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MEMORANDUM FOR: Malcolm R. Knapp, Chief
Geotechnical Branch
Division of Waste Manangement

THRU: Philip S. Justus, Section Leader
Geology-Geophysics Section
Geotechnical Branch
Division of Waste Management

WM Record File
106
WM Project 16
Docket No.
PDR ✓
LPDR ✓

FROM: John S. Trapp
Geology-Geophysics Section
Geotechnical Branch
Division of Waste Management

Distribution:
(Return to WM, 623-SS)

SUBJECT: TRIP REPORT: NRC REVIEW OF GEOPHYSICAL DATA FOR THE
PARADOX BASIN

On the 16th, 17th and 18th of October, 1984, Richard Lee, Abou-Bakr Ibrahim, Ben Rice and John Trapp of WMGT, met in the San Francisco offices of Woodward-Clyde Consultants (WCC) to review the data utilized in preparation of the draft report titled "Seismic Reflection, Gravity, and aeromagnetic studies of the Geologic Structure in the Gibson Dome Area, Southwestern Paradox Basin". Representatives of DOE/SRPO, Battelle/ONWI, USGS, Weston Geophysical and NRC Research were also present.

Attached to this memo is a copy of the signed meeting minutes, list of attendees and data review sheets completed during the visit which documents this review.

15/
John S. Trapp
Geology-Geophysics Section
Geotechnical Branch
Division of Waste Management

Enclosures:
As stated

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PDR WASTE
WM-16 PDR

OFC	: WMGT:dw	:	:	:	:	:	:	:
NAME	: JTrapp	:	:	:	:	:	:	:
DATE	: 84/10/29	:	:	:	:	:	:	:

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NRC DATA REVIEW OF GEOPHYSICAL DATA FOR THE PARADOX BASIN
16 to 18 October, 1984
Woodward-Clyde Consultant office
San Francisco, CA

On the 16th, 17th, and 18th of October, 1984 representatives of the NRC geotechnical staff (WMGT) met in the San Francisco office of Woodward-Clyde Consultants to review the data utilized in the preparation of the draft report titled "SEISMIC REFLECTION, GRAVITY AND AEROMAGNETIC STUDIES OF THE GEOLOGIC STRUCTURE IN THE GIBSON DOME AREA, SOUTHWESTERN PARADOX BASIN. As the data used to prepare this report is proprietary, it was the purpose of this meeting to evaluate the quality of the data, how it was collected, processed and analyzed and then to gather insight into how the interpretations presented in the above report were made. As this meeting was to be a data review and not a workshop, questions regarding geologic interpretations were not part of the agenda.

In attendance at this meeting were, in addition to the NRC and Woodward-Clyde Consultants, representatives of the Department of Energy (DOE), Battelle Memorial Institute Office of Nuclear Waste Isolation (ONWI), the US Geologic Survey, as well as Weston Geophysical and Lawrence Livermore Laboratory. A complete attendance list is included as Attachment 1.

On the morning of the 16th, T. Grant, I. Wong and T. Turcotte of WCC presented a brief overview of the procedures utilized in processing, collecting and analyzing the data. For the remainder of the day the NRC and its consultants conducted a general review of all data available. During the 17th the NRC performed a detailed review of selected pieces of data. The results of the NRC review are presented in the three attached data sheets. On the morning of the 18th a discussion was conducted between the NRC staff and consultants regarding all information reviewed.

In the afternoon the data review was concluded and results of the review were discussed between the NRC and all attendees.

General observations by the NRC on the data were as follows:

- 1) Some seismic data is of variable quality.
- 2) Seismic data were obtained and processed utilizing standard/routine petroleum industry methodology.
- 3) Future seismic surveys should be of high resolution type designed to provide additional information on the salt and near surface strata.
- 4) The gravity and magnetic data appear to be of good quality.
- 5) The Davis and Lavender Canyon sites are located at the Southwestern edge of the gravity survey. No data are included to the Southwest of the sites.
- 6) If the Paradox Basin is selected for characterization the relationship between gravity and magnetic data and geologic features such as the Northeast trending basement features and circular features as seen on landsat and orthophotos may be the subject of a workshop between the NRC and DOE.

- 7) Future geophysical surveys including proprietary data should be available for submission to the NRC.

The NRC representatives at this data review wish to thank DOE, ONWI, and WCC for the excellent cooperation in conducting this review.



John S. Trapp
U. S. Nuclear Regulatory Commission
Division of Waste Management



P. Michael Ferrigan
U. S. Department of Energy
Salt Repository Project Office

October 18, 1984

Attachments as stated.

OCTOBER 16, 1984
GEOPHYSICS REVIEW MEETING

Michael Ferrigan	DOE/SRPO	614 - 424-5916
John Trapp	NRC	301-427-4545
Ben Rice	NRC	301-427-4646
Buck Ibrahim	NRC	301-427-4646
Jim Hileman	Battelle	614-454-7534
Vincent Murphy	Weston	617-366-9191
John Imse	Weston	617-366-9191
Richard Lee	NRC	301-427-4526
Tom Turcotte	WCC	415-945-3000
Terry Grant	WCC	415-864-5010
Fred R. Cranwell	WCC	415-864-5010
Albert M. LaSala, JR.	USGS	614-424-5916
Ernst G. Zurflueh	NRC	301-427-4343
Bernard Archer	ONWI	614-424-4863
H. Lawrence McKague	LLNL	814-422-6494
Ivan Wong	WCC	415-864-5010

J. TRAPP,
Reviewer F. MURPHY, A.K. IZRAHIM, R. LEE
Date 10/18/84

GEOLOGY-GEOPHYSICAL DATA REVIEW CHECKLIST

1. Name/type, identification number, and date of survey?
*SEISMIC REFLECTION SURVEY IN GIBSON DOME AREA, PARADOX BASIN;
DEC. 1983, CATHERINE KITCHO, WCC "ROUGH DRAFT".*
- 1a. What was the overall objective of the survey?
(i.e., What features were to be identified?)
*TO IDENTIFY GEOLOGIC STRUCTURE & STRATIGRAPHY OF GIBSON DOME
AREA.*
- 1b. What criteria were used for line or station locations selection?
GROUP SHOOT PROJECT DATA BANKS.
- 1c. What geologic constraints were used in determining coverage?
TOPOGRAPHIC & ROUTING CONSTRAINTS.
- 1d. What was the density of coverage in survey?
(i.e., seismic coverage, gravity station locations, aeromag. flt line
spacing,...)
*GOOD COVERAGE IN THE EAST (2-10 MILE SPACING). SPARSE COVERAGE
IN THE WEST (REFER TO ATTACHED FIG. 2-1 SHEET 1 OF 3).*
- 1e. What features (i.e., structures, anomalies, stratigraphic parameters)
were determined by the survey?
*SEISMIC REFLECTION HORIZONS IDENTIFIED & CORRELATED TO PREC,
DEVONIAN, MISSISSIPPIAN, & HORIZONS UP TO TOP OF SALT.*
- 1f. Comments on:

J. TRAPP,

Reviewer V. MURPHY, A.K. IBRAHIM, R. LEEDate 10/18/84

2. How is the procedure documented?

MAP PRESENTATION OF LINE LOCATIONS & PROCESSED SEISMIC REFLECTION SURVEY RECORDINGS. ALSO SHOWN IN TITLE "ROUGH DRAFT" REPORT.

- 2a. Is it a standard (ASTM) procedure? If yes, provide reference.

N/A

- 2b. If non-"standard", how was the procedure developed, reviewed, documented, and approved? For example, COE, USBM, USBR, USGS, NBS, or other (internal) processes.

PROCESSING PROCEDURE IN SE 6-B FORMAT AS SHOWN ON ATTACHED HEADER SHEET EXAMPLE.

- 2c. Have there been revisions and how and when were the revisions reviewed, documented, approved, and implemented?

ORAL CONFIRMATION BY WCC OF REPROCESSING OF SOME SEISMIC REFLECTION SURVEYS.

- 2d. Show are any deviations from the established procedures that occur during survey documented?

ESTABLISHED PROCEDURES APPEAR TO HAVE BEEN FOLLOWED DURING ACQUISITION & PROCESSING OF DATA.

- 2e. Comments on:

Review: J. TRAPP, V. MURPHY,
A.K. IBRAHIM, R. LEE

DATE: 10/18/84

3. What instrumentation is used for the survey? *STANDARD SEISMIC REFLECTION DIGITAL RECORDING SYSTEMS USED; ~~BUT~~ SINCE DATA OBTAINED FROM DIFFERENT SOURCES; A SMALL AMOUNT OF DATA USED ANALOG RECORDING SYSTEMS; ENERGY SOURCE GENERALLY VIBROSEIS SYSTEMS; DYNAMITE IN A FEW CASES.*
- 3a. How were the reliabilities* of the instruments specified?
WCC RELIED UPON CONTRACTOR WHOSE QC LABEL IS ON SEISMIC HEADER SHEET (SEE ATTACHED).
- 3b. Is there a calibration system and were calibrations systematically carried out according to approved procedure?
NONE ARE APPARENT. NO INFORMATION IS AVAILABLE.
- 3c. Are the calibration procedures traceable to national or industrial standards?

yes

- 3d. Comments on:

* Reliability is defined as the probability of an instrument to perform a stated function under a stated environment for a stated line.

J. TRAPP,
Reviewer V. MURPHY, A.K. IBRAHIM,
Date 10/18/84 R. LEE

4. What are the data processing and presentation techniques used?

*NORMAL DATA PROCESSING USED. SEE ATTACHED HEADER SHEET
EXAMPLE FROM LINE 37 DAVIS CANYON AREA.*

- 4a. How can the raw numerical data be retrieved?

ORIGINAL DIGITAL RECORDING TAPES MUST BE REQUESTED.

- 4b. Are the data presented in a complete and clear format?
(Comment also on the utility of the presentation.)

YES, STANDARD SIZE & QUALITY IN PRESENTATION.

- 4c. Are the data keyed to geological, environmental, geographic or other traceable references?

yes, REFER TO TITLE "ROUGH DRAFT" REPORT.

- 4d. Comments on:

J. TRAPP,

Reviewer V. MURPHY, A.K. IBRAHIM,
Date 10/18/84 R. Lee

5. What are the acceptance/rejection criteria for the survey data?

*CAPABILITY TO IDENTIFY GEOLOGICAL FEATURES OF INTEREST FOR
REPOSITORY SITING CONSIDERATIONS.*

5a. Were these criteria established prior to survey performance?

yes.

5b. How are the criteria implemented? (Data handling, review procedure, corrective action.)

o Data Handling

*ORIGINALLY RECORDED DATA WERE REVIEWED & WHEN IT
APPEARED FEASIBLE, REPROCESSING TOOK PLACE.*

o Review Procedure

*A CONSULTANT WAS UTILIZED (J.S. RICHARDS, INC.) WHO
ALSO PARTICIPATED IN CHOOSING SEISMIC LINES.*

o Corrective Action

*SOME ~~INTERPRETATIONS~~ & TERMINOLOGY ^{is} ~~ARE~~ EXPECTED TO
BE REVISED.*

J. TRAPP,
 Reviewer V. MURPHY, A.K. ZORANIM,
Date 10/18/84 R. Lee

6. General comments (such as, relationship among different surveys, impacts on interpretation, instrument redundancy, factors resulting in test closure, accuracy of measurements, limitations, additional uses of data, computer programs, and other miscellaneous comments).

- A) DIFFERENT SURVEYS HAVE DISCLOSED DIFFERENT QUALITY OF DATA RECORDINGS & INTERPRETABLE FEATURES.
- B) CONCERNING IMPACTS ON INTERPRETATIONS, THE VELOCITY DATA USED AFFECTS THE RESOLUTION POTENTIAL FOR SMALL FEATURES.
- C) CONCERNING TEST CLOSURE, MANY LINES HAVE LIMITED OR NO "TIES" TO OTHER LINES.
- D) CONCERNING ACCURACY & LIMITATIONS OF MEASUREMENTS, THE DATA IN ITS PRESENT FORMAT CONSTRAINS INTERPRETATIONS.
- E) CONCERNING ADDITIONAL DATA USES, SEISMIC SURVEY DATA CAN BE COMBINED WITH GRAVITY, MAGNETIC & WELL LOG DATA.

7. Requested Data - (Identify all data and documentation that are needed for further review).

SINCE DATA IS NOTED AS PROPRIETARY & PRESENTLY ONLY AVAILABLE AT ONE LOCATION (WCC OFFICES, SAN FRANCISCO), IT WOULD BE HELPFUL IF DATA COULD BE AVAILABLE TO THE NRC ~~APPROPRIATE FEDERAL AGENCIES~~ FOR ~~INTERNAL~~ REVIEW WITH CONSTRAINTS AS NECESSARY.

IN ADDITION, FUTURE SURVEYS COULD BE SIMILARLY AVAILABLE.

AS SEEN IN TITLED "ROUGH DRAFT" REPORT, FIG. 2-1 SHEET 1 OF 3, THESE ARE THE KEY LINES REVIEWED:

33A, 33B, 34, 35, 36, 37, 38, 39, 40A, 42 + 43.

IN ADDITION, OTHER SEISMIC LINES WERE PERUSED:

FOREXAMPLE, 1, 5 + 13.

WOODWARD-CRYDE
PARADOX BASIN
SAN JUAN CO., UTAH



SEFEL GEOPHYSICAL
SEISMIC DATA PROCESSING
DENVER COLORADO

DATE PROCESSED OCTOBER 81
CONTRACT NUMBER 6659

FIELD RECORDING

ACQUISITION BY
PARTY
DATE

SEISMIC ENGINEERING CO.
3
AUGUST 1968

RECORDING

TYPE
RECORD LENGTH

ANALOG
6 SEC.

ENERGY SOURCE
TYPE
DEPTH

DYNAMITE
20 FT.

FIELD GEOMETRY

NUMBER OF CHANNELS
S.P. INTERVAL
GROUP INTERVAL
COVERAGE
SPREAD

24
1320 FT.
440 FT.
400 PERCENT
5060-220--220-5060

DIGITAL PROCESSING

1 REFORMAT TO SEFEL SEG-Y
RESAMPLE TO 4 MS.

2 DISPLAY RAW RECORDS

3 RECORD EDIT

4 CDP GATHER

5 DECONVOLUTION

OPERATOR LENGTH
PREWHITENING
DESIGN WINDOW
APPLICATION TIME

SPIKING
76 MSEC.
1 PERCENT
300 - 1900 MSEC.
0 - 3000 MSEC.

6 ELEVATION STATICS

DATUM ELEVATION
REPLACEMENT VELOCITY

6000 FT.
10000 FT./SEC.

7 VELOCITY ANALYSIS

TYPE
VELOCITY RANGE

CVS
9000 - 18000 FT./SEC.

8 NORMAL MOVEOUT CORRECTION

9 AUTOMATIC RESIDUAL STATICS

RANGE
WINDOW

+/- 25 MSEC.
900-1600 MSEC.

10 FINAL VELOCITY ANALYSIS

11 FINAL NORMAL MOVEOUT CORRECTION

12 FIRST BREAK SUPPRESSION

13 CDP STACK

14 FINAL FILTER

FREQUENCY BAND
TIME
FREQUENCY BAND
TIME

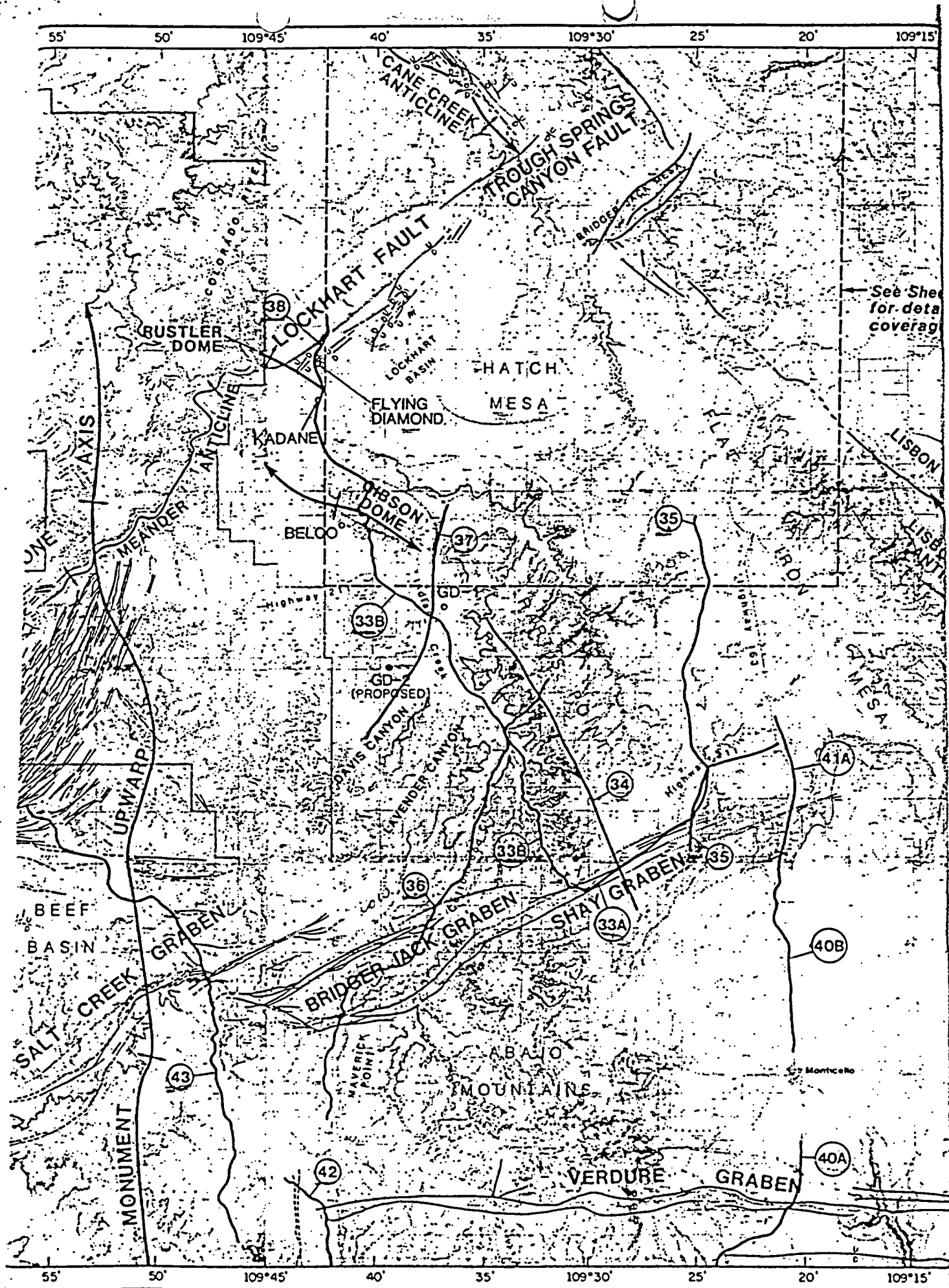
15-45 HZ.
0-1800 MSEC.
10-35 HZ.
1500-1800 MSEC.

15 TRACE EQUALIZATION

16 FILM DISPLAY

SCALE
POLARITY

12 TPI 5 IPS
NORMAL



Reviewer B. RICE, J. IMSE, E. ZURFLUEH
Date OCT. 17, 1984

GEOLOGY-GEOPHYSICAL DATA REVIEW CHECKLIST

1. Name/type, identification number, and date of survey?
GRAVITY SURVEY; PROJECT 85-2003, GEOTERREX, LIMITED; 1982
- 1a. What was the overall objective of the survey?
(i.e., What features were to be identified?)
REGIONAL GEOLOGIC DATA FOR THE PARADOX BASIN
- 1b. What criteria were used for line or station locations selection?
ONE MILE GRID FOR STATION LOCATIONS
- 1c. What geologic constraints were used in determining coverage?
PARADOX BASIN BOUNDARY
- 1d. What was the density of coverage in survey?
(i.e., seismic coverage, gravity station locations, aeromag. flt line spacing,...)
ONE MILE GRID SPACING (NORTH-SOUTH AND EAST-WEST LINES)
- 1e. What features (i.e., structures, anomalies, stratigraphic parameters) were determined by the survey?
GRAVITY ANOMALIES - INTERPRETATIONS OF STRUCTURAL AND STRATIGRAPHIC FEATURES INCOMPLETE AT THIS TIME.
- 1f. Comments on:
THE DAVIS AND LAVENDER CANYON SITES ARE LOCATED ON THE SOUTH WESTERN EDGE OF THE SURVEY. NO DATA TO THE SOUTHWEST IS INCLUDED IN THE SURVEY.

Reviewer B. RICE; J. IMSE; E. ZURFLUH
Date OCT. 17, 1984

2. How is the procedure documented?

LOGISTICS REPORT BY THE COLLECTING CONTRACTOR.

2a. Is it a standard (ASTM) procedure? If yes, provide reference.

NO, THESE ARE STANDARD INDUSTRY PROCEDURES

2b. If non-"standard", how was the procedure developed, reviewed, documented, and approved? For example, COE, USBM, USBR, USGS, NBS, or other (internal) processes.

(SEE 2a.)

2c. Have there been revisions and how and when were the revisions reviewed, documented, approved, and implemented?

NO REVISIONS

2d. Show are any deviations from the established procedures that occur during survey documented?

NO DEVIATIONS

2e. Comments on:

NONE

B. RICE; J. IMSE; E. ZURFLUEH
OCT. 17, 1984

3. What instrumentation is used for the survey?

LACOSTE-ROMBERG MODEL G GRAVIMETER & A
FERRANTI INERTIAL SURVEY SYSTEM

- 3a. How were the reliabilities* of the instruments specified?

CALCULATED ERROR OF ± 0.3 mgal

- 3b. Is there a calibration system and were calibrations systematically carried out according to approved procedure?

YES, STATION REOCCUPATION AND LOOPING BETWEEN
ESTABLISHED GRAVITY BASE STATIONS AT MOAB, UH AND MONTICELLO, UH

- 3c. Are the calibration procedures traceable to national or industrial standards?

YES, SEE 3b.

- 3d. Comments on:

NONE

* Reliability is defined as the probability of an instrument to perform a stated function under a stated environment for a stated line.

Reviewer B. RICE; J. IMSE; E. ZURFUEH
Date OCT. 17, 1984

4. What are the data processing and presentation techniques used?

STANDARD BOUGUER REDUCTION USING THREE DENSITIES (2.2 g/cm^3 , 2.4 g/cm^3 , AND 2.67 g/cm^3). 2nd VERTICAL DERIVATIVE AND LIMITED PROFILE MODELLING DONE BY 3-D GRAVITY, INC. - 1983. PRESENTED IN 1:48,000 SCALE MAPS.

- 4a. How can the raw numerical data be retrieved?

COMPUTER TAPE AND PAPER TABLES WITH WOODWARD-CLYDE CONSULTANTS AND 3-D GRAVITY, INC.

- 4b. Are the data presented in a complete and clear format?
(Comment also on the utility of the presentation.)

NO, ONLY THE BOUGUER MAP AT 2.67 g/cm^3 AND DERIVATIVE MAP AT 2.4 g/cm^3 WERE AVAILABLE.

- 4c. Are the data keyed to geological, environmental, geographic or other traceable references?

DATA ARE GEOGRAPHICALLY TRACEABLE TO TOWNSHIP LINES.

- 4d. Comments on:

NONE

Reviewer J. IMSE; B. RICE; E. ZURFLUEN
Date OCT. 17, 1984

5. What are the acceptance/rejection criteria for the survey data?

STATION REOCCUPATION RESULTS ARE USED FOR ACCEPTANCE /
REJECTION CRITERIA FOR GRAVITY VALUES. INERTIAL SURVEY
COMPARED TO EXISTING TOPOGRAPHIC MAPS FOR ACCEPTANCE / REJECTION.

- 5a. Were these criteria established prior to survey performance?

YES

- 5b. How are the criteria implemented? (Data handling, review procedure, corrective action.)

IMPLEMENTED BY PROCEDURES SHOWN IN 5. — PROFESSIONAL
JUDGEMENT CALLS WERE USED FOR CORRECTIVE ACTIONS.

o Data Handling

o Review Procedure

o Corrective Action

Reviewer B. RICE; J. IMSE; E. ZURFLUEH
Date OCT. 17, 1984

6. General comments (such as, relationship among different surveys, impacts on interpretation, instrument redundancy, factors resulting in test closure, accuracy of measurements, limitations, additional uses of data, computer programs, and other miscellaneous comments).

THERE IS NO PLANNED DATE FOR THE NEXT DRAFT OF THE KITCHO REPORT (DEC. 1983), CONTAINING A COMPLETE AND INTEGRATED INTERPRETATION, UTILIZING APPROPRIATE BOUGUER DENSITIES AS IDENTIFIED IN THAT REPORT.

7. Requested Data - (Identify all data and documentation that are needed for further review).

COPY OF THE LOGISTICS REPORT AND AVAILABLE MAPS
(e.g. BOUGUER AND VERTICAL DERIVATIVE MAPS)

Reviewer B. RICE; J. IMSE; E. ZURFLUEH
Date OCT. 17, 1984

GEOLOGY-GEOPHYSICAL DATA REVIEW CHECKLIST

1. Name/type, identification number, and date of survey?
AEROMAGNETIC SURVEY; JOB 81-206, GEOTERREX LIMITED; 1969-70.
- 1a. What was the overall objective of the survey?
(i.e., What features were to be identified?)
UNCOMPANGRE PLATEAU, PARADOX FOLD AND FAULT BELT, MONUMENT
UPWARD, BLANDING BASIN, AND AREAS OF IGNEOUS INTRUSIVES.
- 1b. What criteria were used for line or station locations selection?
NORTHEAST FLIGHT LINES FLOWN TO IDENTIFY NORTHWEST
TRENDING FEATURES IN THE BASEMENT STRUCTURES AND INTRUSIVES.
- 1c. What geologic constraints were used in determining coverage?
(SEE 1a AND 1b)
- 1d. What was the density of coverage in survey?
(i.e., seismic coverage, gravity station locations, aeromag. flt line
spacing,...)
1 MILE FLIGHT LINE SPACING - 3 MILE TIE LINE SPACING
FLIGHT ELEVATIONS 7,500'; 10,500'; 12,000'; AND 13,200' BAROMETRIC
OVER VARIOUS BLOCKS.
- 1e. What features (i.e., structures, anomalies, stratigraphic parameters)
were determined by the survey?
MAGNETIC ANOMALIES - INTERPRETATIONS OF STRUCTURAL
FEATURES INCOMPLETE AT THIS TIME.
- 1f. Comments on:
DATA COVERAGE AND QUALITY APPEAR TO BE GOOD

Reviewer B. RICE; J. IMSE; E. ZURFLUEN
Date OCT. 17, 1984

2. How is the procedure documented?

SURVEY REPORT BY ACQUISITION CONTRACTOR

2a. Is it a standard (ASTM) procedure? If yes, provide reference.

NO, THESE ARE STANDARD INDUSTRY PROCEDURES

2b. If non-"standard", how was the procedure developed, reviewed, documented, and approved? For example, COE, USBM, USBR, USGS, NBS, or other (internal) processes.

(SEE 2a.)

2c. Have there been revisions and how and when were the revisions reviewed, documented, approved, and implemented?

NO REVISIONS

2d. Show are any deviations from the established procedures that occur during survey documented?

NO DEVIATIONS

2e. Comments on:

NONE

B. RICE; J. IMSE; E. ZURFLUEN
OCT. 17, 1984

3. What instrumentation is used for the survey?

CESIUM VAPOR MAGNETOMETER AND FIXED WING AIRCRAFT
(MAGNETOMETER IN TOWED BIRD)

3a. How were the reliabilities* of the instruments specified?

INSTRUMENT RELIABILITIES NOT SPECIFIED IN REPORT AND
LOCATION RELIABILITIES ARE NOT STATED

3b. Is there a calibration system and were calibrations systematically carried out according to approved procedure?

CALIBRATION NOT STATED IN SURVEY REPORT

3c. Are the calibration procedures traceable to national or industrial standards?

(SEE 3b.)

3d. Comments on:

REPORT IS MORE OF AN INTERPRETED REPORT RATHER THAN
A SURVEY LOGISTICS REPORT.

* Reliability is defined as the probability of an instrument to perform a stated function under a stated environment for a stated line.

Reviewer B. RICE; J. IMSE; E. ZURFLUEN
Date OCT 17, 1984

4. What are the data processing and presentation techniques used?

TOTAL FIELD INTENSITY MAPS

- 4a. How can the raw numerical data be retrieved?

MAGNETIC TAPES AND PAPER FLIGHT LINE PROFILES

- 4b. Are the data presented in a complete and clear format?
(Comment also on the utility of the presentation.)

ONLY DATA AVAILABLE ARE IN A TOTAL FIELD INTENSITY MAP

- 4c. Are the data keyed to geological, environmental, geographic or other traceable references?

DATA ARE TRACEABLE TO GEOGRAPHIC REFERENCES (TOWNSHIP LINES)

- 4d. Comments on:

NONE

Reviewer B. RICE; J. IMSE; E. ZURFLVE
Date OCT. 17, 1984

5. What are the acceptance/rejection criteria for the survey data?

NONE SPECIFIED

5a. Were these criteria established prior to survey performance?

(SEE 5.)

5b. How are the criteria implemented? (Data handling, review procedure, corrective action.)

(SEE 5.)

o Data Handling

o Review Procedure

o Corrective Action

Reviewer B. RICE; J. IMSE; E. ZUCKERMAN
Date OCT. 17, 1984

6. General comments (such as, relationship among different surveys, impacts on interpretation, instrument redundancy, factors resulting in test closure, accuracy of measurements, limitations, additional uses of data, computer programs, and other miscellaneous comments).

THERE IS NO PLANNED DATE FOR THE NEXT DRAFT OF THE KITCHID REPORT (DEC. 1983) CONTAINING A COMPLETE AND INTEGRATED INTERPRETATION OF THE AEROMAGNETIC DATA.

7. Requested Data - (Identify all data and documentation that are needed for further review).

COPY OF THE LOGISTICS AND SURVEY REPORTS AND AVAILABLE MAPS.