

51° 123° /5

REPORT OF SEISMIC OPERATIONS

PETROLEUM RESOURCES BRANCH

ASSESSMENT REPORT

NO. 1507 ENCLOSURES _____

Conducted in the
CHILCOTIN AREA
of
British Columbia
for

Hudson's Bay Oil and Gas Company Limited
by
Hudson's Bay Oil and Gas Company Limited "VIBROSEIS" Party #2

Location: Permits 2089-2097 inclusive
and 2101

51°45'N Lat.
124°15'W Long:

Type of Work: Seismic ("VIBROSEIS")

Starting Date: April 20, 1970

Completion Date: May 22, 1970

Submitted by:

Hudson's Bay Oil and Gas Company Limited

Oct '70

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1. Field Layouts
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ENCLOSURES

1. Surface Vibrator Point Location and Elevation Map
 (1" = 200 mile Index Map Attached)

NOTE: No reflected data obtained; consequently, no seismic maps were prepared.

Enclosed Section from Location "E" represents a maximum input effort.

INTRODUCTION

The Chilcotin Project is located 130 miles west of Williams Lake, British Columbia on the Bella Coola road.

Hudson's Bay Oil and Gas Company Limited "VIBROSEIS" Party No. 2 recorded in five test locations during April and May 1970, under the supervision of Geophysicist A.J. Ferworn and Party Chief D. Chorney.

This project is located in the Interior Plateau region of British Columbia. No seismic recordings have previously been attempted in this area; consequently a great deal of testing was necessary to establish recording parameters. These tests included an expanded spread, interference tests, sweep and effort comparisons and several miles of CDP recording.

There are two abandoned wells north and east of the block. The H.B. Redstone c-75-A bottomed at 4290 feet in basalt and the Honolulu Nazko a-4-L bottomed at 10,864 feet in basement rock. Neither well had any sonic logs for velocity control.

Test Site A (Redstone well) was located along a river bank since it was the only accessible straight section of road near the H.B. Redstone well.

Similarly, Test Sites C (Kleena Kleene) and E (north of Kleena Kleene) were along surface drainage channels.

Test Sites B (South of Tatla Lake) and D (West of Chilanko Forks) were along gravel ridges. These may vary in thickness resulting in static variations in the data.

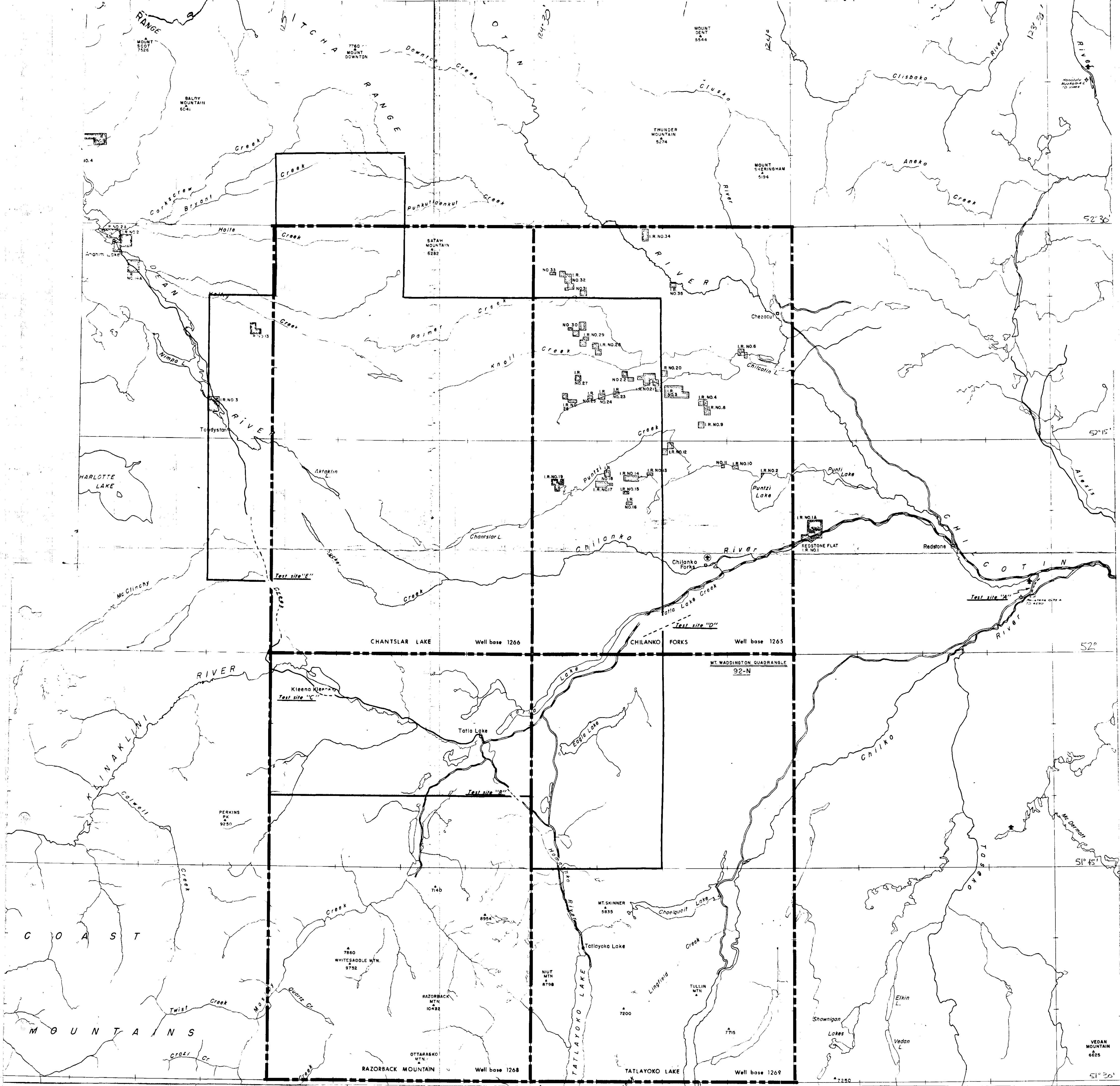
The Chilcotin Block covered four map sheets:

1. Chilanko Forks
2. Tatlayoko Lake
3. Chantlar Lake
4. Razorback Mountain

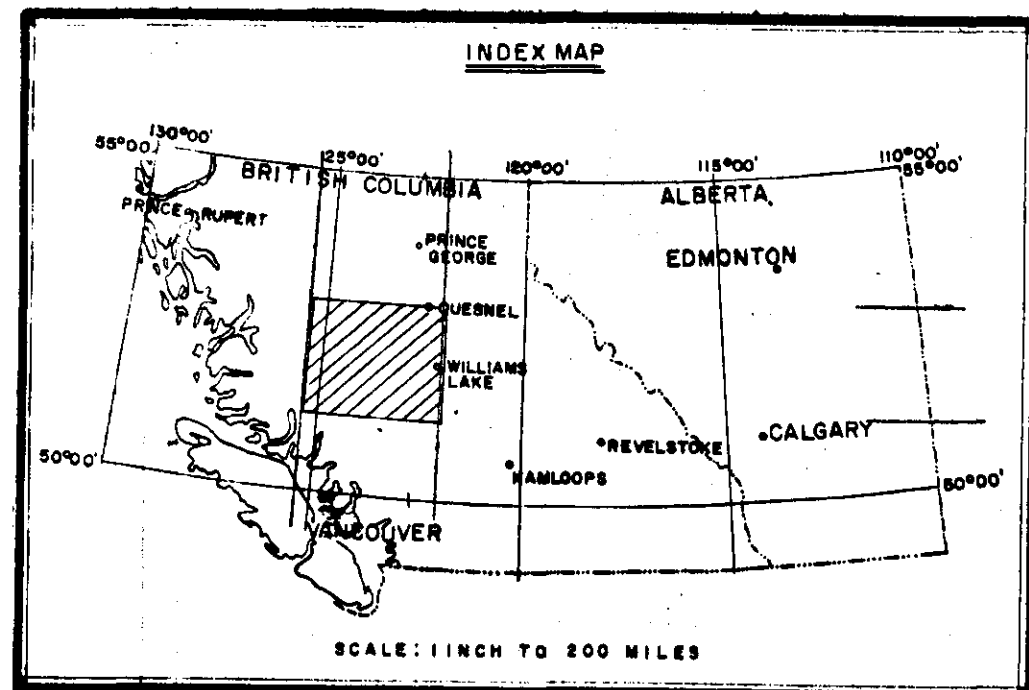
OPERATIONS

1. General Accessibility

The crew members were housed in a camp consisting of "Porta-Bilt" trailers leased from Crown Caterers of Edmonton. The camp was located on an abandoned U.S. Air Force trailer park at Chilanko Forks during the recording of Test Sites "A", "B", "C" and "D".



SCALE: 1:250,000
 1 inch = 4 Miles Approximately



REFERENCE

Town	□ Road Hard Surface, All Weather	— ELAVEN OR MORE
Village or Settlement	● Road Loose Surface All Weather	— LESS THAN 5 LANE
Airport or Airfield	✈ Road Loose Surface Dry Weather	
Seaplane Anchorage	⚓	
Landing Ground	⚓	
	▲ Mountain Peak	

HUDSON'S BAY OIL AND GAS COMPANY LIMITED
 GEOLOGICAL DEPARTMENT
 CALGARY ALBERTA

CHILCOTIN AREA
 BRITISH COLUMBIA

SEISMIC COVERAGE

APRIL, 1968 E.H.R.2 E-4-A

It was then moved to Martin Lake, 2 miles north of the village of Tatla Lake for the recording of test site "E".

All outside services had to be obtained from Williams Lake.

Small dirt airstrips were available at the Redstone well and at Tatla Lake. The airstrip at Chilanko forks is an abandoned radar station and Air Force strip which is in excellent condition, paved and over 6,000 feet in length.

(a) Surface Conditions

The recording was over good gravel roads. However, one of the scheduled test areas was on soft muskeg and inaccessible with our equipment. No cross-country recording was attempted.

(b) Topography

The project area consisted of rough, evergreen forested terrain with intermittent muskeg patches. Igneous plugs formed several hills over the block. Most roads followed drainage channels resulting in very few straight sections which could be recorded.

Drainage from the east 1/2 of the block was generally east into the Chilanko River which flows southeast into the Fraser River. The west 1/2 of the block drained west into the Klinaklini River and Dean River.

The highest and lowest elevation in each test site are:

<u>Test</u>	<u>Highest Elevation</u>	<u>Lowest Elevation</u>
A	2581' @ S.P. A-0	2546' @ S.P. A-20
B	3495' @ S.P. B-9	3465' @ S.P. B-21
C	3097' @ S.P. C-20	3097' @ S.P. C-0
D	3528' @ S.P. D-14	3414' @ S.P. D-65
E	3201' @ S.P. E-41	3109' @ S.P. E-185

2. Surveying

(a) Permits

No permit fees were paid since all recording was on roads.

(b) Instruments

A K&E Doric transit (Serial No. H-3361) was used to establish vertical and horizontal control.

(c) Bench Marks

Vertical and Horizontal control was established from the following locations:

Geodetic Bench Marks #1121J
#1139J
#1144J
#1151J
#1152J
#1165J
#1167J
#1169J
#1170J

West Boundary of Lot 558A
N.E.C. Lot 1500
N.E.C. and N.W.C. of Lot 1863
Lot 1173

- (d) The horizontal and vertical ties were within the limits set out on pages 7-3 and 8-1 of O.M. Vol. III.

3. Recording

(a) Equipment

- i) Recorder: Unit No. V112A; a 20 channel recorder using Model 3 amplifiers and a Model 2 tape recorder.
- ii) Vibrators: Continental Oil Company center-mounted vibrators bearing unit numbers: VSH 36, VSH 37, VSH 38, VSH 64, VSH 65 and VSH 66.
- iii) Correlator: Continental Oil Company magnetic correlator Model M-XV.
- iv) Receptors: Electro-Tech Model EVS-20 Hz subminiature geophones. These are strung in series, 10 to a string.

(b) Field Parameters

The following tests were run at five test locations.

Interference Tests

Source: 15 sweeps/vibrator/25'
Offset: 300' near to 6000' far offsets
(exception - Test Site "E" had a near offset of 900')

Drag: Every 150' from 300' to 3000' and then every
300' from 3000' to 6000'.

Receptors:

Test Site A (Redstone Well)

20 phones bunched
20 phones/200'
20 phones/300'
20 phones/450'
using a 57-12D sweep.

Test Site B (South of Tatla Lake)

20 phones bunched
20 phones/200'
20 phones/300'
20 phones/450'
using a 57-12 D sweep.

Test Site C (Kleena Kleene)

20 phones bunched
20 phones/300'
20 phones/450'
20 phones/600'
using a 40-12 D sweep.

Test Site D (West of Chilanko Forks)

20 phones bunched
20 phones/200'
20 phones/450'
20 phones/700'
using a 57-12 D sweep.

Test Site E (North of Kleena Kleena)

20 phones bunched
40 phones/200'
40 phones/400'
40 phones/800'
using a 57-12 D sweep.

Sweep and Effort Comparisons

Test Site A: (Redstone Well)

Side by side cables were recorded simultaneously having 10 traces

with 20 phones/300' and 10 traces with 40 phones/500' (see field lay-out diagram).

<u>Drag</u>	<u>Offset</u>	<u>Sweep</u>
15 sweeps/vib/300'	600'W	57-12D
30 sweeps/vib/300'	600'W	57-12D
30 sweeps/vib/300'	600'W	40-12D
30 sweeps/vib/300'	600'W	65-15D
30 sweeps/vib/300'	1500'W	57-12D
30 sweeps/vib/300'	3000'W	57-12D

Test Site B: (South Tatla Lake)

Side by side cables were recorded simultaneously having 10 traces with 20 phones/300' and 10 traces with 40 phones/500' (see field lay-out diagram).

<u>Drag</u>	<u>Offset</u>	<u>Sweep</u>
15 sweeps/vib/300'	600'S	57-12D
30 sweeps/vib/300'	600'S	57-12D
30 sweeps/vib/300'	600'S	40-12D
30 sweeps/vib/300'	600'S	65-15D

Recording 10 traces with 20 phones/300'		
60 sweeps/vib/300'	1200'S	40-12D
60 sweeps/vib/300'	4000'S	40-12D
60 sweeps/vib/900'	2000'S	40-12D

Recording 10 traces with 40 phones/500'		
60 sweeps/vib/300'	1200'S	40-12D
60 sweeps/vib/300'	4000'S	40-12D
60 sweeps/vib/900'	2000'S	40-12D

Test Site C: (Kleena Kleene)

Side by side cables were recorded simultaneously having 10 traces with 20 phones/450' and 10 traces with 40 phones/500' (see field lay-out diagram).

<u>Drag</u>	<u>Offset</u>	<u>Sweep</u>
15 sweeps/vib/300'	1200'W	40-12D
15 sweeps/vib/300'	1200'E	40-12D
30 sweeps/vib/300'	1200'W	40-12D
30 sweeps/vib/300'	1200'E	40-12D
30 sweeps/vib/300'	600'W	40-12D
30 sweeps/vib/300'	600'E	40-12D
30 sweeps/vib/300'	600'W	40-12D
30 sweeps/vib/300'	600'E	65-15D

<u>Drag</u>	<u>Offset</u>	<u>Sweep</u>
30 sweeps/vib/300'	600'W	57-12D
30 sweeps/vib/300'	600'E	57-12D
30 sweeps/vib/300'	3000'W	57-12D
30 sweeps/vib/300'	3000'E	57-12D

Test Site D: (West of Chilanko Forks)

Side by side cables were recorded simultaneously having 10 traces with 40 phones/250' and 10 traces with 40 phones/500'.

<u>Drag</u>	<u>Offset</u>	<u>Sweep</u>
30 sweeps/vib/300'	600'E	57-12D
30 sweeps/vib/300'	600'W	57-12D
30 sweeps/vib/300'	600'E	65-15D
30 sweeps/vib/300'	600'W	65-15D
30 sweeps/vib/300'	600'E	40-12D
30 sweeps/vib/300'	600'W	40-12D
30 sweeps/vib/300'	1200'E	57-12D
30 sweeps/vib/300'	1200'W	57-12D
30 sweeps/vib/300'	3000'W	57-12D
30 sweeps/vib/300'	3000'E	57-12D

Recording 10 traces with 40 phones/500' only

60 sweeps/vib/900'	600'E	57-12D
60 sweeps/vib/900'	600'W	57-12D

Test Site E: (North of Kleena Kleene)

An inline cable having 10 traces with 40 phones/800' and a cross cable having 10 traces with 20 phones/300' were re-recorded simultaneously (see field lay-out diagram).

<u>Drag</u>	<u>Offset</u>	<u>Sweep</u>
30 sweeps/vib/900'	900'N	40-12D
30 sweeps/vib/900'	900'S	40-12D
30 sweeps/vib/900'	900'N	57-12D
30 sweeps/vib/900'	900'S	57-12D
30 sweeps/vib/900'	900'N	24-6D
30 sweeps/vib/900'	900'S	24-6D
30 sweeps/vib/900'	2100'N	57-12D
30 sweeps/vib/900'	2100'S	57-12D
30 sweeps/vib/900'	2100'N	24-6D
30 sweeps/vib/900'	2100'S	24-6D

<u>Drag</u>	<u>Offset</u>	<u>Sweep</u>
Recording inline cable with 40 phones/800' only		
60 sweeps/vib/600'	900'N	57-12D
60 sweeps/vib/600'	900'S	57-12D
60 sweeps/vib/600'	900'N	24-6D
60 sweeps/vib/600'	900'S	24-6D
60 sweeps/vib/600'	2100'N	57-12D
60 sweeps/vib/600'	2100'S	57-12D
60 sweeps/vib/600'	2100'N	24-6D
60 sweeps/vib/600'	2100'S	24-6D

NOTE: The 24-6D sweep is the 48-12D sweep run at half speed.

Expanded Spread

Test Site D: (See field lay-out diagram)

The expanded spread was done using 30 sweeps/vib/600' with a 57-12D sweep. The receptors were laid out with 40 phones/600'.

<u>Drag</u>	<u>Cable</u>	<u>Basement</u>	<u>Offset</u>
1 W	11-30	6-15 1/2	3000'-8700'
15W	16-25	15 1/2-20	300'-3000'
15E	14-5	14 1/2-10	300'-3000'
30E	20-1	25-15 1/2	3000'-8700'

Production Recording (See Field Lay-Out Diagrams)

Test Site D: (West of Chilanko Forks)

Sweep: 57-12D
 Nest: 40 phones/600'
 Drag: 30 sweeps/vib/600'
 Offset: 600'
 Spread: 2700'
 Type
 Recording: 500% Split CDP

Test Site E: (North of Kleena Kleene)

Sweep: 57-12D and 24-6D (48 12D at half speed)
 Nest: 40 phones/600'
 Drag: 120 sweeps/vib/600' and 60 sweeps/vib/600'
 Offset: 900'
 Spread: 2700'
 Type
 Recording: 200% Split CDP

4. Personnel

(a) Field Personnel

The field crew consisted of 18 men in the following positions:

Party Manager
Chief Observer
Observer
Vibrator Technicians (4)
Correlator Operator (1)
Surveyors (2)
Rodmen (1)
Recording Helpers (7)

(b) Camp Personnel

Cook
Cook's Helper
Mechanic

(c) Office Personnel

Computations and data preparation were performed by Hudson's Bay Oil and Gas in Calgary.

Personnel consisted of one Party Chief, two Seismologists, two Computers and one Trainee Geophysicist.

5. Equipment

(a) Camp

1 - Kitchen-Diner
2 - Sleepers (8 man)
1 - Washroom-Sleeper (3 man)
1 - Recreation Trailer
1 - Office Trailer
1 - Correlator Trailer (playback instruments)
1 - Power Trailer

(b) Field

1 - Recorder (20 trace analog)
2 - Cable Trucks
3 - Model Y600 Vibrators (5 Ton)
3 - Model 8 Vibrators (7.5 Ton Force)
2 - Pickups
2 - Carryall Vehicles
1 - Water Truck

CONCLUSIONS:

1. The Chilcotin Block cannot be mapped with the "VIBROSEIS" method; the enclosed section from Site "E" represents a maximum input "VIBROSEIS" approach.
2. A dynamite reflection crew would not obtain records; the tertiary flood basalt is too deeply buried to routinely drill through with seismic rigs.
3. The main access road follows the main drainage channels which may be surface fault expressions.

It is possible that records could be obtained in the northeast portion of the permit area, which was inaccessible in May.

A. J. Ferworm
Geophysicist

APPENDIX

CHILCOTIN BLOCK

Efficiency Statistics:

Date work started:	April 20, 1970
Date work completed:	May 22, 1970
Working days:	18.0
Idle days (experimental, move time, holidays):	6.6
Setups:	231
Profiles:	143

*Basement traverse (total miles):	14.2
(miles per day):	0.79

*Number of geophone strings (total):	962
(per day):	53.5

VSH 36,37,38 *Number of sweeps per vibrator (total):	4290**
(per day):	536**

*Average downtime per vibrator (total):	17***
(per day):	2.12***

VSH 64,65,66 *Number of sweeps per vibrator (total):	3660**
(per day):	366**

*Average downtime per vibrator (total):	1.6***
(per day):	0.16***

*NOTE: Idle days are not accounted for in these statistics

A working day is defined as 8 hours

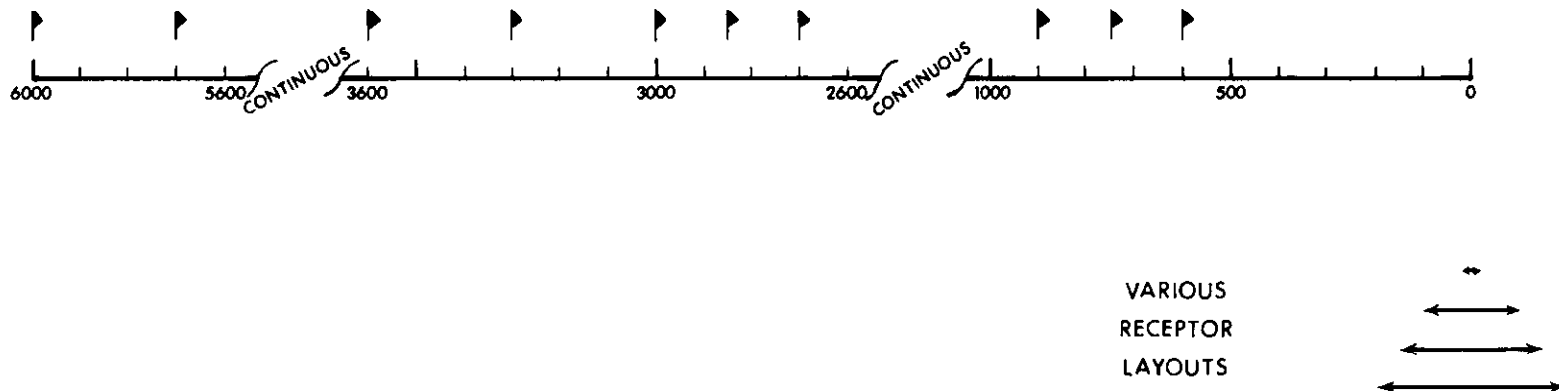
**NOTE: Based on performance of the best 2 vibrators each day

***NOTE: Downtime for 3 vibrators (includes routine maintenance)

CHILCOTIN PROJECT

FIELD SET-UP DIAGRAM

INTERFERENCE TEST SITES A to E incl.



LAYOUT OF SOURCE : M'S 15 SWEEP / VIB. / 25 ft.

LAYOUT OF RECEPTORS :	TEST SITES <u>A & B</u>	TEST SITE <u>C</u>	TEST SITE <u>D</u>	TEST SITE <u>E</u>
	M ₁ R 20 - bunched	M ₁ R 20 - bunched	M ₁ R 20 - bunched	M ₁ R 20 - bunched
	M ₁ R 20 / 200'	M ₁ R 20 / 300'	M ₁ R 20 / 200'	M ₁ R 40 / 200'
	M ₁ R 20 / 300'	M ₁ R 20 / 450'	M ₁ R 40 / 450'	M ₁ R 40 / 450'
	M ₁ R 20 / 450'	M ₁ R 40 / 600'	M ₁ R 40 / 700'	M ₁ R 40 / 800'

SWEEP : 57 - 12 D on SITES A, B, D & E
40 - 12 D on SITE C

OFFSET : TEST SITES A, B, C & D
drag every 150 ft from o/s 300 ft to o/s 3000 ft
drag every 300 ft from o/s 3000 ft to o/s 6000 ft

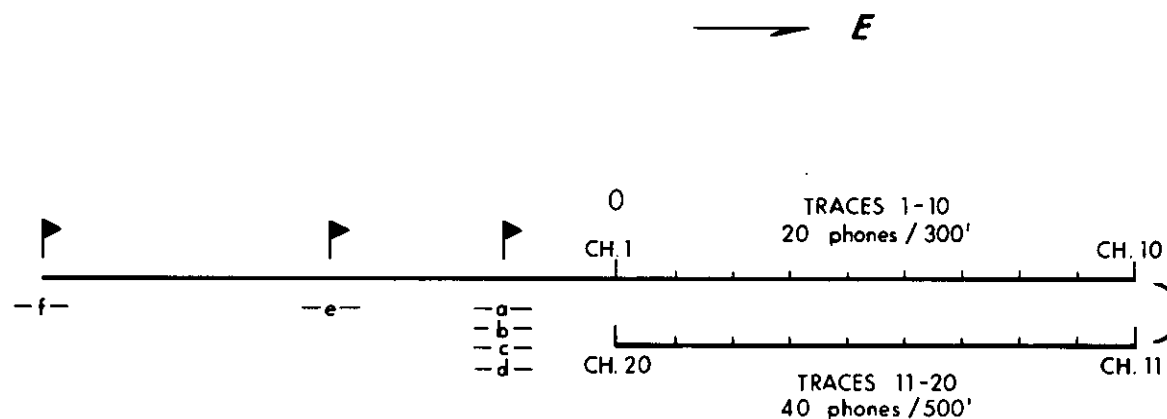
TEST SITE E
drag every 150 ft from o/s 900 ft to o/s 3000 ft
drag every 300 ft from o/s 3000 ft to o/s 6000 ft

FIGURE 1

FIELD SET-UP DIAGRAM

SWEEP & EFFORT COMPARISONS

CHILCOTIN TEST SITE "A" (HB REDSTONE WELL)



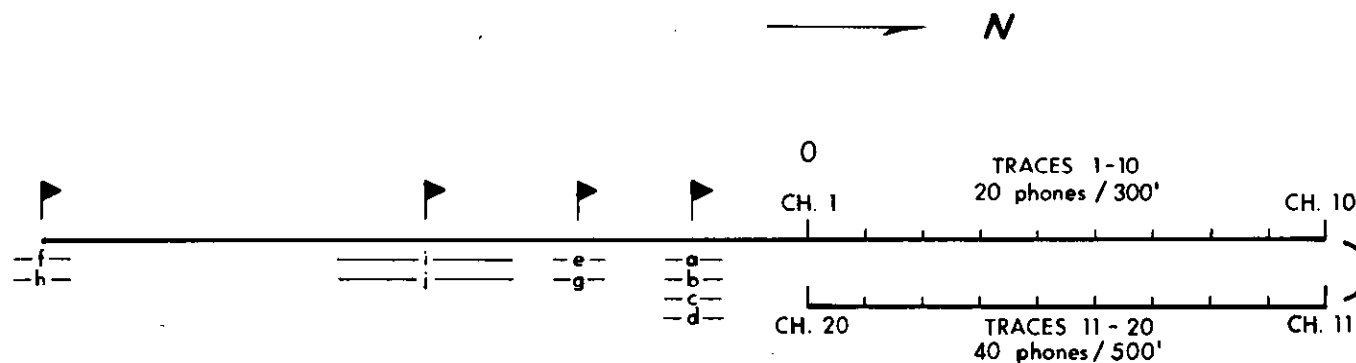
VIBRATOR POSITION	DRAG	OFFSET	SWEEP
a	15 / VIB / 300'	600' W	57-12 D
b	30 / VIB / 300'	600' W	57-12 D
c	30 / VIB / 300'	600' W	40-12 D
d	30 / VIB / 300'	600' W	65-15 D
e	30 / VIB / 300'	1500' W	57-12 D
f	30 / VIB / 300'	3000' W	57-12 D

FIGURE 2

FIELD SET-UP DIAGRAM

SWEEP & EFFORT COMPARISONS

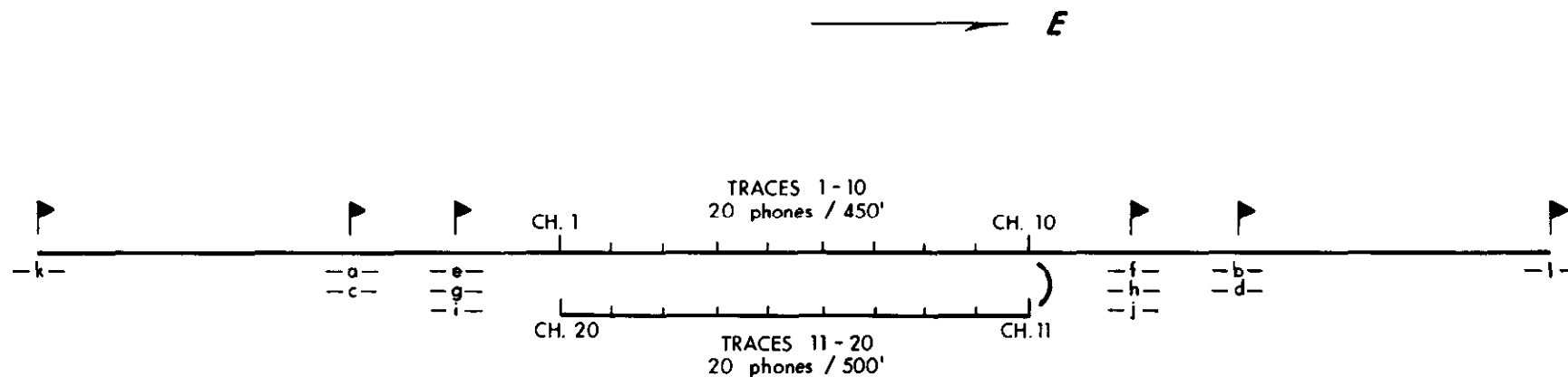
CHILCOTIN TEST SITE "B" (SOUTH OF TATLA LAKE)



VIBRATOR	POSITION	DRAG	OFFSET	SWEEP
a		15/VIB/300'	600' S	57-12 D
b		30/VIB/300'	600' S	57-12 D
c		30/VIB/300'	600' S	40-12 D
d		30/VIB/300'	600' S	65-15 D
RECORDING	TRACES 1 - 10 ONLY	(20 phones / 300')		
e		60/VIB/300'	1200' S	40-12 D
f		60/VIB/300'	4000' S	40-12 D
RECORDING	TRACES 11 - 20 ONLY	(40 phones / 500')		
g		60/VIB/300'	1200' S	40-12 D
h		60/VIB/300'	4000' S	40-12 D
RECORDING	TRACES 1 - 10 ONLY	(20 phones / 300')		
i		60/VIB/900'	2000' S	40-12 D
RECORDING	TRACES 11 - 20 ONLY	(40 phones / 500')		
j		60/VIB/900'	2000' S	40-12 D

FIGURE 3

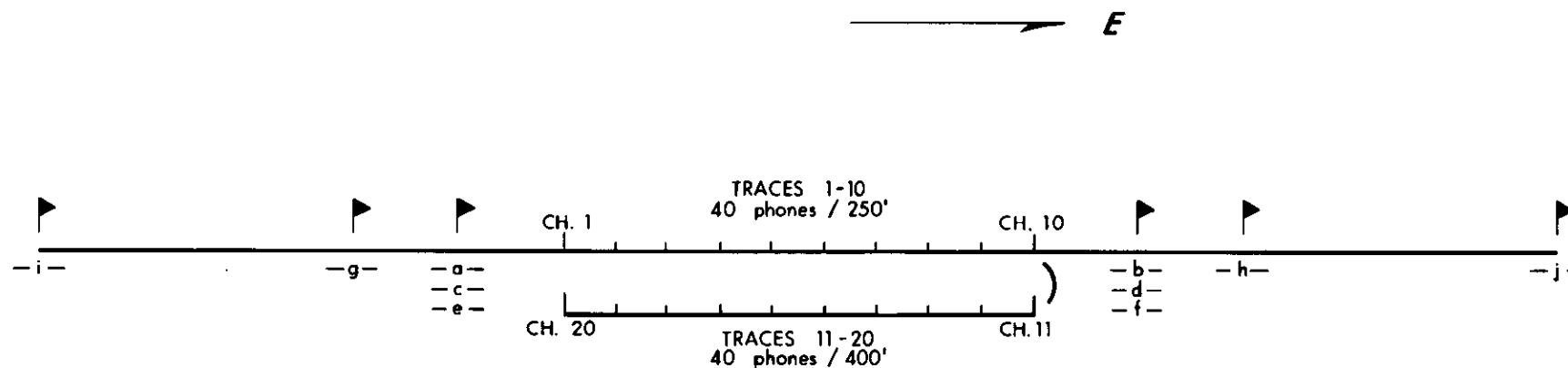
FIELD SET-UP DIAGRAM
SWEEP & EFFORT COMPARISONS
CHILCOTIN TEST SITE "C" (KLEENA KLEENE)



VIBRATOR	POSITION	DRAG	OFFSET	SWEEP
a		15/VIB/300'	1200' W	40-12 D
b		15/VIB/300'	1200' E	40-12 D
c		30/VIB/300'	1200' W	40-12 D
d		30/VIB/300'	1200' E	40-12 D
e		30/VIB/300'	600' W	40-12 D
f		30/VIB/300'	600' E	40-12 D
g		30/VIB/300'	600' W	65-15 D
h		30/VIB/300'	600' E	65-15 D
i		30/VIB/300'	600' W	57-12 D
j		30/VIB/300'	600' E	57-12 D
k		30/VIB/300'	3000' W	57-12 D
l		30/VIB/300'	3000' E	57-12 D

FIGURE 4

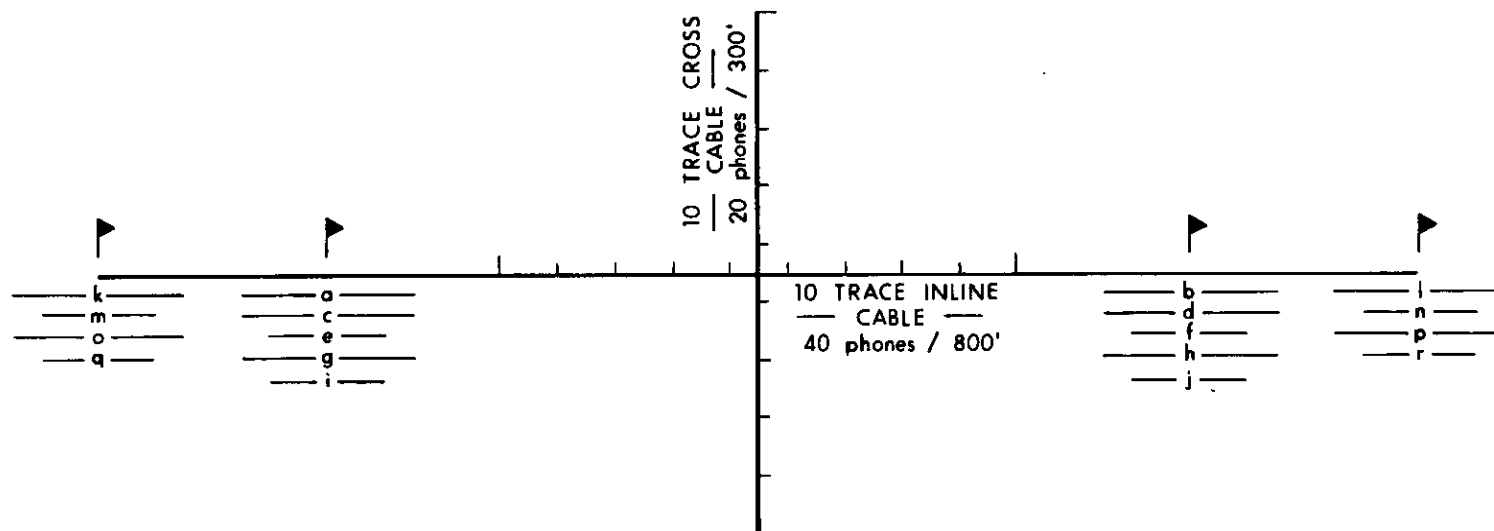
FIELD SET-UP DIAGRAM
SWEEP & EFFORT COMPARISONS
CHILCOTIN TEST SITE "D" (CHILANKO FORKS)



VIBRATOR	POSITION	DRAG	OFFSET	SWEEP
a		30/VIB/300'	600' W	57-12 D
b		30/VIB/300'	600' E	57-12 D
c		30/VIB/300'	600' W	65-15 D
d		30/VIB/300'	600' E	65-15 D
e		30/VIB/300'	600' W	40-12 D
f		30/VIB/300'	600' E	40-12 D
g		30/VIB/300'	1200' W	57-12 D
h		30/VIB/300'	1200' E	57-12 D
i		30/VIB/300'	3000' W	57-12 D
j		30/VIB/300'	3000' E	57-12 D

FIGURE 5

FIELD SET-UP DIAGRAM
SWEEP & EFFORT COMPARISONS
CHILCOTIN TEST SITE "E"

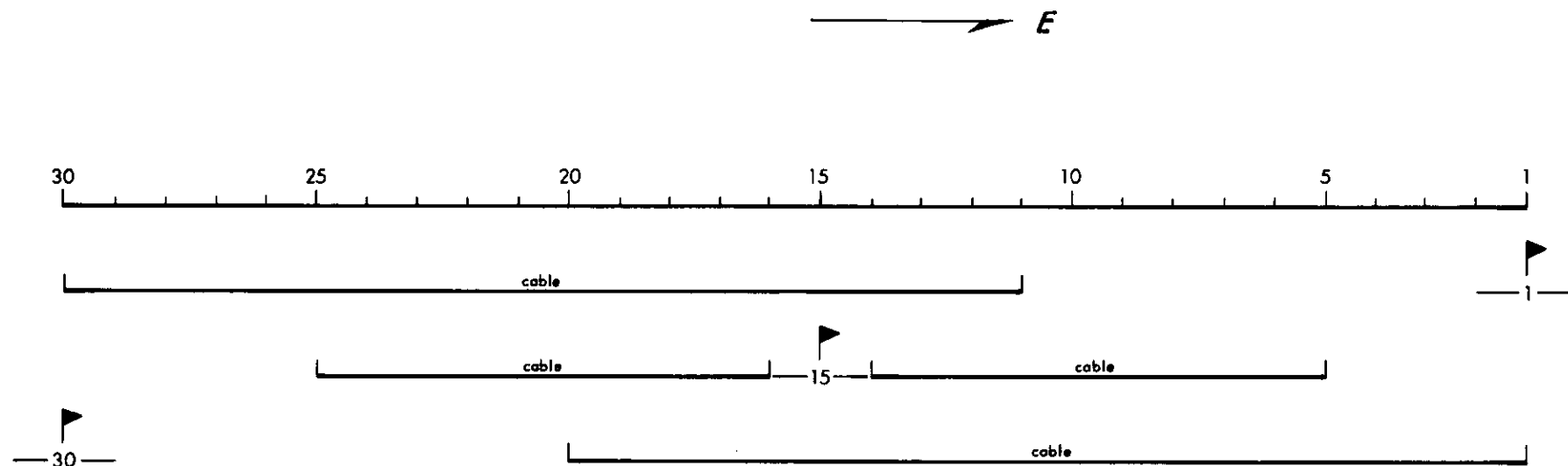


VIBRATOR	POSITION	DRAG	RECORD	OFFSET	SWEEP
	a	30/VIB/900'	BOTH CABLES	900' N	40-12 D
	b	30/VIB/900'	BOTH CABLES	900' S	40-12 D
	c	30/VIB/900'	BOTH CABLES	900' N	57-12 D
	d	30/VIB/900'	BOTH CABLES	900' S	57-12 D
	e	60/VIB/600'	INLINE CABLE	900' N	57-12 D
	f	60/VIB/600'	INLINE CABLE	900' S	57-12 D
	g	30/VIB/900'	BOTH CABLES	900' N	24-6 D*
	h	30/VIB/900'	BOTH CABLES	900' S	24-6 D*
	i	60/VIB/600'	INLINE CABLE	900' N	24-6 D*
	j	60/VIB/600'	INLINE CABLE	900' S	24-6 D*
	k	30/VIB/900'	BOTH CABLES	2100' N	57-12 D
	l	30/VIB/900'	BOTH CABLES	2100' S	57-12 D
	m	60/VIB/600'	INLINE CABLE	2100' N	57-12 D
	n	60/VIB/600'	INLINE CABLE	2100' S	57-12 D
	o	30/VIB/900'	BOTH CABLES	2100' N	24-6 D*
	p	30/VIB/900'	BOTH CABLES	2100' S	24-6 D*
	q	60/VIB/600'	INLINE CABLE	2100' N	24-6 D*
	r	60/VIB/600'	INLINE CABLE	2100' S	24-6 D*

* 24 - 6 D SWEEP IS A 48 - 12 D SWEEP RUN AT 1/2 SPEED

FIGURE 6

EXPANDED SPREAD
(PART OF PRODUCTION)
CHILCOTIN TEST SITE " D "



SOURCE : M₁ S 30 SWEEPS / VIB / drag / 600'
LAYOUT OF RECEPTORS : M₁ R 40 phones / 600'
SWEEP : 57 - 12 D

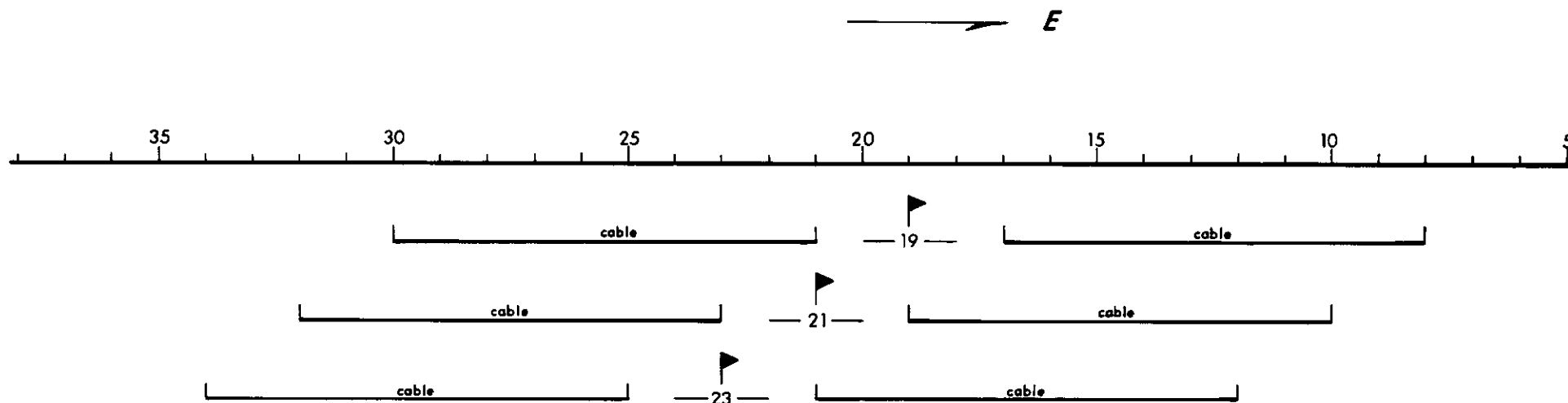
DRAG	OFFSET	COVERAGE	
		SURFACE	SUBSURFACE
1 (WEST)	3000' - 8700'	11 - 30	6 - 15 1/2
15 (WEST)	300' - 3000'	16 - 25	15 1/2 - 20
15 (EAST)	300' - 3000'	14 - 5	14 1/2 - 10
30 (EAST)	3000' - 8700'	20 - 1	25 - 15 1/2

FIGURE 7

FIELD SET-UP DIAGRAM

(PRODUCTION)

CHILCOTIN TEST SITE "D" (CHILANKO FORKS)

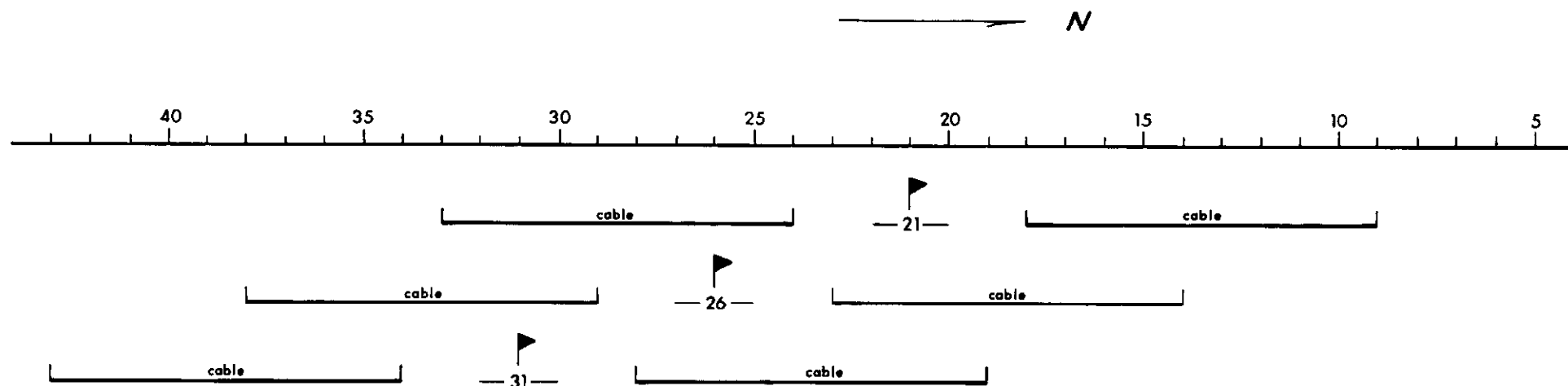


SOURCE : M₁ S 30 SWEEPS / VIB / 600'
 RECEPTORS : M₁ R 40 phones / 600'
 SWEEP : 57 - 12 D
 OFFSET : 600'
 SPREAD : 2700' 500 % CDP SPLIT

DRAG	EAST SURFACE	COVERAGE SUB-SURFACE	WEST SURFACE	COVERAGE SUB-SURFACE
19	17 - 8	18 - 13 1/2	21 - 30	20 - 24 1/2
21	19 - 10	20 - 15 1/2	23 - 32	22 - 26 1/2
23	21 - 12	22 - 17 1/2	25 - 34	24 - 28 1/2
	↓	↓	↓	↓

FIGURE 8

FIELD SET-UP DIAGRAM
(PRODUCTION)
CHILCOTIN TEST SITE "E"



SOURCE : M_I S 60 SWEEPS / VIB / 600' (FIRST 10 DRAGS)
 120 SWEEPS / VIB / 600' (REMAINING DRAGS)
 RECEPTORS : 40 phones / 600'
 SWEEP : 24 - 6 D * (FIRST 10 DRAGS)
 57 - 12 D (REMAINING DRAGS)
 OFFSET : 900'
 SPREAD : 2700' 200 % CDP SPLIT

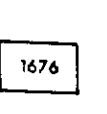
* 24 - 6 D SWEEP IS A 48 - 12 D SWEEP RUN AT 1/2 SPEED

DRAG	EAST SURFACE	COVERAGE SUB-SURFACE	WEST SURFACE	COVERAGE SUB-SURFACE
21	18 - 9	19 1/2 - 15	24 - 33	22 1/2 - 27
26	23 - 14	24 1/2 - 20	29 - 38	27 1/2 - 32
31	28 - 19	2 1/2 - 25	34 - 43	2 1/2 - 37



FIGURE 9

(12)

[illegible]

Hudson's Bay Oil and Gas Company Limited			
EXPLORATION DEPARTMENT		ALBERTA	
CHANTSLAR LAKE GEOGRAPHICAL LOCATION MAP <i>(WITH SURFACE ELEVATIONS)</i>			
CONTOUR INTERVAL: _____		SRC : _____ / SEC : _____ TIME or INTERVAL: _____	
ELEVATION REFERENCE: _____		THICKNESS or DEPTH: _____ VELOCITY: _____	
AUTHORITYS AFFILIATION or MAP SOURCE: _____			
SCALE: 1" = 4,000'	AUTHOR: _____	DATE: _____	
FILE NO. _____	C - 3 - B		1266

(M3)

[illegible]

15 10	16 9	13 12
7 CHARLIS LAKES	8 CHILANIL PARKS	5 REDSPRINE
2 1	4	
15 RAZORBACK MTN.	16 TATLAVED LAKES	13 12
10	9	

Hudson's Bay Oil and Gas Company Limited			
EXPLORATION DEPARTMENT		ALBERTA	
CALGARY			
CHILANKO FORKS			
GEOGRAPHICAL LOCATION MAP			
WITH SURFACE ELEVATIONS 1987			
CONTOUR INTERVAL: sec. ('for " / sec.) TIME OF INTERVAL: sec. THICKNESS OR DEPTH: ft. ELEVATION REFERENCE: ft. VELOCITY: "/sec. AUTHORS AFFILIATION or MAP SOURCE:			
SCALE: 1"=4,000'	AUTHOR:	DATE:	
FILE NO.:		C-3-H	1265

14

[illegible][illegible]

PERIOD: _____ RANCH: _____
ASSESSMENT REPORT
NO. _____ ENCLOSURES _____

93C	6 CHARLOTTE LAKE 3	7 CHARLESAR LAKE 2	8 CHILANCO FORKS 1
	14	15 FAZORBACK MTN 10	16 FAYANCO LAKE 9
92N	6 CHILCO MTN 3	7 CHILCO MTN 2	8 CHILCO MTN 1

Hudson's Bay Oil and Gas Company Limited			
EXPLORATION DEPARTMENT			
CALGARY	ALBERTA		
RAZORBACK MTN.			
GEOPHYSICAL LOCATION MAP			
WITH SURFACE ELEVATIONS 1071			
CONTOUR INTERVAL: sec. 1" for 1" sec.			
THICKNESS or DEPTH: sec. 1" for 1" sec.			
ELEVATION REFERENCE: ft. VELOCITY: 1" sec.			
AUTHORS AFFILIATION or MAP SOURCE			
SCALE 1" = 4,000'	AUTHOR	DATE	
FILE NO.	C-3-1	1268	

1507-5-

LINE E
DATE 6-17-70

FIELD DATA

SHOT BY	H-2	TYPE RECORDING	ALL FILES
G/SETS	900'	TO	3600'
BASEMENT INTERVAL TRACE	150'		
SOURCE SAMPLES	120	DIMENSIONS	600'
RECEPTORS SAMPLES		DIMENSIONS	
SWEEP	57~12	NO OF VIBRATORS	

DIGITAL PROCESSING

PR NO B172-9 REEL NO 32766 ORDER NO 1

VIBROSEIS CORRELATION SEC

NORMAL MOVEOUT AND STATICS SHIFT

VELOCITY SOURCE VE

ADJUSTED TRACE CORRECTION SEC

WINDOW SEC

CORRELATION COEFFICIENT SHIFT

STAGE NORMALIZATION 2

DECONVOLUTION ☒ SEC

WINDOW 0-300 SEC

OPERATION LENGTH SEC

FREQUENCY 12-57 CYCLES

SAILE SEC

FREQUENCY FILTER ☐ TIME VARIANT FILTER ☐

SEC CYCLES

SEC CYCLES

OTHER PROCESSES TF

PLAYBACK
PLAYBACK FILTER 5-60 MIXING 250

A. J. Ferworm OCT 19

PETROLEUM RESOURCES BRANCH
ASSESSMENT REPORT
NO. 1507 ENCLOSURES _____

~~ENCLOSURES~~

1000

$$\frac{120}{1200 \text{ ft.}}$$

120/600 ft.

161

156

131

146

171
1

136

131
L

1158

146

141

136

131

126

121

116

111

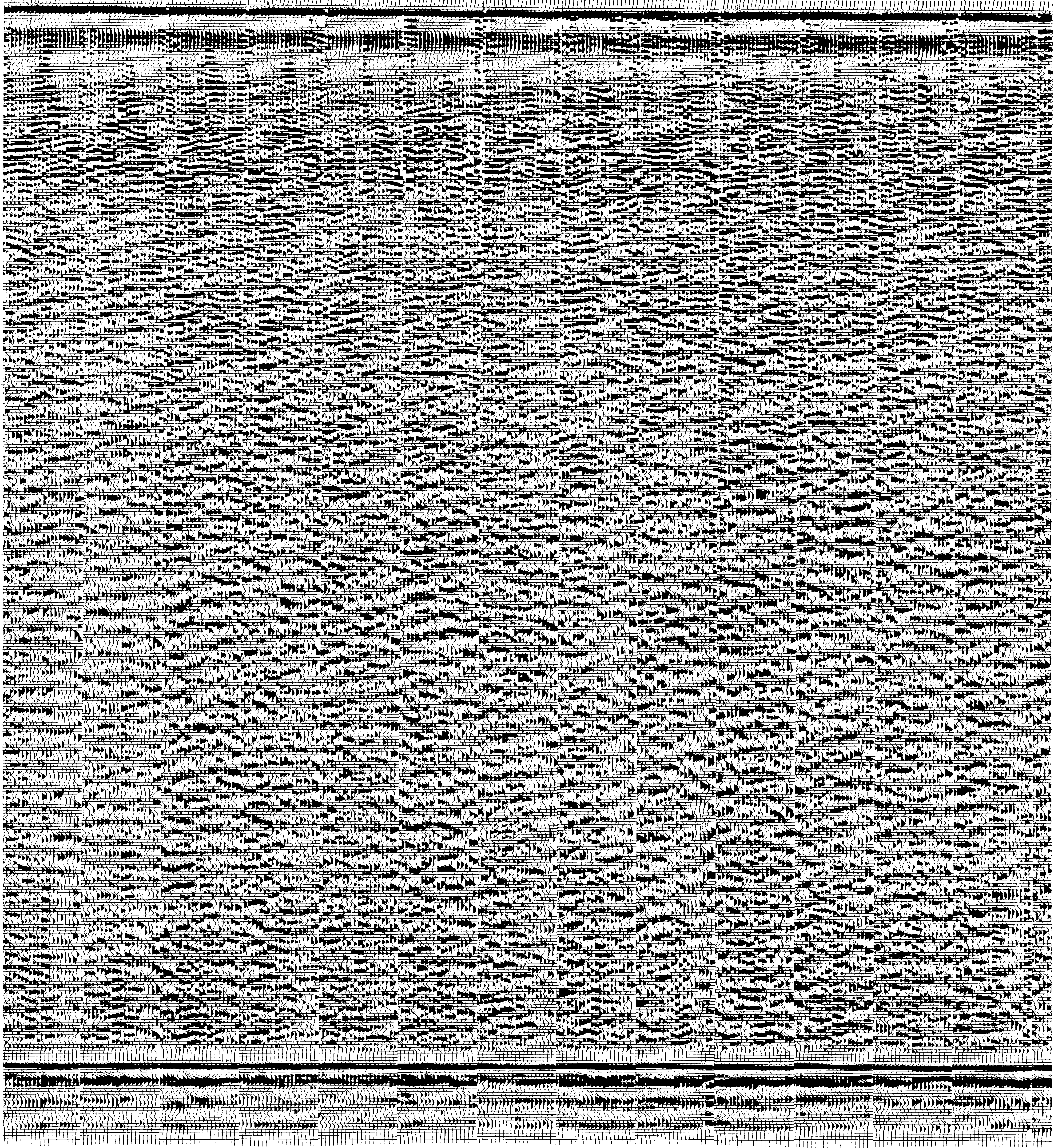
106

101

96

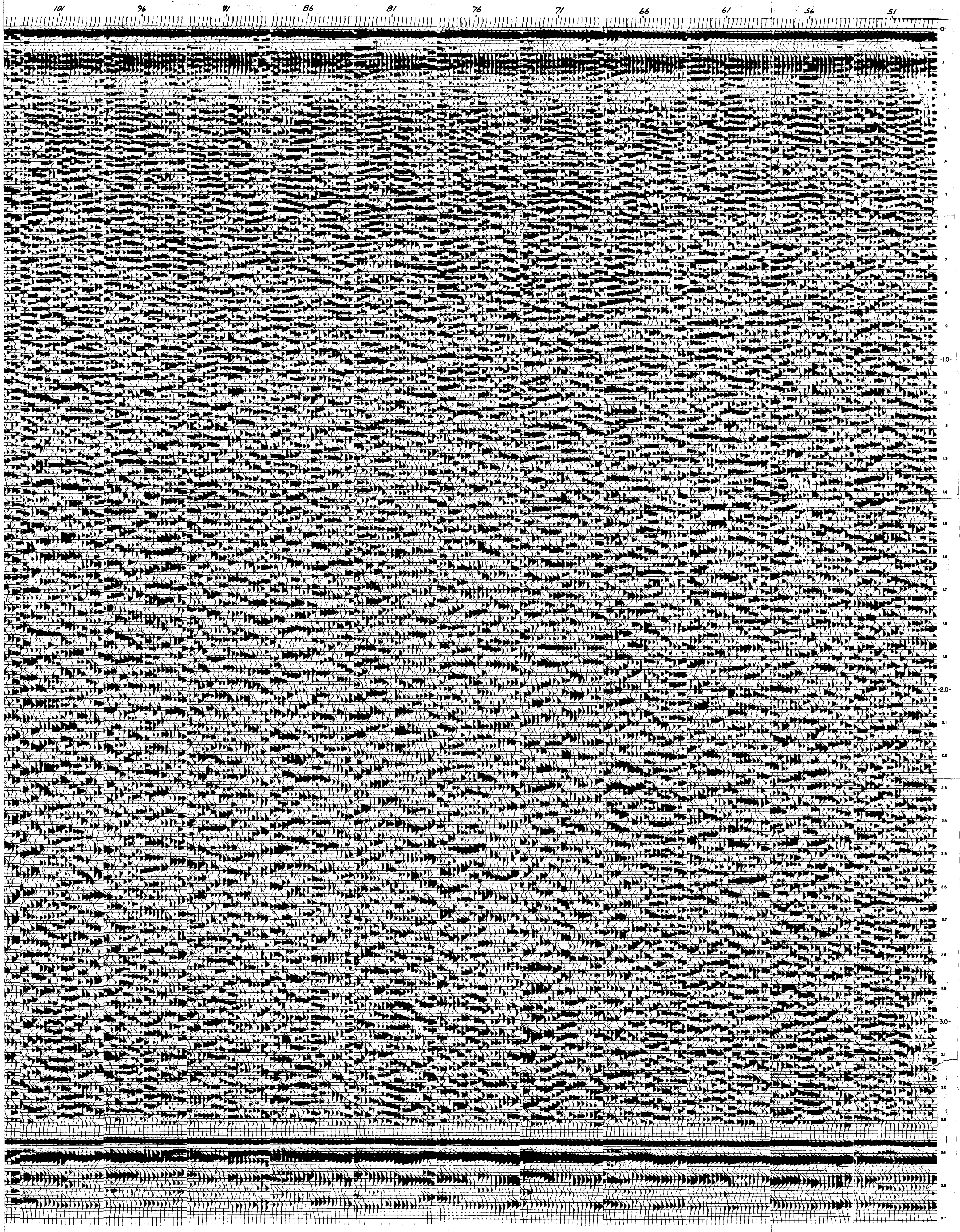
91

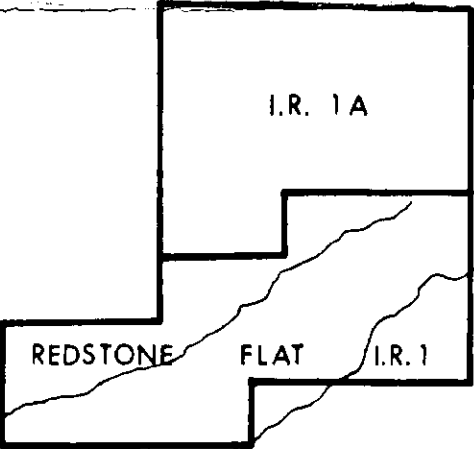
86



12

N



[illegible][illegible]

DATA ON THIS MAP HAVE
BEEN CORRECTED BY:

- ☐ NORMAL UPHOLE
- ☐ CRITICAL DISTANCE
- ☐ TIME INTERCEPT
- ☐ CURVE PATH
- ☐

PETROLEUM BRANCH
 ASSESSMENT REPORT
 NO. _____ ENCLOSURES _____

The map shows two transects, 93C and 92N, with sampling points and vegetation types. Transect 93C is located in the upper part of the map, and transect 92N is located in the lower part. The map includes a scale bar (0 to 1000 meters) and a north arrow. The vegetation types are labeled as CHIRANAN FOREKS, REDSTONE, ALPIS CREE, and TATAYONG LAKE. The sampling points are numbered 1 through 16.

Transect	Point	Vegetation Type
93C	16	CHIRANAN FOREKS
	13	REDSTONE
	14	ALPIS CREE
	9	CHIRANAN FOREKS
	12	REDSTONE
	11	ALPIS CREE
92N	8	CHIRANAN FOREKS
	5	REDSTONE
	6	ALPIS CREE
	1	CHIRANAN FOREKS
	4	REDSTONE
	3	ALPIS CREE
92N	16	TATAYONG LAKE
	13	TATAYONG LAKE
	14	TATAYONG LAKE
92N	9	TATAYONG LAKE
	12	TATAYONG LAKE
	11	TATAYONG LAKE

Hudson's Bay Oil and Gas Company Limited		
EXPLORATION DEPARTMENT		
CALGARY	ALBERTA	
REDSTONE GEOPHYSICAL LOCATION MAP <i>WITH SURFACE ELEVATIONS</i> <i>1587-2</i>		
CONTOUR INTERVAL: sec. (' for ' /sec.) TIE IN INTERVAL: sec. THICKNESS or DEPTH: ' /sec. ELEVATION REFERENCE: ft. VELOCITY: ' /sec. AUTHORS AFFILIATION or MAP SOURCE:		
SCALE 1" = 4 KM	AUTHOR	DATE
FILE No.	C-3-H	1328