Okanagan Falls

001582

SUPERINTENDENT OF BROKERS
AND
VANCOUVER STOCK EXCHANGE

(Venture Company)

STATEMENT OF MATERIAL FACTS (#62/92)

EFFECTIVE DATE: SEPTEMBER 8, 1992.

INTERNATIONAL DUSTY MAC ENTERPRISES LTD.
100-601 West Cordova Street, Vancouver, British Columbia V6B 1G1
Canada, Telephone: (604) 683 2568
NAME OF ISSUER, ADDRESS OF HEAD OFFICE AND TELEPHONE NUMBER

Suite 1710 - 1177 West Hastings Street,
Vancouver, British Columbia, Canada, V6E 2L3
ADDRESS OF REGISTERED AND RECORDS OFFICES OF ISSUER

MONTREAL TRUST COMPANY OF CANADA, 510 Burrard Street,
Vancouver, British Columbia, Canada, V6C 3B9
NAME AND ADDRESS OF REGISTRAR & TRANSFER AGENT
FOR ISSUER'S SECURITIES

The securities offered hereunder are speculative in nature. Information concerning the risks involved may be obtained by reference to this document. Further clarification, if required, may be sought from a broker.

SHAREHOLDERS' OFFERING:
600,000 COMMON SHARES AND UP TO 600,000 SHARES
WHICH MAY BE ACQUIRED UPON EXERCISE OF WARRANTS

This Statement of Material Facts qualifies the sale, to the public through the facilities of the Vancouver Stock Exchange, 600,000 shares of the Issuer which were acquired by the Offerors pursuant to private placement agreements dated April 30, 1992 and issued to the Offerors July 17, 1992. Pursuant to the terms of the placement agreements the Offerors were also granted share purchase warrants entitling them to purchase up to an additional 600,000 shares of the company which will be exerciseable during the two year period ending April 30, 1994.

The shares offered hereby will be sold at the market prices prevailing at the time of sale. The Offerors will be required to pay a commission to the selling Agents. The proceeds from the sales will accrue only to the benefit of the Offerors - and none will accrue to the Issuer.

prosp\dusty.s&t

AGENTS

L.O.M. Western Securities Ltd.
22nd Floor, 609 Granville St.
Vancouver, B.C.
V7Y 1H2

Pacific International Securities Inc.
1500 - 700 West Georgia Street
Vancouver, B.C.
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Neither the Superintendent of Brokers for British Columbia nor the Vancouver Stock Exchange have in any way passed upon the merits of the securities offered hereunder and any representation to the contrary is an offence.

mined from the property. Further, pending commencement of production, annual payments of $10,000 (U.S.) must be paid - which will increase to $20,000 (U.S.) per year commencing January 31, 1996. If commercial production is not commenced by December 31, 2000, the claims covered by the Agreement must be returned to the Vendors.

The Issuer has no other ongoing financial requirements with respect to the property other than the nominal annual costs of maintaining the claims in existence.

4. PARTICULARS OF NON-RESOURCE ASSETS

The Issuer holds no non-resource assets except fee-simple surface title to approximately 175 acres (approximately 71 hectares) of land overlying portions of the Okanagan Falls Properties. These lands are legally subdivided into 2 parcels of 73 acres and 102 acres. The lands are undeveloped and do not contain any buildings or other improvements.

The Issuer had owned approximately 213 acres for in excess of 20 years. Effective July 17, 1992 the Issuer sold 38 acres for a cash sale price of $180,000. The Issuer had a formal appraisal of the lands done in May of 1992 which indicated the full 213 acres had a value of $504,000. The Issuer has no financial requirements or commitments relative to the lands except the nominal costs of the annual taxes that must be paid. The Issuer has no plans to conduct any work on the lands or install any improvements or otherwise incur any expenses relative to the lands.

5. CORPORATE INFORMATION

The Issuer was incorporated under the laws of the Province of British Columbia on August 6, 1968 under the name Dusty Mac Mines Ltd. (N.P.L.). Its present name was adopted April 27, 1992. the Head Office of the Issuer is located at 100-601 West Cordova Street, Vancouver, British Columbia. The registered and records offices of the Issuer are located at 1710 - 1177 West Hastings Street, Vancouver, B.C.

Prior to April 27, 1992 the Issuer had 6,641,005 shares issued and outstanding. Effective April 27, 1992 the shares were consolidated on a 1 new for 5 old basis, resulting in there being 1,328,201 consolidated shares outstanding. Subsequently 48,800 shares were cancelled, and 1,115,526 shares issued so that, at the date hereof, the authorized capital of the Issuer consists of 10,000,000 common shares without par value, of which 2,394,927 are issued. Warrants

B. MINERAL PROPERTIES

1. Okanagan Falls Properties

The Issuer is the owner - and has been since 1968 - of a group of contiguous mineral claims located immediately south and ~~west~~ east of Okanagan Falls, at the south end of Skaha Lake, in the southern Okanagan Valley, British Columbia. The claims cover approximately 5,435 acres (approximately 2,200 hectares). The Issuer conducted a small open-pit gold and silver mining operation on the claims in 1973. Since then the Issuer has granted exploration options on the claims to two companies - which have conducted various amounts of exploration - all of which have indicated that the claims contain additional mineralization. However, no mineable reserves have been established at current international gold prices. The Issuer has no present plans to conduct further exploration on the claims - nor are there any exploration option agreements in existence. The Issuer has no ongoing financial requirements with respect to the property other than the nominal annual costs of maintaining the claims in existence. As is noted in Item 4 below, the Issuer holds fee simple surface title to a portion of the lands covered by the claims.

2. Barstow, California, property

The Issuer is the owner of 100% interests in approximately 570 acres (approximately 230.7 hectares) of contiguous mineral claims located approximately 12 miles northeast of Barstow, California. the Issuer originally acquired optional rights to the claims in 1979 - and subsequently completed the exercise of its rights to acquire the claims. The Issuer conducted exploration work on the property between 1979 and 1990, having expended approximately $1,866,000 on exploration work on the property and related matters. The Issuer has calculated in-house that the results of the work obtained to date indicate reserves of approximately 20,000,000 tons averaging 1.54 ounces of silver per ton. The Issuer has concluded that at current international silver prices the silver-bearing mineralized material underlying the claims is not economically mineable. The Issuer is maintaining the claims in good standing but is otherwise not doing - nor planning - any further exploration work on the property pending an improvement in silver prices.

The Issuer's acquisition of the property included assuming the obligations contained in an Agreement dated June 27, 1966, as amended January 27, 1976, between Charles Hatch and Ruth Hatch, as Vendors, and Calico Silver, Inc., as Purchaser. That Agreement provides that if production from the property is commenced a royalty will have to be paid of $0.10 (U.S.) for each ton of ore

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INDEPENDENT GEOLOGISTS AND ENGINEERS CONSENT

The undersigned firm of independent Petroleum Geologists and Engineers of Calgary, Alberta, Canada knows that it is named as having prepared a report reviewing an exploration drilling prospect referred to as the Petroleum Prospect Review and Reserve Potential of the Gila Salt Dome Prospect, Maricopa Co., Arizona with an effective date of January 1, 1992. The undersigned firm hereby gives its consent to International Dusty Mac Enterprises Ltd. to the use of its name and the use of the reserves estimates.

AMH GROUP LTD.

PERMIT TO PRACTICE
AMH GROUP LTD.
Signature
Date 11/5/92
PERMIT NUMBER: P 4434
The Association of Professional Engineers, Geologists and Geophysicists of Alberta

CERTIFICATE OF QUALIFICATION

I, Allan K. Ashton, Petroleum Engineer of Calgary, Alberta, Canada hereby certify:

1. That I am President of AMH Group Ltd. and I did prepare a review of an exploration drilling prospect entitled Petroleum Prospect Review and Reserve Potential of the Gila Salt Dome Prospect, Maricopa Co., Arizona for International Dusty Mac Enterprises Ltd..

2. That I graduated from the University of Alberta with a Bachelor of Science degree in Chemical Engineering in 1965. That I am a registered Professional Engineer in the Province of Alberta. That I have in excess of twenty seven years experience in reservoir studies and evaluations of oil and gas fields in western Canada and the United States.

3. That I have no direct or indirect interest, nor do I expect to receive any direct or indirect interest in the prospect reviewed nor do I have any direct or indirect interest in the securities of International Dusty Mac Enterprises Ltd.

4. That a field inspection of the prospect area was not made, however, such an inspection was not deemed necessary in view of the available data and the nature of the property being reviewed.

Allan K. Ashton, P.Eng.

Dated: May, 1992

CERTIFICATE OF QUALIFICATION

I, Robin C. Mann, Petroleum Geologist of CALGARY, ALBERTA, Canada, hereby certify:

1. That I am Vice-President, Geology of AMH Group Ltd., and I did prepare a review of an exploration drilling prospect entitled Petroleum Prospect Review and Reserve Potential of the Gila Salt Dome Prospect, Maricopa Co., Arizona for International Dusty Mac Enterprises Ltd.

2. That I graduated from Carleton University with a Master of Science degree in Geology in 1979. That I am a registered Professional Geologist in the Province of Alberta and a Certified Petroleum Geologist in the United States. That I have in excess of thirteen years experience in reservoir studies and evaluations of oil and gas fields in western Canada and the United States.

3. That I have no direct or indirect interest, nor do I expect to receive any direct or indirect interest in the property evaluated nor do I have any direct or indirect interest in the securities of International Dusty Mac Enterprises Ltd.

4. That a field inspection of the project area was not made, however, such an inspection was not deemed necessary in view of the available data and the nature of the property being reviewed.

Robin C. Mann, CPG, P.Geol.

Dated: May, 1992

INTRODUCTION

Melange Associates, Inc. of Denver, Colorado (Melange) has assembled approximately 11,560 gross acres of oil and gas leases and mineral estates in the Gila Salt Dome Prospect area of Maricopa County, Arizona (Figure 2). The land holdings are well located with respect to the currently known limits of the prospect, and represent a virtual control position should the oilfield be present as mapped. The prospect has been defined and a potential drilling location isolated using a combination of surface geology, gravity and seismic mapping and subsurface well control (which is dominantly shallow) within the basin containing the Gila Salt Dome Prospect.

International Dusty Mac Enterprises Ltd. (15%) in conjunction with Arrowhead Resources Ltd. (51.85%) and Sundance Resources Ltd. (33.15%), has committed to a farm-in well to earn an undivided eighty-seven-and-one half percent (87.5%) of the interest owned by Melange on the prospect lands. Melange Associates, Inc. has entered into an agreement with SunCor Development Company, the mineral rights owner, where Melange has purchased the mineral lease on a two year term, reserving to SunCor a 15% overriding royalty on production from the property.

For the initial test well, International Dusty Mac Enterprises Ltd. has agreed to pay 15% of the costs and obligations (US$187,500) for a 15% working interest until payout. After payout, International Dusty Mac Enterprises Ltd. will revert to 15% of the available 87.5% working interest or 13.125%. International Dusty Mac Enterprises Ltd. has also acquired a portion of (5%) the carried working interest held by Melange Associates, Inc. This 5% carried interest will revert to a 5% working interest after payout of the intial test well.

In addition, International Dusty Mac Enterprises Ltd. will reserve unto Melange their proportionate share of a 5% override on all production on all wells drilled on the property. Each well drilled will earn the above mentioned interests on a 640 acre lease basis per well. Additional lands may be earned by way of drilling additional wells based on a 90 day rolling option from the completion date of the previous well. After the drilling of the initial test well, it should be noted that International Dusty Mac Enterprises Ltd. will only pay 18.125% of the costs for subsequent wells, while Arrowhead Resources Ltd. and Sundance Resources Ltd. will pay the remaining 45.369% and 29.006% respectively of the costs and Melange will pay the remaining 7.5% on all earned and unearned lands. All companies will then be responsible for their proportionate share of the burdens. A summary of the interests and burdens undertaken by International Dusty Mac Enterprises Ltd. are summarized in Table 1.

As was stated by M.T. Halbouty in 1969, "The very thought of a giant petroleum field, to most explorationists, is an exciting dream.", if the initial test well is successful at the Gila Salt Dome prospect, there exists a possibility of encountering a giant oilfield, with recoverable reserves of up to 873 million barrels of oil underlying lands controlled by the Company. Even though the prospect is categorized in this report as a high risk/very high return new field wildcat prospect, the potential which exists will spark the imagination of many explorationists.

SUMMARY

The Gila Salt Dome Prospect is located in the Glendale Basin of the Basin and Range Province, Arizona (Figure 1). The prospect is located on the flank of a large Miocene age salt dome (the Luke Salt Dome) seventeen (17) miles west-northwest of the city of Phoenix.

AMH Group Ltd., on behalf of International Dusty Mac Enterprises Ltd. (the Company) has completed an independent review of the Gila Salt Dome Prospect located in Maricopa Co., Arizona. The review was based on information and data supplied by Melange Associates, Inc. (the Operator of the prospect), an independent geophysical report prepared by Mr. R.S. Klipping (geophysical consultant to International Dusty Mac Enterprises Ltd.) and publicly available information.

International Dusty Mac Enterprises Ltd. and its partner have committed to drill a 5,500 foot Tertiary test well in Section 23, Township 1 North, Range 2 West on the prospect lands. The exploration well will test the sediments beneath a salt ledge along the southeastern flank of the Luke Salt Dome. The sediments are believed to be Lower Tertiary sandstones and conglomerates, with very good reservoir characteristics. Within the area, numerous oil shows have been described in the few deep tests (to the north of the prospect), water wells and from surface seeps. These shows demonstrate that oil has been generated within the basin and is of high quality with API gravities of between 38° and 43°.

The prospect has been defined from shallow well information, gravity and seismic data. The hydrocarbon trap is an updip truncation of the Lower Tertiary reservoir sediments into the main salt mass along its southern edge. The sediments are believed to be present under a salt ledge that was formed either by enlargement of the salt depositional basin, or by salt movement over time.

Reserve estimates for the prospect range in magnitude from 243 million barrels of recoverable oil (low case) to 873 million barrels of recoverable oil (high case). A conservative estimate of potential reserves is in order of 375 million barrels of recoverable oil, using realistic reservoir parameters based on the known geology.

The economic analysis for a "typical" successful well on the prospect lands indicates the potential to realize an excellent rate of return and quick payout of capital invested. In addition, the potential exists for the development of a very large oilfield should the initial well be successful. A summary of the economics for the low and high recoverable reserves cases are included in Section 7.0 of this report. The detailed average successful well economic forecast is summarized in the economics section as Appendix 2.

Exploring for large hydrocarbon reserves of this nature is a high risk business and the prospective investor must be aware of this fact. Based on our review, the Gila Salt Dome Prospect is a high risk prospect, however, if successful, the rate of return will be very high.

DISCUSSION

1.0 REGIONAL GEOLOGY

The Gila Salt Dome Prospect is located within the Glendale Basin of the Basin and Range Province of Arizona (Figure 1). The prospect is situated along the southern flank of a large Miocene age salt dome (the Luke Salt Dome) some seventeen miles west-northwest of Phoenix. The prospect is based on the premise that hydrocarbons are trapped within Tertiary age sediments underneath a ledge along the southern limit of the Luke Salt deposit.

From the information supplied, it is evident that hydrocarbons have been generated within the Glendale Basin. Since the early 1900's, there have been recorded a significant number of oil occurrences, from both surface and subsurface data. At present, no commercial oil production has been found in the Glendale Basin. Oil production in this area has been restricted to test data from a few subsurface wells. The lack of oil production, it is believed, is primarily due to the small number of exploration wells drilled within the basin, hence the ultimate hydrocarbon potential of the basin has not been fully evaluated. A summary on the exploration history of the Glendale Basin is described in an article in the July 22, 1991 Oil and Gas Journal, entitled "Clues Point to Oil in Arizona's Deep Tertiary". A copy of this article has been included, as Appendix 1 of this report.

Within the Glendale Basin three major rock types are believed to be present. These are, Tertiary alluvium clastic sediments and salt, potential Paleozoic and Mesozoic sediments, and Precambrian metasediments and basement granite. The sediments which are of most importance to the Gila Salt Dome prospect, are the Tertiary clastics and the salt, and possibly source rocks within the inferred stratigraphically lower Paleozoic or Mesozoic stratum.

The Tertiary section within the area of the Luke Salt Dome has been divided into two sections. The lower, or older unit, ranges in age from Eocene through Middle Miocene. These sediments lie unconformably on top of the faulted Paleozoic/Mesozoic sediments, and consist dominantly of conglomerates and fanglomerates, arkosic sandstones with minor shale beds and Lower Miocene volcanics. The upper, or younger Tertiary section, is dominantly mid-Miocene in age. This section was deposited during the formation of the Basin and Range Province, and consists of alluvial fanglomerates, lacustrine sediments and evaporitic deposits. The information on the stratigraphy within the basin is limited due to the lack of deep well control.

The geological history of the Glendale Basin has been very complex since Late Eocene time. In the Late Eocene, during the Laramide Orogeny, the Mesozoic and Paleozoic sediments underwent significant extension and erosion in many areas. From this period until Oligocene time, this major extensional block faulting continued in the prospect area. Sedimentation during this period resulted in the deposition of the Tertiary fanglomerates, intercollated with lacustrine sediments and volcanic deposits. Following the extensional regime in Late Oligocene time, an intense episode of regional block- faulting began and continued into the Early Miocene. This tectonism produced the present Horst and Graben terrain seen within this area of Arizona. The resulting faulted grabens produced numerous interior drainage basins. A large lacustrine environment was formed during this period in the area now known as the Glendale Basin. This environment saw the deposition of the Miocene sediments, in addition to evaporites and particularly salt, because the basin was restricted.

Various hypotheses have been proposed for the formation of the Luke Salt Dome, and its relationship with the surrounding sediments. One theory suggests that alluvial fans were deposited along the edge of the Sierra Estrella-White Tank Mountains, depositing coarse-grained sediments around the edge of the basin (Figure 3). In addition, small deltaic systems deposited sand around the perimeter of the lake.

Within the central area of the lake (now the central part of Glendale Basin), significant evaporation occurred, and salt was deposited from the hypersaline lake. Over time, the depositional center of the lake either shifted southward or was enlarged, such that salt was deposited over older beach/deltaic and alluvial fan deposits. This enlargement of the salt depositional area, or shift of the lacustrine depositional center, produced a large salt ledge that is present along the southern edge of the Luke Salt Dome.

A second theory on the formation of the potential reservoir for the Gila Salt Dome prospect, suggests that salt was deposited over the entire Glendale Basin during the Early Miocene. Alluvial fan debris was deposited from the adjacent uplifts during the Late Miocene, loading the flanks of the salt. This loading, mobilized the salt to flow into the central part of the basin, piercing up through the shallower Miocene section. From Late Miocene to present, the Luke Salt body underwent massive salt flowage and doming. The doming caused the surrounding sediments to be tilted away from the salt mass, producing the observed updip truncation of the potential reservoir section into the salt. Schematic diagrams showing the two hypothetical models for the deposition of the salt, and the formation of the potential reservoir, are presented on Figure 3.

1.1 Salt Domes

Oilfields formed due to the flowage of salt masses or by piercement salt domes, account for one of the most prolific producing play types with the Tertiary sediments of the southern United States. In Texas, oilfields trapped against or under salt domes have been among the most prolific producing areas in the state. Since the discovery of Spindletop in 1901, salt domes have been very important to the oil industry.

The geology around salt domes is generally very complex. The intrusion or movement of the salt, creates complex structures in the surrounding sedimentary rocks. Individual sedimentary beds can be faulted and folded, and high angle dips are common in the vicinity of the salt mass. Some domes can be mushroom shaped and have salt overlays, beneath which prolific reservoirs are common. Reservoirs are commonly truncated updip by salt which forms an effective overlying seal.

Substantial oil production from salt domes is primarily due to the multitude of fault compartments or individual beds forming the reservoir section. Production seen to-date from salt dome reservoirs has ranged from a few thousand to over 275 million barrels (The Grand Isle Block 16 Field, offshore Louisiana). Production from large piercement salt domes is typically in the terms of millions of barrels, with many fields producing over 100 million barrels. For reference, Table 3 gives a list of Texas salt domes which may be similar to the Gila salt structure.

2.0 OIL SOURCE POTENTIAL

As has been discussed in the Regional Geology section of this report, with reference to the Oil and Gas Journal's article on Arizona contained in Appendix 1, very promising potential exists in the Glendale Basin for finding significant volumes of hydrocarbons. From a review of sample descriptions and drilling logs for all wells drilled within the Glendale Basin (both exploration and the deeper water wells), there is a consistent report of hydrocarbon shows and descriptions of light oil (38° to 43° API) being present. Most descriptions state that there is considerable oil present within the sediment or water samples taken, confirming that oil has been generated in the area, perhaps in large quantities.

From the sample descriptions for the few deep tests within the Glendale Basin, there is a black, oil saturated Tertiary shale present at depth. In the Tannehill #1 Beardsley well (north of the Luke Salt Dome), this shale was found at a depth of 3280 feet. Other significant shows of oil have been found in shales at depth and within the sandstones of the basin in every deep test. A description of these is summarized in the Oil and Gas Journal's article.

The exploration well data, water well data and description of numerous oil seeps in the Phoenix and Luke Salt Dome areas, suggest that oil has been generated in the Glendale Basin. The source of the hydrocarbons has been hypothesized to be either Paleozoic or Tertiary in origin. The nature of the oil, being of high gravity and low pour point, suggests a Paleozoic source. Within the basin, however, there is a relatively high thermal gradient (2.3°F per 100 feet), suggesting that the Paleozoic section would be overmature, hence may not be a possible source for the oil observed to-date.

Within the Tertiary section, there have been many descriptions of black shales, as mentioned above. These shales have been described to be similar to Eocene lacustrine source rocks present in the Bluebell-Altamont Field of Utah and the Eocene of Nevada. It is, therefore, suggested that Tertiary source rocks exist within the Glendale Basin, due to the oil shows seen to-date, and that it has been sourced from lacustrine sediments. A Tertiary lacustrine source will fit both the geologic history of the basin, and account for the high geothermal gradient producing oil from the younger section.

3.0 PROSPECT DESCRIPTION

3.1 Seismic

A detailed review of all the available geophysical data was made by Robert S. Klipping, a consulting petroleum geophysicist of Denver, Colorado. Mr. Klipping reviewed the north-south lines 0004-1 and 0004-1A, and the east-west line 0002-5. The following section is a synopsis of a brief report prepared by Mr. Klipping, in addition to the observations of AMH on the data available.

The seismic data is 24 fold Vibroseis data that was acquired in 1979 by Exxon. The quality of the seismic data varies from poor to fairly good. The data seen on the east side of the prospect is of much better quality than that seen on line 0002-5, to the west.

From the lines available, there are a series of reflectors showing the presence of a synclinal feature centered near the central part of the basin (Section II Township 2 North, Range 1 West). The sediments at this level are believed to be of Paleozoic age and have been completely faulted during the formation of the Glendale Basin within the Basin and Range Province (Figure 6).

Above the lower, faulted, horizons are two distinctly different seismic events. The most noticeable, is the large area where there are no evident seismic reflectors. This character seems to indicate a large salt mass sitting on top of the proposed Paleozoic section within the Tertiary sediments. The second seismic signature, which can be observed within the upper half of the seismic section, is the presence of seismic reflectors which are continuous over a large area, and seem to be "injected" into the salt under the prospect lands. These reflectors are believed to represent a series of conglomerates, sandstones and shales which have been deposited within the basin, and have become partially encased within the southern part of the salt mass.

From the available seismic data, the thickest, central portion of the salt mass is located in sections 2, 10, 11 and 16 Township 2 North Range 1 West. The seismic also indicates, that along the southern flank of the salt structure, an overhang or salt "ledge" is present which extends over the series of strong seismic reflectors. As mentioned above, these reflectors are believed to be a sequence of layered sedimentary rocks, which, if porous and permeable, would form the reservoir section of the prospect.

The seismic data indicates that the salt ledge and underlying clastic wedge are present on the eastern side of the prospect lands. The ledge and underlying clastics cannot be conclusively defined west of shot point 2100 on seismic line 0002-5, therefore, the potential for reserves under lands west of this is highly questionable.

The potential drilling location in the north half of section 23, T2N, R1W is ideally located based on the seismic information available. The location is situated close to the intersection point of seismic lines 0002-5 and 0004-1. At this location, the well has the best chance of encountering the clastic wedge underlying the Salt, as defined by the seismic data.

3.2 Gravity Data

The Lake Salt Dome has been defined by the United States Geophysical Survey (USGS) in 1978 using a gravity study. Their conclusions stated that the salt dome was in the order of 9,000 to 12,000 feet thick, and that a shallow salt ledge or "lip" was present on the south side of the mass. The presence of the salt ledge was based on two facts; firstly that the salt had been encountered by water wells in the area at a shallow depth, and secondly that along the southern boundary the gravity data showed the salt to be thin (Figure 5). Therefore, if the salt is thin and at a shallow depth, it is likely that clastics exist beneath a shallow salt ledge.

3.3 Geology

The only deep test drilled in the vicinity of the Lake Salt Dome was the SunCor well, which was drilled to a depth of 4000 feet in Section 19 T2N 1W. The well was still drilling in salt at total depth, however, there existed several zones of brown to black organic inclusions and at TD a thin bed of black shale was penetrated within the salt. The well also encountered at 3,000 feet a zone of calcareous to clayey siltstone which had a dull white to yellow fluorescence with a very slow milky white cut. This show indicates that oil is in the vicinity of the salt mass, but the rocks penetrated by the SunCor well were not of reservoir quality. From Figure 6 it is evident that the SunCor well was drilled into the main salt mass to the north of the present prospect, and was not properly located with respect to the Salt Ledge as currently mapped.

The geology of the sediments beneath the Salt Ledge are unknown due to the lack of deep test data. From the regional geology it can be hypothesized, however, that the Lower Tertiary section will consist dominantly of conglomerates, sandstones and shales. Because seismic reflections are present within the sedimentary package beneath the salt ledge, it is believed that there is a series of stacked sandstones/conglomerates and shales and not a homogeneous reservoir mass. It is, therefore, believed that if oil is present within this area, it will be present in a series of stacked reservoirs and not present as one thick continuous reservoir. A series of stacked reservoirs would be consistent with salt dome reservoirs seen along the Gulf Coast of Texas.

From the regional geology, assumptions can be made for the reservoir parameters for the sandstones and conglomerates that may exist beneath the salt ledge. Porosities and permeabilities have been assumed to be very good as the Lower Tertiary sediments tend to be coarse grained, poorly sorted and partially unconsolidated. It has also been assumed that there will be significantly more

sandstones and conglomerates in the stratigraphic section than shales, as the depositional history of the area is basically intermontane and dominated by high energy environments.

4.0 POTENTIAL RESERVES

Potential reserves have been calculated under the Company lands to be earned using the information supplied by the Company to AMH. This included one north-south seismic section (line 0004-1) and interpretive maps on top of the salt structure and the basin (Figures 4, 6 and 7). Reserves were determined for three cases; a high case where each of the reservoir parameters was assumed to be the highest value anticipated, a low case where the reservoir parameters were assumed to be conservative estimates, and a conservative case where reservoir parameters were determined to be realistic with respect to similar reservoirs worldwide.

Since information is not available on the potential reservoir rocks which could be present underneath the salt ledge, various assumptions had to be used. These assumptions were based on the shallow well control and from other deep wells in the Glendale Basin. The following discussion are the methods used to determine the potential reserves at the Gila Salt Dome Prospect.

4.1 Methods Used to Determine Reserves

From the seismic data supplied it is believed that the vertical clastic section of up to 1,500 feet will be comprised dominantly of sandstones, conglomerates and shales, with minor limestone beds. In order to determine the volume of potential reservoir sediment within the section below the salt ledge, an analysis of the ratio of porous sandstone to non-reservoir rock from the shallow wells around the salt dome, and the deeper section from wells drilled to depths greater than 3,000 feet within the Glendale Basin was undertaken. Using the shallow wells, it was

determined that the Upper Tertiary section is approximately 25% reservoir rock and 75% non porous sediments. Away from the salt dome the percentage of reservoir rock increases, as there is a higher percentage of anhydrites around the salt which plug the porosity. From this analysis therefore, a 25% value was used as the lower limit for the reservoir section in order to determine potential reserves.

In the vicinity of the salt dome no deep tests were available which penetrated the Tertiary sediments. From wells to the north, however, it was determined that below depths of 2,500 feet the porous sandstone to non-porous sediment ratio could be as high as 55% with 40% being a conservative average. These values were obtained from the Tannehill #1 well and wells in the Wittmann area which had significant oil shows in the stratigraphic section, between the depths of 2,500 to 3,300 feet. Using this analysis and sample descriptions from the Wittmann #1 well, a value of 40% was used as the upper limit for percentages of reservoir section within the total sediment section below the salt ledge.

The net pay, or vertical thickness of the potential oil column was derived by determining the average vertical thickness of the sedimentary package beneath the salt ledge which could be oil bearing, and multiplying this by 25% for the low case and 40% for the high case scenario. Using this method, the vertical thickness of potential reservoir rock can be determined for use in the potential reserves calculations. From our analysis, there is approximately 1,000 feet of sedimentary section which could be prospective below the lip of the salt ledge. Using 1,000 feet of gross sedimentary section, a net pay of 250 feet (low case) or 400 feet (high case) should be used to determine potential reserves. A third case (conservative case) was also determined using the net pay of 400 feet. The value of 400 feet was also used in this case, as it is believed that the deeper sediments will contain a higher percentage of sandstones, in comparison to the shallow sediments due to the geologic history of the basin.

A porosity of 18% was used in both the low case and conservative case scenarios, as porosity values of approximately 18% were seen within sandstone sections from the few wireline logs available within the basin. For the high case scenario, a porosity of 23% was used, which would be consistent with porosities seen in the Miocene sediments if they were not totally consolidated.

The oil saturation value was assumed to be 70% as no data was available with respect to saturation within the Glendale Basin.

The areal extent of the prospect was determined from mapping provided by Melange Associates, Inc. and by Robert S. Klipping (an independent geophysicist). From maps produced by Melange, the areal extent of the prospect was considered to be 10 sections (6,400 acres) in size. Robert S. Klipping's maps show additional risk on the west side of the prospect, therefore only 5.5 sections (3,520 acres) were considered prospective at the present time. For potential reserve calculations, the areal extent of the prospect determined by Melange (10 sections) was used for the high case and Klipping's mapping (5.5 sections) was used for the low and conservative cases.

From the above parameters, potential reserves were determined for the Gila Salt Dome Prospect. The reservoir parameters and reserve calculations are shown on Table 3 with the reserves being as follows:

	Original Oil-In-Place (OOIP) (Millions of Barrels)	Recoverable Oil-In-Place (ROIP) (Millions of Barrels)
High Case	2,910	873
Conservative Case	1,250	375
Low Case	782	235

5.0 RISK FACTORS

The Gila Salt Dome Prospect, as stated previously, is a high risk/very high rate of return prospect. The major risks facing a company drilling the prospect can be summarized as follows:

Although the salt dome structure has been defined from gravity data, seismic coverage and shallow water and exploration wells, the data does not clearly define the exact limits of the salt ledge and its areal extent. Additional seismic data would aid in better defining the areal extent of the prospect, however, the acquisition of this information should probably wait until a discovery is made.

The composition of the sediments immediately below the salt ledge are unknown and only assumptions based on the regional geology can be made at present. There exists the risk that these sediments are not of reservoir quality, and could be non-porous and non-permeable. If this is the case, producible hydrocarbons will not be present below the salt ledge.

It is possible that there has been a breach of the reservoir section underneath the salt ledge. As the entire prospect area is not covered with seismic data, it is possible that to the north, around the edge of the salt mass, an undetected path could exist such that any hydrocarbons migrating beneath the salt ledge could continue migrating northward and were not entrapped under company lands.

From the information available for this report, it is certain that oil has been generated in the Glendale Basin. A possibility exists, however, that this oil has only been generated in small quantities and is only local in distribution. It is possible that large quantities of hydrocarbons have not been generated in the area of the salt mass and that any reservoir rocks beneath the salt ledge will have small quantities of oil and will be dominantly water bearing.

A risk exists that oil trapped beneath the salt ledge may be present within numerous smaller pools and not larger continuous reservoirs. This risk would not be that wells drilled on Company lands would be uneconomic, but that the economics would be lower than presented within this report.

The probability of finding a very large to giant oil accumulation at the Gila Salt Dome prospect is low, based on the risks mentioned above. The cost to drill the prospect, however, are also relatively low, such that the very high upside potential of the Gila Salt Dome, significantly outweighs the financial risks. This prospect, if successful, does have the potential to be one of the largest on-shore oil discoveries within the lower forty-eight States.

6.0 POTENTIAL PRODUCTION FORECAST

Based on the foregoing discussion, the estimated ultimate recoverable oil reserves for this prospect are in the range of 235 million barrels (low case) to 873 million barrels (high case). Table 3 summarizes the pertinent reservoir parameters and volumetric reserve estimates. For the purposes of this economic evaluation, the recoverable oil reserves on a per section (640 acre) basis has been considered. This being the case, the reserves range from 43 million barrels to 87 million barrels per section for the low and high case respectively.

Historical data pertaining to the average daily producing rate in the immediate vicinity of the prospect is not available. However, research of salt dome production in Texas and Louisiana reveals that similar oil pools have produced in excess of 275 million barrels and the data available indicates that a typical well will produce at rates ranging from a few hundred barrels per day to several thousand barrels per day. Based on a review of this data, two producing scenarios have been considered for this prospect:

Case 1 (High) Recoverable reserves are 87 million barrels per section and 8 wells per section (80 acre spacing). This equates to approximately 11 million barrels per well. The initial producing rate is 5000 BOPD per well.

Case 2 (Low) Recoverable reserves are 43 million barrels per section and 16 wells per section (40 acre spacing). This equates to 2.7 million barrels per well. The initial producing rate is assumed to be 1000 BOPD per well.

The depletion scenario for each of these cases is included with the detailed economics in Appendix II.

7.0 ECONOMIC PARAMETERS

The economic parameters for this prospect are based on data and information provided by the Company and non-confidential information contained in AMH's files:

a) The working interest for the initial test well is 15% before payout and 18.125% after. This interest is made up of 15% working interest before payout reverting to a 13.125% after payout (this interest was negotiated between International Dusty Mac Enterprises Ltd., Arrowhead Resources Ltd. and Sundance Resources Ltd.) and a 5% carried interest reverting to a working interest negotiated between International Dusty Mac Enterprises Ltd. and Melange Associates, Inc.

b) The prospect is burdened by a 20% royalty and 3.437% state tax.

c) Project costs for International Dusty Mac's interest are US$187,500.

d) Operating costs are estimated to be $10,000 per well month and 5¢ per barrel of oil. An additional operating cost of 25¢ per barrel was included for potential water disposal. Water/oil ratios were assumed to be initially 10%, escalating at 50% per year.

e) Oil prices are estimated to be $20.00 per barrel in 1992 escalating at 5% per year. A constant price forecast of $20.00 per barrel is also presented.

All product prices, capital and operating costs are in U.S. dollars.

A summary of the before tax economics for the prospect are presented as follows:

	Company Share of Reserves		Cumulative Cash Flow, $ Million, Before Tax		
	Before Royalty Million Barrels	After Royalty Million Barrels	Undisc.	10%	20%
CASE 1 **Recoverable Reserves - 11 million barrels/well**					
Escalated Price Forecast	2.0	1.5	34.7	23.9	18.0
Constant Price Forecast	2.0	1.5	29.1	20.8	16.0
CASE 2 **Recoverable Reserves 2.7 million barrels/well**					
Escalated Price Forecast	0.47	0.36	8.1	5.3	4.1
Constant Price Forecast	0.47	0.36	6.6	4.5	3.4

A detailed summary of the economics is presented in Appendix II of this report.

8.0 CONCLUSIONS

International Dusty Mac Enterprises Ltd. is preparing to drill one of the more interesting prospects within the southern United States. The Gila Salt Dome prospect has the potential to contain up to 873 million barrels of recoverable oil, and open up a new petroliferous basin for exploration. From the information available, the Gila Salt Dome prospect is based on sound, geophysical data, and exploration concepts. The prospect is high risk, however, for the relatively low cost of drilling an exploration well in the area, the potential returns are extremely high.

TABLE 1
SUMMARY OF
INTEREST & BURDENS
GILA SALT DOME PROSPECT

1) International Dusty Mac Enterprises Ltd. pays US$187,500 to gain a 15% working interest in the available 87.5% W.I. in the prospect. International Dusty Mac Enterprises Ltd. also obtains a 5% carried interest before payout (5% working interest after payout) through negotiation with Melange Associates, Inc. International Dusty Mac Enterprises Ltd. therefore has a 15% working interest before payout and an 18.125% working interest after payout.

2) On subsequent wells International Dusty Mac Enterprises Ltd. has an 18.125% working interest to earn additional 640 acre leases.

3) All lands are subject to a 15% override to SunCor and a 5% override to Melange. All working interest owners will pay their proportionate share of the royalty.

4) State taxes are at present a 3.437% sales tax on production and a 11% tax on equipment. For Arizona, at present, there are no severance taxes on production.

TABLE 2

PRODUCTION FROM TEXAS SALT DOMES

Large piercement salt domes (depth data from Halbouty, 1979).

Field	Discovery date	Top cap (ft)	Top salt (ft)	Production			Cumulative production (million barrels)	Estimated ultimate recovery (million barrels)
				Supradome	Cap	Flank		
Barbers Hill	1916	350	1,000	No	No	Frio, Miocene	128.0	129.3
Batson	1903	1,080	2,050	Miocene	Yes	Miocene, Frio, Yegua	60.6	61.0
Big Creek	1922	450	635	Miocene, Frio	No	Vicksburg	24.6	27.0
Blue Ridge	1919	143	230	No	No	Miocene, Frio, Vicksburg	24.1	24.3
Boling	1925	303	975	Miocene	Yes	Miocene, Frio	35.7	36.2
Clam Lake	1937	none	8,173	Miocene	No	No	10.7	19.4
Clay Creek	1928	1,000	2,400	Wilcox, Sparta and Queen City	No	No	12.8	13.2
Damon Mound	1915	surface	529	No	No	Frio, Miocene	21.6	21.9
Danbury	1930	none	4,948	Miocene	No	Frio	21.6	21.9
Esperson	1929	none	6,170	Miocene, Frio, Vicksburg	No	Yegua	50.5	51.9
Fannett	1927	741	2,080	Miocene?	No	Frio	51.0	52.9
Goose Creek	1908	> 5,000	?	Frio, Miocene	No	No	134.7	135.2
Hankamer	1929	7,535	7,582	Miocene, Frio	No	No	48.8	51.0
High Island	1922	150	1,228	No	No	Miocene, Frio	132.0	134.2
Hull	1918	260	595	No	Yes	Miocene, Frio, Yegua	183.5	185.9
Humble	1905	700	1,214	Pliocene, Miocene	Yes	Frio, Yegua	168.2	169.5
Liberty South	1925	275	480	No	No	Miocene, Frio, Vicksburg, Yegua	86.1	88.0
Markham	1908	1,300	1,417	Miocene	Yes	Frio	17.6	17.7
Moore's Orchard	1926	285	369	No	No	Miocene, Frio, Yegua	21.8	22.1
Orange	1913	none	7,120	Miocene, Frio	No	Hackberry	61.8	62.8
Pierce Junction	1921	630	860	No	No	Miocene, Frio, Vicksburg, Jackson, Yegua	88.3	88.9
Port Neches	1928	none	6,948	Miocene, Frio	No	Hackberry	31.7	32.4
Saratoga	1901	1,500	1,900	Miocene	No	Yegua	59.2	61.1
Sour Lake	1902	660	719	Miocene	Yes	Frio, Jackson?, Yegua	123.8	126.8
Spindletop	1901	700	1,200	Miocene	Yes	Miocene, Frio	153.2	153.9
West Columbia	1904	650	768	No	Yes	Miocene, Frio	162.2	163.6
							1,922.1	1,952.1

TABLE 3

SUMMARY OF RESERVOIR PARAMETERS AND RESERVE ESTIMATES FOR GILA SALT DOME PROSPECT MARICOPA, ARIZONA

Case[3]		POTENTIAL RESERVES High Case[1]	Conservative Case[2]	Low
Original Reservoir Pressure	psia	N/A	N/A	N/A
Reservoir Temperature	°R	N/A	N/A	N/A
Oil Gravity	°API	N/A	N/A	N/A
Formation Volume Factor	Res. Vol./St.Vol.	1.1	1.1	1.1
Average Porosity	%	23	18	18
Connate Water Saturation	%	30	30	30
Net Pay	feet	400	400	250
Productive Area	acres	6400	3520	3520
Original Oil-In-Place	MM BBLS	2910	1250	782
Recovery Factor	%	30	30	30
Ultimate Reserves	MM BBLS	873	375	235
Cumulative Production	MM BBLS	0	0	0
Gross Remaining Reserves	MM BBLS	873	375	235

NOTES:

(1) Recoverable reserves per section = 87 million bbls

(2) Recoverable reserves per section = 68 million bbls

(3) Recoverable reserves per section = 43 million bbls

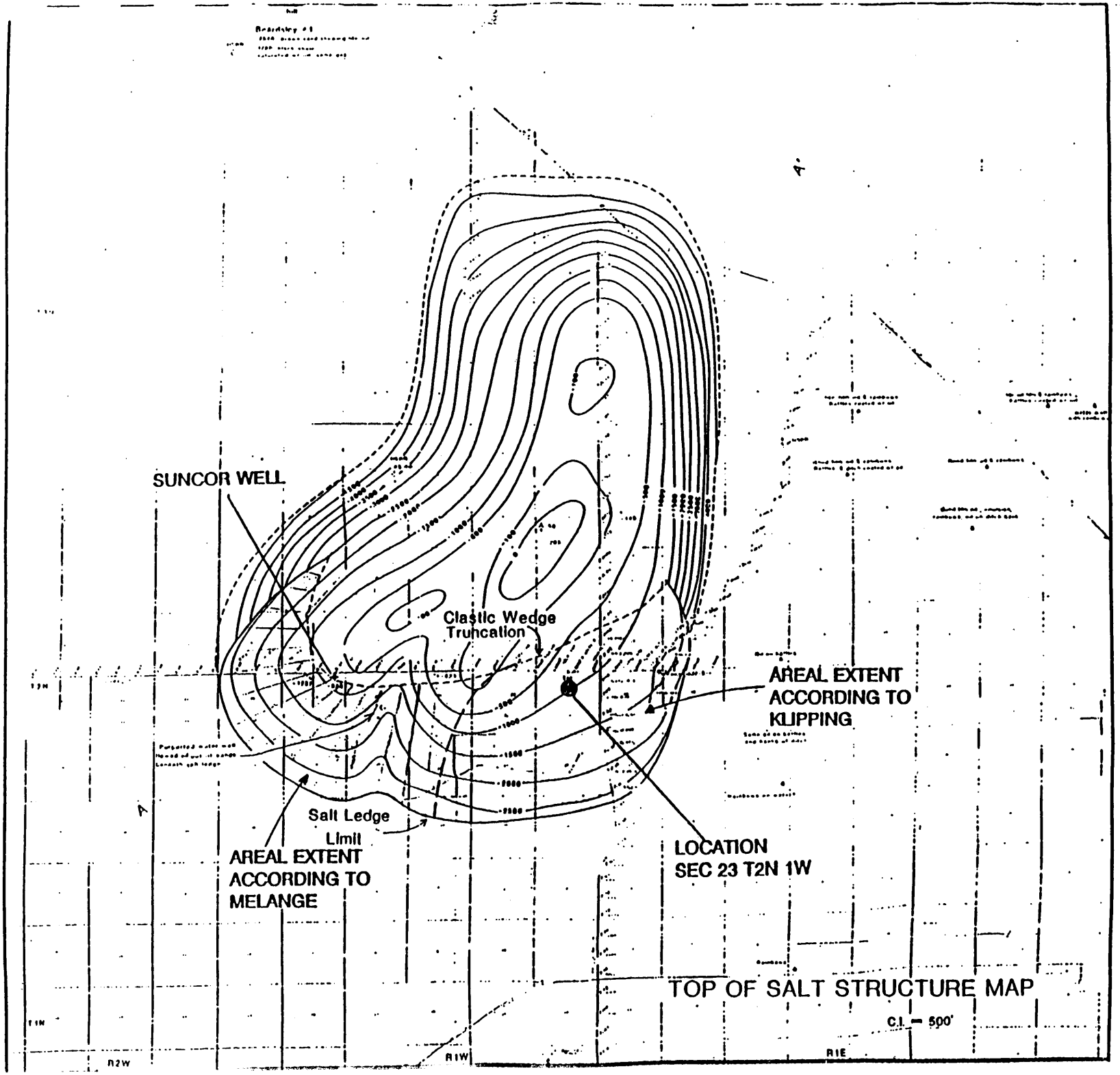

SUNCOR WELL
Clastic Wedge Truncation
AREAL EXTENT ACCORDING TO KLIPPING
Salt Ledge Limit
AREAL EXTENT ACCORDING TO MELANGE
LOCATION SEC 23 T2N 1W
TOP OF SALT STRUCTURE MAP
C.I. = 500'
R2W
R1W
R1E

FIGURE 1

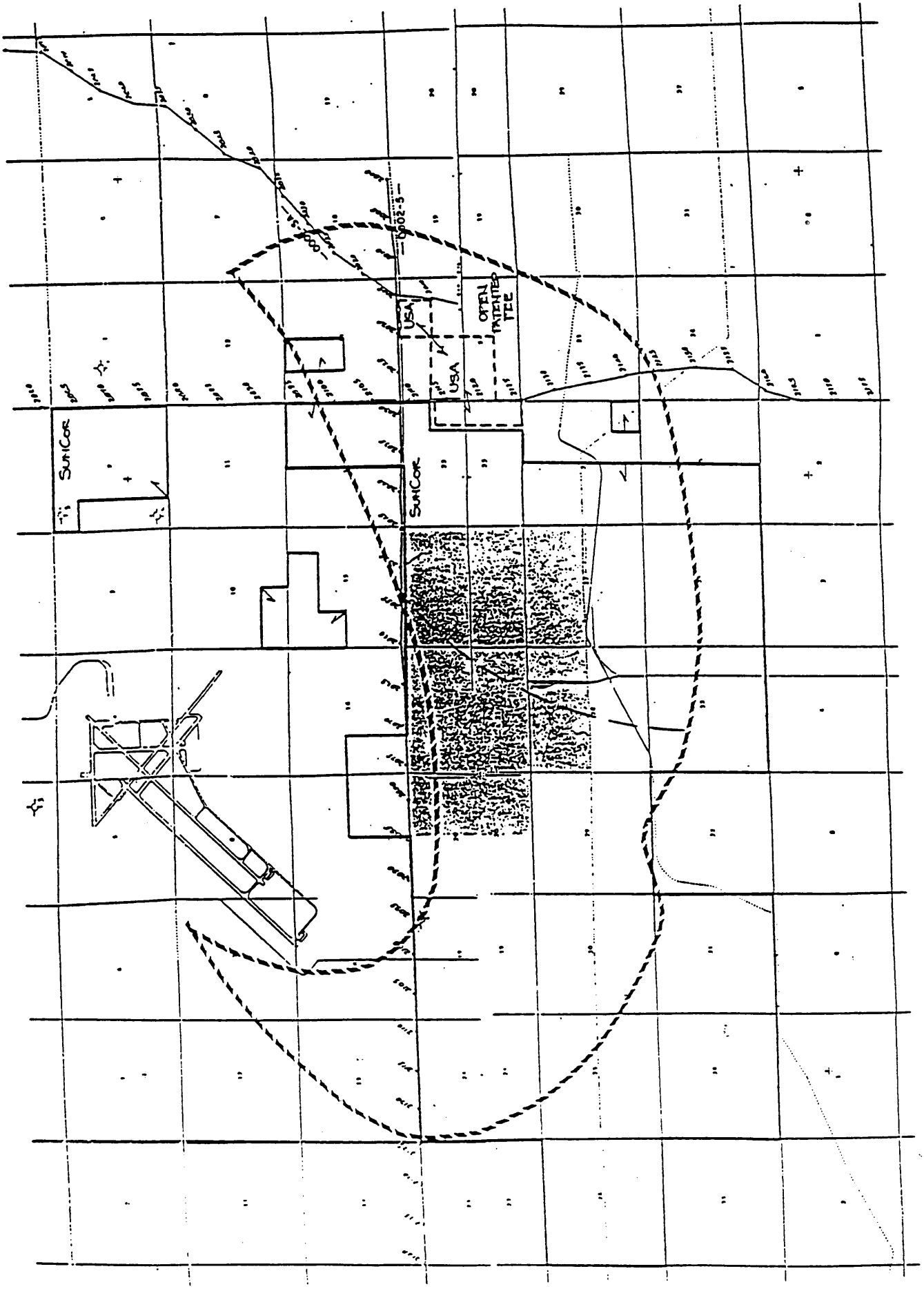
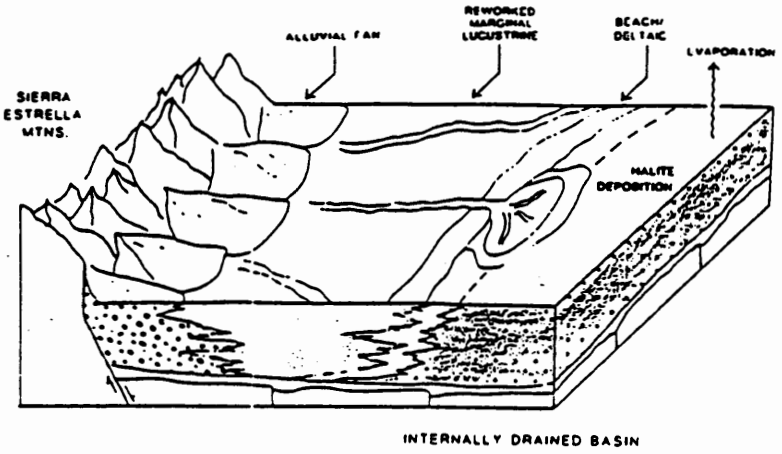
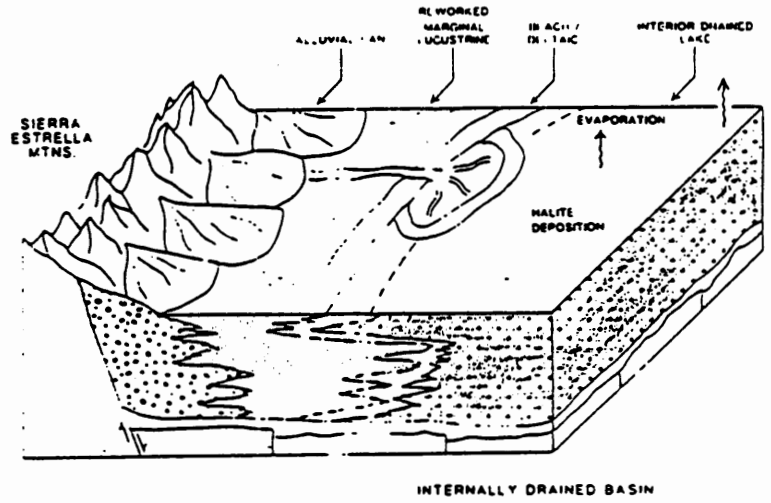


FIGURE 2

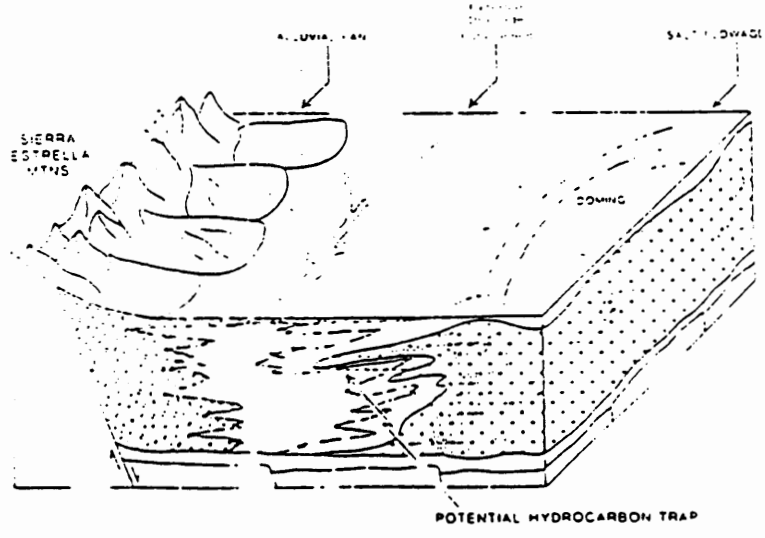
1. **MIOCENE** (11MYBP): Lacustrine Retreat



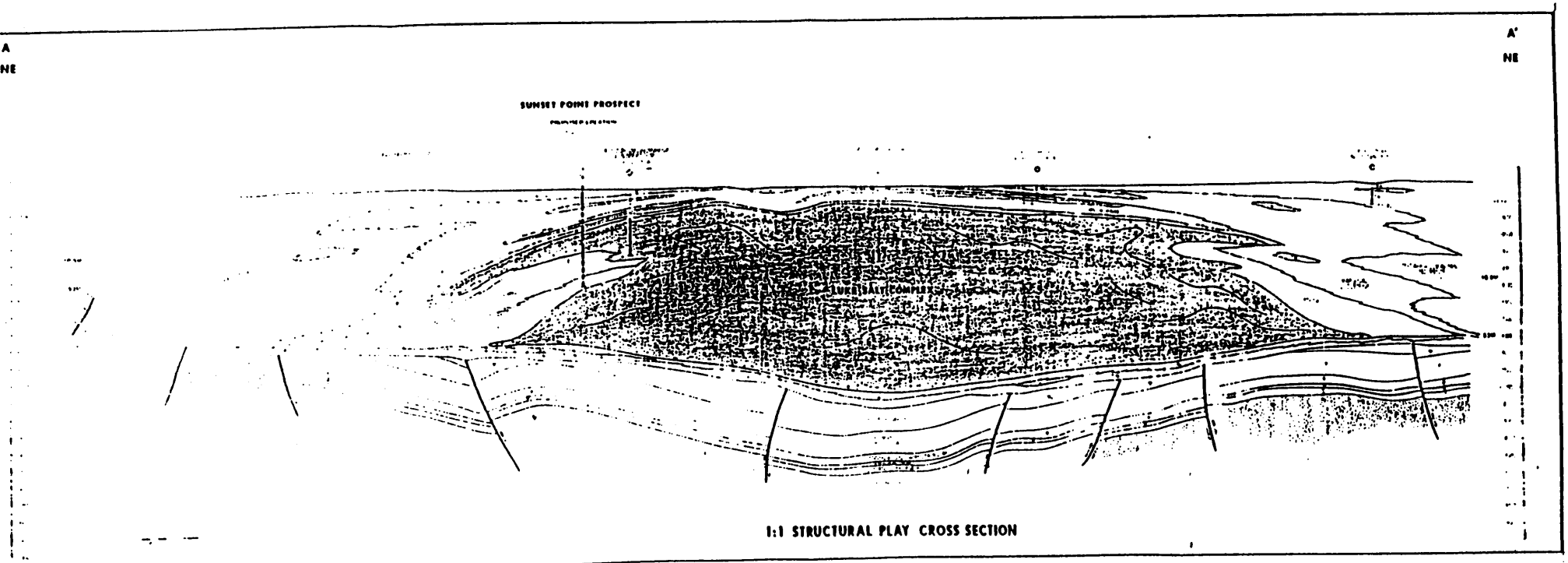
2. **MIOCENE** (10 MYBP): Lacustrine Advance



3. Late **MIOCENE - PRESENT**: Salt Flowage& Doming



FIGURE



1:1 STRUCTURAL PLAY CROSS SECTION

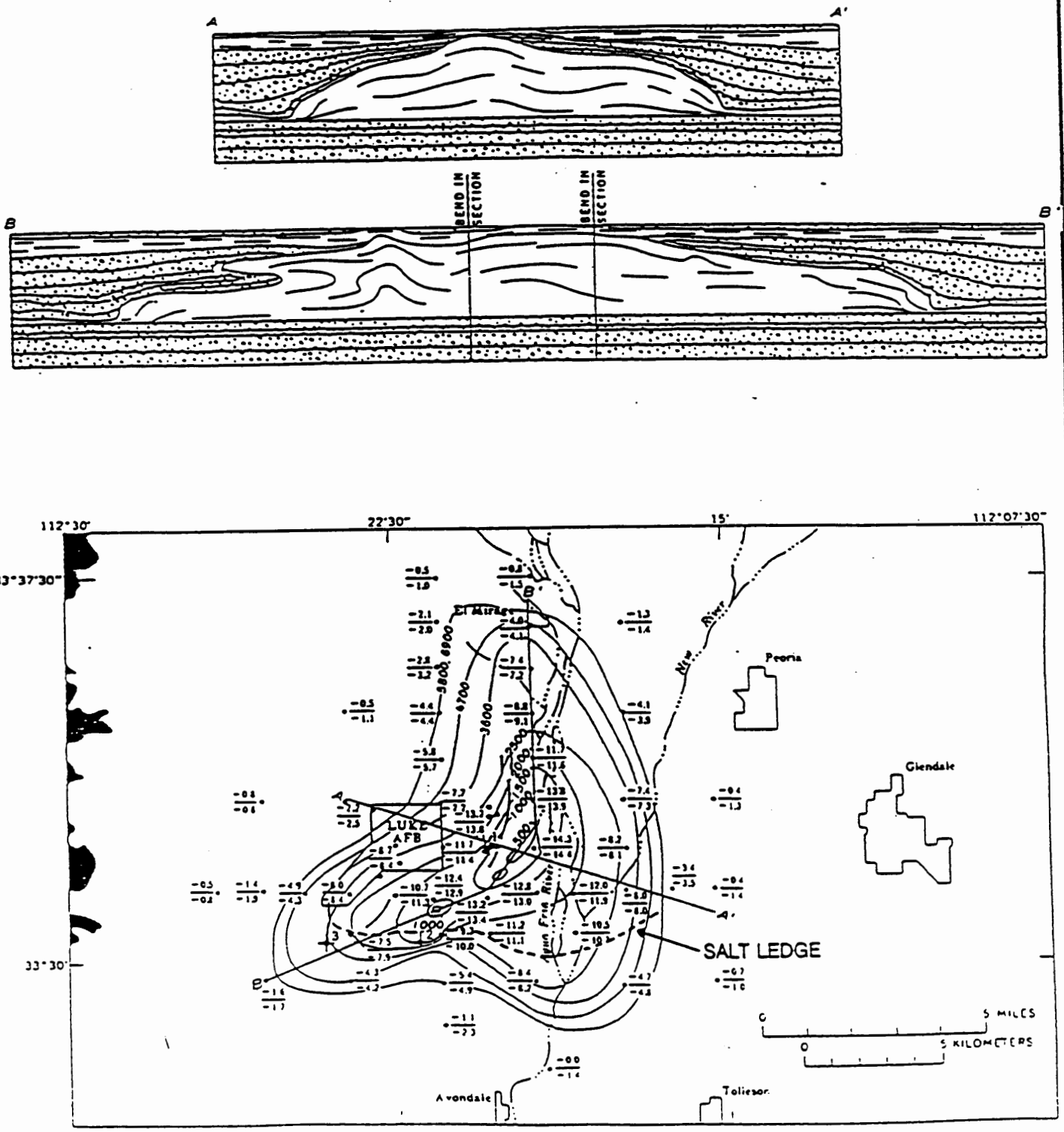


FIGURE 5 Salt Structure Based on Gravity.
(Eaton, 1978)

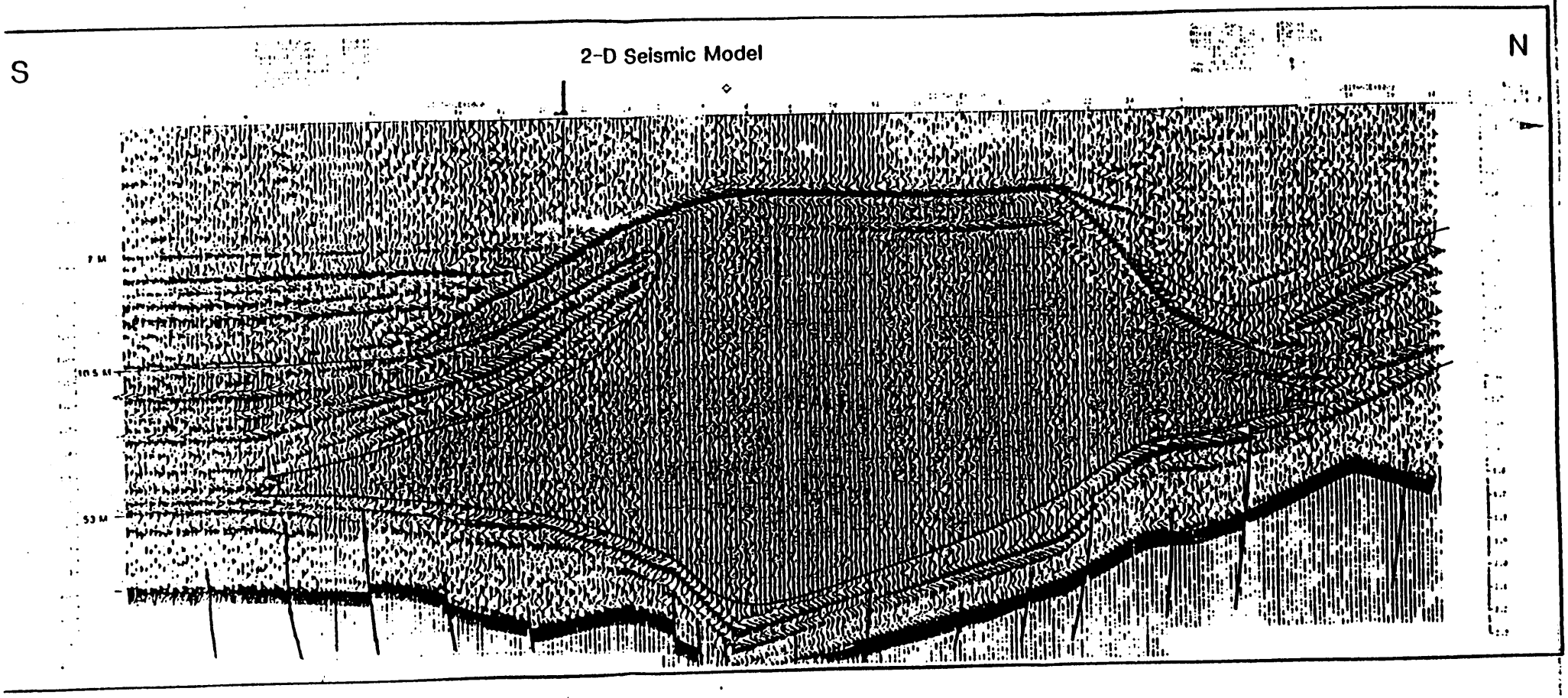


FIGURE 4

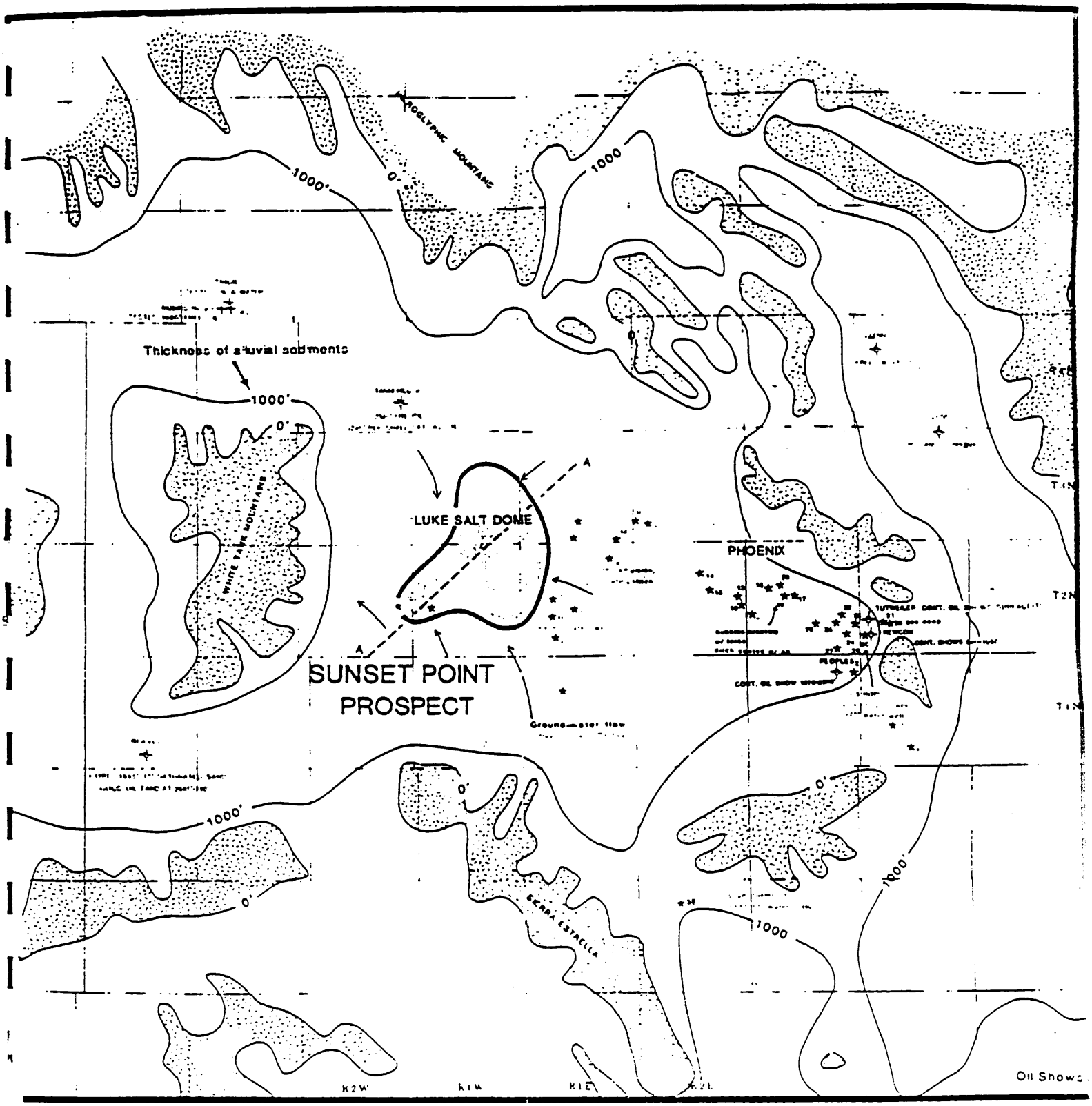

Thicknoss of alluvial sediments
1000'
0'
PICACHO MOUNTAINS
WHITE TANK MOUNTAINS
LUKE SALT DOME
SUNSET POINT
PROSPECT
PHOENIX
SIERRA ESTRELLA
Oil Shows
R2W
R1W
R1E

FIGURE 7

APPENDIX I

OIL & GAS JOURNAL ARTICLE ENTITLED "CLUES POINT TO OIL IN ARIZONA'S DEEP TERTIARY"

Clues point to oil in Arizona's deep Tertiary

Fig. 1

Wittmann area exploratory drilling

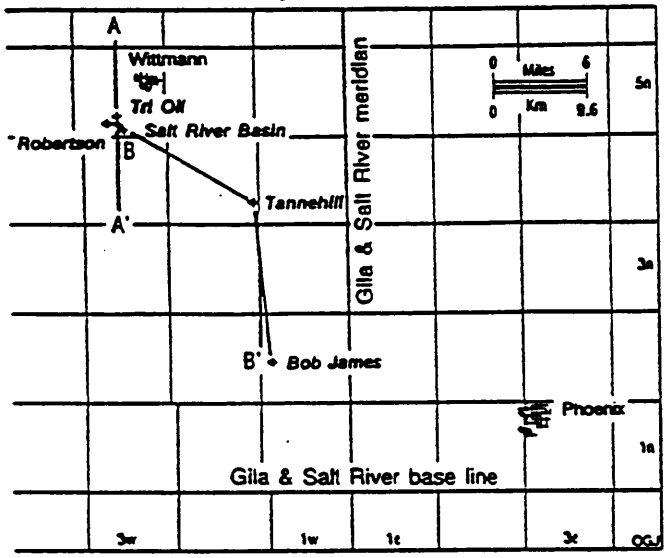
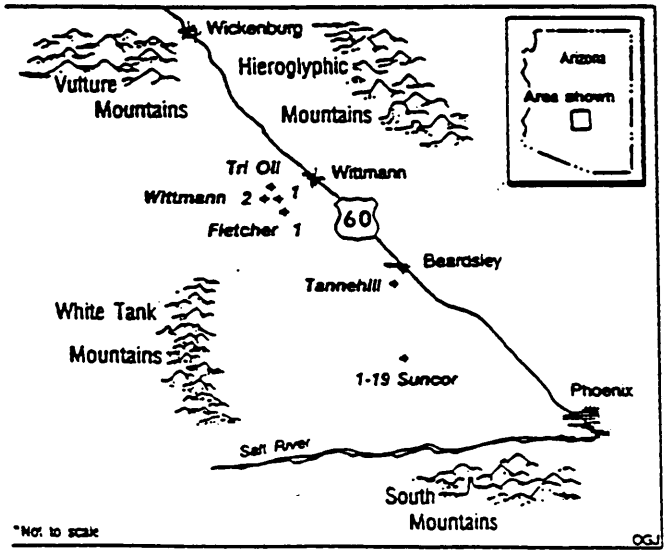


Fig. 2

Wittmann area features*



Steven L. Rauzi
Arizona Oil & Gas Conservation Commission
Phoenix

Evaluation of several wells near Wittmann, Ariz., suggests the need for additional drilling in the deep Tertiary basins of central Arizona.

In one of the earlier wells, 1 Wittmann, the driller reported as much as 1,600 ft of light oil in a test. Unfortunately, an unsuccessful water shut-off attempt prevented this well's completion.

Later drilling in 1981 and 1982 yielded mixed results and provided information on rotary drilling conditions and costs and basin stratigraphy.

Four of the wells described were drilled on private land and the fifth on a state lease.

Federal land is found in several, mostly isolated, areas in the valley but predominates in the mountains and to the west. One small federal tract, surrounded by private land, over a large salt deposit was picked up in the March 1991 U.S. Bureau of Land Management lease sale.

State land is available on a non-competitive basis and carries a 5 year term with a one eighth royalty on any production.

A major concern is the apparent lack of a good oil and gas source rock in the area. However, a thick section of deeply buried salt at the southern end of the valley is recognized by some to be just such a source.

In the most recent well, the 1-19 Suncor, more than 2,000 ft of salt was drilled, but no well has penetrated the base of the salt.

Seismic data over the salt suggest that it may extend to a depth of 12,000-15,000 ft. On a more regional basis, gravity and magnetic data show this valley to be one of the deepest in the southern part of Arizona.

The current report provides a summary of the data available in the well files and sample repository of the Arizona Oil & Gas Conservation Commission.

The well data are listed (see table), and the location of the wells and Sections A-A' and B-B' in Maricopa County are shown (Fig. 1).

Wittmann area

The Wittmann area is a broad, flat valley floored with Tertiary sediments.

The valley is both topographic and structural in that it is bounded by upfaulted, erosionally subdued mountains of Precambrian to Tertiary crystalline and metamorphic rocks.

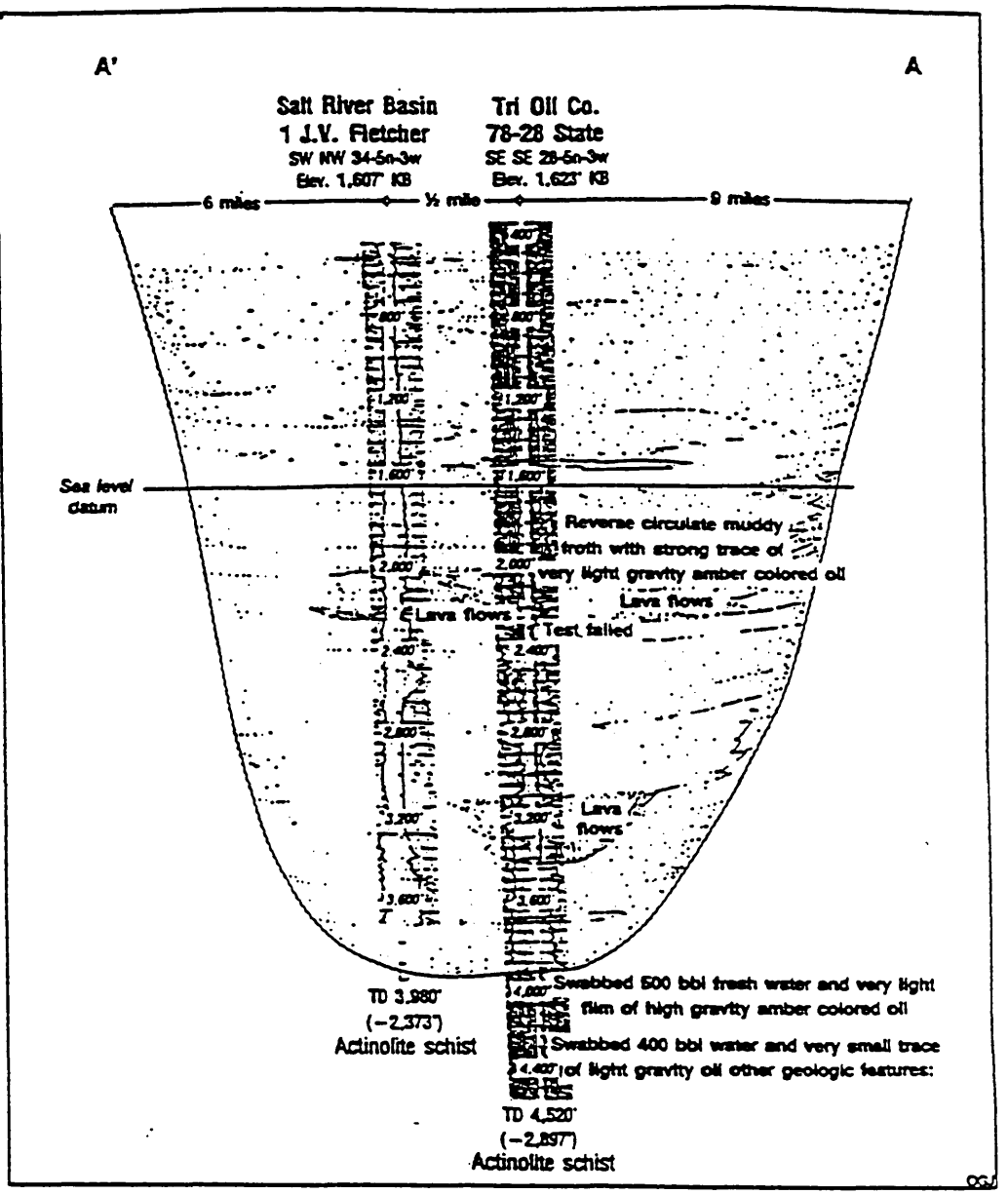
The Vulture and Hieroglyphic mountains bound the area on the north and northeast, the White Tank Mountains are on the southwest, and the South Mountains are on the southeast. The Salt River drains the area at the south end of the valley (Fig. 2).

Selected wells, Wittmann area, Maricopa County, Ariz.

Operator	Well	Location	Year drilled	Total depth, ft	Formation at total depth	Remarks
Tannehill	1 Beardsley	SE NE 25-4n-2w	1923	3,350	Tertiary sediments*	Shows in two sands, no tests
Robertson	1 Wittmann	NE NE 33-5n-3w	1944	4,280	Volcanic rock†	1,600 ft oil recovered in test
Robertson	2 Wittmann	NE NW 32-5n-3w	1946	4,970	Volcanic rock†	Shows at 4,650 ft, no tests
Salt River	1 Fletcher	SW NW 34-5n-3w	1981	3,980	Precambrian schist	No shows or tests
Tri Oil	76-28 State	SE SE 28-5n-3w	1982	4,520	Precambrian schist	Swabbed trace to show of oil
Bob James	1 Suncor	NE NE 19-2n-1w	1988	4,000	Tertiary salt	Show at 3,000 ft, no tests

*Probable. †Questionable.

North-south cross section



The Tertiary sediments just southwest of Wittmann are about 4,000 ft thick. They thicken to more than 11,000 ft 20 miles to the southeast, where the Tertiary section includes a large volume of relatively pure nonmarine salt (Fig. 4).

The valley slopes gently southward toward the Salt River. Elevations of the valley floor range from 1,600 ft near Wittmann to 900 ft at the river.

Elevations exceed 4,000 ft in the Vulture and Hieroglyphic Mountains, 3,500 ft in the White Tank Mountains, and 2,500 ft in the South Mountains.

These ranges contain Proterozoic schist similar to and herein correlated with the schist in the Tri Oil and Salt River Basin wells near the town of Wittmann (Fig. 1).

Early wells

The Tannehill 1 Beardsley was the earliest well to be drilled in the study area.

This well was drilled in 1923 and is located near the small town of Beardsley in SE NE 25-4n-2w (Fig. 1).

Tannehill drilled the 1 Beardsley with cable tools. His driller reported a gray sand with globules of oil at 2,208-10 ft. He also reported shows in a brown sand at 2,518-40 ft.

A black shale saturated with oil and showing gas was reported at 3,252-80 ft. The TD of the 1 Beardsley is 3,350 ft in probable Tertiary sediments (Fig. 4).

A note on the driller's log records the static water level in the hole. It stood at 138 ft and was drawn down to 183 ft after pumping.

J.J. Robertson drilled the first well near the town of Wittmann in 1944. His well, the 1 Wittmann, is located just southwest of Wittmann in NE NE 33-5n-3w (Fig. 1).

The logs, cores, and cuttings are not available for 1 Wittmann. However, the file on this well does contain the driller's recollection of the operation.

His account describes light oil recovered in a test and a show of oil in a conventional core. He claimed that this core was analyzed at the Tucson School of Mines, where it was considered to be of Permian age.

This driller, Lance Fletcher, provided the financial backing for the nearby 1 Fletcher well drilled in 1981. That he returned to finance this later well lends credence to his recollection of the test in the 1 Wittmann.

In a letter in the well files of the Arizona Oil & Gas Conservation Commission, Fletcher recalled the test as follows:

"A medium to strong blow was immediate, it became stronger until oil surfaced after about a minute."

He went on to report the amount of fluid recovered in the test: 1,600 ft of 36° gravity oil and 1,600 ft of salt water. When the crew tried to shut off the water, they cemented the tubing in the hole.

The core description, the scenario of the test, and the tubing being cemented in the hole suggest that a light oil is trapped at this location.

That it was not developed was due to mechanical problems. Alternatively, these reports suggest that oil has migrated through the Wittmann area.

TD of the 1 Wittmann is reported to be at 4,280 ft in volcanic rock.

Robertson drilled the 2 Wittmann in 1946 in NE NW 33-5n-3w, about 1,500 ft west of the 1 Wittmann (Fig. 1).

He apparently drilled this well to re-enter the oil zone that was lost when tubing was cemented in the 1 Wittmann. However, it seems unusual to the author that he would have stepped out so far from the original hole.

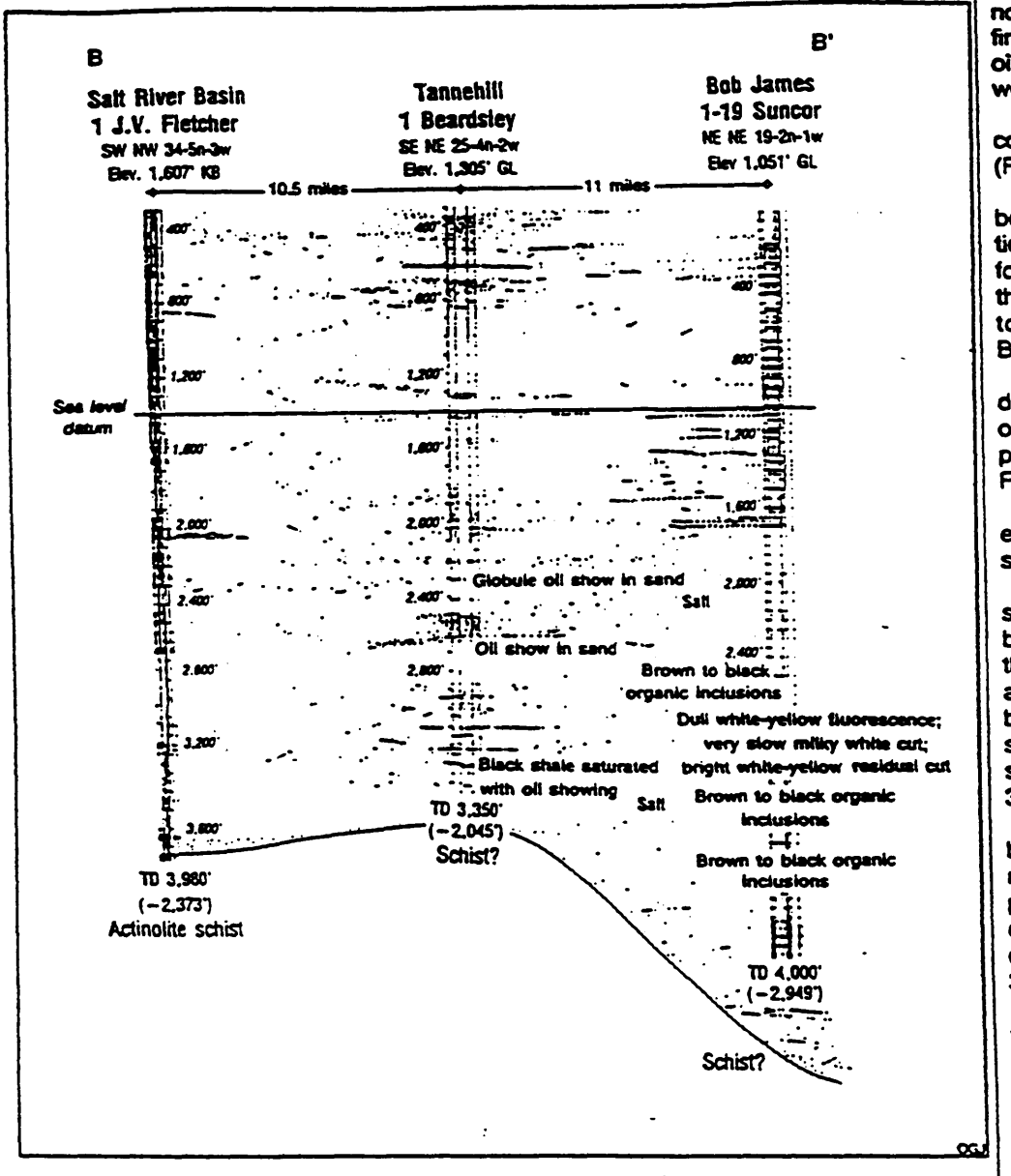
The 2 Wittmann file contains a very general lithologic summary. It reports sand and gravel to 3,100 ft, conglomerate to 3,800 ft, and volcanic rock from 3,800 ft to TD 4,970 ft. It also records a show of oil from 4,650-60 ft in the volcanic rock. No tests are reported.

Modern drilling

Salt River Basin Joint Venture drilled the 1 Fletcher in 1981 in SW NW 34-5n-3w

Fig. 4

Northwest-southeast cross section



about 1,350 ft southeast of 1 Wittmann (Fig. 1).

Lance Fletcher, the previously mentioned driller on the 1 Wittmann well, was the lease holder and financier for the 1 Fletcher.

The mud and electric logs record a continuous sequence of fine- to coarse-grained, varicolored alluvium and colluvium. A 50 ft thick volcanic flow is present at 2,200 ft.

The interval 2,700-3,400 ft is notably silty and clayey, indicating the development of an effective seal in this part of the basin. Precambrian actinolite schist was penetrated at 3,940 ft, and the well bottomed in schist at 3,980 ft (Figs. 3, 4). No shows or tests are reported.

In 1982, the Tri Oil 78-28 State was the most recent well to be drilled in the vicinity of Wittmann (Fig. 1). The 78-28 State is in SE SE 28-5n-3w, about 1,350 ft due north of 1 Wittmann and about one half mile northwest of 1 Fletcher.

The operator ran dual-induction, sonic, neutron, and dipmeter logs and set and cemented 7 in. casing to 4,517 ft. He then perforated and attempted to test several zones.

The first test at 2,020-21 ft failed because of a loose joint.

The second test at 2,337-38 ft recovered seven stands of hole fluid in 1 hr from another loose joint.

The third test at 4,216-17 ft recovered 3,800 ft of fresh water in 41 min. It had a final flowing pressure of 1,597 psi.

After these three tests, 221 holes were shot across two large intervals, 2,024-2,343 ft and 3,935-4,514 ft.

The well was then fractured using 52 tons of sand. Swabbing recovered fresh water with strong traces to slight shows of gas and light oil.

Unfortunately, the large interval of perforated pipe made it difficult for the operator to tell which zone in the well was effectively stimulated. Tri Oil could not determine which perforations were yielding the oil, and it failed to control the inflow of water.

The operator admitted such and wrote that he had no doubt that he had failed to find and produce a significant oil and gas saturation in this well.

The Bob James 1-19 Suncor well is in NE NE 19-2n-1w (Fig. 1).

This well is included here because it provides information on the probable source for the oil and gas reported in the wells drilled near the towns of Wittmann and Beardsley.

The 1-19 Suncor was drilled in 1988 to test sand objectives below a large deposit of salt near Luke Air Force Base (Fig. 4).

The Suncor well penetrated salt at 1,720 ft and was still in salt at TD 4,000 ft.

The mud log records sandstone, claystone, and several beds of anhydrite overlying the salt. It also records several thin beds of orange to brown claystone within the salt and a thin bed of black shale encased in salt at 3,950 ft.

Several zones of brown to black organic inclusions are reported in the salt, and a particularly interesting zone of very slightly calcareous to clayey siltstone is reported at 3,000 ft.

This siltstone has a dull white to yellow fluorescence with a very slow milky white cut. The siltstone also has a bright white to yellow residual cut but no odor or visible stain.

Since the Suncor well was still in salt at TD, its primary objective of testing sands below the salt was not accomplished. Testing of the supposed sands is still a valid objective.

Additional objectives include salt overhangs, stratigraphic intertonguing around the periphery of the salt, and faulted wedges of sediment within the salt.

This well offers a probable source for the oil and gas reported in the several wells in the Wittmann area.

Possible oil source rocks

The oil and gas shows reported in the Tannehill, Wittmann, and Tri Oil Co. wells indicate that oil and gas are

The author . . .

Rauzi

Steven L. Rauzi grew up in Moab, Utah, and received BS and MS degrees in geology from Utah State University in Logan. From 1980-87 he worked for Texaco in Los Angeles as an exploration and development geologist. Since 1988 he has been the oil and gas program administrator for the Arizona Oil & Gas Conservation Commission in Phoenix.

present in this area.

At the least, these shows record a period of oil and gas migration through the basin. If a potential source rock for oil and gas can be described, then the reported shows in these wells take on a greater significance.

At least two possible source rocks for oil and gas have been identified. The first is the "black shale saturated with oil" in the Tannehill well.

The second, and more likely source, is the thick section of salt, and intimately associated sediments, in the Suncor well (Fig. 1).

In fact, the shows in the Wittmann area wells suggest that oil migrated out of and away from the deeply buried salt at Luke Air Force Base. At least 20 miles of oil migration is indicated.

Luke salt

The salt at Luke, or Luke salt, is at least Miocene in age.

It is overlain by basalt that has been age dated at about 10.5 million years.[1]

The average bromine content of the Luke salt is about 2 ppm. Values of less than 30 ppm bromine tend to represent nonmarine salt, and the Luke salt deposit is probably of lacustrine or playa origin.[2] The sheer volume of relatively clean salt at Luke tends to suggest a lacustrine deposit.

The organisms in saline lakes normally include a narrow range of species that grow in remarkable abundance.[3] These authors cite several examples of abundant biotas in saline lakes.

For example, they describe saline lakes that provide sufficient food for enormous flocks of flamingos, in some cases a million or more birds.

Most species of flamingos obtain their food from organic rich bottom muds. These saline lakes must therefore maintain a high productivity of phytoplankton, which settle and are incorporated into the bottom muds.

Under the right conditions, these muds, along with significant amounts of bird droppings, can be preserved and become good source rocks for oil and gas.

Like modern saline lakes, the lake, or lakes,[4] in which the Luke salt was deposited could very well have sustained an abundance of organisms that accumulated as organic rich bottom muds.

In the case of Luke, organic rich muds may have been concentrated during volcanic-associated phytoplankton "blooms." Thus extra-rich muds in the Luke salt could correlate with periods of increased volcanic activity.

The "oil-saturated black shale" reported in the Tannehill well could represent just such a relationship. Salt-associated source beds may well be a significant factor not just in the oil and gas play of the Wittmann area but in the entire Phoenix basin as well.

Heat source, stratigraphic trap

Gravity and magnetic data suggest that the Luke salt is at least 10,000 ft thick.[2,5]

Seismic data suggest that it may extend to a depth of 12,000-15,000 ft.[6] These depths are sufficient to generate oil and gas.

Sufficient heat and pressure necessary to generate oil and gas from salt-associated source beds also may have been provided by Tertiary intrusion and volcanism. Such was the case at Dineh-bi-Keyah field in northeastern Arizona.

There, a Tertiary sill was intruded into Pennsylvanian carbonate rocks. That sill was intruded into Pennsylvanian carbonate rocks. That sill has produced more than 17 million bbl of oil.[7]

Concrete evidence of such intrusive relationships has not been documented in the study area, but a sill intruded into either the black shale described in the Tannehill well or organic-rich muds associated with the Luke salt offers the same possibility for stratigraphic traps in the Wittmann area.

Conclusion

The 1 Wittmann was reported to have produced 1,600 ft of light oil and 1,600 ft of salt water in a cased hole test.

Unfortunately, mechanical problems and an unsuccessful water shut-off attempt prevented development of the Wittmann well.

Shows of oil also were reported in two sands in the Tannehill Beardsley well. If these sands pinch out laterally into clay, stratigraphic traps are possible in the undrilled parts of this basin.

Two possible sources for oil and gas in the Wittmann area include the "oil-saturated black shale" in the Tannehill well and the thick section of Miocene salt in the Suncor well.

The salt in the Suncor well may serve as a trapping mechanism to oil and gas below the salt.

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3. Kirkland, D.W., and R. Evans, Source-rock potential of evaporitic environment: AAPG Bull., Vol. 65, 1981, pp. 181-190.
4. Lowery, C.J., Sedimentation of Cenozoic deposits in western Salt River Valley, Arizona: unpublished master's thesis, Arizona State University, Tempe, 1964.
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APPENDIX II

ECONOMICS

SUMMARY OF ECONOMICS

ESCALATED PRICE FORECAST

CASE 1: 11 MILLION BARRELS PER WELL

IDMSALT1 -
GILA SALT DOME

FORECAST OF OIL SALES AND BEFORE TAX REVENUE

INTERNATIONAL DUSTY MAC ENTERPRISES
GILA SALT DOME PROSPECT
MARICOPA COUNTY, ARIZONA
POTENTIAL OIL RESERVES
CASE 1: TOTAL ESTIMATED RESERVES 87 MILLION BARRELS/640 ACRES
ECONOMICS BASED ON 11 MILLION BARRELS (ONE WELL PER 80 ACRES)
ESCALATED PRICE FORECAST

	GROSS	COMPANY SHARE						
YEAR	ANNUAL OIL SALES (MBBLS)	OIL BEFORE ROYALTY (MBBLS)	OIL AFTER ROYALTY (MBBLS)	REVENUE AFTER ROYALTY M$	OPERATING EXPENSES M$	CAPITAL INVESTMENT M$	**** CASH FLOW **** ANNUAL M$	CUMULATIVE M$
1992	1369	245	188	3758	35	0	3724	3724
1993	1825	331	253	5318	53	0	5266	8989
1994	1825	331	253	5584	62	0	5523	14512
1995	1573	285	218	5055	68	0	4987	19500
1996	1160	210	161	3914	69	0	3845	23345
1997	856	155	119	3031	72	0	2959	26304
1998	631	114	88	2347	76	0	2271	28575
1999	465	84	65	1818	82	0	1736	30311
2000	343	62	48	1407	89	0	1319	31630
2001	253	46	35	1090	97	0	993	32623
2002	187	34	26	844	107	0	737	33360
2003	138	25	19	654	118	0	535	33895
2004	102	18	14	506	132	0	374	34269
2005	75	14	10	392	147	0	245	34514
2006	55	10	8	303	165	0	138	34652
2007	41	7	6	235	185	0	50	34702
TOTAL	10898	1973	1510	36257	1555	0	34702	

WORKING INTEREST SCHEDULE
15.000 % TO APRIL 1992
18.125 % THEREAFTER

PRESENT VALUE AS OF JANUARY 1992
AT 10% M$ 23,945
AT 15% M$ 20,590
AT 18% M$ 18,967
AT 20% M$ 18,012
AT 25% M$ 15,981

AMH GROUP LTD.

SUMMARY OF ECONOMICS

ESCALATED PRICE FORECAST

CASE 2: 2.7 MILLION BARRELS PER WELL

IDMSALT3 -
GILA SALT DOME

FORECAST OF OIL SALES AND BEFORE TAX REVENUE

INTERNATIONAL DUSTY MAC ENTERPRISES
GILA SALT DOME PROSPECT
MARICOPA COUNTY, ARIZONA
POTENTIAL OIL RESERVES
CASE 2: TOTAL ESTIMATED RESERVES 43 MILLION BARRELS/640 ACRES
ECONOMICS BASED ON 2.7 MILLION BARRELS (ONE WELL PER 40 ACRES)
ESCALATED PRICE FORECAST

	GROSS	COMPANY SHARE						
YEAR	ANNUAL OIL SALES (MBBLS)	OIL BEFORE ROYALTY (MBBLS)	OIL AFTER ROYALTY (MBBLS)	REVENUE AFTER ROYALTY M$	OPERATING EXPENSES M$	CAPITAL INVESTMENT M$	**** CASH FLOW **** ANNUAL M$	CUMULATIVE M$
1992	274	47	36	720	19	0	701	701
1993	365	66	51	1064	29	0	1035	1736
1994	365	66	51	1117	31	0	1086	2822
1995	329	60	46	1056	33	0	1023	3844
1996	266	48	37	896	35	0	861	4705
1997	215	39	30	760	38	0	723	5428
1998	174	31	24	645	41	0	604	6032
1999	140	25	19	548	45	0	503	6535
2000	113	21	16	465	49	0	415	6951
2001	92	17	13	394	55	0	339	7290
2002	74	13	10	335	62	0	273	7563
2003	60	11	8	284	70	0	213	7776
2004	48	9	7	241	81	0	160	7936
2005	39	7	5	204	94	0	110	8046
2006	32	6	4	173	110	0	63	8109
2007	26	5	4	147	131	0	16	8126
TOTAL	2610	470	360	9049	923	0	8126	

WORKING INTEREST SCHEDULE
15.000 % TO JUNE 1992
18.125 % THEREAFTER

PRESENT VALUE AS OF JANUARY 1992
AT 10% M$ 5,289
AT 15% M$ 4,454
AT 18% M$ 4,060
AT 20% M$ 3,831
AT 25% M$ 3,352

AMH GROUP LTD.

SUMMARY OF ECONOMICS

CONSTANT PRICE FORECAST

CASE 1: 11 MILLION BARRELS PER WELL

IDMSALT5 -
GILA SALT DOME

FORECAST OF OIL SALES AND BEFORE TAX REVENUE

INTERNATIONAL DUSTY MAC ENTERPRISES
GILA SALT DOME PROSPECT
MARICOPA COUNTY, ARIZONA
POTENTIAL OIL RESERVES
CASE 1: TOTAL ESTIMATED RESERVES 87 MILLION BARRELS/640 ACRES
ECONOMICS BASED ON 11 MILLION BARRELS (ONE WELL PER 80 ACRES)
CONSTANT PRICE FORECAST

	GROSS	COMPANY SHARE						
YEAR	ANNUAL OIL SALES (MBBLS)	OIL BEFORE ROYALTY (MBBLS)	OIL AFTER ROYALTY (MBBLS)	REVENUE AFTER ROYALTY M$	OPERATING EXPENSES M$	CAPITAL INVESTMENT M$	**** CASH FLOW **** ANNUAL M$	CUMULATIVE M$
1992	1369	245	188	3758	35	0	3724	3724
1993	1825	331	253	5065	51	0	5014	8738
1994	1825	331	253	5065	57	0	5008	13746
1995	1573	285	218	4367	60	0	4307	18053
1996	1160	210	161	3220	59	0	3161	21214
1997	856	155	119	2375	59	0	2316	23530
1998	631	114	88	1751	60	0	1691	25222
1999	465	84	65	1292	62	0	1230	26451
2000	343	62	48	953	65	0	888	27339
2001	253	46	35	703	68	0	634	27974
2002	187	34	26	518	72	0	446	28420
2003	138	25	19	382	77	0	305	28725
2004	102	18	14	282	82	0	199	28924
2005	75	14	10	208	88	0	119	29044
2006	55	10	8	153	95	0	58	29101
2007	41	7	6	113	103	0	10	29112
TOTAL	10898	1973	1510	30205	1093	0	29112	

WORKING INTEREST SCHEDULE
15.000 % TO APRIL 1992
18.125 % THEREAFTER

PRESENT VALUE AS OF JANUARY 1992
AT 10% M$ 20,813
AT 15% M$ 18,131
AT 18% M$ 16,814
AT 20% M$ 16,032
AT 25% M$ 14,354

AMH GROUP LTD.

SUMMARY OF ECONOMICS

CONSTANT PRICE FORECAST

CASE 2: 2.7 MILLION BARRELS PER WELL

IDMSALT6 -
GILA SALT DOME

FORECAST OF OIL SALES AND BEFORE TAX REVENUE

INTERNATIONAL DUSTY MAC ENTERPRISES
GILA SALT DOME PROSPECT
MARICOPA COUNTY, ARIZONA
POTENTIAL OIL RESERVES
CASE 2: TOTAL ESTIMATED RESERVES 43 MILLION BARRELS/640 ACRES
ECONOMICS BASED ON 2.7 MILLION BARRELS (ONE WELL PER 40 ACRES)
CONSTANT PRICE FORECAST

	GROSS	..... COMPANY SHARE						
	ANNUAL OIL	OIL BEFORE	OIL AFTER	REVENUE AFTER	OPERATING	CAPITAL	**** CASH FLOW ****	
YEAR	SALES (MBBLS)	ROYALTY (MBBLS)	ROYALTY (MBBLS)	ROYALTY M$	EXPENSES M$	INVESTMENT M$	ANNUAL M$	CUMULATIVE M$
1992	274	47	36	720	19	0	701	701
1993	365	66	51	1013	28	0	985	1686
1994	365	66	51	1013	29	0	984	2671
1995	329	60	46	912	30	0	883	3553
1996	266	48	37	737	30	0	707	4260
1997	215	39	30	596	31	0	565	4825
1998	174	31	24	482	32	0	449	5274
1999	140	25	19	389	34	0	355	5630
2000	113	21	16	314	36	0	279	5908
2001	92	17	13	254	39	0	216	6124
2002	74	13	10	205	42	0	164	6287
2003	60	11	8	166	46	0	120	6408
2004	48	9	7	134	51	0	84	6491
2005	39	7	5	108	57	0	52	6543
2006	32	6	4	88	64	0	24	6567
TOTAL	2584	466	357	7132	565	0	6567	

WORKING INTEREST SCHEDULE
15.000 % TO JUNE 1992
18.125 % THEREAFTER

PRESENT VALUE AS OF JANUARY 1992
AT 10% M$ 4,482
AT 15% M$ 3,839
AT 18% M$ 3,531
AT 20% M$ 3,350
AT 25% M$ 2,966

AMH GROUP LTD.

CERTIFICATE OF THE ISSUER

The foregoing constitutes full, true and plain disclosure of all material facts relating to the securities offered by this Statement of Material facts as required by the Securities Act (British Columbia) and its regulations.

DATED this 20th day of August, 1992.

GEORGE HAROLD LAYCRAFT
President, Director and Promoter

JAMES GLASS
Director

DONALD LINDSAY MCDONALD
Director

CERTIFICATE OF THE AGENTS

To the best of our knowledge, information and belief, the foregoing constitutes full, true and plain disclosure of all material facts relating to the securities offered by this Statement of Material Facts, as required by the Securities Act (British Columbia) and its regulations.

DATED this 1 day of September, 1992.

L.O.M. WESTERN SECURITIES LTD.

Per:

PACIFIC INTERNATIONAL SECURITIES INC.

Per: