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MOVABLE-WALL COKE OVEN TESTS OF COAL SAMPLES
SUBMITTED BY STELCO INCORPORATED

Project No. 03-3-0/14-29
Job No. 3367R

J. G. Jorgensen and T. A. Lloyd
Combustion and Carbonization Research Laboratory

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J. G. Jorgensen* and T. A. Lloyd**

INTRODUCTION

The investigation is No. 29 in the continuing program of coal evaluation for STELCO Inc by the Energy Research Laboratories.

The scope of the investigation comprises of eleven blend tests carbonized in duplicate in the CANMET 18-inch width movable-wall coke oven. Two additional tests were repeated using a different Mathies coal. The blends tested are described in Table 1.

The project was initiated in a letter dated 2 September 1981 by I. Pevatto, Research and Development, STELCO, The Steel Company of Canada Limited. A copy of this letter is included in Appendix 1.

The results of the coke oven tests and analyses are recorded in Tables 2 to 13. The results were transmitted to the company during the course of the investigation and this report is intended primarily for record purposes.

*Head, Coal Petrography, **Conventional Coke-making, Combustion and Carbonization Research Laboratory, Energy Research Laboratories, CANMET, Energy, Mines and Resources Canada, Ottawa, Canada K1A 0G1

Table 1 - Test Blends

Test No.*	1	2	3	4	5	6	7	8	9	10	11
Oven Test No.	581	572	573 577	579	571	574	582	583	584	590 592	591
	585	576	613	587	575	578	586	588	589	614	593
Blend Composition %											
Beckley	25	25	25	25	-	-	4	4	4	4	4
Maple Meadow	-	-	-	-	25	25	11	11	11	11	11
Reitz	-	-	-	-	-	-	5	5	5	5	5
Jewell No. 12	-	-	-	-	-	-	8	8	8	8	8
Chisholm	75	-	-	-	-	-	-	25	-	-	-
Moss No. 3	-	75	-	-	75	-	-	-	25	-	-
Madison	-	-	-	-	-	-	-	-	-	-	-
Mathies	-	-	75	-	-	75	-	-	-	25	-
Devco	-	-	-	75	-	-	-	-	-	-	25
HV Mix**	-	-	-	-	-	-	72	47	47	47	47

* All Tests Repeated

** HV Mix Consists of:

Moss No. 3	31%
Chisholm	38%
Devco	4%
Madison	19%
Mathies	8%

Table 2 - Analyses of Coke Oven Charges and Resultant Cokes

Identification

Test Number.....	581	585	572	576	573	577	613
Date Charged.....	1981-10-26	1981-11-02	1981-10-05	1981-10-15	1981-10-06	1981-10-19	1982-02-01
Description.....	Test No. 1	Test No. 1	Test No. 2	Test No. 2	Test No. 3	Test No. 3	Test No. 3 (New Mathies)

Coke Oven Charge

Laboratory Number.....	4285-81		4244-81		4245-81		2248-82
------------------------	---------	--	---------	--	---------	--	---------

Proximate Analysis (db)

Ash.....%	5.0		6.3		6.8		7.9
Volatile Matter....%	27.6		24.9		30.1		28.0
Fixed Carbon.....%	67.4		68.8		63.1		64.1
Sulphur (db)	0.65		0.72		1.45		1.56

Resultant Coke

Laboratory Number.....	4398-81	4402-81	4389-81	4393-81	4390-81	4394-81	2487-82
------------------------	---------	---------	---------	---------	---------	---------	---------

Proximate Analysis (db)

Ash.....%	6.8	6.7	8.3	8.2	9.3	9.2	10.5
Volatile Matter....%	0.8	0.9	1.0	1.0	0.7	1.0	0.9
Fixed Carbon.....%	92.4	92.4	90.7	90.8	90.0	89.8	88.6
Sulphur (db).....%	0.52	0.49	0.70	0.73	1.18	1.18	1.14

Table 3 - Analyses of Coke Oven Charges and Resultant Cokes

Identification

Test Number.....	579	587	571	575	574	578	582
Date Charged.....	1981-10-21	1981-11-04	1981-09-28	1981-10-14	1981-10-07	1981-10-20	1981-10-27
Description.....	Test No. 4	Test No. 4	Test No. 5	Test No. 5	Test No. 6	Test No. 6	Test No. 7

Coke Oven Charge

Laboratory Number.....	4284-81		4038-81		4246-81		4286-81
------------------------	---------	--	---------	--	---------	--	---------

Proximate Analysis (db)

Ash.....%	3.7		6.3		6.7		5.7
Volatile Matter....%	29.8		24.9		30.3		27.2
Fixed Carbon.....%	66.5		68.8		63.0		67.1
Sulphur (db)%	1.10		0.68		1.40		0.73

Resultant Coke

Laboratory Number.....	4396-81	4404-81	4120-81	4392-81	4391-81	4395-81	4399-82
------------------------	---------	---------	---------	---------	---------	---------	---------

Proximate Analysis (db)

Ash.....%	4.9	5.5	8.2	8.0	9.1	9.1	7.6
Volatile Matter....%	0.8	0.8	1.3	0.8	0.9	1.1	0.8
Fixed Carbon.....%	94.3	93.7	90.5	91.2	90.0	89.8	91.6
Sulphur (db).....%	0.95	0.92	0.67	0.65	1.13	1.16	0.65

Table 4 - Analyses of Coke Oven Charges and Resultant Cokes

Identification

Test Number.....	586	583	588	584	589	590	592
Date Charged.....	1981-11-03	1981-10-28	1981-11-05	1981-10-29	1981-11-09	1981-11-12	1981-11-17
Description.....	Test No. 7	Test No. 8	Test No. 8	Test No. 9	Test No. 9	Test No.10	Test No.10

Coke Oven Charge

Laboratory Number.....	4287-81	4374-81	4534-81
Proximate Analysis (db)			
Ash.....%	5.8	6.1	6.2
Volatile Matter....%	27.0	26.6	27.6
Fixed Carbon.....%	67.2	67.3	66.2
Sulphur (db)	0.70	0.70	0.96

Resultant Coke

Laboratory Number.....	4403-81	4400-81	4405-81	4401-81	4406-81	2016-82	2018-82
Proximate Analysis (db)							
Ash.....%	8.7	7.6	7.4	7.6	7.8	8.2	8.2
Volatile Matter....%	0.7	0.7	1.7	0.8	1.8	0.9	0.9
Fixed Carbon.....%	90.6	91.7	90.9	91.6	90.4	90.9	90.9
Sulphur (db).....%	0.64	0.59	0.59	0.65	0.62	0.76	0.81

Table 5 - Analyses of Coke Oven Charges and Resultant Cokes

<u>Identification</u>			
Test Number.....	614	591	593
Date Charged.....	1982-02-02	1981-11-16	1981-11-18
Description.....	Test No. 10 (New Mathies)	Test No. 11	Test No. 11
<u>Coke Oven Charge</u>			
Laboratory Number.....	2249-82	4535-81	
Proximate Analysis (db)			
Ash.....%	6.5	5.2	
Volatile Matter....%	26.8	27.6	
Fixed Carbon.....%	66.7	67.2	
Sulphur (db)%	1.03	0.84	
<u>Resultant Coke</u>			
Laboratory Number.....	2488-82	2077-82	2019-82
Proximate Analysis (db)			
Ash.....%	8.7	6.8	6.9
Volatile Matter....%	0.8	0.8	0.8
Fixed Carbon.....%	90.5	92.4	92.3
Sulphur (db).....%	0.77	0.72	0.73

Table 6 - Physical Tests and Fusibility of Ash of Component Coals

Identification

Laboratory Number.....	4285-81	4244-81	4245-81	2248-82	4284-81	4038-81
Description.....	Test No. 1	Test No. 2	Test No. 3	Test No. 3	Test No. 4	Test No. 5
				(New Mathies)		

Coal Pulverization

Sieve Analysis

<u>Passing</u>	<u>Retained On</u>						
	1/4 in. %	0.7	0.2	0.7	0.4	0.2	0.1
1/4 in.	1/8 in. %	15.1	12.6	14.0	9.9	13.3	8.0
1/8 in.	1/16 in. %	20.5	19.1	21.7	18.0	20.0	15.0
1/16 in.	1/32 in. %	20.7	18.8	23.2	22.2	22.2	17.7
1/32 in.	.....%	43.0	49.3	40.4	49.5	44.3	59.2
Total Passing	1/8 in. %	84.2	87.2	85.3	89.7	86.5	91.9

Grindability

Hardgrove Index

Fusibility of Ash

Initial Deformation Temp°F
 Softening Temp. Spherical.....°F
 Softening Temp. Hemispherical...°F
 Fluid Temp.....°F

48 47 46 45 44 43 42 41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

48 47 46 45 44 43 42 41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

Table 7 - Physical Tests and Fusibility of Ash of Component Coals

Identification

Laboratory Number.....	4246-81	4286-81	4287-81	4374-82	4534-81	2249-82
Description.....	Test No. 6	Test No. 7	Test No. 8	Test No. 9	Test No.10	Test No.10 (New Mathies)

Coal Pulverization

Sieve Analysis

<u>Passing</u>	<u>Retained On</u>						
	1/4 in. %	0.6	0.3	0.5	0.3	0.6	0.2
1/4 in.	1/8 in %	14.3	13.4	14.5	13.0	15.6	7.9
1/8 in.	1/16 in. %	21.7	19.9	20.1	20.2	21.5	15.1
1/16 in.	1/32 in. %	22.5	21.5	20.9	20.7	21.3	19.3
1/32 in.	.....%	40.9	44.9	44.0	45.8	41.0	57.5
Total Passing	1/8 in. %	85.1	86.3	85.0	86.7	83.8	91.9

Grindability

Hardgrove Index

Fusibility of Ash

Initial Deformation Temp°F
 Softening Temp. Spherical.....°F
 Softening Temp. Hemispherical...°F
 Fluid Temp°F

Table 8 - Physical Tests and Fusibility of Ash of Component Coals

Identification

Laboratory Number..... 4535-81
 Description.....
 Test No. 11

Coal Pulverization

Sieve Analysis

<u>Passing</u>	<u>Retained On</u>	
	1/4 in.	% 0.4
1/4 in.	1/8 in.	% 14.3
1/8 in.	1/16 in.	% 19.8
1/16 in.	1/32 in.	% 21.0
1/32 in.	.....	% 44.5
Total Passing	1/8 in.	% 85.3

Grindability

Hardgrove Index

Fusibility of Ash

Initial Deformation Temp°F
 Softening Temp. Spherical.....°F
 Softening Temp. Hemispherical...°F
 Fluid Temp°F

Table 9 - Carbonization Data

Test Identification Number.....	581	585	572	576	573					
Date of Test.....	26/10/81	02/11/81	05/10/81	15/10/81	06/10/81					
Laboratory Number.....										
Description.....	Test No. 1	Test No. 1	Test No. 2	Test No. 2	Test No. 3					
<u>Carbonization Data</u>										
Net Weight of Charge (wet).....lb	700.0	685.7	712.4	703.5	709.0					
Moisture in Charge.....	6.0	6.1	5.9	5.8	6.0					
ASTM Bulk Density (wet).....lb/ft ³	-	-	-	-	-					
Oven Bulk Density (db).....lb/ft ³	45.8	44.8	46.6	46.1	46.3					
<u>Carbonization Results</u>										
Gross Coking Time.....hr:min	19:10	18:40	18:40	18:40	18:45					
Maximum Wall Pressure.....lb/in ²	1:36	0.66	0.63	0.56	0.78					
Coke Yield Actual.....%	74.7	73.7	74.2	75.2	71.6					
Mean Coke Size.....in	2.66	2.58	2.54	2.57	2.58					
Apparent Specific Gravity.....	0.781	0.775	0.820	0.821	0.773					
Time to 900°C.....hr:min	17:05	16:35	17:40	17:10	16:45					
Final Centre Temp .....°F	1785	1820	1760	1800	1800					
<u>Screen Analysis of Coke</u> (cumulative percentage retained on)										
3 inch sieve.....	34.6	29.2	28.5	30.4	29.8					
2 inch sieve.....	75.9	74.5	73.1	73.2	74.1					
1 1/2 inch sieve.....	91.4	89.9	90.1	88.6	89.2					
1 inch sieve.....	96.2	95.6	95.7	95.8	95.4					
3/4 inch sieve.....	97.1	96.4	96.5	96.7	96.5					
1/2 inch sieve.....	97.6	97.1	97.1	97.3	97.2					
Percentage - 1/2 inch (breeze).....	2.4	2.9	2.9	2.7	2.8					
<u>Tumbler Test (ASTM)</u>										
Stability Factor.....	59.0	59.9	55.8	55.4	56.5					
Hardness Factor.....	63.5	64.3	62.5	62.4	63.7					
<u>Japanese Drum Test (JIS)</u> (cumulative percentage retained on)										
50 mm sieve.....	* 44.5	** 22.4	* 49.4	** 27.8	* 29.5	** 10.9	* 37.5	** 14.1	* 44.4	** 16.8
25 mm sieve.....	* 91.9	** 79.0	* 93.0	** 80.2	* 92.0	** 77.5	* 92.2	** 77.5	* 90.7	** 76.4
15 mm sieve.....	* 94.8	** 83.8	* 95.0	** 84.1	* 94.4	** 83.0	* 94.5	** 83.2	* 93.9	** 82.1

*30 revs

**150 revs

Table 10 - Carbonization Data

Test Identification Number.....	577	613	579	587	571					
Date of Test.....	19/10/81	01/02/81	21/10/81	04/11/81	28/09/81					
Laboratory Number.....										
Description.....	Test No. 3	Test No. 3 (New Mathies)	Test No. 4	Test No. 4	Test No. 5					
<u>Carbonization Data</u>										
Net Weight of Charge (wet).....lb	700.0	713.5	697.8	696.2	712.3					
Moisture in Charge.....	5.9	5.9	6.0	5.9	5.9					
ASTM Bulk Density (wet).....lb/ft ³	-	-	-	-	-					
Oven Bulk Density (db).....lb/ft ³	45.8	46.7	45.6	45.6	46.6					
<u>Carbonization Results</u>										
Gross Coking Time.....hr:min	18:45	18:20	19:15	18:15	18:48					
Maximum Wall Pressure.....lb/in ²	0.69	0.56	0.49	0.45	0.68					
Coke Yield Actual.....%	70.5	71.1	72.3	70.8	75.7					
Mean Coke Size.....in	2.56	2.54	2.53	2.40	2.46					
Apparent Specific Gravity.....	0.768	0.785	0.790	0.779	0.812					
Time to 900°C.....hr:min	16:30	15:40	17:10	15:50	17:45					
Final Centre Temp .....°F	1820	1880	1785	1860	1760					
<u>Screen Analysis of Coke</u> (cumulative percentage retained on)										
3 inch sieve.....	29.1	32.1	24.9	19.9	25.4					
2 inch sieve.....	72.9	72.1	75.7	69.3	70.7					
1 1/2 inch sieve.....	88.3	85.7	90.8	88.7	87.9					
1 inch sieve.....	94.9	93.8	96.1	95.7	94.8					
3/4 inch sieve.....	96.1	95.7	96.9	96.5	95.8					
1/2 inch sieve.....	96.8	96.5	97.5	97.3	96.5					
Percentage - 1/2 inch (breeze).....	3.2	3.5	2.5	2.7	3.5					
<u>Tumbler Test (ASTM)</u>										
Stability Factor.....	57.2	46.5	55.0	55.5	56.2					
Hardness Factor.....	63.8	60.0	59.8	60.9	62.7					
<u>Japanese Drum Test (JIS)</u> (cumulative percentage retained on)										
50 mm sieve.....	* 46.6	** 20.8	* 33.0	** 9.9	* 50.0	** 22.7	* 40.4	** 23.3	* 40.4	** 14.3
25 mm sieve.....	* 90.5	** 76.1	* 85.9	** 67.0	* 92.1	** 78.7	* 92.1	** 78.2	* 89.5	** 74.9
15 mm sieve.....	* 93.8	** 82.5	* 91.5	** 77.7	* 94.5	** 82.4	* 94.0	** 81.9	* 93.8	** 81.7

*30 revs

**150 revs

Table 11 - Carbonization Data

Test Identification Number.....	575	574	578	582	586					
Date of Test.....	14/10/81	07/10/81	20/10/81	21/10/81	03/11/81					
Laboratory Number.....										
Description.....	Test No. 5	Test No. 6	Test No. 6	Test No. 7	Test No. 7					
<u>Carbonization Data</u>										
Net Weight of Charge (wet).....lb	703.0	715.6	704.3	718.3	703.0					
Moisture in Charge.....	5.9	5.9	6.0	5.9	5.9					
ASTM Bulk Density (wet).....lb/ft ³	-	-	-	-	-					
Oven Bulk Density (db).....lb/ft ³	46.0	46.8	46.0	47.0	46.0					
<u>Carbonization Results</u>										
Gross Coking Time.....hr:min	18:50	18:50	19:00	18:50	18:55					
Maximum Wall Pressure.....lb/in ²	0.63	-	0.76	0.57	0.68					
Coke Yield Actual.....%	75.4	71.5	70.7	74.0	73.7					
Mean Coke Size.....in	2.56	2.49	2.51	2.48	2.51					
Apparent Specific Gravity.....	0.827	0.767	0.782	0.805	0.814					
Time to 900°C.....hr:min	17:35	16:40	16:30	17:10	16:30					
Final Centre Temp .....°F	1790	1810	1825	1800	1840					
<u>Screen Analysis of Coke</u> (cumulative percentage retained on)										
3 inch sieve.....	29.8	24.2	27.1	24.2	26.5					
2 inch sieve.....	73.5	71.3	72.2	71.5	72.0					
1 1/2 inch sieve.....	89.2	88.2	89.2	89.7	88.6					
1 inch sieve.....	95.6	95.3	95.5	96.1	95.8					
3/4 inch sieve.....	96.6	96.4	96.3	97.0	96.7					
1/2 inch sieve.....	97.3	97.2	97.2	97.5	97.3					
Percentage - 1/2 inch (breeze).....	2.7	2.8	2.8	2.5	2.7					
<u>Tumbler Test (ASTM)</u>										
Stability Factor.....	54.9	58.9	57.3	58.2	59.4					
Hardness Factor.....	62.2	64.7	63.6	64.6	65.7					
<u>Japanese Drum Test (JIS)</u> (cumulative percentage retained on)										
	*	**	*	**	*	**	*	**	*	**
50 mm sieve.....	36.9	8.5	36.1	15.6	37.3	18.0	55.9	21.9	34.8	20.4
25 mm sieve.....	91.2	76.7	90.5	76.9	90.5	75.6	92.5	78.5	92.4	80.0
15 mm sieve.....	94.4	82.4	93.8	83.0	93.7	82.6	94.8	83.5	94.8	84.3

*30 revs

**150 revs

Table 12 - Carbonization Data

Test Identification Number.....	583	588	584	589	590					
Date of Test.....	28/10/81	05/11/81	29/10/81	09/11/81	12/11/81					
Laboratory Number.....										
Description.....	Test No. 8	Test No. 8	Test No. 9	Test No. 9	Test No.10					
<u>Carbonization Data</u>										
Net Weight of Charge (wet).....lb	703.5	704.3	706.6	706.2	701.5					
Moisture in Charge.....	6.0	5.9	6.1	5.9	5.9					
ASTM Bulk Density (wet).....lb/ft ³	-	-	-	-	-					
Oven Bulk Density (db).....lb/ft ³	46.0	46.1	46.1	46.2	45.9					
<u>Carbonization Results</u>										
Gross Coking Time.....hr:min	18:55	18:15	18:50	18:15	18:05					
Maximum Wall Pressure.....lb/in ²	0.59	0.61	0.49	0.48	0.63					
Coke Yield Actual.....%	73.5	73.5	73.0	73.7	72.4					
Mean Coke Size.....in	2.52	2.45	2.44	2.46	2.46					
Apparent Specific Gravity.....	0.821	0.798	0.832	0.825	0.820					
Time to 900°C.....hr:min	16:40	16:30	16:15	16:45	16:05					
Final Centre Temp .....°F	1835	1820	1895	1855	1855					
<u>Screen Analysis of Coke</u> (cumulative percentage retained on)										
3 inch sieve.....	26.3	23.8	22.4	22.8	24.3					
2 inch sieve.....	71.4	70.0	70.0	70.2	70.2					
1 1/2 inch sieve.....	89.3	89.2	89.1	88.8	87.4					
1 inch sieve.....	96.2	95.7	96.1	95.8	95.6					
3/4 inch sieve.....	96.8	96.4	96.9	96.6	96.5					
1/2 inch sieve.....	97.6	97.1	97.5	97.3	97.2					
Percentage - 1/2 inch (breeze).....	2.4	2.9	2.5	2.7	2.8					
<u>Tumbler Test (ASTM)</u>										
Stability Factor.....	59.9	59.6	58.8	57.5	58.8					
Hardness Factor.....	65.1	64.8	64.5	63.7	65.7					
<u>Japanese Drum Test (JIS)</u> (cumulative percentage retained on)										
50 mm sieve.....	* 37.0	** 17.9	* 28.4	** 15.0	* 35.3	** 13.3	* 30.5	** 6.3	* 34.9	** 14.2
25 mm sieve.....	* 92.5	** 80.4	* 91.9	** 78.6	* 92.0	** 77.2	* 91.8	** 77.8	* 92.0	** 79.7
15 mm sieve.....	* 95.1	** 85.9	* 94.5	** 84.2	* 94.5	** 83.5	* 94.2	** 83.2	* 94.3	** 84.0

*30 revs

**150 revs

Table 13 - Carbonization Data

Test Identification Number.....	592	614	591	593				
Date of Test.....	17/11/81	02/02/82	16/11/81	18/11/81				
Laboratory Number.....								
Description.....	Test No. 10	Test No. 10 (New Mathies)	Test No. 11	Test No. 11				
<u>Carbonization Data</u>								
Net Weight of Charge (wet).....lb	703.8	705.0	696.9	702.9				
Moisture in Charge.....	5.9	5.9	6.0	5.9				
ASTM Bulk Density (wet).....lb/ft ³	-	-	-	-				
Oven Bulk Density (db).....lb/ft ³	46.1	46.1	45.6	46.0				
<u>Carbonization Results</u>								
Gross Coking Time.....hr:min	18:45	17:15	18:20	18:00				
Maximum Wall Pressure.....lb/in ²	0.59	0.50	0.56	0.52				
Coke Yield Actual.....%	72.8	73.1	72.7	72.1				
Mean Coke Size.....in	2.51	2.40	2.44	2.40				
Apparent Specific Gravity.....	0.810	0.831	0.797	0.811				
Time to 900°C.....hr:min	16:30	15:45	16:10	15:45				
Final Centre Temp .....°F	1840	1840	1860	1880				
<u>Screen Analysis of Coke</u> (cumulative percentage retained on)								
3 inch sieve.....	26.4	23.7	21.6	20.7				
2 inch sieve.....	71.1	66.7	71.1	67.4				
1 1/2 inch sieve.....	89.5	86.0	88.9	87.6				
1 inch sieve.....	95.5	95.2	95.7	95.7				
3/4 inch sieve.....	96.2	96.6	96.5	96.5				
1/2 inch sieve.....	96.9	97.3	97.3	97.3				
Percentage - 1/2 inch (breeze).....	3.1	2.7	2.7	2.7				
<u>Tumbler Test(ASTM)</u>								
Stability Factor.....	58.1	54.7	58.7	58.7				
Hardness Factor.....	64.6	63.5	63.9	64.4				
<u>Japanese Drum Test (JIS)</u> (cumulative percentage retained on)								
50 mm sieve.....	45.4	27.3	42.1	19.1	36.7	14.5	36.4	8.2
25 mm sieve.....	92.5	79.8	91.5	75.8	91.5	78.4	92.7	79.0
15 mm sieve.....	94.5	84.0	94.3	81.4	94.1	83.2	95.3	84.6
	*30 revs		**150 revs					

APPENDIX 1

Letter dated September 2, 1981 from
I Pevatto, Research and Development
Stelco Inc.

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stelcoThe Steel Company
of Canada, LimitedGeneral Office
Stelco Tower
Hamilton, Ontario
L8N 3T1
(416) 528-2511

September 2, 1981

Dr. J. Price
Proj. Scientist
CANMET
Dept. of Energy, Mines
& Resources
555 Booth Street
Ottawa, Ontario
K1A 0G1

Dear Dr. Price:

The first shipment of coal for the 18in MW oven test series should be delivered to Ottawa very shortly.

I must apologize for the sample delivery delays, I think we have now resolved most of the problems and we should be able to send up enough coal to at least make a start on the test programme.

The complete test outline is given in Table I.

As mentioned, we have resolved *most* of the problems; one of the two problems remaining is the quality of the Chisholm coal we sampled. We are, as yet, still not sure if it is representative and we will not use it in any of the tests until we can satisfy ourselves of the true quality. The other question is the Devco coal that is coming from Sysco. We will have to analyze a sample of that before we allow it to be used.

Looking at the test outline we see that there are only 4 tests (No 2, 3, 5 & 6) which do not require either Devco or Chisholm. We suggest you do these four tests (replicated) first* and hopefully we can resolve the difficulties with Devco and Chisholm by then.

The first shipment should arrive in Ottawa soon and will consist of two high-volatile coals Madison (4 drums) and Mathies (16 drums). More samples will follow soon (they just arrived here at R&D today after being tied up in customs for 3 weeks).

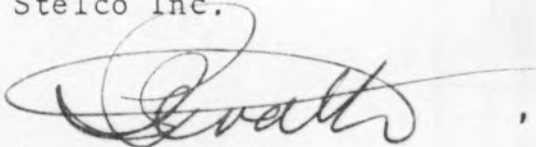
*replicates of these four to be done in random fashion if possible.

Dr. J. Price
September 2, 1981
Page 2

If you have any questions please call me at 528-2511 (ext 260).

Thank you.

Yours truly,
Stelco Inc.



I. Pevatto
Research & Development

IP/jmr
Attach.

Copy to: N. Daneliak
A. S. MacKenzie

Table I: Ottawa 18in MW Oven Test Series
Sept. 1981

Test No*	1	2	3	4	5	6	7	8	9	10	11
Beckley	25	25	25	25	--	--	4	4	4	4	4
Maple Meadow	--	--	--	--	25	25	11	11	11	11	11
Reitz	--	--	--	--	--	--	5	5	5	5	5
Jewell No 12	--	--	--	--	--	--	8	8	8	8	8
Chisholm	75	--	--	--	--	--	--	25	--	--	--
Moss No 3	--	75	--	--	75	--	--	--	25	--	--
Madison	--	--	--	--	--	--	--	--	--	--	--
Mathies	--	--	75	--	--	75	--	--	--	25	--
Devco	--	--	--	75	--	--	--	--	--	--	25
HV Mix**	--	--	--	--	--	--	72	47	47	47	47

* All tests are to be replicated

**HV Mix should consist of:

Moss No 3	31%
Chisholm	38%
Devco	4%
Madison	19%
Mathies	8%

Table II: Test Conditions Required

Moisture	6%
Pulverization	80% minus 1/8in
Coking Rate	lin per hour
Bulk Density	will vary according to other parameters