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Abstracted for  
Geo-Science Data Index

Date \_\_\_\_\_

FINAL REPORT-GRANDVIEW AREA-N.W.T.

for  
SUN OIL COMPANY by

CATALINA EXPLORATION & DEVELOPMENT

GEOPHYSICAL REPORT ON A SEISMIC SURVEY  
OF THE GRANDVIEW AREA, N.W.T.

The two enclosed maps were the result of a seismic survey of the Grandview N.W.T. area. The survey was carried out between the months of February to April 1971.

The program consisted of 154 miles of line of four fold dynamite data. The R.O.C. Grandview Hills well was used as the base of the surveying control and all positions and elevations throughout the survey were referred to this well location as surveyed by Western Geophysical Co. in 1961.

The identification of the Middle Devonian horizon is being made on the basis of the velocity and depth data provided by this well. The data were adjusted to a 900 foot above sea level datum plane using a correction velocity of 10,000 ft./sec.

*Peter Chaney Jr.*

P.E. Chaney, Jr.  
August 4, 1971

PEC:mmc

Enclosures

Approved: \_\_\_\_\_

*P. E. Chaney Jr.*  
Arctic District  
Geophysical Supervisor



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FINAL REPORT - GRANDVIEW AREA - N.W.T.

for

SUN OIL COMPANY

by

CATALINA EXPLORATION & DEVELOPMENT LTD.

1. ABSTRACT

A seismic survey was conducted in the Grandview Hills Area of the Northwest Territories, for Sun Oil Company. The prospect consisted of 154.3 miles of line shot for four fold common depth point stack. All data was recorded in digital binary gain format.

2. FIELD PROCEDURES

Location: See figures I and II  
Shooting Dates: February 7, 1971 to April 8, 1971  
Licence No.: 1681

a) SURVEYING

Surveying was accomplished with a Wild T-16 Theodolite. Group positions and shot points were chained and elevations were determined for all stations and shot points. Notes were worked in the field to determine ties and then sent to Sun Oil, in Calgary, where they were computerized using Sun's survey programs. Survey control was obtained from R.O.C. at al Grandview Hills Well located on the north end of Line "D". Star shots were taken at various points in the Prospect to determine true North including one at the well site. The survey was tied within itself and all loops closed within the normal allowable error.

b) SHOOTING

Single holes, 50' deep were loaded with 5 pounds of powder. Detonation was performed remotely by radio.

c) RECORDING

All data was recorded in digital format using Texas Instrument DFS III. Format was 21 track and 1" tape. A 2-ms sample rate was used to record 5 second records. Recording filters were 12 c.p.s. low cut with a 36 db slope and a 124 c.p.s. high cut.



Uphole and time break were recorded remotely by radio.

d) SPREAD DIAGRAM

All data was shot for four fold common depth point stack using a group interval of 150 feet and a shot point interval of 450 feet. Shot points were on the stations. Each group consisted of 8 Mark L-10 14 c.p.s. geophones spaced at 18 feet apart. (See figure IV). The cable consisted of sixteen sections of 56 conductor cable with 6 take-outs per section spaced at 155 feet.

e) TERRAIN

The east half of the Project was generally very hilly with elevations ranging from 550 feet to 1,500 feet above sea level. Numerous short steep hills made it very difficult to negotiate some of the lines in this area with wheeled vehicles. The west half of the Project was generally flat and movement along lines easy. The Project was covered with numerous lakes ranging up to 3 miles long by  $1\frac{1}{2}$  miles wide. Tree cover was generally light with some heavier stands of spruce along the creeks.

f) SUPPLY AND CREW  
SUPPORT FACILITIES

The crew was moved in by barge from Norman Wells via the MacKenzie River. All fuel and explosives were barged from Hay River and stockpiled with the camp and equipment on the west bank of the river opposite "Little Chicago". The geographical co-ordinates of camp-site and stockpile are  $67^{\circ} 08' N.$  Lat. and  $130^{\circ} 17' W.$  Long. (approximately). The barging in of equipment and supplies was carried out in September, and two men were sent in to set up and watch camp. The stockpile consisted of 33,733 gallons of gasoline

and 33,785 gallons of diesel fuel which was stored in rubber pillow tanks, supplied by Sun Oil. Dynamite and caps were put in by Ace Explosives which consisted of 18,000 pounds of Hi-Velocity 60% 2 1/2 lb. dynamite, 960-60 foot caps, 3000-50 foot caps plus all accessories. The expediting was looked after by Catalina out of Norman Wells for the first half of the Project, then by Hanvold Expediting in Inuvik until the conclusion of the job. Aircraft for the first half of the Project was supplied to Catalina by Liberty Airways. The equipment was one Asten aircraft on wheels only and was stationed in Norman Wells. This aircraft did not prove to be very satisfactory and would not recommend its use for this area or type of operation again. For the remainder of the operation, Northward Aviation was used on a casual basis out of Inuvik. The majority of Northward's flights were made with a single Otter on skis. Cessna 180, Beaver and Twin Otter were also used depending on the size of load required. Five Airstrips were constructed during the job. The first being an Ice Strip on the river at stockpile site, the second a Bush Strip and the last three were Ice Strips on lakes. Fuel was hauled from the stockpile at river to fuel sloops on crew by a 1,500 gallon tank truck on wheels. The average haul was approximately 32 miles one way. This method of fuel supply proved to be quite satisfactory.

### 3. EQUIPMENT

The basic crew consisted of the equipment listed below:

- a) Party Managers Vehicle:  
3/4 ton pick-up and skidoo.

- b)       **Surveyors Vehicles:**  
          3/4 ton 4x4 crew cab  
          J-5 Bombardier
- c)       **Recording Crew Vehicles:**  
          1 3/4 ton 4x4 crew cab  
          1 S-200 Foremost  
          2 S Model Bombardier
- d)       **Mechanics Vehicle:**  
          1 ton flat deck c/w gin poles and water truck  
              for camp water supply.
- e)       **Drill Units:**  
          1 Failing Holemaster (air) on tandem truck  
          1 Mayhew 1000 (air) on single axle truck  
          1 Mayhew 1000 (air) on R-180 Modwell tracked vehicle  
          1 Failing CFD-1 (air) on R-110 Modwell tracked vehicle  
          1 3/4 ton 4x4 crew cab  
          1 3/4 ton pick-up (two-wheel drive)  
          1 3 ton shop truck - parts van
- f)       **Camp - 42 man - wheeled (3 axel)**  
          3 - 12 man sleepers  
          1 - office sleeper (4 man)  
          1 - wash trailer sleeper (2 man)  
          1 - kitchen-diner  
          1 - storage unit on skids (beated)  
          1 - shop - power plant unit - on skids  
          2 - fuel sloops on skids - each with one 500 gallon propane  
              tank and four, 500 gallon fuel storage tanks.
- g)       **Cats:**  
  
          The cats were contracted from G.D. Beattie Construction Ltd.,  
          of Dawson Creek, British Columbia and consisted of four D-7  
          Cats c/w camp and a 3/4 ton 4x4 service truck. Three cats  
          were equipped with winches and one with ripper.

4. CATALINA BANKRUPTCY

On March 4, 1971 Catalina Exploration & Development Ltd., went into voluntary bankruptcy and all of its operations were stopped. Sun Oil was notified, and on March 5, 1971 negotiations were begun to determine how Sun Oil could complete their project with the least amount of time and expense. Without going into detail, it was agreed that Sun Oil would take over the complete crew and pay the Trustee of the bankrupt Catalina an hourly rate for their equipment based on recording hours. Personnel were retained and paid by Sun as well as the sub-contracted parties e.g., cats, drills and catering. At the time of bankruptcy, approximately 25 miles of line had been shot and the recording crew was out on time off, due to the lack of holes. The drill crew was shut down on March 5, 1971 because of the bankruptcy and returned to work again on March 6, 1971. The recording crew commenced work again on March 10, 1971 as the drilling conditions had improved and they were substantially ahead of the recording crew. All drilling on the project was completed on March 29, 1971 and recording completed April 3, 1971.

RECORDING STATISTICS

<u>MONTH</u>	<u>NUMBER OF RECORDING DAYS</u>	<u>MILES SHOT</u>
February	11	28.37
March	21	93.53
April	<u>5</u>	<u>32.30</u>
TOTALS	37	154.20 (subsurface) 159.37 (surface)

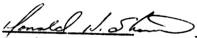
Average mileage per day - Subsurface 4.17  
- Surface 4.31

KEY PERSONNEL

The following list of people were in charge of the survey -

Donald H. Strand	Operations Manager - Catalina
Cam Watt	Operations Manager - Catalina
George Nowatt	Supervisor - Beaver Geophysical
H.D. Chaney	Supervisor - Sea Oil
P. Voth	Party Manager
Paul Gibson	" "
Don Johnson	Operator
L. Cedergren	Surveyor
R. McIntosh	"
R. Smith	"

Submitted by

  
Donald H. Strand

## FIELD OPERATIONS SUMMARY

1 of 2

Company SUN OIL COMPANY Party No. 301

Prospect No. X-202 Area Grandview

County MacKenzie State N.W.T. Crew Headquarters Camp

Date Started February 12, 1971 Completed April 5, 1971 Time Spent 57 Days (Net)

Type Survey: ☒ Reflection ☒ Land Miles of Subsurface Coverage 189.37  
☐ Refraction ☐ Marine Range of Water Depths \_\_\_\_\_

## COSTS:

Total Cost \$423,280.72 (Data Gathering Including Permits)  
 Average Cost per Mile \$2,236.00 (Data Gathering Including Permits)  
 Total Processing Costs (If Available) \_\_\_\_\_  
 Permits and Damages nil Per Mile/S.P. \_\_\_\_\_

## PERSONNEL:

Field Supervisor Donald H. Strand Operator Ron Johnson  
 Party Chief Paul Gibson Surveyor Ron Smith  
 Contractor and Subcontractor Catalina Exploration, Elgin Drilling & C.D. Beattie Construction  
 Total Personnel (Including Contractor, Local Labor, etc.) 39

## INSTRUMENT:

Make Texas Instrument Series DPS III Instrument No. 32

☒ Digital Sample Rate: ☐ 1 ☒ 2 ☐ 4  
☐ Analog No. Channels: ☒ 24 ☐ 48

Amplifier Type Binary Gain Field Filters: Hi 124 Lo 12

Magnetic Recorder Type Texas Instrument No. \_\_\_\_\_

Tape Format TIAC-21 track

Field Stacking Types 40% - SP 450' spacing

## ENERGY SOURCE:

Explosive

Total Holes Shot 1,783 Usual Depth 50'  
 Average No. Holes/Pattern 1 Size of Pattern Array 1  
 Type Explosive Dupont 60% Average Charge Size 5 lbs.

Vibroseis

Number Vibrator Units \_\_\_\_\_ Usual No. Sweeps/V.P. \_\_\_\_\_  
 Sweep Frequencies \_\_\_\_\_ Vibrator Pattern \_\_\_\_\_

Other Energy Sources - Pertinent Data \_\_\_\_\_

## DETECTORS:

Line Drawing No. 390 Hookup Series  
 Average No. Det./Channel 8 Frequency 14 Cps  
 Type Detector L-10 String Drawing No. 69703  
 Usual Detector Array 8 inline  
 Group Spacing 150' Planting Spike

## SPREADS:

Total Spread Length 3600' Stacking Capability 400 %  
 Location S.P. Relative to Spread 0-150-3600'

## SURVEYING:

Type Survey (Transit, Plane Table, etc.) Transit  
 Elevation Tie Points Well site, line intersections  
 Traverse Tie Points Well site, line intersections

Anticipated Accuracy ☒ Good ☐ Fair ☐ Poor  
 Remarks Sun surveyor re-ran complete prospect. Well site used for take-off and all lines tied back to well site. Star shots taken for horizontal control.

## DRILLING RIGS:

No. 4 Models Failing Holemaster Truck Holes per Day/Av. 9.74  
 Comments Mayhew 1000 Truck  
Mayhew 1000 Truck  
Failing CPD-1 Track (all drills with air)

## SPECIAL TRANSPORTATION (Boats, Buggies, etc.)

Equipment barged up the MacKenzie River and moved to locations by bulldozer. Aircraft used for crew supplies.

## UNUSUAL FIELD PROBLEMS (Attach additional page if necessary.)

Catalina Exploration & Development Ltd., filed bankruptcy during operations. Sun Oil took over crew to complete project.

Donald H. Skid  
 August 6, 1971  
 Date



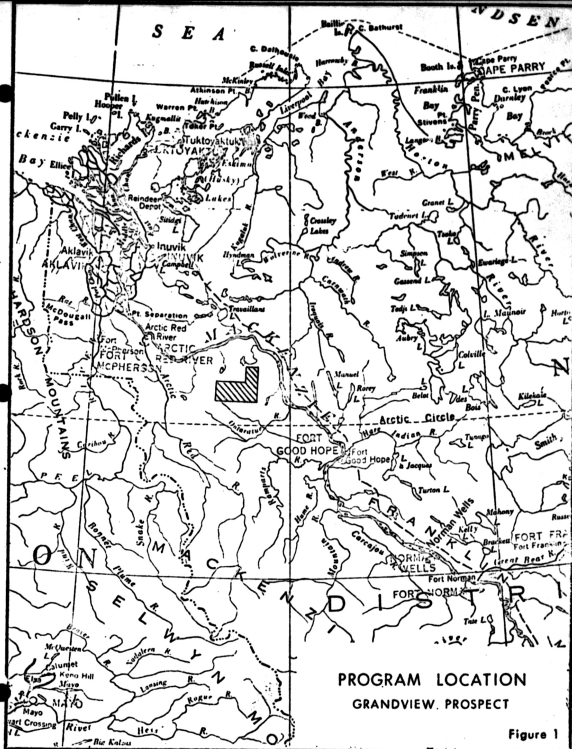
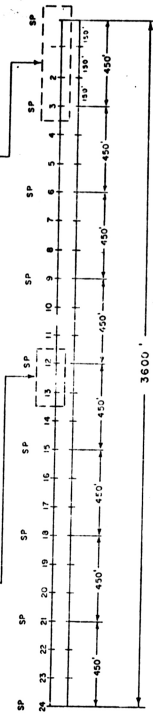
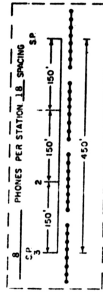


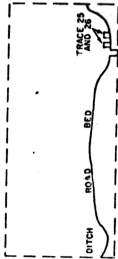
Figure 1

AREA 

JOB NO. \_\_\_\_\_



USED BY SUN OIL CO.



TRACE 26 - UPHOLE LOG FROM HOLE - RADIO 5 M S. DELAY

CONFIGURATION FOR TWO UPHOLES.