REPORT ON THE IRON ORE DEVELOPMENT OF THE SEMINOE MINING DISTRICT NORTH FROM RAWLINS, WYOMING

Location and General.

The Seminoe Mining District is located about 27 miles north from Rawlins, Wyoming. The main development to be seen is in Townships 25 and 26 North and Ranges 85 and 86 West with a small surface showing in Township 27 North and Ranges 85 and 86 West. The district is reached by fair wagon road about 35 miles in length. Thus far the chief object of exploration has been in search of copper and precious metals, but without any marked success.

Geological.

A complete investigation of the geology of the district with exact boundaries of different rocks would be a matter of several weeks work. In general however the following description will suffice.

The Seminoe Range has a general easterly and westerly direction and is made up in the main of intrusive rocks, diorites quartzites, greenstones, etc. Locally quartz intrusions are to be noticed, usually stated to be barren in character.

There are large areas of siliceous rocks which are highly ferruginous, leading to the oft repeated statement that Bradleys Peak, the highest westerly point, is a "mountain of iron ore".

Since iron "ore" is a commercial term, this is an exaggeration.

There are immense bodies of low grade iron bearing material, but it is very siliceous in character and could never as a whole in any location be termed iron ore.

In trends as shown on the accompanying maps, occur detached surface bodies of iron ore. In general these are found associated with greenstone on the footwall, and tending into jasper on the hanging wall, if the term of wall may be used. The deposits are of apparent replacement of country rocks, by jasper and ore along an impervious footwall of greenstone. The formation is in many respects similar to that seen in Minnesota, at Tower and at Ely and east thereof.

The Seminoe Range and its foothills are composed entirely of the older rocks. Immediately abutting against them are the measures of the Cretaceous period with their coal measures. The latter are much disturbed and broken and there are probably few areas of any size which would be workable for coal, except for local use.

Locations Examined.

There has been comparatively little work done on iron ores for the purpose of development, the chief work having apparently been undertaken in a (thus far) fruitless search for copper and precious metals. Map I herewith is intended to show in a general way, the ffact that Bradley's Peak seems to be the center from which the iron trends radiate. The strike is west of south as far as about the center of Section 12, T. 25, R. 86 at which point it turns easterly and seems to split into at least three belts.

S.E. ¼ Sec. 1. T. 25 N., R. 86 W.

On this quarter section one Paulsen of Rawlins has located nine lode claims, which are now under bond and lease to the Carroll Brothers for the sum of $25,000.00.

It is on these claims that the chief work has been done tending to show iron ore. As shown on Map III a tunnel over 250 feet long has been driven to crosscut a large vein which shows above on surface. (34A.) The footwall is greenstone and the hanging a mixed jasper with calcareous infiltration.

The tunnel was sampled in sections on the 64 feet of iron material shown. The results are very disappointing. In appearance the ore is very good, but analysis shows it to be a siliceous non-Bessemer ore very low in iron content.

	Description	Iron	Silica	Phosphorus
28.	Tunnel 164'-150'	19.50	48.02	.060
29.	" 150'-140'	31.50	53.50	.094
30.	" 140'-130'	44.50	35.00	.116
31.	" 130'-120'	34.50	51.50	.071
32.	" 120'-110'	37.50	45.80	.079
33.	" 110'-100'	34.50	27.50	.089
34.	Best selected from dump	40.00	40.80	.070
35.	70' cut above tunnel average	38.20	43.65	.067

It is hardly necessary to say that better ore must be developed to make the property of any value as an iron ore producer.

N.W.¼ Sec. 12. T.25 N.R.86W.

Surface iniications point here to a very wide belt, but the work is entirely insufficient to determine whether the rock at surface is in place or slide from some narrower veins. The samples do not offer very much encouragement. High grade pieces can be selected but all samples taken were attempts at commercial averages of the material exposed.

	Description	%Iron	%Silica	%Phos.
35.	Pit W. ½N.W. ¼	34.00	48.00	.091
36.	"	41.00	39.70	.061
37.	Pit E. ½ N.W. ¼	53.00	20.50	.064
38.	" Appears to be in place and is worth development	64.60	1.80	.179

In the last place alone does there seem to be any probability of higher grade ore.

S.E. ¼ Sec. 12. T.25 N. R. 86 W.

Numerous knolls on the quarter show iron float, and by the east side of a greenstone knoll is found a 75 foot shaft from which a specimen is said to have been sent to the World's Fair. An average sample of the dump shows.

	% Iron	% Silica	% Phos.
48.	45.00	33.60	.080

This is not commercial ore at this point.

Section 18, T. 25 N., R. 85 W.

On this section in the northeast quarter, Mr. Barrock has run a tunnel in "wash and slide" as shown on Map III. Singularly enough the only good ore is in this wash. The samples shown as follows and while the ore body may be found, the general character of the material is low grade thus far.

	Description	% Iron	% Silica	% Phos.
24.	Cut in wash	37.50	36.15	.119
25.	"	64.60	1.75	.096
26.	Ore apparently in place	33.00	53.20	.082

Section 7, T. 25 N., R. 85 W.

On the N.W.¼ of this section in a draw between two small hills, one Patterson of Duluth has sunk a shaft 104' deep. The bottom however is still in detrital material and crosscutting to the hills would be advisable. A sample however of the ore from the shaft only shows:

	% Iron	% Silica	% Phos.
27.	37.00	28.00	.058

Section 18, T. 25 N., R. 85 W. Con.

In the extreme southeast corner of the N.E.¼ is a pit showing ore in place between greenstone and diorite of about 15' width. The claim is known as the "Greeley Placer" and is patented. There are several other pits to the northwest but they are caved in and not accessible for sampling. Sample of this pit shows.

	% Iron	% Silica	% Phos.
45.	28.80	35.80	.356

In the S.W. ¼ of this section are several cuts and a shaft which have a very good appearance and the locality is in fact the most encouraging seen on the whole property. Samples as follows:

	Description	% Iron	% Silica	% Phos.
46.	Pit 20' deep ore 18' wide, average	65.80	1.00	.181
47.	Shaft 50' deep in extreme southwest corner of the section. Ore 12' exposed.	62.00	7.60	.090

Territory North of Bradley's Peak.

On Section 31 E. 85 W. T.26 N. and Section 36 of T. 26 N. R. 86 W. and beyond to the north, the iron formation can be readily traced. There appear however, to be intrusions of siliceous rocks as well as quartz intermixed with the iron. Little or no work has been done, except what passes for discovery shafts. A sample was taken from a ledge about 8 feet in width which showed,

	% Iron	% Phos.	% Silica	Gold	Oz. Silver	Per Lead	Ton Platinum
44.	33.50	.125	5.50	.02	.50	None	None

Conclusions on Iron Ore of the District.

With the exception of the S.W. ¼ of Section 12 T.25 N. R. 86 W. and the NW ¼ of the same section, the samples give little promise of immediate discovery of commercial iron ore. Were the district located in Lake Superior where iron ore demand is enormous and increasing, thorough exploration could be advised. In the writer's mind however the Rawlins territory has much greater promise for tonnage, as well as furnishing high grade Bessemer ore against only the possibility of a siliceous Non-Bessemer ore. Considering all the chances, together with the ultimate necessity of a long branch to the territory and a difficult final approach to the present locations which have any promise. Locally there is promise of successful development of Non-Bessemer ore, but as a whole the district is too low grade for commercial consideration.

Coal Lands and Openings Near Iron Ore.

Happening to have an extra half day, the writer visited a number of openings on the Cretaceous Coal Measures. The coal is properly a lignite or brown coal, though its structure is universally good. The locations examined were as follows:

S.W. ¼ Sec. 17 T.25N.R. 85 W. (Open Ground)

As shown on Map III a tunnel 180 feet long opens two veins of considerable size. Both walls are good and hard. The contour of the country indicates a flattening of the basin to the north. Analysis of samples were as follows, the coal being non-coking:

	% Moisture	% V. C.	% F.C.	% Ash	% Sulphur
39. 6' on footwall side	7.22	49168	38.20	4.90	.35
40. 3' on hanging side	7.47	47.03	35.00	10.50	.31
41. 8 feet entire vein	7.72	44.28	44.30	3.70	.38

While the coal partially fuses and would hence act well under a boiler it does not coke. Note low Ash and Sulphur.

N.W. ¼ Sec. 19. Formerly source of mill supply of Paint Co. operating gold mine on Sec. 31 T. 26 N. R. 85 W. Seam Broken and irregular.

S.E. ¼ Sec. 19. Section 8 feet shows 6 ft. dirty coal, 1 ft. slate and 1 ft. coal next to reef. Not worth development.

N.W. ¼ Sec. 20. Same vein as above. Same character

N.E. ¼ Sec. 20. Claimed to be coking coal. Did not so prove. Samples resulted as follows:

	% Moisture	% V.C.	% F.C.	% Ash	% Sulphur
42. 6 ft. soft coal on top clean, no partings	9.72	54.58	32.00	3.70	.30
54. 3 ft. bottom hard splint character	8.92	48.68	39.50	2.90	.35
49. S.W. ¼ Sec. 24. 4' coal good roof and bottom, non-coking	8.47	49.63	38.70	3.20	.35

These coals would be of service to any local industry and render mining cheap in event of future discovery of iron ores. They could have no local bearing on the manufacture of pig iron.

Submitted,

(Sgd.) R. N. DICKMAN

Chicago, Ills., June 12, 1906.

ANALYSES

SEMINOE MOUNTAIN, WYOMING

IRON ORE

No.					% Iron	% Silica	% Phosphorous
28.	Tunnel	164'	150'	SE¼-S1-T25N-R86W.	19.50	48.02	.060
29.	Tunnel	150'	140'	"	31.50	53.50	.094
30.	Tunnel	140'	130'	"	44.50	35.00	.116
31.	Tunnel	130'	120'	"	34.50	51.50	.071
32.	Tunnel	120'	110'	"	37.50	45.80	.079
33.	Tunnel	110'	100'	"	34.50	27.50	.089
34.	Best selected from dump			"	40.00	40.80	.070
35.	70' cut above tunnel average			"	38.20	43.65	.067
35.	Pit W½-NW¼ Sec. 12-T25N-R86W.				34.00	48.00	.091
36.	Pit W½-NW¼ Sec. 12-T25N-R86W.				41.00	39.70	.061
37.	Pit E½-NW¼ Sec. 12-T25N-R86W.				53.00	20.50	.064
38.	Pit E½-NW¼ Sec. 12-T25N-R86W. In place				64.60	1.80	.179
48.	SE¼-Sec 12-T25N-R86W.				45.00	33.60	.080
24.	Cut in wash Sec. 18-T25N-R85W.				37.50	36.15	.119
25.	Cut in wash - Sec. 18-T25N-R85W.				64.60	1.75	.096
26.	Ore apparently in place-Do.				33.00	53.20	.082
27.	NW¼-Sec 18.-T25N-R85W.				37.00	28.00	.058
45.	NE¼-Sec. 18.-T25N-R85W.				28.80	55.80	.356
46.	Pit 20' deep. Ore 18' wide SW¼-Do.				65.80	1.00	.181
47.	Shaft 60' deep " 12' wide " "				62.00	7.60	.090
44.	Ledge sample Sec. 31-T-26N-R85W. Sec. 36-T-26N-R86W.				33.50	5.50	.125

oz. Gold	oz. Silver	% lead	% Platinum
.02	.50	None	None

VARIOUS

ANALYSES

Semilole Mountain
Iron Ores

	# 296			
Silica	45.35%	43.50%	27.43%	)
Iron oxide	52.87	54.41	70.44	)
Magnesia	1.17	1.19	1.08	) Represented as
Manganese	-	Trace	Trace	) lowest grade ore
Sulphur	0.129	0.101	0.055	) obtainable from
Phosphorus	0.091	0.11	0.114	) Sections 1 & 12
Moisture	0.17	0.299	0.761	) T25N -- R86W.
	100.00%	100.00%	100.00%	
Iron equivalent	36.98	38.05	49.27	

	#9	#11	
Ferric Oxide	94.75 %	98.24%	)
Silica	2.20	1.70	)
Phosphorus	0.44	0.071	) Supposedly picked samples.
Sulphur	None	None	)
Titanium	None	None	)
	97.39%	100.011%	
Iron equivalent	66.39	68.78	

E. C. HOAG