | 1654.00 | 1654.00 | 3.15 | 6.56 | | 3.51 | 1.12 | | | 1.93 | | I |
| CCP | 1656.00 | 1656.00 | 2.66 | 6.74 | | 3.55 | 1.31 | | | 1.88 | | I |
| CCP | 1657.00 | 1657.00 | 2.86 | 2.38 | | 1.28 | 0.37 | | | 0.72 | | I |
| CCP | 1657.70 | 1657.70 | 2.80 | 5.22 | | 2.64 | 0.97 | | | 1.61 | | I |
| CCP | 1660.80 | 1660.80 | 2.35 | 8.68 | | 0.12 | 0.15 | | | 8.41 | | I |
| CCP | 1661.00 | 1661.00 | 2.26 | 10.48 | | 0.27 | 0.25 | | | 9.96 | | I |
| CCP | 1662.00 | 1662.00 | 2.79 | 1.38 | | 0.10 | 0.12 | | | 1.17 | | I |
| CCP | 1662.50 | 1662.50 | 2.94 | 0.21 | | 0.00 | 0.00 | | | 0.21 | | I |
| CCP | 1662.70 | 1662.70 | 2.61 | 0.39 | | 0.00 | 0.00 | | | 0.39 | | I |

33 RESULT(s) selected ..., from the following search criteria:

Company: SAG, Nat: NOR, Well:

6407/9-6, Type: CCP, Depth between:

0.000 and 99999.990 m, MPLC: I

SAGLAB RESULTS MANAGEMENT : EXTRACTION ANALYSIS RESULTS in mg/g Rock

Data for Well 6407/9-6

Page 2

| Type | St.Depth | En.Depth | Weight (g) | EOM mg/g Rock | EOM mg/g TOC | Sat (mg/g) | Aro (mg/g) | NSO (mg/g) | Asph (mg/g) | Polars (mg/g) | TOC (%) | M/I |
|------|----------|----------|---------------|------------------|-----------------|---------------|---------------|---------------|----------------|------------------|------------|-----|
| CCP | 1663.00 | 1663.00 | 2.03 | 6.41 | | 2.75 | 0.94 | | | 2.72 | | I |
| CCP | 1665.00 | 1665.00 | 2.09 | 7.19 | | 4.03 | 1.42 | | | 1.74 | | I |
| CCP | 1667.00 | 1667.00 | 2.37 | 6.23 | | 3.32 | 1.09 | | | 1.81 | | I |
| CCP | 1669.00 | 1669.00 | 2.73 | 3.76 | | 1.72 | 0.64 | | | 1.40 | | I |
| CCP | 1671.00 | 1671.00 | 2.95 | 1.70 | | 0.78 | 0.24 | | | 0.68 | | I |
| CCP | 1672.70 | 1672.70 | 3.06 | 0.00 | | 0.00 | 0.00 | | | 0.00 | | I |
| CCP | 1673.50 | 1673.50 | 2.95 | 0.04 | | 0.04 | 0.00 | | | 0.00 | | I |
| CCP | 1673.60 | 1673.60 | 3.07 | 0.19 | | 0.00 | 0.00 | | | 0.19 | | I |
| CCP | 1674.00 | 1674.00 | 2.79 | 0.22 | | 0.00 | 0.00 | | | 0.22 | | I |
| CCP | 1676.00 | 1676.00 | 2.59 | 0.34 | | 0.00 | 0.00 | | | 0.34 | | I |
| CCP | 1680.00 | 1680.00 | 3.21 | 0.09 | | 0.00 | 0.00 | | | 0.09 | | I |
| CCP | 1682.00 | 1682.00 | 2.66 | 0.16 | | 0.00 | 0.00 | | | 0.16 | | I |
| CCP | 1683.00 | 1683.00 | 2.57 | 0.34 | | 0.00 | 0.00 | | | 0.34 | | I |
| CCP | 1685.00 | 1685.00 | 3.44 | 0.20 | | 0.00 | 0.00 | | | 0.20 | | I |
| CCP | 1687.00 | 1687.00 | 2.45 | 0.11 | | 0.00 | 0.00 | | | 0.11 | | I |

33 RESULT(s) selected ..., from the following search criteria:

Company: SAG, Nat: NOR, Well:

6407/9-6, Type: CCP, Depth between:

0.000 and 99999.990 m, MPLC: I

SAGLAB RESULTS MANAGEMENT : EXTRACTION ANALYSIS RESULTS in mg/g Rock

Data for Well 6407/9-6

Page 3

| Type | St.Depth | En.Depth | Weight (g) | EOM mg/g Rock | EOM mg/g TOC | Sat (mg/g) | Aro (mg/g) | NSO (mg/g) | Asph (mg/g) | Polars (mg/g) | TOC (%) | M/I |
|---------------------|----------|----------|---------------|------------------|-----------------|---------------|---------------|---------------|----------------|------------------|------------|-----|
| CCP | 1688.40 | 1688.40 | 3.07 | 1.15 | | 0.04 | 0.10 | | | 1.01 | | I |
| CCP | 1689.00 | 1689.00 | 2.29 | 4.81 | | 0.03 | 0.13 | | | 4.65 | | I |
| CCP | 1690.00 | 1690.00 | 2.15 | 0.89 | | 0.00 | 0.00 | | | 0.89 | | I |
| Averages this Well: | | | | 3.73 | 0.00 | 1.45 | 0.51 | 0.00 | 0.00 | 1.77 | 0.00 | |
| Averages all Wells: | | | | 3.73 | 0.00 | 1.45 | 0.51 | 0.00 | 0.00 | 1.77 | 0.00 | |

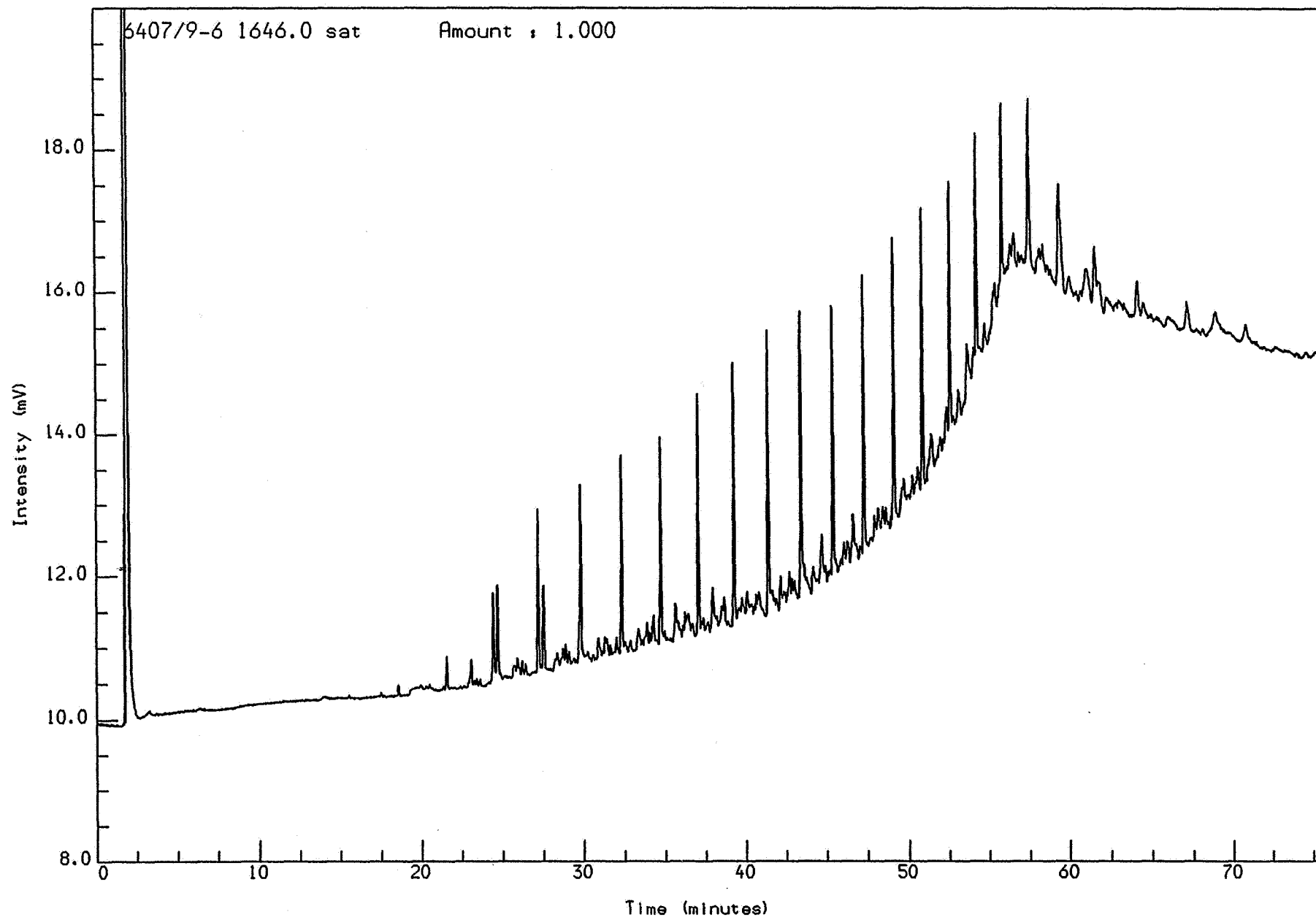
33 RESULT(s) selected ..., from the following search criteria:
 Company: SAG, Nat: NOR, Well:
 6407/9-6, Type: CCP, Depth between:
 0.000 and 99999.990 m, MPLC: I

Table 2.

| 0 well | 1 | 2 nat | 3 formation | 4 | 5 upper depth | 6 lower depth | 7 sample type | 8 a/a+j | 9 20S |
|------------|----------|-------|-------------|-------------|------------------|------------------|------------------|---------|----------|
| 1 6407/9-6 | 6407/9-6 | nor | | saga_sept92 | 1646 | 1646 | ccp | 0.79562 | 0.573171 |

| 0 well | 10 bbS 217 | 11 %C27 abbS | 12 %C28 abbS | 13 %C29 abbS |
|------------|---------------|-----------------|-----------------|-----------------|
| 1 6407/9-6 | 0.567282 | 29.520295 | 29.889299 | 40.590406 |

Figure 1.



Acquired on 17-AUG-1992 at 21:22

Reported on 18-AUG-1992 at 12:30

Figure 2.

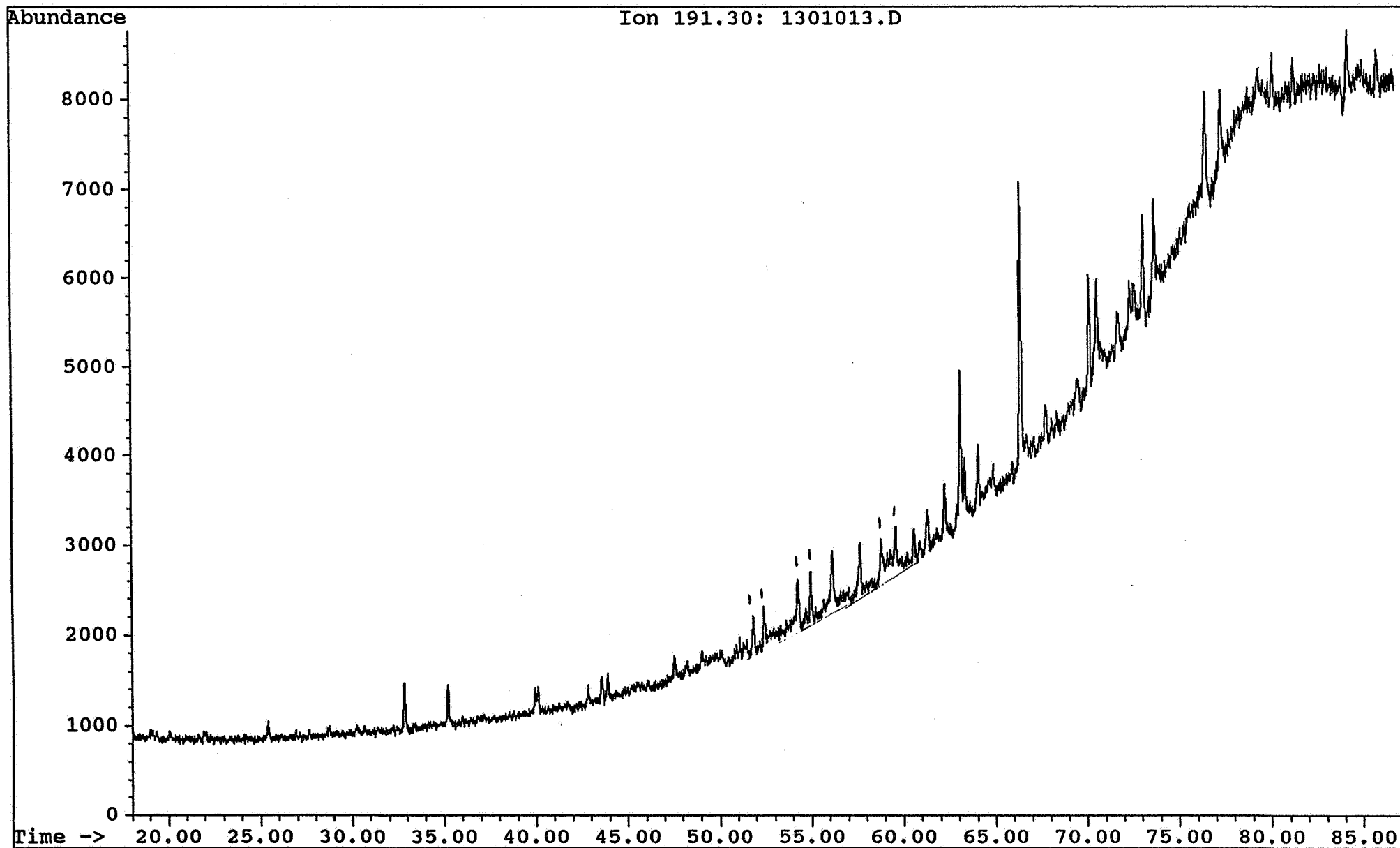
Saga Petroleum a.s.

Date acquired: 2 Sep 92 4:47 am

File: C:\CHEMPC\DATA\HALTEN\RUN9\1301013.D Inst: HP5971A Inj: Split Meth: BMS.M

Sample name:

WELL 6407/9-6 1646,00 sat

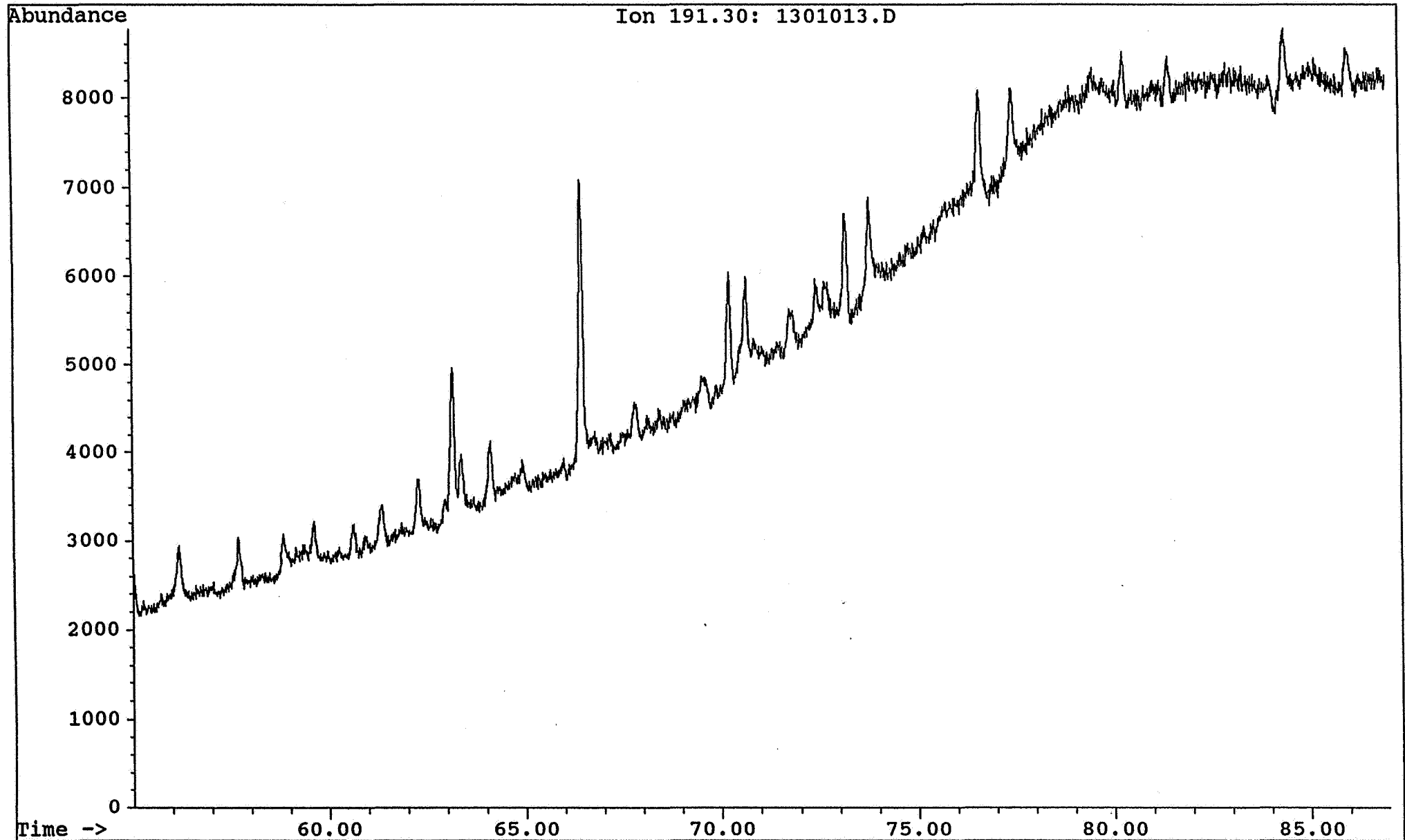


Saga Petroleum a.s.

Date acquired: 2 Sep 92 4:47 am

File: C:\CHEMPC\DATA\HALTEN\RUN9\1301013.D Inst: HP5971A Inj: Split Meth: BMS.M

Sample name: WELL 6407/9-6 1646,00 sat



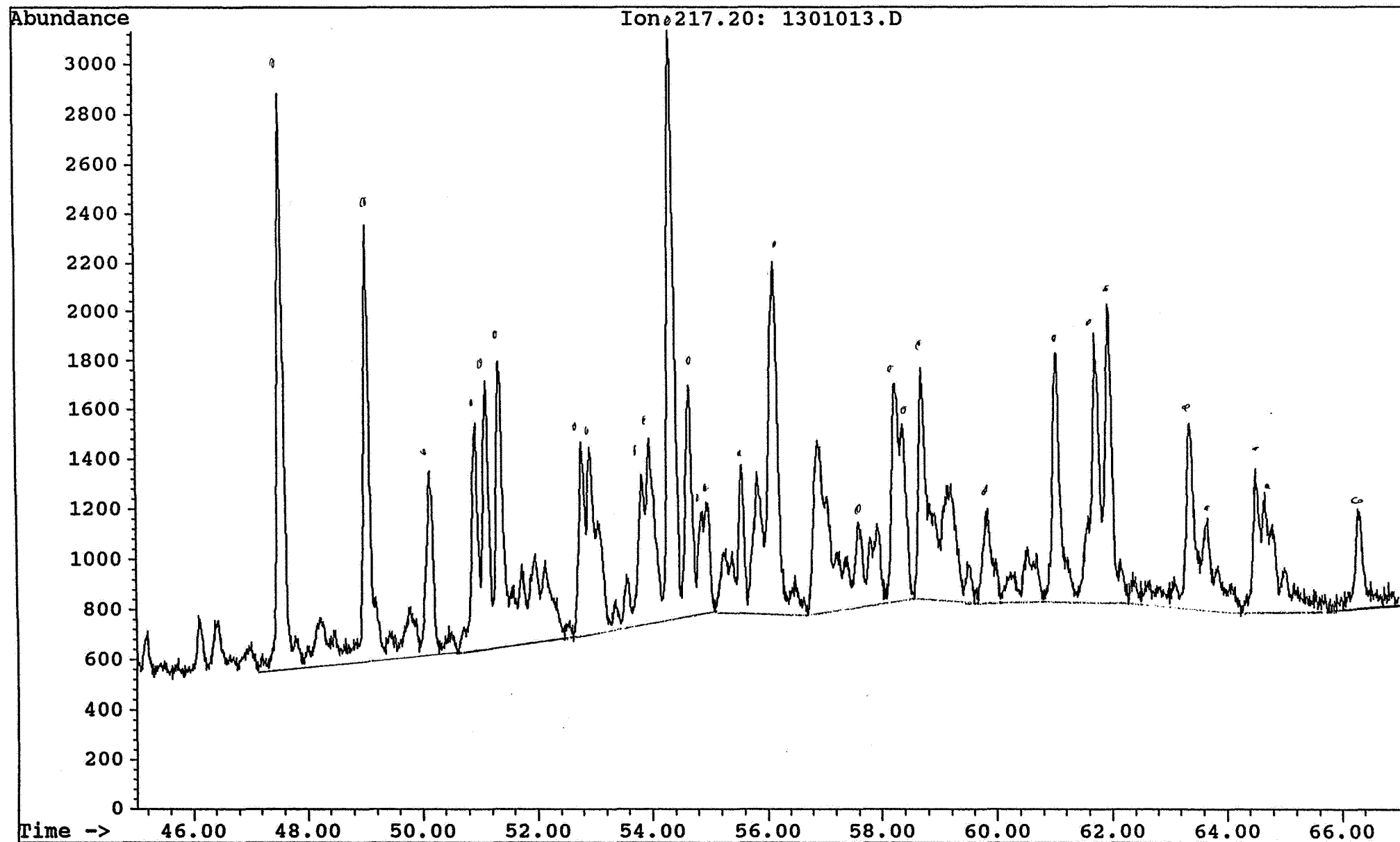
Saga Petroleum a.s.

Date acquired: 2 Sep 92 4:47 am

File: C:\CHEMPC\DATA\HALTEN\RUN9\1301013.D Inst: HP5971A Inj: Split Meth: BMS.M

Sample name:

WELL 6407/9-6 1646,00 sat

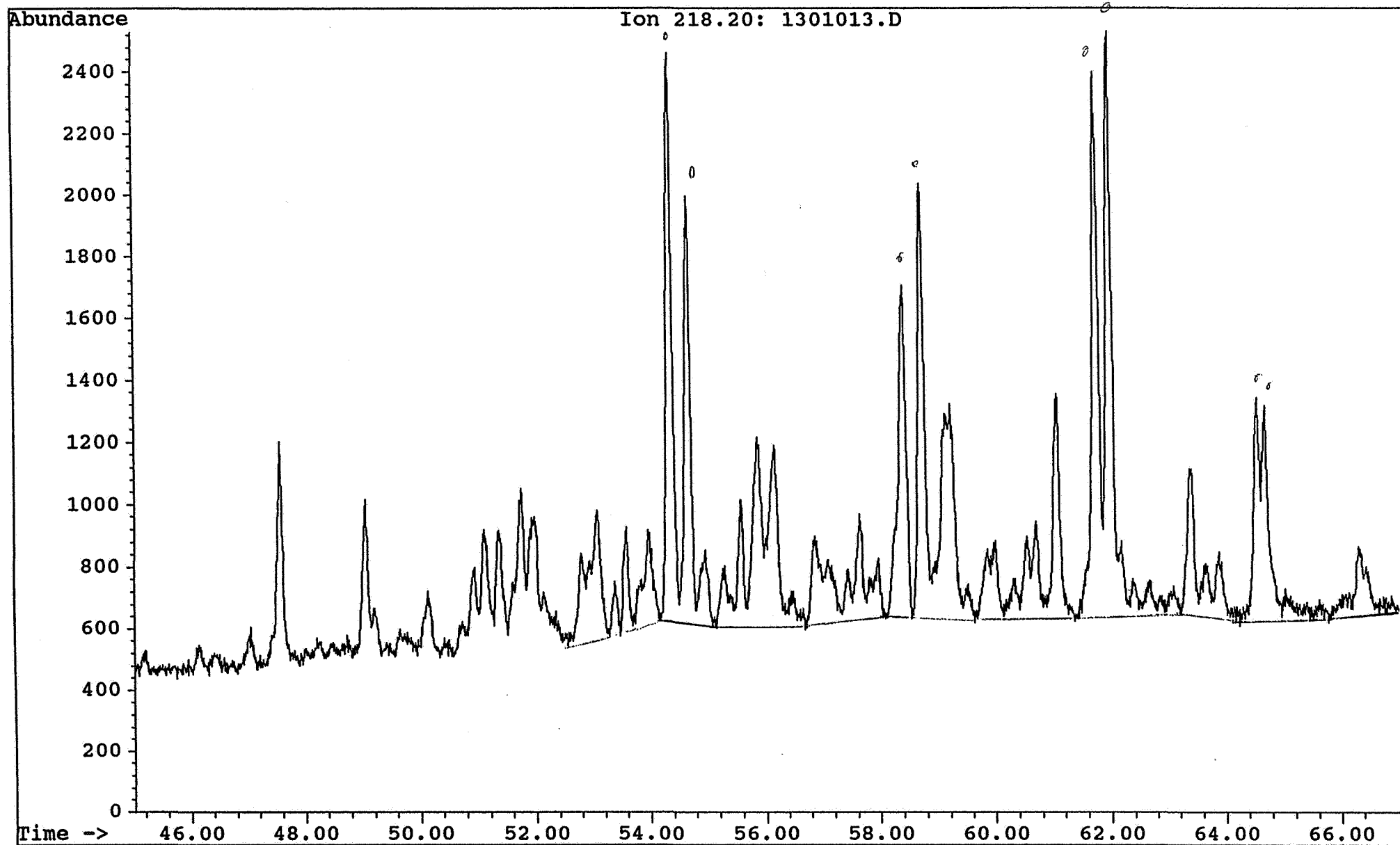


Saga Petroleum a.s.

Date acquired: 2 Sep 92 4:47 am

File: C:\CHEMPC\DATA\HALTEN\RUN9\1301013.D Inst: HP5971A Inj: Split Meth: BMS.M

Sample name: WELL 6407/9-6 1646,00 sat



Saga Petroleum a.s.

Date acquired: 2 Sep 92 4:47 am

File: C:\CHEMPC\DATA\HALTEN\RUN9\1301013.D Inst: HP5971A Inj: Split Meth: BMS.M

Sample name:

WELL 6407/9-6 1646,00 sat

