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CODE   Crude
Oil
Data
Exchange

Implementation
Guidelines

PIDX Publication 3810

Petroleum Industry
Data Exchange
Committee

March 1992

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Crude Oil Data Exchange

Statement of Purpose and Industry Use

Purpose

- Exchange document data from crude oil or product run tickets, crude oil lease and point of sale run statements, and tank strapping increment tables in a standardized fixed record format.

Benefits

- Early booking of crude oil volumes and values.
- Effective monitoring of inventories, receipts/delivery balances, shipments and other critical items.
- Reduction in clerical effort.

History

- CODE was installed as an industry standard in 1978 transmitting oil run ticket information. Oil statement records were added to the system in January 1986. Tank increment records were added to the system in January 1989.

Implementation and User Guide

Exhibit A

Record Formats

Exhibit B

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Implementation and User Guide Crude Oil Data Exchange (CODE)

Receiving From Other Companies

The following is an outline of steps that a company might follow to obtain maximum benefits as a receiver of CODE data.

1. Initiate a study to determine how your company would like to use CODE data after it is received in-house.

2. Initiate a project that would allow for processing the CODE data through the appropriate accounting area in your company.

3. You will need to identify the companies that you would like to receive data from.
   a. Prioritize a list of potential sending companies.
   b. Compile a list of property codes.

4. Prepare a letter to the accounting contact of the company you want to receive from. It should contain the following:
   a. Your company ID.
   b. A list of the property codes for which you would like to receive CODE information.
   c. The names and phone numbers of your company's accounting and system contacts.
   d. A firm date when you will be ready to receive CODE transmissions or a date when you will contact the transmitter to give them further start-up information.

Transmitting to Other Companies

- In order to become a transmitter of CODE data, in-house run tickets, oil run statements or tank increment data will have to be converted to the standard CODE record formats. Be very careful to follow the exact data formats.

- Advise the contact of the company you plan to send data to of the following:
   a. Your company iD.
   b. Request a list of property codes they need transmitted.
   c. The names and phone numbers of your company's accounting and systems contacts.
   d. A firm date when you will be ready to send CODE transmissions.

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CODE Operating Conventions

The following is a list of operating convention within CODE.

1. At no time shall a sender of CODE data retransmit run ticket or run statement data to any receiver without the receiver's prior knowledge and permission. To do so will cause the receiver to incur additional charges for the same transmission.

2. All senders and receivers of CODE data are strongly encouraged to comply with all standards and guidelines regarding data formats. Failure to do so will result in system degradation.

3. Price adjustments should not generate a new run ticket record. They should not be included in transmissions. The run ticket transmission should reflect the hard copy.

4. When adjustments are made, the incorrect entry should be reversed and the corrected entry should be sent. The adjustment indicator field should be set to '1' for both records.

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Exhibit B

Record Formats
and Layouts

Run Tickets
and
Run Statements

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F1eld Name	Lgth	Type	From	To	Description
Record ID		N	1	1	A numeric code used to identify the various code formats
CompanyID	2	*NN*	2	3	Code used to identify the sending/receiving company
Ticket Type	1	N	4	4	Numeric field used to differentiate types of tickets as follows:

<div align="center">

1 =Meter   4 = Estimated Barrels
2 =Gauged   6 =Total Lease Volume
3 = Net Barrels

</div>

F1eld Name	Lgth	Type	From	To	Description
Transmitter's Rec!Del Ind.	1	N	5	5	1 = Delivery; 2 = Receipt
Run Type	1	N	6	6	0 = Unknown; 1 = Lease Run; 2 = Trunk Line (Central Gath. Point); 3 = Line Transfer; 4 = Joint Unit
Ticket Number	7	*NN*	7	13	Identifies the transaction run ticket number; required for meter, gauged, and estimated barrel type tickets
Run Ticket Date	6	N	14	19	Run ticket date in the form 'MMDDYY'
Property Code	14	*NN*	20	33	Identifies the sending company's property number
Gathering Charge	1	N	34	34	0 =No gathering charge; 1 =Gathering charge
Tank/Meter No.	7	*NN*	35	41	Tank/Meter number
Adjustment Ind.	1	N	42	42	0 = No correction; 1 - Correction to previous transmission
Opening Reading	10	N	43	52	The opening/top reading for a meter or gauged ticket; format for meter would be XXXXXXX.XX (implied decimal); gauged format would be FFFRINNDD (feet, inches, numerator, denominator)
Opening Date	4	N	53	56	Run ticket date or opening meter ticket date in the form MMDD
Closing Reading	10	N	57	66	Same as opening reading
Closing Date	4	N	67	70	Same as opening date
Meter Factor	8	N	71	78	For meter tickets, expressed in the form XX.XXXXXX (implied decimal)
Shrinkage; Incrustation	7	N	79	85	For gauged tickets, transmit incrustation factor; for meter tickets use

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Factor   shrinkage factor; form for both is XX.XXXXXX (implied decimal)

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Field Name	Lgth	Type	From	To	Description
Opening Temperature	4	N	86	89	Required field for meter, gauged, and estimated barrel tickets; for meter, if not temperature compensated, enter average line temperature; otherwise, default to 60 degrees for meters; numeric format should be XXX.X (implied decimal)
Closing Temperature	4	N	90	93	See opening temperature
BS&W%	4	N	94	97	Numeric format should be XX.XX (implied decimal); set to zero for estimated barrels or total lease volume
Observed Gravity	3	N	98	100	Numeric format XXX (implied decimal)
Observed Temp	4	N	101	104	Numeric format XXX.X (implied decimal)
Pos/Neg Code	1	N	105	105	Numeric code for barrel designation; 0 = Positive; 1 = Negative
TOTAL NErVOLUME	9	N	106	114	Numeric Format XXXXXXX.XX (implied decimal)
Shipper's Net Volume	9	N	115	123	Numeric format XXXXXXX.XX (implied decimal; used to show shipper's barrels transported through a pipeline; default to total net volume if not applicable
Corrected Gravity	3	N	124	126	Numeric format XX.X (implied decimal)
Product Code	3	A/N	127	129	If ticket is for a product other than crude oil, use standard (PETROEX) product code for identification; otherwise, leave blank
Transmission Date	3	N	130	132	Left blank by the transmitting company; will be filled with julian date when data is distributed through codsplit

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Field Name	Lgth	Type	From	To	Description
Record ID	1	N	1	1	A numeric code used to identify the various code formats
Company ID	2	A/N	2	3	Code used to identify the sending/receiving company
Record Count	10	N	4	13	Indicates the number of type 2 (run ticket detail) records preceding and including this record for this company
Pos/Neg Code	1	N	14	14	Numeric code for barrel designation; 0 = Positive; 1 = Negative
Sub -Total Net Volume	13	N	15	27	Numeric format XXXXXXXXXXX.XX (implied decimal); total of all net volumes for preceding type 2 records
Sub-Total Shipper's Net Volume	13	N	28	40	Numeric format XXXXXXXXXXX.XX (implied decimal); total of all shipper's net volumes for preceding type 2 records
	89		41	129	Blank
Transmission Date	3	N	130	132	Left blank by the transmitting company; will be filled with julian date when data is distributed through codsplit

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Field Name	Lgth	Type	From	To	Description
Record ID	1	N	1	1	A numeric code used to identify the various code formats
	2		2	3	Blank
Record Count	10	N	4	13	Indicates the number of type 2 records preceding and including this record for this company
Pos/Neg Code	1	N	14	14	Numeric code for barrel designation: 0 =Positive; 1 =Negative
GRAND TOTAL NET VOLUME	13	N	15	27	Numeric format XXXXXXXXXX.XX (implied decimal); total of all net volumes for preceding type 4 records
GRAND TOTAL SHIPPER'S NET VOLUME	13	N	28	40	Numeric format XXXXXXXXXXX.XX (implied decimal); total of all shipper's net volumes for preceding type 4 records
	92		41	132	Blank

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Field Name	Lgth	Type	From	To	Description
Record ID	1	N	1	1	A numeric code used to identify the various code formats
CompanyID	2	AIN	2	3	Code used to identify the sending/receiving company
Ticket Date	6	N	4	9	Run ticket date in the form "MMDDYY"
Accounting Date	4	N	10	13	Accounting period in the form 'YYMM'
Ticket Number	7	AIN	14	20	Identifies the transaction run ticket number
Tank/Meter No.	8	AIN	21	28	Tank/meter number
Property Number	18	AIN	29	46	Identifies the sending company's property code
Carr. Gravity	4	N	47	50	Numeric format XXX.X (implied decimal)
Product Price	6	N	51	56	Numeric format XX.XXXX (implied decimal)
Net Volume	10	N	57	66	Signed numeric field in the format +/-XXXXXXX.XX (implied decimal)
Gross Value	12	N	67	68	Signed numeric field in the format +/-XXXXXXX.XX (implied decimal)
Adjustment Value	10	N	79	88	Signed numeric field in the format +/-XXXXXXX.XX (implied decimal)
Trucking Charges	10	N	89	98	Signed numeric field in the format +/-XXXXXXX.XX (implied decimal)
State Taxes	11	N	99	109	Signed numeric.field in the format +/-XXXXXXX.XX (implied decimal)
Windfall Ind.	1	N	110	110	Code which indicated windfall tax tier: 0 =Not applicable; 1 =Tier I; 2 =Tier II: 3 =Tier III(22.5%) : 4 =Tier III (30%)
Net Value	12	N	111	122	Signed numeric field in the format +/-XXXXXXX.XX (implied decimal)
Adjustment Ind.	1	N	123	123	0= No correction; 1 = Correction to previous transmission
	6		124	129	Blank
Transmission Date	3	N	130	132	Left blank by the transmitting company; will be filled with julian date when data is distributed through codsplit

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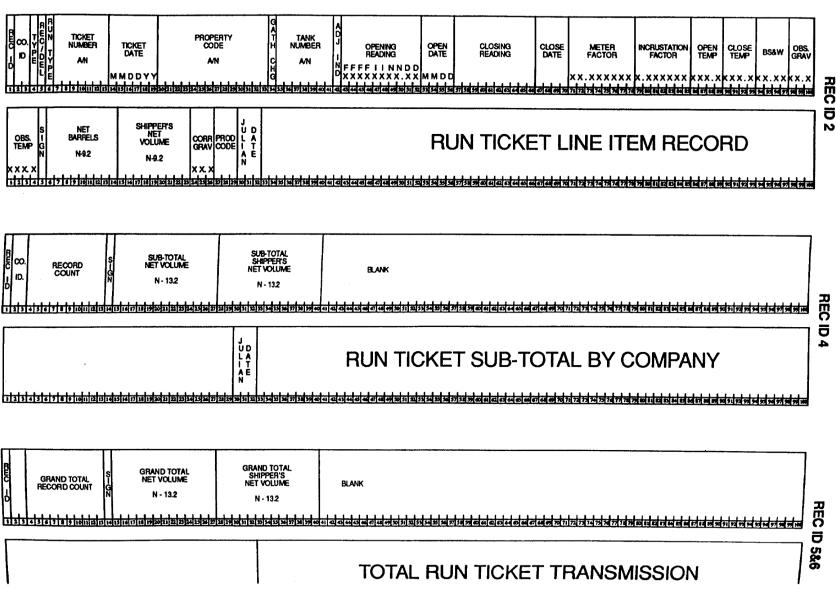| Field Name	Lgth	Type	From	To	Description
Record ID	1	N	1	1	A numeric code used to identify the various code formats
Company ID	2	NN	2	3	Code used to identify the sending/receiving company
Record Count	10	N	4	13	The number of preceding type 7 & 8 detail records (including this only)
Property Code	18	NN	14	31	Identifies the sending company's property code
Net Volume	10	N	32	41	Signed numeric field in the format +/-XXXXXXX.XX (implied decimal)
Gross Value	12	N	42	53	Signed numeric field in the format +/-XXXXXXX.XX (implied decimal)
Adjustment Value	10	N	54	63	Signed numeric field in the format +/-XXXXXXX.XX (implied decimal)
Trucking Charges	10	N	64	73	Signed numeric field in the format +/-XXXXXXX.XX (implied decimal)
State Taxes	11	N	74	84	Signed numeric field in the format +/-XXXXXXX.XX (implied decimal)
Net Value	12	N	85	96	Signed numeric field in the format +/-XXXXXXX.XX (implied decimal)
	33		97	129	Blank
Transmission Date	3	N	130	132	Left blank by the transmitting company; will be filled with julian date when data is distributed through codsplit

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Total Run Statement- Transmission

Field Name	Lgth	Type	From	To	Description
Record ID	1	N	1	1	A numeric code used to identify the various code formats
	2		2	3	Blank
Record Count	10	N	4	13	The number of preceding type 7 & 8 detail records (including this one)
Net Volume	10	N	14	23	Signed numeric field in the format +/-$XXXXXXX.XX$ (implied decimal)
Net Value	12	N	24	35	Signed numeric field in the format +/-$XXXXXXX.XX$ (implied decimal)
	97		36	132	Blank

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REC ID 2

RUN TICKET LINE ITEM RECORD

Field layout (row 1):
| REC ID | CO. ID | REC TYPE/DEL | RUN TYPE | TICKET NUMBER A/N | TICKET DATE MMDDYY | PROPERTY CODE A/N | GATH CHG | TANK NUMBER A/N | ADJ IND | OPENING READING FFFF I I NNDD XXXXXXX.XX | OPEN DATE MMDD | CLOSING READING | CLOSE DATE | METER FACTOR XX.XXXXXX | INCRUSTATION FACTOR X.XXXXXX | OPEN TEMP XXX.X | CLOSE TEMP XXX.X | BS&W XX.XX | OBS. GRAV XX.X |

Field layout (row 2):
| OBS. TEMP XXX.X | SIGN | NET BARRELS N-9.2 | SHIPPER'S NET VOLUME N-9.2 | CORR GRAV XX.X | PROD CODE | JULIAN DATE |

REC ID 4

RUN TICKET SUB-TOTAL BY COMPANY

Field layout (row 1):
| REC ID | CO. ID | RECORD COUNT | SIGN | SUB-TOTAL NET VOLUME N-13.2 | SUB-TOTAL SHIPPER'S NET VOLUME N-13.2 | BLANK |

Field layout (row 2):
| JULIAN DATE |

REC ID 5&6

TOTAL RUN TICKET TRANSMISSION

Field layout (row 1):
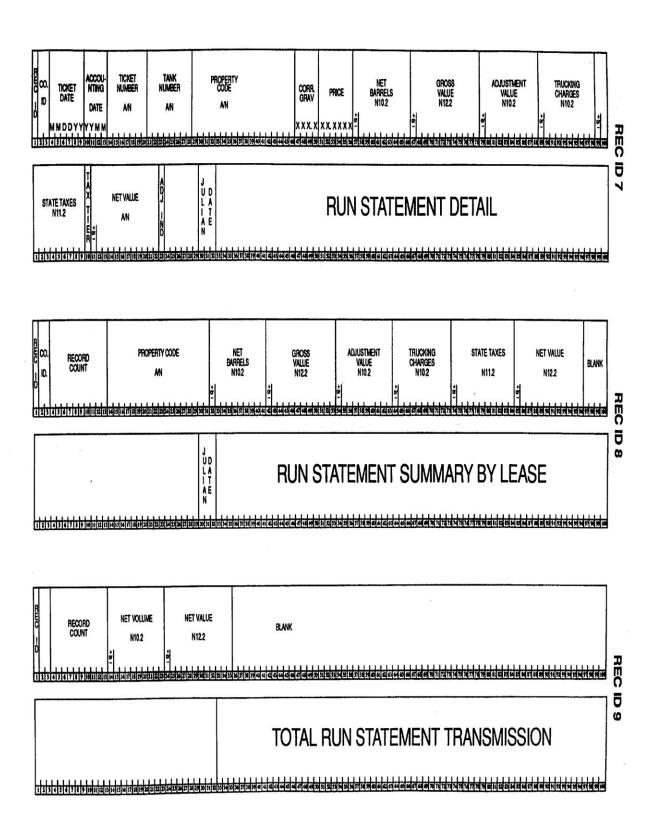| REC ID | GRAND TOTAL RECORD COUNT | SIGN | GRAND TOTAL NET VOLUME N-13.2 | GRAND TOTAL SHIPPER'S NET VOLUME N-13.2 | BLANK |

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REC ID 7

RUN STATEMENT DETAIL

REC ID 8

RUN STATEMENT SUMMARY BY LEASE

REC ID 9

TOTAL RUN STATEMENT TRANSMISSION

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Product Definition	Description		Code
Aviation Gasoline	80/87		A10
	100/130	low lead	1{20
	100/130	high lead	/l2.5
	115/145		A30
Regular Gasoline	80.0		B00
	80.5		805
	81.0		810
	81.5		815
	82.0		820
	82.5		825
	83.0		830
	83.5		835
	84.0		840
	84.5		845
	85.0		850
	85.5		855
	86.0		860
	86.5		865
	87.0		870
	87.5		875
	88.0		880
	88.5		885
	89.0		890
	89.5		895
	90.0		899
Premium Gasoline	90.0		C00
	90.5		C05
	91.0		C10
	91.5		C15
	92.0		C20
	92.5		C25
	93.0		C30
	93.5		C35
	94.0		C40
	94.5		C45
	95.0		C50
	95.5		C55
	96.0		C60
	96.5		C65
	97.0		C70
	97.5		C75
	98.0		C80
	98.5		C85

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Product Definition	Description	Code
Unleaded Regular		D
Sub Octane Unleaded		D1
Mid Octane Unleaded		D2
Sub Octane Leaded Regular		DS
Sub Octane Unleaded Regular		DN5
Unleaded - 84 Octane		D84
- 89 Octane		D89
No.1 Diesel	45 Centane Index	E5
	48 Centane Index	E8
	49 Centane Index	E9
No. 1 Fuel Oil		E10
No.2 Diesel	40 Centane Index	F0
	45 Centane Index	F5
	48 Centane Index	F8
	49 Centane Index	F9
No. 2 Fuel Oil		F10
Railroad Diesel		F35
Low Sulfur Diesel		G
High Centane Diesel	50+Centane	GO
Kerosene		H
	Special Kero Blend	H1
	K-1 Kerosene	H2
Jet Fuel, Military	JP4	J4
	JP5	J5
Jet Fuel, Commercial		K

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Product Definition	Description	Code
	Jet 50A-Deicer	K1
	Normal Feed Stock	K2
	Q-Grade	K6
No. 1 Heating Oil		L
Low Lead Regular		LLR
No. 2 Heating Oil		M
	No. 2 - Low Pour	M1
	Industrial Gas Oil	M2
	High Sulphur Residual #6	M6
	1.0 Percent	M1P
	0.3 Percent	M3P
Natural Gas	XX= lb.	Nxx
	{ie. N17 = 17lb.)	
Butane Propane Mix		NBP
Condensate		NC
Ethane		NE
Ethane Propane Mix		NEP
Reid Butane		NFB
Isobutane		NIB
Normal Butane		NNB
Propane		NP

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Product Definition	Description	Code
Regular Leaded - Oxynol Blend		O
Unleaded Premium		P
Unleaded Premium (40%) & Unleaded Regular (60%)		PD
Unleaded Premium	Octane- 91	P91
	Octane- 92	P92
		Q
Unleaded Blended Ethanol		Q1
Unleaded Supreme with Ethanol		R
Regular Leaded Ethanol		S
Stock Oils		T
Alcohol		
Leaded Regular with Unleaded Premium		U
Gasohol		W
Reserved for TABS		ZZZ

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