

Mineral Industry Surveys

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SULFUR IN OCTOBER 2003

During the month, production of recovered elemental sulfur was 712,000 metric tons, according to the U.S. Geological Survey. October production was 2% higher than September 2003, and virtually the same as that of October 2002. Shipments were virtually the same as those of September 2003. Producers' ending stocks for October 2003 were 204,000 tons.

Import and export data for October 2003 were not available at the time of publication and will be published in the Sulfur in

November 2003 Mineral Industry Surveys along with apparent consumption. Imports of recovered sulfur for September 2003 were estimated to be 216,000 tons; exports were 50,000 tons. Imports of sulfuric acid for September 2003 were 70,000 tons; exports were 23,000 tons. Sulfur imports are estimated using reports from the U.S. Census Bureau, data from other published sources, and personal communications with industry experts.

TABLE 1
SALIENT SULFUR STATISTICS¹

(Thousand metric tons)

| Period | Production | | | Shipments, all sources |
|------------------------|------------------------|--------------------|--------------------|---------------------------|
| | Petroleum ² | Natural gas | Total | |
| 2002: | | | | |
| January-December | 6,750 | 1,760 | 8,500 | 8,490 |
| January-October | 5,560 | 1,430 ^r | 6,990 ^r | 6,990 ^r |
| October | 545 | 164 | 708 | 699 |
| November | 579 | 155 | 733 | 747 |
| December | 611 | 168 | 779 | 755 |
| 2003: | | | | |
| January | 601 ^r | 169 | 770 ^r | 766 |
| February | 526 | 148 | 674 | 658 |
| March | 597 | 160 | 758 | 739 |
| April | 625 | 166 | 791 | 807 |
| May | 626 | 141 | 766 | 762 |
| June | 560 ^r | 124 | 684 ^r | 675 ^r |
| July ^r | 598 | 152 | 750 | 756 |
| August | 577 | 141 | 718 | 718 |
| September ^p | 563 ^r | 133 ^r | 697 | 706 ^r |
| October | 563 | 148 | 712 | 709 |
| Total | 5,840 | 1,480 | 7,320 | 7,300 |

^pPreliminary. ^rRevised.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Includes a small quantity from coking operations.

TABLE 2
U.S. IMPORTS OF SULFUR¹

(Thousand metric tons and thousand dollars)

| Period | Canada | | Mexico | | Total, all countries ² | |
|-------------------|-----------------------|--------------------|----------|--------------------|-----------------------------------|--------------------|
| | Quantity ^e | Value ³ | Quantity | Value ³ | Quantity ^e | Value ³ |
| 2002: | | | | | | |
| January-December | 1,950 | 9,450 | 430 | 11,300 | 2,560 | 26,800 |
| January-September | 1,410 ^r | 6,270 | 327 | 7,740 | 1,830 ^r | 17,600 |
| September | 180 | 1,050 | 45 | 1,420 | 242 | 3,010 |
| October | 180 | 1,240 | 29 | 944 | 247 | 3,290 |
| November | 180 | 843 | 29 | 942 | 232 | 2,230 |
| December | 180 | 1,100 | 45 | 1,640 | 252 | 3,720 |
| 2003: | | | | | | |
| January | 180 | 1,280 | 44 | 2,460 | 224 | 3,740 |
| February | 170 | 2,330 | 45 | 1,850 | 215 | 4,250 |
| March | 200 | 2,870 | 45 | 2,130 | 245 | 5,660 |
| April | 190 | 2,950 | 44 | 2,380 | 234 | 5,230 |
| May | 200 | 4,160 | 45 | 2,530 | 266 | 7,760 |
| June | 180 | 2,940 | 44 | 2,410 | 241 | 6,270 |
| July | 160 | 2,440 | 45 | 2,180 | 241 | 6,390 |
| August | 160 | 2,040 | 45 | 1,940 | 267 | 4,820 |
| September | 160 | 2,910 | 44 | 2,070 | 213 | 6,160 |
| Total | 1,600 | 23,900 | 401 | 19,900 | 2,150 | 50,300 |

^eEstimated. ^rRevised.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²May include other countries not listed.

³Declared customs valuation.

Sources: U.S. Census Bureau data as adjusted by U.S. Geological Survey and PentaSul North America Sulfur Service.

TABLE 3
U.S. IMPORTS OF SULFURIC ACID¹

(Thousand metric tons and thousand dollars)

| Period | Canada | | | Europe | | | Total, all countries ² | | |
|-------------------|------------------|----------------|--------------------|----------|----------------|--------------------|-----------------------------------|------------------|--------------------|
| | Quantity | Sulfur content | Value ³ | Quantity | Sulfur content | Value ³ | Quantity | Sulfur content | Value ³ |
| 2002: | | | | | | | | | |
| January-December | 615 | 201 | 17,900 | 217 | 71 | 3,750 | 1,060 | 344 | 36,400 |
| January-September | 486 ^r | 158 | 14,100 | 150 | 49 | 1,940 | 777 | 251 ^r | 28,600 |
| September | 37 | 12 | 1,130 | 19 | 6 | 319 | 59 | 19 | 2,120 |
| October | 33 | 11 | 1,170 | 9 | 3 | 255 | 47 | 15 | 2,110 |
| November | 51 | 17 | 1,390 | 28 | 9 | 1,010 | 93 | 31 | 3,080 |
| December | 45 | 15 | 1,310 | 30 | 10 | 548 | 142 | 47 | 2,590 |
| 2003: | | | | | | | | | |
| January | 38 | 13 | 1,330 | 29 | 9 | 511 | 67 | 22 | 1,900 |
| February | 30 | 10 | 1,080 | 25 | 8 | 836 | 57 | 19 | 2,360 |
| March | 42 | 14 | 1,740 | 19 | 6 | 279 | 63 | 21 | 2,480 |
| April | 44 | 14 | 1,680 | -- | -- | -- | 54 | 18 | 2,200 |
| May | 34 | 11 | 1,320 | 29 | 10 | 638 | 75 | 25 | 2,710 |
| June | 26 | 8 | 963 | 40 | 13 | 1,350 | 84 | 27 | 2,770 |
| July | 23 | 8 | 1,020 | 19 | 6 | 318 | 82 | 27 | 1,950 |
| August | 19 | 6 | 980 | 74 | 24 | 751 | 103 | 34 | 2,410 |
| September | 22 | 7 | 1,150 | 9 | 3 | 382 | 70 | 23 | 2,230 |
| Total | 278 | 91 | 11,300 | 244 | 79 | 5,070 | 655 | 216 | 21,000 |

^rRevised. -- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²May include other countries not listed.

³Declared customs valuation.

Source: U.S. Census Bureau.

TABLE 4
U.S. EXPORTS OF SULFUR AND SULFURIC ACID¹

(Thousand metric tons and thousand dollars)

| Period | Sulfur | | Sulfuric acid | | |
|-------------------|----------|--------------------|---------------|----------------|--------------------|
| | Quantity | Value ² | Quantity | Sulfur content | Value ² |
| 2002: | | | | | |
| January-December | 555 | 40,000 | 148 | 49 | 12,800 |
| January-September | 475 | 41,800 | 130 | 42 | 11,500 |
| September | 70 | 6,920 | 16 | 5 | 1,840 |
| October | 76 | 3,450 | 11 | 4 | 1,040 |
| November | 60 | 2,400 | 9 | 3 | 839 |
| December | 14 | 5,300 | 14 | 5 | 1,190 |
| 2003: | | | | | |
| January | 107 | 3,440 | 12 | 4 | 1,380 |
| February | 63 | 3,410 | 16 | 5 | 1,150 |
| March | 31 | 2,020 | 11 | 3 | 1,360 |
| April | 90 | 2,910 | 12 | 4 | 1,430 |
| May | 41 | 2,430 | 22 | 7 | 1,610 |
| June | 11 | 1,780 | 21 | 7 | 1,790 |
| July | 53 | 3,520 | 28 | 10 | 2,430 |
| August | 57 | 2,190 | 27 | 9 | 2,060 |
| September | 50 | 2,090 | 23 | 7 | 1,910 |
| Total | 503 | 23,800 | 171 | 56 | 15,100 |

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Declared f.a.s. (free alongside ship) valuation.

Source: U.S. Census Bureau.

TABLE 5
U.S. CONSUMPTION OF SULFUR¹

(Thousand metric tons)

| Period | Domestic sources ² | Imports ^e | Consumption |
|--------------------------------|-------------------------------|----------------------|-------------|
| 2002: | | | |
| January-December | 7,930 | 2,560 | 10,500 |
| January-September ^f | 5,290 | 1,590 | 6,880 |
| September | 589 | 242 | 831 |
| October | 623 | 247 | 870 |
| November | 687 | 232 | 919 |
| December | 741 | 252 | 993 |
| 2003: | | | |
| January | 661 | 224 | 885 |
| February ^f | 595 | 215 | 810 |
| March | 708 | 245 | 953 |
| April | 717 | 234 | 951 |
| May ^f | 721 | 266 | 987 |
| June | 665 | 241 | 906 |
| July | 703 | 241 | 944 |
| August | 661 | 267 | 928 |
| September | 656 | 213 | 869 |
| Total | 6,090 | 2,150 | 8,230 |

^eEstimated. ^fRevised.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Calculated as shipments minus exports.

TABLE 6
RECOVERED SULFUR PRODUCED AND SHIPPED IN THE UNITED STATES,
BY PAD (PETROLEUM ADMINISTRATION FOR DEFENSE) DISTRICT¹

(Thousand metric tons)

| District and source | October 2003 ^p | | September 2003 | | Total 2003 ² | | Year to date 2002 ² | |
|---------------------------|---------------------------|-----------|------------------|------------------|-------------------------|-----------|--------------------------------|--------------------|
| | Production | Shipments | Production | Shipments | Production | Shipments | Production | Shipments |
| PAD 1: | | | | | | | | |
| Petroleum and coke | 23 | 24 | 21 | 22 | 190 | 192 | 197 ^r | 200 ^r |
| Natural gas | 2 | 2 | 2 | 2 | 21 | 22 | 23 ^r | 23 ^r |
| Total | 25 | 27 | 23 | 24 | 211 | 214 | 220 ^r | 223 ^r |
| PAD 2: | | | | | | | | |
| Petroleum and coke | 67 | 69 | 65 | 67 | 737 | 732 | 704 ^r | 705 ^r |
| Natural gas | 4 | 3 | 4 | 4 | 43 | 43 | 40 ^r | 39 |
| Total | 70 | 72 | 69 | 71 | 780 | 775 | 744 ^r | 744 ^r |
| PAD 3: ³ | | | | | | | | |
| Petroleum and coke | 363 | 358 | 364 ^r | 365 ^r | 3,750 | 3,760 | 3,660 ^r | 3,650 ^r |
| Natural gas | 41 | 41 | 33 ^r | 33 ^r | 370 | 371 | 362 ^r | 364 ^r |
| Total | 404 | 400 | 397 ^r | 398 ^r | 4,120 | 4,130 | 4,020 ^r | 4,010 ^r |
| PAD 4 and 5: ⁴ | | | | | | | | |
| Petroleum and coke | 111 | 108 | 113 ^r | 114 ^r | 1,160 | 1,130 | 993 ^r | 991 ^r |
| Natural gas | 101 | 102 | 94 ^r | 99 ^r | 1,050 | 1,040 | 1,010 ^r | 1,020 ^r |
| California | 82 | 84 | 87 ^r | 88 ^r | 905 | 891 | 782 | 779 |
| Total | 212 | 210 | 207 ^r | 212 ^r | 2,210 | 2,180 | 2,000 ^r | 2,010 ^r |
| Grand total | 712 | 709 | 697 | 706 ^r | 7,320 | 7,300 | 6,990 ^r | 6,990 ^r |

^pPreliminary. ^rRevised.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²May include revisions to prior months.

³Includes the U.S. Virgin Islands.

⁴Quantities produced and shipped in California included in petroleum and natural gas. California total shown for information purposes only.

TABLE 7
COMPARATIVE SULFUR AND SULFURIC ACID STATISTICS¹

(Million metric tons per year [annualized basis] and dollars per metric ton for period shown)

| | 2003 | | | 2002 |
|------------------------------------------------------------|-------------------|-------------------|-------------------|-------|
| | October | September | Year to date | total |
| Production | 8.38 ^p | 8.48 ^r | 8.79 | 8.50 |
| Shipments | 8.35 ^p | 8.59 ^r | 8.76 | 8.49 |
| Exports of sulfur | NA | 0.61 | 0.67 | 0.56 |
| Imports of sulfur: | | | | |
| Canada | NA | 1.95 ^e | 2.14 ^e | 1.95 |
| Mexico | NA | 0.54 | 0.54 | 0.43 |
| Total ² | NA | 2.59 ^e | 2.87 ^e | 2.56 |
| Export of H ₂ SO ₄ | NA | 0.28 | 0.23 | 0.15 |
| Import of H ₂ SO ₄ : | | | | |
| Canada | NA | 0.27 | 0.37 | 0.62 |
| Europe | NA | 0.11 | 0.33 | 0.22 |
| Total ² | NA | 0.85 | 0.88 | 1.06 |
| Consumption: ³ | | | | |
| Domestic sources | NA | 7.98 | 8.14 | 7.93 |
| Imports | NA | 2.59 ^e | 2.87 ^e | 2.56 |
| Total | NA | 10.57 | 11.01 | 10.50 |
| Sulfur export values ⁴ | NA | \$42 | \$47 | \$72 |
| Sulfur import values: ⁴ | | | | |
| Canada | NA | \$18 | \$15 | \$5 |
| Mexico | NA | \$47 | \$50 | \$26 |
| Average | NA | \$29 | \$23 | \$10 |
| H ₂ SO ₄ export values ⁴ | NA | \$83 | \$88 | \$86 |
| H ₂ SO ₄ import values: ⁴ | | | | |
| Canada | NA | \$52 | \$40 | \$29 |
| Europe | NA | \$42 | \$21 | \$17 |
| Average | NA | \$32 | \$32 | \$34 |

^eEstimated. ^pPreliminary. ^rRevised. NA Not available.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Includes other countries not listed.

³Because September trade data were not available, September consumption was not determined.

⁴Average value per ton for most recent data available.