Name and Number of Shaft or Bore given by Geological Survey: (1) KIRKLEATHAM No. 1 BORE NZ 5879 2128

County 54 Quarter Sheet NZ 52/6

SURFACE LEVEL 76 O.D. (Rotary Table 81' from which depth is calculated)

Geological Classification	Description	Thickness		Depth	
	Communicated during operations by Resident Geologist D'Arcy Exploration Co., Ltd. Date of sinking June 26th, 1945. Borer: D'Arcy Exploration Co., Ltd. One-inch Map 34. Six-inch Map (County and Half Quarter Sheet) Yorks, 7 S.W. Log from Mr. S. Elder, Geologist, D'Arcy Exploration Co., and then from Mr. J. G. Child, Geologist, D'Arcy Exploration Co.				
	Drift	47	-	47	-
	Lower Lias	374	-	421	-
	Rhaetic	52	-	473	-
	Keuper Marl	675	-	1148	-
	? Bunter Sandstone) Total for Sst. & Marls	830	-	1978	-
	Red Marl) is 1039	209	-	2187	-
	Upper Anhydrite	11	-	2198	-
	Red Marl and Salt (Top 10' without salt)	33	-	2231	-
	Salt	131	-	2362	-
	Anhydrite	42	-	2404	-
	Dolomite (anhydritic at top)	75	-	2479	-
	Blue-grey fine compact anhydrite interbedded (in parts laminated) with dolomitic blue-grey shale. A few fossils casts in shale. (very doubtful of this. A.F.)	4	-	2483	-
	Anhydrite; fawn and marly dark blue anhydrite with thin blue-grey shale beds; blue-grey shale with salt crystals and thin veins of salt	4	6	2487	6
	Anhydrite and salt intermixed		6	2488	-
	Salt with anhydrite with a little red & brown marl	30	-	2518	-
	Anhydrite, dolomitic and with dolomitic shale partings	26	-	2544	-
	Grey and fine-grained light fawn to grey (white) massive dolomite porous ("white dolomite")	6	-	2550	-
	Dolomite, light fawn to dark-brown slightly porous	83	-	2633	-
	Dolomite, oolitic fawn with more compact dolomite	20	-	2653	-
	Darker grey fawn dolomite	12	-	2665	-
	Dolomite & blue anhydrite in varying proportions	137	-	2802	-
	Dolomite with blue anhydrite nodules: dolomite is brown to grey-brown or brown-grey banded in places and limestones much fissured, fissures are generally filled with anhydrite	18	-	2820	-
	Dolomite and anhydrite, dolomite from fairly dark grey-brown to light grey brown.	145	-	2965	-
	Dark brownish-grey calcareous dolomite and anhydrite (varying between 25% and 80% anhydrite)	50	-	3015	-
	Brown very calcareous dolomite, anhydrite decreases from 5% to nil	16	-	3031	-

(71432) W.2.20870/0370 10,000 9/39 A.& E.W.Ltd. Gp.685

Name and Number of Shaft or Bore given by Geological Survey:

V KIRKLEATHAM No. 1 BORE

County NZ 52/47

Quarter Sheet 34/8

Geological Classification	Description	Thickness		Depth	
				3031	-
	Brown sugary (porous) dolomite with thin bands of more compact dolomite: 3031-41 dolomite is very fossiliferous, bryozoa and forams (?) lamellibranchs below 3041 less visibly fossiliferous.	46	-	3077	-
	Dolomite less porous not visibly fossiliferous, limestone becomes darker downwards until at 3097 it is dark brown.	32	-	3109	-
	Dolomitic limestone with trace of dark-grey	2	-	3111	
	Limestone, dark brown grey to grey brown still very calcareous, more compact than overlying beds	2	-	3113	-
	Limestone dark-grey calcareous with rare thin bands of black shale (non-calcareous but bituminous)	8	-	3121	-
	CORE No. 45 (3121-3133) 35% Recovery.				
	Dark brown limestone strongly calcareous with small nodules of anhydrite (one fairly large nodule about 1½" long). A number of thin cracks occur and these run almost vertically. Although the rock appears to be dense, finely grained and compact there is a very strong smell of sweet oil on fracture and it contains a little free oil. Rare thin veins of calcite occur.	1	6	3122½	
(MARL SLATE)	Black bituminous shale, which is strongly bituminous giving good quantity of oil condensate on heating in a test-tube. There is a strong smell of oil on fracture but in this case it is foetid	1	6	3124	-
	Finely laminated hard marlstone		4	3124	4
	Grey sandstone, coarse, somewhat calcareous		8	3125	-
	Conglomerate, the pebbles are composed of limestone mainly with varying colour light green, grey, dark-grey to almost black. They are up to 1½" long, are rounded and sub-angular, generally with oval shape. There are also some pellets of chert and sandstone		4	3125	4
				3133	-
	CORE No.46 (3133-3138) 95% Recovery				
	The whole core is composed of conglomerate. The pebbles are generally small, most of the order of ½" x ¼" but there are rare ones up to 2"-3" in length. They are rounded and sub-angular; most of them are limy but there are several chert and sandstone. The matrix is composed of a light grey sandy material. The colour of the pebbles varies but generally greyish; some are brown to reddish brown. There are no visible fossils in any of the				

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NZ 6214
34/87

County 54

6" Quarter Sheet

Name and Number of Shaft or Bore given by Geological Survey:

3 KIRKLEATHEM No. 1 BORE.

GEOLOGICAL CLASSIFICATION	DESCRIPTION	THICKNESS	DEPTH
			3133 -
	limestone pebbles examined but some of the chert pebbles contain sponge spicules and possibly radiolaria	5 -	3138 -
	CORE No. 47 (3138-3145) 100% Recovery.		
	Conglomerate	7 -	3145 -
	DRILLED 3145-3173. CORENo. 48 (3173-3193) 100% Recovery.		
	Conglomerate	9 -	3154 -
	Black mica. shale	26 -	3180 -
	Calcareous sandstone with numerous black partings of shale	10 -	3190 -
3180-82	Hard dark grey calcareous sandstone, fine-grained with partings of black micaceous shale and shaly sandstones. There are several visible small fossils but most appear to be of a detrital character; some small crinoid stems.		
3182-89½	Calcareous sandstone with numerous partings of black and dark grey micaceous shale. The sandstone itself is also micaceous. Rare thin calcite veins occur. The lowest 2ft are more shaly and pyrites is more abundant. There are some detrital fossils in the lower half.		
3189-3193	(6" already included in 10ft to 3190) Greyish white medium-grained sandstone with numerous very thin partings of micaceous shale, these decreasing downwards towards bottom. The bedding is generally regular, slightly false-bedded in places.	3 -	3193 -
	The general dip in the core gradually increases from about 8° at the top to 18°-20° approximately at the bottom.		
	Dirty white quartzitic sandstone		3255 -
	Black micaceous shale with stringers of micaceous sandstone		3327 -
	Dark grey micaceous sandstone		3348 -
	Dark grey shales, crinoids, a few brachiopods and a goniatite		3365 -
	Dark grey shales fine-grained dip about 7°		3377 -
	Cored 3365-3377 (Recovery 9½ft - a couple of crinoid ossicles in bottom 6ft.: Very scarce fragments of shells ca 3371 otherwise a barren lot.		
	Black shales and sandstone partings		3427 -
	Limy sandstone (not a true limestone)		3435 -
	Black shale and sandstone partings		3452 -
	Sandstone and shale partings		3472 -
	Cored 3464-3472. 85% Recovery quartzitic sandstone and Shale partings.		
	Black shale some grey-white quartzitic sandstone		3482 -
	Grey brown limestone, some black shale		3484 -
	Grey brown limestone, some black shale and dark grey sandstone (Limestone has thin calcite veins and is notably pyritic		3486 -
	Dark grey sandstone and shale, some limestone		3488 -
	Dark grey shale, some limestone, little sandstone		3490 -

(T1182) Wt.30870/0870 10,000 9/59 A.& E.W.Ltd. Gp.685

NZ 52 NW 34/87

Name and Number of Shaft or Bore given by Geological Survey :

County

Quarter Sheet

KIRKLEATHEM No. 1 BORE

GEOLOGICAL CLASSIFICATION	DESCRIPTION	THICKNESS	DEPTH
			3490 -
	Black shale, trace limestone and sandstone		3524 -
Cored 3506-3521. 94% Recovery all black or dark grey shale.			
	Black shale, little sandstone		3525 -
	Black shale, trace sandstone		3529 -
	Grey brown limestone, some black shale		3531 -
	Grey brown limestone, trace black shale		3535 -
	Black shale, some grey brown limestone		3537 -
	Grey brown limestone, trace black shale		3543 -
	Grey brown limestone, some black shale		3545 -
	Black shale, little limestone		3547 -
	Light grey quartzitic sandstone, some limestone and black shale		3555 -
	Light grey quartzitic sandstone, some limestone (? cavings) little black shale		3557 -
	Light quartzitic sandstone - little black shale and limestone		3559 -
	Light quartzitic sandstone and limestone, some black shale		3561 -
	Black shale and limestone, some sandstone		3567 -
	Light grey quartzitic sandstone, some limestone and black shale		3569 -
	Light grey quartzitic sandstone, some limestone and black shale		3571 -
	Limestone and black shale, some sandstone		3573 -
	Black shale, some sandstone, little limestone		3577 -
	Black shale, trace sandstone and limestone		3609 -
	Black shale, some dark grey limestone		3611 -
	Dark grey limestone, little black shale		3613 -
	Light brown limestone, trace black shale		3615 -
	Light brown limestone, little black shale		3618½ -
Core No. 53 3615-3618½ (85% Recovery)			
	The core consists entirely of limestone. The top half (approx) is light grey and contains a few chert nodules, one being greater than width of core (i.e. over 2 inches). Calcite veining common.		

NZ 52/47

Entered on Listing Sheet 95. **34/87**

"RE-ISSUE with CORRECTIONS"

D'ARCY EXPLORATION Cº Lᵀᴰ

TEST AREA KIRKLEATHAM WELL Nº 1

A/26 LICENCE

POSITION OF WELL: LONG. LAT.

COUNTY: YORKSHIRE 7 SW.

1" N.S. gd. 34

ELEVATION: DERRICK FLOOR: ROTARY TABLE: 76'

RIG: IDEAL 90 DERRICK: 87' JACK KNIFE POWER: ELECTRIC

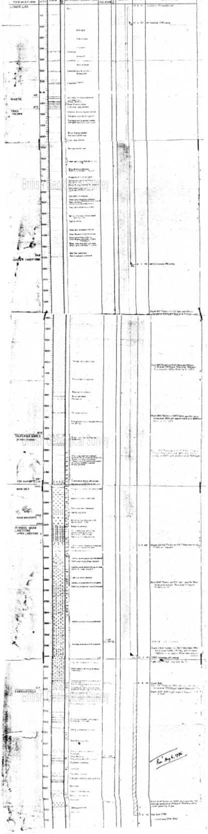
HISTORY:— Commenced Drilling 26. 6. 45. Completed Drilling 22. 9. 45. Total depth: 3176'

Site on 6" Yorks. 7 S.W./E. 2. 8. 66.

- LEGEND -

SHALE, CLAY, MARL OR MUDSTONE	FIRECLAY
SANDY SHALE ETC.	IRONSTONE
INTER-BEDDED SHALE ETC. & SANDSTONE	CHERT OR FLINT
CONGLOMERATE BRECCIA	ANHYDRITE, GYPSUM OR SALT
PEBBLY SANDSTONE	LIMESTONE
SANDSTONE	DOLOMITIC LIMESTONE OR DOLOMITE ROCK
COAL	IGNEOUS ROCK

GEOLOGICAL FORMATION	DEPTH IN FEET	LOG	DETAILS OF FORMATION	OIL, GAS, WATER, COAL SEAMS	CASING	DATE	REMARKS



Rec'd Aug 6, 1946