

152001



FINAL OPERATIONS REPORT

MARINE SEISMIC SURVEY

CLIENT : AMOCO AUSTRALIA PETROLEUM COMPANY

CONTRACTOR : GEOPHYSICAL SERVICE INC

VESSEL : M/V EUGENE MCDERMOTT II

LOCATION : T-14P, T-18P, T-22P.

PROJECT NAME : 1985-B MARINE SEISMIC SURVEY



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SECTION I

INTRODUCTION



SECTION I

INTRODUCTION

A 2D marine seismic survey was conducted for AMOCO between 9th October and the 16th November 1985. The data was collected in the Bass Basin (Permits T-14P, T-18P and T-22P) north of Tasmania.

The purpose of the following report is to provide the reader with an insight into methods and equipment used by G.S.I to collect the data and also to highlight any problems that were encountered during the survey period.

Section I(i) consists of statistics of the Motor Vessel Eugene McDermott II.

Section I(ii) contains a list of key personnel involved with operation and maintenance of instruments and equipment employed in collection of the data and also those responsible for the assurance of quality and integrity of data recorded.

An overview of the instrumentation is detailed in section II, with section II(1) containing a brief description of the theory of operation of G.S.I.'s unique equipment. Section II(2) involves both details and discussions of the instrumentation and equipment incorporated in onboard operation.

Information regarding positional systems in use during the survey, including base station data, system calibration and navigation tape summaries are outlined in section III.

In the final section (IV) all aspects of operational procedures are provided and include shipment details and survey statistics.

A number of plates are attached with this report which illustrate various supplementary details involved with data collection and processing techniques and equipment.

1. SURVEY VESSEL - M/V EUGENE McDERMOTT II

Flag	Republic of Panama
Homeport	Panama
Trade	Foreign-going
Owners	Geophysical Service Inc.
Call Sign	HO 9376 (Telex: HOMC 1330706)
Length	52.73 metres L.O.A.
Breadth	12.19 metres B.O.A.
Depth	4.27 metres
Draft	3.05 - 3.24 metres
Official No.	7062-PEXT-1, 7685/77
Gross Tonnage	911.66 Tonnes
Nett Tonnage	244.21 Tonnes
Main Engines	2 x 1125 HP (D399 Cat.)
Elec. Power	2 x 250 KVA Cat D
Load Line	LLoyds Register

ii. KEY PERSONNEL

Party Manager	R. Barrick, A. Welfare
Systems Engineers	N. Blake. S. Dowling R. Burgoyne K. Weber
Survey Operators	P. Blake T. Hartley
System Operators	D. Starling N. Blake R. Burgoyne R. Hill (trainee) M. Milne. (trainee)
Technical Co-ordinator	M. Wilson
Quality Control	M. Wilson D. Murray
Nav Personnel	P. Young (Geomex)
Magnetics & Gravity	H. Oehl A. Conwell (Edcon)
Compressor Mechanic	K. Bakewell R. Barnes
Airgun Mechanics	T. Prentice J. Nieuwenhuize R. Taylor R. Cush
Master	C. Grubba M. Gusterson
Vessel Supervisor	W. Lee
Client Representatives	F. Renton



SECTION II

INSTRUMENTS

SECTION II (1)(i) THEORY OF OPERATION :- MULTIPLEX STREAMER

The Texas Instruments multiplex streamer consists of four major in water elements, Live Section I's, Live Section II's, Streamer Electronic Modules and Repeater Modules. Configured for 240 traces, the cable comprises of 20 separate "clusters" each handling a group of twelve traces. The three components making up each cluster are a SEM placed between a live I and a live II, with each live section containing 6 separate 15 metre groups. Each group or trace contains 40 acceleration cancelling "dish" type hydrophones, wired in parallel.

Data from the six traces in a live section is passed to their associated SEM where preamplifier gain is applied before the signal is low cut filtered if required. The analog signal is then digitized before being time multiplexed and passed in serial phase encoded format to the head of the live I section where it is converted to a fibre optic signal. Along with the data from the twelve traces, each SEM data block contains a Configuration Status and a Q.C. Status word. These two 16 bit words are used in the onboard Supervisors Terminal to monitor the integrity of the data being received.

The sequence of data flow in the streamer begins at SEM #1 which is programmed as the Last Active Module. Each subsequent SEM places its 18 word data block behind the previous SEM's information. Therefore SEM #20 data is the last to arrive at the Data Acquisition Unit.

A repeater module is placed between each lead-in section (including the stretches) for the purpose of resynchronising and retiming of the fibre optic data stream as it travels between the last active cluster and the onboard electronics. This is a function which is also performed in each SEM, thereby negating the need for repeater modules in the active section of the streamer.

Synchronization between SEMs is maintained via the Command Bus. This bus operating at a 12 kHz rate is also the means in which commands are conveyed from the supervisor terminal and each SEM. Typical commands include the switching of low cut filters, the setting of preamplifier gain constant and the driving of the SEM's impulse and leakage test circuit.

SEM seismic data is supplied to the recording equipment at a 1ms sample rate and subsequent resampling is performed in the Data Acquisition Unit.



ii. THEORY OF OPERATION :- TRACE SEQUENTIAL RECORDER

The G.S.I. Trace Sequential Recording system is comprised of three main units, the Data Acquisition Unit, the Supervisory Terminal and the Data Recording Unit. Each unit serves a complete and separate function but all are integrated to form the data recording system.

The Data Acquisition Unit provides all interface requirements of the multiplex streamer. The data reception logic in the DAU converts the phase encoded optical data from the streamer into an electrical signal in NRZI format. The serial data is then converted to parallel and any resampling or trace mixing is performed subsequent to anti-alias filtering, which is achieved with the use of digital filters. D.C. offset removal is also a function performed in the Data Acquisition Unit.

The Supervisor Terminal is the means of communication between the operator and the recording and acquisition units. All configuration of streamer and recording parameters are set through software by the operator. The ST also performs quality control checks of both SEM data received and data recorded to magnetic tape. Any errors which may occur within the system during recording appear on the error log screen and are also printed to a T.I. 810 printer interfaced to the S.T.990 computer. The Supervisor Terminal also provides a communications link between the CMS III and the recording instruments. This enables header information such as shotpoint number, Julian time and line number and ID to be transferred to tape. Inversely, the ST passes record and tape reel numbers as well as error information to the CMS III for use in the Automatic Data Logging facility, discussed later in this report.

ii. THEORY OF OPERATION :- TRACE SEQUENTIAL RECORDER (cont.)

The Data Recording Unit ,controlled by its own microprocessor, is responsible for accepting the filtered multiplexed data from the Data Acquisition Unit and reformatting it into a Trace Sequential format. This is achieved by reading all of the sampled data for one complete seismic record into mass memory and then "picking" the data out from memory in a fashion which places individual trace data in blocks of complete record samples in a sequential order. This sequential data is then formatted into SEG D with the addition of general,extended and trace headers. Conversion to the Group Coded Recording system is performed by a Telex brand tape formatter which is interfaced to one of three Telex 6253 , tri-density tape transports. Reproduce display is a function also handled in the DRU, with oscillograph, oscilloscope and servo-profiler displays being controlled by the Multiplex Display Board in the DRU. Reproduce gain levels are set through the S.T. software.

System flow charts and SEG D tape format plates are attached with this report. (See index)



iii. THEORY OF OPERATION :- CONFIGURABLE MARINE SYSTEM

The Configurable Marine System's (CMS) primary roles are to maintain survey control and to record navigation and quality control data to magnetic tape, although a large number of other functions can be performed dependant on survey requirements. The heart of the CMS system is a Texas Instruments 980B mini computer. The 980 controls the flow of data between all peripheral devices. A Texas Instruments 990 mini computer and video display terminal dedicated to quality control functions (990 QC) provides the means of operator interface to the 980 system. Through the 990 QC terminal all relevant job parameters for line control are initiated to the 980B.

Another 990 mini computer, dedicated to navigation control, provides the 980 with position fixing information at a pre-determined time interval. The 990 NAV system is capable of interfacing with a wide variety of radio positioning systems with a maximum of twelve individual range data inputs. Using combinations of these range inputs a geodetic fix position, vessel speed and heading are calculated. This fix position is passed to the 980 which, using speed and azimuth supplied by either doppler sonar and ships gyro or RPS data, dead reckons between fixes. Shotpoint positioning during a survey line is achieved in the distance mode with the CMS issuing the airgun controller and recording systems with a shot request after every 30 metres of travel. Generally real time navigation is accomplished using a three way fix routine for fix information to the 980. Occasionally, however, due to either station geometry or signal stability, it may become necessary to remove a particular station's data from the fix routine. In this instance, although data from the "dropped" station is no longer being used, it is still recorded to magnetic tape (as is data from any alternate navigation systems interfaced to the 990 NAV) and may be used in post processing if required.

As well as navigation control with the 990 NAV system the 980 is interfaced to the Texas Instruments TIGER II airgun controller, another 990 mini computer based unit. This system controls all gun firing times by calculating delays from a true firing time history table. This ensures the tuned gun array is always performing at maximum energy efficiency. A video display terminal allows operator monitoring of gun statistics and performance details. Any gun related errors are transferred to the 980B for use by the Automatic Data Logging system (ADL). The ADL is a quality control system which logs to navigation tape any survey related data, whilst providing a hard copy of this data to the operator via the 990 QC 810 printer.



iv. THEORY OF OPERATION :- ENERGY SOURCE

An electro-pneumatic acoustic energy source known as an airgun was used for reflection work. An airgun has only two moving parts. A shuttle and a solenoid. The airgun consists of an upper and lower air chamber connected by an air passage through a moveable shuttle. Another air passage links the upper chamber with the underside of the upper flange of the shuttle and this air passage is controlled by a solenoid valve. Air, at a pressure of 2000 psi (13.8 Mpa), enters the upper chamber through its inlet forcing the shuttle closed. The shuttle is held firmly closed because the area of its upper flange is greater than the area of its lower flange. The main volume of air passes through the channel in the shuttle into the lower chamber. To fire the airgun a command from the Texas Instruments airgun controller unit (Tiger II) activates the solenoids and retracts a plunger. This permits air to pass through a porthole to the underside on the lower shuttle. This neutralizes the downward pressure of the shuttle leaving only the upward pressure on the lower flange from the lower air chamber. The rapid expulsion of air creates the bubble and resultant pulse. The air bubble collapses in a manner similar to that caused by explosives except that its period is controlled and is placed in the desired seismic frequency band.

The energy source used by the M/V Eugene McDermott II was a tuned array of 4075 cu. ins. total capacity. The array was designed for deep penetration and good resolution, having a broadband frequency output that extends below the normal low frequency band for seismic energy sources.

The array includes three low pressure ended air lines each side of the array so that the depth can be monitored by means of static air pressure at all times. The array was ballasted with the use of plastic Norwegian buoys to ride at the contract specified depth.

The Texas Instruments airgun controller (Tiger II) monitored the firing of each airgun in the array. Individual gun firing times were continuously controlled to give phasing within +/- 1 ms for maximum pulse amplitude and front to back ratio.

The Tiger II also performed a quality control function by indicating, with individual gun LED displays, the status of a gun if it was not operating correctly, either self fire or no fire. The airgun performances were logged on both the CMS navigation tape and printer log.



SECTION II (2)

INSTRUMENT DETAILS AND DISCUSSIONS

SECTION II (2)i. MULTIPLEX STREAMER DETAILS

Length (centre to centre)	3600 m
Group Interval	15 m
Live Section Length	89.77 m
Stretch Section Length	100 m
SEM Module Length	0.46 m
Repeater Module Length	0.3 m
No. of Hydrophones per Group	40
Hydrophone Interval	0.375m
Hydrophone Type	TI - ACR
No. of Stretch Sections	4 Front, 1 Tail
Skin Type	PVC Tropical
Location of Depth Transducers on Sections	As per Remote Compass Units and on all Live I sections
Location of Depth Controllers	12/13, 36/37, 60/61, 85, 108/109, 132/133, 156/157, 180/181, 204/205, 228/229, 235, 240.
Near Group	240
Streamer Sensitivity	8.20 uv/ubar

i(a) MULTIPLEX STREAMER DISCUSSION

The streamer depth control was maintained by proper ballasting and the use of individually addressable remote controlled "Syntron" depth levellers (birds). Streamer depths were constantly monitored throughout the survey. The depth transducers were located just before the SEM in every live I section. These depths were displayed on the TSR's Supervisory Terminal. A 'hard copy' of the depth display was printed out at the end of every line (the sample period was every 50 shotpoints).

On the morning of the 24 October 1985 during a period of weather downtime, approximately ten kilograms of lead was secured to the far front end stretch section, as the near groups showed a tendency to ride shallow when sea conditions increased. This addition proved helpful in prolonging the recording time during periods of rough seas.

During the line change between TQH5-19 and TQH5-19A, streamer clusters fifteen and sixteen were observed to be riding excessively deep. The streamer was retrieved and the bird between these two clusters was found to have reversed after the front holding collar had parted. Repairs were performed and the streamer deployed, after which, no further ballasting problems were encountered.

Four stretch sections were incorporated between the vessel and the last active section to attenuate any front end jerk and propeller oriented noise bursts. The stretch sections were weighted with lead to aid in front end ballast. A bird was placed at the head of the stretch for fine adjustment of front end depth which tends to alter with vessel speed and tidal conditions. Another stretch section, along with approximately 200m of nylon rope, was placed between the tailbuoy and the first active section to reduce tailbuoy induced noise bursts.

Streamer feather angle was monitored every 100 shotpoints by observing the difference between the line heading and the bearing of the tailbuoy as displayed on the ship's radar, at times when the feather angle exceeded 7 degrees readings were recorded every 50 shotpoints and the client representative informed.



i(a) MULTIPLEX STREAMER DISCUSSION (cont.)

Eight seismic lines were terminated because of streamer failure. The majority of problems were streamer electronics modules (SEMS) causing synchronizing and parity errors on streamer data. Line TQH5-90 and TQH5-24 were terminated and completely reshot after reoccurring streamer parity and sync. errors. Lines TQH5-24 and TQH5-17 were terminated for the same reason, however earlier data on both lines was considered acceptable so they were overlapped and continued.

Power failure accounted for the termination of two lines. After shotpoint 507 on line TQH5-109 power to the entire streamer was lost, no fault was located and the vessel circled and continued the line. The same situation occurred after shotpoint 495 on line TQH5-78. During the run-in to line TQH5-115 the aft power relay in the SEM of cluster 14 failed, this meant that no power was available to clusters 1 to 13. The run in was aborted, the streamer retrieved and the offending SEM replaced.

Both line TQH5-137 and TQH5-153 were terminated because of spiking pulses on channels in a single cluster, both lines were reshot after the appropriate streamer repairs.

The SEMS that proved faulty during the survey were tested onboard the vessel and then forwarded to the manufacturer for repairs.

ii. RECORDING SYSTEM DETAILS

Recording System	Trace Sequential Recorder Serial Number 001
Tape Format	SEG D. Group Coded Recording 6250 bpi
Tape Speed	125 ips
Channels (on tape)	241 (includes 1 auxiliary)
Gain Control Mode	I.F.P.
Sample Interval	2ms
Record Length	6 secs
Recording Delay	0 secs
Preamplifer Gain	12 dB
Final Gain	96 dB
Dynamic Range	115 dB (referred to input noise)
Filters	Lowcut 8 Hz @ 18 dB/8ve High cut 128 Hz @ 72 dB/8ve
Polarity	Positive Pressure Gives Positive Number on Tape



ii. RECORDING SYSTEM DETAILS (cont.)

SEG D FORMAT

Each shot consists of;
A 576 byte record plus 195 x 6164 byte data trace records.

576 byte record :-

general header	32 bytes
6 channel set descriptors	192 bytes (6 x 32)
8 sample skew headers	256 bytes (8 x 32)
3 extended headers	96 bytes (3 x 32)

	576 bytes

Data trace record :-

of bytes = $20 + T_{max} \times 1024 \times 2/DT$

where : T = max recording time in seconds
DT = sample period in milliseconds
20 = # of bytes/trace header

of bytes = $20 + 6 \times 1024 \times 2 / 2$

of bytes = 6164 bytes

For a more detailed description see attached plates with this report.



ii. RECORDING SYSTEM DISCUSSION

On completion of recording of a seismic line all magnetic tapes were replayed on an alternate transport to ensure readability and data integrity. A record header was also decoded and analysed after every line as a confirmation of correct system setup and Q.C. data transfer to tape.

On several occasions the recording system was responsible for the termination of a seismic line. Generally the cause of the cessation of recording could not be determined, however the data recording units' software was the most likely cause, as the recording system operated normally once the software had been reloaded. Lines TQH5-141, TQH5-16 and TQH5-66A were terminated and completely reshot because of recording system software "hangups", line TQH5-19 was terminated for the same reason however the line was continued with a suitable full-fold overlap.

Between shotpoints 505 and 532 on line TQH5-157, a communication breakdown between the Trace Sequential Recorder and the Configurable Marine System meant that shotpoint numbers were not being relayed to the recording system. Therefore on field tape records 505 to 532 shotpoint number 505 is written in the headers. The correct shotpoint number record number relationship is clearly logged on the observers logs, the actual relationship remained synchronized throughout the line eg. shotpoint 506 was recorded on record 506 and shotpoint 532 was recorded on record 532.

The analysis of the quality assurance tests performed on the Sems prior to the surveys' commencement showed channel one of Sem 249 as having a noise level 1.8 microbars greater than the manufacturers specified maximum. As the results of the tests were not received on the vessel until the later part of the survey the Sem was inserted into the steamer at position seventeen at 0900 hours on the 2nd of November and removed at 1358 hours on the 6th of November. Channel one of steamer cluster 17 is equivalent to trace 193. No excessive ambient noise levels were observed on this trace during the period Sem 249 was in use.

iii. SERVO PROFILER DETAILS

Manufacturer	EPC Labs
Model	3200
Serial Number	252
Source	Trace Number 236
Record Length	4 secs
Gain Mode	PGC
Filters	Production Filters

iii(a) SERVO PROFILER DISCUSSION

An event mark appeared on the profiler charts at a 50 shotpoint interval with the relevant shotpoint number annotated on that mark. This was done to aid in interpretation.

iv. FATHOMETER DETAILS

Manufacturer	Simrad
Model	EA
Water Velocity Value	1484 m/sec
Transducer Position with respect to CNP	16.7 m forward
Draft Correction	3.5 m
Calibrated	27th August 1985.

iv(a) FATHOMETER DISCUSSION

At a 50 shotpoint interval an event mark was logged to the fathometer strip chart with the relevant shotpoint number and water depth annotated alongside the mark. On any occasion where it became necessary to change fathometer scale, the shotpoint number and new scale were also logged on the chart.

The fathometer was operational for all recorded seismic lines and proved trouble free for the entire duration of the survey.

v. OSCILLOGRAPH (CAMERA) DETAILS

Manufacturer SIE
 Model ERC-10C
 Number of Channels 64, with 62 being used
 Polarity Positive pressure at the hydrophones gives positive numbers on tape and an upbreak on the camera records

Camera records display 60 data channels and a record number with identification code as listed below.

<u>Display Code</u>	<u>Camera Display</u>
0	Traces 1, 2, 3, 4, 58, 59, 60
1	Traces 61, 62, 63, 119, 120
2	Traces 121, 122, 123, 179, 180
3	Traces 181, 182, 183, 239, 240
4	Traces 1, 5, 9, 233, 237
5	Traces 2, 5, 10, 234, 238
6	Traces 3, 7, 11, 235, 239
7	Traces 4, 8, 12, 236, 240
8	Traces 1, 3, 5, 117, 119
9	Traces 121, 123, 125, 237, 239
10	Traces 2, 4, 6, 118, 120

v(a) OSCILLOGRAPH DISCUSSION

Five separate camera records were produced at a fifty shotpoint interval whilst recording a seismic line. This provided a hard copy of every individual trace available in the streamer for the purpose of Q.C. analysis. A "noise strip" was recorded prior to commencement and on completion of each line, then replayed to the camera to visually display the ambient streamer noise levels for each line.

Generally the camera records were of a high standard and the instrument performed without failure during the survey period.

vi. GRAVIMETER DETAILS

Operator	Edcon
Manufacturer	La Coste & Romberg
Serial Number	S 50
Sensor Distance from Stern	25.6 m For ^o d
Sensor Distance from Centreline	1.8 m To Port
Recording System	Kennedy 9800
Chart Recorder	T.I. Servo Riter II

vi(a) GRAVIMETER DISCUSSION

The collection of gravity data commenced after a suitable sensor stabilisation period, on completion of the vessels turn to line heading. This was usually on the run-in to the majority of seismic lines. Gravity data was also collected on three occasions that the vessel was on transit to or from Devonport. Gravity data was recorded on 800 BPI 9 track magnetic tape using a Kennedy 9800 recording unit, interfaced to Edcon's stand alone recording system. Gravity data was not collected during the extension to the survey.

vii. MAGNETOMETER DETAILS

Operator	Edcon
Type	Airborn Proton Precession
Recording System	Kennedy 9800 (see discussion)
Chart Recorder	Geometrics G803
Sensor Distance From Stern	275 m Aft

vii(a) MAGNETOMETER DISCUSSION

Recording of magnetometer data commenced during the run-in to the majority of seismic lines. This was possible as the magnetometer sensor tow cable, being only 275 m long, required a short distance for straightening, relative to the seismic streamer. Magnetics data was recorded on CMS tape for the first portion of the survey and on a Kennedy 9800 magnetic tape recorder after the 22 October. This was when the interface cable between the magnetometer and the Edcon recording system became available. Magnetometer data was not collected during the extension to the survey.

viii. ENERGY SOURCE DETAILS

4075 cu in Airgun Array

Operating Volume	4075 cu. ins.
Total Spare Volume	770 cu. ins.
Operating Pressure	1900 psi
Operating Depth	10.0 m +/- 1.0 m
Timing Control	Tiger II
Firing Delay	51.2 ms
Compressors	3 Norwalk C600 3 Le Roi 750

Setback:

Distance from CNP To Centre of Gun Array	54.4 m
Distance from Stern To Centre of Gun Array	39.2 m

viii(a) ENERGY SOURCE DISCUSSION

The airguns were maintained by GSI personnel on line changes so that throughout the survey the airgun array was operating within specifications. Whilst recording 30m shotpoint intervals two Le Roi and two Norwalk compressors were used to maintain specified operating pressure.

The line change between line TQH5-33 and TQH5-35 was extended by 2.4 hours to allow repairs to the starboard gun string. The metal clamp which holds the aft Norwegian buoy loosened, and was forced down the firing line causing damage to the sensor and solenoid wires, rendering the last three guns on the starboard side unuseable.

viii(a) ENERGY SOURCE DISCUSSION cont.

At approximately shotpoint 360 on line TQH5-167, number four compressor, a high pressure Norwalk, blew a bracket cylinder head gasket and was closed down for repairs. Air pressure dropped to 1600 PSI by shotpoint 365 and was down to 1400 PSI by shotpoint 380, between shotpoints 380 and 400 the lowest pressure was reached, 1250 PSI. At shot point 400 the gasket at fault had been repaired and the pressure rose steadily from 1600 PSI to 1850 PSI at shotpoint 420. To increase the pressure while compressor four was inoperative no shot was fired at shotpoint 385 and 399. Under normal operating conditions, the portion of line TQH5-167 that was surveyed with reduced pressure would have been reshot, however as time was limited and two priority two lines were still to be surveyed the line was continued. (See also section IV i.)



SECTION III

NAVIGATION

SECTION IIIi. SYSTEM DETAILS
Primary System
 =====

 ARGO
 =====

Type	Phase Comparison
Survey Company	Geomex
Operating Frequency	1702 kHz
Ships Antenna Height (Above Sea Level)	22 m
Antenna Location from Stern	24.8 m
Antenna Location from Centre Line	2.28 m (to port)
Lane Width	88.0347 m

Secondary System
 =====

 SYLEDIS
 =====

Type	Range / Range Pulsed
Survey Company	Geomex
Operating Frequency	427 mHz
Antenna Height (ASL)	25 m
Antenna Location from Stern	25.8 m
Antenna Location from Centre Line	0 m

ii. BASE STATION LOCATIONS

Applicable throughout the prospect.

ARGO					
Station	Position	Partial	Slot	Elevation	
Point Sorell	041 07 23.63 S	0.75	05	30 m	
	146 31 42.34 E				
North Point	040 42 52.15 S	0.69	06		
	145 15 30.28 E				
Naracoopa	039 55 29.05 S	0.41	07	55.9 m	
	144 07 39.03 E				
Liptrap	038 53 35.54 S	0.49	08	114.7 m	
	145 56 53.40 E				

SYLEDIS					
Station	Position	Delay	Beacon	Elevation	
Point Sorell	041 07 24.73 S	-248.9 m	*07	30 m	
	146 31 41.93 E				
North Point	040 42 51.40 S	-251.3 m	03		
	145 15 31.31 E				
Naracoopa	039 55 29.95 S	-239.6 m	04	56 m	
	144 07 39.47 E				
Liptrap	038 53 35.43 S	-245.4 m	05	113.6 m	
	145 56 51.54 E				
Diamond M	039 53 36.53 S	-237.9 m	06		
	145 58 37.08 E				

Note: Syledis beacon 02 was used on Point Sorell during the baseline crossings.



iii. BASELINE CROSSINGS/SYSTEM CALIBRATION

The Syledis beacons were calibrated onshore prior to the commencement of the survey. This was achieved by operating the beacons from a known surveyed marker and observing the ranges displayed on the mobile unit which was placed on a second marker several kilometres from the first. The observed distance was compared to the measured distance between markers and the delta values noted. These values were corrected for during the survey and preprospect navigation check, by the CMS 990 Navigation software.

The integrity of the Syledis navigation net was proved by baseline crossings. Once the accuracy of the Syledis system was established it was used as a standard to compute Argo lane partials. This was accomplished by crossing several Syledis Argo baselines and using the observed Syledis range to calculate the range from the vessel to the relevant Argo beacon. The computed value was compared to the observed Argo range in order to calculate the partial lane. A partial value was entered into the Argo mobile unit for each base station (see Section III ii). "Fine tuning" of the partials was achieved by positioning the vessel in an area of good base station geometry, computing a position fix from three Syledis ranges and then calculating the distance to all Argo base stations using an inverse fix mini computer program. The computed distance was compared to the observed Argo range so that the partials could be adjusted if necessary. At the completion of the calibration the following partials were entered into the Argo mobile: 0.75 for Point Sorell, 0.69 for North Point, 0.41 for Narracoopa and 0.49 for Cape Liptrap.

When it was convenient to do so, transits to and from ports for example, Argo baselines were crossed to verify the systems' accuracy. Baseline results are tabled later in this section, the large variations shown were attributed to sky waves as the larger values occurred on baselines crossed close to sunrise or sunset.

iv. BASELINE CROSSINGS RESULTSSYLEDIS:

DATE	BASE STATIONS	COMPUTED DISTANCE	OBSERVED DISTANCE	DELTA
06/10/85	Pt Sorell Nth Point	116205.49 m	116207 m	2 m
06/10/85	Pt Sorell Nth Point	"	116207 m	2 m
08/10/85	Pt Sorell Naracoopa	243083.02 m	243104 m	21 m
08/10/85	Pt Sorell Naracoopa	"	243101 m	18 m

ARGO (A) SYLEDIS (B) (Used to calculate Argo partials,
see calibration discussion.)

08/10/85	Pt Sorell (S) Nth Point (A)	116218.47 m	116252 m	34 m
08/10/85	Pt Sorell (S) Nth Point (A)	"	116250 m	32 m
08/10/85	Pt Sorell (A) Nth Point (S)	116201.28 m	116229 m	28 m
08/10/85	Pt Sorell (A) Nth Point (S)	"	116228 m	27 m
08/10/85	Pt Sorell (A) Naracoopa (S)	243072.90 m	243157 m	84 m
08/10/85	Pt Sorell (A) Naracoopa (S)	"	243082 m	9 m



ARGO:

08/10/85	Pt Sorell Nth Point	116214.27 m	116288 m	74 m
08/10/85	Pt Sorell Naracoopa	243097.08 m	243059 m	38 m
22/10/85	Pt Sorell Naracoopa	243097.08 m		5 m
22/10/85	Pt Sorell Nth Point	116214.27 m		6 m
23/10/85	Pt Sorell Nth Point	116214.27 m	116218 m	4 m
23/10/85	Pt Sorell Naracoopa	243097.08 m	243095 m	2 m
16/11/85	Pt Sorell Naracoopa	243097.08 m	243131 m	33 m
16/11/85	Pt Sorell Nth Point	116214.27 m	116224 m	10 m
17/11/85	Pt Sorell Nth Point	116214.27 m	116214 m	0 m
17/11/85	Pt Sorell Naracoopa	243097.08 m	243103 m	6 m
17/11/85	Nth Point C. Liptrap	210667.56 m	210670 m	2 m
17/11/85	C. Liptrap Naracoopa	194167 m	194183 m	16 m
25/11/85	Nth Point C. Liptrap	210667.56 m	210665 m	3 m
25/11/85	Pt Sorrel Naracoopa	243097.08 m	243114 m	17 m
25/11/85	Pt Sorell Nth Point	116214.27 m	116223 m	9 m



v. NAVIGATION DISCUSSION

The overall quality of navigation data collected during the survey was high. For the majority of the survey, online positioning of the vessel was carried out using three "ARGO" ranges. However, at times when three ranges were not available for such reasons as unacceptable angles between stations or noise on signals, then the survey continued using only two "ARGO" ranges. When this situation occurred, the accuracy of the two ranges were checked periodically by transit satellite position updates and also when an acceptable third range was acquired.

The secondary system, Syledis, was implemented as primary on two occasions only; firstly between shotpoints 404 and 414 during line TQH5-11, and secondly between shotpoints 131 and 141 during line TQH5-09. Between these shotpoints Argo signals were lost completely due to an earth problem with the antenna loading unit, the fault was easily and quickly rectified.

Syledis was only available during the main part of the survey, the beacons were removed from their bases on the 17th of November for recalibration. The transit satellite system became the secondary navigation system during the extension to the survey which took place between the 23rd and the 25th of November. Whilst Syledis was installed as the secondary navigation, usually signals from only one Syledis base were received at one time depending on the vessels position within the prospect. The reason for this was the extreme ranges, often in excess of 120 km, which was approximately the maximum range of the Syledis signals. The beacon on the rig Diamond Epoch which was the closest to the majority of survey lines was unservicable due to an electrical fault between 1930 hours on the 25th of October and 1200 hours on the 12th of November.

Skywave interference was negligible and no down time was attributed to it or in fact to any radio positioning equipment.

A more detailed discussion is provided in a separate navigation report.

vi. NAVIGATION TAPE SUMMARY

For full details of Line number/Nav. tape number correlation, See Production Details (Section IV iv.)



SECTION IV

OPERATIONS



SECTION IV

i. OPERATIONS DISCUSSION

As the survey vessel had no commitments between the 23rd and 25th of November, a period subsequent to the completion of the initial prospect, Amoco provided an additional twenty seismic lines. There were no changes in the parameters used for the additional lines although the offset was found to have increased 5 metres, (see Plate 5) also the transit satellite system was installed as the secondary navigation system. The entire addition to the survey could not be completed in the allocated time, the following list contains the completed lines:

Priority 1: TQH5-102, TQH5-100, TQH5-161, TQH5-163, TQH5-165.

Priority 3: TQH5-104, TQH5-167,

The priority three block was surveyed before the priority two block as the rig Diamond Epoch was on location in the centre of block two until 0900 hours on the 25th of November. On the transit to the second priority block at 1133 hours 25th of November the streamer parted directly in front of the sem in cluster 10. By 1500 hours the same afternoon the streamer had been retrieved and repaired, however time did not allow the lines in the priority two block to be surveyed, as the vessel was due in Devonport for resupply and crew change. Damaged to the streamer consisted of one damaged LI section only.

In cases where two survey lines were connected (or nearly connected) end to end, the connecting ends were extended sixty shotpoints past the preplotted end co-ordinates in order to supply a fullfold intersection. The afore mentioned occurred on the following pairs of lines, TQH5-45 & TQH545-1, TQH5-51 & TQH551-1, TQH5-54 & TQH554-1, TQH5-56 & TQH556-1, TQH5-57 & TQH557-1, TQH5-59 & TQH559-1, TQH5-60 & TQH560-1, TQH5-61 & TQH561-1.

The prospect extended into frequently used shipping lanes, this meant that propellor noise from passing vessels was sometimes unavoidable. Recordings that were affected occurred between: SP1670 and SP1825 (4.7 km) on line TQH5-33, SP450 and SP700 (7.5 km) on line TQH5-42, SP1085 and SP1250 (5 km) on line TQH5-39, SP147 and SP330 (5.5 km) on line TQH5-5. Interference was carefully monitored to ensure that the specified streamer noise levels were not exceeded. The maximum level of propellor noise noted was seven microbars during line TQH5-42.



SECTION IV

i. OPERATIONS DISCUSSION (cont.)

The survey vessel was steered off-line between SP752 and SP804 on line TQH5-26 and between SP641 and SP1011 on line TQH5-22 in order to avoid mooring buoys connected with the oil rig Diamond Epoch. The maximum offline distance on TQH5-26 was 200 metres to port (east) at SP804. On TQH5-22 the maximum offline distance was 220 metres to port (west) at SP851.

A grid of lines in the north eastern area of the prospect were re-numbered as requested by AMOCO. The changes are as listed:

ORIGINAL NUMBER	PRESENT NUMBER
TQH5-A	TQH5-201
TQH5-B	TQH5-202
TQH5-C	TQH5-203
TQH5-D	TQH5-204
TQH5-E	TQH5-205
TQH5-F	TQH5-206
TQH5-G	TQH5-207
TQH5-H	TQH5-208
TQH5-I	TQH5-209
TQH5-J	TQH5-210
TQH5-K	TQH5-211
TQH5-L	TQH5-212
TQH5-M	TQH5-213
TQH5-N	TQH5-214

Seismic and navigation data were shipped in three separate shipments. The first shipment took place on the 22nd October 1985 whilst the vessel was in port for resupply and crew change. The second data shipment took place on the 6th November, and the third on the 16th November, the third shipment was the last that contained data from the main part of the survey. The final data shipment took place on the 26th of November, and contained all data recorded during the extension of the survey. All data was offloaded from the survey vessel in Devonport, Tasmania.

SECTION IVi. OPERATIONS DISCUSSION (cont.)

Line TQH5-163 was terminated because of a continuous interrupt being transmitted from the instrument room plotter to the 990 onboard binning computer. The interrupt caused a communication delay between the 990 computer and the TIGER II. The plotter fault caused 6.5 hours of down time before it was located and repaired. Line TQH5-163 was totally reshot. Recording conditions varied during the survey from good to poor, on several occasions recording ceased due to inclement weather and related sea conditions which caused unacceptable levels of ambient noise. Fortunately, front end streamer jerk, which could have been caused by the heavy swells experienced, was kept to a minimum by the long offset.

ii. SHIPMENT DETAILS

Seismic data shipment no. : 2931-SYD-24-85 (22 Oct 85)
: 2931-SYD-25-85 (6 Nov 85)
: 2931-SYD-26-85 (16 Nov 85)
: 2931-SYD-27-85 (26 Nov 85)

Seismic data shipped to : Geophysical Service Inc.
6 - 10 Talavera Road,
North Ryde,
New South Wales. 2113.

Navigation data shipment no. : 2931-PER-53-85 (22 Oct 85)
: 2931-PER-54-85 (6 Nov 85)
: 2931-PER-55-85 (16 Nov 85)
: 2931-PER-57-85 (26 Nov 85)

Navigation data shipped to : Geophysical Service Inc.
47 Burswood Road
Victoria Park 6100
Western Australia.

Gravity and Magnetics data
shipment numbers : (22 Oct 85)
: 2931-MISC-22-85 (16 Nov 85)

Gavity and Magnetics data
shipped to : AMOCO Production Co. Inc.
501 Westlake Park Blvd.
Houston, Texas 77079
U.S.A.
(first shipment)

: Edcon
605 Parfet Street,
Denver, Colorado 80215
U.S.A.
(second shipment)

iii. STATISTICS

First Recording Day	:	9th October 1985
Last Recording Day	:	16th November 1985
First Recording Day (Extension)	:	23rd November 1985
Last Recording Day (Extension)	:	25th November 1985
Number of Lines	:	158
Number of Lines (Extension)	:	7
Number of Kilometres	:	4797.45
Number of Kilometres (Extension)	:	211.65
Number of Shotpoints	:	159915
Number of Shotpoints (Extension)	:	7055
Percentage of Misfires	:	0.3%
Percentage of Misfires (Ext.)	:	0.6%
Average Kilometres per Recording Day	:	122
Average Kilometres per Recording Day (Extension)	:	70.55
Number of Magnetic Kilometres	:	5510.149
Number of Gravity Kilometres	:	5864.964

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APPENDIX A

DAILY OPERATIONS LOG



- A2 -

DAILY OPERATIONS LOG.October 5th

Eugene McDermott II arrived Devonport at 09:00hrs. Alongside in Devonport for remainder of day for mobilisation.

October 6th

Mobilisation of Eugene McDermott II in Devonport. Vessel departed Devonport.

October 7th

Majority of day spent on baseline crossings and navigation calibration checks. Navigation downtime experienced due to Syledis problems 03:00 - 04:33 Hrs and 10:00 - 11:45 Hrs giving a total of 4.501 Hrs downtime for navigation.

October 8th

Completion of Argo lane partial calibration and navigation checks. Vessel travelled to and from Devonport, 06:30 - 11:57 Hrs, for transfer of 2nd cook. Deployment of streamer commenced at 19:45 Hrs.

October 9th

Configuration and deployment of streamer completed at 10:00 Hrs. Streamer problems then rectified between 10:00 Hrs and 21:10 Hrs giving a total of 11.167 Hrs of streamer downtime. Survey commenced with line TQH5-002 at 22:49 Hrs.

October 10th

Shooting production lines, see APPENDIX C for details.

October 11th

Shooting production lines, see APPENDIX C for details. Weather downtime encountered between 20:27 Hrs and 24:00 hrs giving a total of 3.550 Hrs weather downtime for the day.

October 12th

Weather downtime encountered between 00:00 Hrs and 06:04 Hrs giving a total of 6.067 Hrs weather downtime. Production resumed with line TQH5-147 and continued for the remainder of the day, APPENDIX C for details.

October 13th

Shooting production lines, see APPENDIX C for details.

October 14th

Shooting production lines, see APPENDIX C for details. Line TQH5-109 was terminated due to a streamer power failure causing a total of 2.667 Hrs streamer downtime.

DAILY OPERATIONS LOG (Cont.)October 15th

Shooting production lines, see APPENDIX C for details. Streamer failure during line change after line TQH5-113 causing 4.00 Hrs streamer downtime while the streamer was retrieved for repair. Production was halted from 09:40 hrs to 11:22 hrs and from 21:40 hrs to 24:00 hrs due to bad weather causing a total of 4.033 Hrs of weather downtime for the day.

October 16th

Shooting production lines, see APPENDIX C for details. Weather downtime between 00:00 hrs and 03:39 hrs causing a total of 3.650 hrs weather downtime for the day.

October 17th

Shooting production lines, see APPENDIX C for details. Weather downtime encountered between 04:55 hrs and 06:45 hrs causing a total of 1.833 hrs of weather downtime for the day.

October 18th

Shooting production lines, see APPENDIX C for details. Weather downtime encountered between 11:25 hrs and 13:48 hrs causing a total of 2.383 hrs weather downtime fore the day. Line TQH5-014 was terminated due to a failure of the vessel's auto-pilot causing a total of 2.766 hrs vessel downtime.

October 19th

Shooting production lines, see APPENDIX C for details. Inclement weather throughout the day causing a total of 10.583 hrs weather downtime during the day.

October 20th

Shooting production lines, see APPENDIX C for details.

October 21st

Shooting production lines, see APPENDIX C for details. Line TQH5-141 was terminated due to a TSR transport hang-up causing a total of 2.517 hrs instrument downtime. Upon completion of line TQH5-141A the streamer was retrieved for crew change. Vessel then headed for Devonport at 23:18 hrs.

October 22nd

Vessel travelled to Devonport arriving alongside for data-drop and crew change at 05:40 hrs. Vessel departed Devonport at 20:45 hrs enroute to the prospect.



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DAILY OPERATIONS LOG (Cont.)October 23rd

Streamer deployed after crew change and production resumed with line TQH5-006A at 07:57 hrs. Line TQH5-006A was a re-shoot due to cable noise caused by the weather while shooting the original line. The weather deteriorated during the day causing line TQH5-209 to be terminated. A total of seven hours weather downtime was incurred during the day.

October 24th

Down for weather for the majority of the day. Numerous lines attempted during the day but production did not resume until 23:29 hrs with line TQH5-209A. A total of 23.483 hrs of weather downtime was incurred during the day.

October 25th

Shooting production lines, see APPENDIX C for details. Line TQH5-083 was terminated on the run-in due to weather causing 1.867 hrs of weather downtime to be incurred for the day.

October 26th

Shooting production lines, see APPENDIX C for details.

October 27th

Shooting production lines, see APPENDIX C for details. Clocks were advanced one hour at 02:00 hrs to 03:00 hrs to correspond with Eastern daylight saving time.

October 28th

Shooting production lines, see APPENDIX C for details.

October 29th

Shooting production lines, see APPENDIX C for details. Line change between lines TQH5-033 and TQH5-035 was extended for gun maintenance causing a total of 2.416 hrs downtime.

October 30th

Shooting production lines, see APPENDIX C for details. Lines TQH5-029 and TQH5-056-1 were terminated due to weather which caused a total of 11.283 hrs weather down time for the day.

October 31st

Weather moderated allowing production to resume with line TQH5-137A, see APPENDIX C for details. A total of 4.283 hrs weather downtime were incurred during the day.

November 1st

Shooting production lines, see APPENDIX C for details.

DAILY OPERATIONS LOG (Cont.)November 2nd

Shooting production lines, see APPENDIX C for details. Line TQH5-037 was terminated due to a spiking sem, a total of 4.75 hours of streamer downtime was incurred.

November 3rd

Shooting production lines, see APPENDIX C for details. Lines TQH5-090 and TQH5-153 were terminated due to problems with sems causing a total of 7.149 hours of streamer downtime.

November 4th

Shooting production lines, see APPENDIX C for details. Problems were again encountered with the streamer causing the termination of line TQH5-024 and a total of 6.40 hrs of streamer downtime was incurred during the day. Line TQH5-024A was terminated early due to the rig Diamond M being online.

November 5th

Shooting production lines, see APPENDIX C for details. Weather gradually deteriorated during the day. Line TQH5-078 was terminated due to the streamer losing power. The streamer was retrieved to effect repairs.

November 6th

The streamer was fully retrieved for data-drop. Vessel travelled to and from Devonport at clients request for a data-drop. On returning to the survey area the streamer repairs were completed and production resumed with line TQH5-078A, see APPENDIX C for details. A total of 12.667 hours of client chargeable time was incurred due to the data-drop. 2.750 hours of streamer were incurred in repairing the streamer.

November 7th

Shooting production lines, see APPENDIX C for details. The weather gradually deteriorated during the morning causing the termination of line TQH566-1 which in turn caused a total of 10.217 hours of weather downtime for the day.

November 8th

Down for weather for the majority of the day. The weather improved sufficiently for production to resume with line TQH5-027, see APPENDIX C for details. A total of 21.233 hours of weather downtime were incurred during the day.

DAILY OPERATIONS LOG (Cont.)November 9th

Shooting production lines, see APPENDIX C for details. A total of 1.166 hours of streamer downtime was incurred due to a broken front collar on bird #8 and SEM #19 spiking. 2.233 hours of instrument downtime was incurred due to a circle on line TQH5-019 due to a TSR hang-up.

November 10th

Shooting production lines, see APPENDIX C for details. Streamer repairs were completed causing a total of 3.034 hours of streamer downtime for the day.

November 11th

Shooting production lines, see APPENDIX C for details.

November 12th

Shooting production lines, see APPENDIX C for details.

November 13th

Shooting production lines, see APPENDIX C for details. Line TQH5-066A was terminated due to a TSR lock-up which caused 2.75 Hrs of Instrument downtime for the day. Line TQH5-045 was terminated on the run-in due to excessive feather angle causing 1.95 Hrs of weather downtime. A total of 2.283 Hrs weather downtime was incurred during the day due to the shooting of the overlap for line TQH5-066.

November 14th

Shooting production lines, see APPENDIX C for details.

November 15th

Shooting production lines, see APPENDIX C for details.

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APPENDIX B

LINE SUMMARY



- B2 -

LINE SUMMARY

<u>LINE NO</u>	<u>DIR</u>	<u>SP RANGE</u>	<u>DATE</u>	<u>FEATHER</u>	<u>NOISE</u>	<u>COMMENTS</u>
TQH5-001	232	0001-0583	11NOV	1PT-2SB	5uB	COMPLETE
TQH5-002	325	0001-1183	09OCT	000-1PT	4uB	COMPLETE
TQH5-003	053	0001-0483	10NOV	4SB-000	3uB	COMPLETE
TQH5-004	146	0001-1203	17OCT	1PT-3SB	4uB	COMPLETE
TQH5-005	055	0001-0493	10NOV	000-1PT	4uB	COMPLETE
TQH5-006	326	0001-1204	18OCT	6SB-10SB	5uB	COMPLETE
TQH5-006A	326	0691-1202	23OCT	1SB-2PT	4uB	COMPLETE
TQH5-007	235	0001-1133	10NOV	5PT-1PT	4uB	COMPLETE
TQH5-008	326	0001-1273	15OCT	4PT-1PT	4uB	COMPLETE
TQH5-009	055	0001-0512	10NOV	1SB-000	4uB	COMPLETE
TQH5-010	146	0001-1162	13OCT	2SB-000	4uB	COMPLETE
TQH5-011	056	0001-0452	10NOV	1PT-4PT	4uB	COMPLETE
TQH5-012	326	0004-1193	15OCT	1SB-3PT	4uB	COMPLETE
TQH5-013	055	0001-0712	10NOV	3SB-000	3uB	COMPLETE
TQH5-014	144	0001-0062	18OCT	3PT-3PT	4uB	T.B.R
TQH5-014A	144	0001-1293	18OCT	3PT-2PT	5uB	COMPLETE
TQH5-015	235	0001-0613	10NOV	2SB-4SB	4uB	COMPLETE
TQH5-016	145	0001-0130	25OCT	4SB-4SB	4uB	T.B.R.
TQH5-016A	145	0001-0874	25OCT	5SB-3SB	4uB	COMPLETE
TQH5-017	233	0001-0234	09NOV	2SB-4SB	3uB	T.B.C.
TQH5-17A	233	0101-0843	10NOV	2PT-4PT	4uB	COMPLETE
TQH5-018	326	0001-0673	25OCT	1PT-1SB	4uB	COMPLETE
TQH5-019	054	0001-0454	09NOV	7SB-5SB	4uB	T.B.C.
TQH5-019A	054	0001-0662	09NOV	2SB-3PT	3uB	COMPLETE
TQH5-020	325	0001-0882	17OCT	3PT-3SB	4uB	COMPLETE
TQH5-021	054	0001-0922	09NOV	4SB-1PT	3uB	COMPLETE
TQH5-022	146	0001-1874	17OCT	1PT-2SB	4uB	COMPLETE
TQH5-023	235	0001-1273	09NOV	6SB-1PT	3uB	COMPLETE
TQH5-024	235	0001-0001	02NOV	000-000	4uB	T.B.R.
TQH5-024A	145	0001-1281	04NOV	1SB-000	3uB	COMPLETE
TQH5-025	236	0001-0923	09NOV	1PT-2PT	4uB	COMPLETE
TQH5-026	325	0001-0903	16OCT	1SB-1PT	4uB	COMPLETE
TQH5-027	055	0001-1544	08NOV	2PT-2SB	4uB	COMPLETE
TQH5-028	325	0001-1663	16OCT	3PT-2SB	5uB	COMPLETE
TQH5-029	056	0001-0109	30OCT	2SB-000	4uB	T.B.R.
TQH5-029A	056	0001-2369	02NOV	3PT-2SB	5uB	COMPLETE
TQH5-030	145	0001-0633	13OCT	1SB-4SB	3uB	COMPLETE
TQH5-031	236	0001-2115	30OCT	3SB-2SB	6uB	COMPLETE
TQH5-032	146	0001-0574	25OCT	4SB-5SB	7uB	COMPLETE
TQH5-033	235	0001-3431	28OCT	2SB-2PT	4uB	COMPLETE
TQH5-034	146	0001-0794	16OCT	5SB-2SB	5uB	COMPLETE
TQH5-035	056	0001-2766	29OCT	2PT-5SB	3uB	COMPLETE
TQH5-036	326	0001-0623	25OCT	3SB-1PT	5uB	COMPLETE
TQH5-037	234	0001-0824	02NOV	2PT-000	4uB	T.B.C.
TQH5-037A	234	0641-1593	02NOV	2PT-3SB	6uB	COMPLETE
TQH5-038	329	0001-0943	16OCT	000-2SB	4uB	COMPLETE
TQH5-039	235	0001-1583	04NOV	2SB-4PT	3uB	COMPLETE
TQH5-040	150	0001-1154	16OCT	1SB-1PT	4uB	COMPLETE



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LINE SUMMARY

<u>LINE NO</u>	<u>DIR</u>	<u>SP RANGE</u>	<u>DATE</u>	<u>FEATHER</u>	<u>NOISE</u>	<u>COMMENTS</u>
TQH5-041	234	0001-2553	27OCT	5SB-3PT	4uB	COMPLETE
TQH5-042	144	0001-0972	02NOV	1PT-1SB	4uB	COMPLETE
TQH5-043	055	0001-2087	28OCT	3PT-000	3uB	COMPLETE
TQH5-044	323	0001-3144	01NOV	3SB-000	4uB	COMPLETE
TQH5-045	239	0001-0923	14NOV	000-7PT	5uB	COMPLETE
TQH545-1	056	0001-1260	14NOV	6SB-3SB	4uB	COMPLETE
TQH5-046	322	0001-1816	12OCT	1PT-2SB	4uB	COMPLETE
TQH5-047	235	0001-0763	14NOV	2PT-000	4uB	COMPLETE
TQH5-048	323	0001-1214	15NOV	1SB-7SB	4uB	COMPLETE
TQH5-049	055	0001-1924	15NOV	1SB-6PT	4uB	COMPLETE
TQH5-050	135	0001-1265	05NOV	4SB-3SB	4uB	COMPLETE
TQH5-051	051	0001-0948	15NOV	000-4SB	4uB	COMPLETE
TQH551-1	056	0001-0785	13OCT	000-2SB	3uB	COMPLETE
TQH5-052	146	0001-1303	15OCT	6PT-1PT	4uB	COMPLETE
TQH5-053	056	0001-0372	17OCT	3PT-2PT	5uB	COMPLETE
TQH5-054	142	0001-1136	12NOV	1PT-5SB	4uB	COMPLETE
TQH554-1	137	0001-1726	12NOV	6SB-1PT	4uB	COMPLETE
TQH5-055	230	0001-1033	15NOV	6SB-2SB	5uB	COMPLETE
TQH5-056	144	0001-2447	11NOV	2SB-2SB	4uB	COMPLETE
TQH556-1	139	0001-0437	30OCT	1PT-3SB	4uB	T.B.R.
TQH556-1A	139	0001-1506	05NOV	4PT-2SB	4uB	COMPLETE
TQH5-057	223	0001-1229	15NOV	2PT-4SB	3uB	COMPLETE
TQH557-1	235	0001-1517	13OCT	000-3SB	4uB	COMPLETE
TQH5-058	323	0001-2012	11NOV	4SB-1PT	4uB	COMPLETE
TQH5-059	045	0001-1924	15NOV	4SB-1SB	3uB	COMPLETE
TQH559-1	235	0001-1633	10OCT	3PT-1SB	3uB	COMPLETE
TQH5-060	323	0001-1026	05NOV	000-1SB	4uB	COMPLETE
TQH560-1	131	0001-1373	31OCT	2PT-1SB	3uB	COMPLETE
TQH5-061	044	0001-1419	16NOV	3PT-5SB	3uB	COMPLETE
TQH561-1	235	0001-1706	10OCT	5PT-2SB	4uB	COMPLETE
TQH5-062	146	0001-1512	12NOV	4PT-000	4uB	COMPLETE
TQH5-063	225	0001-1813	16NOV	2PT-5SB	3uB	COMPLETE
TQH5-064	324	0001-0672	13NOV	2SB-000	4uB	COMPLETE
TQH5-065	057	0001-1262	12OCT	5PT-2PT	3uB	COMPLETE
TQH5-066	325	1752-2676	07NOV	3SB-3SB	7uB	T.B.C.
TQH5-066A	325	2431-2652	13NOV	1SB-1SB	4uB	T.B.R.
TQH5-066B	325	2431-4162	13NOV	5SB-1SB	4uB	COMPLETE
TQH566-1	322	0001-1751	07NOV	000-2SB	5uB	COMPLETE
TQH5-067	237	0001-0912	03NOV	2SB-000	4uB	COMPLETE
TQH5-068	145	0001-0953	13NOV	9SB-1PT	3uB	COMPLETE
TQH5-069	237	0001-0393	30OCT	000-2SB	4uB	COMPLETE
TQH5-070	126	0001-0743	19OCT	000-2SB	4uB	COMPLETE
TQH5-071	056	0001-0602	29OCT	3SB-1PT	4uB	COMPLETE
TQH5-072	307	0001-0122	19OCT	1SB-1PT	3uB	T.B.R.
TQH5-072A	128	0001-0962	20OCT	1SB-1SB	4uB	COMPLETE



- B4 -

LINE SUMMARY

<u>LINE NO</u>	<u>DIR</u>	<u>SP RANGE</u>	<u>DATE</u>	<u>FEATHER</u>	<u>NOISE</u>	<u>COMMENTS</u>
TQH5-073	056	0001-0523	29OCT	4SB-1SB	4uB	COMPLETE
TQH5-074	309	0001-1152	20OCT	5SB-2SB	4uB	COMPLETE
TQH5-75	235	0001-0723	29OCT	2PT-1SB	4uB	COMPLETE
TQH5-76	310	0001-1303	06NOV	2PT-2SB	4uB	COMPLETE
TQH5-77	055	0001-0583	28OCT	3SB-000	4uB	COMPLETE
TQH5-78	130	0001-0504	05NOV	2SB-4SB	5uB	T.B.C.
TQH5-78A	130	0001-1322	06NOV	5SB-3SB	3uB	COMPLETE
TQH5-079	055	0001-0532	29OCT	3SB-1SB	4uB	COMPLETE
TQH5-080	312	0001-1033	01NOV	5SB-3SB	4uB	COMPLETE
TQH5-081	233	0001-0733	28OCT	2PT-2SB	5uB	COMPLETE
TQH5-083	054	0001-0582	27OCT	2PT-1PT	4uB	COMPLETE
TQH5-084	317	0001-0862	21OCT	3SB-1SB	4uB	COMPLETE
TQH5-085	054	0001-0412	28OCT	5SB-2SB	5uB	COMPLETE
TQH5-086	137	0001-1213	21OCT	1PT-000	4uB	COMPLETE
TQH5-087	055	0001-0833	26OCT	2SB-2PT	5uB	COMPLETE
TQH5-88						
TQH5-89	235	0001-0573	26OCT	4SB-2SB	4uB	COMPLETE
TQH5-90	326	0001-0154	03NOV	2SB-2SB	4uB	T.B.R.
TQH5-90A	326	0001-1002	03NOV	000-2SB	4uB	COMPLETE
TQH5-91	056	0001-0363	25OCT	4PT-4PT	5uB	COMPLETE
TQH5-92	348	0001-0832	12NOV	6SB-5SB	5uB	COMPLETE
TQH5-93	236	0001-0753	23OCT	2PT-2SB	5uB	COMPLETE
TQH5-94	145	0001-0332	11NOV	1PT-1SB	4uB	COMPLETE
TQH5-95	055	0001-1692	10OCT	1PT-4SB	3uB	COMPLETE
TQH5-96	322	0001-0433	11NOV	7SB-4SB	4uB	COMPLETE
TQH5-97	053	0001-2083	11OCT	2PT-5SB	5uB	COMPLETE
TQH5-98	298	0001-0698	21OCT	3SB-000	4uB	COMPLETE
TQH5-99	052	0001-1592	11OCT	000-2SB	3uB	COMPLETE
TQH5-100	142	0001-0836	23NOV	2SB-000	4uB	COMPLETE
TQH5-102	313	0001-1744	23NOV	2SB-1PT	4uB	COMPLETE
TQH5-101	231	0001-1363	11OCT	3SB-000	3uB	COMPLETE
TQH5-103	051	0001-1223	13OCT	1SB-1PT	4uB	COMPLETE
TQH5-104	292	0001-0872	25NOV	000-2SB	4uB	COMPLETE
TQH5-105	233	0001-1173	14OCT	1SB-3PT	4uB	COMPLETE
TQH5-107	234	0001-1253	14OCT	000-4PT	4uB	COMPLETE
TQH5-109	054	0001-0520	14OCT	000-1PT	4uB	T.B.C.
TQH5-109A	054	0381-1132	14OCT	000-2PT	4uB	COMPLETE
TQH5-111	055	0001-1034	14OCT	3SB-2PT	4uB	COMPLETE
TQH5-113	235	0001-0843	15OCT	2SB-2SB	5uB	COMPLETE
TQH5-115	243	0001-0643	18OCT	5PT-000	4uB	COMPLETE
TQH5-117	041	0001-0902	31OCT	1PT-2SB	4uB	COMPLETE
TQH5-119	040	0001-0902	20OCT	4SB-1SB	5uB	COMPLETE
TQH5-121	219	0001-0873	20OCT	1PT-1SB	5uB	COMPLETE
TQH5-123	219	0001-0873	31OCT	2SB-000	4uB	COMPLETE
TQH5-125	039	0001-0862	20OCT	4SB-1SB	4uB	COMPLETE



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LINE SUMMARY

<u>LINE NO</u>	<u>DIR</u>	<u>SP RANGE</u>	<u>DATE</u>	<u>FEATHER</u>	<u>NOISE</u>	<u>COMMENTS</u>
TQH5-127	039	0001-0862	01NOV	2PT-2SB	5uB	COMPLETE
TQH5-129	218	0001-0923	19OCT	2PT-3PT	4uB	COMPLETE
TQH5-131	218	0001-0993	01NOV	1SB-000	4uB	COMPLETE
TQH5-133	038	0001-1122	19OCT	1PT-2SB	3uB	COMPLETE
TQH5-135	038	0001-0802	19OCT	1SB-4SB	4uB	COMPLETE
TQH5-137	226	0001-0391	12OCT	4PT-5PT	4uB	T.B.R.
TQH5-137A	226	0001-0853	31OCT	000-3SB	5uB	COMPLETE
TQH5-139	044	0001-0932	31OCT	2PT-2SB	3uB	COMPLETE
TQH5-141	044	0001-0118	21OCT	2SB-2SB	3uB	T.B.R.
TQH5-141A	044	0001-0872	21OCT	6PT-3PT	3uB	COMPLETE
TQH5-143	224	0001-0843	21OCT	000-1PT	3uB	COMPLETE
TQH5-145	217	0001-0884	07NOV	000-1PT	5uB	COMPLETE
TQH5-147	148	0001-0803	12OCT	5PT-1SB	4uB	COMPLETE
TQH5-149	055	0001-0483	03NOV	2PT-000	4uB	COMPLETE
TQH5-151	234	0001-0523	03NOV	000-3SB	4uB	COMPLETE
TQH5-153	055	0001-0314	03NOV	2PT-1PT	4uB	T.B.R.
TQH5-153A	055	0001-0643	04NOV	000-3SB	5uB	COMPLETE
TQH5-155	233	0001-0583	04NOV	2SB-000	5uB	COMPLETE
TQH5-157	054	0001-0532	04NOV	2PT-000	5uB	COMPLETE
TQH5-161	040	0001-0833	24NOV	5SB-1SB	5uB	COMPLETE
TQH5-163	223	0001-0126	24NOV	000-000	4uB	COMPLETE
TQH5-163A	223	0001-0939	24NOV	3SB-2PT	4uB	COMPLETE
TQH5-165	046	0001-0859	24NOV	5SB-000	5uB	COMPLETE
TQH5-167	057	0001-0972	25NOV	000-2SB	3uB	COMPLETE
TQH5-201	234	0001-0523	26OCT	2PT-3SB	5uB	COMPLETE
TQH5-202	234	0001-0157	24OCT	000-000	7uB	T.B.R.
TQH5-202A	054	0001-0523	26OCT	2SB-1PT	7uB	COMPLETE
TQH5-203	234	0001-0543	26OCT	1PT-1SB	5uB	COMPLETE
TQH5-204	055	0001-0453	26OCT	2SB-000	3uB	COMPLETE
TQH5-205	234	0001-0453	26OCT	5SB-4SB	4uB	COMPLETE
TQH5-206	235	0001-0513	26OCT	1SB-2SB	5uB	COMPLETE
TQH5-207	325	0001-0495	23OCT	3PT-1SB	4uB	COMPLETE
TQH5-208	325	0001-0142	25OCT	2PT-000	4uB	COMPLETE
TQH5-209	325	0001-0030	23OCT	000-000	4uB	T.B.R.
TQH5-209A	145	0001-0533	24OCT	3PT-2SB	4uB	COMPLETE
TQH5-210	145	0001-0733	23OCT	3SB-1PT	4uB	COMPLETE
TQH5-211	297	0001-0323	27OCT	000-1SB	4uB	COMPLETE
TQH5-212	121	0001-0343	27OCT	2SB-1SB	5uB	COMPLETE
TQH5-213	294	0001-0393	27OCT	2SB-4SB	4uB	COMPLETE
TQH5-214	111	0001-0373	27OCT	2SB-000	5uB	COMPLETE

LINE SUMMARY

LINE NO	DIR	SP RANGE	DATE	FEATHER	NOISE	COMMENTS
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TQH5-073	056	0001-0523	29OCT	4SB-1SB	4uB	COMPLETE
TQH5-074	309	0001-1152	20OCT	5SB-2SB	4uB	COMPLETE
TQH5-75	235	0001-0723	29OCT	2PT-1SB	4uB	COMPLETE
TQH5-76	310	0001-1303	06NOV	2PT-2SB	4uB	COMPLETE
TQH5-77	055	0001-0583	28OCT	3SB-000	4uB	COMPLETE
TQH5-78	130	0001-0504	05NOV	2SB-4SB	5uB	T.B.C.
TQH5-78A	130	0001-1322	06NOV	5SB-3SB	3uB	COMPLETE
TQH5-079	055	0001-0532	29OCT	3SB-1SB	4uB	COMPLETE
TQH5-080	312	0001-1033	01NOV	5SB-3SB	4uB	COMPLETE
TQH5-081	233	0001-0733	28OCT	2PT-2SB	5uB	COMPLETE
TQH5-083	054	0001-0582	27OCT	2PT-1PT	4uB	COMPLETE
TQH5-084	317	0001-0862	21OCT	3SB-1SB	4uB	COMPLETE
TQH5-085	054	0001-0412	28OCT	5SB-2SB	5uB	COMPLETE
TQH5-086	137	0001-1213	21OCT	1PT-000	4uB	COMPLETE
TQH5-087	055	0001-0833	26OCT	2SB-2PT	5uB	COMPLETE
TQH5-88						
TQH5-89	235	0001-0573	26OCT	4SB-2SB	4uB	COMPLETE
TQH5-90	326	0001-0154	03NOV	2SB-2SB	4uB	T.B.R.
TQH5-90A	326	0001-1002	03NOV	000-2SB	4uB	COMPLETE
TQH5-91	056	0001-0363	25OCT	4PT-4PT	5uB	COMPLETE
TQH5-92	348	0001-0832	12NOV	6SB-5SB	5uB	COMPLETE
TQH5-93	236	0001-0753	23OCT	2PT-2SB	5uB	COMPLETE
TQH5-94	145	0001-0332	11NOV	1PT-1SB	4uB	COMPLETE
TQH5-95	055	0001-1692	10OCT	1PT-4SB	3uB	COMPLETE
TQH5-96	322	0001-0433	11NOV	7SB-4SB	4uB	COMPLETE
TQH5-97	053	0001-2083	11OCT	2PT-5SB	5uB	COMPLETE
TQH5-98	298	0001-0698	21OCT	3SB-000	4uB	COMPLETE
TQH5-99	052	0001-1592	11OCT	000-2SB	3uB	COMPLETE
TQH5-100	142	0001-0836	23NOV	2SB-000	4uB	COMPLETE
TQH5-102	313	0001-1744	23NOV	2SB-1PT	4uB	COMPLETE
TQH5-101	231	0001-1363	11OCT	3SB-000	3uB	COMPLETE
TQH5-103	051	0001-1223	13OCT	1SB-1PT	4uB	COMPLETE
TQH5-104	292	0001-0872	25NOV	000-2SB	4uB	COMPLETE
TQH5-105	233	0001-1173	14OCT	1SB-3PT	4uB	COMPLETE
TQH5-107	234	0001-1253	14OCT	000-4PT	4uB	COMPLETE
TQH5-109	054	0001-0520	14OCT	000-1PT	4uB	T.B.C.
TQH5-109A	054	0381-1132	14OCT	000-2PT	4uB	COMPLETE
TQH5-111	055	0001-1034	14OCT	3SB-2PT	4uB	COMPLETE
TQH5-113	235	0001-0843	15OCT	2SB-2SB	5uB	COMPLETE
TQH5-115	243	0001-0643	18OCT	5PT-000	4uB	COMPLETE
TQH5-117	041	0001-0902	31OCT	1PT-2SB	4uB	COMPLETE
TQH5-119	040	0001-0902	20OCT	4SB-1SB	5uB	COMPLETE
TQH5-121	219	0001-0873	20OCT	1PT-1SB	5uB	COMPLETE
TQH5-123	219	0001-0873	31OCT	2SB-000	4uB	COMPLETE



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LINE SUMMARY

<u>LINE NO</u>	<u>DIR</u>	<u>SP RANGE</u>	<u>DATE</u>	<u>FEATHER</u>	<u>NOISE</u>	<u>COMMENTS</u>
TQH5-127	039	0001-0862	01NOV	2PT-2SB	5uB	COMPLETE
TQH5-129	218	0001-0923	19OCT	2PT-3PT	4uB	COMPLETE
TQH5-131	218	0001-0993	01NOV	1SB-000	4uB	COMPLETE
TQH5-133	038	0001-1122	19OCT	1PT-2SB	3uB	COMPLETE
TQH5-135	038	0001-0802	19OCT	1SB-4SB	4uB	COMPLETE
TQH5-137	226	0001-0391	12OCT	4PT-5PT	4uB	T.B.R.
TQH5-137A	226	0001-0853	31OCT	000-3SB	5uB	COMPLETE
TQH5-139	044	0001-0932	31OCT	2PT-2SB	3uB	COMPLETE
TQH5-141	044	0001-0118	21OCT	2SB-2SB	3uB	T.B.R.
TQH4-141A	044	0001-0872	21OCT	6PT-3PT	3uB	COMPLETE
TQH5-143	224	0001-0843	21OCT	000-1PT	3uB	COMPLETE
TQH5-145	217	0001-0884	07NOV	000-1PT	5uB	COMPLETE
TQH5-147	048	0001-0803	12OCT	5PT-1SB	4uB	COMPLETE
TQH5-149	055	0001-0483	03NOV	2PT-000	4uB	COMPLETE
TQH5-151	234	0001-0523	03NOV	000-3SB	4uB	COMPLETE
TQH5-153	055	0001-0314	03NOV	2PT-1PT	4uB	T.B.R.
TQH5-153A	055	0001-0643	04NOV	000-3SB	5uB	COMPLETE
TQH5-155	233	0001-0583	04NOV	2SB-000	5uB	COMPLETE
TQH5-157	054	0001-0532	04NOV	2PT-000	5uB	COMPLETE
TQH5-201	234	0001-0523	26OCT	2PT-3SB	5uB	COMPLETE
TQH5-202	234	0001-0157	24OCT	000-000	7uB	T.B.R.
TQH5-202A	054	0001-0523	26OCT	2SB-1PT	7uB	COMPLETE
TQH5-203	234	0001-0453	26OCT	1PT-1SB	5uB	COMPLETE
TQH5-204	055	0001-0453	26OCT	2SB-000	3uB	COMPLETE
TQH5-205	234	0001-0453	26OCT	5SB-4SB	4uB	COMPLETE
TQH5-206	235	0001-0513	26OCT	1SB-2SB	5uB	COMPLETE
TQH5-207	325	0001-0493	23OCT	3PT-1SB	4uB	COMPLETE
TQH5-208	325	0001-0412	25OCT	2PT-000	4uB	COMPLETE
TQH5-209	325	0001-0030	23OCT	000-000	4uB	T.B.R.
TQH5-209A	145	0001-0533	24OCT	3PT-2SB	4uB	COMPLETE
TQH5-210	145	0001-0733	23OCT	3SB-1PT	4uB	COMPLETE
TQH5-211	297	0001-0323	27OCT	000-1SB	4uB	COMPLETE
TQH5-212	121	0001-0343	27OCT	2SB-1SB	5uB	COMPLETE
TQH5-213	294	0001-0393	27OCT	2SB-4SB	4uB	COMPLETE
TQH5-214	111	0001-0373	27OCT	2SB-000	5uB	COMPLETE

152054



- C1 -

APPENDIX C

PRODUCTION DETAILS (DATE ORDER)



- C2 -

PRODUCTION DETAILS

DATE	LINE	SP. RANGE	KMS	NAV. TAPE	STATUS
09/10/85	TQH5-2	0001-1183	35.49	20195	COMPLETE
10/10/85	TQH559-1	0001-1633	48.99	20195	COMPLETE
10/10/85	TQH5-95	0001-1692	50.76	20195	COMPLETE
10/10/85	TQH5-01	0001-1706	51.18	20195	COMPLETE
11/10/85	TQH5-99	0001-1592	47.76	20195	COMPLETE
11/10/85	TQH5-101	0001-1363	40.89	20195	COMPLETE
11/10/85	TQH5-97	0001-2083	62.49	20195	COMPLETE
12/10/85	TQH5-137	0001-0391	-	20196	T.B.R.
12/10/85	TQH5-147	0001-0803	24.09	20196	COMPLETE
12/10/85	TQH5-46	0001-1816	54.48	20196	COMPLETE
12/10/85	TQH5-65	0001-1262	37.86	20196	COMPLETE
13/10/85	TQH5-10	0001-1162	34.86	20196	COMPLETE
13/10/85	TQH557-1	0001-1517	45.51	20196	COMPLETE
13/10/85	TQH551-1	0001-0785	23.55	20196	COMPLETE
13/10/85	TQH5-30	0001-0633	18.99	20196	COMPLETE
13/10/85	TQH5-103	0001-1223	36.69	20196	COMPLETE
14/10/85	TQH5-105	0001-1173	35.19	20196	COMPLETE
14/10/85	TQH5-109	0001-0507	15.21	20196	T.B.C.
14/10/85	TQH5-109A	0508-1132	18.75	20196	COMPLETE
14/10/85	TQH5-107	0001-1253	37.59	20197	COMPLETE
14/10/85	TQH5-111	0001-1034	31.02	20197	COMPLETE
15/10/85	TQH5-113	0001-0843	25.29	20197	COMPLETE
15/10/85	TQH5-08	0001-1273	38.19	20197	COMPLETE
15/10/85	TQH5-12	0004-1193	35.70	20197	COMPLETE
16/10/85	TQH5-40	0001-1154	34.62	20197	COMPLETE
16/10/85	TQH5-38	0001-0943	28.29	20197	COMPLETE
16/10/85	TQH5-34	0001-0794	23.82	20197	COMPLETE
16/10/85	TQH5-26	0001-0903	27.09	20197	COMPLETE
17/10/85	TQH5-28	0001-1663	49.89	20197	COMPLETE
17/10/85	TQH5-22	0001-1874	56.22	20197	COMPLETE
17/10/85	TQH5-20	0001-0882	26.46	20198	COMPLETE
17/10/85	TQH5-53	0001-0372	11.16	20198	COMPLETE
17/10/85	TQH5-4	0001-1203	36.09	20198	COMPLETE
18/10/85	TQH5-115	0001-0643	19.29	20198	COMPLETE
18/10/85	TQH5-6	0001-1204	36.12	20198	COMPLETE
18/10/85	TQH5-14	0001-0062	0.0	20198	T.B.R.
18/10/85	TQH5-14A	0001-1293	38.79	20198	COMPLETE
19/10/85	TQH5-70	0001-0743	22.29	20198	COMPLETE
19/10/85	TQH5-135	0001-0802	24.06	20198	COMPLETE
19/10/85	TQH5-72	0001-0122	0.0	20198	T.B.R.
19/10/85	TQH5-133	0001-1122	33.66	20198	COMPLETE
19/10/85	TQH5-129	0001-0923	27.69	20198	COMPLETE

PRODUCTION DETAILS

DATE	LINE	SP. RANGE	KMS	NAV. TAPE	STATUS
20/10/85	TQH5-125	0001-0862	25.86	20198	COMPLETE
20/10/85	TQH5-121	0001-0873	26.19	20198	COMPLETE
20/10/85	TQH5-119	0001-0902	27.06	20199	COMPLETE
20/10/85	TQH5-72A	0025-0962	28.14	20199	COMPLETE
20/10/85	TQH5-74	0001-1152	34.56	20199	COMPLETE
21/10/85	TQH5-98	0001-0698	20.94	20199	COMPLETE
21/10/85	TQH5-84	0001-0862	25.86	20199	COMPLETE
21/10/85	TQH5-86	0001-1213	36.39	20199	COMPLETE
21/10/85	TQH5-143	0001-0843	25.29	20199	COMPLETE
21/10/85	TQH5-141	0001-0141	0.0	20199	T.B.R.
21/10/85	TQH5-141A	0001-0872	26.16	20196	COMPLETE
23/10/85	TQH5-6A	0691-1202	0.0	20200	COMPLETE
23/10/85	TQH5-93	0001-0753	22.59	20200	COMPLETE
23/10/85	TQH5-207	0001-0493	14.79	20200	COMPLETE
23/10/85	TQH5-210	0001-0733	21.99	20200	COMPLETE
23/10/85	TQH5-209	0001-0030	0.0	20200	T.B.R.
24/10/85	TQH5-202	0001-0157	0.0	20200	T.B.R.
25/10/85	TQH5-209A	0001-0533	15.99	20200	COMPLETE
25/10/85	TQH5-208	0001-0412	12.36	20200	COMPLETE
25/10/85	TQH5-36	0001-0623	18.69	20200	COMPLETE
25/10/85	TQH5-32	0001-0574	17.22	20200	COMPLETE
25/10/85	TQH5-18	0001-0673	20.19	20200	COMPLETE
25/10/85	TQH5-16	0001-0130	00.00	20200	COMPLETE
25/10/85	TQH5-16A	0001-0874	26.22	20200	COMPLETE
26/10/85	TQH5-91	0001-0363	10.89	20200	COMPLETE
26/10/85	TQH5-89	0001-0573	17.19	20200	COMPLETE
26/10/85	TQH5-206	0001-0513	15.39	20200	COMPLETE
26/10/85	TQH5-87	0001-0833	24.99	20200	COMPLETE
26/10/85	TQH5-205	0001-0453	13.59	20200	COMPLETE
26/10/85	TQH5-204	0001-0453	13.59	20200	COMPLETE
26/10/85	TQH5-203	0001-0453	13.59	20200	COMPLETE
26/10/85	TQH5-202A	0001-0523	15.69	20200	COMPLETE
27/10/85	TQH5-201	0001-0523	15.69	20200	COMPLETE
27/10/85	TQH5-214	0001-0373	11.19	20200	COMPLETE
27/10/85	TQH5-213	0001-0393	11.79	20200	COMPLETE
27/10/85	TQH5-212	0001-0343	10.29	20200	COMPLETE
27/10/85	TQH5-211	0001-0323	09.69	20200	COMPLETE
27/10/85	TQH5-83	0001-0582	17.46	20201	COMPLETE
27/10/85	TQH5-41	0001-2553	76.59	20201	COMPLETE
28/10/85	TQH5-43	0001-2087	62.61	20201	COMPLETE
28/10/85	TQH5-85	0001-0412	12.36	20201	COMPLETE
28/10/85	TQH5-81	0001-0733	21.99	20201	COMPLETE
28/10/85					



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PRODUCTION DETAILS

DATE	LINE	SP. RANGE	KMS	NAV. TAPE	STATUS
29/10/85	TQH5-35	0001-2766	82.98	20201	COMPLETE
29/10/85	TQH5-71	0001-0602	18.06	20201	COMPLETE
29/10/85	TQH5-79	0001-0532	15.96	20202	COMPLETE
29/10/85	TQH5-75	0001-0723	21.69	20202	COMPLETE
30/10/85	TQH5-73	0001-0523	15.69	20202	COMPLETE
30/10/85	TQH5-69	0001-0393	11.79	20202	COMPLETE
30/10/85	TQH5-31	0001-2115	63.45	20202	COMPLETE
30/10/85	TQH5-29	0001-0109	0.0	20202	T.B.R.
30/10/85	TQH556-1	0001-0437	0.0	20202	T.B.R.
31/10/85	TQH5-137A	0001-0853	25.59	20202	COMPLETE
31/10/85	TQH5-139	0001-0932	27.96	20202	COMPLETE
31/10/85	TQH556-1	0001-1373	41.19	20202	COMPLETE
31/10/85	TQH5-117	0001-0902	29.06	20202	COMPLETE
31/10/85	TQH5-123	0001-0873	26.19	20202	COMPLETE
01/11/85	TQH5-127	0001-0862	25.86	20202	COMPLETE
01/11/85	TQH5-131	0001-0993	29.79	20202	COMPLETE
01/11/85	TQH5-80	0001-1033	30.99	20202	COMPLETE
01/11/85	TQH5-44	0001-3144	94.32	20203	COMPLETE
02/11/85	TQH5-42	0001-0972	29.16	20203	COMPLETE
02/11/85	TQH5-37	0001-0824	22.83	20203	COMPLETE
02/11/85	TQH5-37A	0641-1593	24.96	20203	COMPLETE
02/11/85	TQH5-29A	0001-2639	79.17	20203	COMPLETE
03/11/85	TQH5-67	0001-0912	27.36	20203	COMPLETE
03/11/85	TQH5-90	0001-0154	0.0	20203	T.B.R.
03/11/85	TQH5-90A	0001-1002	30.06	20203	COMPLETE
03/11/85	TQH5-149	0001-0483	14.49	20203	COMPLETE
03/11/85	TQH5-151	0001-0523	15.69	20203	COMPLETE
03/11/85	TQH5-153	0001-0314	0.0	20203	T.B.R.
04/11/85	TQH5-153A	0001-0643	19.29	20203	COMPLETE
04/11/85	TQH5-155	0001-0583	17.49	20203	COMPLETE
04/11/85	TQH5-157	0001-0532	15.96	20203	COMPLETE
04/11/85	TQH5-24	0001-0001	0.0	20204	T.B.R.
04/11/85	TQH5-24A	0001-1281	38.43	20204	COMPLETE
04/11/85	TQH5-39	0001-1583	47.49	20204	COMPLETE
05/11/85	TQH556-1A	0001-1506	45.18	20204	COMPLETE
05/11/85	TQH5-60	0001-1026	30.78	20204	COMPLETE
05/11/85	TQH5-50	0001-1265	37.95	20204	COMPLETE
05/11/85	TQH5-78	0001-0504	14.85	20204	T.B.C.
06/11/85	TQH5-78A	0375-1333	25.14	20205	COMPLETE
06/11/85	TQH5-76	0001-1303	39.09	20205	COMPLETE
07/11/85	TQH5-145	0001-0884	26.52	20205	COMPLETE
07/11/85	TQH566-1	0001-2676	76.53	20205	T.B.C.
08/11/85	TQH5-27	0001-1544	46.32	20205	COMPLETE
09/11/85	TQH5-25	0001-0923	27.69	20205	COMPLETE
09/11/85	TQH5-21	0001-922	27.66	20205	COMPLETE
09/11/85	TQH5-23	0001-1273	38.19	20205	COMPLETE

PRODUCTION DETAILS

DATE	LINE	SP. RANGE	KMS	NAV. TAPE	STATUS
09/11/85	TQH5-19	0001-0454	13.17	20205	T.B.C.
09/11/85	TQH5-19A	0001-0662	15.99	20205	COMPLETE
09/11/85	TQH5-17	0001-0229	06.87	20205	T.B.C.
10/11/85	TQH5-17A	0101-0843	18.42	20205	COMPLETE
10/11/85	TQH5-13	0001-0712	21.36	20205	COMPLETE
10/11/85	TQH5-15	0001-0613	18.39	20206	COMPLETE
10/11/85	TQH5-11	0001-0452	13.56	20206	COMPLETE
10/11/85	TQH5-09	0001-0512	15.36	20206	COMPLETE
10/11/85	TQH5-07	0001-1133	33.99	20206	COMPLETE
10/11/85	TQH5-03	0001-0483	14.49	20206	COMPLETE
10/11/85	TQH5-05	0001-0493	14.79	20206	COMPLETE
11/11/85	TQH5-94	0001-0332	09.96	20206	COMPLETE
11/11/85	TQH5-96	0001-0433	12.99	20206	COMPLETE
11/11/85	TQH5-01	0001-0583	17.49	20206	COMPLETE
11/11/85	TQH5-56	0001-2447	73.41	20206	COMPLETE
11/11/85	TQH5-58	0001-2012	60.36	20206	COMPLETE
12/11/85	TQH5-62	0001-1512	45.36	20206	COMPLETE
12/11/85	TQH5-92	0001-0832	24.96	20206	COMPLETE
12/11/85	TQH5-54	0001-1136	34.08	20206	COMPLETE
12/11/85	TQH554-1	0001-1726	51.78	20207	COMPLETE
12/11/85	TQH5-88	0001-0972	23.67	20207	COMPLETE
13/11/85	TQH5-64	0001-0672	20.16	20207	COMPLETE
13/11/85	TQH5-66A	2431-2652	0.0	20207	T.B.R.
13/11/85	TQH5-66B	2431-4162	48.33	20207	COMPLETE
13/11/85	TQH5-82	0001-0753	22.59	20207	COMPLETE
13/11/85	TQH5-68	0001-0953	28.59	20207	COMPLETE
14/11/85	TQH545-1	0001-1260	37.80	20207	COMPLETE
14/11/85	TQH5-47	0001-0763	22.89	20207	COMPLETE
14/11/85	TQH5-45	0001-0923	27.69	20207	COMPLETE
14/11/85	TQH5-49	0001-1932	57.96	20207	COMPLETE
14/11/85	TQH5-48	0001-1214	36.42	20207	COMPLETE
15/11/85	TQH5-52	0001-1303	39.09	20207	COMPLETE
15/11/85	TQH5-55	0001-1033	30.99	20208	COMPLETE
15/11/85	TQH5-59	0001-1924	57.72	20208	COMPLETE
15/11/85	TQH5-57	0001-1229	36.87	20208	COMPLETE
15/11/85	TQH5-51	0001-0948	28.44	20208	COMPLETE
16/11/85	TQH5-63	0001-1813	54.39	20208	COMPLETE
16/11/85	TQH5-61	0001-1419	42.57	20208	COMPLETE
23/11/85	TQH5-102	0001-1744	52.32	20211	COMPLETE
23/11/85	TQH5-100	0001-0836	25.08	20211	COMPLETE
24/11/85	TQH5-161	0001-0833	24.99	20211	COMPLETE
24/11/85	TQH5-163	0001-0126	00.00	20211	T.B.R.
24/11/85	TQH5-163A	0001-0939	28.17	20211	COMPLETE
24/11/85	TQH5-165	0001-0859	25.77	20211	COMPLETE
25/11/85	TQH5-104	0001-0872	26.16	20211	COMPLETE
25/11/85	TQH5-167	0001-0972	29.16	20211	COMPLETE

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APPENDIX D

FIELD TAPE INVENTORY



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FIELD TAPE INVENTORY

<u>DATE</u>	<u>TAPE NO.</u>	<u>LINE NO.</u>	<u>SP RANGE</u>	<u>RECORD NO.</u>
09/10/85	816930	TQH5-002	0001-0113	0001-0113
	816931	TQH5-002	0114-0236	0114-0236
	816932	TQH5-002	0237-0359	0237-0359
10/10/85	816933	TQH5-002	0360-0482	0360-0482
	816934	TQH5-002	0483-0605	0483-0605
	816935	TQH5-002	0606-0728	0606-0728
	816936	TQH5-002	0729-0851	0729-0851
	816937	TQH5-002	0852-0974	0852-0974
	816938	TQH5-002	0975-1097	0975-1097
	816939	TQH5-002	1098-1183	1098-1183
	816940	TQH559-1	0001-0113	0001-0113
	816941	TQH559-1	0114-0226	0114-0226
	816942	TQH559-1	0227-0339	0227-0339
	816943	TQH559-1	0340-0452	0340-0452
	816944	TQH559-1	0453-0565	0453-0565
	816945	TQH559-1	0566-0678	0566-0678
	816946	TQH559-1	0679-0791	0679-0791
	816947	TQH559-1	0792-0904	0792-0904
	816948	TQH559-1	0905-1017	0905-1017
	816949	TQH559-1	1018-1130	1018-1130
	816950	TQH559-1	1131-1243	1131-1243
	816951	TQH559-1	1244-1356	1244-1356
	816952	TQH559-1	1357-1469	1357-1469
	816953	TQH559-1	1470-1582	1470-1582
	816954	TQH559-1	1583-1633	1583-1633
	816955	TQH5-95	0001-0113	0001-0113
	816956	TQH5-95	0114-0226	0114-0226
	816957	TQH5-95	0227-0339	0227-0339
	816958	TQH5-95	0340-0467	0340-0467
	816959	TQH5-95	0468-0595	0468-0595
	816960	TQH5-95	0596-0723	0596-0723
	816961	TQH5-95	0724-0851	0724-0851
	816962	TQH5-95	0852-0981	0852-0981
	816963	TQH5-95	0982-1111	0982-1111
	816964	TQH5-95	1112-1241	1112-1241
	816965	TQH5-95	1242-1371	1242-1371
	816966	TQH5-95	1372-1501	1372-1501
816967	TQH5-95	1502-1631	1502-1631	
816968	TQH5-95	1632-1692	1632-1692	
816969	TQH556-1	0001-0128	0001-0128	
816970	TQH556-1	0129-0260	0129-0260	
816971	TQH556-1	0261-0390	0261-0390	
816972	TQH556-1	0391-0520	0391-0520	
816973	TQH556-1	0521-0650	0521-0650	
816974	TQH556-1	0651-0780	0651-0780	



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FIELD TAPE INVENTORY (cont.)

<u>DATE</u>	<u>TAPE NO.</u>	<u>LINE NO.</u>	<u>SP RANGE</u>	<u>RECORD NO.</u>	
10/10/85	816975	TQH556-1	0781-0910	0781-0910	
	816976	TQH556-1	0911-1040	0911-1040	
	816977	TQH556-1	1041-1170	1041-1170	
	816978	TQH556-1	1171-1300	1171-1300	
	816979	TQH556-1	1301-1430	1301-1430	
	816980	TQH556-1	1431-1560	1431-1560	
	816981	TQH556-1	1561-1690	1561-1690	
	816982	TQH556-1	1691-1706	1691-1706	
	11/10/85	816983	TQH5-99	0001-0130	0001-0130
		816984	TQH5-99	0131-0252	0131-0252
816985		TQH5-99	BAD -TAPE	BAD -TAPE	
816986		TQH5-99	0257-0357	0253-0353	
816987		TQH5-99	0358-0487	0354-0483	
816988		TQH5-99	0488-0617	0484-0613	
816989		TQH5-99	0618-0696	0614-0692	
816990		TQH5-99	0704-0816	0693-0805	
816991		TQH5-99	0817-0946	0806-0935	
816992		TQH5-99	0947-1076	0936-1065	
816993		TQH5-99	1077-1206	1066-1195	
816994		TQH5-99	1207-1336	1196-1325	
816995		TQH5-99	1337-1466	1326-1455	
816996		TQH5-99	1467-1592	1456-1581	
816997		TQH5-101	0001-0130	0001-0130	
816998		TQH5-101	0131-0263	0131-0263	
816999		TQH5-101	0264-0396	0264-0396	
817000		TQH5-101	0397-0520	0397-0520	
817001		TQH5-101	0521-0650	0521-0650	
817002		TQH5-101	0651-0780	0651-0780	
817003		TQH5-101	0781-0910	0781-0910	
817004		TQH5-101	0911-1040	0911-1040	
817005		TQH5-101	1041-1170	1041-1170	
817006		TQH5-101	1171-1300	1171-1300	
817007		TQH5-101	1301-1363	1301-1363	
817008	TQH5-97	0001-0130	0001-0130		
817009	TQH5-97	0131-0260	0131-0260		
817010	TQH5-97	0261-0390	0261-0390		
817011	TQH5-97	0391-0520	0391-0520		
817012	TQH5-97	0521-0650	0521-0650		
817013	TQH5-97	0651-0780	0651-0780		
817014	TQH5-97	0781-0910	0781-0910		
817015	TQH5-97	0911-1040	0911-1040		



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FIELD TAPE INVENTORY (cont.)

<u>DATE</u>	<u>TAPE NO.</u>	<u>LINE NO.</u>	<u>SP RANGE</u>	<u>RECORD NO.</u>	
11/10/85	817016	TQH5-97	1041-1170	1041-1170	
	817017	TQH5-97	1171-1300	1171-1300	
	817018	TQH5-97	1301-1430	1301-1430	
	817019	TQH5-97	1431-1560	1431-1560	
	817020	TQH5-97	1561-1690	1561-1690	
	817021	TQH5-97	1691-1820	1691-1820	
	817022	TQH5-97	1821-1950	1821-1950	
	817023	TQH5-97	1951-2074	1951-2074	
	817024	TQH5-97	2075-2083	2075-2083	
	12/10/85	817025	TQH5-137	0001-0130	0001-0130
		817026	TQH5-137	0131-0260	0131-0260
		817027	TQH5-137	0261-0390	0261-0390
		817028	TQH5-137	0391-0391	0391-0391
		817029	TQH5-147	0001-0130	0001-0130
817030		TQH5-147	0131-0260	0131-0260	
817031		TQH5-147	0261-0390	0261-0390	
817032		TQH5-147	0391-0520	0391-0520	
817033		TQH5-147	0521-0650	0521-0650	
817034		TQH5-147	0651-0780	0651-0780	
817035		TQH5-147	0781-0803	0781-0803	
817036		TQH5-46	0001-0130	0001-0130	
817037		TQH5-46	0131-0139	0131-0139	
817038		TQH5-46	0147-0259	0141-0253	
817039		TQH5-46	0260-0389	0254-0383	
817040		TQH5-46	0390-0519	0384-0513	
817041		TQH5-46	0520-0649	0514-0643	
817042		TQH5-46	0650-0779	0644-0773	
817043		TQH5-46	0780-0909	0774-0903	
817044		TQH5-46	0910-1039	0904-1033	
817045		TQH5-46	1040-1169	1034-1163	
817046		TQH5-46	1170-1299	1164-1293	
817047		TQH5-46	1300-1429	1294-1423	
817048		TQH5-46	1430-1559	1424-1553	
817049		TQH5-46	1560-1689	1554-1683	
817050		TQH5-46	1690-1816	1684-1810	
817051		TQH5-65	0001-0130	0001-0130	
817052		TQH5-65	0131-0260	0131-0260	
817053		TQH5-65	0261-0390	0261-0390	
817054		TQH5-65	0391-0520	0391-0520	
817055		TQH5-65	0521-0650	0521-0650	
13/11/85		817056	TQH5-65	0651-0780	0651-0780
	817057	TQH5-65	0781-0910	0781-0910	
	817058	TQH5-65	0911-1040	0911-1040	
	817059	TQH5-65	1041-1171	1041-1171	
	817060	TQH5-65	1172-1262	1172-1262	



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FIELD TAPE INVENTORY (cont.)

<u>DATE</u>	<u>TAPE NO.</u>	<u>LINE NO.</u>	<u>SP RANGE</u>	<u>RECORD NO.</u>
13/10/85	817061	TQH5-10	0001-0130	0001-0130
	817062	TQH5-10	0131-0260	0131-0260
	817063	TQH5-10	0261-0390	0261-0390
	817064	TQH5-10	0391-0520	0391-0520
	817065	TQH5-10	0521-0650	0521-0650
	817066	TQH5-10	0651-0780	0651-0780
	817067	TQH5-10	0781-0910	0781-0910
	817068	TQH5-10	0911-1040	0911-1040
	817069	TQH5-10	1041-1162	1041-1162
	817070	TQH557-1	0001-0130	0001-0130
	817071	TQH557-1	0131-0260	0131-0260
	817072	TQH557-1	0261-0390	0261-0390
	817073	TQH557-1	0391-0520	0391-0520
	817074	TQH557-1	0521-0650	0521-0650
	817075	TQH557-1	0651-0780	0651-0780
	817076	TQH557-1	0781-0910	0781-0910
	817077	TQH557-1	0911-1040	0911-1040
	817078	TQH557-1	1041-1170	1041-1170
	817079	TQH557-1	1171-1300	1171-1300
	817080	TQH557-1	1301-1430	1301-1430
	817081	TQH557-1	1431-1517	1431-1517
	817082	TQH557-1	0001-0130	0001-0130
	817083	TQH557-1	0131-0260	0131-0260
	817084	TQH557-1	0261-0390	0261-0390
	817085	TQH557-1	0391-0520	0391-0520
	817086	TQH557-1	0521-0652	0521-0652
	817087	TQH557-1	0653-0784	0653-0784
	817088	TQH557-1	0785-0785	0785-0785
	817089	TQH5-30	0001-0130	0001-0130
	817090	TQH5-30	0130-0260	0130-0260
	817091	TQH5-30	0261-0390	0261-0390
	817092	TQH5-30	0391-0520	0391-0520
	817093	TQH5-30	0521-0633	0521-0633
817094	TQH5-103	0001-0130	0001-0130	
817095	TQH5-103	0131-0260	0131-0260	
817096	TQH5-103	0261-0390	0261-0390	
817097	TQH5-103	0391-0520	0391-0520	
817098	TQH5-103	0521-0650	0521-0650	
14/10/85	817099	TQH5-103	0651-0780	0651-0780
	817100	TQH5-103	0781-0910	0781-0910
	817101	TQH5-103	0911-1040	0911-1040
	817102	TQH5-103	1041-1170	1041-1170
	817103	TQH5-103	1171-1223	1171-1223
	817104	TQH5-105	0001-0130	0001-0130
	817105	TQH5-105	0131-0260	0131-0260



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FIELD TAPE INVENTORY (cont.)

<u>DATE</u>	<u>TAPE NO.</u>	<u>LINE NO.</u>	<u>SP RANGE</u>	<u>RECORD NO.</u>
14/10/85	817106	TQH5-105	0261-0390	0261-0390
	817107	TQH5-105	0391-0520	0391-0520
	817108	TQH5-105	0521-0650	0521-0650
	817109	TQH5-105	0651-0780	0651-0780
	817110	TQH5-105	0781-0910	0781-0910
	817111	TQH5-105	0911-1040	0911-1040
	817112	TQH5-105	1041-1170	1041-1170
	817113	TQH5-105	1171-1173	1171-1173
	817114	TQH5-109	0001-0130	0001-0130
	817115	TQH5-109	0131-0260	0131-0260
	817116	TQH5-109	0261-0390	0261-0390
	817117	TQH5-109	0391-0508	0391-0508
	817118	TQH5-109A	0381-0493	0001-0113
	817119	TQH5-109A	0494-0623	0114-0243
	817120	TQH5-109A	0624-0753	0244-0373
	817121	TQH5-109A	0754-0883	0374-0503
	817122	TQH5-109A	0884-1013	0504-0633
	817123	TQH5-109A	1014-1132	0634-0752
	817124	TQH5-107	0001-0130	0001-0130
	817125	TQH5-107	0131-0260	0131-0260
	817126	TQH5-107	0261-0390	0261-0390
	817127	TQH5-107	0391-0520	0391-0520
	817128	TQH5-107	0521-0650	0521-0650
	817129	TQH5-107	0651-0753	0651-0753
	817130	TQH5-107	0763-0892	0755-0884
	817131	TQH5-107	0893-1022	0885-1014
	817132	TQH5-107	1023-1152	1015-1144
	817133	TQH5-107	1153-1253	1145-1245
	817134	TQH5-111	0001-0130	0001-0130
	817135	TQH5-111	0131-0260	0131-0260
	817136	TQH5-111	0261-0390	0261-0390
	817137	TQH5-111	0391-0520	0391-0520
	817138	TQH5-111	0521-0650	0521-0650
	817139	TQH5-111	0651-0780	0651-0780
	817140	TQH5-111	0781-0910	0781-0910
	817141	TQH5-111	0911-1034	0911-1034
	817142	TQH5-113	0001-0130	0001-0130
	817143	TQH5-113	0131-0260	0313-0260
	817144	TQH5-113	0261-0390	0261-0390
	817146	TQH5-113	0391-0520	0391-0520
	817147	TQH5-113	0521-0650	0521-0650
	817148	TQH5-113	0651-0780	0651-0780
	817149	TQH5-113	0781-0843	0781-0843
	817150	TQH5-8	0001-0113	0001-0113



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FIELD TAPE INVENTORY (cont.)

<u>DATE</u>	<u>TAPE NO.</u>	<u>LINE NO.</u>	<u>SP RANGE</u>	<u>RECORD NO.</u>	
15/10/85	817150	TQH5-8	0114-0243	0114-0243	
	817151	TQH5-8	0244-0373	0244-0373	
	817152	TQH5-8	0374-0503	0374-0503	
	817153	TQH5-8	0504-0633	0504-0633	
	817154	TQH5-8	0634-0763	0634-0763	
	817155	TQH5-8	0764-0893	0764-0893	
	817156	TQH5-8	0894-1023	0894-1023	
	817157	TQH5-8	1024-1153	1024-1153	
	817158	TQH5-8	1154-1273	1154-1273	
	817159	TQH5-12	0004-0133	0001-0130	
	817160	TQH5-12	0134-0263	0131-0260	
	817161	TQH5-12	0264-0393	0261-0390	
	817162	TQH5-12	0394-0523	0391-0520	
	817163	TQH5-12	0524-0653	0521-0650	
	817164	TQH5-12	0654-0783	0651-0780	
	817165	TQH5-12	0784-0913	0781-0910	
	817166	TQH5-12	0914-1043	0911-1040	
	817167	TQH5-12	1044-1173	1041-1170	
	817168	TQH5-12	1174-1193	1171-1190	
	16/10/85	817169	TQH5-40	0001-0130	0001-0130
		817170	TQH5-40	0131-0260	0131-0260
		817171	TQH5-40	0261-0390	0261-0390
		817172	TQH5-40	0391-0520	0391-0520
		817173	TQH5-40	0521-0650	0521-0650
		817174	TQH5-40	0651-0780	0651-0780
		817175	TQH5-40	0781-0910	0781-0910
		817176	TQH5-40	0911-1040	0911-1040
		817177	TQH5-40	1041-1154	1041-1154
		817178	TQH5-38	0001-0130	0001-0130
		817179	TQH5-38	0131-0260	0131-0260
		817180	TQH5-38	0261-0390	0261-0390
		817181	TQH5-38	0391-0520	0391-0520
		817182	TQH5-38	0521-0650	0521-0650
817183		TQH5-38	0651-0780	0651-0780	
817184		TQH5-38	0781-0910	0781-0910	
817185		TQH5-38	0911-0943	0911-0943	
817186		TQH5-34	0001-0130	0001-0130	
817187		TQH5-34	0131-0260	0131-0260	
817188		TQH5-34	0261-0390	0261-0390	
817189		TQH5-34	0391-0520	0391-0520	
817190		TQH5-34	0521-0650	0521-0650	
817191		TQH5-34	0651-0780	0651-0780	
817192		TQH5-34	0781-0794	0781-0794	
817193		TQH5-26	0001-0130	0001-0130	
817194		TQH5-26	0131-0260	0131-0260	
817195		TQH5-26	0261-0390	0261-0390	



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FIELD TAPE INVENTORY (cont.)

<u>DATE</u>	<u>TAPE NO.</u>	<u>LINE NO.</u>	<u>SP RANGE</u>	<u>RECORD NO.</u>
	817196	TQH5-26	0391-0520	0391-0520
	817197	TQH5-26	0521-0650	0521-0650
	817198	TQH5-26	0651-0780	0651-0780
	817199	TQH5-26	0781-0903	0781-0903
	817200	TQH5-28	0001-0130	0001-0130
	817201	TQH5-28	0131-0260	0131-0260
	817202	TQH5-28	0261-0390	0261-0390
	817203	TQH5-28	0391-0520	0391-0520
	817204	TQH5-28	0521-0650	0521-0650
	817205	TQH5-28	0651-0780	0651-0780
	817206	TQH5-28	0781-0910	0781-0910
17/OCT/85	817207	TQH5-28	0911-1040	0911-1040
	817208	TQH5-28	1041-1170	1041-1170
	817209	TQH5-28	1171-1300	1171-1300
	817210	TQH5-28	1301-1430	1301-1430
	817211	TQH5-28	1431-1560	1431-1560
	817212	TQH5-28	1561-1663	1561-1663
	817213	TQH5-22	0001-0130	0001-0130
	817214	TQH5-22	0131-0260	0131-0260
	817215	TQH5-22	0261-0390	0261-0390
	817216	TQH5-22	0391-0520	0391-0520
	817217	TQH5-22	0521-0650	0521-0650
	817218	TQH5-22	0651-0780	0651-0780
	817219	TQH5-22	0781-0910	0781-0910
	817220	TQH5-22	0911-1040	0911-1040
	817221	TQH5-22	1041-1170	1041-1170
	817222	TQH5-22	1171-1300	1171-1300
	817223	TQH5-22	1301-1430	1301-1430
	817224	TQH5-22	1431-1560	1431-1560
	817225	TQH5-22	1561-1690	1561-1690
	817226	TQH5-22	1691-1820	1691-1820
	817227	TQH5-22	1821-1874	1821-1874
	817228	TQH5-20	0001-0130	0001-0130
	817229	TQH5-20	0131-0260	0131-0260
	817230	TQH5-20	0261-0390	0261-0390
	817231	TQH5-20	0391-0520	0391-0520
	817232	TQH5-20	0521-0650	0521-0650
	817233	TQH5-20	0651-0780	0651-0780
	817234	TQH5-20	0781-0882	0781-0882
	817235	TQH5-53	0001-0130	0001-0130
	817236	TQH5-53	0131-0260	0131-0260
	817237	TQH5-53	0261-0372	0261-0372



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FIELD TAPE INVENTORY (cont.)

<u>DATE</u>	<u>TAPE NO.</u>	<u>LINE NO.</u>	<u>SP RANGE</u>	<u>RECORD NO.</u>
	817238	TQH5-04	0001-0113	0001-0113
	817239	TQH5-04	0114-0245	0114-0245
	817240	TQH5-04	0246-0377	0246-0377
	817241	TQH5-04	0378-0509	0378-0509
	817242	TQH5-04	0510-0641	0510-0641
	817243	TQH5-04	0642-0773	0642-0773
	817244	TQH5-04	0774-0905	0774-0905
	817245	TQH5-04	0906-1037	0906-1037
	817246	TQH5-04	1038-1169	1038-1169
	817247	TQH5-04	1170-1203	1170-1203
18/10/85	817248	TQH5-115	0001-0130	0001-0130
	817249	TQH5-115	0131-0260	0131-0260
	817250	TQH5-115	0261-0390	0261-0390
	817251	TQH5-115	0391-0520	0391-0520
	817252	TQH5-115	0521-0643	0521-0643
	817253	TQH5-06	0001-0130	0001-0130
	817254	TQH5-06	0131-0260	0131-0260
	817255	TQH5-06	0261-0390	0261-0390
	817256	TQH5-06	0391-0520	0391-0520
	817257	TQH5-06	0521-0650	0521-0650
	817258	TQH5-06	0651-0780	0651-0780
	817259	TQH5-06	0781-0910	0781-0910
	817260	TQH5-06	0911-1040	0911-1040
	817261	TQH5-06	1041-1170	1041-1170
	817262	TQH5-06	1171-1204	1171-1204
	817263	TQH5-14	0001-0062	0001-0062
	817264	TQH5-14A	0001-0130	0001-0130
	817265	TQH5-14A	0131-0260	0131-0260
	817266	TQH5-14A	0261-0390	0261-0390
	817267	TQH5-14A	0391-0520	0391-0520
	817268	TQH5-14A	0521-0650	0521-0650
	817269	TQH5-14A	0651-0780	0651-0780
	817270	TQH5-14A	0781-0910	0781-0910
	817271	TQH5-14A	0911-1040	0911-1040
	817272	TQH5-14A	1041-1170	1041-1170
	817273	TQH5-14A	1171-1293	1171-1293
	817274	TQH5-70	0001-0130	0001-0130
	817275	TQH5-70	0131-0260	0131-0260
	817276	TQH5-70	0261-0390	0261-0390
	817277	TQH5-70	0391-0520	0391-0520
	817278	TQH5-70	0521-0650	0521-0650
	817279	TQH5-70	0651-0743	0651-0743



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FIELD TAPE INVENTORY (cont.)

<u>DATE</u>	<u>TAPE NO.</u>	<u>LINE NO.</u>	<u>SP RANGE</u>	<u>RECORD NO.</u>	
18/10/85	817280	TQH5-135	0001-0113	0001-0113	
	817281	TQH5-135	0114-0240	0114-0240	
	817282	TQH5-135	0241-0370	0241-0370	
	817283	TQH5-135	0371-0500	0371-0500	
	817284	TQH5-135	0501-0630	0501-0630	
	817285	TQH5-135	0631-0760	0631-0760	
	817286	TQH5-135	0761-0802	0761-0802	
	817287	TQH5-72	0001-0122	0001-0122	
	817288	TQH5-133	0001-0130	0001-0130	
	817289	TQH5-133	0131-0250	0131-0250	
	19/10/85	817290	TQH5-133	0251-0370	0251-0370
		817291	TQH5-133	0371-0490	0371-0490
		817292	TQH5-133	0491-0610	0491-0610
		817293	TQH5-133	0611-0730	0611-0730
817294		TQH5-133	0731-0850	0731-0850	
817295		TQH5-133	0851-0970	0851-0970	
817296		TQH5-133	0971-1090	0971-1090	
817297		TQH5-133	1091-1122	1091-1122	
817298		TQH5-129	0001-0120	0001-0120	
817299		TQH5-129	0121-0240	0121-0240	
20/10/85		817300	TQH5-129	0241-0360	0241-0360
		817301	TQH5-129	0361-0362	0361-0362
		817302	TQH5-129	0368-0482	0362-0476
		817303	TQH5-129	0483-0597	0477-0591
	817304	TQH5-129	0598-0712	0592-0706	
	817305	TQH5-129	0713-0827	0707-0821	
	817306	TQH5-129	0828-0923	0822-0917	
	817307	TQH5-125	0001-0115	0001-0115	
	817308	TQH5-125	0116-0230	0116-0230	
	817309	TQH5-125	0231-0345	0231-0345	
	817310	TQH5-125	0346-0460	0346-0460	
	817311	TQH5-125	0461-0575	0461-0575	
	817312	TQH5-125	0576-0690	0576-0690	
	817313	TQH5-125	0691-0805	0691-0805	
817314	TQH5-125	0806-0862	0806-0862		
817315	TQH5-121	0001-0115	0001-0115		
817316	TQH5 121	0116-0230	0116-0230		
817317	TQH5 121	0231-0345	0231-0345		
817318	TQH5 121	0346-0460	0346-0460		
817319	TQH5 121	0461-0575	0461-0575		
817320	TQH5-121	0576-0690	0576-0690		
817321	TQH5-121	0691-0805	0691-0805		
817322	TQH5-121	0806-0873	0806-0873		



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FIELD TAPE INVENTORY (cont.)

<u>DATE</u>	<u>TAPE NO.</u>	<u>LINE NO.</u>	<u>SP RANGE</u>	<u>RECORD NO.</u>	
20/10/85	817323	TQH5-119	0001-0115	0001-0115	
	817324	TQH5-119	0116-0230	0116-0230	
	817325	TQH5-119	0231-0345	0231-0345	
	817326	TQH5-119	0346-0460	0346-0460	
	817327	TQH5-119	0461-0575	0461-0575	
	817328	TQH5-119	0576-0690	0576-0690	
	817329	TQH5-119	0691-0805	0691-0805	
	817330	TQH5-119	0806-0902	0806-0902	
	817331	TQH5-72A	0001-0016	0001-0016	
	817332	TQH5-72A	0025-0142	0017-0134	
	817333	TQH5-72A	0143-0260	0135-0252	
	817334	TQH5-72A	0261-0378	0253-0370	
	817335	TQH5-72A	0379-0496	0371-0488	
	817336	TQH5 72A	0497-0614	0489-0606	
	817337	TQH5-72A	0615-0732	0607-0724	
	817338	TQH5-72A	0733-0850	0725-0842	
	817339	TQH5-72A	0851-0869	0843-0861	
	817340	TQH5-72A	0870-0962	0862-0954	
	817341	TQH5-74	0001-0118	0001-0118	
	817342	TQH5-74	0119-0236	0119-0236	
	817343	TQH5-74	0237-0354	0237-0354	
	817344	TQH5-74	0355-0472	0355-0472	
	817345	TQH5-74	0473-0590	0473-0590	
	817346	TQH5-74	0591-0708	0591-0708	
	817347	TQH5-74	0709-0826	0709-0826	
	817348	TQH5-74	0827-0944	0827-0944	
	817349	TQH5-74	0945-1062	0945-1062	
	817350	TQH5-74	1063-1152	1063-1152	
	21/10/85	817351	TQH5-98	0001-0115	0001-0115
		817352	TQH5-98	0116-0230	0116-0230
		817353	TQH5-98	0231-0345	0231-0345
		817354	TQH5-98	0346-0460	0346-0460
		817355	TQH5-98	0461-0575	0461-0575
		817356	TQH5-98	0576-0690	0576-0690
817357		TQH5-98	0691-0698	0691-0698	
817358		TQH5-84	0001-0011	0001-0011	
817359		TQH5-84	0012-0124	0012-0124	
817360		TQH5-84	0125-0127	0125-0127	
817361		TQH5-84	0132-0245	0128-0241	
817362		TQH5-84	0246-0358	0242-0354	
817363		TQH5-84	0359-0474	0355-0470	
817364		TQH5-84	0475-0590	0471-0586	
817365		TQH5-84	0591-0706	0587-0702	
817366		TQH5-84	0707-0822	0703-0818	
817367		TQH5-84	0823-0862	0819-0858	



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FIELD TAPE INVENTORY (cont.)

<u>DATE</u>	<u>TAPE NO.</u>	<u>LINE NO.</u>	<u>SP. RANGE</u>	<u>RECORD NO.</u>	
21/10/85	817368	TQH5-86	0001-0112	0001-0112	
	817369	TQH5-86	0120-0129	0113-0122	
	817370	TQH5-86	0130-0242	0123-0235	
	817371	TQH5-86	0243-0357	0236-0350	
	817372	TQH5-86	0358-0472	0351-0465	
	817373	TQH5-86	0473-0587	0466-0580	
	817374	TQH5-86	0588-0702	0581-0695	
	817375	TQH5-86	0703-0817	0696-0810	
	817376	TQH5-86	0818-0932	0811-0925	
	817377	TQH5-86	0933-1047	0926-1040	
	817378	TQH5-86	1048-1162	1041-1155	
	817379	TQH5-86	1163-1213	1156-1206	
	817380	TQH5-143	0001-0118	0001-0118	
	817381	TQH5-143	0119-0236	0119-0236	
	817382	TQH5-143	0237-0354	0237-0354	
	817383	TQH5-143	0355-0472	0355-0472	
	817384	TQH5-143	0473-0590	0473-0590	
	817385	TQH5-143	0591-0708	0591-0708	
	817386	TQH5-143	0709-0826	0709-0826	
	817387	TQH5-143	0827-0843	0827-0843	
	817388	TQH5-141	0001-0118	0001-0118	
	817389	TQH5-141	0122-0141	0119-0136	
	817390	TQH5-141A	0001-0115	0001-0115	
	817391	TQH5-141A	0116-0230	0116-0230	
	817392	TQH5-141A	0231-0345	0231-0345	
	817393	TQH5-141A	0346-0460	0346-0460	
	817394	TQH5-141A	0461-0575	0461-0575	
	817395	TQH5-141A	0576-0690	0461-0690	
	817396	TQH5-141A	0691-0805	0691-0805	
	817397	TQH5-141A	0806-0872	0806-0872	
	23/10/85	817398	TQH5-06A	0691-0819	0691-0819
		817399	TQH5-06A	0820-0948	0820-0948
		817400	TQH5-06A	0949-1077	0949-1077
		817401	TQH5-06A	1078-1202	1078-1202
		817402	TQH5-93	0001-0129	0001-0129
		817403	TQH5-93	0130-0258	0130-0258
817402		TQH5-93	0259-0387	0259-0387	
817404		TQH5-93	0388-0516	0388-0516	
817405		TQH5-93	0517-0645	0517-0645	
817406		TQH5-93	0646-0753	0646-0753	
817407		TQH5-207	0001-0130	0001-0130	
817408		TQH5-207	0131-0260	0131-0260	
817409		TQH5-207	0261-0390	0261-0390	
817410		TQH5-207	0391-0493	0391-0493	



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FIELD TAPE INVENTORY (cont.)

<u>DATE</u>	<u>TAPE NO.</u>	<u>LINE NO.</u>	<u>SP. RANGE</u>	<u>RECORD NO.</u>	
23/10/85	817412	TQH5-210	0001-0089	0001-0089	
	817413	TQH5-210	0090-0219	0090-0219	
	817414	TQH5-210	0220-0349	0220-0349	
	817415	TQH5-210	0350-0479	0350-0479	
	817416	TQH5-210	0480-0609	0480-0609	
	817417	TQH5-210	0610-0733	0610-0733	
	817418	TQH5-209	0001-0030	0001-0030	
	24/10/85	817419	TQH5-202	0001-0113	0001-0113
817420		TQH5-202	0114-0257	0114-0257	
817421		TQH5-209A	0001-0130	0001-0130	
817422		TQH5-209A	0131-0260	0131-0260	
817423		TQH5-209A	0261-0390	0261-0390	
817424		TQH5-209A	0391-0520	0391-0520	
817425		TQH5-209A	0521-0533	0521-0533	
817426		TQH5-208	0001-0113	0001-0113	
817427		TQH5-208	0114-0243	0114-0243	
817428		TQH5-208	0244-0378	0244-0378	
817429		TQH5-208	0379-0412	0379-0412	
817430		TQH5-36	0001-0130	0001-0130	
817431		TQH5-36	0131-0260	0131-0260	
817432		TQH5-36	0261-0390	0261-0390	
817433		TQH5-36	0391-0520	0391-0520	
817434		TQH5-36	0521-0623	0521-0623	
817435		TQH5-32	0001-0127	0001-0127	
817436		TQH5-32	0128-0257	0128-0257	
817437		TQH5-32	0258-0387	0258-0387	
25/10/85		817438	TQH5-32	0388-0517	0388-0517
		817439	TQH5-32	0518-0574	0518-0574
		817440	TQH5-18	0001-0130	0001-0130
		817441	TQH5-18	0131-0260	0131-0260
	817442	TQH5-18	0261-0390	0261-0390	
	817443	TQH5-18	0391-0520	0391-0520	
	817444	TQH5-18	0521-0650	0521-0650	
	817445	TQH5-18	0651-0673	0651-0673	
	817446	TQH5-16	0001-0130	0001-0130	
	817447	TQH5-16A	0001-0130	0001-0130	
	817448	TQH5-16A	0131-0260	0131-0260	
	817449	TQH5-16A	0261-0390	0261-0390	
	817450	TQH5-16A	0391-0520	0391-0520	
	817451	TQH5-168	0521-0650	0521-0650	
	817452	TQH5-16A	0651-0780	0651-0780	
	817453	TQH5-16A	0781-0874	0781-0874	
	817454	TQH5-91	0001-0130	0001-0130	
	817455	TQH5-91	0131-0260	0131-0260	
	817456	TQHR-91	0261-0363	0261-0363	



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FIELD TAPE INVENTORY (cont.)

<u>DATE</u>	<u>TAPE NO.</u>	<u>LINE NO.</u>	<u>SP RANGE</u>	<u>RECORD NO.</u>
25/10/85	817457	TQH5-89	0001-0129	0001-0129
26/10/85	817458	TQH5-89	0130-0258	0130-0258
	817459	TQH5-89	0259-0388	0259-0388
	817460	TQH5-89	0389-0518	0389-0518
	817461	TQH5-89	0519-0573	0519-0573
	817462	TQH5-206	0001-0130	0001-0130
	817463	TQH5-206	0131-0260	0131-0260
	817464	TQH5-206	0261-0390	0261-0390
	817465	TQH5-206	0391-0513	0391-0513
	817466	TQH5-87	0001-0130	0001-0130
	817467	TQH5-87	0131-0260	0131-0260
	817468	TQH5-87	0261-0390	0261-0390
	817469	TQH5-87	0391-0520	0391-0520
	817470	TQH5-87	0521-0650	0521-0650
	817471	TQH5-87	0651-0780	0651-0780
	817472	TQH5-87	0781-0833	0781-0833
	817473	TQH5-205	0001-0130	0001-0130
	817474	TQH5-205	0131-0260	0131-0260
	817475	TQH5-205	0261-0390	0261-0390
	817476	TQH5-205	0391-0453	0391-0453
	817477	TQH5-204	0001-0130	0001-0130
	817478	TQH5-204	0131-0260	0131-0260
	817479	TQH5-204	0261-0390	0261-0390
	817480	TQH5-204	0391-0453	0391-0453
	817481	TQH5-203	0001-0130	0001-0130
	817482	TQH5-203	0131-0260	0131-0260
	817483	TQH5-203	0261-0390	0261-0390
	817484	TQH5-203	0391-0453	0391-0453
	817485	TQH5-202A	0001-0130	0001-0130
	817486	TQHR-202A	0131-0260	0131-0260
	817487	TQH5-202A	0261-0390	0261-0390
	817488	TQH5-202A	0391-0469	0391-0469
	817489	TQH5-202A	0470-0523	0470-0523
	817490	TQH5-201	0001-0130	0001-0130
	817491	TQH5-201	0131-0260	0131-0260
	817492	TQH5-201	0261-0390	0261-0390
	817493	TQH5-201	0391-0520	0391-0520
	817494	TQH5-201	0521-0523	0521-0523
	817495	TQH5-214	0001-0130	0001-0130
	817496	TQH5-214	0131-0260	0131-0260
	817497	TQH5-214	0261-0373	0261-0373



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FIELD TAPE INVENTORY (cont.)

<u>DATE</u>	<u>TAPE NO.</u>	<u>LINE NO.</u>	<u>SP RANGE</u>	<u>RECORD NO.</u>
27/10/85	819001	TQH5-213	0001-0130	0001-0130
	819002	TQH5-213	0131-0260	0131-0260
	819003	TQH5-213	0261-0390	0261-0390
	819004	TQH5-213	0391-0393	0391-0393
	819005	TQH5-212	0001-0130	0001-0130
	819006	TQH5-212	0131-0260	0131-0260
	819007	TQH5-212	0261-0343	0261-0343
	819008	TQH5-211	0001-0130	0001-0130
	819009	TQH5-211	0131-0260	0131-0260
	819010	TQH5-211	0261-0323	0261-0323
	819011	TQH5-83	0001-0131	0001-0131
	819012	TQH5-83	0132-0263	0132-0263
	819013	TQH5-83	0264-0393	0264-0393
	819014	TQH5-83	0394-0523	0394-0523
	819015	TQH5-83	0534-0582	0534-0582
	819016	TQH5-41	0001-0130	0001-0130
	819017	TQHR-41	0131-0260	0131-0260
	819018	TQH5-41	0261-0390	0261-0390
	819019	TQH5-41	0399-0528	0391-0520
	819020	TQH5-41	0529-0658	0521-0650
	819021	TQH5-41	0659-0788	0651-0780
	819022	TQH5-41	0789-0918	0781-0910
	819023	TQH5-41	0919-1048	0911-1040
	819024	TQH5-41	1049-1178	1041-1170
	819025	TQH5-41	1179-1308	1171-1300
	819026	TQH5-41	1309-1438	1301-1430
	819027	TQH5-41	1439-1568	1431-1560
	819028	TQH5-41	1569-1698	1561-1690
	819029	TQH5-41	1699-1828	1691-1820
	819030	TQH5-41	1829-1958	1821-1950
	819031	TQH5-41	1959-2088	1951-2080
	819032	TQH5-41	2089-2218	2081-2210
	819033	TQH5-41	2219-2348	2211-2340
	819034	TQH5-41	2349-2478	2341-2470
	819035	TQH5-41	2479-2553	2471-2545



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FIELD TAPE INVENTORY (cont.)

<u>DATE</u>	<u>TAPE NO.</u>	<u>LINE NO.</u>	<u>SP RANGE</u>	<u>RECORD NO.</u>
27/10/85	819036	TQH5-43	0001-0130	0001-0130
	819037	TQH5-43	0131-0260	0131-0260
28/10/85	819038	TQH5-43	0261-0390	0261-0390
	819039	TQH5-43	0391-0520	0391-0520
	819040	TQH5-43	0521-0650	0521-0650
	819041	TQH5-43	0651-0780	0651-0780
	819042	TQH5-43	0781-0910	0781-0910
	819043	TQH5-43	0911-1040	0911-1040
	819044	TQH5-43	1041-1170	1041-1170
	819045	TQH5-43	1171-1300	1171-1300
	819046	TQH5-43	1301-1430	1301-1430
	819047	TQH5-43	1431-1560	1431-1560
	819048	TQH5-43	1561-1690	1561-1690
	819049	TQH5-43	1691-1820	1691-1820
	819050	TQH5-43	1821-1950	1851-1950
	819051	TQH5-43	1951-2080	1951-2080
	819052	TQH5-43	2081-2087	2081-2087
	819053	TQH5-85	0001-0128	0001-0128
	819054	TQH5-85	0129-0258	0129-0258
	819055	TQH5-85	0259-0388	0259-0388
	819056	TQH5-85	0389-0412	0389-0412
	819057	TQH5-81	0001-0130	0001-0130
	819058	TQH5-81	0131-0260	0131-0260
	819059	TQH5-81	0261-0390	0261-0390
	819060	TQH5-81	0391-0520	0391-0520
	819061	TQH5-81	0521-0650	0521-0650
	819062	TQH5-81	0651-0733	0651-0733
	819063	TQH5-77	0001-0130	0001-0130
	819064	TQH5-77	0131-0260	0131-0260
	819065	TQH5-77	0261-0390	0261-0390
	819066	TQH5-77	0391-0520	0391-0520
	819067	TQH5-77	0521-0583	0521-0583
	819068	TQH5-33	0001-0130	0001-0130
	819069	TQH5-33	0131-0260	0131-0260
	819070	TQH5-33	0261-0390	0261-0390
	819071	TQH5-33	0391-0520	0391-0520
	819072	TQH5-33	0521-0650	0521-0650
	819073	TQH5-33	0651-0780	0651-0780
	819074	TQH5-33	0781-0910	0781-0910
	819075	TQH5-33	0911-1040	0911-1040
	819076	TQH5-33	1041-1170	1041-1170
	819077	TQH5-33	1171-1300	1171-1300
	819078	TQH5-33	1301-1430	1301-1430
	819079	TQH5-33	1431-1560	1431-1560



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FIELD TAPE INVENTORY (cont.)

<u>DATE</u>	<u>TAPE NO.</u>	<u>LINE NO.</u>	<u>SP RANGE</u>	<u>RECORD NO.</u>	
28/10/85	819080	TQH5-33	1561-1690	1561-1690	
	819081	TQH5-33	1691-1820	1691-1820	
	819082	TQH5-33	1821-1950	1821-1950	
	819083	TQH5-33	1951-2080	1951-2080	
	819084	TQH5-33	2081-2210	2081-2210	
	819085	TQH5-33	2211-2340	2211-2340	
	819086	TQH5-33	2341-2470	2341-2470	
	819087	TQH5-33	2471-2600	2471-2600	
	819088	TQH5-33	2601-2730	2601-2730	
	819089	TQH5-33	2731-2860	2731-2860	
	819090	TQH5-33	2861-2990	2861-2990	
	819091	TQH5-33	2991-3120	2991-3120	
	819092	TQH5-33	3121-3250	3121-3250	
	819093	TQH5-33	3251-3380	3251-3380	
	819094	TQH5-33	3381-3431	3381-3431	
	819095	TQH5-35	0001-0113	0001-0113	
	819096	TQH5-35	0114-0243	0114-0243	
	819097	TQH5-35	0244-0373	0244-0373	
	819098	TQH5-35	0374-0499	0374-0499	
	819099	TQH5-35	0500-0629	0500-0629	
	29/10/85	819100	TQH5-35	0630-0759	0630-0759
		819101	TQH5-35	0760-0889	0760-0889
		819102	TQH5-35	0590-1019	0890-1019
		819103	TQH5-35	1020-1149	1020-1149
		819104	TQH5-35	1150-1279	1150-1279
819105		TQH5-35	1280-1409	1280-1409	
819106		TQH5-35	1410-1539	1410-1539	
819107		TQH5-35	1540-1669	1540-1669	
819108		TQH5-35	1670-1799	1670-1799	
819109		TQH5-35	1800-1929	1800-1929	
819110		TQH5-35	1930-2059	1930-2059	
819111		TQH5-35	2060-2189	2060-2189	
819112		TQH5-35	2190-2319	2190-2319	
819113		TQH5-35	2320-2449	2320-2449	
819114		TQH5-35	2450-2579	2450-2579	
819115		TQH5-35	2580-2709	2580-2709	
819116		TQH5-35	2710-2766	2710-2766	
819117		TQH5-71	0001-0130	0001-0130	
819118		TQH5-71	0131-0260	0131-0260	
819119		TQH5-71	0261-0390	0261-0390	
819120		TQH5-71	0391-0520	0391-0520	
819121		TQH5-71	0521-0602	0521-0602	
819122		TQH5-79	0001-0130	0001-0130	
819123		TQH5-79	0131-0260	0131-0260	
819124		TQH5-79	0261-0390	0261-0390	
819125		TQH5-79	0391-0500	0391-0500	



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FIELD TAPE INVENTORY (cont.)

<u>DATE</u>	<u>TAPE NO.</u>	<u>LINE NO.</u>	<u>SP RANGE</u>	<u>RECORD NO.</u>	
29/10/85	819126	TQH5-79	0501-0532	0501-0532	
	819127	TQH5-75	0001-0130	0001-0130	
	819128	TQH5-75	0131-0260	0131-0260	
	819129	TQH5-75	0261-0390	0261-0390	
	819130	TQH5-75	0391-0520	0391-0520	
	819131	TQH5-75	0521-0650	0521-0650	
	819132	TQH5-75	0651-0723	0651-0723	
	819133	TQH5-73	0001-0130	0001-0130	
	819134	TQH5-73	0131-0260	0131-0260	
	819135	TQH5-73	0261-0390	0261-0390	
	819136	TQH5-73	0391-0520	0391-0520	
	819137	TQH5-73	0521-0523	0521-0523	
	819138	TQH5-69	0001-0130	0001-0130	
	819139	TQH5-69	0131-0260	0131-0260	
	819140	TQH5-69	0261-0390	0261-0390	
	30/10/85	819141	TQH5-69	0391-0393	0391-0393
		819142	TQH5-31	0001-0130	0001-0130
		819143	TQH5-31	0131-0260	0131-0260
		819144	TQH5-31	0261-0390	0261-0390
819145		TQH5-31	0391-0520	0391-0520	
819146		TQH5-31	0521-0650	0521-0650	
819147		TQH5-31	0651-0780	0651-0780	
819148		TQH5-31	0781-0910	0781-0910	
819149		TQH5-31	0911-1040	0911-1040	
819150		TQH5-31	1041-1170	1041-1170	
819151		TQH5-31	1171-1300	1171-1300	
819152		TQH5-31	1301-1430	1301-1430	
819153		TQH5-31	1431-1560	1431-1560	
819154		TQH5-31	1561-1690	1561-1690	
819155		TQH5-31	1691-1820	1691-1820	
819156		TQH5-31	1821-1950	1821-1950	
819157		TQH5-31	1951-2080	1951-2080	
819158	TQH5-31	2081-2115	2081-2115		
819159	TQH5-29	0001-0109	0001-0109		
819160	TQH556-1	0001-0130	0001-0130		
819161	TQH556-1	0131-0260	0131-0260		
819162	TQH556-1	0261-0390	0261-0390		
819163	TQH556-1	0391-0437	0391-0437		
31/10/85	819164	TQH5-137A	0001-0130	0001-0130	
	819165	TQH5-137A	0131-0260	0131-0260	
	819166	TQH5-137A	0261-0390	0261-0390	
	819167	TQH5-137A	0391-0520	0391-0520	
	819168	TQH5-137A	0521-0650	0525-0650	
819169	TQH5-137A	0651-0780	0651-0780		
819170	TQH5-137A	0781-0853	0781-0853		



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FIELD TAPE INVENTORY (cont.)

<u>DATE</u>	<u>TAPE NO.</u>	<u>LINE NO.</u>	<u>SP RANGE</u>	<u>RECORD NO.</u>
31/10/85	819171	TQH5-139	0001-0130	0001-0130
	819172	TQH5-139	0131-0260	0131-0260
	819173	TQH5-139	0261-0390	0261-0390
	819174	TQH5-139	0391-0520	0391-0520
	819175	TQH5-139	0521-0650	0521-0650
	819176	TQH5-139	0651-0780	0651-0780
	819177	TQH5-139	0781-0910	0781-0910
	819178	TQH5-139	0911-0932	0911-0932
	819179	TQH560-1	0001-0130	0001-0130
	819180	TQH560-1	0131-0260	0131-0260
	819181	TQH560-1	0261-0390	0261-0390
	819182	TQH560-1	0391-0520	0391-0520
	819183	TQH560-1	0521-0650	0521-0650
	819184	TQH560-1	0651-0780	0651-0780
	819185	TQH560-1	0781-0789	0781-0789
	819186	TQH560-1	0798-0927	0791-0920
	819187	TQH560-1	0928-1057	0921-1050
	819188	TQH560-1	1058-1187	1051-1180
	819189	TQH560-1	1188-1317	1181-1310
	819190	TQH560-1	1318-1373	1311-1366
	819191	TQH5-117	0001-0130	0001-0130
	819192	TQH5-117	0131-0260	0131-0260
	819193	TQH5-117	0261-0330	0261-0330
	819194	TQH5-117	0338-0467	0332-0461
	819195	TQH5-117	0468-0598	0462-0592
	819196	TQH5-117	0599-0728	0593-0722
	819197	TQH5-117	0729-0858	0723-0852
	819198	TQH5-117	0859-0902	0853-0896
	819199	TQH5-123	0001-0130	0001-0130
	819200	TQH5-123	0131-0260	0131-0260
	819201	TQH5-123	0261-0390	0261-0390
	819202	TQH5-123	0391-0520	0391-0520
	819203	TQH5-123	0521-0650	0521-0650
	819204	TQH5-123	0651-0780	0651-0780
	819205	TQH5-123	0781-0873	0781-0873
	819206	TQH5-157	0001-0130	0001-0130
	819207	TQH5-157	0131-0260	0131-0260
	819208	TQH5-157	0261-0390	0261-0390
	819209	TQH5-157	0391-0520	0391-0520
	819210	TQH5-157	0521-0650	0521-0650
	819211	TQH5-157	0651-0780	0651-0780
	819212	TQH5-157	0781-0862	0781-0862

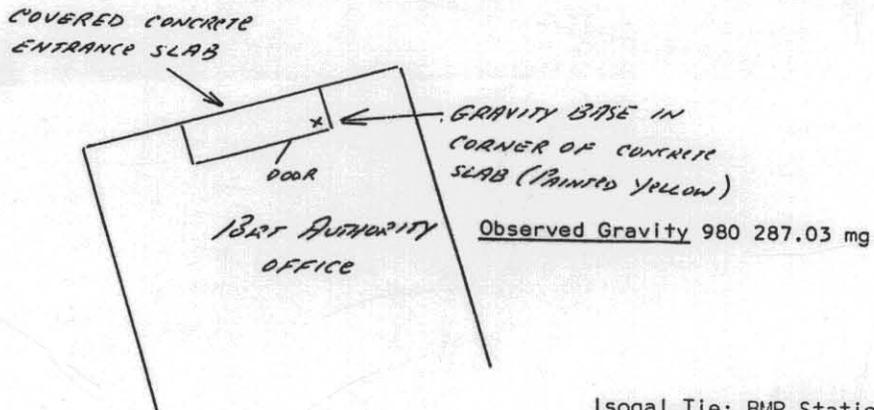
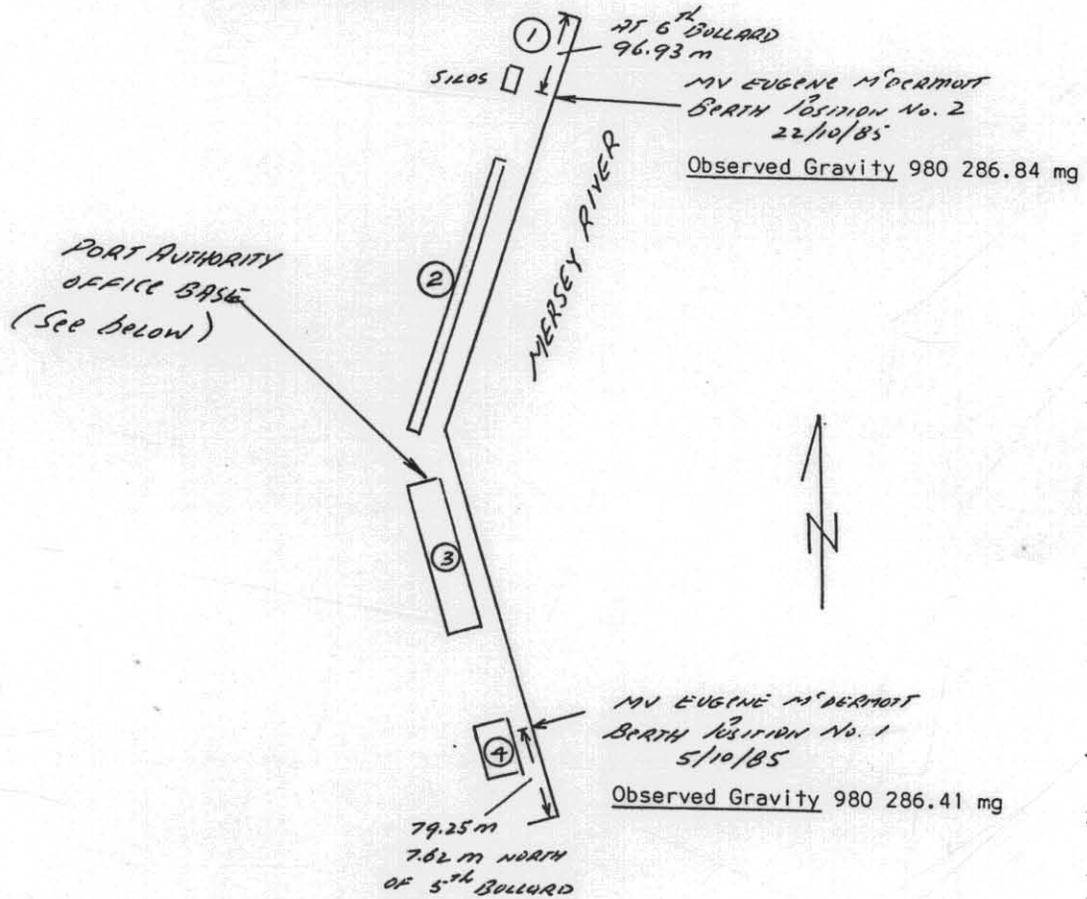


APPENDIX E

GRAVITY BASE STATION RESULTS

PORT OF DEVONPORT

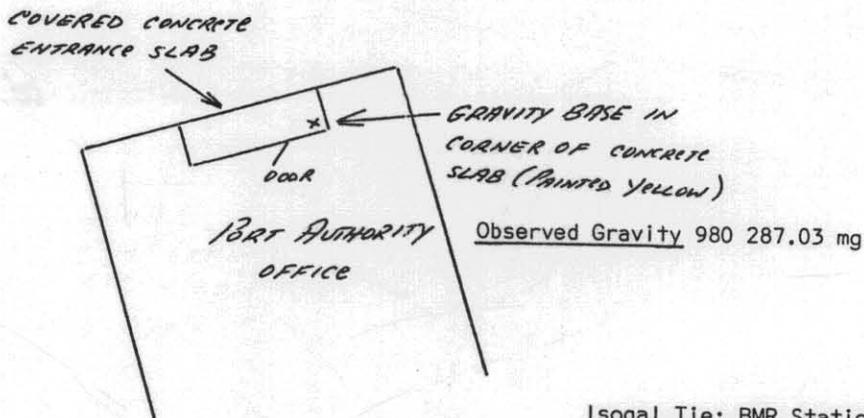
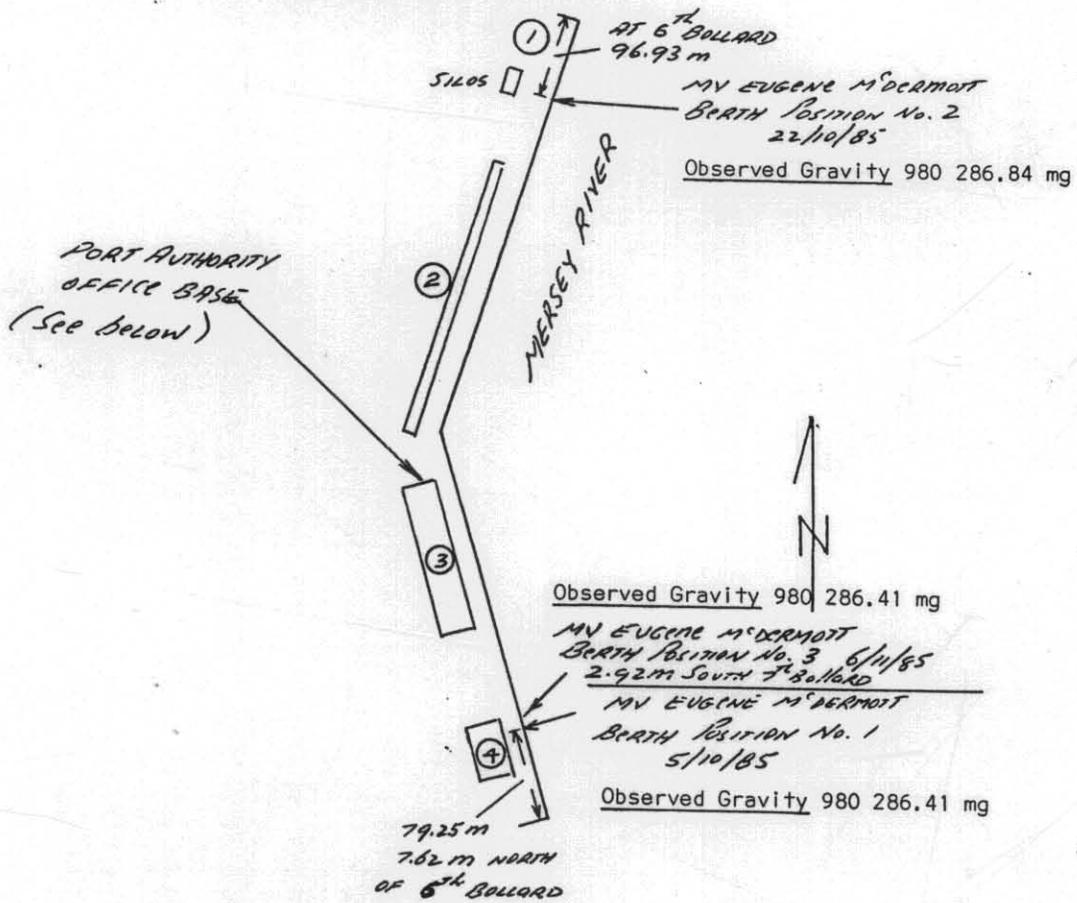
LOCATION PLAN FOR GRAVITY BASES ON WESTERN
SIDE OF MERSEY RIVER



Isogal Tie: BMR Station 8591/2141
Devonport Airport
980 284.07 milligals

October, 1985

LOCATION PLAN FOR GRAVITY BASES ON WESTERN
SIDE OF MERSEY RIVER



Isogal Tie: BMR Station 8591/2141
Devonport Airport
980 284.07 milligals

October, 1985
November, 1985

152084

WONGELA GEOPHYSICAL PTY. LTD.

GRAVITY DATA FORM

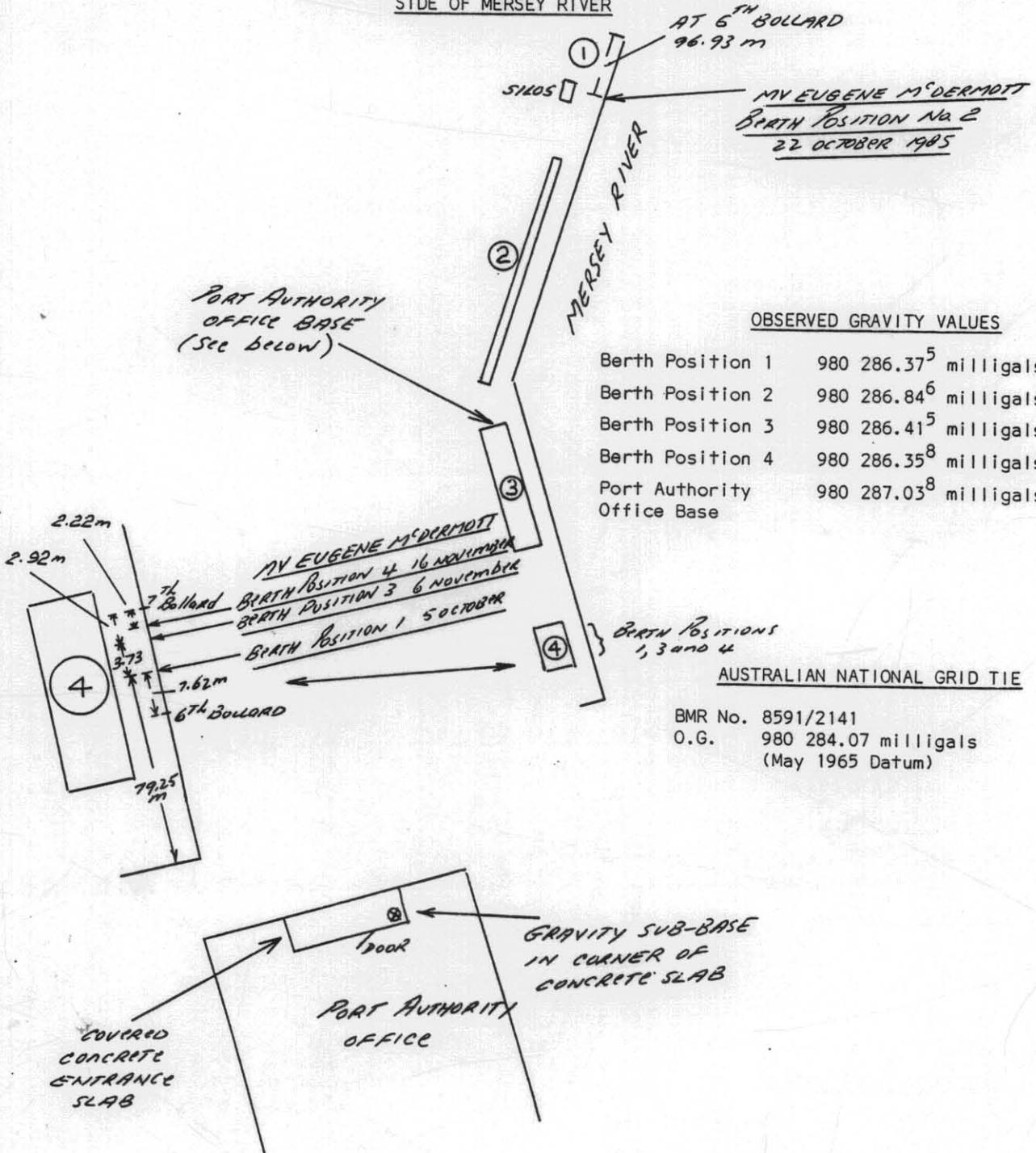
181

 AREA DEVONPORT DATE 16/11/85 METER G711 SCALE VALUE 1.01764 OBSERVER INGALL

STATION IDENT.																TIME	METER	ELEV.	X										Y										REMARKS																																				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54																						
EUGENE McDONNATT #4																29	45	37	10	89																																																							#4
Port Authority Base																29	49	37	11	55																																																							PAB
EUGENE McDONNATT #4																29	52	37	10	89																																																							#4
Port Authority Base																29	58	37	11	55																																																							PAB
EUGENE McDONNATT #4																29	03	37	10	89																																																							#4 19 4 x 20' Area 4.58m 20' Area 70' HD 8810 WIDE 70' HD 1710" 25.43m
																																																																											#4 70 CM
																																																																											NORTH OF
																																																																											#3
																																																																											NOTE: VESSEL
																																																																											BERTHED WITH
																																																																											BOW TO SOUTH
																																																																											IN CONTRAST TO
																																																																											THE THREE PREVIOUS
																																																																											OCCASIONS
																																																																											VESSEL 38' WIDE
																																																																											METER 25' FROM
																																																																											STARBOARD SIDE

LOCATION PLAN FOR GRAVITY BASES ON WESTERN

SIDE OF MERSEY RIVER



OBSERVED GRAVITY VALUES

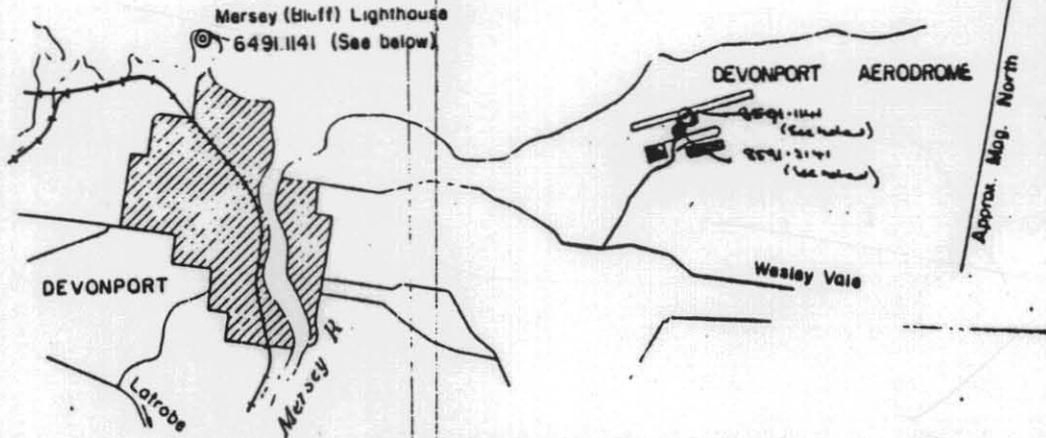
Berth Position 1	980 286.37 ⁵ milligals
Berth Position 2	980 286.84 ⁶ milligals
Berth Position 3	980 286.41 ⁵ milligals
Berth Position 4	980 286.35 ⁸ milligals
Port Authority Office Base	980 287.03 ⁸ milligals

AUSTRALIAN NATIONAL GRID TIE

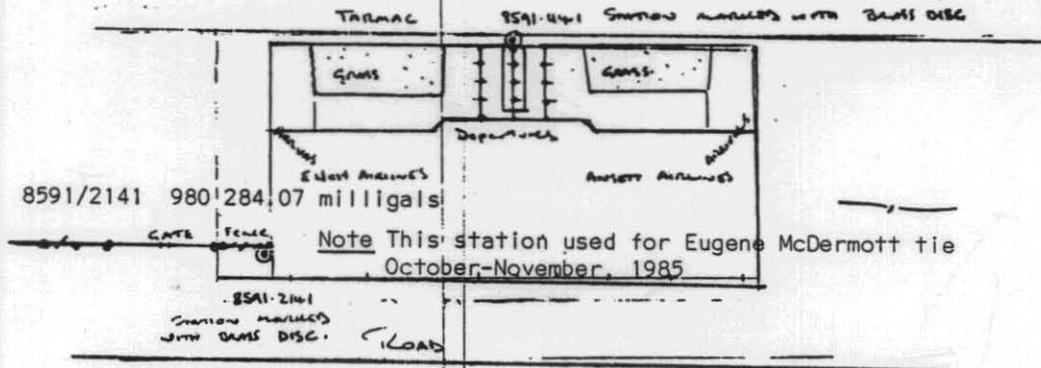
BMR No. 8591/2141
 O.G. 980 284.07 milligals
 (May 1965 Datum)

October-November 1985

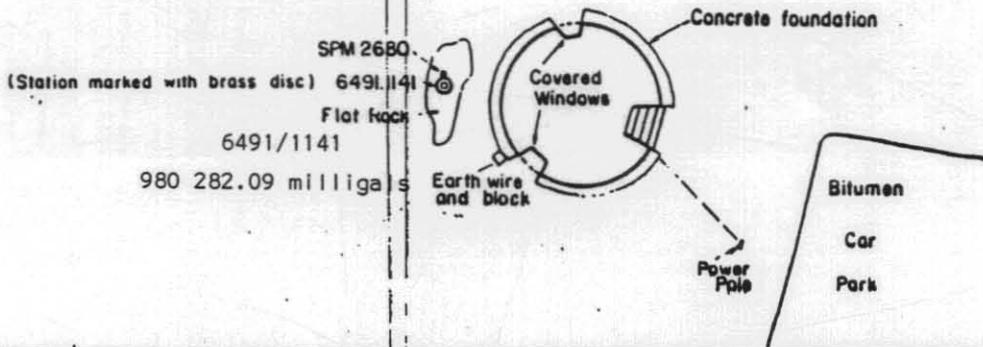
BASS STRAIT



8591/1141 980 284.39 milligals



MERSEY (BLUFF) LIGHTHOUSE



- ▲ Primary base
- △ Secondary base
- ⊙ Excentre

DEVONPORT TAS

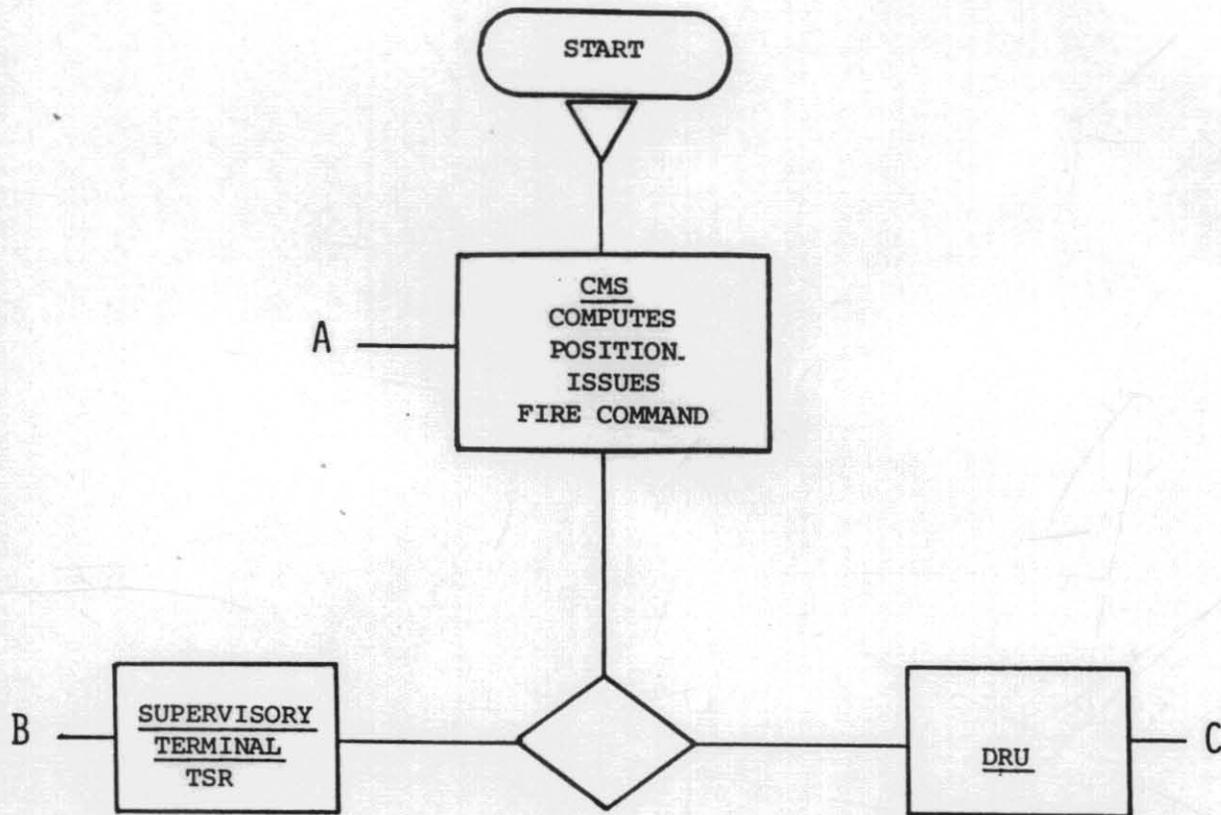
Sheet 1 of 1

K56/82-23

GRAVITY STATIONS
AUSTRALIAN NATIONAL GRAVITY NETWORK

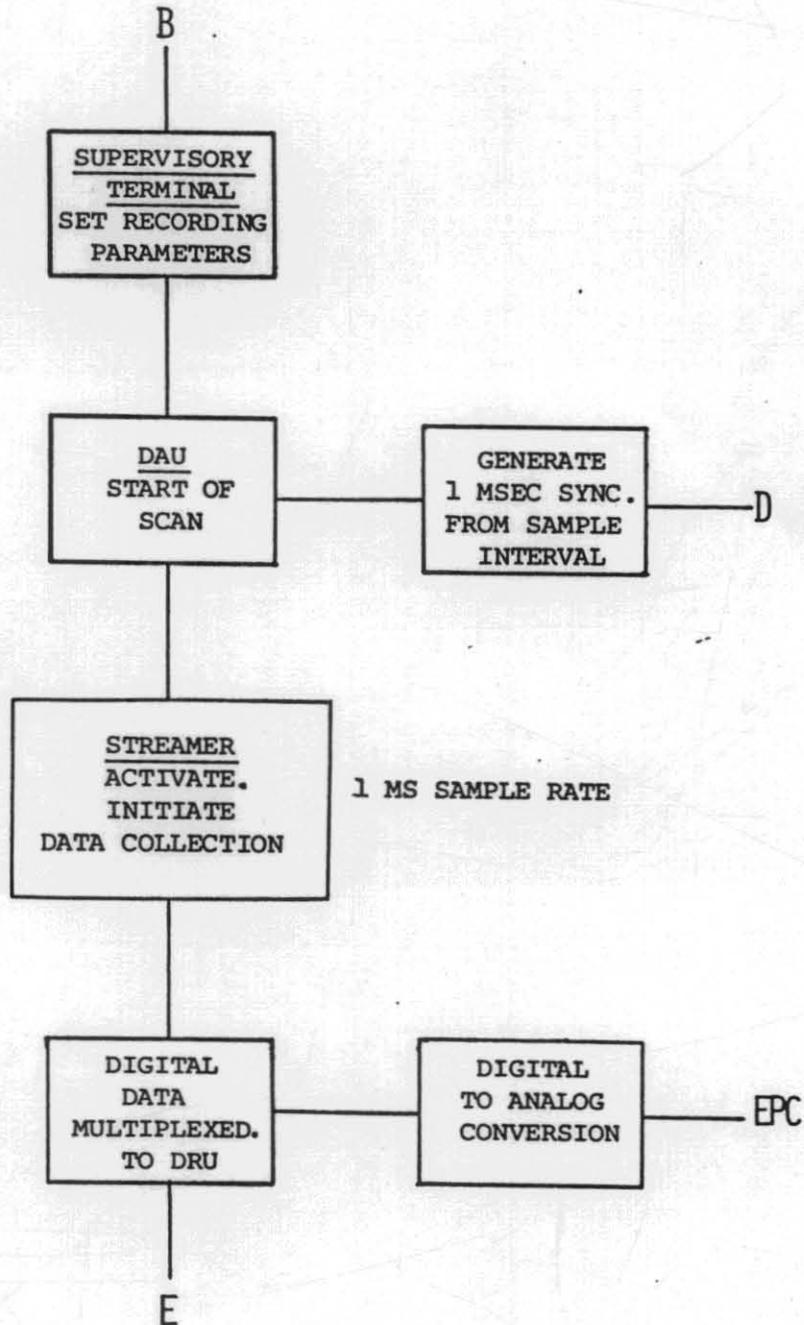


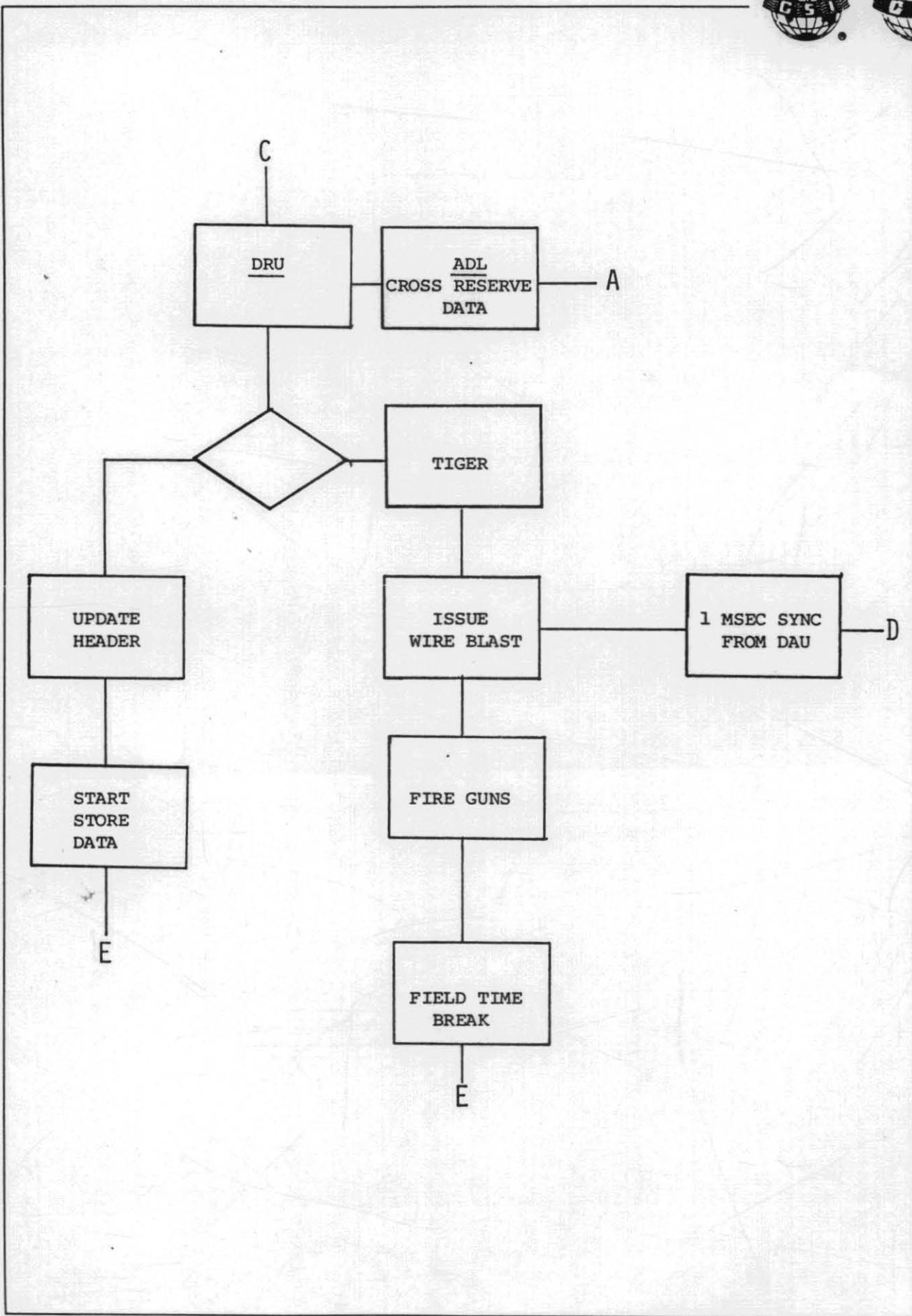
TSR RECORDING SEQUENCE

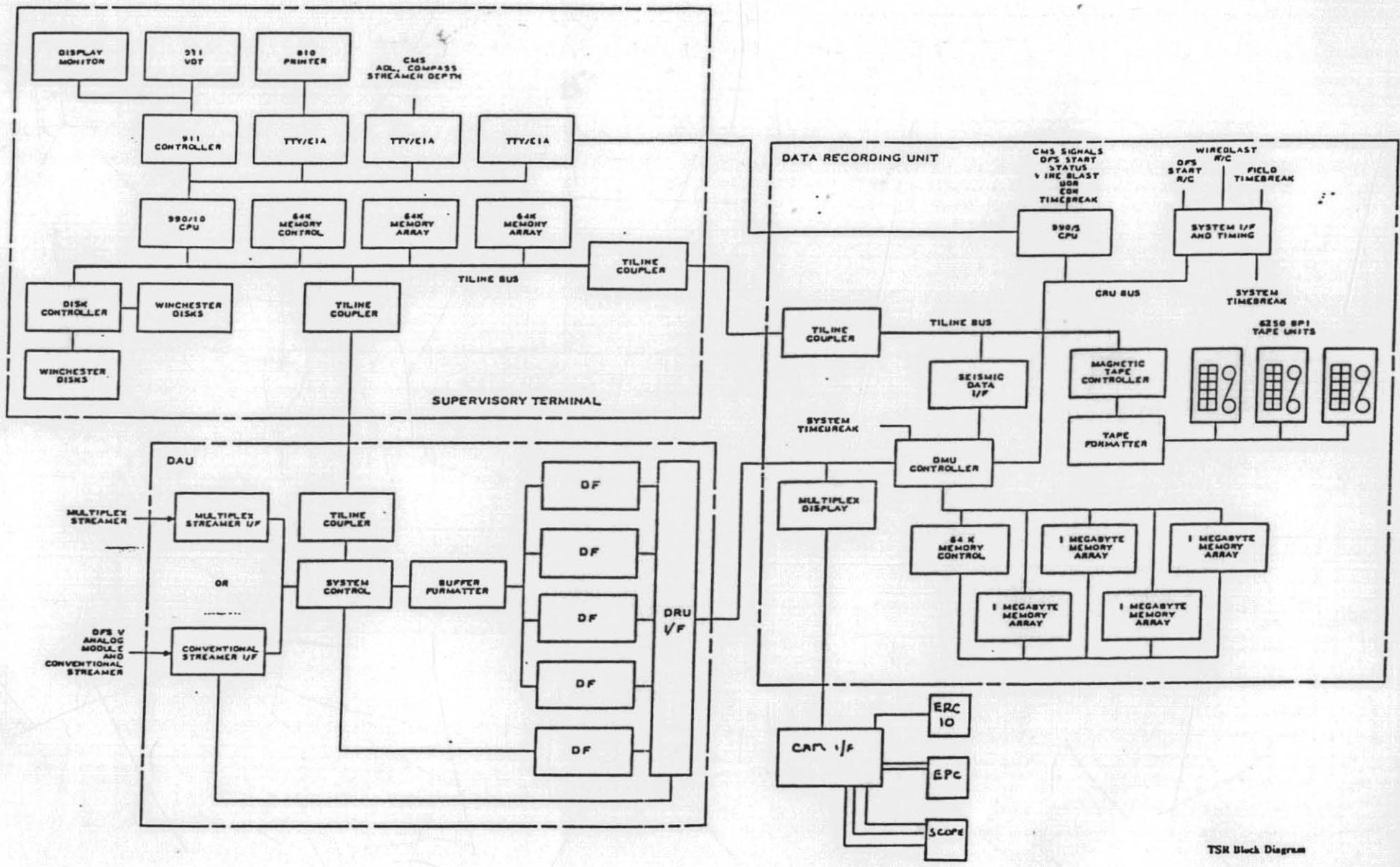




TSR RECORDING SEQUENCE



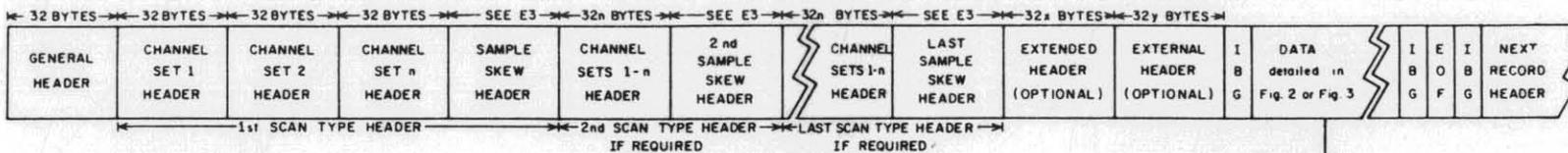




TSM Block Diagram

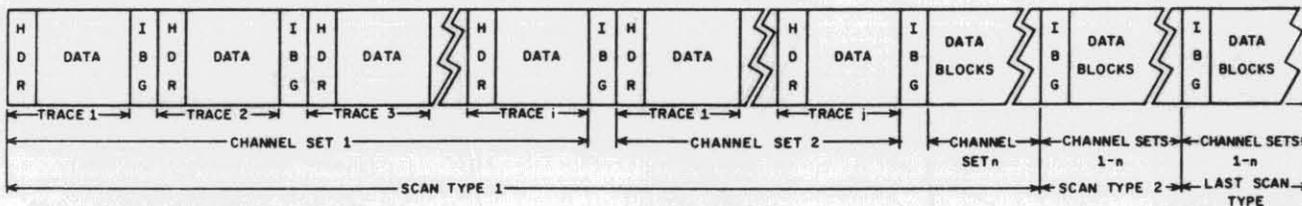
152091

PLATE 4A

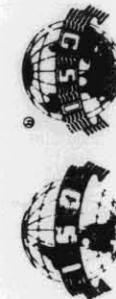


Record format

- SOS = START OF SCAN (4 BYTES)
- T = TIMING WORD (4 BYTES)
- HDR = TRACE HEADER (20 BYTES)
- IBG = INTER BLOCK GAP
- E3 = REFERENCE APPENDIX E3
- x AND y ARE GENERAL HEADER ENTRIES



Demultiplexed data blocks



152093

601-100



2 byte quaternary exponent data recording method

The following illustrated the 16-bit word and the corresponding bit weights:

Bit	0	1	2	3	4	5	6	7
Byte 1	S	C ₂	C ₁	C ₀	Q ₋₁	Q ₋₂	Q ₋₃	Q ₋₄
Byte 2	Q ₋₅	Q ₋₆	Q ₋₇	Q ₋₈	Q ₋₉	Q ₋₁₀	Q ₋₁₁	Q ₋₁₂

S = sign bit. — (One = negative number).

C = quaternary exponent. — This is a three bit positive binary exponent of 4 written as 4^{CCC} where CCC can assume values from 0-7.

*Q*₁₋₁₂ = fraction. — This is a 12 bit one's complement binary fraction. The radix point is to the left of the most significant bit (*Q*₋₁) with the MSB being defined as 2^{-1} . The fraction can have values from

$-1 + 2^{-12}$ to $1 - 2^{-12}$. In order to guarantee the uniqueness of the start of scan, negative zero is invalid and must be converted to positive zero.

Input signal = $S.QQQQ.QQQQ.QQQQ \times 4^{CCC} \times 2^{MP}$ millivolts where 2^{MP} is the value required to de-scale the data sample to the recording system input level. MP is defined in Byte 8 of each channel set descriptor in the scan type header.



TRACK NO.	4	7	6	5	3	9	1	8	2
-----------	---	---	---	---	---	---	---	---	---

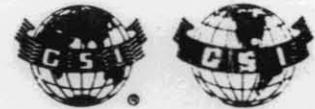
BIT NO.	P	0	1	2	3	4	5	6	7
---------	---	---	---	---	---	---	---	---	---

BCD VALUE MSD	8	4	2	1	8	4	2	1	LSD
BINARY VALUE MSB	128	64	32	16	8	4	2	1	LSB

FILE NUMBER	F ₁	F ₁	F ₁	F ₁	F ₂	F ₂	F ₂	F ₂	1
	F ₃	F ₃	F ₃	F ₃	F ₄	F ₄	F ₄	F ₄	2
FORMAT CODE	Y ₁	Y ₁	Y ₁	Y ₁	Y ₂	Y ₂	Y ₂	Y ₂	3
	Y ₃	Y ₃	Y ₃	Y ₃	Y ₄	Y ₄	Y ₄	Y ₄	4
GENERAL CONSTANTS	K ₁	K ₁	K ₁	K ₁	K ₂	K ₂	K ₂	K ₂	5
	K ₃	K ₃	K ₃	K ₃	K ₄	K ₄	K ₄	K ₄	6
	K ₅	K ₅	K ₅	K ₅	K ₆	K ₆	K ₆	K ₆	7
	K ₇	K ₇	K ₇	K ₇	K ₈	K ₈	K ₈	K ₈	8
	K ₉	K ₉	K ₉	K ₉	K ₁₀	K ₁₀	K ₁₀	K ₁₀	9
	K ₁₁	K ₁₁	K ₁₁	K ₁₁	K ₁₂	K ₁₂	K ₁₂	K ₁₂	10
	YEAR	YR ₁	YR ₁	YR ₁	YR ₁	YR ₂	YR ₂	YR ₂	YR ₂
DAY (DY)	0	0	0	0	DY ₁	DY ₁	DY ₁	DY ₁	12
	DY ₂	DY ₂	DY ₂	DY ₂	DY ₃	DY ₃	DY ₃	DY ₃	13
HOUR	H ₁	H ₁	H ₁	H ₁	H ₂	H ₂	H ₂	H ₂	14
MINUTE	MI ₁	MI ₁	MI ₁	MI ₁	MI ₂	MI ₂	MI ₂	MI ₂	15
SECOND	SE ₁	SE ₁	SE ₁	SE ₁	SE ₂	SE ₂	SE ₂	SE ₂	16
MANUFACTURER'S CODE	M ₁	M ₁	M ₁	M ₁	M ₂	M ₂	M ₂	M ₂	17
	M ₃	M ₃	M ₃	M ₃	M ₄	M ₄	M ₄	M ₄	18
MANUFACTURER'S SERIAL NUMBER	M ₅	M ₅	M ₅	M ₅	M ₆	M ₆	M ₆	M ₆	19
	B ₁	B ₁	B ₁	B ₁	B ₂	B ₂	B ₂	B ₂	20
BYTES PER SCAN	B ₃	B ₃	B ₃	B ₃	B ₄	B ₄	B ₄	B ₄	21
	B ₅	B ₅	B ₅	B ₅	B ₆	B ₆	B ₆	B ₆	22
BASE SCAN INTERVAL	I ₃	I ₂	I ₁	I ₀	I ₋₁	I ₋₂	I ₋₃	I ₋₄	23
POLARITY (P)	P	P	P	P	S/B _{x3}	S/B _{x2}	S/B _{x1}	S/B _{x0}	24
SCANS/BLOCK EXPONENT (S/B _x)	S/B ₇	S/B ₆	S/B ₅	S/B ₄	S/B ₃	S/B ₂	S/B ₁	S/B ₀	25
RECORD TYPE (Z)	Z	Z	Z	Z	R ₁	R ₁	R ₁	R ₁	26
RECORD LENGTH (R)	R ₂	R ₂	R ₂	R ₂	R ₃	R ₃	R ₃	R ₃	27
SCAN TYPES/RECORD	ST/R ₁	ST/R ₁	ST/R ₁	ST/R ₁	ST/R ₂	ST/R ₂	ST/R ₂	ST/R ₂	28
CHANNEL SETS /SCAN TYPE	CS ₁	CS ₁	CS ₁	CS ₁	CS ₂	CS ₂	CS ₂	CS ₂	29
SKREW BLOCKS	SK ₁	SK ₁	SK ₁	SK ₁	SK ₂	SK ₂	SK ₂	SK ₂	30
EXTENDED HEADER BLOCKS	EC ₁	EC ₁	EC ₁	EC ₁	EC ₂	EC ₂	EC ₂	EC ₂	31
EXTERNAL HEADER BLOCKS	EX ₁	EX ₁	EX ₁	EX ₁	EX ₂	EX ₂	EX ₂	EX ₂	32

General header

PLATE 4D



TRACK NO.

4	7	6	5	3	9	1	8	2
---	---	---	---	---	---	---	---	---

BIT NO.

P	0	1	2	3	4	5	6	7
---	---	---	---	---	---	---	---	---

BCD VALUE MSD	8	4	2	1	8	4	2	1	LSD
BINARY VALUE MSB	128	64	32	16	8	4	2	1	LSB

SCAN TYPE NUMBER	ST ₁	ST ₁	ST ₁	ST ₁	ST ₂	ST ₂	ST ₂	ST ₂	1
CHANNEL SET NUMBER	CN ₁	CN ₁	CN ₁	CN ₁	CN ₂	CN ₂	CN ₂	CN ₂	2
CHANNEL SET START TIME	TF ₁₆	TF ₁₅	TF ₁₄	TF ₁₃	TF ₁₂	TF ₁₁	TF ₁₀	TF ₉	3
CHANNEL SET END TIME	TE ₁₆	TE ₁₅	TE ₁₄	TE ₁₃	TE ₁₂	TE ₁₁	TE ₁₀	TE ₉	4
	TE ₈	TE ₇	TE ₆	TE ₅	TE ₄	TE ₃	TE ₂	TE ₁	5
	TE ₈	TE ₇	TE ₆	TE ₅	TE ₄	TE ₃	TE ₂	TE ₁	6
	0	0	0	0	0	0	0	0	7
DESCALE MULTIPLIER	MP ₃	MP ₄	MP ₃	MP ₂	MP ₁	MP ₀	MF ₋₁	MP ₋₂	8
NUMBER OF CHANNELS	C/S ₁	C/S ₁	C/S ₁	C/S ₁	C/S ₂	C/S ₂	C/S ₂	C/S ₂	9
	C/S ₃	C/S ₃	C/S ₃	C/S ₃	C/S ₄	C/S ₄	C/S ₄	C/S ₄	10
CHANNEL TYPE (C)	C ₁	C ₁	C ₁	C ₁	0	0	0	0	11
SAMPLES/CHANNEL (S/C)	S/C	S/C	S/C	S/C	J	J	J	J	12
CHANNEL GAIN (J)	AF ₁	AF ₁	AF ₁	AF ₁	AF ₂	AF ₂	AF ₂	AF ₂	13
ALIAS FILTER FREQUENCY	AF ₃	AF ₃	AF ₃	AF ₃	AF ₄	AF ₄	AF ₄	AF ₄	14
ALIAS FILTER SLOPE (AS)	0	0	0	0	AS ₁	AS ₁	AS ₁	AS ₁	15
	AS ₂	AS ₂	AS ₂	AS ₂	AS ₃	AS ₃	AS ₃	AS ₃	16
LOW CUT FILTER	LC ₁	LC ₁	LC ₁	LC ₁	LC ₂	LC ₂	LC ₂	LC ₂	17
	LC ₃	LC ₃	LC ₃	LC ₃	LC ₄	LC ₄	LC ₄	LC ₄	18
LOW CUT FILTER SLOPE (LS)	0	0	0	0	LS ₁	LS ₁	LS ₁	LS ₁	19
	LS ₂	LS ₂	LS ₂	LS ₂	LS ₃	LS ₃	LS ₃	LS ₃	20
FIRST NOTCH FILTER	NT ₁	NT ₁	NT ₁	NT ₁	NT ₂	NT ₂	NT ₂	NT ₂	21
	NT ₃	NT ₃	NT ₃	NT ₃	NT ₄	NT ₄	NT ₄	NT ₄	22
SECOND NOTCH FILTER	NT ₁	NT ₁	NT ₁	NT ₁	NT ₂	NT ₂	NT ₂	NT ₂	23
	NT ₃	NT ₃	NT ₃	NT ₃	NT ₄	NT ₄	NT ₄	NT ₄	24
THIRD NOTCH FILTER	NT ₁	NT ₁	NT ₁	NT ₁	NT ₂	NT ₂	NT ₂	NT ₂	25
	NT ₃	NT ₃	NT ₃	NT ₃	NT ₄	NT ₄	NT ₄	NT ₄	26
	0	0	0	0	0	0	0	Q	27
	0	0	0	0	0	0	0	0	28
	0	0	0	0	0	0	0	0	29
	0	0	0	0	0	0	0	0	30
	0	0	0	0	0	0	0	0	31
	0	0	0	0	0	0	0	0	32

Channel set descriptor



FILE NUMBER	F ₁	F ₁	F ₁	F ₁	F ₂	F ₂	F ₂	F ₂	1
	F ₃	F ₃	F ₃	F ₃	F ₄	F ₄	F ₄	F ₄	2
SCAN TYPE NUMBER	ST ₁	ST ₁	ST ₁	ST ₁	ST ₂	ST ₂	ST ₂	ST ₂	3
CHANNEL SET NUMBER	CN ₁	CN ₁	CN ₁	CN ₁	CN ₂	CN ₂	CN ₂	CN ₂	4
TRACE NUMBER	TN ₁	TN ₁	TN ₁	TN ₁	TN ₂	TN ₂	TN ₂	TN ₂	5
	TN ₃	TN ₃	TN ₃	TN ₃	TN ₄	TN ₄	TN ₄	TN ₄	6
FIRST TIMING WORD	T ₁₅	T ₁₄	T ₁₃	T ₁₂	T ₁₁	T ₁₀	T ₉	T ₈	7
	T ₇	T ₆	T ₅	T ₄	T ₃	T ₂	T ₁	T ₀	8
	T ₋₁	T ₋₂	T ₋₃	T ₋₄	T ₋₅	T ₋₆	T ₋₇	T ₋₈	9
SAMPLE SKEW	0	0	0	0	0	0	0	0	10
	SS ₋₁	SS ₋₂	SS ₋₃	SS ₋₄	SS ₋₅	SS ₋₆	SS ₋₇	SS ₋₈	11
TIME BREAK WINDOW	0	0	0	0	0	0	0	0	12
	TW ₁₅	TW ₁₄	TW ₁₃	TW ₁₂	TW ₁₁	TW ₁₀	TW ₉	TW ₈	13
	TW ₇	TW ₆	TW ₅	TW ₄	TW ₃	TW ₂	TW ₁	TW ₀	14
	TW ₋₁	TW ₋₂	TW ₋₃	TW ₋₄	TW ₋₅	TW ₋₆	TW ₋₇	TW ₋₈	15
	0	0	0	0	0	0	0	0	16
	0	0	0	0	0	0	0	0	17
0	0	0	0	0	0	0	0	18	
0	0	0	0	0	0	0	0	19	
0	0	0	0	0	0	0	0	20	

Demultiplexed trace header



HEADER BLOCK PARAMETERS

General header

All values are in packed BCD unless otherwise specified.

INDEX BYTE	ABBREVIATION	DESCRIPTION
1	F ₁ , F ₂	File number of four
2	F ₃ , F ₄	digits (0-9999)
3	Y ₁ , Y ₂	Format code:
4	Y ₃ , Y ₄	0015 20 bit binary multiplexed 0022 8 bit quaternary multiplexed 0024 16 bit quaternary multiplexed 0042 8 bit hexadecimal multiplexed 0044 16 bit hexadecimal multiplexed 0048 32 bit hexadecimal multiplexed 8015 20 bit binary demultiplexed 8022 8 bit quaternary demultiplexed <u>8024 16 bit quaternary demultiplexed</u> 8042 8 bit hexadecimal demultiplexed 8044 16 bit hexadecimal demultiplexed 8048 32 bit hexadecimal demultiplexed 0200 Illegal, do not use 0000 Illegal, do not use
5	K ₁ , K ₂	General constants, 12 digits
6	K ₃ , K ₄	
7	K ₅ , K ₆	
8	K ₇ , K ₈	
9	K ₉ , K ₁₀	
10	K ₁₁ , K ₁₂	
11	YR ₁ , YR ₂	Last two digits of year (0-99)
12	0, DY ₁	Julian day 3 digits (1-366)
13	DY ₂ , DY ₃	
14	H ₁ , H ₂	Hour of day 2 digits (0-23) (Greenwich Mean Time)
15	MI ₁ , MI ₂	Minute of hour 2 digits (0-59)
16	SE ₁ , SE ₂	Second of minute 2 digits (0-59)
17	M ₁ , M ₂	Manufacturer's code 2 digits Note: See Appendix B for the current assignments
18	M ₃ , M ₄	Manufacturer's serial number, 4 digits
19	M ₅ , M ₆	
20	B ₁ , B ₂	Bytes per scan 6 digits (1-999,999) are utilized in the multiplexed formats to identify the number of bytes (including data, auxiliary, sync, and timing bytes, etc.) required to make up a complete scan. In a demultiplexed record, this field is not used and is recorded as zeros. (See Appendix E2)
21	B ₃ , B ₄	
22	B ₅ , B ₆	
23	I ₃ thru I ₄	Base scan interval. —This is coded as a binary number with the LSB equal to 1/16 msec. This will allow sampling intervals from 1/16 through 8 msec



GENERAL HEADER

INDEX BYTE	ABBREVIATION	DESCRIPTION																																				
24	P,	<p>in binary steps. Thus, the allowable base scan intervals are $1/16$, $1/8$, $1/4$, $1/2$, 1, 2, 4, and 8 msec. The base scan interval is always the difference between successive timing words. Each channel used will be sampled one or more times per base scan interval.</p> <p>Polarity.—These 4 binary bits are measured on the sensors, cables, instrument, and source combination and are set into the system manually. The codes are:</p> <ul style="list-style-type: none"> 0000 Untested 0001 Zero 0010 45 degrees 0011 90 degrees 0100 135 degrees 0101 180 degrees 0110 225 degrees 0111 270 degrees 1000 315 degrees 1001 1010 1011 1100 unassigned 1101 1110 1111^c 																																				
25	, S/BX ₃ thru S/BX ₀ S/B ₇ thru S/B ₀	<p>This binary number (range 0 to 15) is an exponent of 2 and is used in conjunction with S/B (Byte 25). This binary number (range 0 to 255) is used in conjunction with S/BX (see Byte 24) to indicate the number of scans in a block. If it is 0, the data body is one continuous block. Otherwise, the data body is composed of multiple blocks, each block containing $S/B \times 2^{S/BX}$ scans. It is valid only for multiplexed data.</p>																																				
26	Z,	<p>Record type</p> <table border="1"> <thead> <tr> <th>Bits</th> <th>0</th> <th>1</th> <th>2</th> <th>3</th> <th></th> </tr> </thead> <tbody> <tr> <td>0</td> <td>0</td> <td>1</td> <td>0</td> <td>0</td> <td>Test record</td> </tr> <tr> <td>0</td> <td>1</td> <td>0</td> <td>0</td> <td>0</td> <td>Parallel channel test</td> </tr> <tr> <td>0</td> <td>1</td> <td>1</td> <td>0</td> <td>0</td> <td>Direct channel test</td> </tr> <tr> <td>1</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>Normal record</td> </tr> <tr> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>1</td> <td>Other</td> </tr> </tbody> </table>	Bits	0	1	2	3		0	0	1	0	0	Test record	0	1	0	0	0	Parallel channel test	0	1	1	0	0	Direct channel test	1	0	0	0	0	Normal record	0	0	0	0	1	Other
Bits	0	1	2	3																																		
0	0	1	0	0	Test record																																	
0	1	0	0	0	Parallel channel test																																	
0	1	1	0	0	Direct channel test																																	
1	0	0	0	0	Normal record																																	
0	0	0	0	1	Other																																	
27	, R ₁ R ₂ , R ₃	<p>Record length from time zero (in increments of 0.5 times 1.024 sec). This value can be set from 00.5 to 99.5 representing times from 0.512 sec. to 101.888 sec. A setting of 00.0 indicates the record length is indeterminate.</p>																																				

^cDetails of polarity codes and test methods are listed in the following reference: Thigpen, B. B., Dalby, A. E., Landrum, R., 1975, Special report of the subcommittee on polarity standards: Geophysics, v. 40, p. 694.



GENERAL HEADER

INDEX BYTE	ABBREVIATION	DESCRIPTION
28	ST/R ₁ , ST/R ₂	Scan types per record. This 2 digit code is the number of scan types per record (1-99). (Zero is invalid.)
29	CS ₁ , CS ₂	Number of channel sets per scan type (1-99). (Zero is invalid.) This 2 digit code is the number of channel sets per scan. If multiple scan types are used (such as in a switching sampling interval environment), this number is equal to the number of channel sets contained in the scan type with the largest number of channel sets. If scan types also exist with less than this maximum number of channel sets per scan type, dummy channel set descriptors will have to be recorded in the scan type header. This can be done by setting the number of channels in the dummy channel set descriptor to zero (reference Bytes 9 and 10 of the scan type header description). Example 6 illustrates this requirement.
30	SK ₁ , SK ₂	Number of 32 byte fields added to the end of each scan type header in order to record the sample skew of all channels (0-99). (See Appendix E3). Zero indicates that skew is not recorded.
31	EC ₁ , EC ₂	Extended header length. The extended header is used to record additional equipment parameters. An example of this would be parameters generated by the addition of a field stacker to the system. The two digits (0-99) in this field specify the number of 32 byte extensions.
32	EX ₁ , EX ₂	External header length. The external header is used to record additional user supplied information in the header. The two digits (0-99) in this field specify the number of 32 byte extensions.

Scan type header (channel set descriptor)

The scan type header is determined by the system configuration and consists of one or more channel set descriptors each of 32 bytes followed by a series of 32 byte sample skew fields. A channel set is defined as a group of channels operating with the same set of parameters and being sampled as part of a scan of data. A scan type header can be composed of from 1 to 99 channel set descriptors. If dynamic parameter changes are required during the recording, additional scan type headers must be added, each containing the channel set descriptors necessary to define the new parameters. Each scan type header must have the same number of channel set descriptors (see Appendix E4 for header length calculation).



CHANNEL SET DESCRIPTOR

INDEX BYTE	ABBREVIATION	DESCRIPTION
1	ST ₁ , ST ₂	These two digits (1-99) identify the number of the scan type header to be described by the subsequent bytes. The first scan type header is 1 and the last scan type header number is the same value as Byte 28 (ST/R) of the general header. If a scan type header contains more than one channel set descriptor, the scan type header number will be repeated in each of its channel set descriptors. If the system does not have dynamic parameter changes during the record, such as switched sampling intervals, there will only be one scan type header required.
2	CN ₁ , CN ₂	These two digits (1-99) identify the channel set to be described in the next 30 bytes within this scan type header. The first channel set is "1" and the last channel set number is the same number as Byte 29 (CS) of the general header. If the scan actually contains fewer channel sets than CS, then dummy channel set descriptors are included as specified in Byte 29 of general header.
3 4	TF ₁₆ thru TF ₉ TF ₈ thru TF ₁	Channel set starting time. This is a binary number where TF ₁ = 2 ¹ msec (2-msec increments). This number identifies the timing word of the first scan of data in this channel set. In a single scan type record, this would typically be recorded as a zero (an exception might be deep water recording). In multiple scan type records, this number represents the starting time, in milliseconds, of the channel set. Start times from 0 to 131,070 msec (in 2-msec increments) can be recorded.
5 6	TE ₁₆ thru TE ₉ TE ₈ thru TE ₁	Channel set end time. This is a binary number where TE ₁ = 2 ¹ milliseconds (2 millisecond increments). These two bytes represent the record end time of the channel set in milliseconds. In a multiplexed record, all channels of a channel set must be of the same length. TE may be used in a demultiplexed record to allow the termination of a particular channel set shorter than other channel sets within its scan type. In a single scan type record, Bytes 5 and 6 would be the length of the record. End times up to 131,070 msec (in 2-msec increments) can be recorded.
7 8	0, 0 MP ₅ , MP ₄ thru MP ₋₂	This sign magnitude binary number is the exponent of the base 2 multiplier to be used to descale the data on tape to obtain input voltage in millivolts. The radix point is between MP ₀ and MP ₋₁ . This multiplier has a range of 2 ^{31.75} to 2 ^{-31.75} . (See Appendix E7.)
9 10	C/S ₁ , C/S ₂ C/S ₃ , C/S ₄	This is the number of channels in this channel set. It can assume a number from 0-9999.

PLATE 4J



CHANNEL SET DESCRIPTOR

INDEX BYTE	ABBREVIATION	DESCRIPTION																																																																		
11	C ₁ , 0	Channel type identification: <table border="1"> <thead> <tr> <th>Bit</th> <th>0</th> <th>1</th> <th>2</th> <th>3</th> <th></th> </tr> </thead> <tbody> <tr> <td>0</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>Other</td> </tr> <tr> <td>0</td> <td>1</td> <td>1</td> <td>0</td> <td></td> <td>External data</td> </tr> <tr> <td>0</td> <td>1</td> <td>0</td> <td>1</td> <td></td> <td>Time counter^d</td> </tr> <tr> <td>0</td> <td>1</td> <td>0</td> <td>0</td> <td></td> <td>Water break</td> </tr> <tr> <td>0</td> <td>0</td> <td>1</td> <td>1</td> <td></td> <td>Up hole</td> </tr> <tr> <td>0</td> <td>0</td> <td>1</td> <td>0</td> <td></td> <td>Time break</td> </tr> <tr> <td>0</td> <td>0</td> <td>0</td> <td>1</td> <td></td> <td>Seis</td> </tr> <tr> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td></td> <td>Unused</td> </tr> <tr> <td>1</td> <td>0</td> <td>0</td> <td>0</td> <td></td> <td>Signature, unfiltered</td> </tr> <tr> <td>1</td> <td>0</td> <td>0</td> <td>1</td> <td></td> <td>Signature, filtered</td> </tr> </tbody> </table>	Bit	0	1	2	3		0	1	1	1	1	Other	0	1	1	0		External data	0	1	0	1		Time counter ^d	0	1	0	0		Water break	0	0	1	1		Up hole	0	0	1	0		Time break	0	0	0	1		Seis	0	0	0	0		Unused	1	0	0	0		Signature, unfiltered	1	0	0	1		Signature, filtered
Bit	0	1	2	3																																																																
0	1	1	1	1	Other																																																															
0	1	1	0		External data																																																															
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0	0	1	0		Time break																																																															
0	0	0	1		Seis																																																															
0	0	0	0		Unused																																																															
1	0	0	0		Signature, unfiltered																																																															
1	0	0	1		Signature, filtered																																																															
12	S/C,	This packed BCD number is an exponent of 2. The number (2 ^{S/C}) represents the number of subscans of this channel set in the base scan. Possible values for this parameter (2 ^{S/C}) are 1 to 512 (2 ⁰ to 2 ⁹). Reference Byte 23 of the general header.)																																																																		
12	, J	Channel gain control method. <table border="1"> <thead> <tr> <th>Bits</th> <th>Gain mode</th> </tr> <tr> <th>4</th> <th>5</th> <th>6</th> <th>7</th> <th></th> </tr> </thead> <tbody> <tr> <td>0</td> <td>0</td> <td>0</td> <td>1</td> <td>- (1) Individual AGC</td> </tr> <tr> <td>0</td> <td>0</td> <td>1</td> <td>0</td> <td>- (2) Ganged AGC</td> </tr> <tr> <td>0</td> <td>0</td> <td>1</td> <td>1</td> <td>- (3) Fixed gain</td> </tr> <tr> <td>0</td> <td>1</td> <td>0</td> <td>0</td> <td>- (4) Programmed gain</td> </tr> <tr> <td>1</td> <td>0</td> <td>0</td> <td>0</td> <td>- (8) Binary gain control</td> </tr> <tr> <td>1</td> <td>0</td> <td>0</td> <td>1</td> <td>- (9) IFP gain control</td> </tr> </tbody> </table>	Bits	Gain mode	4	5	6	7		0	0	0	1	- (1) Individual AGC	0	0	1	0	- (2) Ganged AGC	0	0	1	1	- (3) Fixed gain	0	1	0	0	- (4) Programmed gain	1	0	0	0	- (8) Binary gain control	1	0	0	1	- (9) IFP gain control																													
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1	0	0	1	- (9) IFP gain control																																																																
13	AF ₁ , AF ₂	Alias filter frequency. It can be coded for any frequency from 0 to 9999 Hz.																																																																		
14	AF ₃ , AF ₄																																																																			
15	0, AS ₁	Alias filter slope in dB per octave. It can be coded from 0 to 999 dB in 1-dB steps. A zero indicates the filter is out (see Appendix E5 for definition).																																																																		
16	AS ₂ , AS ₃																																																																			
17	LC ₁ , LC ₂	Low-cut filter setting. It can be coded for any frequency from 0 to 9999 Hz.																																																																		
18	LC ₃ , LC ₄																																																																			
19	0, LS ₁	Low-cut filter slope. It can be coded for any slope from 0 to 999 dB per octave. A zero slope indicates the filter is out. (See Appendix E5 for definition.)																																																																		
20	LS ₂ , LS ₃																																																																			
21	NT ₁ , NT ₂	Notch frequency setting. It can be coded for any frequency from 0 to 999.9 Hz. The out filter is written as 000.0 Hz.																																																																		
22	NT ₃ , NT ₄																																																																			

^dIllegal code for this format because the timing counter is part of the start of scan and cannot be identified as part of a channel.

PLATE 4K



CHANNEL SET DESCRIPTOR

INDEX BYTE	ABBREVIATION	DESCRIPTION
---------------	--------------	-------------

The following notch filters are coded in a similar manner:

23	NT ₁ , NT ₂	Second notch frequency
24	NT ₃ , NT ₄	
25	NT ₁ , NT ₂	Third notch frequency
26	NT ₃ , NT ₄	
27		
28		
29	Unused. Written as zeros.	
30		
31		
32		



APPENDIX C—GLOSSARY

Base scan interval The time between timing words. A base scan interval usually contains one scan but under some conditions may contain multiple subscans.

Block The data between gaps on tape.

Channel set One or more channels sampled at the same sampling interval and containing the same filter, fixed gain, and other fixed parameter information.

Channel set descriptor A unit of the scan type header describing the parameters of a channel set.

Data recording method The arrangement of bits to represent samples on tape.

File All data recorded from a single energy impulse or sweep. It may also be the sum of a number of energy impulses or sweeps. Literally, it is all of the blocks between file marks.

Format Data recording method combined with a multiplexed/demultiplexed indicator (see general header Bytes 3 and 4).

General header The first header in the header block. It contains information common to the entire record.

Index byte The byte number of some particular parameter within the general or scan type header.

Packed BCD Binary coded decimal digits represented by four data bits.

Sample skew The fraction of the base scan interval between the timing word and the actual time the sam-

ple was taken in a base scan interval (not related to position on tape).

Sampling interval The interval between readings such as the time between successive samples of a digital seismic trace.

Scan One complete sequence of events, such as sampling all channels. Data recorded during a base scan interval.

Scan interval The interval between readings of all samples contained in a scan type.

Scan type One complete set of channel sets which make up a scan. A seismic record contains multiple scans, and may or may not contain more than one scan type.

Scan type header A header containing one or more channel set descriptors and the skew information.

Subscan A set of samples containing one sample for each channel in a channel set.

Time break window Time interval in which time break is expected. If time break does not occur by the end of the window, internal time break is generated.

Trace A record of one seismic channel within a scan type. A collection of a sequential set of points from one seismic channel.

Trace block A block containing the data of one trace or a part of a trace with constant parameters.



HEADER DESCRIPTORS

G = general header

S = scan type header (channel set descriptor)

ABBREVIATION	HEADER	BYTE NO.	DESCRIPTION
AF	S	13, 14	ALIAS FILTER FREQUENCY
AS	S	15, 16	ALIAS FILTER SLOPE
B	G	20, 21, 22	BYTES PER SCAN (MULTIPLEXED ONLY)
BCD	—		BINARY CODED DECIMAL
BOT	—		BEGINNING OF TAPE MARK
C	S	11	CHANNEL TYPE IDENTIFICATION
CN	S	2	CHANNEL SET NUMBER
CS	G	29	CHANNEL SETS PER SCAN TYPE
C/S	S	9, 10	CHANNELS IN THIS CHANNEL SET
DP	—		DYNAMIC PARAMETER CHANGE BIT (SEE THE MULTIPLEXED DATA BLOCK, SOS BYTE 4)
DY	G	12, 13	DAY OF YEAR
EC	G	31	EXTENDED HEADER LENGTH
EOF	—		END OF FILE MARK
EOT	—		END OF TAPE MARK
EX	G	32	EXTERNAL HEADER LENGTH
F	G	1, 2	FILE NUMBER
H	G	14	HOUR OF DAY
HDR	—		HEADER FOR DEMULTIPLEXED TRACE
HL	—		HEADER LENGTH (SEE APPENDIX E4)
I	G	23	BASE SCAN INTERVAL
IBG	—		INTERBLOCK GAP (ALSO GAP)
ITB	—		INTERNAL TIME BREAK (SEE THE MULTIPLEXED DATA BLOCK, SOS BYTE 4)
J	S	12	GAIN CONTROL METHOD
K	G	5 THRU 10	GENERAL CONSTANTS
LC	S	17, 18	LOW CUT FILTER FREQUENCY
LS	S	19, 20	LOW CUT FILTER SLOPE
LSB	—		LEAST SIGNIFICANT BIT
LSD	—		LEAST SIGNIFICANT DIGIT
M	G	17 THRU 19	MANUFACTURER'S CODE AND SERIAL NUMBER
MI	G	15	MINUTE OF HOUR
MP	S	8	DESCALING EXPONENT
MSB	—		MOST SIGNIFICANT BIT
MSD	—		MOST SIGNIFICANT DIGIT
NT	S	21 THRU 26	NOTCH FILTER FREQUENCY
P	G	24	POLARITY
R	G	26, 27	RECORD LENGTH
S	—		SIGN BIT
S/B, S/BX	G	24, 25	NUMBER OF SCANS PER BLOCK

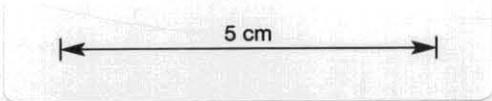


HEADER DESCRIPTORS

ABBREVIATION	HEADER	BYTE NO.	DESCRIPTION
S/C	S	12	EXPONENT OF SAMPLES PER CHANNEL IN THE BASE SCAN
SE	G	16	SECOND OF MINUTE
SK	G	30	NUMBER OF 32 BYTE SKEW FIELDS
SOS	—		START OF SCAN (MULTIPLEXED DATA BLOCK)
SS	—		SAMPLE SKEW
S/S	—		SAMPLES/SCAN
ST	S	1	SCAN TYPE NUMBER
ST/R	G	28	SCAN TYPES PER RECORD
T	—		TIMING WORD (MULTIPLEXED DATA BLOCK)
TF	S	3, 4	FIRST TIMING WORD IN THIS CHANNEL SET
TE	S	5, 6	END TIME OF THIS CHANNEL SET
TN	—		DEMULPLEXED TRACE NO. (SEE TRACE HEADER)
TW	—		TIME BREAK WINDOW (SEE DEMULTI- PLEXED DATA BLOCK, TRACE HEADER BYTES 13, 14 AND 15)
TWI	—		TIME BREAK WINDOW INDICATOR (SEE MULTIPLEXED DATA BLOCK, SOS BYTE 4)
Y	G	3, 4	FORMAT CODE (DATA RECORDING METHOD)
YR	G	11	YEAR (LAST TWO DIGITS)
Z	G	26	RECORD TYPE



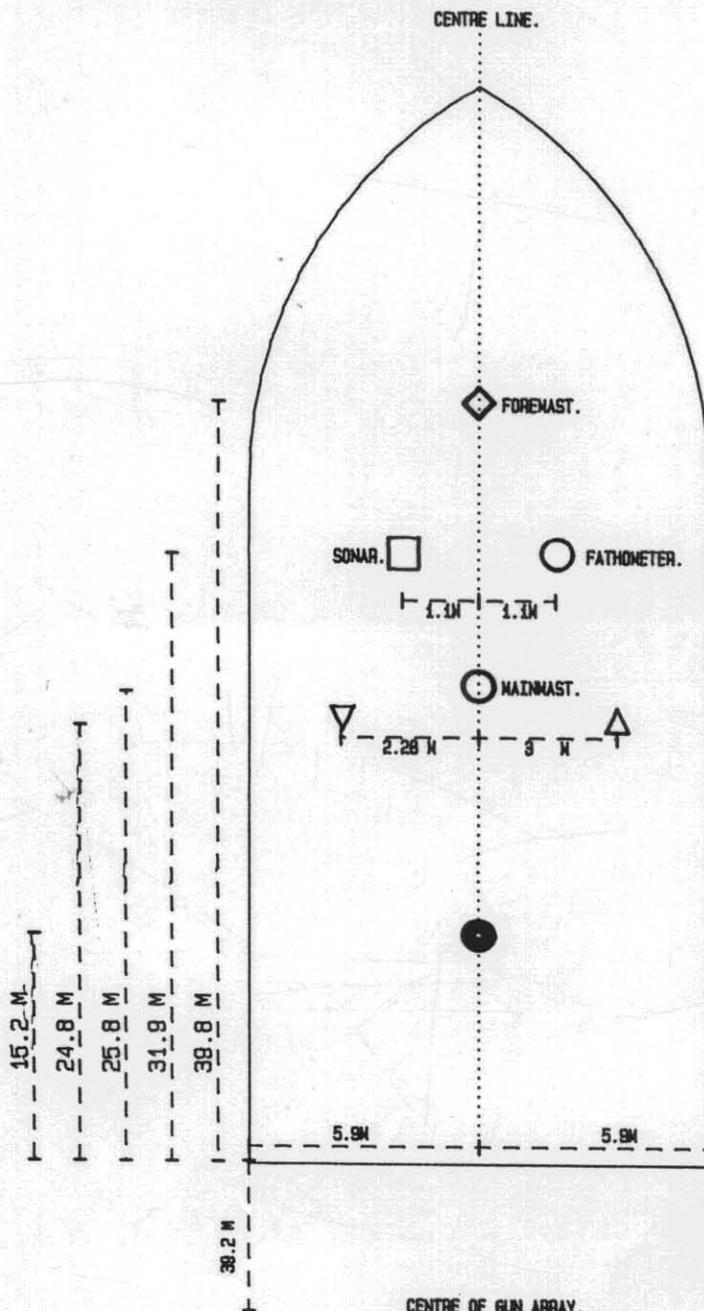
PLATE (5)



M/V EUGENE McDERMOTT II .

CLIENT: AMOCO.

DATE: OCT/NOV 1985



KEY.

- ◆ .
- SYLEDIS.
- ▽ ARGO ANT.
- △ .
- CENTRAL NAV POINT
(SAT ANT).

THE CENTRAL NAV POINT IS THE POSITION THAT ALL ANTENNAE ARE REFERENCED TO ie. A SHOT OCCURS WHEN THE CNP IS OVER THE PREPLOTTED SHOTPOINT CO-ORDINATE !

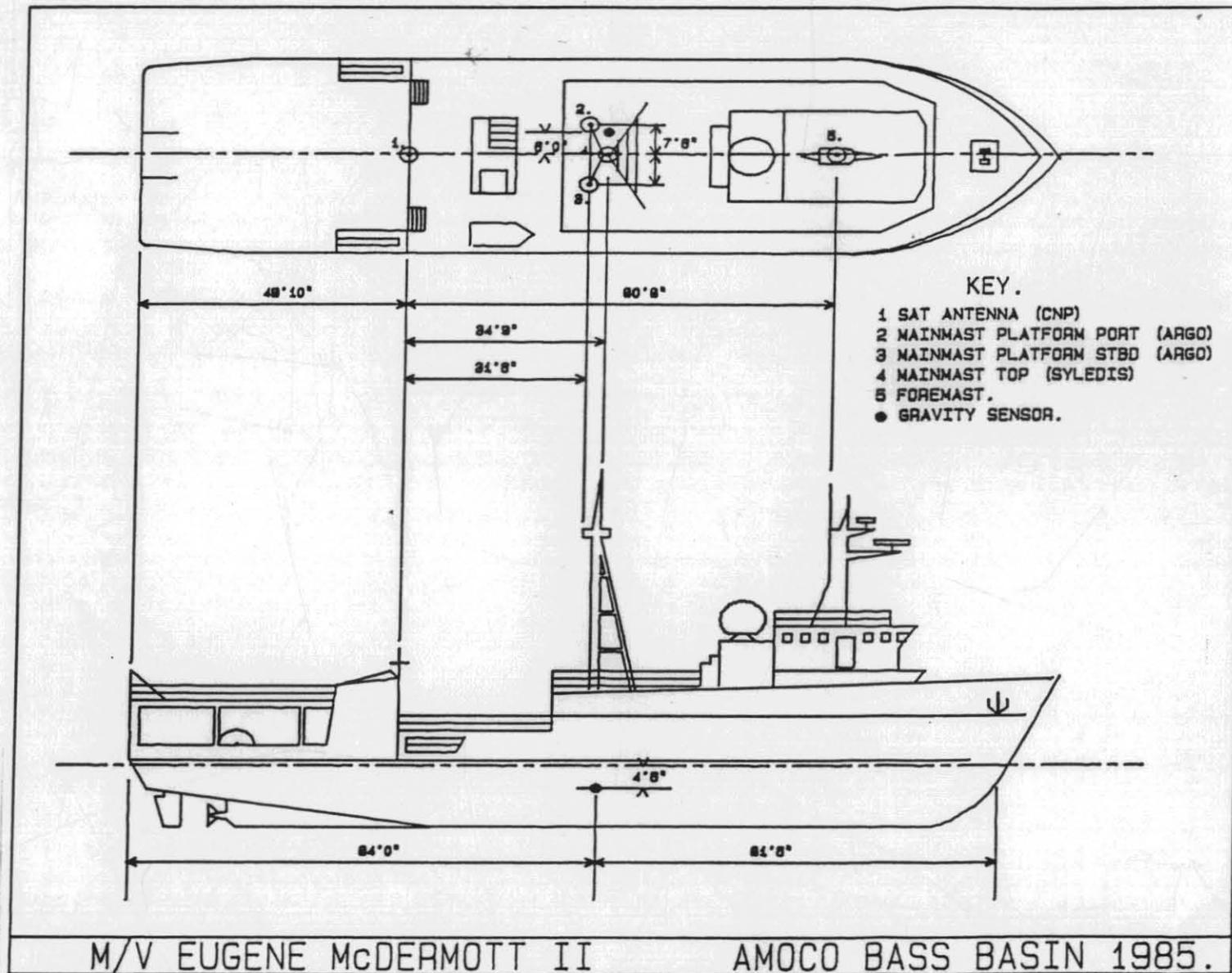


PLATE (5a)

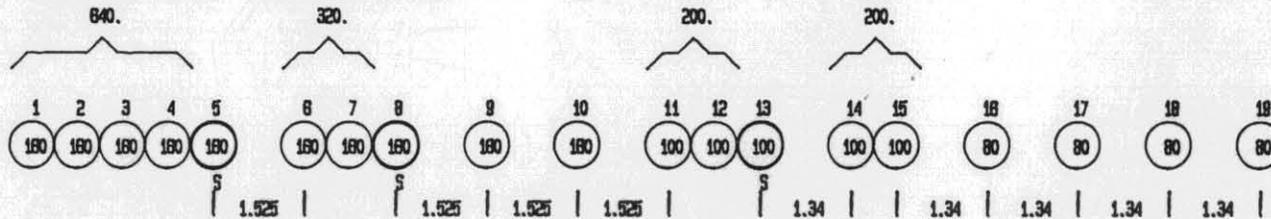


152108

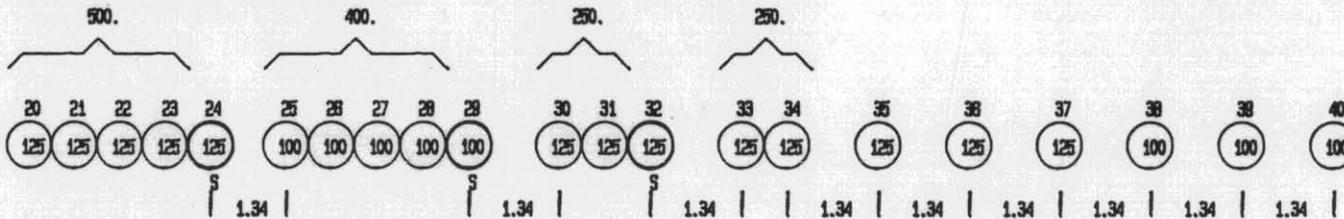
5 cm

4075 CUBIC-INCH MOD II/III AIRGUN ARRAY

STARBOARD STRING (19 GUNS, 18.25 M)



PORT STRING (21 GUNS, 18.6 M)



NOTES-

1. GUN SIZE IN CUBIC INCHES
2. CENTRELINE TO CENTRELINE SPACING OF ALL COALESCED GUNS IS 0.545 METRES
3. SPARE GUNS DENOTED BY "S"
4. GUNS 1 - 10 ARE MOD III PC, GUNS 11 - 40 ARE MOD II PC
5. PREDICTED AVERAGE PERFORMANCE-
 $P_a=80$ BAR-M (P-P, 0-125 Hz)
 $P_a/P_b=10$:

ARRAY COMPOSITION

1 X 640	}	4075 ACTIVE	}	770 SPARE
1 X 500				
1 X 400				
1 X 320				
2 X 250				
2 X 200				
2 X 180				
3 X 125				
3 X 100				
4 X 80.				

PLATE (7)



152110

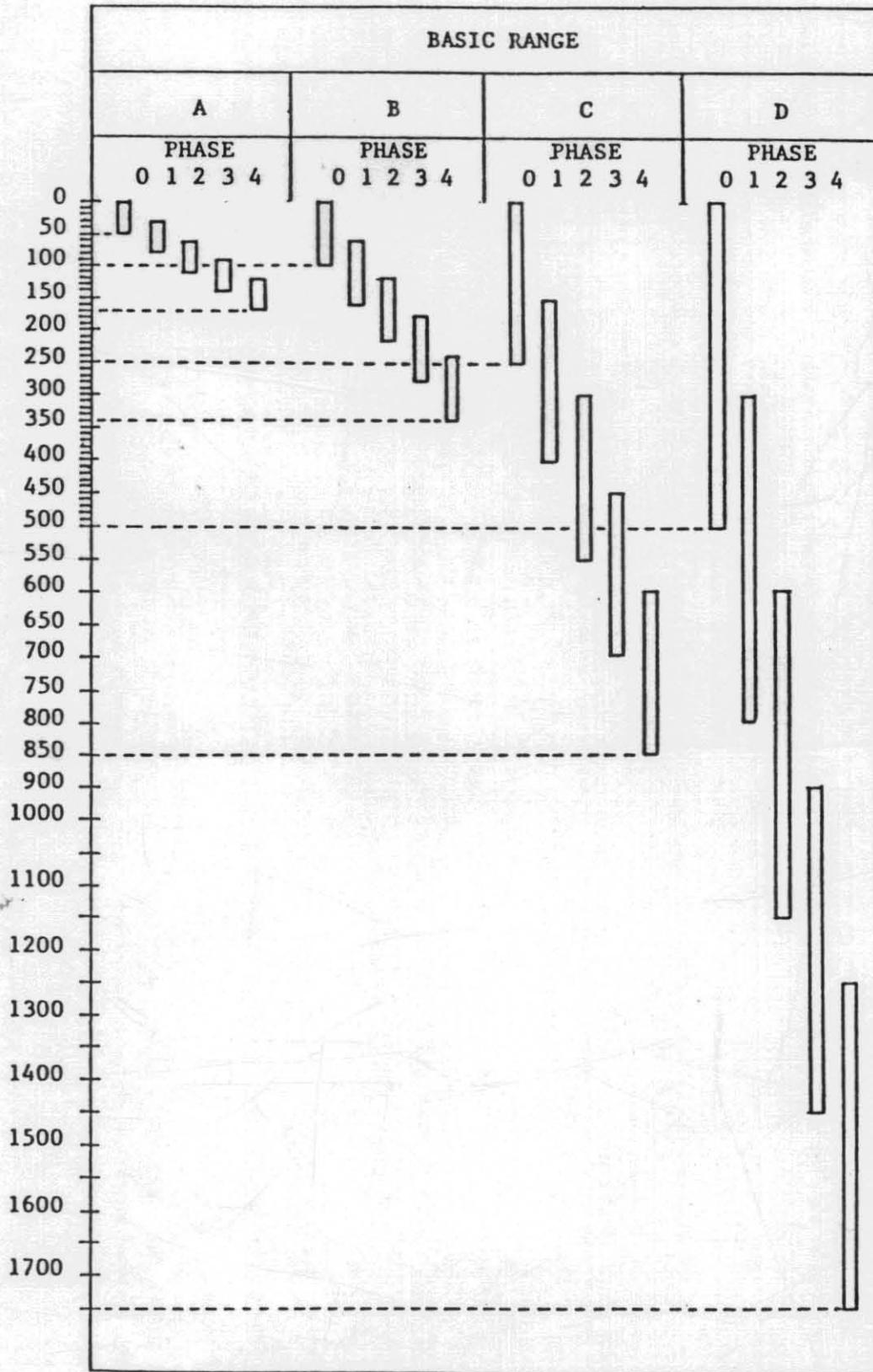
5 cm

152111

PLATE 8



SIMRAD MODEL EA FATHOMETER SCALE



GS1 240 TRACE MUX STREAMER.

CLIENT : AMOCO.
 PROSPECT : 1985B -MARINE SURVEY.
 VESSEL : M/V EUGENE McDERMOTT II.
 DATE : OCT/NOV 1985.

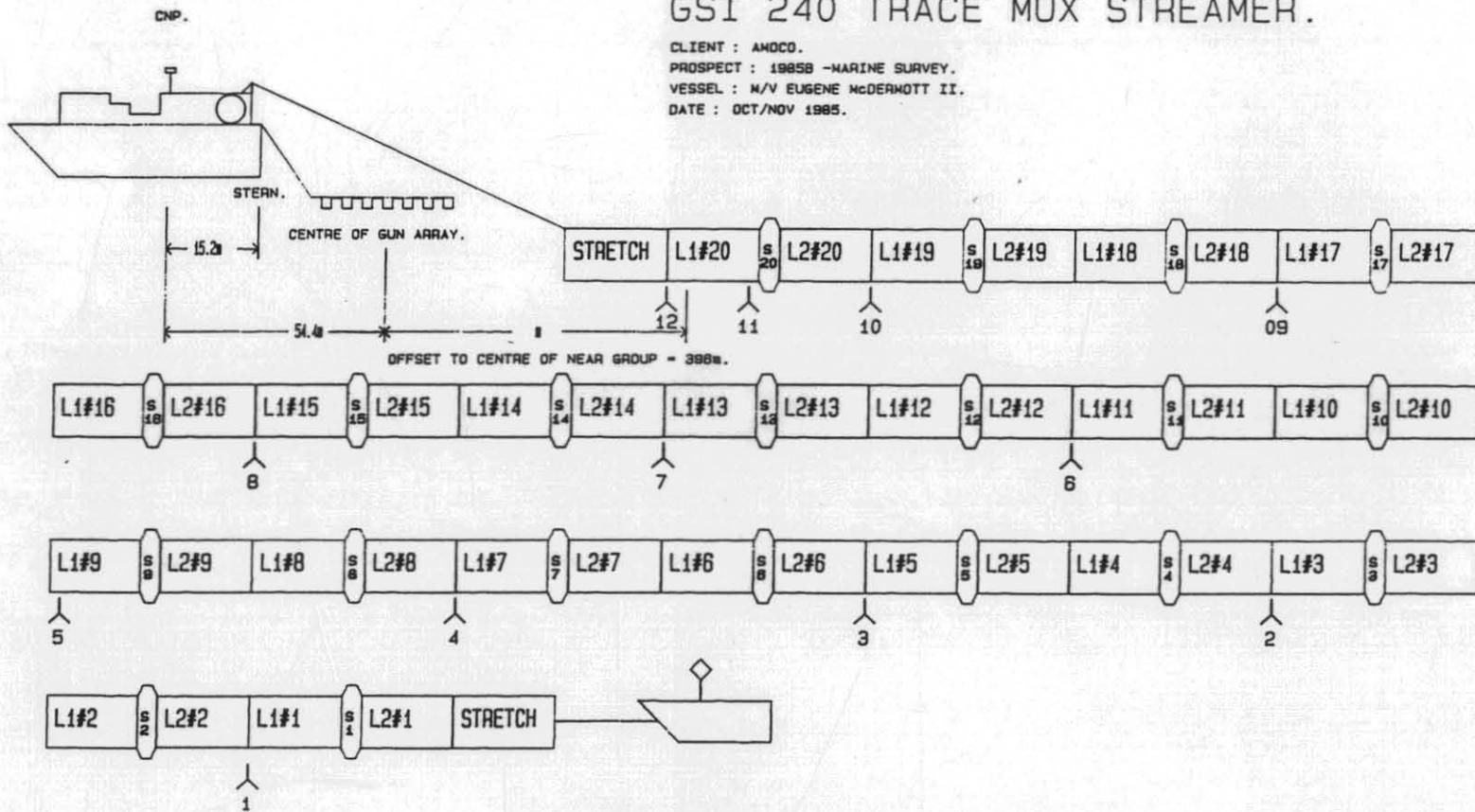


PLATE (9)

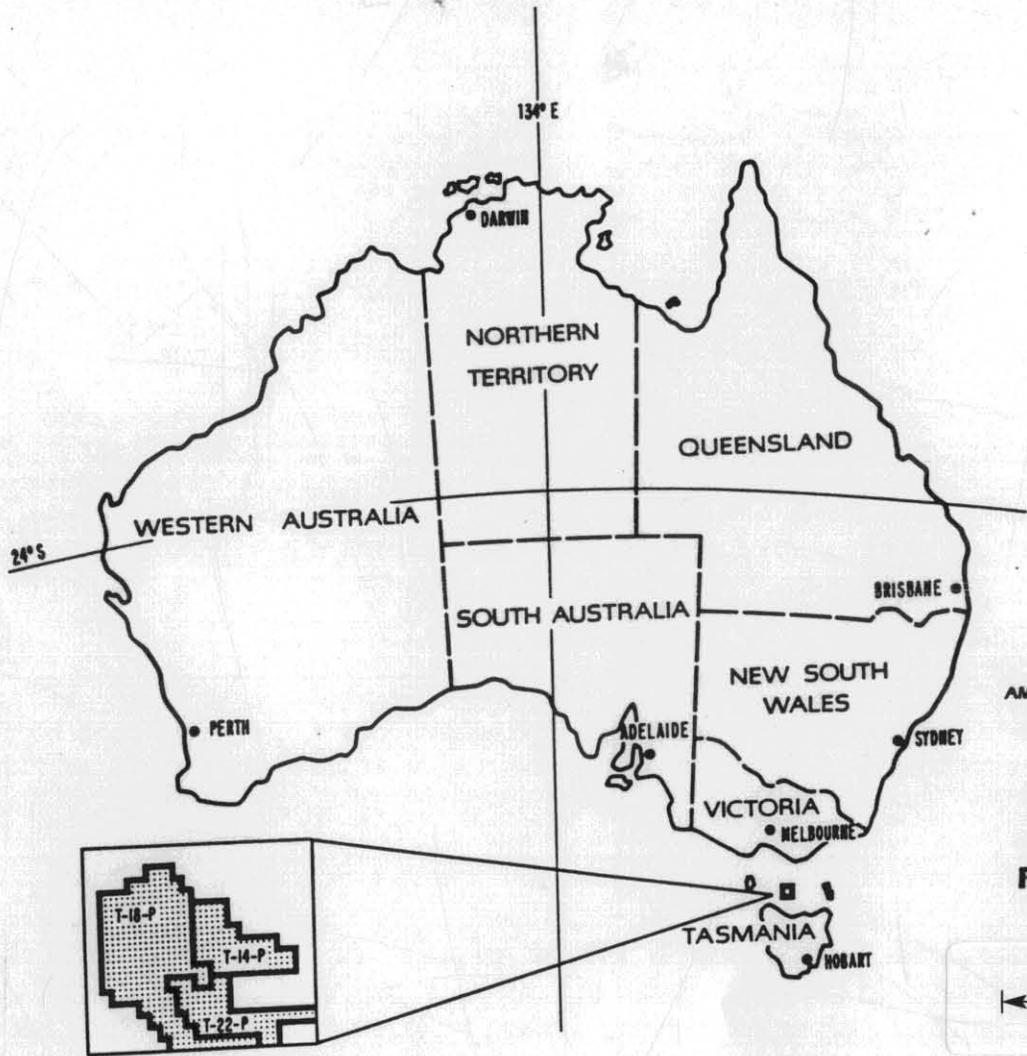
NOTE :

- 1 : TOTAL LENGTH OF A L1/SEM/L2 CLUSTER IS 180 m.
- 2 : GROUP LENGTH IS 15m.
- 3 : PHYSICAL OFFSET CALCULATION : 4 X 100m STRETCH + 7m (CABLE TOW CLAMP) + 7.5m (CENTRE OF NEAR GROUP) - 39.2m (STERN TO CENTRE OF GUNS)!
- 4 : THE CENTRAL NAV POINT IS THE POSITION THAT ALL ANTENNAE ARE REFERENCED TO 10. A SHOT OCCURS WHEN THE CNP IS OVER THE PREPLOTED SHOTPOINT CO-ORDINATE !

1
CABLE LEVELLER.



152112



1:22,000,000 Approx

AMOCO AUSTRALIA PETROLEUM COMPANY

LOCATION MAP
Offshore Tasmania

BASS BASIN
PERMITS T-14,18,22-P

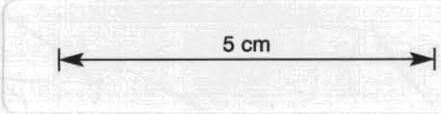


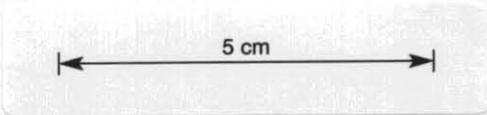
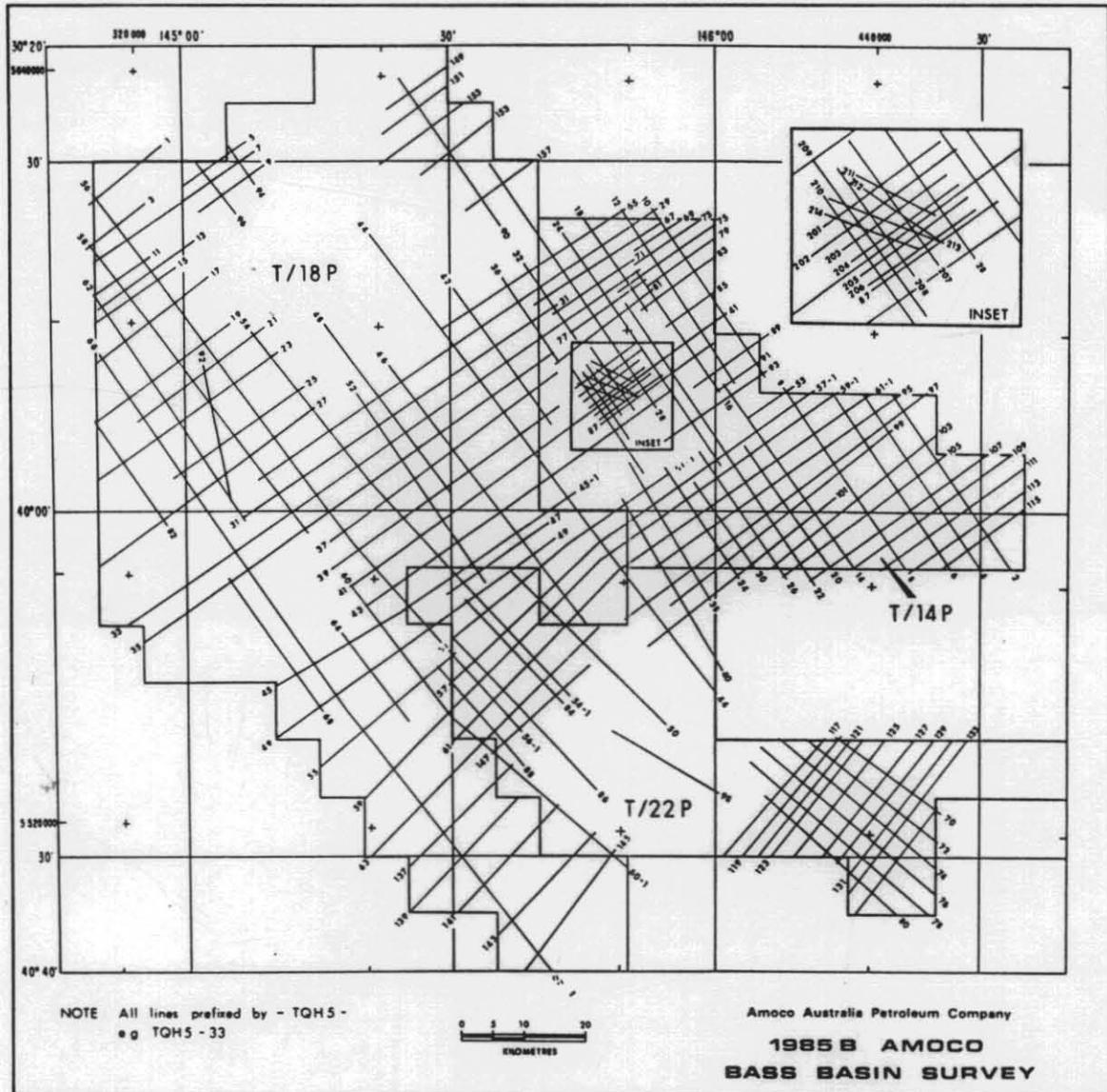
PLATE (10)



152113



PLATE (11)



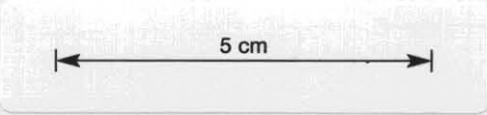
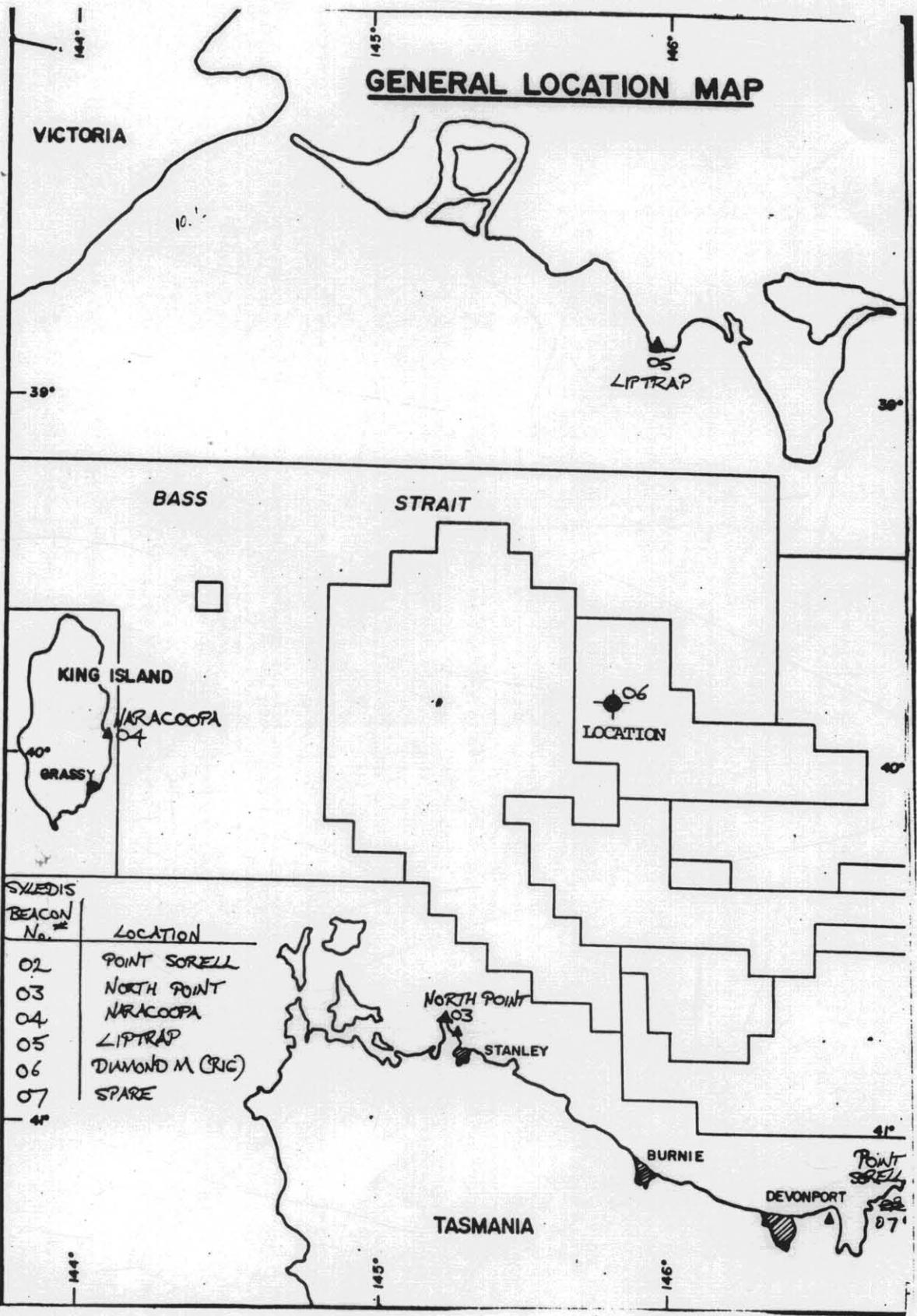


PLATE (12)



SYLVEDIS BEACON No.	LOCATION
02	POINT SORELL
03	NORTH POINT
04	NARACOOPA
05	LIPTRAP
06	DIAMOND M. (RIC)
07	SPARE

152116

5 cm

PLATE (13)

