

CHEMICAL & GEOLOGICAL LABORATORIES LTD.

Edmonton — Fort St. John — Calgary

WATER ANALYSIS REPORT

Field Wildcat N.W.T. Well No. S.O.B.C. Blackstone YT D.-77
 Operator The California Standard Co. Date Received July 31, 1962
 Formation Middle Devonian Depths 4904-5303'
 Other pertinent data Location: Lat. 65° 46' 10.77"N ; Long. 137° 14' 54.78"W
Rec. 190 ft. drilling mud. Sampled from 90 ft above tool on July 1, 1962

Date _____ Lab. No. E19868-1

PARTS PER MILLION (MILLIGRAMS PER LITER)

Na & K	Ca	Mg	Fe	SO ₄	Cl	CO ₃	HCO ₃	OH	H ₂ S
3350	87	10	present	1239	737	2522	1240		

MILLIGRAM EQUIVALENTS

145.71	4.34	0.82		25.77	20.78	83.98	20.34		
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MILLIGRAM EQUIVALENTS IN PERCENT

48.29	1.44	0.27		8.54	6.89	27.83	6.74		
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Total Solids in Parts per Million

By evaporation **11720**
 After ignition **7040**
 Calculated **8556**
 Specific Gravity **1.008**
 Observed pH **10.4**
 Resistivity **1.34** ohm meters @ 68° F.

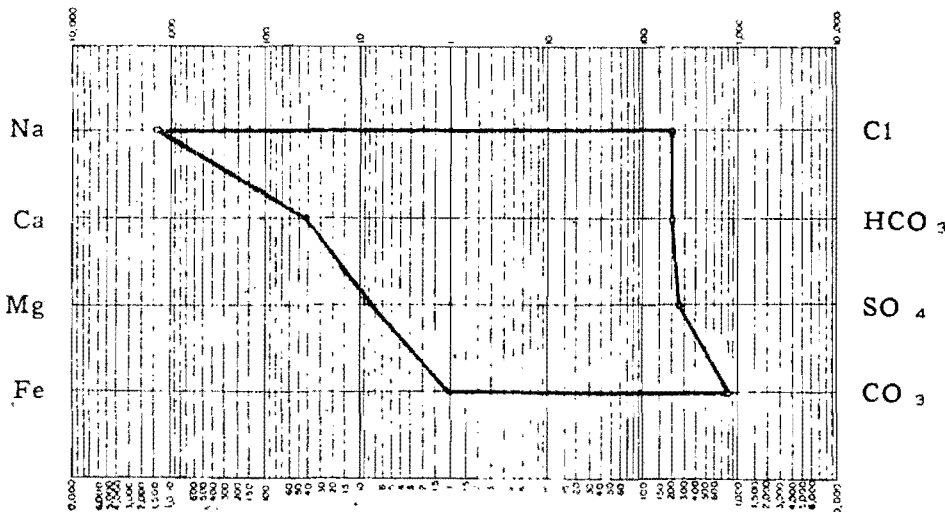
Properties of Reaction in Percent

Primary salinity **30.86**
 Secondary salinity **- - -**
 Primary alkalinity **65.72**
 Secondary alkalinity **3.42**
 Chloride salinity **44.65**
 Sulfate salinity **55.35**

Remarks and conclusions Organic matter present in total solids. This sample appears to be a filtrate water.

Milligram equivalents times 10

LOGARITHMIC PATTERN
MEQ per unit



OIL AND GAS CONSERVATION BOARD (PROVINCE OF ALBERTA)

STANDARD SAMPLE INFORMATION SHEET

INFORMATION TO BE FORWARDED WITH EACH SAMPLE OF WATER, OIL OR GAS (Please supply as much of the following information as possible. Please Print Clearly.)

Kind of sample (water, oil or gas): Water

Marks on sample container: 90' above tool

Sample obtained by: Operator

Date: July 1, 1962

Operator: The California Standard Co.

Mailing address for results: 14605 - 118 Ave. Edmonton

Well name and No. SOBC Blackstone YT D-77 Field or Area: Wildcat
 Located in: L.S.D. Lat. 65° 46' 10.77 "N ; Long. 137° 14' 54.78 "W"
 Sec. Rge. W Mer. Elev:

K.B. 2116 (est)
 Grd.

Sample obtained from (line, tubing, separator, etc.): drill pipe

Pressure: (a) at point of sampling 0 psig. (b) Gas Bomb pressure NA psig.

Temperature: (a) at point of sampling 50 °F (b) Separator NA °F

Name of Zone and Formation: Middle Devonian

Method of Production: D.S.T., Pump, Flowing, Swabbing,

Other (specify) DST #1

If D.S.T. sample, D.S.T. results:

Interval 4904 - 5303

Recovery 190' drilling mud

Well production at sampling time: Oil NA Bpd; Gas NA MCFD; Water NA Bpd.

Perforations or open hole interval: NA

Pressures: Reservoir 2534 , Tubing NA , Casing NA , Separator NA

REMARKS:

W. Newhouse
 (Signed)

Calstan
 (Company)

CHEMICAL & GEOLOGICAL LABORATORIES LTD.

Edmonton — Fort St. John — Calgary

WATER ANALYSIS REPORT

Field Mildcat N.W. T. Well No. S.O.B.C. Blackatona YT D-77
 Operator The California Standard Co. Date Received July 31.62
 Formation Middle Devonian Depths 5701' - 5822'
 Other pertinent data Location: Lat. 65° 46' 10.77"N ; Long. 137° 14' 54.78"W
DST # 2

Sampled July 8.62 from 30' above tool Date _____ Lab. No. 19868-2

PARTS PER MILLION (MILLIGRAMS PER LITER)

Na & K	Ca	Mg	Fe	SO ₄	Cl	CO ₃	HCO ₃	OH	H ₂ S
1223	293	64		28	2077	59	730		

MILLIGRAM EQUIVALENTS

53.20	14.62	5.26		0.58	58.57	1.96	11.97		
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MILLIGRAM EQUIVALENTS IN PERCENT

36.40	10.00	3.60		0.40	40.07	1.34	8.19		
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Total Solids in Parts per Million

By evaporation 4590
 After ignition 3790
 Calculated 4103
 Specific Gravity 1.005
 Observed pH 8.4
 Resistivity 1.55 ohm meters @ 68° F.

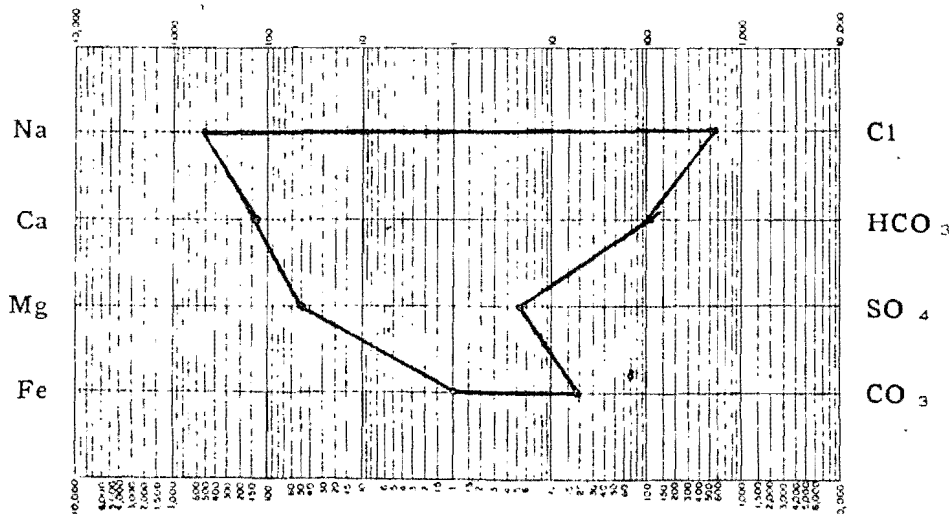
Properties of Reaction in Percent

Primary salinity 72.80
 Secondary salinity 8.14
 Primary alkalinity 0.00
 Secondary alkalinity 19.06
 Chloride salinity 99.01
 Sulfate salinity 0.99

Remarks and conclusions This sample is a filtrate water.

Milligram equivalents times 10

LOGARITHMIC PATTERN
MEQ per unit



OIL AND GAS CONSERVATION BOARD (PROVINCE OF ALBERTA)

STANDARD SAMPLE INFORMATION SHEET

INFORMATION TO BE FORWARDED WITH EACH SAMPLE OF WATER, OIL OR GAS (Please supply as much of the following information as possible. Please Print Clearly.)

Kind of sample (water, oil or gas):

Marks on sample container: 30' above tool

Sample obtained by: Operator

Date: July 9, 1962

Operator: The California Standard Co.

Mailing address for results: 14605 - 118 Ave, Edmonton

Well name and No. SOBC Blackstone YT D-77 Field or Area: Wildcat

Lat. 65° 46' 10.77"N ; Long 137° 14' 54.78" W

Located in: ~~Section~~ ~~Block~~ ~~Range~~ ~~County~~ ~~State~~ ~~Province~~

K.B. 2116 est
Grd.

Sample obtained from (line, tubing, separator, etc.): drill pipe

Pressure: (a) at point of sampling 0 psig. (b) Gas Bomb pressure NA psig.

Temperature: (a) at point of sampling 50 °F (b) Separator NA °F

Name of Zone and Formation: Middle Devonian

Method of Production: D.S.T., Pump, Flowing, Swabbing,

Other (specify) DST #2

If D.S.T. sample, D.S.T. results:

Interval 5701- 5822

Recovery 900' brackish water 2600' sulph.
brackish water.

Well production at sampling time: Oil NA Bpd; Gas NA MCFD; Water NA Bpd.

Perforations or open hole interval: NA

Pressures: Reservoir 2614 , Tubing NA , Casing NA , Separator NA

REMARKS:

W. Newhouse
(Signed)

Calstan
(Company)

CHEMICAL & GEOLOGICAL LABORATORIES LTD.

Edmonton

Fort St. John

Calgary

WATER ANALYSIS REPORT

Field Wildcat N.W.T. Well No. S.O.B.C. Blackstone YT D-77
 Operator California Standard Co. Date Received July 31, 1962
 Formation Middle Devonian Depths 6600' - 6764'
 Other pertinent data Location: Lat. 65° 46' 10.77 "N ; Long. 137° 14' 54.78"W
DST # 3

Sampled July 26, 1962 immediately above tool. Date Lab. No. E19868=3

PARTS PER MILLION (MILLIGRAMS PER LITER)

Na & K	Ca	Mg	Fe	SO ₄	Cl	CO ₂	HCO ₃	OH	H ₂ S
1335	336	65	present	28	2284	48	830		

MILLIGRAM EQUIVALENTS

58.09	16.77	5.34		0.58	64.41	1.60	13.61		
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MILLIGRAM EQUIVALENTS IN PERCENT

36.22	10.45	3.33		0.36	40.16	1.00	8.48		
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Total Solids in Parts per Million

By evaporation 5040
 After ignition 3560
 Calculated 4505
 Specific Gravity 1.005
8.2
 Observed pH
 Resistivity 1.49 ohm meters @ 68° F.

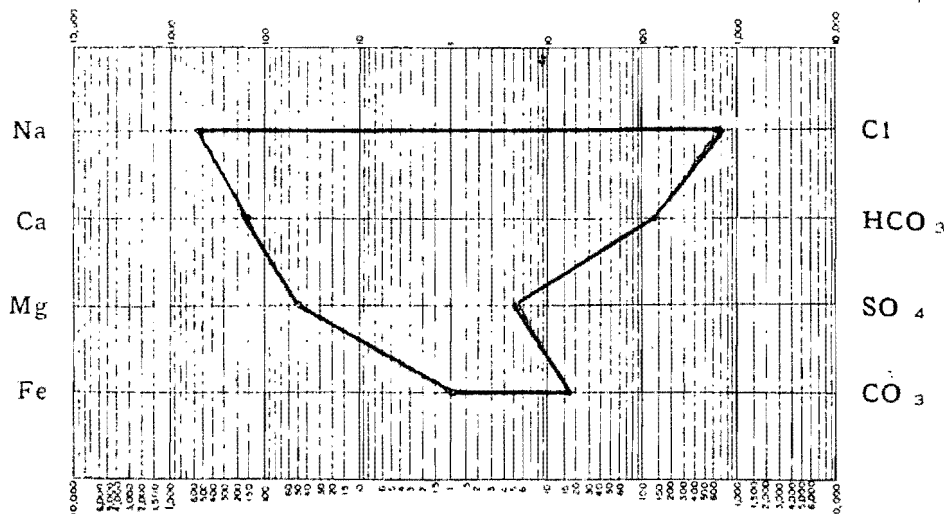
Properties of Reaction in Percent

Primary salinity 72.44
 Secondary salinity 8.60
 Primary alkalinity - - -
 Secondary alkalinity 18.96
 Chloride salinity 99.11
 Sulfate salinity 0.89

Remarks and conclusions This sample is a filtrate water.

Milligram equivalents times 10

LOGARITHMIC PATTERN
MEQ per unit



OIL AND GAS CONSERVATION BOARD (PROVINCE OF ALBERTA)

STANDARD SAMPLE INFORMATION SHEET

INFORMATION TO BE FORWARDED WITH EACH SAMPLE OF WATER, OIL OR GAS (Please supply as much of the following information as possible. Please Print Clearly.)

Kind of sample (water, oil or gas):

Marks on sample container: Caught immediately above the tool.

Sample obtained by: Operator Date: July 26, 1962

Operator: The California Standard Co.

Mailing address for results: 14605 - 118 Ave.

Well name and No. SOBC Blackstone YT D-77 Field or Area: Wildcat

Located in: L.S.D. Sec. Twp. Rge. W Mer. Elev: K.B. Grd.

Sample obtained from (line, tubing, separator, etc.): Drill Pipe

Pressure: (a) at point of sampling 0 psig. (b) Gas Bomb pressure NA psig.

Temperature: (a) at point of sampling 60 °F (b) Separator NA °F

Name of Zone and Formation: Middle Devonian

Method of Production: D.S.T. Pump, Flowing, Swabbing,

Other (specify) DST #3

If D.S.T. sample, D.S.T. results: Interval 6600-6764

Recovery 500' contaminated mud, 3900' mud contaminated sulph. water.

Well production at sampling time: Oil NA Bpd; Gas NA MCFD; Water NA Bpd.

Perforations or open hole interval: NA

Pressures: Reservoir 3036, Tubing NA, Casing NA, Separator NA

REMARKS:

W. Newhouse

(Signed)

Calstan

(Company)

CHEMICAL & GEOLOGICAL LABORATORIES LTD.

Edmonton — Fort St. John — Calgary

WATER ANALYSIS REPORT

Field (Wildcat) N.W.T. Well No. S.O.B.C. Blackstone Y.T. #D-77
 Operator The California Standard Company Date Received September 20, 1962
 Formation Silurian Depths 8200' - 8251'
 Other pertinent data D.S.T. #4; Rec. 40' mud. Sampled just above tool. Location: Lat. 65° 46' 10.77"N Long. 137° 14' 54.78"W. Elevation: 2116' (est.) KB..

Date Sampled: August 19, 1962, Lab. No. E20127-1

PARTS PER MILLION (MILLIGRAMS PER LITER)

Na & K	Ca	Mg	Fe	SO ₄	Cl	CO ₃	HCO ₃	OH	H ₂ S
726	393	99	Present	77	196	182	2,810		

MILLIGRAM EQUIVALENTS

31.52	19.61	8.14		1.60	5.53	6.06	46.08		
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MILLIGRAM EQUIVALENTS IN PERCENT

26.59	16.54	6.87		1.35	4.67	5.11	38.87		
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Total Solids in Parts per Million

By evaporation ---
 After ignition ---
 Calculated 3,057
 Specific Gravity 1.004
 Observed pH 8.8
 Resistivity 2.381 ohm meters @ 68° F.

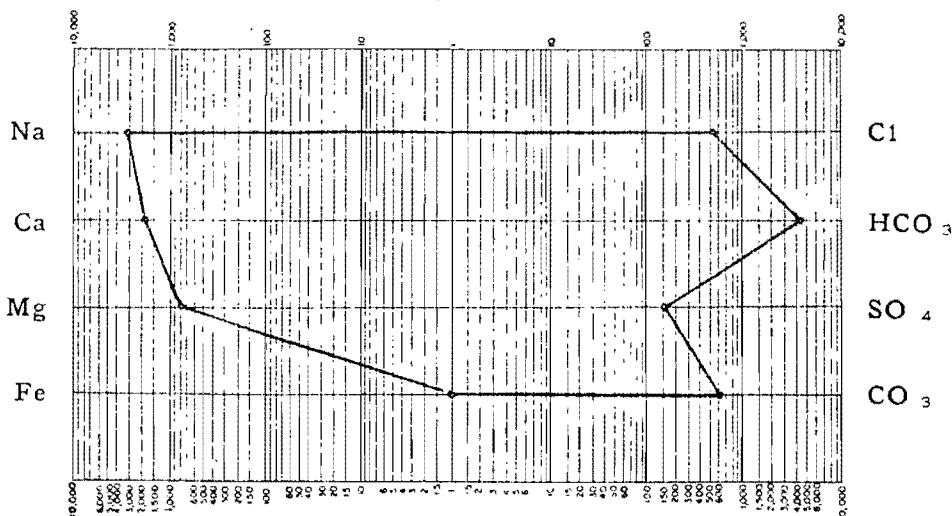
Properties of Reaction in Percent

Primary salinity 12.04
 Secondary salinity ---
 Primary alkalinity 41.14
 Secondary alkalinity 46.82
 Chloride salinity 77.57
 Sulfate salinity 22.43

Remarks and conclusions R.I.: 1.3370. Large amount of organic matter present in sample. Insufficient sample to determine total solids. We have nothing on file with which to correlate this water, however, the sample appears to be a filtrate water.

Milligram Equivalents Multiplied by 100 On Pattern.

LOGARITHMIC PATTERN
MEQ per unit



OIL AND GAS CONSERVATION BOARD (PROVINCE OF ALBERTA)

STANDARD SAMPLE INFORMATION SHEET

INFORMATION TO BE FORWARDED WITH EACH SAMPLE OF WATER, OIL OR GAS (Please supply as much of the following information as possible. Please Print Clearly.)

Kind of sample (water, oil or gas): Mud

Marks on sample container: Sample caught just above tool

Sample obtained by: Operator Date: August 19, 1962

Operator: The California Standard Company

Mailing address for results: 14605 - 118th Ave.

Well name and No. S.O.B.C. Blackstone Y.T. Field or Area: (Wildcat) Y.T.
#D-77

Located in: L.S.D. Sec. Twp. Rge. W Mer. Elev. K.B. 2116 est.
Lat. 65°46' 100.77" N Long. 137°14' 54.78" W. Grd.

Sample obtained from (line, tubing, separator, etc.): drill pipe

Pressure: (a) at point of sampling 0 psig. (b) Gas Bomb pressure NA psig.

Temperature: (a) at point of sampling 50 °F (b) Separator NA °F

Name of Zone and Formation: Silurian

Method of Production: D.S.T., Pump, Flowing, Swabbing.

Other (specify) D.S.T. #4

If D.S.T. sample, D.S.T. results: Interval 8200' - 8251'

Recovery 40' mud.

Well production at sampling time: Oil NA Bpd; Gas NA MCFD; Water NA Bpd.

Perforations or open hole interval: NA.

Pressures: Reservoir 1120 , Tubing NA. , Casing NA. , Separator NA.

REMARKS:

IS. IP 1120

W. Mudie

(Signed)

The California Standard Company
(Company)

CHEMICAL & GEOLOGICAL LABORATORIES LTD.

Edmonton — Fort St. John — Calgary

WATER ANALYSIS REPORT

Field (Wildcat) N.W.T. Well No. S.O.B.C. Blackstone Y.T. #D-77
 Operator The California Standard Company Date Received September 20, 1962
 Formation Silurian Depths 8697' - 8726'
 Other pertinent data D.S.T. #5; Rec. 570' sl. gassified water cushion. Sampled from 90' above tool. Location: Lat. 65°46' 10.77"N Long. 137°14' 54.78"W..
 Elevation: 2116' (est.) KB..

Date Sampled: August 31, 1962, Lab. No. E20127-2

PARTS PER MILLION (MILLIGRAMS PER LITER)

Na & K	Ca	Mg	Fe	SO ₄	Cl	CO ₂	HCO ₃	OH	H ₂ S
75	28	4	Present	25	19		240		

MILLIGRAM EQUIVALENTS

3.27	1.40	0.33		0.52	0.54		3.94		
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MILLIGRAM EQUIVALENTS IN PERCENT

32.70	14.00	3.30		5.20	5.40		39.40		
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Total Solids in Parts per Million

By evaporation	272
After ignition	106
Calculated	269
Specific Gravity	1.001
Observed pH	8.4
Resistivity	43.17 ohm meters @ 68° F.

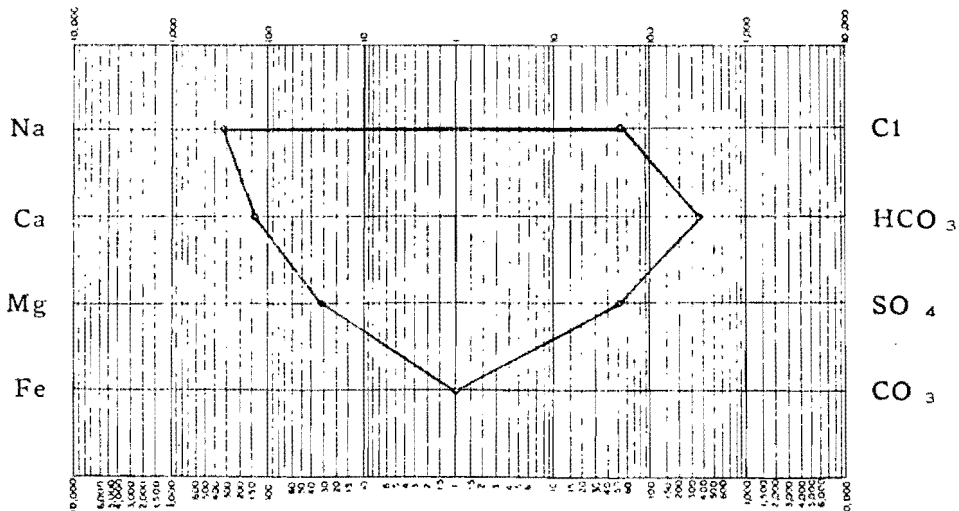
Properties of Reaction in Percent

Primary salinity	21.20
Secondary salinity	---
Primary alkalinity	44.20
Secondary alkalinity	34.60
Chloride salinity	50.94
Sulfate salinity	49.06

Remarks and conclusions R.I.: 1.3355. We have nothing on file with which to correlate this water; however, the sample appears to be a filtrate water.

Milligram Equivalents Multiplied by 100 On Pattern.

LOGARITHMIC PATTERN
MEQ per unit



OIL AND GAS CONSERVATION BOARD (PROVINCE OF ALBERTA)

STANDARD SAMPLE INFORMATION SHEET

INFORMATION TO BE FORWARDED WITH EACH SAMPLE OF WATER, OIL OR GAS (Please supply as much of the following information as possible. Please Print Clearly.)

Kind of sample (water, oil or gas): Water cushion

Marks on sample container: Sample 90' above tool

Sample obtained by: Operator

Date: August 31, 1962

Operator: The California Standard Company

Mailing address for results: 14605 - 118th Ave.

Well name and No. S.O.B.C. Blackstone Y.T. Field or Area: (Wildcat)
D-77

Located in: L.S.D. Sec. Twp. Rge. W Mer. Elev: K.B. 2116 est.
Lat. 65046' 10.77"N Long. 137014' 54.78"W Grd.

Sample obtained from (line, tubing, separator, etc.): drill pipe

Pressure: (a) at point of sampling 0 psig. (b) Gas Bomb pressure NA psig.

Temperature: (a) at point of sampling 50 °F (b) Separator NA °F

Name of Zone and Formation: Silurian

Method of Production: D.S.T. Pump, Flowing, Swabbing,

Other (specify) D.S.T. #5

If D.S.T. sample, D.S.T. results:

Interval 8697' - 8727'

Recovery 570' sl. gassified water cushion

Well production at sampling time: Oil NA Bpd; Gas NA MCFD; Water NA Bpd.

Perforations or open hole interval: N.A.

Pressures: Reservoir 2525 , Tubing NA , Casing NA , Separator NA

REMARKS:

ISIP 2525

W. Mudie

(Signed)

The California Standard Company

(Company)

CHEMICAL & GEOLOGICAL LABORATORIES LTD.

Edmonton

Fort St. John

Calgary

WATER ANALYSIS REPORT

Field (Wildcat) Well No. S.O.B.C. Blackstone YT D-77
 Operator The California Standard Company Date Received October 15, 1962
 Formation Ordovician Depths 9480' - 9913'
 Other pertinent data DST # 6. Location: 65° 46' 10.77"N; Long. 37° 14' 54.78"W
Sampled 565' above tool. Recovered 2500' water cushion and
5540' formation water. Sampled from drill pipe. Temperature at point of sampling
45°F. Pressure 0 psig. Reservoir pressure Date Sampled: Sept. 27/62
4480. KB 2116 est. Lab. No. E20252

PARTS PER MILLION (MILLIGRAMS PER LITER)

Na & K	Ca	Mg	Fe	SO ₄	Cl	CO ₃	HCO ₃	OH	H ₂ S
7535	1657	252	present	53	13843		2420		

MILLIGRAM EQUIVALENTS

327.77	82.68	20.71		1.10	390.37		39.69		
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MILLIGRAM EQUIVALENTS IN PERCENT

38.01	9.59	2.40		0.13	45.27		4.60		
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Total Solids in Parts per Million

By evaporation 27,080
 After ignition 22,740
 Calculated 24,532
 Specific Gravity 1.019
 Observed pH 7.9
 Resistivity 0.294 ohm meters @ 68° F.

Properties of Reaction in Percent

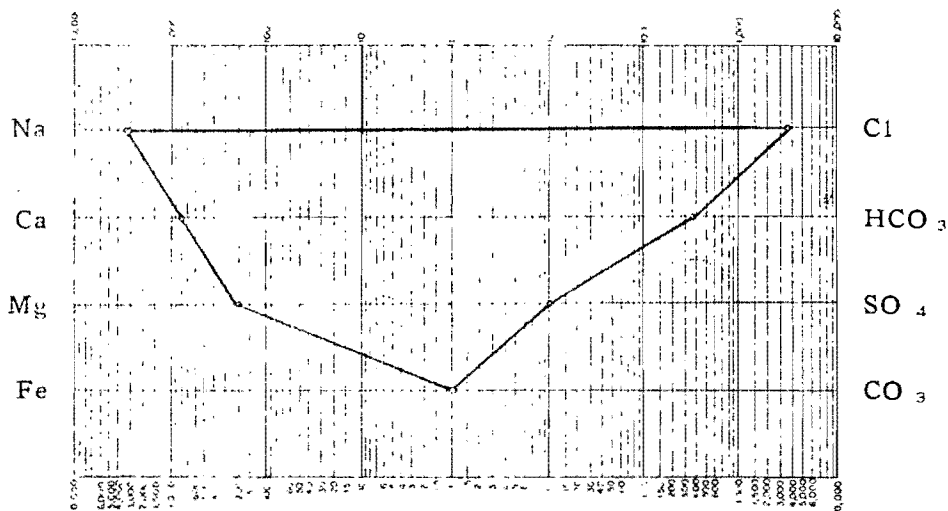
Primary salinity 76.02
 Secondary salinity 14.78
 Primary alkalinity -
 Secondary alkalinity 9.20
 Chloride salinity 99.71
 Sulfate salinity 0.29

Remarks and conclusions Organic matter present in total solids. We have nothing on file with which to correlate this sample.

Millegram equivalents multiplied by 10 on the pattern.

Refractive Index - 1.3410

LOGARITHMIC PATTERN
MEQ per unit



OIL AND GAS CONSERVATION BOARD (PROVINCE OF ALBERTA)

STANDARD SAMPLE INFORMATION SHEET

Laboratory Number:
E20252

INFORMATION TO BE FORWARDED WITH EACH SAMPLE OF WATER, OIL OR GAS (Please supply as much of the following information as possible. Please Print Clearly.)

Kind of sample (water, oil or gas):

Marks on sample container: 565' above tool.

Sample obtained by: Operator Date: Sept.27/62

Operator: The California Standard Co.

Mailing address for results: 14605 - 118th Ave.

Well name and No. SOBC Blackstone YT D-77 Field or Area: Wildcat
Lat. 65° 46' 10.77"N ; Long. 137° 14' 54.78"W

Located in: L.S.D. Sec. Twp. Rge. W Mer. Elev: K.B. 2116 est. Grd.

Sample obtained from (line, tubing, separator, etc.): Drill pipe

Pressure: (a) at point of sampling 0 psig. (b) Gas Bomb pressure NA psig.

Temperature: (a) at point of sampling 45 °F (b) Separator NA °F

Name of Zone and Formation: Ordovician

Method of Production: D.S.T., Pump, Flowing, Swabbing,

Other (specify)

If D.S.T. sample, D.S.T. results: # 6 Interval 9480-9913

Recovery 2500' of Water cushion & 5590' formation water.

Well production at sampling time: Oil NA Bpd; Gas NA MCFD; Water NA Bpd.

Perforations or open hole interval: 9480 -9913

Pressures: Reservoir 4480 , Tubing NA , Casing NA , Separator NA

REMARKS:

FSIP 4480 incomplete
Temp 185°F.

J. Charleston
(Signed)

Calstan
(Company)

CHEMICAL & GEOLOGICAL LABORATORIES LTD.

Edmonton

Fort St. John

Calgary

WATER ANALYSIS REPORT

Field (Wildcat), Yukon Territories. Well No. S.O.B.C. Blackstone YT D-77
 Operator The California Standard Company Date Received January 15, 1963
 Formation Silurian and Ordovician Depths 9210' - 9360'
 Other pertinent data D.S.T. #7; Sampled from drill pipe., Recovered 30' mud.
 Location: Lat. 65° 46' 10.77" N. Long. 137° 14' 54.78" W. Elevation: 1716' KB.
 (est.)

Date Sampled: November 26, 1962 Lab. No. E20901-3

PARTS PER MILLION (MILLIGRAMS PER LITER)

Na & K	Ca	Mg	Fe	SO ₄	Cl	CO ₃	HCO ₃	OH	H ₂ S
2123	453	21	Present	761	930	1478	1550		

MILLIGRAM EQUIVALENTS

92.37	22.60	1.73		15.83	26.23	49.22	25.42		
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MILLIGRAM EQUIVALENTS IN PERCENT

39.58	9.68	0.74		6.78	11.24	21.09	10.89		
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Total Solids in Parts per Million

By evaporation	13,820
After ignition	5,852
Calculated	6,529
Specific Gravity	1.007
Observed pH	10.4
Resistivity	1.61 ohm meters @ 68° F.

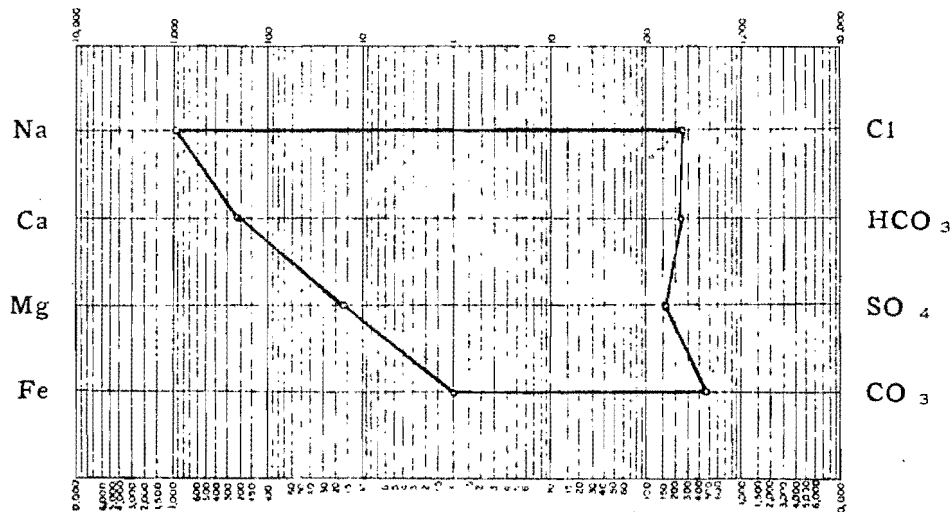
Properties of Reaction in Percent

Primary salinity	36.04
Secondary salinity	---
Primary alkalinity	43.12
Secondary alkalinity	20.84
Chloride salinity	62.38
Sulfate salinity	37.62

Remarks and conclusions Refractive Index: 1.3370. Extremely large amount of organic matter present in total solids. The total concentration is much lower than expected for Ordovician and Silurian waters. Sample appears to be a filtrate water.

Milligram Equivalents Multiplied by 10 On the Pattern.

LOGARITHMIC PATTERN
MEQ per unit



OIL AND GAS CONSERVATION BOARD (PROVINCE OF ALBERTA)

STANDARD SAMPLE INFORMATION SHEET

INFORMATION TO BE FORWARDED WITH EACH SAMPLE OF WATER, OIL OR GAS (Please supply as much of the following information as possible. Please Print Clearly.)

Kind of sample (water, oil or gas): Analyse for water

Marks on sample container: None

Sample obtained by: Operator

Date: Nov. 26/62

Operator: The California Standard Company

Mailing address for results: 14605 - 118th Ave.

Well name and No. SOBC Blackstone YT-D77

Field or Area: Wildcat Yukon T.

Located in:

Lat. 65° 46' 10.77" N. Long. 137° 14' 54.78" W.

Elev:

K.B. 1716 est.
Grd.

Sample obtained from (line, tubing, separator, etc.): drill pipe

Pressure: (a) at point of sampling -10 psig.

(b) Gas Bomb pressure NA. psig.

Temperature: (a) at point of sampling 20 °F

(b) Separator NA. °F

Name of Zone and Formation:

Method of Production: D.S.T., Pump, Flowing, Swabbing,

Other (specify) Silurian & Ordovician

If D.S.T. sample, D.S.T. results: D.S.T. #7

Interval 9210 - 9360

Recovery 30' mud.

Well production at sampling time: Oil NA Bpd;

Gas NA

MCFD;

Water NA

Bpd.

Perforations or open hole interval: 9210 - 9360

Pressures: Reservoir 1393 , Tubing

, Casing

, Separator

REMARKS:

S. J. Homer.

(Signed)

The California Standard Company.

(Company)

CHEMICAL & GEOLOGICAL LABORATORIES LTD.

Edmonton — Fort St. John — Calgary

WATER ANALYSIS REPORT

Field (Wildcat), Yukon Territories Well No. S.O.B.C. Blackstone YT D-77
 Operator The California Standard Company Date Received January 15, 1963
 Formation Ordovician Depths 12,504' - 12,662'
 Other pertinent data D.S.T. #8; Sampled immediately above tool from drill pipe.
 Recovered 2850' drilling mud (Migrun). Location: Lat. 65° 46' 10.77" N. Long. 137° 14' 54.78" W. Elevation: 1716' K.B. (est.)

Date Sampled: November 28, 1962 Lab. No. E20901-2

PARTS PER MILLION (MILLIGRAMS PER LITER)

Na & K	Ca	Mg	Fe	SO ₄	Cl	CO ₃	HCO ₃	pH	HaS
3145	296	26	Present	621	2340	1562	1390		

MILLIGRAM EQUIVALENTS

136.81	14.77	2.14		12.92	65.99	52.01	22.80		
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MILLIGRAM EQUIVALENTS IN PERCENT

44.50	4.80	0.70		4.20	21.46	16.92	7.42		
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Total Solids in Parts per Million

By evaporation	14,328
After ignition	6,680
Calculated	8,665
Specific Gravity	1.007
Observed pH	10.3
Resistivity	1.32 ohm meters @ 68° F.

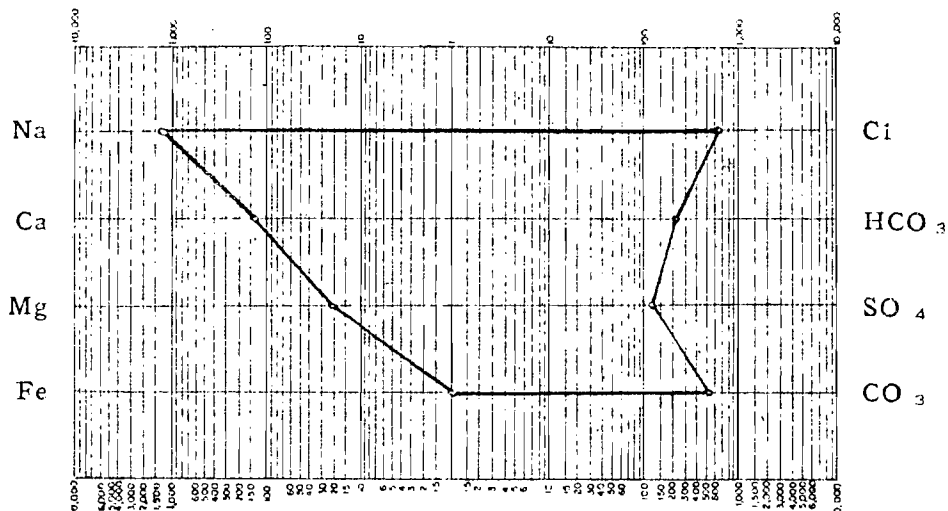
Properties of Reaction in Percent

Primary salinity	51.32
Secondary salinity	---
Primary alkalinity	37.68
Secondary alkalinity	11.00
Chloride salinity	83.63
Sulfate salinity	16.37

Remarks and conclusions Refractive Index: 1.3370. Extremely large amount of organic matter present in total solids. The concentration is much lower than expected for Ordovician waters. The sample appears to be a filtrate water.

Milligram Equivalents Multiplied by 10 On the Pattern.

LOGARITHMIC PATTERN
MEQ per unit



OIL AND GAS CONSERVATION BOARD (PROVINCE OF ALBERTA)

STANDARD SAMPLE INFORMATION SHEET

INFORMATION TO BE FORWARDED WITH EACH SAMPLE OF WATER, OIL OR GAS. (Please supply as much of the following information as possible. Please Print Clearly.)

Kind of sample (water, oil or gas): Analyse for water.

Marks on sample container: Sampled immediately above tool.

Sample obtained by: Operator Date: Nov. 28/62.

Operator: The California Standard Company

Mailing address for results: 14605 - 118th Ave.

Well name and No. SOBC Blackstone YT D-77 Field or Area: Wildcat Yukon

Located in: Lat. 65° 46' 10.77" N. Long. 137° 14' 54.78" W. Elev: K.B. 1716 est. Grd.

Sample obtained from (line, tubing, separator, etc.): drill pipe

Pressure: (a) at point of sampling -15 psig. (b) Gas Bomb pressure NA psig.

Temperature: (a) at point of sampling 15 °F (b) Separator NA °F

Name of Zone and Formation: Ordovician

Method of Production: D.S.T., Pump, Flowing, Swabbing,

Other (specify)

If D.S.T. sample, D.S.T. results: D.S.T. #8 Interval 12504 - 12662
Recovery 2850' drilling mud (Misrun)

Well production at sampling time: Oil NA Bpd; Gas NA MCFD; Water NA Bpd.

Perforations or open hole interval: 12504 - 12662

Pressures: Reservoir Misrun, Tubing NA, Casing NA, Separator NA

REMARKS:

S. J. Homer.

(Signed)

The California Standard Company.

(Company)

CHEMICAL & GEOLOGICAL LABORATORIES LTD.

Edmonton — Fort St. John — Calgary

WATER ANALYSIS REPORT

Field (Wildcat), Yukon Territories Well No. S.O.B.C. Blackstone YT D-77
 Operator The California Standard Company Date Received January 15, 1963
 Formation Ordovician Depths 13,038' - 13,217'
 Other pertinent data D.S.T. #10; Sampled 100' above tool from drill pipe., Recovered
650' mud (Miarun). Location: Lat. 65° 46' 10.77" N. Long. 137° 14' 54.78" W.
Elevation: 1716' K.B. (est.).

Date Sampled: November 30, 1962. Lab. No. E20901-1

PARTS PER MILLION (MILLIGRAMS PER LITER)

Na & K	Ca	Mg	Fe	SO ₄	Cl	CO ₃	HCO ₃	OH	H ₂ S
2864	298	27	Present	599	1970	1527	1390		

MILLIGRAM EQUIVALENTS

124.57	14.87	2.22		12.46	55.55	50.85	22.80		
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MILLIGRAM EQUIVALENTS IN PERCENT

43.97	5.25	0.78		4.40	19.60	17.95	8.05		
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Total Solids in Parts per Million

By evaporation	14,224
After ignition	6,192
Calculated	7,970
Specific Gravity	1.007
Observed pH	10.3
Resistivity	1.44 ohm meters @ 68° F.

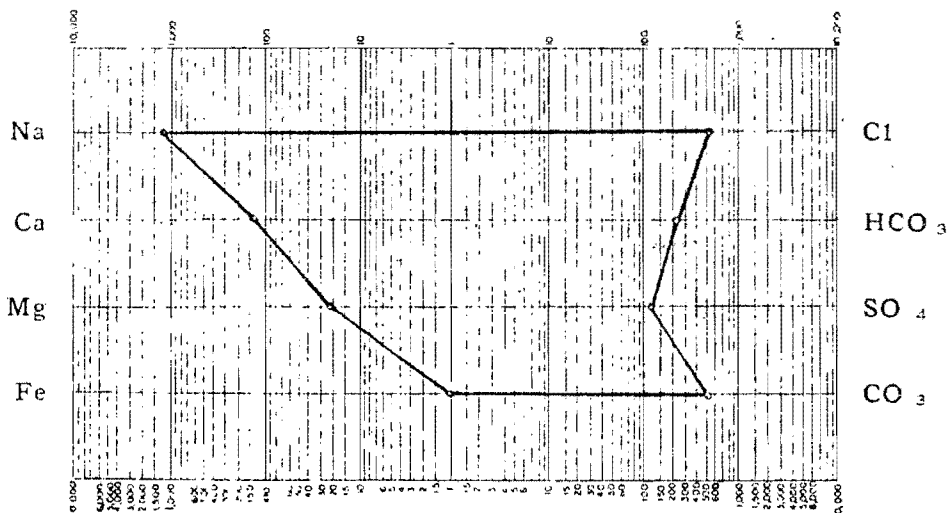
Properties of Reaction in Percent

Primary salinity	48.00
Secondary salinity	---
Primary alkalinity	39.94
Secondary alkalinity	12.06
Chloride salinity	81.67
Sulfate salinity	18.33

Remarks and conclusions Refractive Index: 1.3370. Extremely large amount of organic matter present in total solids. The concentration is much lower than expected for Ordovician waters. The sample appears to be a filtrate water.

Milligram Equivalents Multiplied by 10 On the Pattern.

LOGARITHMIC PATTERN
MEQ per unit



OIL AND GAS CONSERVATION BOARD (PROVINCE OF ALBERTA)

STANDARD SAMPLE INFORMATION SHEET

INFORMATION TO BE FORWARDED WITH EACH SAMPLE OF WATER, OIL OR GAS (Please supply as much of the following information as possible. Please Print Clearly.)

Kind of sample (water, oil or gas): Analyse for water.

Marks on sample container: Sampled 100' above tool.

Sample obtained by: Operator Date: Nov. 30/62

Operator: The California Standard Company

Mailing address for results: 14605 - 118th Ave.

Well name and No. SOBC Blackstone YT D-77 Field or Area: Wildcat Y.T.

Located in: Elev: K.B. 1716 est.
 Lat. 65° 46' 10.77" N. Long. 137° 14' 54.78" W. Grd.
 Sample obtained from (line, tubing, separator, etc.): drill pipe

Pressure: (a) at point of sampling 0 psig. (b) Gas Bomb pressure NA psig.

Temperature: (a) at point of sampling - 20 °F (b) Separator NA °F

Name of Zone and Formation: Ordovician

Method of Production: D.S.T., Pump, Flowing, Swabbing,

Other (specify)

If D.S.T. sample, D.S.T. results: D.S.T. #10 Interval 13038 - 13217

Recovery 650' mud. Misrun

Well production at sampling time: Oil NA Bpd; Gas NA MCFD; Water NA Bpd.

Perforations or open hole interval: 13038 - 13217

Pressures: Reservoir No charts Tubing NA, Casing NA, Separator NA.

REMARKS:

P. Silvus

(Signed)

The California Standard Company.
 (Company)

CHEMICAL & GEOLOGICAL LABORATORIES LTD.

10568 - 114th Street
428 - 35 Ave. N.E.

Edmonton, Alberta
Calgary, Alberta

Phones: GA 2-5624 - GA 4-2562
Phones: CR 7-6149 - CR 7-0305

GAS ANALYSIS REPORT

FIELD (Wildcat) Northwest Territories WELL NO. S.O.B.C. Blackstone YT D-77
 OPERATOR The California Standard Company LOCATION _____
 FORMATION _____ DEPTHS 9480' - 9913' LAB. NO. E20269
 DATE Sampled: September 27, 1962
 REMARKS Sample obtained from Drill pipe. Date received: October 17, 1962.
See information sheet.

ORSAT ANALYSIS

% by
Volume

Oxygen _____
 Nitrogen _____
 Carbon dioxide _____
 Hydrogen sulfide _____
 Total hydrocarbons _____

 Average "n" _____

CHROMATOGRAPH

% by
Volume

G.P.M. in
U.S. Gal. Imp. Gal.
@ 60° F. & @ 60° F. &
14.696 PSI 14.65 PSI

Oxygen 19.38
 Nitrogen 70.78
 Carbon dioxide 0
 Hydrogen sulfide 0
 Methane + 9.94
 Ethane _____
 Propane _____
 Isobutane _____
 N-butane _____
 Isopentane _____
 N-pentane _____
 Hexanes _____

 TOTAL 100.00

HYDROGEN SULFIDE
(by Tutwiler Method)

Grains of hydrogen sulfide per
100 cu. ft. of gas at 60° F. and
 14.7 lbs. per sq. in. _____
 14.65 lbs. per sq. in. _____
 Percentage of Hydrogen sulfide N11

G.P.M.

Actual pentanes + _____
 Calculated at 12 lbs. _____
 Calculated at 15 lbs. _____
 Calculated at 22 lbs. _____
 Calculated at 26 lbs. _____

GROSS B.T.U.

60°F. and 14.7 p.s.i.a. 100
 60°F. and 14.65 p.s.i.a. 100

Vapor pressure (calculated)
of actual pentanes + _____
 Specific Gravity Calculated 0.953
 Specific Gravity by Weight 0.951

Remarks and Conclusions: This sample container arrived with 0 psig. and was pressured with water to obtain this analysis. This analysis has not been corrected for air contamination.

OIL AND GAS CONSERVATION BOARD (PROVINCE OF ALBERTA)

STANDARD SAMPLE INFORMATION SHEET

INFORMATION TO BE FORWARDED WITH EACH SAMPLE OF WATER, OIL OR GAS (Please supply as much of the following information as possible. Please Print Clearly.)

Kind of sample (water, oil or gas): Gas

Marks on sample container:

Sample obtained by: Operator

Date: September 27, 1962

Operator: The California Standard Company

Mailing address for results: 14605 - 118th Ave.

Well name and No. SOB.C. Blackstone YT D-77 Field or Area: (Wildcat)

Located in: Long. 137°14' 54.78" W.

Lat. 65° 46' 10.77" N.

Elev: K.B.2116' est.
Grd.

Sample obtained from (line, tubing, separator, etc.): Drill pipe

Pressure: (a) at point of sampling 0 psig. (b) Gas Bomb pressure psig.

Temperature: (a) at point of sampling 45 °F (b) Separator NA. °F

Name of Zone and Formation: Ordovician

Method of Production: D.S.T., Pump, Flowing, Swabbing,

Other (specify)

If D.S.T. sample, D.S.T. results: D.S.T. #6 Interval 9480' - 9913'

Recovery 2500' of w.c. and 5540' formation water.

Well production at sampling time: Oil NA Bpd; Gas NA MCFD; Water NA Bpd.

Perforations or open hole interval: 9480 - 9913

Pressures: Reservoir 4480, Tubing, Casing, Separator

REMARKS:

FSIP 4480 incomplete

J. Charleston

(Signed)

The California Standard Company
(Company)