

EXPLANATION

STRUCTURE CONTOUR SYMBOLS

- CONTROL FROM OIL WELL DATA
- - - CONTROL BY SURFACE MAPPING AND ADJUSTED INTERVAL BETWEEN TOP OF COLORADO SHALE AND MADISON LIMESTONE
- - - CONTROL INADEQUATE, POSITION OF CONTOUR INFERRED
- - - DEPRESSION CONTOUR

THE INTERVAL FROM CONTOURED HORIZON TO TOP OF COLORADO SHALE VARIES FROM 2,320 TO 2,360 FEET, INCREASING NORTHWESTWARD

WELL SYMBOLS

- OIL WELL
- OIL WELL (SUNBURST SAND PRODUCTION)
- ⊙ OIL WELL, SHOW OF GAS
- ⊛ OIL WELL, SHUT IN
- ⊜ OIL WELL, ABANDONED
- ⊝ OIL WELL, SHOW OF GAS, ABANDONED
- ⊞ SHOW OF OIL AND GAS, ABANDONED
- ⊟ SHOW OF OIL, ABANDONED
- ⊠ GAS WELL, SHOW OF OIL
- ⊡ GAS WELL
- ⊢ GAS WELL, SHUT IN
- ⊣ GAS WELL, SHOW OF OIL, ABANDONED
- ⊤ GAS WELL, ABANDONED
- ⊥ SHOW OF GAS, ABANDONED
- ⊦ DRY HOLE, ABANDONED

MISCELLANEOUS SYMBOLS

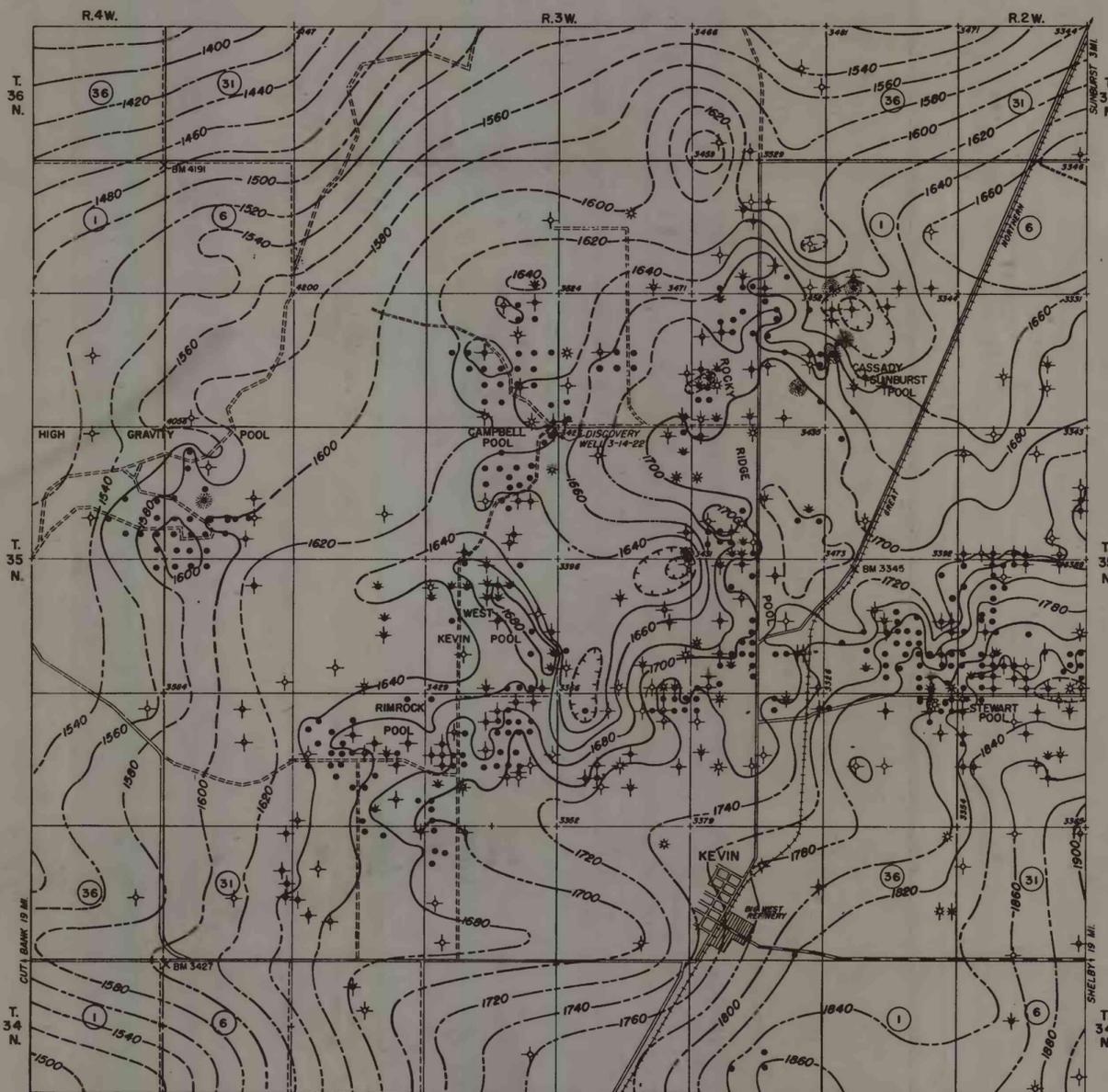
- BITUMINOUS SURFACED ROAD
- - - GRADED GRAVEL ROAD
- - - UNSURFACED ROAD
- ⊙ FOUND CORNER (6) SECTION NUMBER
- ⊙ SECTION CORNER WITH ELEVATION
- BM X3345 BENCH MARK

NOTE ON PRODUCTION

POOL	PRODUCING HORIZON	OPENING DATE	OIL PRODUCTION TO JAN. 1, 1946 (bbls)	OIL WELLS PRODUCING	OIL WELLS ABANDONED	NON-PRODUCTIVE TESTS
HIGH GRAVITY	MADISON	2-15-1941	308,967	30	0	8
CAMPBELL	BASAL ELLIS MADISON	3-14-1922	507,975	42	6	13
STEWART	BASAL ELLIS MADISON	11-26-1922	1,515,168	76	29	18
ROCKY RIDGE	MADISON	8-8-1925	1,215,493	63	19	35
WEST KEVIN	BASAL ELLIS MADISON	5-1-1924	264,090	23	7	8
RIMROCK	MADISON	6-3-1928	1,010,365	47	15	17
CASSADY-SUNBURST	SUNBURST MADISON	11-24-1922	812,070	43	6	12
TOTAL			3,534,146	324	84	111

1/ MONTANA STATE OIL CONSERVATION BOARD
 2/ DOES NOT INCLUDE GAS WELLS
 3/ DISCOVERY DATE FOR KEVIN-SUNBURST OIL FIELD. INTENSE COMMERCIAL DEVELOPMENT OF CAMPBELL POOL BEGAN 10-21-1924

THIS TABLE PRESENTS WELL DATA ONLY WITHIN POOL BOUNDARIES, OUTLYING WELLS NOT BEING INCLUDED. 803 TESTS HAVE BEEN DRILLED WITHIN THE MAP AREA YIELDING 417 OIL WELLS, 27 GAS WELLS, AND 181 NON-PRODUCTIVE TESTS. AFTER ACID, INITIAL WELL PRODUCTION HAS VARIED FROM 3 TO 1100 BARRELS PER DAY. DECLINE IS USUALLY RAPID AND WELLS SOON MAKE WATER IN VOLUMES EXCEEDING OIL PRODUCED. AVERAGE DAILY PRODUCTION IS ABOUT 5 TO 10 BARRELS. GRAVITY OF MADISON OIL VARIES FROM 28° TO 33° A.P.I., EXCEPT IN HIGH GRAVITY AND RIMROCK POOLS WHERE IT AVERAGES 37° AND 36° RESPECTIVELY. GRAVITY OF SUNBURST OIL IS ABOUT 36.6°
 GAS IS PRODUCED CHIEFLY FOR LEASE USE FROM THE SUNBURST SAND, WITH LESSER AMOUNTS FROM SANDS IN THE BLACKLEAF SANDY MEMBER IN THE COLORADO GROUP, AND FROM 1 WELL IN THE MADISON LIMESTONE.



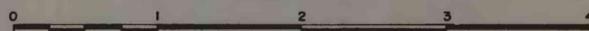
BASE COMPILED FROM G.L.O. TOWNSHIP PLATS AND AUTHORS' FIELD SHEETS.

GEOLOG' BY C.E. ERDMANN 1943; J.T. GIST 1944; J.W. NORDQUIST AND G.W. BEER 1946

UNITED STATES DEPARTMENT OF THE INTERIOR GEOLOGICAL SURVEY

MAP SHOWING CONTOURS ON ERODED SURFACE OF MADISON LIMESTONE AND WELLS REACHING THE MADISON T. 35 N., R. 3 W., TOOLE COUNTY, MONTANA

SCALE OF MILES



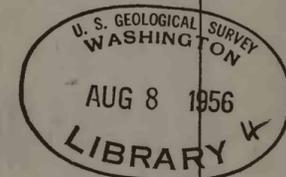
CONTOUR INTERVAL 20 FEET. DATUM MEAN SEA LEVEL

JANUARY 1947

STANDARD WELL LOG FOR T.35N, R.3W.

SYSTEM	SERIES	GROUP	FORMATION	THICKNESS (FT.)	GRAPHIC LOG	DESCRIPTION AND REMARKS
C O L O R A D O	(Undifferentiated)	MONTANA GR.	EAGLE SS.	158-168 (113-140)	[Graphic Log]	TWO MEDICINE FM.
						VIRGELLE SANDSTONE MEMBER
						TRANSITION ZONE
						See Composites Section of Exposed Rocks on Sheet A
						Lettered beds are markers for structural mapping
						A
						B
						C
						D
						E
C O L O R A D O	(Undifferentiated)	MONTANA GR.	NIOBARRA FM.	650	[Graphic Log]	Shale, dark gray, silty, often finely micaceous; contains numerous limestone concretion beds and thin layers of bentonite
						Sandstone, calcareous, fine-grained, laminated with dark-gray sandy shale
						Sandstone, dark-gray, fine-grained with gray and black chert pebbles
						Shale, gray-green with bentonite
						Sandstone
						Shale, dark gray
						Sandstone, light-gray, medium-grained
						Shale, dark-gray, sandy
						Sandstone, gray, medium-grained, non-calcareous; yields water in north part of township
						Sandstone, medium-gray, fine-grained, with white clay matrix; contains gas locally
C O L O R A D O	(Undifferentiated)	MONTANA GR.	KOOTENAI FM.	392	[Graphic Log]	Sandstone, light-gray, calcareous
						Sandstone, light-gray, fine-grained
						Mudstone, gray-green, red and maroon
						Sandstone, calcareous with black chert
						Sandstone, light-gray, fine-grained, non-calcareous with white clay matrix
						Sunburst sand (Oil locally)
						Mudstone, yellow and gray
						Sandstone, gray-drab, fine-grained with thin laminae of dark micaceous shale
						Shale, non-fossiliferous, gray to dark gray, calcareous toward base
						Sandstone, gray, calcareous
DISCONFORMITY						
MISSISSIPPIAN	MADISON LS.	ELLIS FM.	215	[Graphic Log]	Limestone, white to cream-colored, dense, crystalline, cherty. Eroded surface is porous and dolomitic locally	
					1100±	

GRAPHIC LOG IS A COMPOSITE OF SAMPLE LOGS OF PACIFIC WESTERN OIL CORP. - CATLETT WELL NO. 1, SW SE SE SEC. 4, T. 35 N., R. 3 W., AND REGINA DE PARMENT HALBERSTADT - GOV'T. NO. 2, NW SW SW SEC. 22, T. 35 N., R. 3 W.



Montana (Toole County, T35N R3W). Geol. 1:63,360. 1947. sheet 2 copy 1