

## ANALYSIS

FOR

THE CLEVELAND CLIFFS 1401 COR. ALL-TRAIL P-3

DEPTH	DENSITY LOG			VELOCITY LOG			DENSITY AND VELOCITY	
	RHO-3	CAL/TON	ACCUM. YIELD	RHO-3	CAL/TON	ACCUM. YIELD	CAL/TON	ACCUM. YIELD
220	2.080	48.6	45.8					
231	2.120	44.1	93.0					
232	2.160	41.3	134.2					
233	2.220	35.4	169.7					
234	2.270	30.4	200.1					
235	2.290	29.4	229.6					
236	2.290	29.4	258.0					
237	2.290	29.4	286.4					
238	2.270	30.4	316.9					
239	2.240	33.5	350.3					
240	2.250	32.5	382.8					
241	2.240	33.5	416.2					
242	2.230	34.4	450.7					
243	2.220	35.4	486.1					
244	2.190	38.4	524.5					
245	2.140	43.2	567.7					
246	2.280	29.4	597.1					
247	2.360	21.2	618.3					
248	2.310	26.4	644.7					
249	2.270	30.4	675.1					
250	2.290	29.4	703.6					
251	2.290	29.4	732.0					
252	2.320	25.3	757.3					
253	2.330	24.3	781.6					
254	2.320	25.3	807.0					
255	2.290	28.4	835.4					
256	2.270	30.4	865.9					
257	2.240	33.5	899.3					
258	2.230	34.4	933.8					
259	2.240	33.5	967.2					
260	2.310	26.4	993.6					
261	2.380	19.1	1012.7					
262	2.360	21.2	1033.9					
263	2.330	24.3	1058.2					
264	2.320	25.3	1083.5					
265	2.360	21.2	1104.7					
266	2.350	22.2	1126.9					
267	2.370	20.1	1147.1					
268	2.330	24.3	1171.4					
269	2.300	27.4	1193.8					
270	2.310	26.4	1225.2					
271	2.300	27.4	1252.6					
272	2.290	28.4	1284.0					
273	2.260	31.5	1315.5					
274	2.230	34.4	1346.9					
275	2.310	26.4	1378.3					
276	2.310	26.4	1409.7					
277	2.310	26.4	1441.1					
278	2.310	26.4	1472.5					
279	2.310	26.4	1503.9					

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DEPTH	DENSITY LOG			VELOCITY LOG			DENSITY AND VELOCITY	
	RHO-B	G/L/TON	ACCUM. YIELD	RHO-B	G/L/TON	ACCUM. YIELD	G/L/TON	ACCUM. YIELD
280	2.2800	21.5	1518.3					
281	2.2800	21.3	1518.7					
282	2.2800	21.4	1519.1					
283	2.2800	21.4	1519.6					
284	2.2800	21.5	1520.0					
285	2.2800	21.4	1520.5					
286	2.2800	21.4	1520.9					
287	2.2800	21.3	1521.2					
288	2.2800	21.3	1521.5					
289	2.2800	21.2	1521.7					
290	2.2800	21.2	1521.9					
291	2.2800	21.3	1522.3					
292	2.2800	21.5	1522.6					
293	2.2800	21.4	1522.9					
294	2.2800	21.3	1523.2					
295	2.2800	21.3	1523.5					
296	2.2800	21.4	1523.8					
297	2.2800	21.3	1524.1					
298	2.2800	21.3	1524.4					
299	2.2800	21.3	1524.7					
300	2.2800	21.3	1525.0					
301	2.2800	19.1	1525.3					
302	2.2800	19.1	1525.6					
303	2.2800	26.4	1525.9					
304	2.2800	30.4	1526.2					
305	2.2800	26.4	1526.5					
306	2.2800	30.4	1526.8					
307	2.2800	25.3	1527.1					
308	2.2800	18.0	1527.4					
309	2.2800	22.2	1527.7					
310	2.2800	23.3	1528.0					
311	2.2800	19.1	1528.3					
312	2.2800	19.1	1528.6					
313	2.2800	21.2	1528.9					
314	2.2800	20.1	1529.2					
315	2.2800	19.1	1529.5					
316	2.2800	19.1	1529.8					
317	2.2800	19.1	1530.1					
318	2.2800	19.1	1530.4					
319	2.2800	19.1	1530.7					
320	2.2800	19.1	1531.0					
321	2.2800	20.1	1531.3					
322	2.2800	20.1	1531.6					
323	2.2800	20.1	1531.9					
324	2.2800	20.1	1532.2					
325	2.2800	20.1	1532.5					
326	2.2800	20.1	1532.8					
327	2.2800	20.1	1533.1					
328	2.2800	20.1	1533.4					
329	2.2800	20.1	1533.7					
330	2.2800	20.1	1534.0					

THE UNIVERSITY OF CHICAGO

DEPTH	DENSITY LOG			VELOCITY LOG			DENSITY AND VELOCITY	
	RFC-B	GAL/TON	ACCUM. YIELD	RFC-B	GAL/TON	ACCUM. YIELD	GAL/TON	ACCUM. YIELD
330	2.270	20.4	2762.8					
331	2.270	20.4	2755.2					
332	2.270	20.4	2765.7					
333	2.260	21.2	2786.9					
334	2.240	23.3	2810.2					
335	2.220	25.3	2839.5					
336	2.200	27.4	2856.7					
337	2.170	29.1	2876.8					
338	2.180	19.1	2895.9					
339	2.200	19.1	2915.0					
340	2.250	22.2	2937.2					
341	2.270	20.1	2957.4					
342	2.270	20.1	2977.5					
343	2.270	20.1	2997.6					
344	2.260	21.2	3018.8					
345	2.230	24.3	3043.1					
346	2.230	24.3	3067.4					
347	2.250	22.2	3089.7					
348	2.280	19.1	3108.7					
349	2.400	17.0	3125.7					
350	2.360	21.2	3146.9					
351	2.320	25.3	3172.2					
352	2.320	25.3	3197.6					
353	2.380	19.1	3216.7					
354	2.360	21.2	3237.8					
355	2.200	27.4	3275.2					
356	2.190	28.4	3313.6					
357	2.200	29.4	3343.1					
358	2.340	23.3	3366.3					
359	2.220	29.3	3391.7					
360	2.350	22.2	3413.9					
361	2.320	25.3	3439.3					
362	2.350	23.2	3461.5					
363	2.380	24.3	3485.8					
364	2.260	31.5	3517.3					
365	2.190	38.4	3555.6					
366	2.180	42.2	3597.5					
367	2.170	45.7	3647.6					
368	2.140	53.4	3697.0					
369	2.100	67.4	3751.4					
370	2.070	79.3	3800.7					
371	2.010	95.4	3850.1					
372	2.000	99.4	3899.6					
373	2.000	100.3	3949.0					
374	2.000	101.2	3998.4					
375	2.000	102.4	4047.8					
376	2.000	103.4	4097.2					

# ANALYSIS

## DEPTH LOG

## VELOCITY LOG

## DEPTH & VELOCITY

DEPTH	REFRA	SL/TON	ACCOM. YIELD	SL/TON	ACCOM. YIELD	SL/TON	ACCOM. YIELD
370	2.140	41.3	4071.5				
371	2.140	41.3	4105.5				
372	2.140	41.3	4121.6				
373	2.140	41.3	4135.3				
374	2.140	41.3	4151.4				
375	2.140	41.3	4172.4				
376	2.140	41.3	4193.6				
377	2.140	41.3	4215.0				
378	2.140	41.3	4235.4				
379	2.140	41.3	4255.8				
380	2.140	41.3	4331.0				
391	2.160	41.3	4372.3				
392	2.160	41.3	4413.6				
393	2.110	42.2	4455.6				
394	1.930	42.2	4521.8				
395	1.820	71.4	4593.2				
396	1.720	78.5	4671.6				
397	1.790	72.8	4745.4				
398	2.100	47.0	4792.3				
399	2.250	32.5	4824.8				
400	2.080	48.6	4873.6				
401	2.200	37.4	4911.0				
402	2.180	39.4	4950.4				
403	2.180	39.4	4969.7				
404	2.160	41.3	5031.0				
405	2.160	41.3	5072.3				
406	2.190	36.4	5110.6				
407	2.210	36.4	5147.1				
408	2.160	41.3	5168.3				
409	2.160	39.4	5227.7				
410	2.160	38.4	5266.1				
411	2.170	40.3	5300.4				
412	2.150	42.2	5348.6				
413	2.120	45.1	5393.7				
414	1.950	60.5	5434.2				
415	1.790	73.6	5527.5				
416	1.700	80.7	5606.7				
417	1.890	51.5	5690.2				
418	1.810	67.4	5777.2				
419	1.700	71.4	5851.0				
420	2.100	41.3	5924.5				
421	2.100	41.3	5965.5				
422	2.100	41.3	6006.5				
423	2.100	41.3	6047.5				
424	2.100	41.3	6088.5				
425	2.100	41.3	6129.5				
426	2.100	41.3	6170.5				
427	2.100	41.3	6211.5				
428	2.100	41.3	6252.5				
429	2.100	41.3	6293.5				
430	2.100	41.3	6334.5				



THE CLIFF AND CLIFFS

DEPTH	DENSITY LOG			VELOCITY LOG			DENSITY AND VELOCITY	
	RHO-B	GAL/TON	ACCOY. YIELD	RHO-B	GAL/TON	ACCOY. YIELD	GAL/TON	ACCOY. YIELD
480	2.440	12.7	73.2	1.710	85.2	77.6	85.2	77.6
481	2.430	12.7	73.2	1.710	85.2	77.6	85.2	77.6
482	2.430	12.7	73.2	1.710	85.2	77.6	85.2	77.6
483	2.430	12.7	73.2	1.710	85.2	77.6	85.2	77.6
484	2.430	12.7	73.2	1.710	85.2	77.6	85.2	77.6
485	2.430	12.7	73.2	1.710	85.2	77.6	85.2	77.6
486	2.430	12.7	73.2	1.710	85.2	77.6	85.2	77.6
487	2.430	12.7	73.2	1.710	85.2	77.6	85.2	77.6
488	2.430	12.7	73.2	1.710	85.2	77.6	85.2	77.6
489	2.430	12.7	73.2	1.710	85.2	77.6	85.2	77.6
490	2.430	12.7	73.2	1.710	85.2	77.6	85.2	77.6
491	2.430	12.7	73.2	1.710	85.2	77.6	85.2	77.6
492	2.430	12.7	73.2	1.710	85.2	77.6	85.2	77.6
493	2.430	12.7	73.2	1.710	85.2	77.6	85.2	77.6
494	2.430	12.7	73.2	1.710	85.2	77.6	85.2	77.6
495	2.430	12.7	73.2	1.710	85.2	77.6	85.2	77.6
496	2.430	12.7	73.2	1.710	85.2	77.6	85.2	77.6
497	2.430	12.7	73.2	1.710	85.2	77.6	85.2	77.6
498	2.430	12.7	73.2	1.710	85.2	77.6	85.2	77.6
499	2.430	12.7	73.2	1.710	85.2	77.6	85.2	77.6
500	2.430	12.7	73.2	1.710	85.2	77.6	85.2	77.6
501	2.430	12.7	73.2	1.710	85.2	77.6	85.2	77.6
502	2.430	12.7	73.2	1.710	85.2	77.6	85.2	77.6
503	2.430	12.7	73.2	1.710	85.2	77.6	85.2	77.6
504	2.430	12.7	73.2	1.710	85.2	77.6	85.2	77.6
505	2.430	12.7	73.2	1.710	85.2	77.6	85.2	77.6
506	2.430	12.7	73.2	1.710	85.2	77.6	85.2	77.6
507	2.430	12.7	73.2	1.710	85.2	77.6	85.2	77.6
508	2.430	12.7	73.2	1.710	85.2	77.6	85.2	77.6
509	2.430	12.7	73.2	1.710	85.2	77.6	85.2	77.6
510	2.430	12.7	73.2	1.710	85.2	77.6	85.2	77.6
511	2.430	12.7	73.2	1.710	85.2	77.6	85.2	77.6
512	2.430	12.7	73.2	1.710	85.2	77.6	85.2	77.6
513	2.430	12.7	73.2	1.710	85.2	77.6	85.2	77.6
514	2.430	12.7	73.2	1.710	85.2	77.6	85.2	77.6
515	2.430	12.7	73.2	1.710	85.2	77.6	85.2	77.6
516	2.430	12.7	73.2	1.710	85.2	77.6	85.2	77.6
517	2.430	12.7	73.2	1.710	85.2	77.6	85.2	77.6
518	2.430	12.7	73.2	1.710	85.2	77.6	85.2	77.6
519	2.430	12.7	73.2	1.710	85.2	77.6	85.2	77.6
520	2.430	12.7	73.2	1.710	85.2	77.6	85.2	77.6
521	2.430	12.7	73.2	1.710	85.2	77.6	85.2	77.6
522	2.430	12.7	73.2	1.710	85.2	77.6	85.2	77.6
523	2.430	12.7	73.2	1.710	85.2	77.6	85.2	77.6
524	2.430	12.7	73.2	1.710	85.2	77.6	85.2	77.6
525	2.430	12.7	73.2	1.710	85.2	77.6	85.2	77.6
526	2.430	12.7	73.2	1.710	85.2	77.6	85.2	77.6
527	2.430	12.7	73.2	1.710	85.2	77.6	85.2	77.6

# HYDROGEN ANALYSIS

--- FOR ---

THE CLEVELAND CLIFFS IRON COMPANY--WELL P-3

DEPTH	DENSITY LOG			VELOCITY LOG			DENSITY AND VELOCITY	
	RHO-B	GAL/TON	ACCUM. YIELD	RHO-B	GAL/TON	ACCUM. YIELD	GAL/TON	ACCUM. YIELD
530	2.410	15.9	8750.6					
531	2.490	7.2	8757.8					
532	2.510	4.9	8762.7					
533	2.480	8.3	8771.0					
534	2.480	8.3	8779.3					
535	2.500	6.1	8785.3					
536	2.510	4.9	8790.3					
537	2.470	9.4	8799.6					
538	2.470	9.4	8809.0					
539	2.480	8.3	8817.3					
540	2.490	7.2	8824.5					
541	2.470	9.4	8833.8					
542	2.470	9.4	8843.2					
543	2.470	9.4	8852.6					
544	2.480	8.3	8860.9					
545	2.470	9.4	8870.2					
546	2.460	10.5	8880.7					
547	2.410	15.9	8896.6					
548	2.330	24.3	8920.9					
549	2.400	17.0	8937.9					
550	2.440	12.1	8950.5					
551	2.460	10.5	8961.0					
552	2.460	10.5	8971.4					
553	2.420	14.8	8986.2					
554	2.360	21.2	9007.4					
555	2.420	14.8	9022.2					
556	2.480	8.3	9030.5					
557	2.480	8.3	9038.8					
558	2.490	7.2	9046.0					
559	2.460	10.5	9056.4					
560	2.430	13.7	9070.2					
561	2.450	11.6	9081.7					
562	2.480	8.3	9090.0					
563	2.510	4.9	9094.9					
564	2.520	2.7	9097.6					
565	2.520	2.8	9101.5					
566	2.490	7.2	9108.6					
567	2.440	12.7	9121.2					
568	2.470	9.4	9130.7					
569	2.410	15.9	9142.5					
570	2.380	19.1	9159.6					
571	2.420	14.8	9169.4					
572	2.480	8.3	9169.7					
573	2.480	10.5	9199.2					
574	2.430	13.7	9212.9					
575	2.420	13.7	9226.6					
576	2.440	12.7	9237.2					
577	2.410	15.9	9247.7					
578	2.410	15.9	9247.7					
579	2.410	15.9	9247.7					

TABLE 17

DEPTH	VELOCITY LOG			DENSITY LOG		
	TIME	DEPTH	VELOCITY	TIME	DEPTH	DENSITY
1	1.0	1.0	1.0	1.0	1.0	1.0
2	1.1	1.1	1.1	1.1	1.1	1.1
3	1.2	1.2	1.2	1.2	1.2	1.2
4	1.3	1.3	1.3	1.3	1.3	1.3
5	1.4	1.4	1.4	1.4	1.4	1.4
6	1.5	1.5	1.5	1.5	1.5	1.5
7	1.6	1.6	1.6	1.6	1.6	1.6
8	1.7	1.7	1.7	1.7	1.7	1.7
9	1.8	1.8	1.8	1.8	1.8	1.8
10	1.9	1.9	1.9	1.9	1.9	1.9
11	2.0	2.0	2.0	2.0	2.0	2.0
12	2.1	2.1	2.1	2.1	2.1	2.1
13	2.2	2.2	2.2	2.2	2.2	2.2
14	2.3	2.3	2.3	2.3	2.3	2.3
15	2.4	2.4	2.4	2.4	2.4	2.4
16	2.5	2.5	2.5	2.5	2.5	2.5
17	2.6	2.6	2.6	2.6	2.6	2.6
18	2.7	2.7	2.7	2.7	2.7	2.7
19	2.8	2.8	2.8	2.8	2.8	2.8
20	2.9	2.9	2.9	2.9	2.9	2.9
21	3.0	3.0	3.0	3.0	3.0	3.0
22	3.1	3.1	3.1	3.1	3.1	3.1
23	3.2	3.2	3.2	3.2	3.2	3.2
24	3.3	3.3	3.3	3.3	3.3	3.3
25	3.4	3.4	3.4	3.4	3.4	3.4
26	3.5	3.5	3.5	3.5	3.5	3.5
27	3.6	3.6	3.6	3.6	3.6	3.6
28	3.7	3.7	3.7	3.7	3.7	3.7
29	3.8	3.8	3.8	3.8	3.8	3.8
30	3.9	3.9	3.9	3.9	3.9	3.9
31	4.0	4.0	4.0	4.0	4.0	4.0
32	4.1	4.1	4.1	4.1	4.1	4.1
33	4.2	4.2	4.2	4.2	4.2	4.2
34	4.3	4.3	4.3	4.3	4.3	4.3
35	4.4	4.4	4.4	4.4	4.4	4.4
36	4.5	4.5	4.5	4.5	4.5	4.5
37	4.6	4.6	4.6	4.6	4.6	4.6
38	4.7	4.7	4.7	4.7	4.7	4.7
39	4.8	4.8	4.8	4.8	4.8	4.8
40	4.9	4.9	4.9	4.9	4.9	4.9
41	5.0	5.0	5.0	5.0	5.0	5.0
42	5.1	5.1	5.1	5.1	5.1	5.1
43	5.2	5.2	5.2	5.2	5.2	5.2
44	5.3	5.3	5.3	5.3	5.3	5.3
45	5.4	5.4	5.4	5.4	5.4	5.4
46	5.5	5.5	5.5	5.5	5.5	5.5
47	5.6	5.6	5.6	5.6	5.6	5.6
48	5.7	5.7	5.7	5.7	5.7	5.7
49	5.8	5.8	5.8	5.8	5.8	5.8
50	5.9	5.9	5.9	5.9	5.9	5.9
51	6.0	6.0	6.0	6.0	6.0	6.0
52	6.1	6.1	6.1	6.1	6.1	6.1
53	6.2	6.2	6.2	6.2	6.2	6.2
54	6.3	6.3	6.3	6.3	6.3	6.3
55	6.4	6.4	6.4	6.4	6.4	6.4
56	6.5	6.5	6.5	6.5	6.5	6.5
57	6.6	6.6	6.6	6.6	6.6	6.6
58	6.7	6.7	6.7	6.7	6.7	6.7
59	6.8	6.8	6.8	6.8	6.8	6.8
60	6.9	6.9	6.9	6.9	6.9	6.9
61	7.0	7.0	7.0	7.0	7.0	7.0
62	7.1	7.1	7.1	7.1	7.1	7.1
63	7.2	7.2	7.2	7.2	7.2	7.2
64	7.3	7.3	7.3	7.3	7.3	7.3
65	7.4	7.4	7.4	7.4	7.4	7.4
66	7.5	7.5	7.5	7.5	7.5	7.5
67	7.6	7.6	7.6	7.6	7.6	7.6
68	7.7	7.7	7.7	7.7	7.7	7.7
69	7.8	7.8	7.8	7.8	7.8	7.8
70	7.9	7.9	7.9	7.9	7.9	7.9
71	8.0	8.0	8.0	8.0	8.0	8.0
72	8.1	8.1	8.1	8.1	8.1	8.1
73	8.2	8.2	8.2	8.2	8.2	8.2
74	8.3	8.3	8.3	8.3	8.3	8.3
75	8.4	8.4	8.4	8.4	8.4	8.4
76	8.5	8.5	8.5	8.5	8.5	8.5
77	8.6	8.6	8.6	8.6	8.6	8.6
78	8.7	8.7	8.7	8.7	8.7	8.7
79	8.8	8.8	8.8	8.8	8.8	8.8
80	8.9	8.9	8.9	8.9	8.9	8.9
81	9.0	9.0	9.0	9.0	9.0	9.0
82	9.1	9.1	9.1	9.1	9.1	9.1
83	9.2	9.2	9.2	9.2	9.2	9.2
84	9.3	9.3	9.3	9.3	9.3	9.3
85	9.4	9.4	9.4	9.4	9.4	9.4
86	9.5	9.5	9.5	9.5	9.5	9.5
87	9.6	9.6	9.6	9.6	9.6	9.6
88	9.7	9.7	9.7	9.7	9.7	9.7
89	9.8	9.8	9.8	9.8	9.8	9.8
90	9.9	9.9	9.9	9.9	9.9	9.9
91	10.0	10.0	10.0	10.0	10.0	10.0
92	10.1	10.1	10.1	10.1	10.1	10.1
93	10.2	10.2	10.2	10.2	10.2	10.2
94	10.3	10.3	10.3	10.3	10.3	10.3
95	10.4	10.4	10.4	10.4	10.4	10.4
96	10.5	10.5	10.5	10.5	10.5	10.5
97	10.6	10.6	10.6	10.6	10.6	10.6
98	10.7	10.7	10.7	10.7	10.7	10.7
99	10.8	10.8	10.8	10.8	10.8	10.8
100	10.9	10.9	10.9	10.9	10.9	10.9
101	11.0	11.0	11.0	11.0	11.0	11.0
102	11.1	11.1	11.1	11.1	11.1	11.1
103	11.2	11.2	11.2	11.2	11.2	11.2
104	11.3	11.3	11.3	11.3	11.3	11.3
105	11.4	11.4	11.4	11.4	11.4	11.4
106	11.5	11.5	11.5	11.5	11.5	11.5
107	11.6	11.6	11.6	11.6	11.6	11.6
108	11.7	11.7	11.7	11.7	11.7	11.7
109	11.8	11.8	11.8	11.8	11.8	11.8
110	11.9	11.9	11.9	11.9	11.9	11.9
111	12.0	12.0	12.0	12.0	12.0	12.0
112	12.1	12.1	12.1	12.1	12.1	12.1
113	12.2	12.2	12.2	12.2	12.2	12.2
114	12.3	12.3	12.3	12.3	12.3	12.3
115	12.4	12.4	12.4	12.4	12.4	12.4
116	12.5	12.5	12.5	12.5	12.5	12.5
117	12.6	12.6	12.6	12.6	12.6	12.6
118	12.7	12.7	12.7	12.7	12.7	12.7
119	12.8	12.8	12.8	12.8	12.8	12.8
120	12.9	12.9	12.9	12.9	12.9	12.9
121	13.0	13.0	13.0	13.0	13.0	13.0
122	13.1	13.1	13.1	13.1	13.1	13.1
123	13.2	13.2	13.2	13.2	13.2	13.2
124	13.3	13.3	13.3	13.3	13.3	13.3
125	13.4	13.4	13.4	13.4	13.4	13.4
126	13.5	13.5	13.5	13.5	13.5	13.5
127	13.6	13.6	13.6	13.6	13.6	13.6
128	13.7	13.7	13.7	13.7	13.7	13.7
129	13.8	13.8	13.8	13.8	13.8	13.8
130	13.9	13.9	13.9	13.9	13.9	13.9
131	14.0	14.0	14.0	14.0	14.0	14.0
132	14.1	14.1	14.1	14.1	14.1	14.1
133	14.2	14.2	14.2	14.2	14.2	14.2
134	14.3	14.3	14.3	14.3	14.3	14.3
135	14.4	14.4	14.4	14.4	14.4	14.4
136	14.5	14.5	14.5	14.5	14.5	14.5
137	14.6	14.6	14.6	14.6	14.6	14.6
138	14.7	14.7	14.7	14.7	14.7	14.7
139	14.8	14.8	14.8	14.8	14.8	14.8
140	14.9	14.9	14.9	14.9	14.9	14.9
141	15.0	15.0	15.0	15.0	15.0	15.0
142	15.1	15.1	15.1	15.1	15.1	15.1
143	15.2	15.2	15.2	15.2	15.2	15.2
144	15.3	15.3	15.3	15.3	15.3	15.3
145	15.4	15.4	15.4	15.4	15.4	15.4
146	15.5	15.5	15.5	15.5	15.5	15.5
147	15.6	15.6	15.6	15.6	15.6	15.6
148	15.7	15.7	15.7	15.7	15.7	15.7
149	15.8	15.8	15.8	15.8	15.8	15.8
150	15.9	15.9	15.9	15.9	15.9	15.9
151	16.0	16.0	16.0	16.0	16.0	16.0
152	16.1	16.1	16.1	16.1	16.1	16.1
153	16.2	16.2	16.2	16.2	16.2	16.2
154	16.3	16.3	16.3	16.3	16.3	16.3
155	16.4	16.4	16.4	16.4	16.4	16.4
156	16.5	16.5	16.5	16.5	16.5	16.5
157	16.6	16.6	16.6	16.6	16.6	16.6
158	16.7	16.7	16.7	16.7	16.7	16.7
159	16.8	16.8	16.8	16.8	16.8	16.8
160	16.9	16.9	16.9	16.9	16.9	16.9
161	17.0	17.0	17.0	17.0	17.0	17.0
162	17.1	17.1	17.1	17.1	17.1	17.1
163	17.2	17.2	17.2	17.2	17.2	17.2
164	17.3	17.3	17.3	17.3	17.3	17.3
165	17.4	17.4	17.4	17.4	17.4	17.4
166	17.5	17.5	17.5	17.5	17.5	17.5
167	17.6	17.6	17.6	17.6	17.6	17.6
168	17.7	17.7	17.7	17.7	17.7	17.7
169	17.8	17.8	17.8	17.8	17.8	17.8
170	17.9	17.9	17.9	17.9	17.9	17.9
171	18.0	18.0	18.0	18.0	18.0	18.0
172	18.1	18.1	18.1	18.1	18.1	18.1
173	18.2	18.2	18.2	18.2	18.2	18.2
174	18.3	18.3	18.3	18.3	18.3	18.3
175	18.4	18.4	18.4	18.4	18.4	18.4
176	18.5	18.5	18.5	18.5	18.5	18.5
177	18.6	18.6	18.6	18.6	18.6	18.6
178	18.7	18.7	18.7	18.7	18.7	18.7
179	18.8	18.8	18.8	18.8	18.8	18.8
180	18.9	18.9	18.9	18.9	18.9	18.9
181	19.0	19.0	19.0	19.0	19.0	19.0
182	19.1	19.1	19.1	19.1	19.1	19.1
183	19.2	19.2	19.2	19.2	19.2	19.2
184	19.3	19.3	19.3	19.3	19.3	19.3
185	19.4	19.4	19.4	19.4	19.4	19.4
186	19.5	19.5	19.5	19.5	19.5	19.5
187	19.6	19.6	19.6	19.6	19.6	19.6
188	19.7	19.7	19.7	19.7	19.7	19.7
189	19.8	19.8	19.8	19.8	19.8	19.8
190	19.9	19.9	19.9	19.9	19.9	19.9
191	20.0	20.0	20.0	20.0		



THE FOLLOWING DATA WAS OBTAINED FROM THE

DEPTH	DENSITY LOG			VELOCITY LOG			DENSITY AND VELOCITY	
	DEPTH	GAL/TON	ACCU. YIELD	DEPTH	GAL/TON	ACCU. YIELD	GAL/TON	ACCU. YIELD
630	N. 420	11.7	10570.4					
631	N. 420	11.7	10570.4					
632	N. 420	11.7	10570.4					
633	N. 420	11.7	10570.4					
634	N. 420	11.7	10570.4					
635	N. 420	11.7	10570.4					
636	N. 420	11.7	10570.4					
637	N. 420	11.7	10570.4					
638	N. 420	11.7	10570.4					
639	N. 420	11.7	10570.4					
640	N. 420	11.7	10570.4					
641	N. 420	11.7	10570.4					
642	N. 420	11.7	10570.4					
643	N. 420	11.7	10570.4					
644	N. 420	11.7	10570.4					
645	N. 420	11.7	10570.4					
646	N. 420	11.7	10570.4					
647	N. 420	11.7	10570.4					
648	N. 420	11.7	10570.4					
649	N. 420	11.7	10570.4					
650	N. 420	11.7	10570.4					
651	N. 420	11.7	10570.4					
652	N. 420	11.7	10570.4					
653	N. 420	11.7	10570.4					
654	N. 420	11.7	10570.4					
655	N. 420	11.7	10570.4					
656	N. 420	11.7	10570.4					
657	N. 420	11.7	10570.4					
658	N. 420	11.7	10570.4					
659	N. 420	11.7	10570.4					
660	N. 420	11.7	10570.4					
661	N. 420	11.7	10570.4					
662	N. 420	11.7	10570.4					
663	N. 420	11.7	10570.4					
664	N. 420	11.7	10570.4					
665	N. 420	11.7	10570.4					
666	N. 420	11.7	10570.4					
667	N. 420	11.7	10570.4					
668	N. 420	11.7	10570.4					
669	N. 420	11.7	10570.4					
670	N. 420	11.7	10570.4					
671	N. 420	11.7	10570.4					
672	N. 420	11.7	10570.4					
673	N. 420	11.7	10570.4					
674	N. 420	11.7	10570.4					
675	N. 420	11.7	10570.4					
676	N. 420	11.7	10570.4					
677	N. 420	11.7	10570.4					
678	N. 420	11.7	10570.4					
679	N. 420	11.7	10570.4					
680	N. 420	11.7	10570.4					

THE OCEANOGRAPH

PERIOD: 1968

PERIOD: 1968

PERIOD: 1968

DEPTH

STATION

DATE/TIME

COORDINATES

STATION

DATE/TIME

COORDINATES

680	2.360	19.1	11542.6
681	2.360	19.1	11542.6
682	2.360	19.1	11542.6
683	2.360	19.1	11542.6
684	2.360	19.1	11542.6
685	2.360	19.1	11542.6
686	2.360	19.1	11542.6
687	2.360	19.1	11542.6
688	2.360	19.1	11542.6
689	2.360	19.1	11542.6
690	2.360	19.1	11542.6
691	2.360	19.1	11542.6
692	2.360	19.1	11542.6
693	2.360	19.1	11542.6
694	2.360	19.1	11542.6
695	2.360	19.1	11542.6
696	2.360	19.1	11542.6
697	2.360	19.1	11542.6
698	2.360	19.1	11542.6
699	2.360	19.1	11542.6
700	2.360	19.1	11542.6
701	2.360	19.1	11542.6
702	2.360	19.1	11542.6
703	2.360	19.1	11542.6
704	2.360	19.1	11542.6
705	2.360	19.1	11542.6
706	2.360	19.1	11542.6
707	2.360	19.1	11542.6
708	2.360	19.1	11542.6
709	2.360	19.1	11542.6
710	2.360	19.1	11542.6
711	2.360	19.1	11542.6
712	2.360	19.1	11542.6
713	2.360	19.1	11542.6
714	2.360	19.1	11542.6
715	2.360	19.1	11542.6
716	2.360	19.1	11542.6
717	2.360	19.1	11542.6
718	2.360	19.1	11542.6
719	2.360	19.1	11542.6
720	2.360	19.1	11542.6
721	2.360	19.1	11542.6
722	2.360	19.1	11542.6
723	2.360	19.1	11542.6
724	2.360	19.1	11542.6
725	2.360	19.1	11542.6
726	2.360	19.1	11542.6
727	2.360	19.1	11542.6
728	2.360	19.1	11542.6
729	2.360	19.1	11542.6
730	2.360	19.1	11542.6

# LOGS AND ANALYSIS

DATE: 10/1/77

WELL: 211-F3 1.5A 17'-11"-FILL P-3

DEPTH	DENSITY LOG			VELOCITY LOG			DENSITY AND VELOCITY		
	LOG-1	GAL/TO	ACCUR. YIELD	LOG-2	GAL/TO	ACCUR. YIELD	LOG-3	GAL/TO	ACCUR. YIELD
740	2.400	29.4	12111.7						
741	2.400	29.4	12111.7						
742	2.400	29.4	12111.7						
743	2.400	29.4	12111.7						
744	2.400	29.4	12111.7						
745	2.400	29.4	12111.7						
746	2.400	29.4	12111.7						
747	2.400	29.4	12111.7						
748	2.400	29.4	12111.7						
749	2.400	29.4	12111.7						
750	2.400	29.4	12111.7						
751	2.400	29.4	12111.7						
752	2.400	29.4	12111.7						
753	2.400	29.4	12111.7						
754	2.400	29.4	12111.7						

— 10 —

TIME	WAVELENGTH		VELOCITY LOG		DENSITY AND VELOCITY	
	WAVELENGTH	WAVELENGTH	WAVELENGTH	WAVELENGTH	WAVELENGTH	WAVELENGTH
66	1000	1000	1000	1000	1000	1000
67	1000	1000	1000	1000	1000	1000
68	1000	1000	1000	1000	1000	1000
69	1000	1000	1000	1000	1000	1000
70	1000	1000	1000	1000	1000	1000
71	1000	1000	1000	1000	1000	1000
72	1000	1000	1000	1000	1000	1000
73	1000	1000	1000	1000	1000	1000
74	1000	1000	1000	1000	1000	1000
75	1000	1000	1000	1000	1000	1000
76	1000	1000	1000	1000	1000	1000
77	1000	1000	1000	1000	1000	1000
78	1000	1000	1000	1000	1000	1000
79	1000	1000	1000	1000	1000	1000
80	1000	1000	1000	1000	1000	1000
81	1000	1000	1000	1000	1000	1000
82	1000	1000	1000	1000	1000	1000
83	1000	1000	1000	1000	1000	1000
84	1000	1000	1000	1000	1000	1000
85	1000	1000	1000	1000	1000	1000
86	1000	1000	1000	1000	1000	1000
87	1000	1000	1000	1000	1000	1000
88	1000	1000	1000	1000	1000	1000
89	1000	1000	1000	1000	1000	1000
90	1000	1000	1000	1000	1000	1000
91	1000	1000	1000	1000	1000	1000
92	1000	1000	1000	1000	1000	1000
93	1000	1000	1000	1000	1000	1000
94	1000	1000	1000	1000	1000	1000
95	1000	1000	1000	1000	1000	1000
96	1000	1000	1000	1000	1000	1000
97	1000	1000	1000	1000	1000	1000
98	1000	1000	1000	1000	1000	1000
99	1000	1000	1000	1000	1000	1000
100	1000	1000	1000	1000	1000	1000

DENSITY AND VELOCITY

COUNTRY, ACOG, YIELD

[illegible]

# THE CUBA-AMERICAN CORP. REPORT

DEPTH	DENSITY LOG			VELOCITY LOG			DENSITY AND VELOCITY	
	PHO-P	GAL/TON	ACCU. YIELD	PHO-B	GAL/TON	ACCU. YIELD	GAL/TON	ACCU. YIELD
160	2.170	40.3	4223.2					
161	2.160	41.3	4264.4					
162	2.170	40.3	4204.8					
163	2.160	39.4	4344.1					
164	2.150	38.4	4382.5					
165	2.200	37.4	4419.5					
166	2.210	36.4	4456.3					
167	2.230	34.4	4490.8					
168	2.240	33.5	4524.2					
169	2.240	33.5	4557.7					
170	2.240	33.5	4591.1					
171	2.220	33.4	4626.6					
172	2.200	37.4	4664.0					
173	2.210	36.4	4700.4					
174	2.220	35.4	4735.8					
175	2.210	36.4	4772.2					
176	2.200	37.4	4809.6					
177	2.180	39.4	4849.0					
178	2.190	38.4	4887.4					
179	2.160	41.3	4925.8					
180	2.300	27.4	4979.3					
181	2.340	23.3	5004.7					
182	2.320	25.3	5039.2					
183	2.290	28.4	5073.7					
184	2.260	31.5	5108.2					
185	2.250	32.5	5142.7					
186	2.250	32.5	5177.2					
187	2.260	31.5	5211.7					
188	2.290	28.4	5246.2					
189	2.300	27.4	5280.7					
190	2.300	27.4	5315.2					
191	2.310	26.4	5349.7					
192	2.320	25.3	5384.2					
193	2.320	25.3	5418.7					
194	2.300	27.4	5453.2					
195	2.300	27.4	5487.7					
196	2.300	27.4	5522.2					
197	2.240	33.5	5556.7					
198	2.240	33.5	5591.2					
199	2.240	33.5	5625.7					
200	2.240	33.5	5660.2					
201	2.240	33.5	5694.7					
202	2.240	33.5	5729.2					
203	2.240	33.5	5763.7					
204	2.240	33.5	5798.2					
205	2.240	33.5	5832.7					
206	2.240	33.5	5867.2					
207	2.240	33.5	5901.7					
208	2.240	33.5	5936.2					
209	2.240	33.5	5970.7					
210	2.240	33.5	6005.2					



# REPORT OF LOGGING OPERATIONS

DEPTH	DENSITY LOG			VELOCITY LOG			DENSITY AND VELOCITY	
	RFC-P	GAL/TON	ACCUM. YIELD	RFC-S	GAL/TON	ACCUM. YIELD	GAL/TON	ACCUM. YIELD
260	2.270	26.4	7347.5					
261	2.310	26.1	7366.7					
262	2.310	26.1	7385.9					
263	2.310	26.4	7415.2					
264	2.220	24.4	7449.7					
265	2.150	22.2	7491.9					
266	2.110	22.0	7537.9					
267	2.030	20.3	7589.5					
268	2.030	20.4	7642.9					
269	2.120	20.1	7688.0					
270	2.110	20.0	7734.0					
271	2.120	20.1	7778.1					
272	2.120	20.1	7823.2					
273	2.120	20.1	7868.3					
274	2.090	19.9	7916.2					
275	2.120	20.1	7961.3					
276	2.160	21.3	8002.6					
277	2.120	20.1	8047.6					
278	2.130	21.1	8091.9					
279	2.160	21.3	8133.1					
280	2.280	22.8	8182.9					
281	2.340	23.3	8185.8					
282	2.340	23.3	8228.1					
283	2.320	22.3	8274.4					
284	2.340	23.3	8323.3					
285	2.370	23.7	8372.5					
286	2.370	23.7	8423.3					
287	2.320	22.3	8477.8					
288	2.310	22.6	8534.9					
289	2.340	23.3	8594.5					
290	2.260	21.5	8651.4					
291	2.150	21.5	8709.3					
292	2.150	21.5	8769.3					
293	2.110	21.1	8831.4					
294	1.960	19.6	8894.5					
295	1.990	19.9	8959.4					
296	2.150	21.5	9026.1					
297	2.160	21.6	9094.5					
298	2.180	21.8	9164.5					
299	2.100	21.0	9236.1					
300	2.070	20.7	9309.4					
301	2.080	20.8	9384.5					
302	2.080	20.8	9461.4					
303	2.080	20.8	9540.5					
304	2.060	20.6	9621.4					
305	2.060	20.6	9704.5					
306	2.120	21.2	9790.5					
307	2.120	21.2	9878.1					
308	2.120	21.2	9967.5					
309	2.120	21.2	10058.1					



# THE CUBAN LUGS IN THE CUBAN LUGS

DEPTH	DENSITY LOG			DENSITY LOG			DENSITY LOG		
	REF-P	CAL/TOT	ACCUM. YIELD	REF-P	CAL/TOT	ACCUM. YIELD	CAL/TOT	ACCUM. YIELD	
310	2.120	14.1	172.2.3						
311	2.120	14.1	172.2.3						
312	2.120	14.1	172.2.3						
313	2.120	14.1	172.2.3						
314	2.120	14.1	172.2.3						
315	2.120	14.1	172.2.3						
316	2.120	14.1	172.2.3						
317	2.120	14.1	172.2.3						
318	2.120	14.1	172.2.3						
319	2.120	14.1	172.2.3						
320	2.120	14.1	172.2.3						
321	2.120	14.1	172.2.3						
322	2.120	14.1	172.2.3						
323	2.120	14.1	172.2.3						
324	2.120	14.1	172.2.3						
325	2.120	14.1	172.2.3						
326	2.120	14.1	172.2.3						
327	2.120	14.1	172.2.3						
328	2.120	14.1	172.2.3						
329	2.120	14.1	172.2.3						
330	2.120	14.1	172.2.3						
331	2.120	14.1	172.2.3						
332	2.120	14.1	172.2.3						
333	2.120	14.1	172.2.3						
334	2.120	14.1	172.2.3						
335	2.120	14.1	172.2.3						
336	2.120	14.1	172.2.3						
337	2.120	14.1	172.2.3						
338	2.120	14.1	172.2.3						
339	2.120	14.1	172.2.3						
340	2.120	14.1	172.2.3						
341	2.120	14.1	172.2.3						
342	2.120	14.1	172.2.3						
343	2.120	14.1	172.2.3						
344	2.120	14.1	172.2.3						
345	2.120	14.1	172.2.3						
346	2.120	14.1	172.2.3						
347	2.120	14.1	172.2.3						
348	2.120	14.1	172.2.3						
349	2.120	14.1	172.2.3						
350	2.120	14.1	172.2.3						
351	2.120	14.1	172.2.3						
352	2.120	14.1	172.2.3						
353	2.120	14.1	172.2.3						
354	2.120	14.1	172.2.3						
355	2.120	14.1	172.2.3						
356	2.120	14.1	172.2.3						
357	2.120	14.1	172.2.3						
358	2.120	14.1	172.2.3						

FOR

THE CLEVELAND CLIFFS IRON COMPANY-Well P-4

DEPTH	DENSITY LOG			VELOCITY LOG			DENSITY AND VELOCITY	
	RHO-B	GAL/TON	ACCUM. YIELD	RHO-B	GAL/TON	ACCUM. YIELD	GAL/TON	ACCUM. YIELD
360	2.200	37.4	10835.4					
361	2.040	52.5	10891.9					
362	1.810	72.2	10904.0					
363	1.990	57.0	11021.0					
364	2.280	29.4	11030.4					
365	2.330	24.3	11074.7					
366	2.340	23.3	11098.0					
367	2.350	22.2	11120.2					
368	2.290	28.4	11148.6					
369	2.190	38.4	11187.0					
370	2.190	38.4	11225.4					
371	2.320	25.3	11250.7					
372	2.150	42.2	11293.0					
373	2.200	37.4	11330.4					
374	2.340	23.3	11353.7					
375	2.400	17.0	11370.6					
376	2.390	18.0	11388.6					
377	2.380	19.1	11407.7					
378	2.330	24.3	11425.4					
379	2.280	29.4	11443.7					
380	2.120	44.1	11463.8					
381	2.030	53.4	11483.9					
382	2.170	40.3	11504.0					
383	2.370	20.1	11524.1					
384	2.420	14.6	11544.2					
385	2.410	15.6	11564.3					
386	2.440	12.7	11584.4					
387	2.490	7.2	11604.5					
388	2.450	11.6	11624.6					
389	2.420	14.6	11644.7					
390	2.440	12.7	11664.8					
391	2.420	14.6	11684.9					
392	2.370	20.1	11705.0					
393	2.380	19.1	11725.1					
394	2.440	12.7	11745.2					
395	2.470	9.4	11765.3					
396	2.490	7.2	11785.4					
397	2.480	8.3	11805.5					
398	2.400	13.7	11825.6					
399	2.430	12.7	11845.7					
400	2.380	19.1	11865.8					
401	2.340	23.3	11885.9					
402	2.350	22.2	11906.0					
403	2.360	21.1	11926.1					
404	2.370	20.1	11946.2					
405	2.380	19.1	11966.3					
406	2.390	18.0	11986.4					
407	2.400	17.0	12006.5					
408	2.410	15.6	12026.6					
409	2.420	14.6	12046.7					

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[illegible]

DEPTH	DENSITY LOG		VELOCITY LOG		DENSITY AND VELOCITY	
	DEPTH	GAL/TON ACCUM. YIELD	DEPTH	GAL/TON ACCUM. YIELD	DEPTH	GAL/TON ACCUM. YIELD
1	1.00	11.4	1577.3			
2	1.00	11.4	1577.3			
3	1.00	11.4	1577.3			
4	1.00	11.4	1577.3			