

CENTRAL CANADA POTASH INC.

GEOLOGY OF CENTRAL CANADA POTASH AREA

Report 0160-001 -01+02 Nov. 15, 1997

E. A. Christiansen Consulting Ltd.

CONSULTING GEOLOGIST

BOX 3087
SASKATOON, SASKATCHEWAN, CANADA
S7K 3S9

PHONE 374-6700

CCP PO 070213

June 12, 1996

Central Canada Potash, Inc.
P.O. Box 1500
COLONSAY, Saskatchewan
S0K 0Z0

Attention Dr. Alan Coode

Dear Alan:

Enclosed are a milar of the combined geologic, gamma neutron, gamma density and caliper, and acoustic logs and a colored blueline print showing the stratigraphy. The neutron, density, and caliper logs are excellent stratigraphic indicators at this site. Enclosed are also copies of the carbonate and grain size analyses.

Thank you for the opportunity to compile the geological log for this site and to related it to the other logs on the enclosed milar and blueline print.

I would be interested in seeing the logs from the deep hole to see if there is any relationship between the stratigraphy of the Quaternary deposts and the collapse structure.

If you have any queries or require more information, please let me know.

Sincerely yours,

Earl

E.A. Christiansen, P.Eng., P. Geol.

SASKATCHEWAN RESEARCH COUNCIL GEOCHEMICAL LAB

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CCP COLONSA Y SSS1

M184 CHRISTIANSEN MAY 29/96 (25) PG. 1040 [0.5 GM BR DIG.]

1 %Ca BY AA OT96.39
 2 %Mg BY AA
 3 Wt% DOLOMITE=COL.2*7.5852
 4 Wt% CALCITE=(COL.1-(COL.2*1.6486))*2.4973
 5 TOTAL Wt% CO3 (COL.3+COL.4)
 6 WT%DOLOMITE/Wt% CALCITE (COL.3/COL.4)
 7 CO2 FROM CALCITE=COL.4*2.238
 8 CO2 FROM DOLOMITE=COL.3*2.429
 9 TOTAL CO2=COL.7+COL.8

Depth in feet	%Ca	%Mg	WT%DO	WT%CAL	CO3TOT	DO/CAL	CO2CAL	CO2DOL	CO2TOT
BR2	5.08	1.52	11.53	6.43	17.96	1.79	14.39	28.01	42.39
23	4.33	1.75	13.27	3.61	16.88	3.68	8.08	32.24	40.32
28	4.88	1.95	14.79	4.16	18.95	3.56	9.31	35.93	45.23
33	4.35	1.74	13.20	3.70	16.90	3.57	8.28	32.06	40.34
38	4.34	1.77	13.43	3.55	16.98	3.78	7.95	32.61	40.56
43	4.69	1.84	13.96	4.14	18.09	3.37	9.26	33.90	43.16
48	4.68	1.85	14.03	4.07	18.10	3.45	9.11	34.09	43.20
63	7.78	2.72	20.63	8.23	28.86	2.51	18.42	50.11	68.53
68	7.63	2.71	20.56	7.90	28.45	2.60	17.67	49.93	67.60
73	7.62	2.79	21.16	7.54	28.71	2.81	16.88	51.40	68.29
78	8.16	2.92	22.15	8.36	30.50	2.65	18.70	53.80	72.50
83	7.61	2.71	20.56	7.85	28.40	2.62	17.56	49.93	67.49
88	5.94	2.25	17.07	5.57	22.64	3.06	12.47	41.46	53.92
93	6.25	2.32	17.60	6.06	23.65	2.91	13.55	42.74	56.30
98	6.18	2.36	17.90	5.72	23.62	3.13	12.79	43.48	56.28
103	2.50	0.81	6.14	2.91	9.05	2.11	6.51	14.92	21.43
108	2.72	0.85	6.45	3.29	9.74	1.96	7.37	15.66	23.03
113	4.29	1.19	9.03	5.81	14.84	1.55	13.01	21.93	34.94
118	3.87	1.13	8.57	5.01	13.58	1.71	11.22	20.82	32.04
123	4.12	1.09	8.27	5.80	14.07	1.43	12.98	20.08	33.07
BR2	5.29	1.60	12.14	6.62	18.76	1.83	14.82	29.48	44.30
128	3.57	1.09	8.27	4.43	12.70	1.87	9.91	20.08	29.99
133	3.38	1.00	7.59	4.32	11.91	1.75	9.68	18.42	28.10
138	3.41	1.04	7.89	4.23	12.12	1.86	9.48	19.16	28.64
143	3.34	0.98	7.43	4.31	11.74	1.73	9.64	18.06	27.69

ENVIRO-TEST ANALYSIS REPORT

E. A. CHRISTIANSEN CONSULTING
BOX 3087
SASKATOON, SK S7K 3S9

PROJECT: CCP COLONSAY SSS-1

Lab #	Client ID	Sand (%)	Silt (%)	Clay (%)
S6				
05-11201	S2 8'	11.8	29.9	58.3
05-11202	S4 18'	20.4	52.0	27.6
05-11203	S6 28'	20.7	32.6	46.7
05-11204	S8 38'	20.0	33.5	46.5
05-11205	S10 48'	8.5	31.1	60.4
05-11206	S12 58'	1.0	25.8	73.2
05-11207	S14 68'	44.1	35.1	20.9
05-11208	S19 93'	47.9	31.9	20.2
05-11209	S22 108'	29.7	37.1	33.2
05-11210	S24 118'	38.2	34.2	27.6
05-11211	S28 138'	43.3	30.2	26.5
05-11212	S36 178'	4.0	40.1	55.9

METHOD: PSA2S - Particle Size Analysis by Pipette Method

Approved by 
05/30/96

FILE #S6-05112

E. A. Christiansen Consulting Ltd.

CONSULTING GEOLOGIST

BOX 3087
SASKATOON, SASKATCHEWAN, CANADA
S7K 3S9

PHONE 374-6700

November 15, 1997

Central Canada Potash Inc.
P.O. Box 1500
Colonsay, SK S0K 0Z0

Attention: Mr. D.L. Dack, Environmental Co-ordinator:

Re: Geology of CCP Colonsay boreholes D-10 and D-11.

Dear Mr. Dack:

E.A. Christiansen Consulting Ltd. was commissioned by Central Canada Potash Inc. August 8, 1997 to compile geological logs for boreholes D-10 and D-11. The work requested included sampling, describing samples, and selecting till samples for carbonate and particle size analyses. Based on this information and gamma-ray and electric logs, geologic logs were compiled for D-10 and D-11. In addition, a cross section was drawn between boreholes D-10 and D-11 (Drawing 0160-003-01). The geologic logs, carbonate and particle size contents, and conductivity logs provided by SRC through Mark Simpson are enclosed. A vellum of the cross section also is enclosed in case you wish to make more copies.

With reference to the conductivity logs provided by SRC, stratigraphic names and contact depths from the geologic logs were added to the conductivity logs. Except for the contact between the Bearpaw and Dundurn formations in D-10 and the contact between the Floral and Battleford formations in D-11, the depth discrepancy between the conductivity and geologic logs

is 1.5 m or less, and in 6 of the 10 contacts in Table 1, the difference is less than 1 m. The reason for the two larger discrepancies is not known.

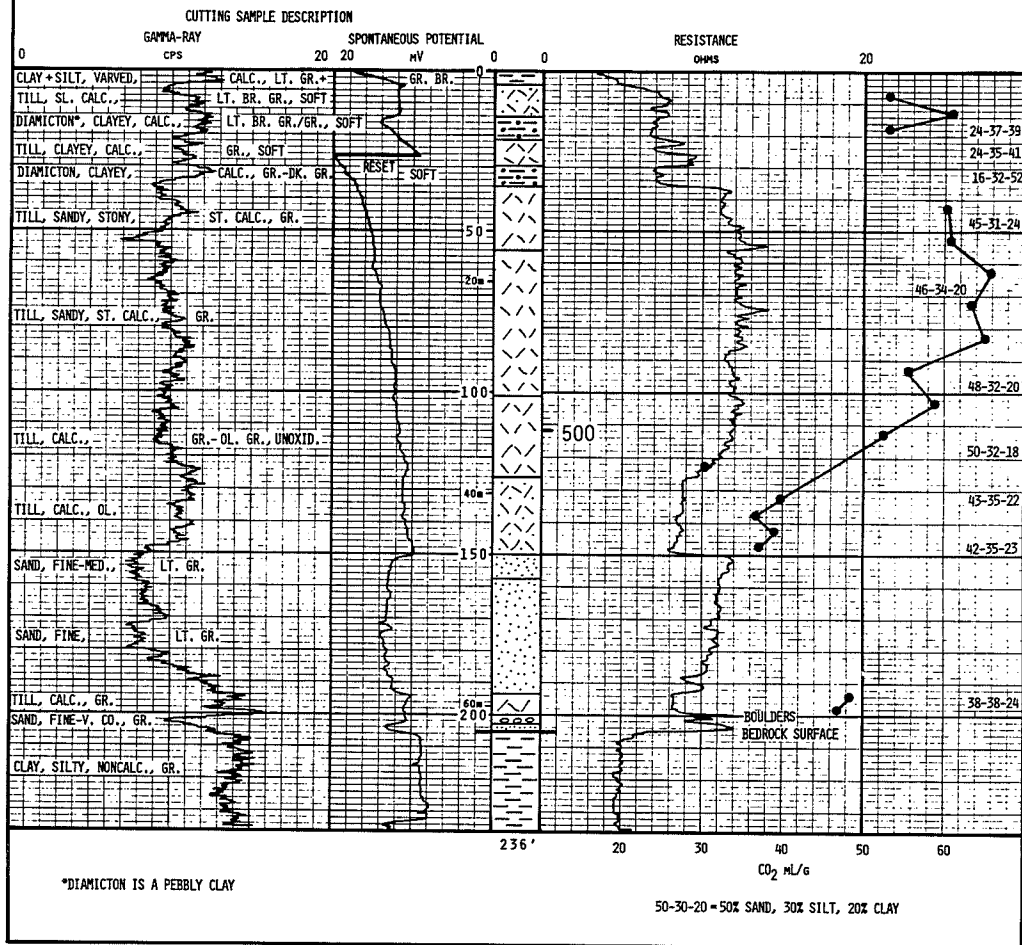
If you have any queries, please contact me. I will be away from my office between November 21 and December 15.

Sincerely yours,

E.A. Christiansen P. Eng., P. Geol.

CCP 72-P/13 1997
COLONSAY D-10
NW-12-16-34-27-W2
13:446241E/5752254N
BOREHOLE

BOREHOLE NO. CCP COLONSAY D10 NTS 72-P/13		PROJECT EAC-0160	
LAND LOCATION NW-12-16-34-27-W2		CONTROL SECTION	
UTM COORD. 13:446240.680E/5752254.313N		STATION OFFSET	
GRD. ELEV. 535.994 M DEPTH 240'		CUTTING SAMPLE INTERVAL 5 FEET	
DATE DRILLED SEPT. 3 TO SEPT. 4 1997		CORE SAMPLE INTERVAL	
COND. WATER 1200 MICROSIEMENS/CM AT 25° C		FROM	
COND. MUD 2100 MICROSIEMENS/CM AT 25° C		CASING DEPTH	
SPECIFIC GRAVITY MUD		CASING WALL THICKNESS	
SUPERVISOR MARTY HAYTER		WATER OR MUD LEVEL	
ASST SUPERVISOR		ABANDONMENT GROUTED TO SURFACE	
LOGGED BY MARTY HAYTER		BIT SIZE 4 7/8" INSERT INTERVAL	
INSTRUMENT MIDCO 1500		BIT SIZE 4 7/8" TRICONE INTERVAL	
PROBE ELECTRIC		BIT SIZE INTERVAL	
PROBE GAMMA MODEL RAP-302		TYPE OF DRILL RIG 1500 FALLING DOUBLE PUMPS	
PROBE CALIPER		DEPTH SCALE SPEED	
DATE LOGGED SEPTEMBER 4 1997		SP 236' 20 MW/2.5"	
TIME OF LOGGING TO		RES. 236' 10 OHMS/2.5"	
DRILL OPERATOR MARTY HAYTER		GAMMA 236' 10 cps/2.5"	
CONTRACTOR HAYTER DRILLING LTD.		CAL 236' 25 FEET/MIN	
REMARKS GEOLOGIC LOG COMPILED 26/09/97		GAMMA TIME CONSTANT (T.C.) 3 SECONDS	
		GEOLOGY BY E.A. CHRISTIANSEN CONSULTING LTD.	



ENVIRO-TEST ANALYSIS REPORT

E.A. CHRISTIEANSEN CONSULTING LTD
BOX 3087
SASKATOON, SK. S7K 3S9

PROJECT: CCP COLONSAY D-10 HOLE

Lab #	Client ID	Sand (%)	Silt (%)	Clay (%)
09-21001	17.5'	24.5	36.5	39.0
09-21002	22.5'	24.3	34.6	41.1
09-21003	27.5'	15.5	32.1	52.4
09-21004	47.5'	45.3	30.6	24.1
09-21005	67.5'	45.8	34.1	20.1
09-21006	97.5'	47.8	32.2	20.0
09-21007	117.5'	49.7	32.3	18.0
09-21008	132.5'	43.2	34.9	21.9
09-21009	147.5'	41.8	34.8	23.4
09-21010	196.0'	37.6	38.5	23.9

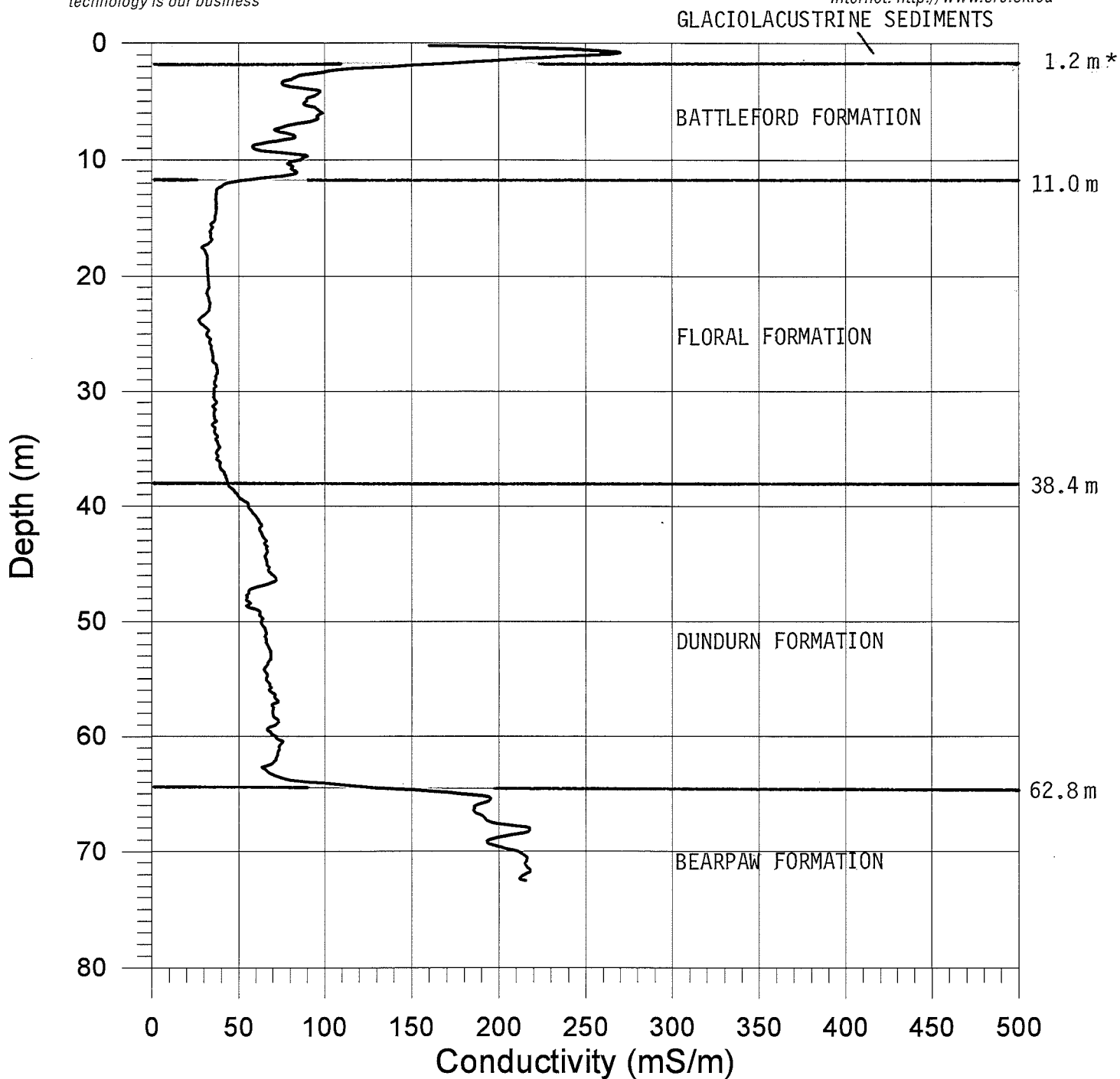
Approved by WB Sept 23/97 FILE #S7-09210



technology is our business

CCP COLONSAY BOREHOLE D-10
Conductivity Log (Geonics EM-39)
Date Logged: November 7, 1997
Logged by: D. Zlipko, SRC

Saskatchewan Research Council
15 Innovation Blvd.
Saskatoon, SK Canada S7N 2X8
Ph: 306-933-5400 Fax: 306-933-7896
Internet: <http://www.src.sk.ca>



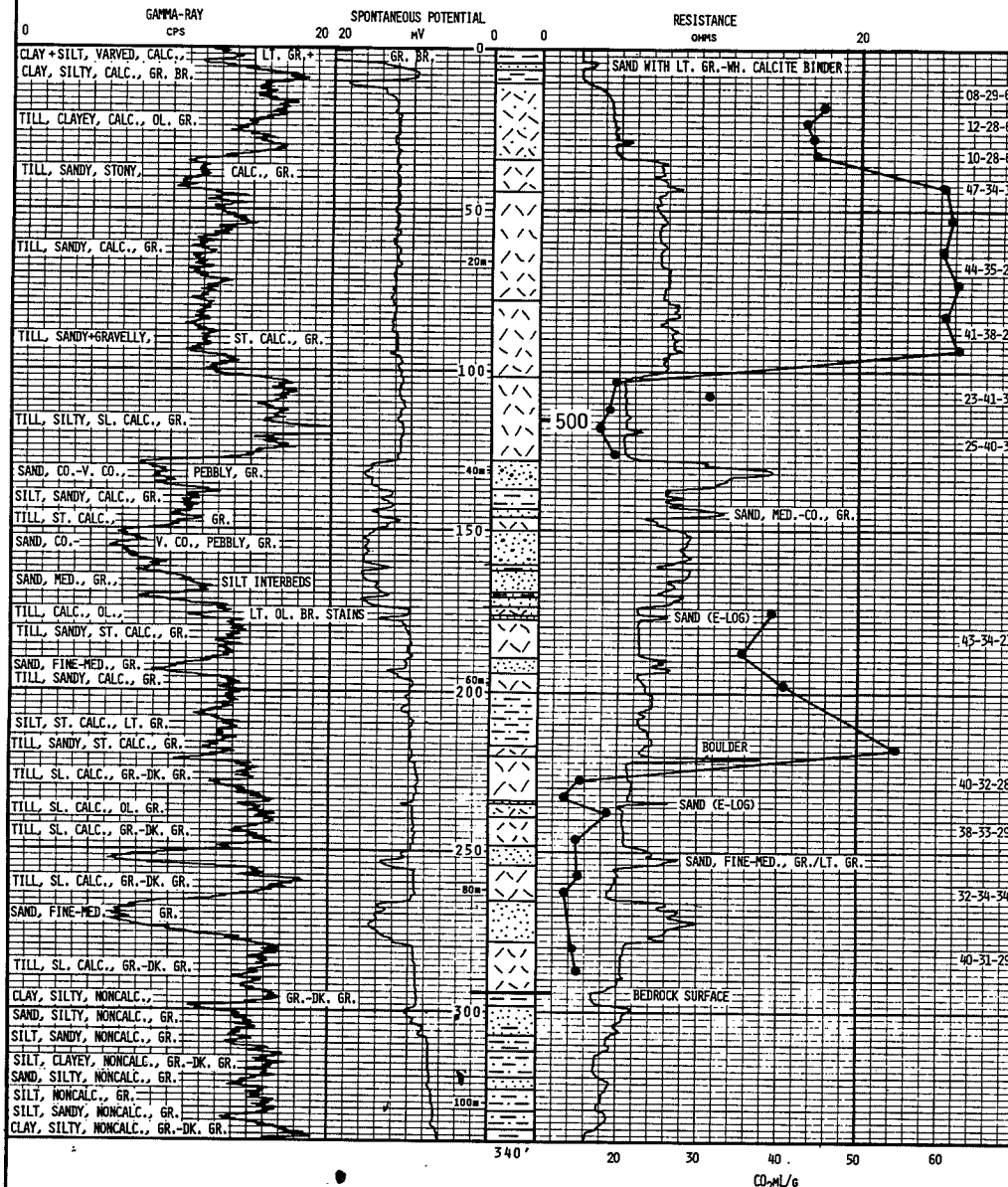
* DEPTH OF CONTACT FROM GEOLOGIC LOG



CCP 72-P/13 1997
COLONSAY D-11
SW-05-21-34-27-W2
13:446257E/5753355N
BOREHOLE

BOREHOLE NO. CCP COLONSAY D-11 WTS 72-P/13		PROJECT	EAC-0160
LAND LOCATION SW-05-21-34-27-W2		CONTROL SECTION	
UTM COORD. 13:446257E/5753355N		STATION	OFFSET
GRD. ELEV. 535.297 M DEPTH 340'		CUTTING SAMPLE INTERVAL	5 FEET
DATE DRILLED SEPT. 8 TO SEPT. 8 1997		CORE SAMPLE INTERVAL	
COND. WATER 1100 MICROSIEMENS/CM AT 25°C		FROM	
COND. MUD 1800 MICROSIEMENS/CM AT 25°C		CASING DEPTH	
SPECIFIC GRAVITY MUD		CASING WALL THICKNESS	
SUPERVISOR MARTY HAYTER		WATER OR MUD LEVEL	
ASST SUPERVISOR		ABANDONMENT	GROUTED TO SURFACE
LOGGED BY MARTY HAYTER		BIT SIZE 4 7/8" INSERT	INTERVAL
INSTRUMENT WIDCO 1500		BIT SIZE 4 7/8" TRICONE	INTERVAL
PROBE ELECTRIC		BIT SIZE	INTERVAL
PROBE GAMMA MODEL RAP-302		TYPE OF DRILL RIG 1500	FAILING DOUBLE PUMPS
PROBE CALIPER		DEPTH	SCALE
DATE LOGGED SEPTEMBER 8 1997		SP. 340'	20 HV/2.5"
TIME OF LOGGING TO		RES. 340'	10 OHMS/2.5"
DRILL OPERATOR MARTY HAYTER		GAMMA 340'	10 CPS/2.5"
CONTRACTOR HAYTER DRILLING LTD.		CAL	25 FEET/HIN
REMARKS GEOLOGIC LOG COMPILED 26.09/97		GAMMA TIME CONSTANT (T.C.) 3 SECONDS	
		GEOLOGY BY E.A. CHRISTIANSEN CONSULTING LTD.	

CUTTING SAMPLE DESCRIPTION



50-30-20 = 50% SAND, 30% SILT, 20% CLAY

ENVIRO-TEST ANALYSIS REPORT

E.A. CHRISTIANSEN CONSULTING LTD.

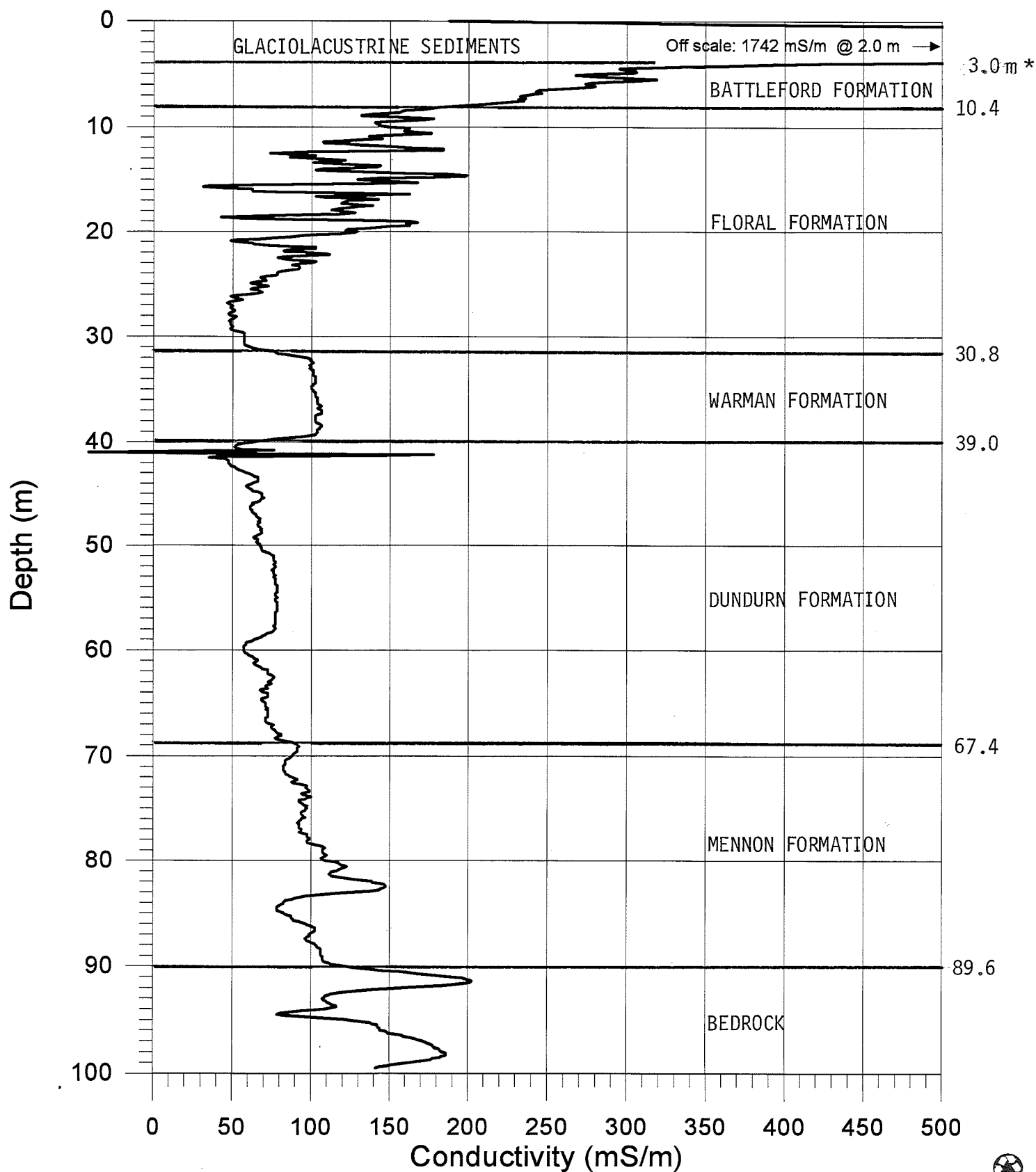
BOX 3087

SASKATOON, SK. S7K 3S9

PROJECT: CCP COLONSAY D-11 HOLE

Lab #	Client ID	Sand (%)	Silt (%)	Clay (%)
09-20901	12.5'	8.2	29.4	62.4
09-20902	22.5'	11.7	28.1	60.2
09-20903	32.5' (01 GR.)	10.3	27.6	62.1
09-20904	32.5' (GR)	13.5	30.5	56.0
09-20905	42.5'	46.8	33.9	19.3
09-20906	67.5'	44.1	35.2	20.8
09-20907	87.5'	41.3	37.9	20.8
09-20908	107.5'	23.4	41.2	35.4
09-20909	122.5'	25.3	39.6	35.1
09-20910	182.5'	42.4	34.3	23.3
09-20911	227.5'	40.0	31.9	28.1
09-20912	242.5'	38.1	33.3	28.6
09-20913	262.5'	31.8	34.4	33.8
09-20914	282.5'	39.4	31.2	29.4

Approved by W6 Sept 23/97 FILE #S7-09209



CCP 72P/13 1996
COLONSAY SSS-1
SW-04-15-34-28-W2
13:438067E/5751296N
TESTHOLE

ELEVATION 528 M

SURVEY

SP COND MUD NOT RECORDED

SP COND WATER NOT RECORDED

SP 10 MV R 10 OHMS



Century
GEOPHYSICAL CORP.

GAMMA NEUTRON

COMPANY : CENTRAL CANADA POTASH INC. OTHER SERVICES:
LOCATION/FIELD : CCP COLONSAY SSS-1
COUNTY : WATROUS
TOWNSHIP : SASK.
SECTION :
DATE : 05/23/96 PERMANENT DATUM : G.L. ELEVATIONS
DEPTH DRILLER : 295 FT ELEV. PERM. DATUM : G.L. KB
LOG BOTTOM : 99.75 LOG MEASURED FROM : G.L. DT
LOG TOP : -2.88 DPL MEASURED FROM : G.L. CL
CASING DRILLER : 0 LOGGING UNIT : 9403
CASING TYPE : 0 FIELD OFFICE : CALGARY, A.B.
CASING THICKNESS : 0 RECORDED BY : R.KELLNER
BIT SIZE : 15.24 BOREHOLE FLUID : H2O FILE : 931002
MAGNETIC DECL. : 19 RM TEMPERATURE : 19 TYPE : 9403A
MATRIX DENSITY : 2.65 LOG : 8
FLUID DENSITY : 1.10 MATRIX DELTA T : 1.0 PLOT : GREEN 7
NEUTRON MATRIX : SANDSTONE FLUID DELTA T : 1.0 THRESH : 19988
REMARKS

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



Century
GEOPHYSICAL CORP.

GAMMA DENSITY

COMPANY : CENTRAL CANADA POTASH INC. OTHER SERVICES:
LOCATION/FIELD : CCP COLONSAY SSS-1
COUNTY : WATROUS
TOWNSHIP : SASK.
SECTION :
DATE : 05/23/96 PERMANENT DATUM : G.L. ELEVATIONS
DEPTH DRILLER : 295 FT ELEV. PERM. DATUM : G.L. KB
LOG BOTTOM : 99.75 LOG MEASURED FROM : G.L. DT
LOG TOP : -2.88 DPL MEASURED FROM : G.L. CL
CASING DRILLER : 0 LOGGING UNIT : 9403
CASING TYPE : 0 FIELD OFFICE : CALGARY, A.B.
CASING THICKNESS : 0 RECORDED BY : R.KELLNER
BIT SIZE : 15.24 BOREHOLE FLUID : H2O FILE : 931002
MAGNETIC DECL. : 19 RM TEMPERATURE : 19 TYPE : 9403A
MATRIX DENSITY : 2.65 LOG : 8
FLUID DENSITY : 1.10 MATRIX DELTA T : 1.0 PLOT : GREEN 7
NEUTRON MATRIX : SANDSTONE FLUID DELTA T : 1.0 THRESH : 19988
REMARKS

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

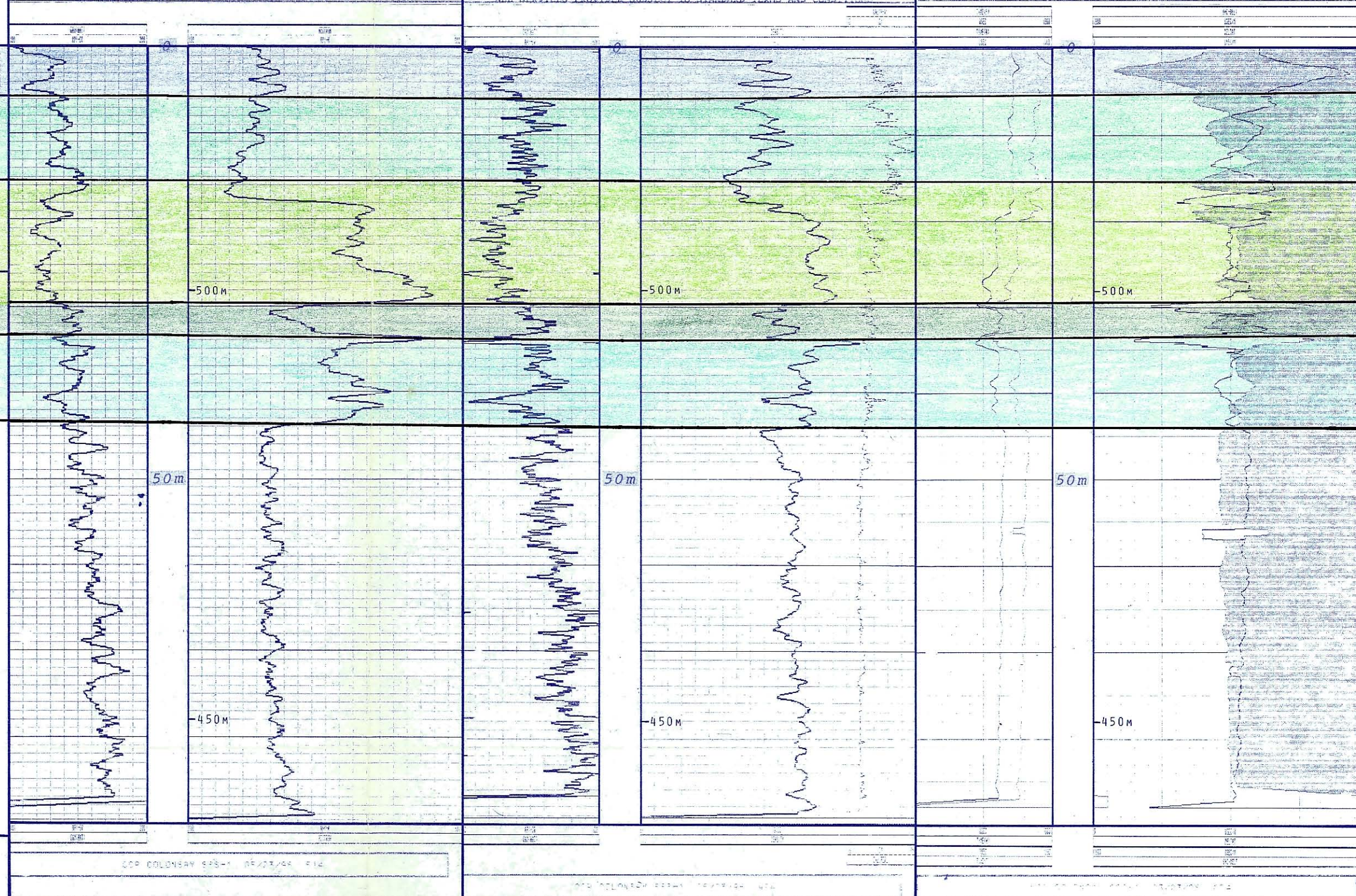


Century
GEOPHYSICAL CORP.

ACOUSTIC

COMPANY : CENTRAL CANADA POTASH INC. OTHER SERVICES:
LOCATION/FIELD : CCP COLONSAY SSS-1
COUNTY : WATROUS
TOWNSHIP : SASK.
SECTION :
DATE : 05/23/96 PERMANENT DATUM : G.L. ELEVATIONS
DEPTH DRILLER : 295 FT ELEV. PERM. DATUM : G.L. KB
LOG BOTTOM : 99.75 LOG MEASURED FROM : G.L. DT
LOG TOP : -2.88 DPL MEASURED FROM : G.L. CL
CASING DRILLER : 0 LOGGING UNIT : 9403
CASING TYPE : 0 FIELD OFFICE : CALGARY, A.B.
CASING THICKNESS : 0 RECORDED BY : R.KELLNER
BIT SIZE : 15.24 BOREHOLE FLUID : H2O FILE : 931002
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MATRIX DENSITY : 2.65 LOG : 8
FLUID DENSITY : 1.10 MATRIX DELTA T : 1.0 PLOT : GREEN 7
NEUTRON MATRIX : SANDSTONE FLUID DELTA T : 1.0 THRESH : 19988
REMARKS

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

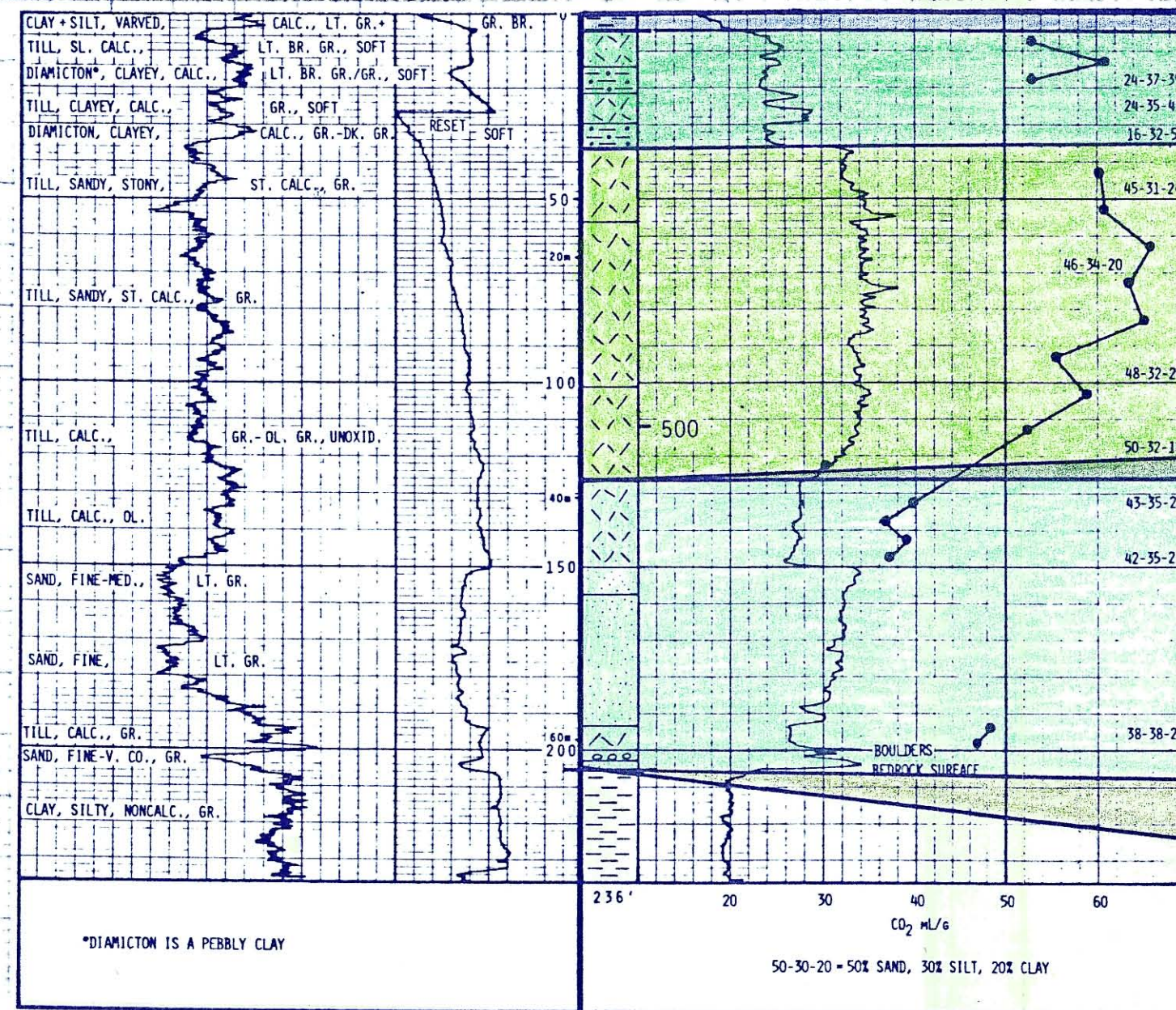


0160-001-01. CORRELATION OF ELECTRIC, GAMMA-NEUTRON,
GAMMA-DENSITY, AND ACOUSTIC LOGS FOR CCP.

A

CCP COLONSAY D-10
NW-12-16-34-27-W2
13:446241E/5752254N
BOREHOLE

D-10



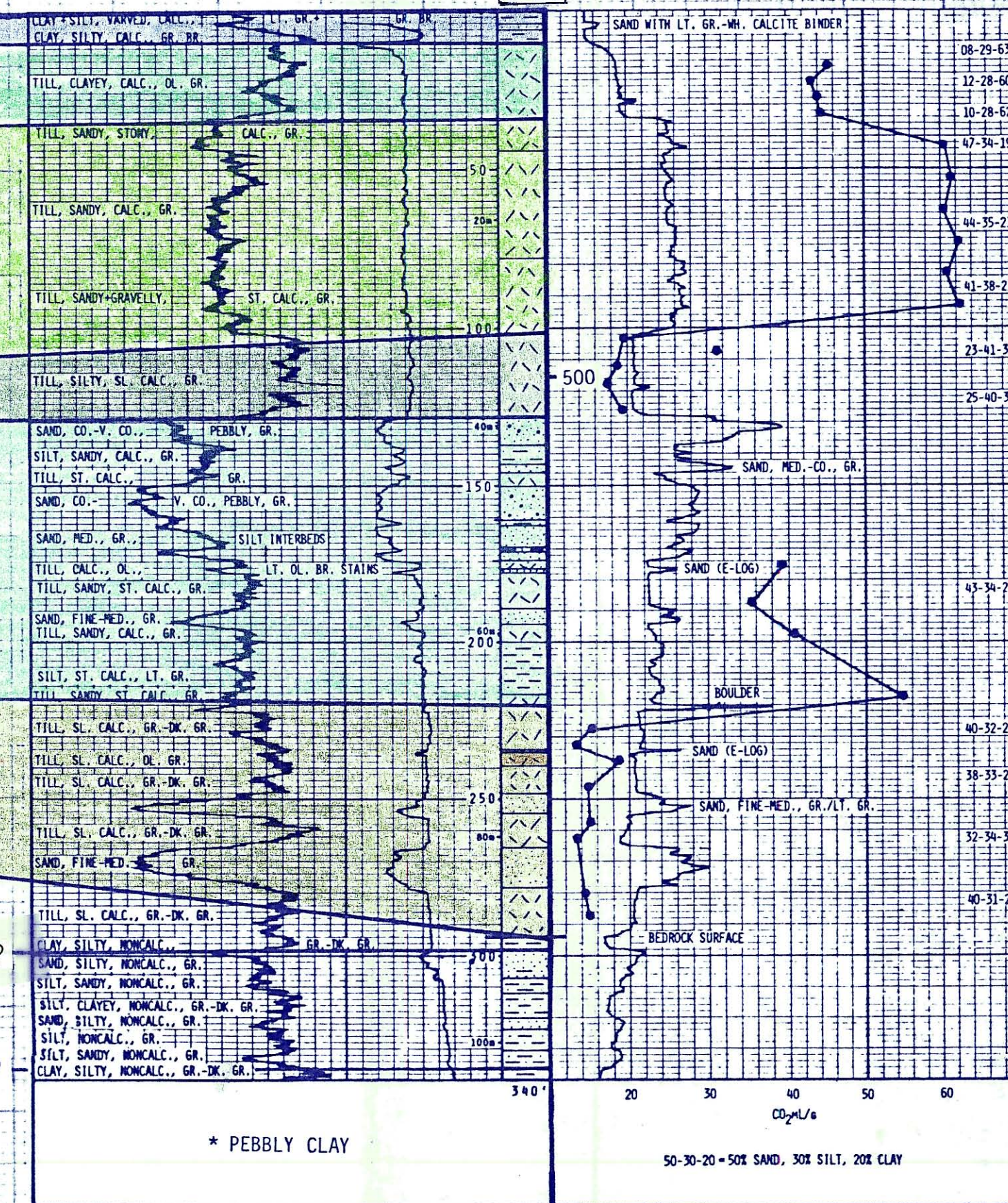
0 100
METRES
VERTICAL EXAGGERATION
5 X

STRUCTURE INFERRED

DRAWING 0160-001-02. CROSS SECTION A-A' BETWEEN
CCP COLONSAY D-10 AND D-11.

CCP COLONSAY D-11
SW-05-21-34-27-W2
13:446257E/5753355N
BOREHOLE

D-11



* PEBBLY CLAY

50-30-20 = 50% SAND, 30% SILT, 20% CLAY

LIMITATION

EXCEPT AT TESTHOLE SITES WHERE GEOLOGIC LOGS ARE AVAILABLE,
GEOLOGIC CONTACTS ARE INFERRED AND REPRESENT GEOLOGIC
MODELS THAT ARE BELIEVED TO BEST FIT THE INFORMATION.

A'

500

METRES ABOVE SEA LEVEL

450