

DEPTH	±MM	FRX	PP	ASSAY	GAL	REC.	LITH.	DESCRIPTION	DATUM = <u>GROUND</u>
				10 20 30 40	TON	GRGD			
								DRILLING CONTRACTOR:	
								LAYNE WESTERN, DENVER, CO	
								RIG:	
								FEEDING: 2500, 12 3/4 CUBIC	
								6 3/4" CHRISTIANSEN "MC-2" PUMP OUT	
								DRILLERS:	
								JOHN SEIFERTS - TOOL DRIVER	
								JACK TARRIS - NOON & MIDNIGHT	
								JIM KAVA - MUDLOG - MUD	
								MATERIAL:	
								12 1/2" 4137	
								SERVICE COMPANY:	
								WESTERN AIR, GRAND JUNCTION	
								FRANK MACKENDRICK - OPERATOR	
								RAY HANCOCK - AIR HAND	
								+++ Tuff. Sg.	
								*** Nephelite	
								-- Bitumen Flakes	
								High Grade Oil Sh.	
								Hematite, pyrite, marcasite, fers, lenses, or flakes	
								Gilsonite Flakes	
582	+213		32					OIL SHALE, med-dk brn; v.f. laminated, mic. to v. fine, low grade, w. ecc. Gilsonite. Only silty, calc.	
583									
584									
585	+210		.50					Tuff Sg. layers - irreg. up & low contacts, poorly sorted w. much clay, pebbles.	
586			.30						
587			.25						
588			.72						
589									
590	+205	Vert. 2 1/2" x 3 1/2"							
591			.40						
592			.00						
593									
594			.00						
595	+200		.60						
596									
597									
598			.60						

584.4  
 (Lost assigned to top where rounded piece of iron, containing)  
 30.08 CUT / 29.46 REC  
 6.00 PM, 24 OCT 74  
 REC  
 584.4  
 584.4

COMMENTS:

HOLE NO: P-3 (CORE) SHEET 2 OF        DATE: 24 Oct 74 LOGGED BY: E. CHANAHAN COLLAR:        TD:       

DEPTH	±MM	FRX	PP	ASSAY 10 20 30 40	GAL/TON	REC. GRD	LITH.	DESCRIPTION
600	+195							
601			.30					
602	<del>4200</del>		.80					
603								
604			.60					
605	+190		.70					Oil shale as above with some silty layers
606			.60					
607								
608								
609			.00					
610	+185		.60					
611								
612	<del>4200</del>		.50					distinct ht. band
613			.30					
614			.40					
615	+180		.20					distinct ht. band
616			.60					
617			.30					very thin
618			.40					
619			.30					
620	+175		.30					partly sorted zone
621			.10					
622	<del>4200</del>		.20					Oil shale - med grade, silty. with thin zones of higher grade material - scattered, very thin ss layers, finely laminated
623			.20					
624			.40					
625	+170		.70					
626			.80					Oil shale - med grade - w. thin - finely laminated - very thin ss. as above
627	<del>4200</del>							
628								
629			.40					
630	+165							
631								
632	<del>4200</del>							
633								
634			.90					
635	+160							
636			.20					
637	<del>4200</del>							
638								
639								
640	+155							
641								
642	<del>4200</del>							
643			.00					
644								
645	+150							
646			.20					
647								
648			.40					

28.79' Run - 29.90' Recor.  
Filled barrel at 5.95 AM - 2 hr and 41/2

N.B.

STATIONS 630 TO ALL DEPTHS LOGGED BETWEEN 630 & 650' (FEW INITIALLY MIS-MARKED ONE) PER BILL AND ACC.

NOTE ALSO - ALL FEATURES HAVE BEEN RECORDED ON THE LOGS BELOW THE ONE THAT NORMALLY BE LOGGED (i.e. PP @ 613.90 on line A FOR INTERVAL 571.4 - 651)

Oil shale as above but increased kerogen content in very localized zones - several thin to very thin ss layers

localized increase in kerogen content

COMMENTS:

HOLE NO: P-3 (CRG) SHEET 3 OF DATE: 10/25/74 LOGGED BY: E.C. GENTZLER COLLAR: TD:

DEPTH	±MM	FRX	PP	ASSAY 10 20 30 40	GAL/ TON	REC. ERGD	LITH.	DESCRIPTION
650	+145							OIL SHALE - med grade with thin ss
651							++++	blabs & stringers - many fine flecks of bit. material
652	4480							
653								
654								
655	+140							
656								THIN layers & lenses of r.f. and Hematite & py. H.
657							HH	occurs as filling thin ss P 658.43 - 49
658							++++	Tuff ss, irreg lenses, petrelite & anthrac. py & f
659			.08					(pp 658 occurs in thin ss 657 almost in
660	+135							tingularly Marlstoner)
661								
662	4480							zone of thin hematite layers & irreg
663							++++	interbedded layers. Also thin Elec
664								of Bitumen & Gilsonite)
665	+130							
666								
667								Tuff ss (667.12-72) & (668.85-669.2) 14.14
668							++++	compact, much clay, & petrelite. Sh. dist.
669							HH	bedding show on.
670	+125		.10					
671								
672	+120							
673								
674								
675	+120						++++	Tuff ss (675.02-676.12) 8 - Saturated w. dead
676								
677							++++	Tuff ss. lenses (677.30-40) & (678.70-75)
678								& irreg, much clay, & petrelite
679								
680	+115		.75					Med to high Oil Grade zone
681								
682	4480	Healed vert. (?)						
683								
684								
685	+110		.74					(Med to high Oil Grade zone)
686								
687								
688								
689			.75					
690	+105							Tuff ss (689.42-.60), V. irreg. constant,
691								Saturated w. dead oil!
692	4480	Healed vert.						do. ss (691.24-.75) & (692.80-692.42)
693								14 S.M. Sh. interbeds
694								
695	+100	Healed vert. 1						
696								
697								
698			.15					Tuff ss (698.02-.15), as above w. some sh.

LOGGED AT NIGHT

COMMENTS:



E. EGGENTZLOP

DEPTH	±MM	FRX	PP	ASSAY 10 20 30 40	GAL/ TON	REC. GARD	LITH.	DESCRIPTION
750	+45							OIL SHALE, DR BRN
751								OIL SHALE, MED BRN with scattered thin
752								<del>bands of</del> finely laminated dk, brn
753			.80					bands
754								
755	+40		.60					
756			.50					
757								
758								tuft-intermittent <del>thin</del> inclusions
759			.40					& thin stringers
760	+35		.50					H. Grade oil shale in concentrated thin bed
761								OIL SHALE, MED BR, silty
762			.10					
763			.90					
764			.50					5' <del>inter</del> buff to light gray (zone) - 2'
765	+30		.10					with a few thin, light brn
766			.40					interbedded shale zones - 1'
767			.50					finely laminated with slightly cont ch. l beds
768			.20					at 765.5 & 767.5
769			.50					OIL SHALE, finely laminated, med
770	+25		.20					brn to gray - decreasing kerogen content
771			.10					Siltstone, light gray
772			.48					
773			.28					
774								
775	+20							
776								OIL SHALE, dark br - blk, fine lam, sl. siltstone
777			.58					bedding
778			.12					(Hard, dense, & dolomitic)
779			.29					
780	+15		.05					OIL SHALE, brn, hard, thinly bedded
781			.60					Tuff ss, contorted bedding & containing dead
782			.12					& much clay.
783		Vert. fract.	.43					
784			.64					along local crest surface
785	+10							
786								
787								
788								
789								
790	+5							
791								
792								
793								
794								
795	0	Vert. fract.	.36					( <del>bed</del> grades into calc. Marlstone w/ hematite - thin)
796								Tuff ss Bx (795.60-796.05) much clay, some
797								MAHOGANY MARKER
798			.15					

REMARKS:

DEPTH	±MM	FRX	PP	ASSAY	GAL/TON	REC. ERGD	LITH.	DESCRIPTION
				10 20 30 40				
800	-5		.42					
801			.04					
802								
803			.34					
804			.14					
805	-10		.33					
806								High grade sil. ss (807.32-.42)
807			.32					
808								do (808.16-.88) w/ <del>interbedded sil. ss &amp; siltstone</del>
809								(distinctive bedding)
810	-15							
811								
812			.9					High grade dk banded zone. Fin. to med. gr. sil. ss - 812.4-813.05 - coarser bed top?
813								
814								
815	-20							
816								
817								
818								
819								Millenium Bed (?)
820	-25		.43					Extremely high grade zone (sil. ss - 820.5-821.0) - coarse loss
821								
822								
823								
824								
825	-30							
826								
827								
828								
829								
830	-35							Siltstone, buff with thin dk. sil. ss bands
831								Siltstone, buff to tan (to 832)
832								
833								
834								
835	-40							
836			~ 70					
836								
838								
839								
840	-45		.35					Siltstone - silty shale, 11 in. to 1 ft. with few narrow bands of darker colored shale to 852
841			.00					
842			.10					
843								
844								
845	-50							
846			.30					
847			.40					
848								

COMMENTS: 811.6 to 812.9 may be Millenium Bed? No Rec  
 ERC  
 29.66 Recd, started cutting 12/24/74  
 29.85 cut, 10/24/74

[illegible]

HOLE NO: P-3 (COGS) SHEET 8 OF      DATE: 27 OCT 74 LOGGED BY: ECG GENTZLEIR COLLAR:      TD:     

DEPTH	±MM	FRX	PP	ASSAY				GAL/TON	REC. GRGD	LITH.	DESCRIPTION
				10	20	30	40				
900	-105		.37								
901											(Breccia (1 to 100 ft))
902			.87								Mar. s.s.
903											
904											
905	-110										
906			.00								
907			.65								
908											
909			.25								
910	-115										
911											
912											
913											
914			.16 .63								
915	-120										
916											
917											
918			.45								
919											
920	-125										
921			.02								
922			.80								
923											
924			.40								
925	-130										
926			.30								
927			(dbl) .02								
928											
929											
930	-135		.90								
931											
932			.00								
933											
934											
935	-140		.30								
936			.30 .45 .50 .75								
937											
938											
939											
940	-145		.30								
941			.35								
942											
943			.10								
944			~ .25								
945	-150										
946			.80								
947			.70								
948											

5500 PM, 27 OCT 74  
 29.18 CUT / 29.37 REC  
 ECG  
 29.64 RECD  
 29.77 CUT

(Breccia (1 to 100 ft))  
 Mar. s.s.  
 (10.18 from cut run)  
 MUDSTONE  
 SILTSTONE  
 looking thicker & silty (dissected)  
 SILTSTONE, fine-gray, finely laminated buff ss  
 laminated buff ss  
 very dk silty looking silt-stone  
 SILTSTONE, A.A.  
 laminated buff ss  
 SILTSTONE A.A.  
 buff ss 924.35 - 924.42 = 912

COMMENTS:



HOLE NO: P-3 SHEET 9 OF DATE: 10/26/74 LOGGED BY: EKV COLLAR: TD:

DEPTH	±MM	FRX	PP	ASSAY 10 20 30 40	CAL TON	REC. GRD	LITH.	DESCRIPTION
950			10.30 9.0			950.19		950-955 Variegated shale, lt. & dk. H. bands - minor bed distortion at 952-945
951			.30					
952			.20 .50					
953			20.70 .85					
954			25.30 35.53.80					
955			(.00) (.95)					7 pps. & 2.1' core loss between 955.0 & 955.95
956			(.15) (.77)					4 pps. between 956.15 & 956.77
957			.30					956-964.0 banded gray clay stone
958			.90					beds that slumping or diff compaction
959			.10 .60					+++ - 2 thin zones of talffos
960			.00 .20					
961			.75					
962			.50					
963			.25 .75					
964		15°	.70					beds that slumping or diff compaction
965			.25					964-975 banded gray clay stone
966			.40 .55					
967			.55					
968			10.25 32.55					
969			.25					
970			10.70					
971			.85					
972			.90					+++ for impregnated zone (bleeding) 972.39 - 972.40
973			50.90					
974			40.90					
975								disturbed beds - slumping
976			10.50 .80					
977			20.25 .80					
978			20.50 .90					976-980 gray siltstone
979			20.45 .55					
980			30.40					gray siltstone, very fine, grades to clay stone - many fine thin light & dark bands - moderately uneven bedding planes are common - diff compaction
981			.80					
982			10.30 30.45.75					
983			25.13.90					
984			.20.70					
985			20.30 40.90					
986			.40.80					Same as above, but generally siltier more massive zones between bedding planes
987			20.50					
988			10.35 .80					
989			.70					
990			10.40 .80					
991								
992			.20.65					
993			.70					
994			.30					
995	-200		.20					
996								
997			see note					997-998, 5 pps. & 1.5' core loss assigned
998			.40					finely laminated fine siltstone

COMMENTS:

HOLE NO: P-3 SHEET 10 OF DATE: 28 OCT 74 LOGGED BY: ER. GARNAHAN COLLAR: EIC GENTZLER TD:

DEPTH	±MM	FRX	PP	ASSAY 10 20 30 40	GAL TON	REC. ERGD	LITH.	DESCRIPTION
1000	-205		30.90					
1001			70					
1002			40.70					
1003			50					
1004			40.80					SHALE, Brn, silty
1005	-210		10					
1006			30					
1007			20.30 60.90					Siltstone gray - lt brn - buff finely laminated
1008			40					
1009			35.55					3 pps from 1008.55 to 1016.0, of coreless assign
1010	-215		108.77					
1011			37					
1012			35					On SH (1012.34-53) High grade bed
1013			42					SILTSTONE (1012.52 - ) Brn, silty, + brn
1014			44					
1015	-220		121					
1016			155					Int. ss (1016.65-80) silty, dark gray
1017			125.40 133.68	52 35.22				do (1016.80-85)
1018			58					
1019			45					(1016.85-90)
1020	-225		79					
1021			88					
1022			178 174	51				(1021.15-15.2445-7)
1023			84					No core
1024			37 44					
1025	-230		10					(Silty + brn)
1026			67					
1027			73					
1028			100 164.72					
1029			133					
1030	-235		11.51					
1031			73					
1032			42					
1033								
1034			42					
1035	-240		103					
1036			108					
1037			125 126					
1038								Conglomerate (1038.36-50) interstratified
1039								Posed of Buff clayey, medium
1040	-245		152 158					
1041								(Silty - brn - buff - , med calc. to heavy, s. v. uniform)
1042			70					
1043								
1044			104 74					
1045	-250							
1046			169					
1047								
1048								

HOLE NO: P-3 (CORE) SHEET 11 OF      DATE: 28 Oct 74 LOGGED BY: EX GENTZLER COLLAR:      TD:     

DEPTH	±MM	FRX	PP	ASSAY				GAL/TON	REC. GRD	LITH.	DESCRIPTION
				10	20	30	40				
1050	-255										
1051											
1052											
1053											Limestone (1053.71-105.800), Buff, thin
1054											bedded, highly calc., P-mud grad. & blocky
1055	-260										oil from lateral. it exists between 105.3 & 105.4
1056			.18								(Micro-stumpage in bedding @ 105.5)
1057			.89								
1058											
1059			.85								OIL SHALE, med-dk gray, f.g., finely laminated
1060	-265										acidified with fine STALS of <del>limestone</del> & thin surface
1061			.75								of <del>chalcoprite</del> sulfidation occurrence is obviously influenced
1062											by laminated nature of the sediment (to 106.4)
1063											
1064											Buff to tan Buff med. calc.)
1065	-270		.71 .85								
1066			.71 .85								
1067			.25 .31 .40								
1068											
1069			.16								
1070	-275										<del>Buff to tan Buff med. calc.)</del> (Manganese - carbonate filling)
1071											
1072											
1073											
1074											
1075	-280										(Manganese + 1/2 layer ~ .01 thick)
1076											
1077											
1078											
1079											
1080	-285										
1081			.68								Limestone (1081.68-.78), buff, v. f. gnd
1082			.78								
1083			.23 .02								(Micro-stumpage (1082.32-.37)
1084			.77 .08								LS (1084.12-.15) as above, w/ minor calc. n.s.
1085	-290		.12 .57								Silts & ss (108.250' & 108.250' & 108.250')
1086											
1087			.74								
1088											
1089											
1090	-295		.44								
1091											
1092											
1093											
1094											1094.14 silty ss of 10. thin layers
1095	-300										LS (1094.57-1094.20) Gg-buff, v. f. gnd. minor g.
1096											
1097											
1098											

COMMENTS: