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DATE: 09/09/92 DE NOVO
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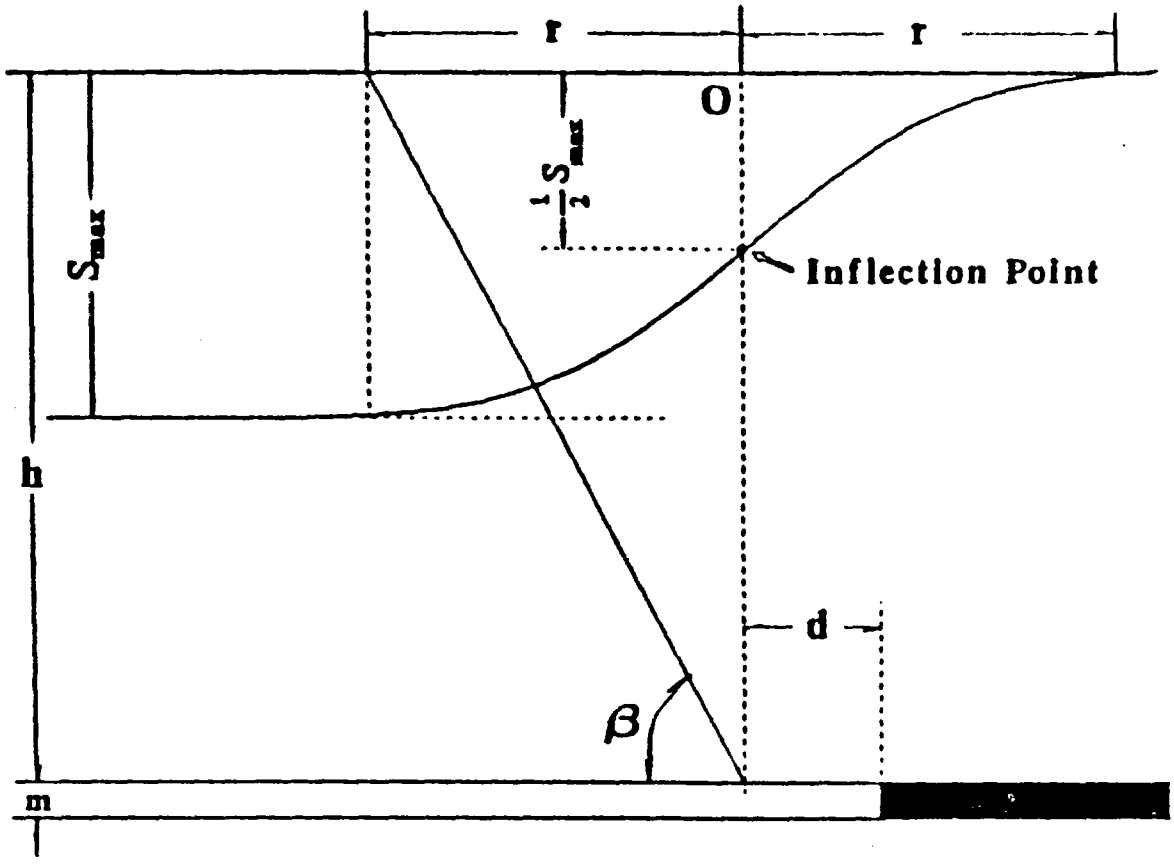

Fig. 2.5. Definition of radius (r) and angle (β) of major influence.

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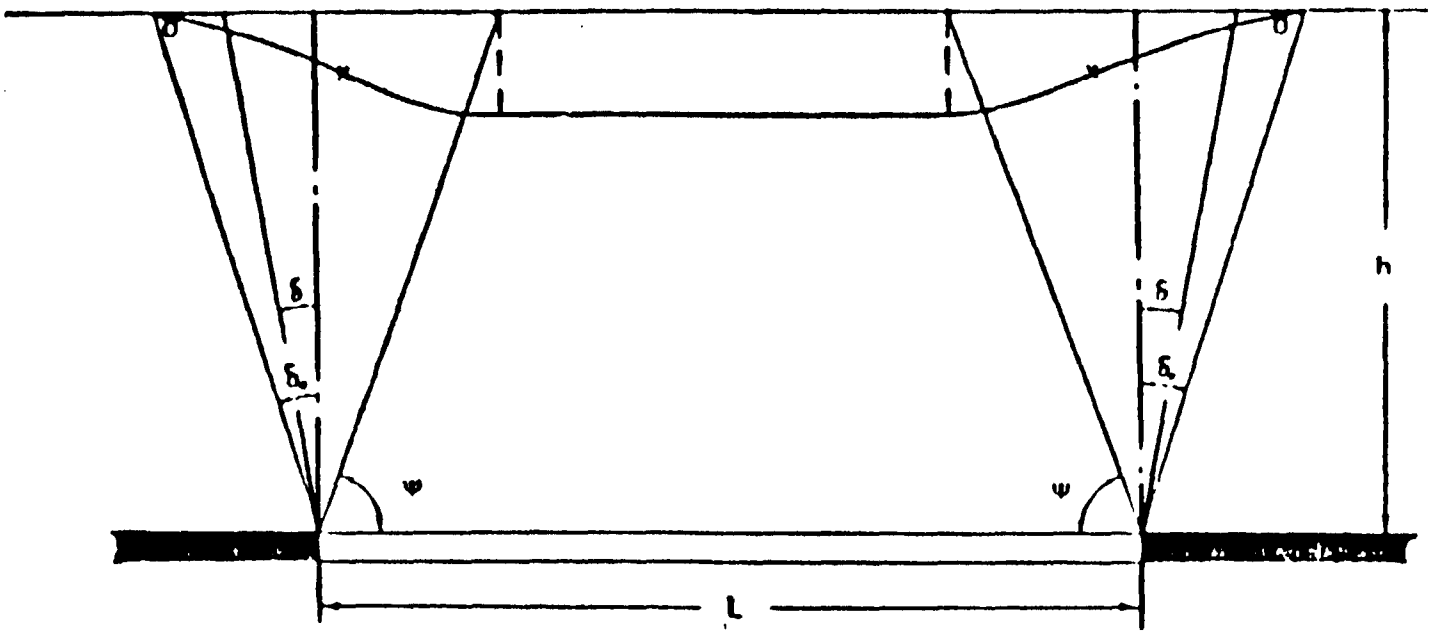

Fig. 2.3. Terminologies used associated with subsidence profile.

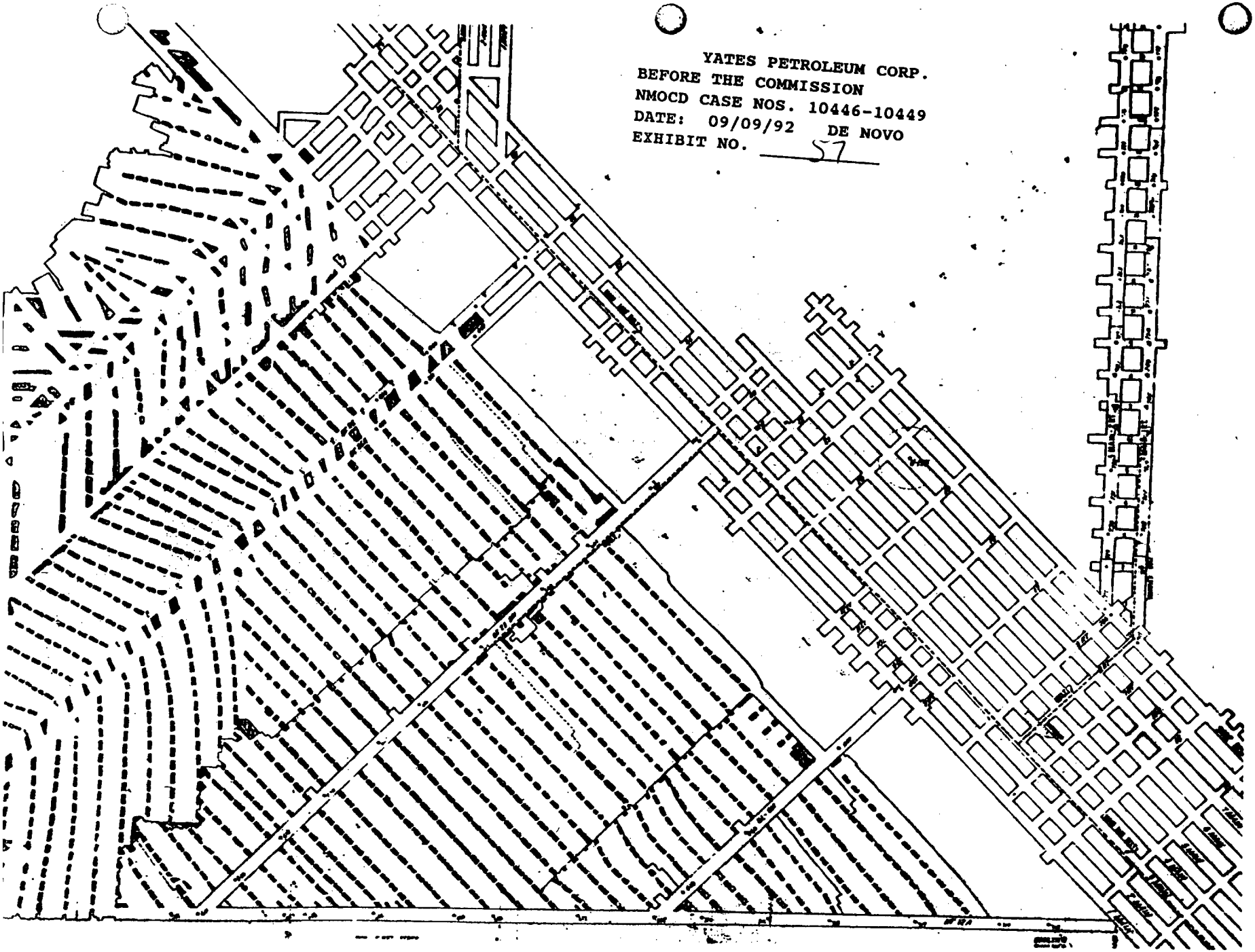

FIGURE 1: MAP OF THE AREA MINED BY THE MODIFIED LONGWALL SYSTEM. NOTE MODIFICATIONS OF SYSTEM AS MINING PROGRESSED FROM RIGHT TO LEFT.

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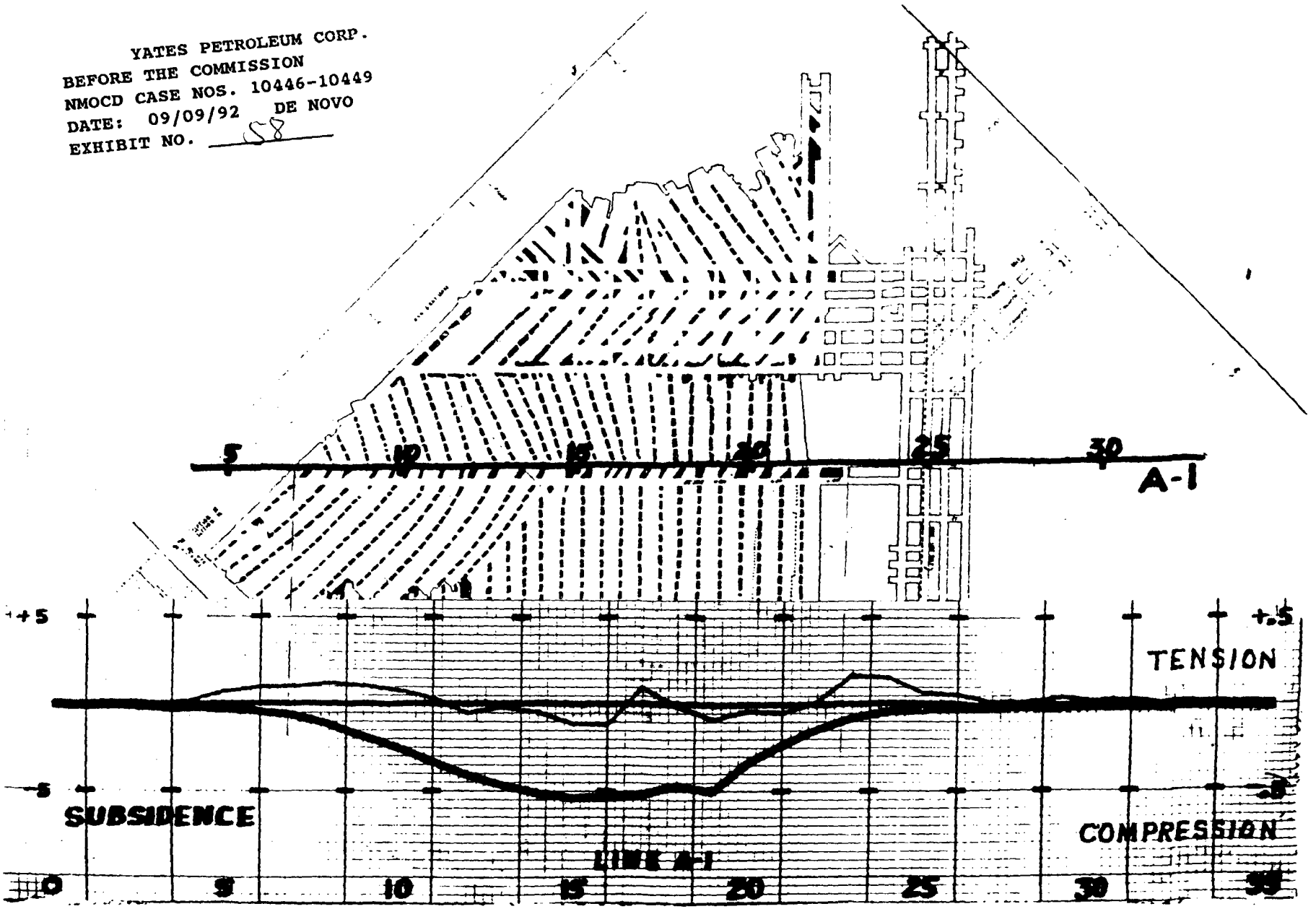

FIGURE 2: SUBSIDENCE AND STRAIN LINE A-1 ON THE SURFACE OVER THE MODIFIED LONGWALL OPERATION. STATIONS ARE IN HUNDREDS OF FEET

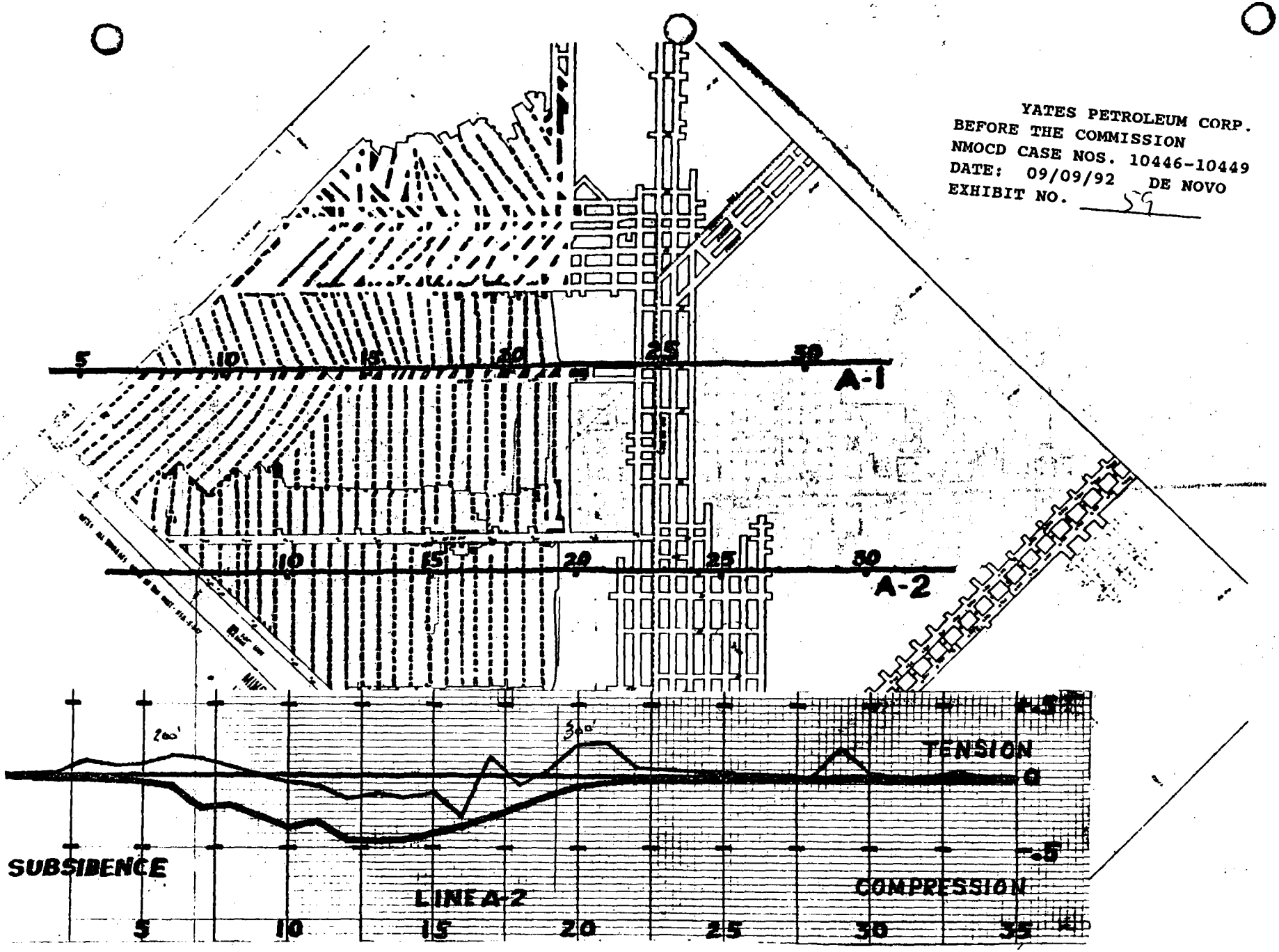

FIGURE 3: SUBSIDENCE (HEAVY LINE) AND STRAIN LINE A-2 OVER THE LONGWALL OPERATION. LEFT SCALE IS SUBSIDENCE IN FEET, RIGHT SCALE IS STRAIN IN TENTHS OF PERCENT.

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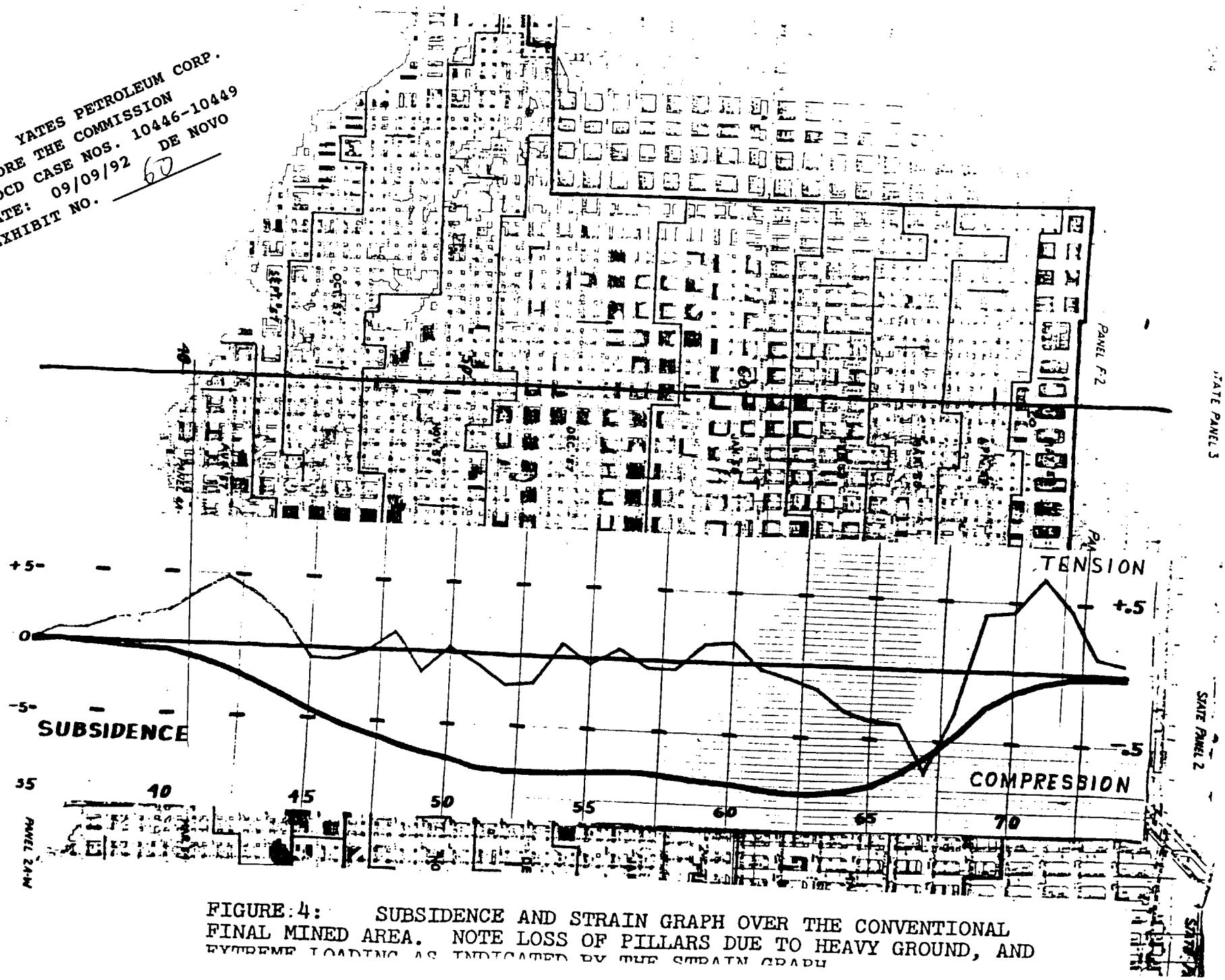
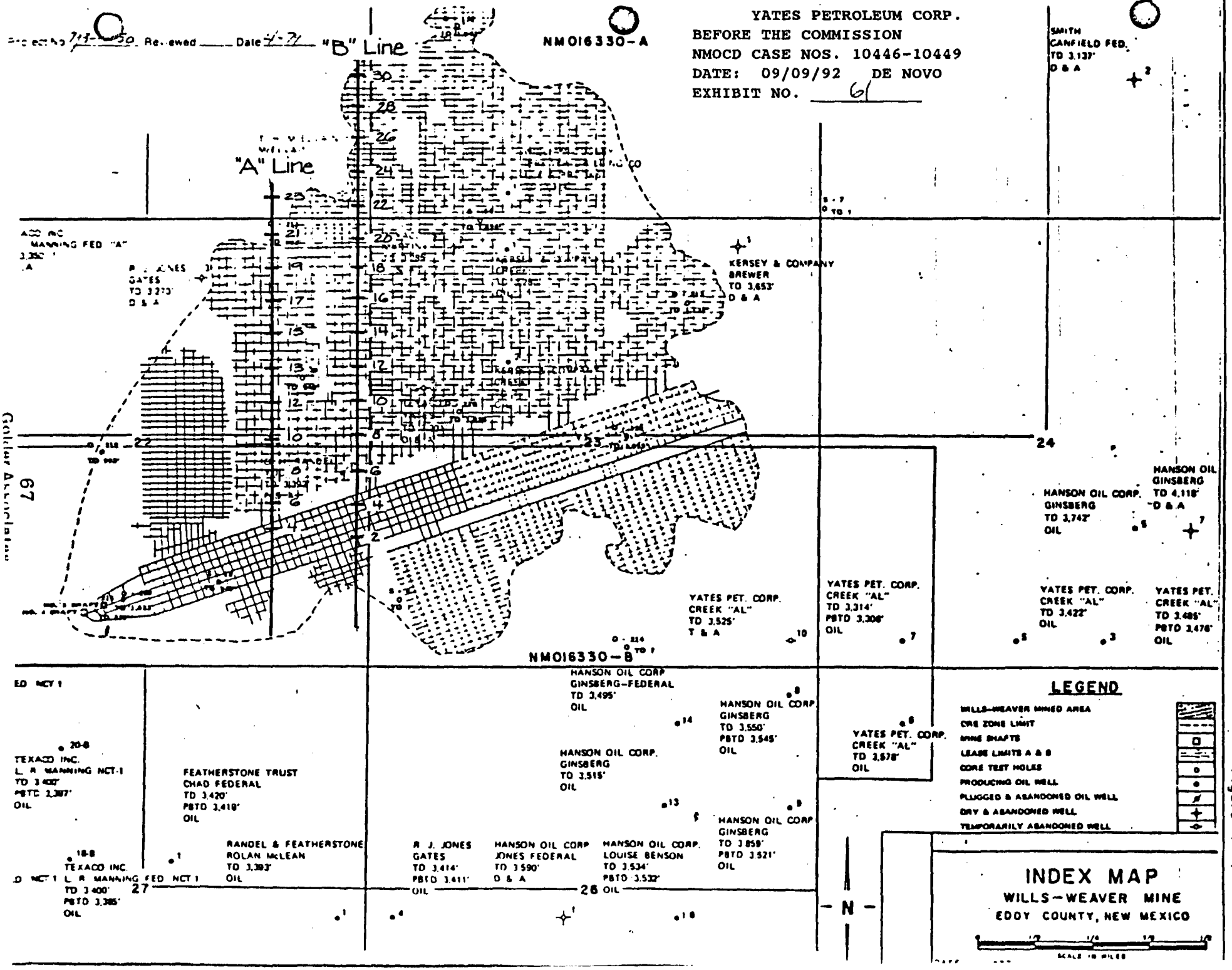


FIGURE 4: SUBSIDENCE AND STRAIN GRAPH OVER THE CONVENTIONAL FINAL MINED AREA. NOTE LOSS OF PILLARS DUE TO HEAVY GROUND, AND EXTREME LOADING AS INDICATED BY THE STRAIN GRAPH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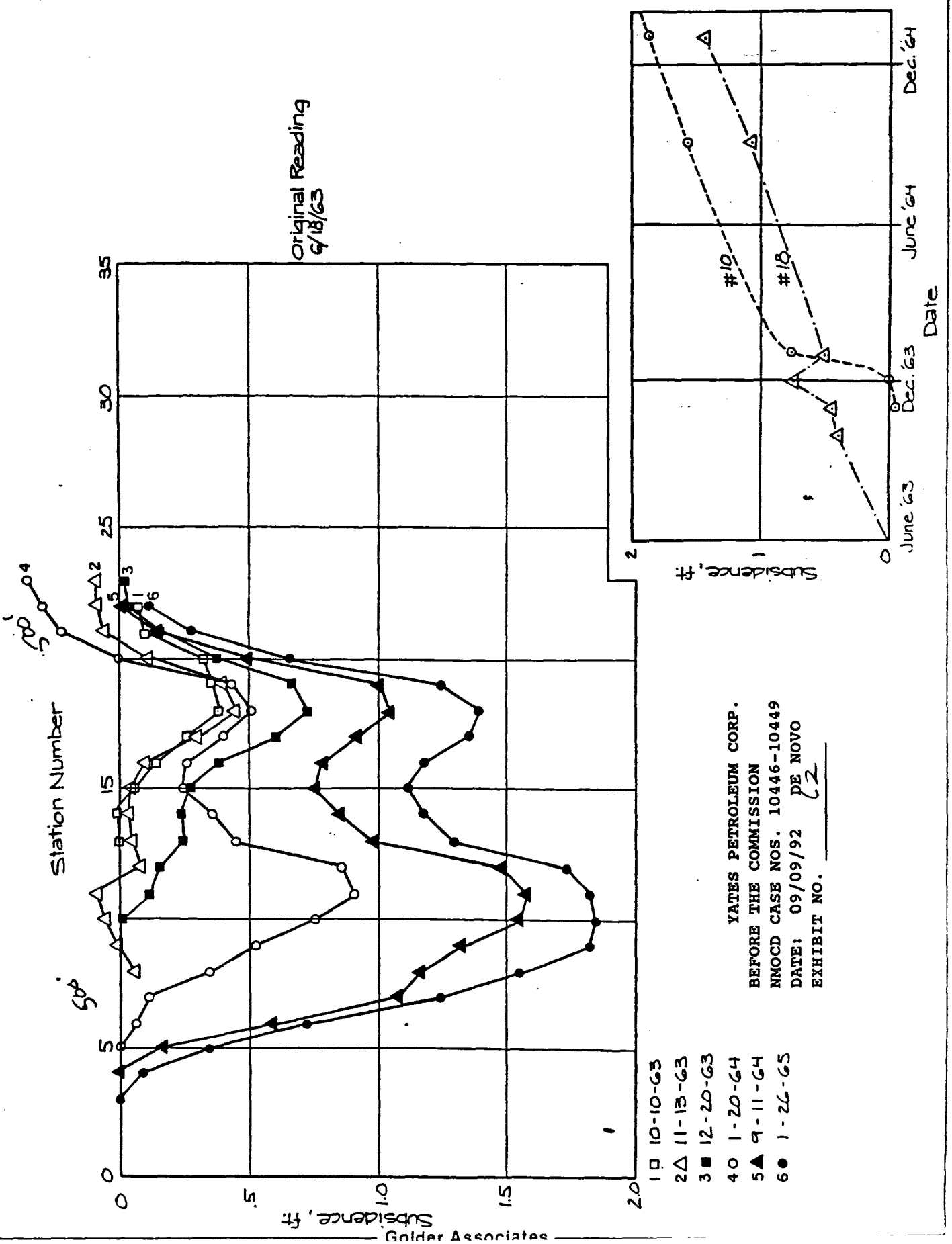
BEFORE THE COMMISSION
NMOCD CASE NOS. 10446-10449
DATE: 09/09/92 DE NOVO
EXHIBIT NO. 6
Received 7-13-92 Reviewed Date 7-21
"A" Line
"B" Line
NM016330-A
NM016330-B
KERSEY & COMPANY BREWER TD 3,653' D & A
R. J. JONES GATES TD 3,273' D & A
HANSON OIL GINSBERG TD 4,118' D & A
HANSON OIL CORP. GINSBERG TD 3,742' OIL
YATES PET. CORP. CREEK "AL" TD 3,525' T & A
YATES PET. CORP. CREEK "AL" TD 3,314' PBTD 3,308' OIL
YATES PET. CORP. CREEK "AL" TD 3,422' OIL
YATES PET. CREEK "AL" TD 3,485' PBTD 3,478' OIL
HANSON OIL CORP GINSBERG-FEDERAL TD 3,495' OIL
HANSON OIL CORP. GINSBERG TD 3,515' OIL
HANSON OIL CORP GINSBERG TD 3,550' PBTD 3,545' OIL
YATES PET. CORP. CREEK "AL" TD 3,578' OIL
HANSON OIL CORP GINSBERG TD 3,859' PBTD 3,521' OIL
TEXACO INC. L R MANNING NCT-1 TD 3,400' PBTD 3,387' OIL
FEATHERSTONE TRUST CHAD FEDERAL TD 3,420' PBTD 3,418' OIL
RANDEL & FEATHERSTONE ROLAN McLEAN TD 3,393' OIL
R J. JONES GATES TD 3,414' PBTD 3,411' OIL
HANSON OIL CORP JONES FEDERAL TD 3,590' D & A
HANSON OIL CORP. LOUISE BENSON TD 3,534' PBTD 3,532' OIL
TEXACO INC. L R MANNING FED NCT 1 TD 3,400' PBTD 3,385' OIL
SMITH CANFIELD FED. TD 3,137' D & A
LEGEND
WILLS-WEAVER MINED AREA
ORE ZONE LIMIT
MINE SHAFTS
LEASE LIMITS A & B
CORE TEST HOLES
PRODUCING OIL WELL
PLUGGED & ABANDONED OIL WELL
DRY & ABANDONED WELL
TEMPORARILY ABANDONED WELL
INDEX MAP
WILLS-WEAVER MINE
EDDY COUNTY, NEW MEXICO
- N -
22
23
24
26
27
67
Galleher Anticline
AT WILLS-WEAVER

Figure 4-4

SURFACE SUBSIDENCE PROFILES ALONG 'A' LINE OVER PANEL I NORTH

Figure 4-5



Project No. 773-50 Reviewed ___ Date 4-74

SURFACE SUBSIDENCE PROFILES ALONG 'B' LINE OVER PANEL 2 NORTH

Figure 4-6

YATES PETROLEUM CORP.
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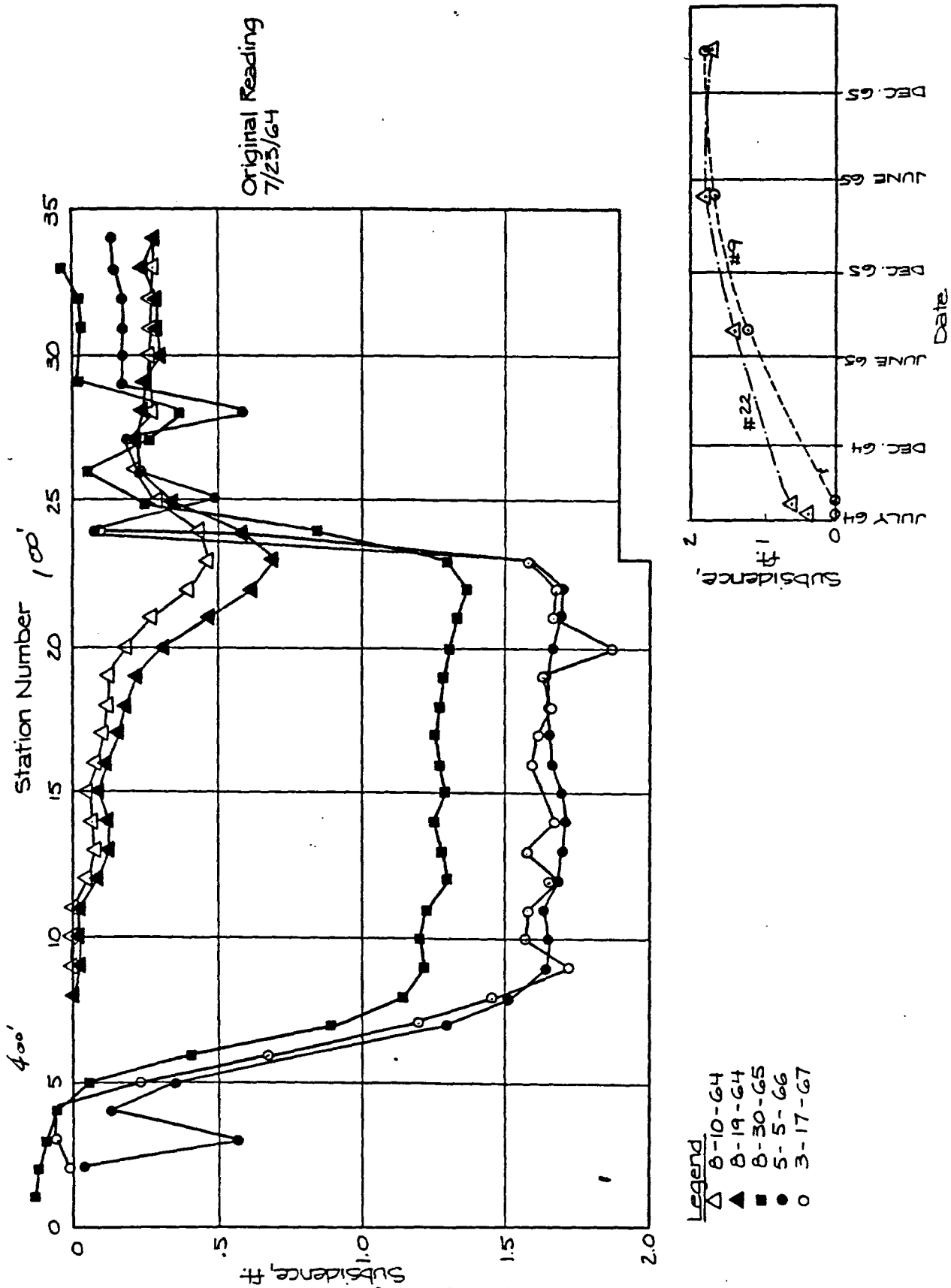


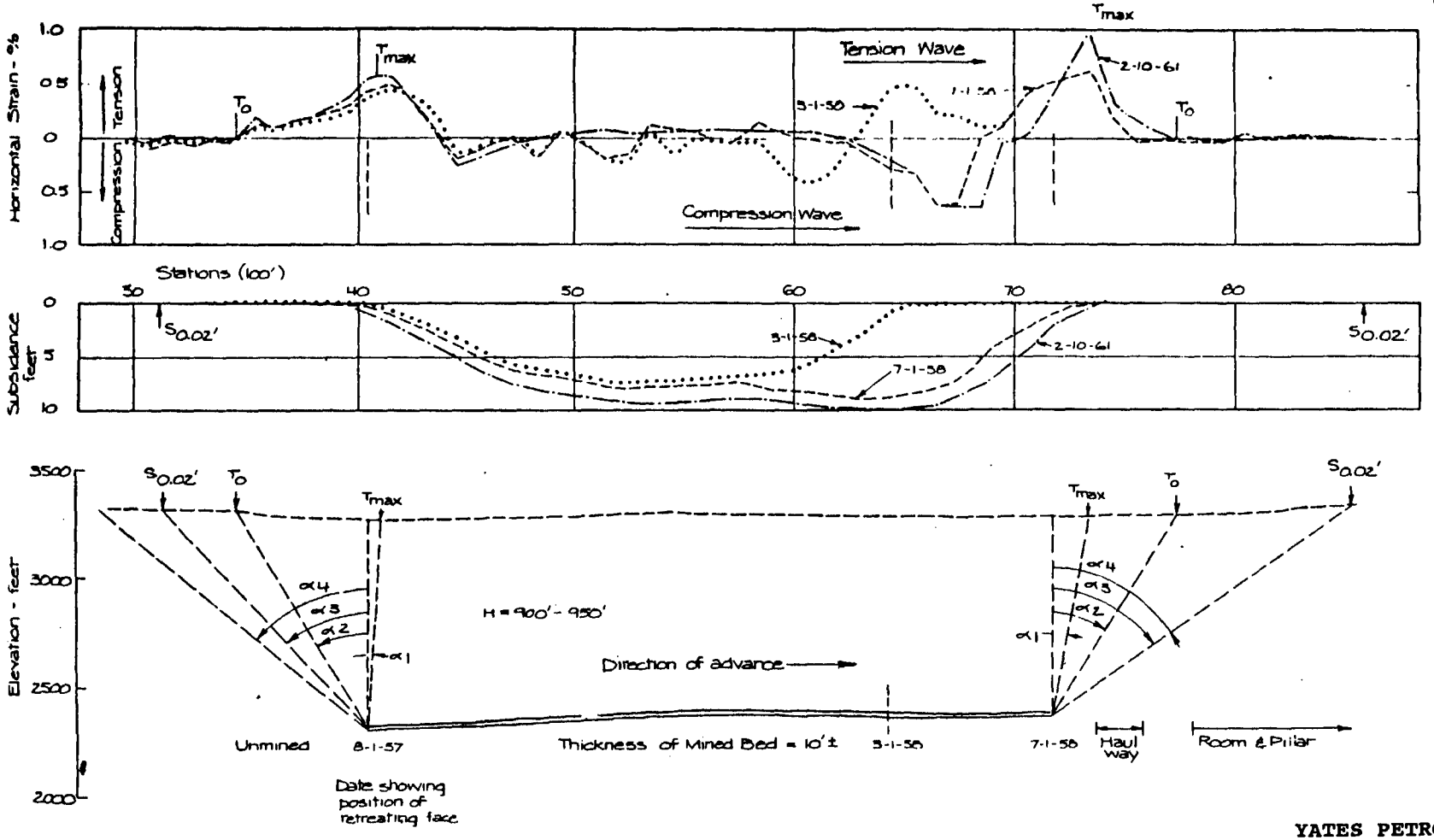
Project No. 73-122 Reviewed ____ Date 4-7-92

Golder Associates

Figure 4

PROFILE OF SUBSIDENCE AND HORIZONTAL STRAIN

(after Deere, 1961)



	$\alpha 1$	$\alpha 2$	$\alpha 3$	$\alpha 4$	H x tan$\alpha 3$
Left side - Unmined Area	-3°	31°	42°	>49°	910'
Right side - Room & Pillar Area	10°	32°	55°	56°	1350'
Basis of Angle	T_{max}	T_o	$S_{0.02'}$	Limit	

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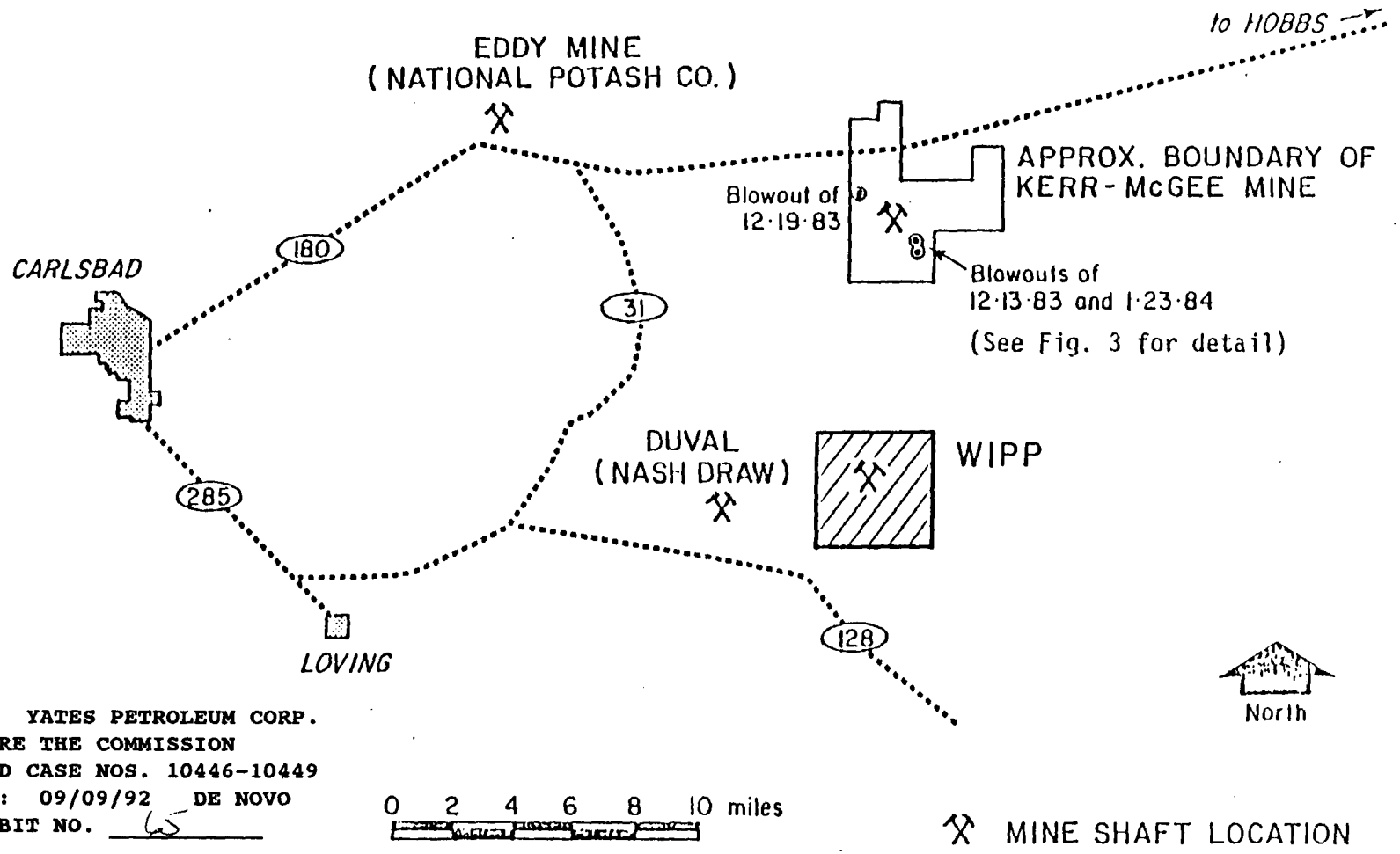

Figure 2. Location of the WIPP site and potash mines where gas blowouts have been documented.

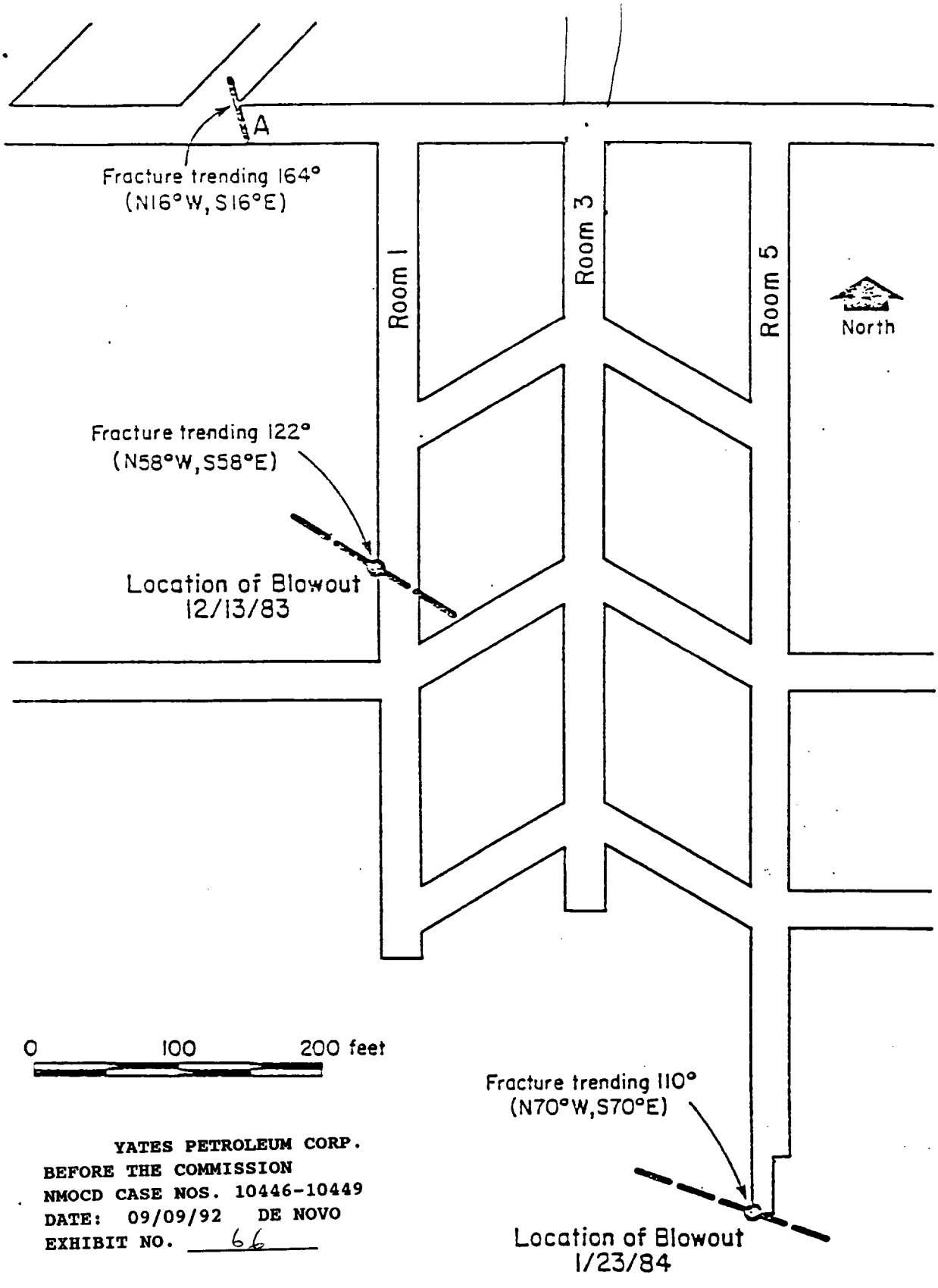

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Figure 3. Detailed layout of Area 169 at the Kerr-McGee mine where the gas blowouts of 12-13-1983 and 1-23-1984 occurred. The orientation of fractures is shown. The fracture at A resulted from a previous blowout. (See Fig. 2 for location within the mine)

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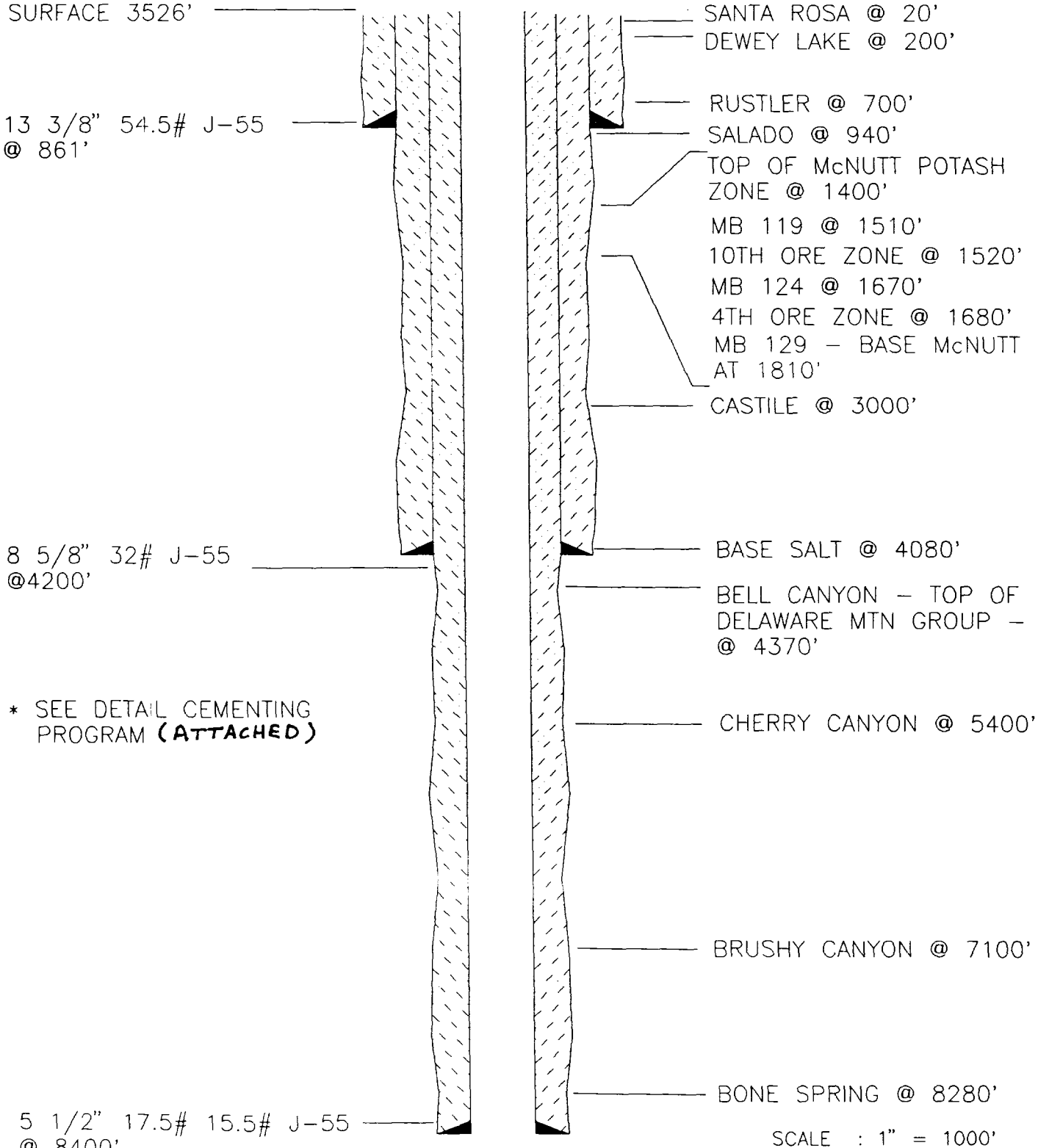
CASING PROGRAM AND GEOLOGIC FORMATIONS
YATES FLORA "AKF" NO. 1

UNIT N - SEC. 2 - T22S - R31E
EDDY COUNTY, NEW MEXICO



SCALE : 1" = 1000'
DRAFT/92028W

TYPICAL CEMENTING PROGRAM FOR WELLS IN SECTION 2-T21S-R31E

SURFACE CASING CEMENTING PROGRAM

Ran 20 joints 13-3/8" 54.50# J-55 (866.50') casing, set 861'. Texas Pattern Notched guide shoe set 861'. Insert float set 818'. Cemented with 600 sacks "HLC" + 2% CaC12 + 1/2#/sx Flocele (yield 1.89, weight 12.9). Tailed in with 200 sacks "C" + 2% CaC12 (yield 1.32, weight 14.8). Bumped plug to 400 psi, float held OK. Circulated 190 sacks to pit.

INTERMEDIATE CASING CEMENTING PROGRAM

Ran 96 joints 8-5/8" 32# HC-80 & J-55 (4205.75') casing, set 4200'. Float shoe set 4200'. Float collar set 4157'. Cemented with 1600 sacks Pacesetter Lite "C" + 10#/sx Salt + 5#/sx Gilsonite + 1/4#/sx Celloseal (yield 1.94, weight 12. 9). Tailed in with 200 sacks "C" + 2% CaC12 (yield 1.32, weight 14.8). Bumped plug to 1750 psi, released pressure and float held OK. Circulated 275 sacks.

PRODUCTION CASING CEMENTING PROGRAM

DETAILED CASING REPORT: Ran 202 joints 5-1/2" casing as follows:

38 joints 17# J-55		1592.37'
145 joints 15.5# J-55		6063.78'
19 joints 17# J-55		795.20'
	TOTAL	8451.55'

Casing set 8450'. Float shoe set 8450'. Float collar set 8408.42'. DV tools at 4485' and 7401'. Short joint 6794'. Cemented in 3 stages as follows: Stage I - 225 sacks "H" + 8#/sx CSE + .6% CF-14 + 5#/sx Gilsonite + .35% Thriftylite (yield 1.75, weight 13.6). Bumped plug to 1000 psi, OK. Circulated 67 sacks. Opened DV tool and circulated 3 hours. Stage II - 700 sacks "H" + 8#/sx CSE + .5% CF-14 + 5#/sx Cilsonite +.35 % Thriftylite (yield 1.82, weight 13.4). Bumped plug to 2950 psi, OK. Circulated 139 sacks. Opened DV tool and circulated 3 hours. Stage III - 425 sacks Super "C" (yield 2.25, weight 11.5). Tailed in with 200 sacks "C" Neat (yield 1.32, weight 14.8). Bumped plug to 3000 psi, float and casing held OK. Circulated 87 sacks.

	STRAIGHT		DIRECTIONAL
HORIZONTAL DISP	0		2660
TRUE VERTICAL DEPTH (TVD)	8500		8500
DRY HOLE COST	450K		700K
COMPLETED COST	600K	300K	900K
PRODUCTIVE LIFE	14 YRS		12 YRS
DAILY PROD @ ECON LIMIT	2 BPD		13 BPD
BBL OIL WASTED			5000 BBL
VALUE OF OIL LOST			$100,000
OPERATING COST/DAY	50		200
OPERATING COST 14 YRS	255K	621K	876K
PRESENT WORTH OF LOSS		310K	
VALUE OF ST HOLE	850K		
INCREMENTAL COST			
OF DIR HOLE @ PW	610K		
PW VALUE OF DIR HOLE	240K		

PW = PRESENT VALUE 10%

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