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LBA Scrubber Specifications
Dated: 1932-1964

Recovered from site on March 6 2021

January 13, 1932.

Mr. F. A. Hagedorn,
Asst. General Superintendent,
Chicago Coke Oven Plant.

Dear Sir:-

The attached information is relative to scrubbing efficiency of L.B.A., using two method; namely, introducing debenzolized absorption oil direct to scrubber (L.B.A) with sufficient feed to keep volatile matter in benzolized oil within a three percent saturation range and recirculating capacity of oil pump (about 100 M_3 per hour) with a decreased volume of debenzolized oil added depending on percent volatile matter in debenzolized oil to scrubbers.

The results obtained in this test indicated (to the writer at least) that introducing debenzolized absorption oil direct to scrubbers (L.B.A's) was and is the most efficient method of operation; to substantiate this statement the writer would like to call to your attention the differential in steam consumption;gallons of light oil produced per ton of coal charged and characteristic of light oil produced using the two methods.

Yours very truly,

P Hansen

EO

INTERLAKE IRON CORPORATION
Chicago Coke Oven Plant.

January 13, 1932.

KEY TO METHOD OF OPERATING SCRUBBERS (L.B.A).

Dec. (17, 18) The #1 L.B.A. in operation with feed of 36.8 M$_3$ of debenzolized oil being introduced at sprays.

Dec. (19, 20, 21, 22, 23) The #1 L.B.A. in operation the same as on December 17th and 18th with the exception that steam consumption on still was increased every day to reduce volatile matter in debenzolized oil to L.B.A.

Dec. (24, 25, 26) The #1 and #2 L.B.A's were in operation in series; 26.9 M$_3$ of debenzolized oil (per hour) was being introduced into the #1 L.B.A. and then pumped into recirculating oil line on the #2 L.B.A. The total oil feed to the #2 L.B.A. was 26.9 M$_3$ of oil from the #1 L.B.A. and capacity of oil pump pumping from bottom of the #2 L.B.A.

Dec. (27, 28, 29) The #1 and #2 L.B.A. was in operation the same as on December 24th, 25th and 26th with the exception of reducing steam consumption on still.

Jan. (1, 2, 3) The #2 L.B.A. was operating with 16.7 M$_3$ of debenzolized oil being introduced into recirculating line; total feed to L.B.A. was 16.7 M$_3$ of debenzolized oil and capacity of oil pump (about 100 M$_3$) pumping out of bottom of L.B.A. Steam consumption on still was increased from day to day to reduce volatile matter in oil to L.B.A.

On December 30th, 31st and January 4th scrubbing efficiency was reduced to maintain desired volume of gas to city.

EO

INTERLAKE IRON CORPORATION
Chicago Coke Oven Plant.

January 13, 1932.

STEAM CONSUMPTION FIGURES

DATE	Flow Meter reading Intergrator	Intergrator Factor	Differential reading on steam Intergrator	Pounds of steam consumed Per 24 Hours	Per gal.L.O. produced	Per gallon Wash oil circu.	Gallons of Straw Oil circulated	Light Oil produced
Dec. 17	7366	863	180	155340	33.05	.54	288000	4700
18	7535	"	169	145850	32.58	.51	"	4476
19	7800	"	265	228700	50.89	.79	"	4495
20	8120	"	320	276160	58.11	.96	"	4752
21	8453	"	333	287380	63.79	1.00	"	4505
22	8834	"	381	328800	67.95	1.14	"	4839
23	9234	"	400	345200	75.70	1.20	"	4560
24	9570	"	336	289970	60.17	1.43	202200	4819
25	9887	"	317	273570	58.86	1.46	187200	4648
26	0160	"	273	235600	56.40	1.26	"	4177
27	0352	"	192	165700	37.27	.79	209400	4446
28	0547	"	195	168290	44.70	.80	210600	3765
29	0741	"	194	167422	37.81	.78	216000	4428
30	0993	Recirculating on #2 L.B.A. account of low city gas						
31	1074	" " "		" " " " "				
Jan. 1	1252	863	178	153614	43.85	.99	156600	3503
2	1499	"	247	213161	69.19	1.35	158400	3081
3	1769	"	270	233010	62.35	1.47	"	3737
4	2032	Recirculating on #2 L.B.A. account of low city gas						
5	2308	863	275	238188	66.00	1.465	162576	3533
6		Recirculating oil on L.B.A.						
7		" " " "	Return to old method of scrubbing.					

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INTERLAKE IRON CORPORATION
Chicago Coke Oven Plant.

January 13, 1932.

OPERATING DATA

Date	Volatile Matter in absorption oil To still 170°C	Volatile Matter in absorption oil To still 200°C	Volatile Matter in absorption oil To L.B.A.	Stripping efficiency of absorption oil	Gallons of light oil produced Per day	Gallons of light oil produced per ton coal charged	Temperature of absorption oil To still	Temperature of absorption oil To L.B.A.
Dec. 17	2.10	2.70	.80	1.90	4700	2.85	25°C	23°C
18	"	2.60	.90	1.70	4476	2.65	"	"
19	2.00	2.50	.70	1.80	4494	2.69	"	24
20	1.95	2.30	.60	1.70	4752	2.87	26	"
21	1.70	2.10	.55	1.55	4505	2.66	27	25
22	1.65	1.95	.45	1.50	4839	2.92	26	"
23	1.70	2.00	.30	1.70	4560	2.74	"	"
24	2.40	3.30	.20	3.10	4819	2.87	25	"
25	2.70	3.25	.23	3.02	4648	2.83	24	"
26	2.45	3.05	.33	2.72	4177	2.50	22	24
27	3.00	3.50	.88	2.70	4446	2.69	23	26
28	2.80	3.35	1.03	2.22	3765	2.20	24	"
29	2.85	3.50	.98	2.52	4428	2.80	23	23
30	3.00	3.60	Recirculating on #2 L.B.A. account of low city gas					
31	2.80	3.50	" " " " " " "					
Jan. 1	2.70	"	.83	2.67	3503	2.18	24	25
2	2.60	3.40	.45	2.95	3081	1.89	23	26
3	2.40	3.00	.60	2.40	3737	2.31	22	24
4	2.35	2.95	Recirculating on #2 L.B.A. account of low city gas					
5	2.30	"	.225	2.725	3533	2.13	22	23

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INTERLAKE IRON CORPORATION
Chicago Coke Oven Plant.

January 13, 1932.

FRACTIONAL DISTILLATION OF LIGHT OIL

Date Produced	Temperature 1st drop	% off @ 100°C	% off @ 120°C	% off @ 125°C	% off @ 150°C.	% off @ 200°C	Dry point % oil	Dry point °C	Napthalene in surplus gas grains per 100 cu.ft.
Dec. 17	68°C	47	73	77	88	93	98	214	1.1
18	66	48	74	77	87	95	97	215	1.1
19	68	52	73	76	86	94	97	219	1.0
20	73	44	71	75	87	95	97	214	1.0
21	68	45	73	76	88	95	97	221	.9
22	73	42	71	75	86	95	96	216	1.4
23	76	42	71	74	87	95	97	212	1.4
24	73	33	63	66	81	93	96	230	1.5
25	78	32	64	69	83	93	96	215	1.2
26	78	34	68	72	85	94	97	214	1.0
27	76	45	75	77	89	95	97	220	.8
28	68	43	73	76	88	95	96	216	.7
29	77	45	72	76	87	95	97	214	1.5
30	Recirculating on #2 L.B.A. account of low city gas.								
31	" " " " " " " "								
Jan. 1	78	27	61	66	83	94	97	212	.8
2	76	26	60	64	81	94	97	210	1.2
3	65	26	62	62	79	94	94	223	.8
4	Recirculating on #2 L.B.A. account of low city gas.								
5	82	21	54	59	79	93	97	218	1.0

EO

THE KOPPERS RESEARCH CORPORATION

MELLON INSTITUTE LABORATORIES

WASH OIL SPECIFICATIONS

January 26, 1933

The following physical and chemical tests apply only to petroleum products:

1. SPECIFIC GRAVITY.

The specific gravity shall be determined by means of a hydrometer or Westphal balance and must not be over 0.875 at 15.5°C.

2. VISCOSITY.

The viscosity must not be more than 69 seconds at 38°C., and not more than 150 seconds at 4°C. Both tests shall be made in a Saybolt Universal Viscosimeter.

3. EMULSIFICATION.

100 ml. of the oil are shaken vigorously for 20 minutes with 100 ml. of distilled water in a 250 ml., glass stoppered cylinder, 30 to 32 cm. in length, (Fisher Cat. No. 8-565). The test is to be carried out at 21°C. with oil and water which have previously attained this temperature. At least 95% of the oil must separate in ten minutes.

4. BOILING RANGE.

Not more than 1% of the oil should distill under 300°C., and not less than 90% under 370°C. The distillation is to be conducted in the apparatus shown on the accompanying drawing F-19773.

5. DECOMPOSITION TEST.

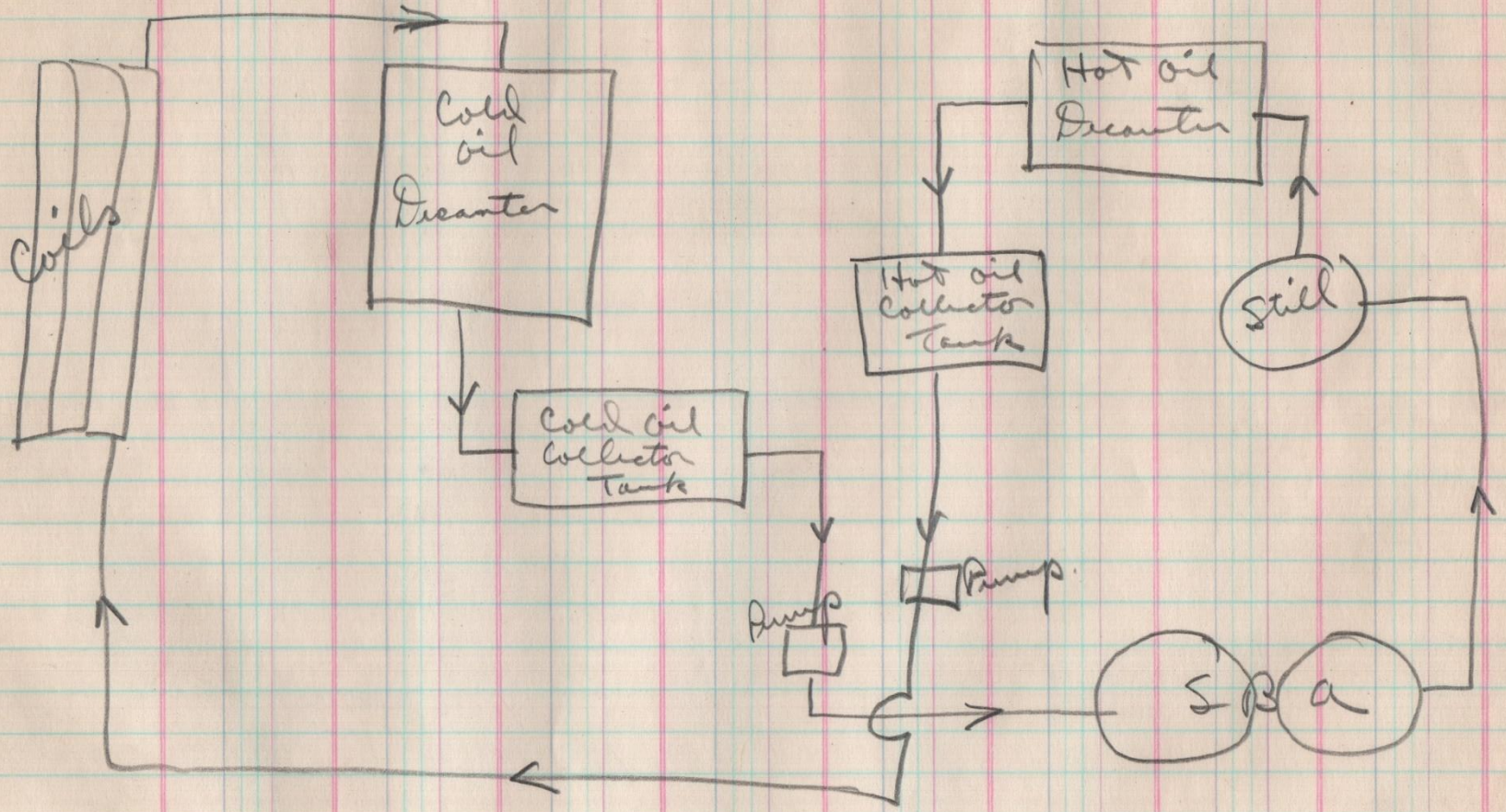
The residue of carbonaceous or other material from the oil shall not be more than 0.10% by weight, when subjected to the following test:

The oil to be tested shall be filtered through a paper without suction at a temperature of 38°C. or lower. A 500 cc. Erlenmeyer pyrex flask, cooled to room temperature, shall be allowed to stand in a balance case for 15 minutes, and then weighed to the nearest milligram. 200 cc. of the oil (to the nearest 0.1 gram) are then placed in the flask and the flask tightly stoppered with a cork carrying a 6 inch length of capillary tubing of 1 mm. inside diameter. The tubing may be bent in any shape to reduce the over-all dimensions of the apparatus. The flask is then placed in a drying oven which has been adjusted previously so that a temperature of 140 - 145°C will be maintained at the level of the oil in the flask. The vents on the oven shall be open. The heating shall be continuous and undisturbed for 120 hours.

The flask is then cooled to room temperature and the stopper removed, after which the oil is diluted with 100 cc. of petroleum ether (U.S.P. quality, with a dry point of 80°C. or less), agitated thoroughly, settled and filtered through a Gooch crucible, using slight suction if necessary. The residue shall be well washed with petroleum ether, being careful that the residue on the filter does not become dry until after the final washing. The volume of petroleum ether used for the washing should not exceed 150 cc. The flask and crucible are then dried at 105°C. for two hours, cooled as before and weighed. The combined residues shall not exceed 0.10% by weight of the oil.

2-21-40

Wash Oil Circulation



C
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P
Y

F. A. Hagedorn

September 30, 1946

R. B. Chamberlin

Light Oil Operation

For the past month we have been running tests on light oil operation the object of which was to increase efficiency and decrease the amount of steam consumed. The attached tabulation shows the essential data concerning these tests.

TEST NO. 1:

This test was merely a checking of the operation which we had practised for some time whereby we were circulating approximately 100 gallons of wash oil per minute using only No. 3 scrubber, 11 ft. in diameter. With that kind of operation we were leaving .67 gallons of light oil in the gas and consuming 120 lbs. of steam per gallon of oil.

TEST NO. 2:

We increased the wash oil circulation in order to give us one and one-half gallons per square foot of grid area. This showed considerable improvement in scrubbing efficiency, but up to and including this test we had made no effort to conserve steam.

TEST NO. 3:

We increased the circulation to 280 gallons per minute and returned 100 gallons per minute to the still, the rest being re-circulated. This did not show any additional scrubbing efficiency because of no increase in scrubbing area or gas velocity. It did show some improvement in steam economy having dropped to 109 lbs. per gallon of light oil purchased.

TEST NO. 4:

We placed No. 2 scrubber in operation which is 14 ft. in diamater and introduced 145 gallons of wash oil per minute to No. 2 scrubber and from thence to No. 3 scrubber and the entire amount to the still. In other words, this was a simple counter-current scrubbing operation with the gas into No. 3 scrubber and leaving No. 2 and the wash oil traveled counter-current to this. Considerable improvement in scrubbing efficiency is noted on this test in that we leave only .36 gallons per ton coal in gas. We decreased steam consumption as well.

TEST NO. 5:

In Test No. 5 we are approaching what we believe to be the ideal mode of operation in that we are introducing 240 gallons of wash oil to the large scrubber and withdrawing 100 gallons of this to the small scrubber and from

thence to the still. The balance of the 240 gallons being re-circulated on the large scrubber. The scrubbing efficiency remains practically the same as in test No. 4 and the steam economy is no better. However, it may be noted that the saturation of the wash oil to the scrubbers is .20 and as we decrease steam consumption this should increase. Starting today, we are decreasing the steam consumed by 500 lbs. per hour every second day until we note the saturation increasing, at which point we will discontinue the reduction of steam and run for a reasonable period of time to get results.

In general, we have accomplished the following:

We have obtained approximately one-quarter of a gallon of light oil per ton of coal additional with the decrease in steam consumption of approximately 20%. We believe that the steam consumption can be further decreased without seriously affecting the light oil recovery.

lb.

Test	Date	Scrubbers in Service	Gas Volume per Hour M. Cu. Ft.	Wash Oil Volume per Min. Gals.	Temp. of Gas °C To	Temp. of Gas °C From	Temp. of Wash Oil °C To	Temp. of Wash Oil °C From	Gas Vol. per Ton Coal Cu. Ft.	Gross Heating Val. of Gas B.T. U.	Gas Pressure m.m. Hg. To	Gas Pressure m.m. Hg. From
1	Aug. 29-30	#3	238	100	28.7	27.0	26.0	30.0	12,405	441	53	51
2	Aug.31-Sept.1	#3	204	145	29.5	28.0	31.0	32.0	11,785	445	48	46
3	Sept. 4-5	#3	225	280	30.0	29.0	32.0	31.0	11,955	453	44	43
4	Sept. 10-11-12	#2 & #3	231	145	30.1	28.0	29.3	30.3	12,237	447	48	41
5	Sept.19-20-21-22	#2 & #3	245	240	30.0	29.0	29.0	32.0	11,974	456	56	38

Test	Saturation of Wash Oil to Scrubbers % @ 170	Saturation of Wash Oil from Scrubbers % @ 170	Saturation of Wash Oil from Scrubbers % @ 200	Light Oil left in Gas /ton Coal Gals.	Light Oil Recovery /ton Coal Gals.	Steam used / Gal.L.O. Lbs.	Total Oil in Gas per Ton Gals.
1	.20	1.15	1.85	.67	1.60	120	2.27
2	.20	.90	1.55	.42	1.78	116	2.20
3	.30	.85	1.50	.46	1.89	109	2.35
4	.20	1.00	1.60	.36	2.18	94	2.54
5	.20	1.10	2.00	.39	1.92	97	2.32

January 24th - 1948

H. Klopsch
K. Purcell
Fuel Oils

Following are the results of tests on Fuel Oils as you requested.

	Sp Gr 60°/60° F	Flash Pt °C C.O.C.	Engler Viscosity @ 100° F.	Pour Point
Oil from Standard Oils stored here for the Forest Park Plant	.980	122°C	—	
Kerosene from Oil House	.818	—	—	
Fuel Oil in use for heating coal cars	.850	80°C	27 Secs	Flows at 4° F
50% Kerosene 50% Fuel Oil for Forest Park	.908	79°C	33 Secs	Flows at 4° F

The mixture of 50% Kerosene 50% Fuel Oil for Forest Park compares favorably with the oil used at present for heating coal cars.

K. J. Purcell

Jan 28 '00/48

	Sp. Gr @60°F	°Be	Flash Point °C	Engler Viscosity
Stanolix Fuel Oil	.850	34.5	80°C	27 Secs
Kerosene	.818	41.0	62°C	
Forest Park Fuel Oil	.980	13.2	122°C	
25% Kerosene 75% Forest Park Fuel Oil	.937	19.1	90°C	140 Secs
33 1/3% " 66 2/3% " " " "	.925	21.1	88°C	
40% " 60% " " " "	.916	22.9	85°C	
50% " 50% " " " "	.908	24.1	79°C	33 Secs
15% Kerosene 15% Stanolix 70% Forest Park Oil	.936	20.0	90°C	
20% " 20% " 60% " " "	.924	21.5	88°C	40 Secs
60% " 40% " " "	.896	26.0	88°C	38 Secs
30% " 30% " 40% " " "	.892	27.0		32 "

				Sp Gr	Be	Flash Point
80% Forest Park Oil	10% Gasoline	10% Stanolix				30°C
75% " " "	5 "	20 "				42°C
80% " " "	10% Light Oil (Crude Benzol)	10 "				28°C
(80% " " "	10% Kerosene	10% Stanolix)	+5% Gasoline			42°C
(70% " " "	15% "	15% ")	+5% "			42°C
60 " " "	20 Gasoline	20 Stanolix		.908		
55 " " "	30	15 "		.895		
43 "	36	24 "		.878		

January 30, 1948

Freedom-Valvoline Oil Company
3040 East 95th Street
Chicago 17, Illinois

Gentlemen:

We would appreciate having you advise us if Valvoline Oil will be on the critical list, so we can plan ahead and avoid delays in operation.

Yours very truly,
INTERLAKE IRON CORPORATION

Plant Purchasing Agent

E/K

CC--HRN
LH

L. Hanson

J. Erickson

Absorbent Oil

H. R. Nicklaus
R. B. Chamberlin

February 5,1948.

In accordance with request from Mr. L. Hanson at the meeting last Friday, I wrote the Valvoline Oil Co., asking them if Valvoline Oil will be on the critical list. I am quoting below reply received from them, dated Feb. 4th.

"In checking our records we find that we are selling you occasional carloads of Absorbent Oil, and while all Petroleum products are somewhat oversold, we do not believe that this material will be classified as being on the critical list.

"Please just give us ample time for slow delivery when placing orders."

J. Erickson

February 4th 1948

H.R. Niklaus
K.J. Purcell
Fuel oil for tracks at Car Dumper.
H. Klopsch

Several different kinds of oil and mixes of these oils were burned in order to see if they could be used as a fuel at the car dumper. A "Hauck #254 Venturi Suction Torch was used. This is the same type as is in use at the dumper.

#1 P4 Solvent Oil had good burning qualities

#2 Diesel Oil used in Caterpillar Tractor had good burning qualities.

#3 Fuel oil for Forest Park burned with a short flame of a poor quality.

#4 50% Diesel Oil 50% Forest Park Oil had fair burning qualities.

#5 50% Stanolix 50% Forest Park Oil had fair burning qualities

These oils were all burned under suction and not under pressure, which is now used at the coal dumper, with the exception of the P4 Solvent Oil, which was

successfully burned both ways.

Fourth Pk Oil	Diesel Oil	Dumpenful Oil Standard	=	Sp. Gr.	Flash Pt
60 %	20 %	20 %	=	.925	96°
70 %	30 %	—	=	.934	108°
60 %	10 %	30 %	=	.912	88°

9-27-49

Mr Niklaus:

Following are the results of 2 series tests for naphthalene in the gas. The tests were run on Sept 25th and 26th.

	Before L.B.A's	After L.B.A.'s
Sept 25th	14.5 grains/100 cu.ft	1.4 grains/100 cu.ft
Sept 26th	13.9 " " " "	.7 " " " "

L. J. Purcell

9-26-49

Mr Nicklaus:

Attached is a record of some work we did on the L.B.A. scrubbers, as regards scrubbing efficiency in 1946.

Possibly you might find some results in here relating to the matter you spoke of Friday

C. J. Purcell

LIGHT OIL IN GAS

DATE	SCRUB #	M CU FT GAS PROD PER HOUR	GALS. WASH OIL CIRC. PER MIN	TEMP °C OF GAS °C TO	TEMP °C OF GAS °C FROM	TEMP °C WASH OIL TO	TEMP °C WASH OIL FROM	% LT OIL IN WASH OIL TO	% LT OIL IN WASH OIL FROM	CU FT GAS PER TON COAL	BTU OF GAS	MM HG GAS PRES TO	MM HG GAS PRES FROM	GALS/TON COAL LIGHT OIL IN GAS TO	GALS/TON COAL LIGHT OIL IN GAS FROM
AUG 29	3	244	100	29.0	27	26	30	1.90	.20	12,480	436	53	51	1.49	.64
30	3	238	100	28.5	27	29	30	1.60	.10	12,330	445	53	51	2.08	.69
					28										
31	3	183	145	29.5	28	30	32	1.70	.20	11 920	447	42	40	1.85	.42
SEPT 1	3	225	145	29.5	28	32	32	1.40	.20	11 650	442	53	52	1.91	.41
* SEPT 4	3	200	280	29.5	29	31	31	1.50	.30	11,640	455	45	44	2.03	.43
5	3	250	280	30.5	29	32	31	1.50	.30	12,270	450	41	42	2.40	.49
* SEPT 10		289	145	32.5	31	31	32	1.60	.20	12,290	443	40	35	1.04	.47
11		200	145	30.5	28	31	32	1.50	.20	12,140	452	50	48	1.04	.26
12		202	145	27.5	25	26	27	1.60	.20	12,280	446	53	41	.86	.12
X SEPT 19		238	240	32.0	31	29	32	1.90	.20	11,820	462	50	32	1.11	.45
X 20		251	"	31.0	29	30	33	2.10	.20	12,129	455	59	39	1.07	.32
X 21		245	"	29.0	27	29	31	1.90 2.40 SPOT	.20	11,974	458	56	35	1.03	.41
X 22			"	29.0	27	28	30	2.20	.20	11,974	452	70	39	1.14	.47

#3 Scrubber 11 ft dia used only from Aug 29th to Sept 5th

#3½ Scrubber 14 ft dia followed from 9-5-46 to 9-2[illegible] During this period test [illegible] before and after #2.

X Remodeling. 100 Gals/min W. Oil steaming to [illegible] Still

Mr. Karl Oliver - Cleveland Office

June 18, 1956

R. B. Chamberlin - Chicago Plant

Absorbent Oil

Mr. H.R. Nicklaus

Mr. Chas. W. Novak, Deep Rock Division of Ken McGee Oil Company, called here last week in regard to absorbent oil. He said he was doing so at your request.

Attached hereto is copy of their specifications as well as our own.

I Made no comments in regard to our present quality or quantity.

We are satisfied with our present material. If you desire another supplier I believe we could use this oil but would want to make a thorough analysis before so doing.

RBC

R.B. Chamberlin

mh

Attach.

SP—2
Revised
7-27-55

DEEP ROCK ABSORPTION OILS

	180 ABSORPTION OIL	MINERAL SEAL OR 240 ABSORPTION OIL
Specific Gravity	.811/.820	.840/.850
API Gravity	41/43	36/38
Distillation:		
IBP Min.	395	515
10%	405/420	540/555
50%	430/445	550/565
90%	470/485	570/585
EP	500/520	585/600
Recovery	98 Min.	98 Min.
Sulfur, %	.10 Max.	.20 Max.
Color, Saybolt	21 Min.	16 Min.
Odor	Sweet	Sweet
Corrosion @ 212° F.	Pass	Pass
Flash, Cleveland Open Cup °F.	180 Min.	260 Min.
Pour Point, °F.	5 Max.	15 Max.
Viscosity, Centipoises @ 100° F.	2 Max.	5.0 Max.
Viscosity SUS @ 100° F.	34.5 Max.	45.0 Max.
Kauri Butanol Value	31/36	26/31
Molecular Weight, Approx.	180	240

Intertake Iron Chicago

METHOD FOR EXAMINATION OF ABSORBENT OIL.

1. SPECIFIC GRAVITY at 15.5°C. Use Pycnometer. The specific gravity should be as low as possible; but not over .840.

2. VISCOSITY as low as possible; but not over 92 seconds at 70°F. when using a Saybolt-A, = 185 seconds when using a Standard Universal Viscosimeter. Oils tried required 72 to 92 seconds with Saybolt-A.

3. 500 cc of the oil steam distilled at 100°C with dephlegmator with 0.5 Kilo of steam should not yield more than 10 cc of distillate. The still should not be heated with direct flame.

4. Steam distillation of the straw oil (as in #3) should produce no permanent emulsion. After 15 minutes there should be no band of emulsified oil between the oil and water. The line of division should be sharply defined.

5. Must give no distillate below 285°C (Temperature of oil) on dry distillation.

6. FREEZING TEST: When chilled to 4.°C., there should be no precipitation or appreciable thickening of the oil.

7. Emulsification Test: 100 cc shaken vigorously in a stoppered 200 cc cylinder @ 20-25°C with 100 cc of water, the separation should take place as quickly as possible. 95% at least should separate in 10 minutes. Cylinder to measure from 20 to 22 c m between 0 and 200 cc graduations and to be cleaned with soap brush and hot water.

8. OLEFINES: Should not lose more than 10% in volume when washed with 2.5 times its volume of a mixture of 2 parts of 95% H_2SO_4 and 1 part fuming sulphuric acid containing about 25% free SO_3.

TEST FOR OLEFINES:

Exactly 10 cc of the straw oil are measured into a 110 cc special flask of the Cassia type with the neck graduated into 10 cc. 25 cc of special Olefine Acid are added. It is absolutely necessary to have the Olefine Acid 101% H_2SO_4 in order to remove all of the Olefines. Keep at 32°F at all times.

Let stand one hour (keep flask tightly corked.)

Fill the flask to the 100 cc mark with 95% H_2SO_4, avoiding mixing of the oil again with the acid. This is done by allowing the acid to slowly flow down the neck of the flask from a burette.

Let stand 2 hours (keep flask tightly corked.)

Read the amount of paraffines left; the difference gives Olefines in 10 cc. of the oil.

Special Flask: 110 cc cork stoppered flask; the 10 cc portion between 100-110 cc is graduated on the neck. Each cc is graduated into 1/20 cc.

When working under these conditions the paraffines are practically unattacked.

INTERLAKE IRON CORPORATION
Cleveland 14, Ohio

June 28, 1956

Mr. R. B. Chamberlin - Chicago Plant

K. H. Oliver - Cleveland Office

Absorbent Oil

Mr. H. R. Nicklaus - Chicago Plant
Mr. John Erickson - Chicago Plant

In response to your memorandum of June 18, 1956 having reference to No. 240 Absorption Oil as produced by Deep Rock Division of Kerr-McGee Oil Industries, Inc., the writer wishes to advise that we have no desire to establish another source for you as long as you are satisfied with your present material. When Mr. Charles W. Novak visited the writer several weeks ago I showed interest in his product in view of Olefine problems which we are encountering at Toledo. At that time I told him that apparently Chicago was not encountering any problems but that it would be satisfactory for him to contact you to discuss the matter. Therefore, please do not feel obligated in any manner, but you might keep them in mind for the future if you run into any problems with your present source.

ORIGINAL SIGNED
K. H. OLIVER

K. H. Oliver

cc

COPY

Mr. D. C. Ross - Cleveland Office

November 18, 1963

R. A. Nagan - Chicago Plant

Milwaukee Solvay Coke - Surplus Absorbent Oil

E. F. Lowe

We have received a sample of the absorbent oil which Milwaukee Solvay is attempting to dispose of. Our specifications on emulsification are 95% separation in 10 min. or less. Two tests of the sample sent to us resulted in 95% separation in 26 min. 20 sec.

On the basis of the emulsification test, we do not think it advisable to purchase this absorbent oil for use at the Chicago Plant.

R. A. Nagan

lb.

INTERLAKE IRON CORPORATION

CHICAGO PLANT

ANALYSIS REPORT

ANALYSIS OF: Absorbent Oil recieved from Milwaukee Solvay Coke Co.

Date Received Nov. 12, 19 63

Date Reported Nov. 15, 19 63

Si	
S	
P	
Mn	
Cr.	
G.C.	
C.C.	
T.C.	
Fe	
SiO_2	
R_2O_3	
AL_2O_3	
CaO	
MgO	
Ig. Loss	
H_2O	
Emulsufication	- 95% at 26 Min. 20 Sec.

R. D Cargny

CF - L5 REV. 3/63

INLAKEIRON CLV

+

INLAKEIRON CGO

ROGER NAGAN

MR A P MUELLER OF MILWAUKEE SOLVAY COKE IS SENDING YOU A ONE GALLON SAMPLE ABSORBENT OIL FOR YOUR DECISION AS TO POSSIBLE USE OF 10,000 GALLONS ONLY AT YOUR PLANT PRICE WILL BE SATISFACTORYILY DETERMINED LATER B H CARMICHAEL HAS BEEN SO INFORMED

D C ROSS WU21 11-8-63 .12.50

INLAKEIRON CLV

+

INLAKEIRON CGO

9/21/64

Mr. R.Nagan

SPECIFICATIONS OF OILS USED AT CHICAGO PIANT

Thede are the specs requested.
H.S.

	#1 Diesel Fuel Oil	#2 Grade Fuel Oil	Furnace Oil	Industrial "C"	Furnace Oil
Use:	Euclids Tractor #14 Cranes Locomotives	Bulk Density Control	Torch Oil	Boilers	Heating Scale Hse Service Hse.
Distillation Deg. "F"	10% - 390	390	390		437
	95% - 520	575	575		585
End Point	530	625	625		640
Doctor's Test Odor:	Sweet	Sweet	Sweet		Sweet
Flash °F (TCC)	128°	145°	145°	180 to 240°	154°
Gravity A P I	43	36	36	8 to 14.4	
Pour Point °F	-35	15	15	20 to 40	-50 to -5
Sulphur %	0.1	.45	.45	1.76 to 3.0	.75
Censtistoke at 100°F	1.8	2.4	2.4		1.8 to 2.7
Viscosity SSF 122°				104 to 200	
Color	Saybolt 17	ASTM 1	ASTM 1		ASTM 2-1/2
Sediment				0	
Corrosion					
Copper strip 3 hrs. at 212°F	1A	1A	1A		
BTU (Est)	132,000	137,000	137,000	144,000 to 152,000	
Combination Water & Sediment				.0 to .9%	
Ash				.0 to .9%	

lb.

CONSUMPTION, PRICES AND STORAGE FACILITIES OF FUEL OIL

	Supplier	1962 Receipts Gallons	1962 Price Range per Gal.	6/6/63 Price per Gal.	Storage Tanks	Delivery	Use
#1 Diesel Fuel Oil							
Coke Plant	Std. Oil Div. (Am. Oil Co.)	49,000	$.1063 to $.1138	$.10883	1 - 12000gal.	Truck Trans.	Euclids #5 Crane #14 Tractor
Furnace Plant	"	99,251	$.1063 to $.1138	$.1035	2-10,000 gal.	RR Car (f.o.b.) (Whiting)	Locomotives Cranes Tractors
Furnace Dock	"	5,000	$.154 to $.156	$.164	1-1,000 gal.	Tank Truck	Dock
#2 Fuel Oil							
Coke Plant	"	83,000	$.095 to $.1026	Less 6500 gals. =.1018 more than 6500 $.0978	1-10,500 gal.	Truck Trans.	Bulk Density
	"	16,300	$.146	Do	2-10,000 gal.	Truck Trans.	Torch Oil
Furnace Oil	"	9,901	$.146		4 - 275 gal.	Tank Truck	Heating
Industrial "C"		707,997	$.07865 to $.079	$.08254	2-45,000 " 1-16,000 "	Truck Trans.	Boilers

lb.