Statistics Canada
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MONTHLY REFINED PETROLEUM PRODUCTS - LONG FORM
2004 REPORTING GUIDE

SECTION A CONCERNS REFINING COMPANIES ONLY

SECTION A - REFINERY SUPPLY OF CRUDE OIL AND EQUIVALENT - PAGE 1

Note: Please ensure that data reported in questions 1 through 8 do **not** include any crude tops, crude bottoms or partially refined products. Please refer to question 9 for the treatment of such products.

1. RECEIPTS FROM FIELDS IN

Report actual receipts at refineries of all domestic crude oil and equivalent for refinery consumption or storage excluding any propane or butanes received for refinery processing, blending or for sale as specification product. Give separate figures for receipts from each supply region, credited to the province or region in which the refinery is located.

Supplying regions are Western and Eastern Canada:
Western = Manitoba, Saskatchewan, Alberta, British Columbia, Northwest and Yukon Territories.
Eastern = Atlantic Provinces, Quebec and Ontario.

2. IMPORTS FROM

Report actual imports of all foreign crude oil and equivalent at refineries. Give separate figures for each supplying foreign country, credited to the province or region in which the refinery is located.

3. GRAND TOTAL OF RECEIPTS

This total (line 17) must agree, by province or region, to the sum of lines 3 (domestic) and 16 (imported).

Note: If your refinery has been involved in the exchange of crude in the surveyed month, it should be reported at question 4.

(i) By pipeline

Report the total of all domestic and foreign crude oil and equivalent actually received into refinery tankage from pipeline, for refinery consumption.

These reported receipts from pipelines must agree with the deliveries to refineries as reported by the pipeline companies to Statistics Canada.

(ii) By other means

Report the total of all domestic and foreign crude oil and equivalent actually received into the refinery from means other than pipelines, *i.e.* tank car, tank truck, tankers, etc.

Note 1: The sum of (i) and (ii) must agree, by province and region, with the entry "Grand total of receipts" line 17.

Note 2: Transfers by a reporting company from itself to itself in the current month from one province to

another of crude and equivalent reported as a receipt in a previous period should be treated as follows: the amount transferred should be shown as a negative in the "Delivering" province and as a positive in the "Receiving" provinces on the relevant line/lines of questions 1 and 2 (*i.e.* lines 1 through 16). In this manner a "double-count" of crude from domestic or foreign sources will be avoided.

Transfers of crude and equivalent from one province to another sent "by other means" but received by "pipeline" should be shown as a negative quantity in line 19 "other means" in the "delivering" province and as a positive quantity in "pipeline" line 18 in the "receiving" province. The reverse can obviously also apply.

4. TRANSFERS - TO OTHER REPORTING COMPANIES AND FROM OTHER REPORTING COMPANIES

Report here any domestic and imported crude oil, condensate and pentanes plus which has been transferred to other reporting companies and/or which has been received from other reporting companies.

5. INVENTORIES

Inventories reported must be in refinery tankage only. Do not include pipeline fill. Report, by province or region, both crude oil and equivalent held in inventory at the beginning and the end of the month.

Revisions to Inventories:

It is noted that the inventory figures are sometimes subject to revision. When such revisions are made, respondents should be guided by the following:

- Minor adjustments of under 200 cubic metres; the opening inventory of the month following the month in error would remain unchanged, with the difference being absorbed in the losses and adjustment item for the current month.
- Major adjustments of over 200 cubic metres; the opening inventory of the month following the month in error should be reported correctly. Revised figures for the previous (incorrectly reported) month should also be provided.

6. LOSSES AND ADJUSTMENTS

Report any losses due to spillage, metering differences, etc. after receipt of the crude into refinery storage. Also include any adjustments caused by inventory revisions.

7. TOTAL CRUDE AND EQUIVALENT CHARGED

Indicate the total quantity of crude oil and equivalent run to stills. Total crude and equivalent charged (line 25) should correspond to grand total of receipts (line 17) minus transfers to other reporting companies (line 20) plus transfers from other reporting companies (line 21) plus opening inventories (line 22) minus closing inventories (line 23) minus losses and adjustments (line 24).

SECTION A - FEEDSTOCKS CHARGED - PAGE 2

8. CRUDE AND EQUIVALENT CHARGED, BY TYPE

The total reported at line 25 of page 1 should be reported according to the five following categories:

(i) *Conventional Crude Oil, Light/Medium* — all crudes of 26^{o} API and over, but excluding processed synthetic production (Syncrude, Suncor), condensate and pentanes plus.

(ii) *Conventional Crude Oil, Heavy* — all crude under 26^{o} API (900 kg) which in its natural viscous state could initially be recovered with primary pumping techniques (based on Alberta Energy Utilities Board).

(iii) *Synthetic Crude Oil* — the processed production from Syncrude, Suncor and any future similar synthetic crude plants. In terms of specific gravity, this oil is classified as "light".

(iv) *Crude Bitumen* — heavy oil, normally below 20^{o} API, never recoverable at a commercial rate

without in-situ technology. This oil is produced from the defined Oil Sands areas of Alberta, as is Synthetic Crude of (iii) above.

(v) *Condensate and Pentanes* — those low density oils having an API rating over 40° API.

9. OTHER MATERIALS USED IN OPERATION

The following explanation concerns refinery, feedstocks, other than crude oil, include any materials:

a. commingled with the crude charged
b. charged directly through the distillation tower
c. charged into refinery processing units such as alkylation, cracking, reforming, etc.

Other materials used in operation must be materials received from sources external to the reporting refinery. These must not include any internal reprocessing of materials withdrawn from inventories or from refinery recycling operations.

Note 1: Excludes internal reprocessing of unfinished products produced and reported in a previous month. If unfinished products are being recharged to a process within the same refinery, the derived production would be transferred from page 21 to the appropriate products using the "inter products transfers" line.

Includes unfinished products received from other refineries which will be charged into the refinery process. See annex 2 for definition of unfinished products.

Note 2: LPG's received from outside the refinery and used for blending or sold as such should not be included.

For each of the following products, indicate the quantity charged, and if imported, please indicate the country of origin in the stub.

(i) Crude tops — that portion of the crude oil input that remains after the refinery (*e.g.* asphalt plant) has extracted the desired heavy products and which portion must be transferred to another refinery for further processing.

(ii) Crude bottoms — that portion of the crude oil input that remains after the refinery has extracted the desired light products and which portion must be transferred to another refinery for further processing.

(iii) Liquefied petroleum gases

(iv) Natural gas used as a refinery feedstock (exclude any natural gas used for heating or as fuel). Such natural gas should be expressed in cubic metres of heavy fuel oil equivalent.

(v) Lubricating oils and lubricating base stock etc. to be reprocessed.

(vi) Other feedstock including additives.

Note: Each of the products listed above must appear as a receipt at lines (5), (7), (8) or (9) of Section B of the questionnaire on the page of the most appropriate product. Further, the quantity must also appear at line 3 "Transfers to Refinery Feedstocks" of the same product page. The resultant "production" (line 1) of any given refined product will thus be the production from both 'crude and equivalent' and 'other materials charged'.

For example, a quantity of Butane, commingled with crude charged must be shown in 4 places:

(1) an input on page 2 line 8 "Liquefied petroleum gases".

(2) on the most appropriate product page "Butane" page 4. In this example line 8 as a receipt from a non-reporting company.

(3) transfer to refinery feedstock line 3 of the Butane page.

(4) refinery production line 1 for possibly several products.

TOTAL OTHER MATERIALS CHARGED AS FEEDSTOCK

Indicate the sum of items reported on lines 6 through 11. This figure should agree with line 3, page 22.

10. TOTAL FEEDSTOCKS CHARGED

Indicate the sum of "Crude Oil and Equivalent Charged" (line 25, page 1) and "Other Materials Charged" (line 12, page 2). This figure should agree with line 1, page 22.

SECTION B CONCERNS BOTH REFINERS AND DISTRIBUTORS

SECTION B - REFINERS PETROLEUM PRODUCTS - PAGES 3 TO 23

Except where indications are given to the contrary, the following instructions relate to all the products shown on the questionnaire numbered 1 to 18, except for product #17, "refinery losses", where lines 1 and 14, are the only lines to apply.

a) REFINERY PRODUCTION

Report, by province or region in which the refinery is located, the calendar month's refinery production from crude oil and equivalent and from other materials used in the refining operation. Production of each product should be measured on a "net yield" level; that is, the stage after exchanges between the various processes of the refinery.

However, for propane and propane mixes - Product 1(A), and butane and butane mixes - Product 1(B), report all refinery production of these products intended:

1) for own use at the refinery, including:

   (i) butane for blending with motor gasoline
   (ii) LPG's used as petrochemical feedstocks

   In these two instances, the quantities of LPG's used for these purposes, should initially be reported at a) production line 1 and then at b) Inter-product Transfers line 2 on the LPG pages.

   (iii) all other refinery own use

2) for sale as such

3) for inter-provincial transfer or for sale to other reporting companies even though the eventual use of the product may be for blending into some other product.

Under no circumstances should propane or butanes be shown as unfinished products merely because of doubt regarding final disposition.

Further, for Petrochemical Feedstocks - Product 2, page 5 report refinery gases and other first derivates of petroleum used internally - or sold - as raw material for the production of petrochemical products. (However, the production of LPG's for petrochemical feedstock must be treated in the manner described above, namely that the quantity of LPG's used as petrochemical feedstock will initially be shown as production on the LPG's pages and will then be transferred to the petrochemical feedstock page by use of the interproduct transfer line 2). Petrochemical feedstock are therefore defined as those products fed into crackers to produce such basic petrochemicals as ethylene, propylene, butylenes, butadienne, benzene, toluene, and xylene: Exclude from petrochemical feedstocks naphtha used to make hydrocarbon solvents see "Naphtha Specialties". For a more detailed description of the method of treating petrochemical feedstocks, see Annex I.

Finally, in the case of refinery losses, product 17, page 20, since there is produced a greater volume of finished products (whose specific gravity is lighter than the raw material input run to stills) than the volume of feedstock charged, this section is normally used to balance production to "Runs to stills" by means of a negative entry. Respondents should make proper use of this section, and not incorrectly enter negative production figures in "Unfinished products", product 18, as the balancing item.

b) TRANSFERS - INTER-PRODUCTS

Report the net movement of product into or out of another product within a given province. Since the production is measured at the 'net yield' level, the inter-product transfer line should be restricted to marketing purposes where for example, the situation requires the sale of Diesel as, say, Light fuel oil.

Net transfers into a product are to be shown on the product page without parentheses *e.g.* 12,345.
Net transfers out of a product are to be shown as in parenthese *e.g.* (12,345).

Exception 1: In product 1A Propane and propane mixes page 3 and 1B Butane and butane mixes page 4, the inter-product transfers line is to be used for other than marketing purposes; that is, to record transfers to Petrochemical feedstocks and to Motor Gasoline. The same amounts must also be reported on the petrochemical feedstock and/or Motor gasoline product pages.

Exception 2: For product 18, Unfinished Products, the inter-products transfers' line is used to transfer amounts of unfinished product to the appropriate end product.

c) TRANSFERS TO REFINERY FEEDSTOCKS

This line must be used for reporting those quantities of previously refined products, partially refined products and other materials used which are to be processed through the refinery for the production of refined products.

Report, by province and region, the quantity of these materials used as refinery feedstock *i.e.* quantities sent to distillation or other refinery units which were previously received from sources outside of the reporting refinery. These materials (crude tops, crude bottoms, LPG's, lube oil for recycling, other feedstocks) should be shown on the most appropriate product page(s) and the total should equate with figures shown on page 2 question 9 "Other Materials used in operation". Thus the addition of line 3 product 1A (propane) and line 3 product 1B (butane) should equal line 8, page 2, "LPG's used as refinery feedstock". The amounts of these non-crude feeds being transferred to refinery feedstock at line 3 will also be shown as a receipt on the same page on the most appropriate line:

5 Transfers inter-provincial in
7 Receipts from other reporting companies
8 Receipts from non-reporting companies
9 Imports

The subtraction of line 3 precludes the possibility of double counting since the quantities have already been included in production and in the receipt line(s) 5, 7, 8, 9.

d) This line applies only to the three products indicated below. The quantities reported form a part of the total reported at line 2, Transfers — Interproducts. This line, *i.e.* line 4, is a non-additive line and must be excluded from the calculations used to arrive at the final entry, namely "Net Sales in Canada".

Product 1(A) Propane and propane mixes
Product 1(B) Butane and butane mixes

Use line 4 to indicate that quantity of these products transferred to "Petrochemical Feedstocks".

Product 2. Petrochemical Feedstocks

Use line 4 to indicate that quantity of energy by-products returned to the refinery operations from the petrochemical operations. (See Annex I for a more detailed description).

e) TRANSFERS - INTER-PROVINCIAL IN

Report the gross movement of each product entering one province from another. The company holding title to the product as it crosses a provincial boundary will report the amounts involved. Do not report transfers made for another account if ownership lies with the other company. Conversely, you should report transfers made on your behalf by another company provided ownership remains with you during the period of transfer.

f) TRANSFERS - INTER-PROVINCIAL OUT

Report the gross movement of each product leaving one province for another. The company holding title to the product as it crosses a provincial boundary will report the amounts involved. Do not report transfers made for another account if ownership lies with the other company. Conversely, you should report transfers made on your behalf by another company provided ownership remains with you during the period of transfer.

Note 1: An inter-provincial transfer may be necessary following a receipt from a reporting or non-reporting company, or an import.

The following example illustrates how a combined inter-provincial transfer and inter-product transfer should be recorded.

Company "A" purchases diesel fuel oil from Company "B" in Quebec (both are respondents to this survey) and the change in ownership takes place in Quebec. Company "A" then sells this product as light fuel oil in Ontario.

Company "A" should report the following:

(i) A receipt "From other reporting companies" of diesel fuel in Quebec, (line 7).
(ii) An inter-provincial transfer of diesel fuel out of Quebec, into Ontario, (lines 5 and 6).
(iii) An inter-product transfer out of diesel fuel into light fuel oil in Ontario, (line 2) in products 9 and 10.

Company "B" should report only a delivery of diesel fuel "to other reporting companies" in Quebec, (line 12).

Note 2: For each product, the Canadian level total shown on line 5 must equal that reported on line 6.

g) RECEIPTS FROM OTHER REPORTING COMPANIES

Receipts from and deliveries to another reporting company relate to situations where a change in title to the product being transferred has occurred even if the product remains in the tanks of the "delivering" company. This concept of "receipts" and "deliveries" therefore obviously affects the measurement of inventories - see sections j) and k) of these instructions.

Report all receipts of product from any companies listed on the back of the first page of the questionnaire. Include actual receipts emanating from sales agreements, processing agreements, exchanges, loans, etc. Exclude, however, any agreements, exchanges, loans, etc., which are based on future production. The quantities reported as receipts should agree with the amounts shown on the delivering companies' invoices or delivery notices and should be entered under the provinces where the change in title occurred. In most instances, this transaction takes place at the supply point - *i.e.* Refinery, Terminal or Bulk plant gates. If all or any part of the amounts received are then shipped to another province before disposition, make the appropriate inter-provincial transfers entries (lines 5 and 6).

Receipts of LPG's from gas processing plants should be recorded on line 8 "Receipts from non-reporting companies" even though such plants could be owned by reporting companies. If refinery-produced butane is purchased from another reporting company for blending into some other product, show both the receipt of the butane and an "Inter-product transfer" to the appropriate product.

Details of inter-company transactions are required where the transactions are for amounts of 200 cubic metres or more.

Please report the receipts in the same product classifications as those shown on the delivering companies' invoices. If all or any part of the amounts received are used in product classifications other than those shown on the invoices, the receiving company must make the appropriate inter-product transfer entries on line 2.

On the reverse side of the product pages, please enter the names of the reporting companies involved and the amount received from each. For each province, the sum of these amounts should agree with line 7 entries on the front of the page.

Sample Transactions:

(i) A selling company which markets in more than one province could make the following entries: in line 6 "Inter-provincial Out" of his own province to the province of secondary receipt, which would be recorded under the appropriate section of line 5 "Inter-provincial In" and from there disposed as a delivery to another reporting company, as an export, a loss or adjustment or as a net sale in Canada, etc.

(ii) A company could perform the above "Inter-provincial transfers In" or "Out" and then transfer the product to another classification through use of line 2 "Transfers - inter-products" *e.g.* Diesel fuel to light fuel oil, Butane to Petrochemical feedstocks, etc.

h) RECEIPTS FROM NON-REPORTING COMPANIES

Report all receipts of product from any companies whose names do not appear on the "List of Reporting Companies" (see back of the first page of the questionnaire).

Note 1: "Paybacks" of quantities of product delivered in a previous month to a non-reporting company and originally reported as a "Net sale in Canada" (under an exchange agreement), should not be recorded and "corrected" in the current month as "negative" receipt (line 8) or as a "negative" sale (line 16). Instead of adjusting a current month for a previous entry, please inform Statistics Canada by way of a note, indicating in detail the nature of the transaction.

Note 2: On the reverse side of the product pages, please enter the names of the "non-reporting" companies involved and the amounts received from each. For each province, the sum of these amounts should agree with line 8 entries on the front of the page.

All receipts of LPG from gas processing plants (even if owned by a reporting company) for use within the reporting refinery should be initially recorded on the propane/butane pages as "receipts from non-reporting companies". Subsequently:

1. Any quantity blended with other products should be recorded as a movement 'out' on the inter-products transfers line to the relevant products.

2. Any quantity destined to petrochemical feedstocks should be similarly recorded, but with the actual quantity also shown at line 4 of the propane/butane pages.

3. Any quantity used in alkylation and similar processing units should be recorded at line 3 "Transfers to refinery feedstocks". Such quantity would then be recorded at line 8 of page 2, and the resultant production there from would be included in the production of the relevant refined products.

4. Any quantity commingled with crude oil would be accorded the same treatment as (3) above.

i) IMPORTS

Report the physical receipts of finished and unfinished products received from sources outside Canada. The company which clears the product through customs, or on whose behalf it was cleared, should report the import. If all or any part of the amount imported is used in a product classification other than that indicated on the customs entry document, the appropriate inter-products transfer must be made, (lines 2). Similarly, if the product is transported to a province other than that indicated on the entry form, the proper inter-provincial transfer (lines 5 and 6) must be made after recording the import in the province of entry.

j) and k) INVENTORIES

Report all refinery and marketing inventories. The opening inventory for the reporting month should match the reported closing inventory of the previous month.

Inventories should include those that result from inter company transactions. As a consequence, if a change in title of a product has occurred (and has been reported), even if the product remains in the tanks of the "delivering" company, this product should nonetheless be reported as inventory of the "receiving" company. Inventories should not include any quantities of product linked to future production for the purpose of loan or repayment.

Revisions to Inventories:

It is noted that the inventory figures are sometimes subject to revision. When such revisions are made, respondents should be guided by the following:

- Minor adjustments of under 200 cubic metres; the opening inventory of the month following the month in error would remain unchanged, with the difference being absorbed in the losses and adjustment item for the current month.
- Major adjustments of over 200 cubic metres; the opening inventory of the month following the month in error would be corrected with the provision to Statistics Canada of an explanation and also the corrected entities.

l) DELIVERIES TO OTHER REPORTING COMPANIES

Report all deliveries of product to any companies listed on the reverse side of the first page of this schedule. Include actual deliveries emanating from sales agreements, processing agreements, exchanges, loans, etc. Exclude, however, any agreements, exchanges, loans, etc. based on future production. The quantities reported as deliveries should be credited to the province where the change in ownership occurred. In most instances, this transaction takes place at the supply point - *i.e.* Refinery, Terminal or Bulk plant gates.

Details of inter-company transactions are required where the transactions are 200 cubic metres and over.

On the reverse side of the product pages, please enter the names of the reporting companies involved and the amount delivered to each. For each province, the sum of these amounts should agree with the line 12 entries on the front of the page.

m) EXPORT

Report all sales of finished or unfinished products for export outside Canada credited to the province of exit. Note that any inter-provincial movement should be recorded as an inter-provincial transfer on lines 5 and 6.

n) LOSSES & ADJUSTMENTS

Reports all refinery or marketing losses due to metering differences, shrinkage, spillage, etc. Include also any adjustments caused by inventory revisions.

o) OWN CONSUMPTION

Report all amounts of product produced or purchased and used in company operations. Exclude petro-chemical feedstocks shipments to own petro-chemical complexes, and own production fuels used to generate electricity, to heat office buildings and to move goods (by air, road or ship). These products should be reported on line 16 -*Net Sales in Canada*.

p) NET SALES IN CANADA

Report all sales of finished and unfinished products for the provinces where such sales have taken place.

Note: On page 8, include any Ethanol/Methanol, MTBE/ETBE (Methyl or Ethyl-Tertiary-Butyl-Ether), Tame(Tertiary-Amyl-Methyl-Ether),TBA (Tertiary-Butyl Alcohol) and other components blended into gasoline which have been added before the final sale of any motor gasoline. This line is the sum of lines 7 to 10 (Receipts from Other Reporting companies + receipts from other Non Reporting companies + Imports + Opening Inventories), and lines 1, 2 and 5 (Refinery Production + Transfers

+ Interprovincial Transfers In) LESS lines 11 to 15 (Closing Inventories, Deliveries to other reporting companies, Exports, losses and adjustments, and own consumption) and LESS lines 3 and 6 (Transfers to Refinery Feedstock and Interprovincial Transfers Out). This figure should thus agree with the total monthly sales, by product and province, actually made by the company, less any sales "to other reporting companies", (line 12) and less any direct exports (line 13).

q) Page 8, Line 17 — ALL SALES OF MOTOR GASOLINE THROUGH RETAIL PUMPS

Report here all sales of motor gasoline (including ethanol/ methanol, MTBE/ETBE, TAME, TBA and other similar additives added) to retail outlets including marinas, irrespective of the type of ownership or operation. Include own brands, subsidiary brands, the known, or an authoritative estimate of retail sales of the respondent's jobbers, resellers, agents, etc.

Note: Any "Card-lock" (Key-lock) facility sales should not be included on this line.

Page 12, Line 17 — VOLUME OF NET SALES (LOW SULPHUR CONTENT)

Report here all sales of diesel fuel oil with sulphur content lower than 0.05%.

Page 14, Line 17 — VOLUME OF NET SALES (LOW SULPHUR CONTENT)

Report here sales of heavy fuel oil (4+5+6) with sulphur content lower than 1%.

Page 22, Product 19 — TOTAL ALL PRODUCTS

This page of the report is the sum of products 1A) to 18 of Section B.

Note 1: Line 1, "Refinery production" should agree with the volumes shown in Section A, page 2 final line *i.e.* Total feedstocks charged.

Note 2: The totals of all inter-products transfers (line 2) should add to "nil".

Note 3: Line 3, "Transfers to refinery feedstocks" should equal line 12 of page 2, "Total Other Materials Charged as Feedstock".

Note 4: The Canadian total, line 5 should equal the total of line 6.

Page 23, Supplement to page 8 — MOTOR GASOLINE SALES: DISPOSITION OF MOTOR GASOLINE

1. SALES BY "GRADE"

Report here by grade (Premium, Mid-grade, Regular non-leaded and Regular leaded) a breakdown of the net sales shown on page 8, line 16.

2. COMPONENTS BLENDED INTO MOTOR GASOLINE

a) Report all quantities of alcohols:

Line 6 (i) **Ethanol** — A light volatile alcohol intended for gasoline blending.

Line 7 (ii) **Methanol** — The simplest alcohol blended to increase the oxygen level in gasoline. Also called methyl alcohol, wood alcohol and wood spirit.

Line 8 (iii) **TBA (Tertiary Butyl Alcohol)** — An alcohol primarily used as a chemical feedstock, a solvent or feedstock for isobutylene production for MTBE.

b) Report all quantities of ethers such as

Line 9 (i) **MTBE (Methyl tertiary butyl ether)** — A gasoline additive produced from methanol and isobutylene used to increase the octane number and oxygen content of gasoline.

(ii) **ETBE (Ethyl tertiary butyl ether)** – A gasoline additive produced from ethanol and isobutylene for increasing the octane rating and oxygen content of gasoline while reducing its volatility. Similar to MTBE.

(iii) **TAME (Tertiary amyl methyl ether)** – An oxygenate blend stock formed by the catalytic etherification of isoamylene with methanol.

(c) Report all other blending components.

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For help in completing this form, please contact
Randall Sheldrick at (613) 951-4804

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ANNEX 1:
SUPPLEMENT TO PRODUCT #2 - PETROCHEMICAL FEEDSTOCKS

I. GENERAL DEFINITIONS

1. *PETROCHEMICAL FEEDSTOCKS:*

   - ethane, propane, butane from atmospheric distillation of crude oil and delivered to petrochemical operations;
   - ethane, ethylene, propane, propylene, butane, butylenes butadiene, produced in secondary refining operations such as catalytic cracking, hyrocracking, reforming, etc. - which are delivered to petrochemical operations or used internally by the refiner for the production of higher olefins or other petrochemicals;
   - pentane, naphthas [1], middle distillates, gas oil, raffinates delivered to steam cracking operations for petrochemical manufacture;
   - aromatic feed streams from reformers *e.g.* heartcut fed to solvent extraction units for recovery of benzene, toluene, xylene, hexame.

   See page 16 for details on the petrochemical feedstock stream.

2. *BACKFLOW TO REFINERY OF ENERGY BY-PRODUCTS:*

   Those materials obtained from the processing of the petrochemical feedstock in the petrochemical units which are returning to normal refinery production (*e.g.* raffinates, polymers, C_9+ aromatics, for gasoline blending).

3. *NET PETROCHEMICAL FEEDSTOCKS:*

   This net figure equals gross petrochemical feedstocks sent by the refinery to petrochemical activities less the backflow of energy by-products; therefore, representing the net disappearance of petrochemical feedstocks needed for Canadian petrochemical activities.

II. REPORTING PROCEDURES

Rule #1: LPG's produced in the refinery and destined to petrochemical activities must be reported initially on the LPG's product pages as production (line 1) and then transferred to the petrochemical feedstocks product page through interproducts transfers (line 2).

Rule #2: Production of petrochemical feedstocks can be reported by two methods (see examples below). The "net yield" method is preferred, that is, net petrochemical feedstocks (refer to definitions in I).

Rule #3: The amount of backflow to the refinery of energy by products must be shown on line 4 of the petrochemical feedstocks product page (line 4 is a non-additive line). By using the "net yield" reporting method, this backflow will not be added to the production of petrochemical feedstocks but will be included in the production of the appropriate products (*e.g.* motor gasoline).

If the "gross" reporting method is used, the backflow must be transferred to the appropriate product page by the inter-products transfers line.

[1] Exclude product "naphtha specialties".

III. EXAMPLES

Example 1 - Net Yield Method (Recommended)

Crude input 250	Mogas	Petrochem	Unfinished	Total
1. Refinery Production	110	30	110	250
2. Backflow (memo item only)		20		
3. Net sales in Canada	110	30	110	250

In this method, the backflow adjustments have already been applied to the production of motor gasoline and unfinished products. The net petrochemical feedstocks equals 30 and the gross petrochemical feedstocks 50 which is 30 plus the backflow of 20. The interproduct transfers line is not used.

Example 2 - Gross method of petrochemical feedstocks (Alternative)

Crude input 250	Mogas	Petrochem	Unfinished	Total
1. Refinery Production	100	50	100	250
2. Backflow (memo item only)		20		
3. Interproduct Transfer	+10	-20	+10	
4. Net sales in Canada	110	30	110	250

In this method, the refinery production equals the gross petrochemical feedstocks (50). The backflow (20) is transferred to motor gasoline (10) and to unfinished products (10) by interproducts transfers line; the net petrochemical feedstocks is therefore 30.

ANNEX 2: PRODUCT CLASSIFICATION
SECTION B, REFINED PETROLEUM PRODUCTS

The following list should be used as a guide when completing Section B. As it is not feasible to list all brand names in use in the industry, this list is intended only to give a reasonable sample of product names that have been established by common use. It should be noted that, where descriptive names do not provide adequate identification, the emphasis for classification purposes has been put on the end use of the product. In cases where products have brand names that are misleading for classification purposes, or are re-brands of basic products, classification should be determined according to the basic products used, *e.g.* Weed Killer (Naphtha Specialties), Pole Treating Oil (Heavy Fuel), Dust Layer (Asphalt), etc.

PRODUCT CATEGORY	**DESCRIPTION**
1. (a) Propane and propane mixes	A normally gaseous paraffinic compound (C_3H_8) extracted from refinery gases.
(b) Butane and butane mixes.....	A normally gaseous paraffinic hydrocarbon (C_4H_{10}) extracted from refinery gases.
2. Petrochemical feedstocks.....	Refinery gases or other petroleum derivatives if sold or shipped to a chemical company to be used as a raw material for further processing. Refer to Section B of the "Instructions" and annex 1 for a detailed explanation of the statistical treatment of this product.
3. Naphtha specialties	Industrial and commercial solvents, lighting naphtha, mineral spirits and paint thinners.
4. Aviation gasoline.....	All gasoline type fuels for piston type aircraft engines.
5. Motor gasoline	All gasoline type fuels for internal combustion engines other than aircraft.
6. Aviation turbo fuel ..... (Kerosene type)	All kerosene type fuels (JetA-1) for turbo-jet or straight jet type aircraft engines.
7. Aviation turbo fuel ..... (Naphtha type)	All naphtha type fuels (Jet B) for turbo-jet or straight jet type aircraft engines.
8. Kerosene, stove oil	Kerosene, mineral lamp oil, no.1 fuel oil Stove oil (including all vapourizing burning oil).
9. Diesel fuel oil	All grades of distillate fuel sold for diesel engine use including low sulphur content (with sulphur content lower than 0.05%).
10. Light fuel oil (nos.2 and 3)	All distillate type fuels for power burners Fuel oil No. 2 (heating oil No. 2) Fuel oil No. 3 (heating oil No. 3) Furnace fuel oil Gas oils Light industrial fuel
11. Heavy fuel oil (Nos. 4, 5 and 6)	All grades of residual type fuels including low sulphur (with sulphur content lower than 1%) for both steam and diesel engines. Bunker B and Bunker C. Fuel oils Nos.4, 5 and 6. Residual fuel oil.

12. Asphalt.....	Asphalt flux, asphalt primers, asphaltic saturants, bitumuls, briquetting binder, cutback asphalts, liquid or solid asphalts, oxidized asphalt, paving compounds, fluxes or primers.
13. Petroleum coke..... (including coke from catalytic cracker)	All petroleum coke included. Petroleum coke is obtained mainly by cracking and carbonising of residue feedstocks, tar and pitches in processes such as delayed coking or fluid coking. The two most important qualities are green coke and calcinated coke. This category also includes catalyst coke deposited on the catalyst during refining processes: this coke is not recoverable and is usually burned as refinery fuel.
14. Lubricating oil and grease.....	All oils and greases of petroleum origin manufactured or sold for lubricating purposes. Automotive or industrial oils which may be described as having special properties other than lubricating alone, such as brake fluids, automatic transmission oils, industrial cutting oils or coolants and rust preventatives. Cordate oils.
15. Wax and candles	All types of paraffin candles, crude scales waxes, dark raw waxes, microcrystalline wax and paraffin waxes.
16. Still gas (still gas).....	The remaining unseparated gaseous fractions produced in refinery distillation or cracking processes, after marketable products have been extracted. This is usually consumed as refinery fuel although sales have been made to public gas utilities under certain circumstances.
17. Refiney losses	The volumetric change between refinery input of raw materials and output for finished products. Since greater volumes of finished products whose specific gravity is lighter than crude oil is produced in most modern refineries, there will usually be negative quantities or gains.
18. Unfinished product.....	The volume in process in a refinery at any particular point in time that cannot be identified in end product terms. Also, imports or purchases of blending agents in inventory where the end product may be in doubt.
19. Total all products	Grand total of all Finished Petroleum Products, Products no. 1(A) to 18 inclusive.

To eliminate the inconsistency of product classification between purchaser and seller, occurring when products are moved between companies, the purchaser will report the purchase in the product classification for which he was invoiced by the seller; the purchase will then be inter-product transferred into the product classification in which it will be disposed.