



**VALIDATION OF THE PUBLIC HEALTH RISK  
ASSESSMENT FOR THE IRVING OIL REFINERY  
UPGRADE  
SAINT JOHN, NEW BRUNSWICK  
FINAL REPORT**

Submitted to:

**New Brunswick Department of Health**  
Fredericton, New Brunswick

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## 1.0 INTRODUCTION

In response to one of the conditions of the Minister of the Environment's Certificate of Determination on the Environmental Assessment of the Irving Oil Limited (IOL) Refinery Upgrade Project in 1999, IOL participated in a Public Health Risk Assessment (PHRA) which was undertaken by the Department of Health and Community Services in relation to the refinery operation. The PHRA of the IOL Refinery Upgrade recommended validation and follow-up be undertaken.

Subsequently, IOL's Air Quality Approval (I-4904) was issued, and included a condition related to the PHRA as follows:

*"The Approval Holder shall participate in a process to validate the assumptions of the Public Health Risk Assessment of the Refinery Upgrade Project (PHRA) to be undertaken by the Department of Health and Wellness and to be completed by September 30, 2006."*

The date for completion of the validation study has subsequently been extended.

### 1.1 Task Definition

The assignment is to carry out a comprehensive study to validate the assumptions made in the PHRA, following the steps outlined in Table 1.1. The work plan included the collection of existing data, which is reasonably available as per the Request for Proposal (RFP), from the New Brunswick Department of Environment (NBENV), the National Pollutant Release Inventory (NPRI) and IOL. The work plan did not include further data collection and assembly or the preparation of addendums to the PHRA. The study was directed by a Steering Committee established by the client, which is Co-Chaired by representatives of the Departments of Environment and Health and Wellness, and whose membership includes residents of Saint John, representatives from Irving Oil, and the City of Saint John.

While pursuing the Validation Study, AMEC found that the available data and methodology used in the PHRA was insufficient to allow a valid opinion with regard to the comparison of the pre- and post-upgrade refinery operation with respect to the health risk of VOCs. After consultation with the client, it was determined that an addendum to the work outlined in Table 1.1 was warranted, and AMEC was asked to perform a ***de novo health risk assessment for ambient VOCs (inhalation route only)***.

In performing the Validation Study, AMEC, pursuant to its discussions and agreement with the Steering Committee, has focused its efforts on relevant environmental data both pre- and post-refinery upgrade, rather than on assessing any methodology issues with regard to the original ***Public Health Risk Assessment***, nor with regard to the air quality modeling which was performed in order to enable the original assessment. In addition, the Steering Committee directed that a "Methodology Report" be prepared which would indicate AMEC's approach to the

**Table 1.1 Validation/Data Sources**

Validation Step	Primary Data Sources	
Verify stack concentrations of Polycyclic Aromatic Hydrocarbons (PAHs) and metals are low following the upgrade.	Stack Tests on new sources including Flue Gas Scrubber (FGS), Sulphuric Acid Tail Gas Unit (SATGU) and Sulphuric Acid Regeneration Unit (SARU). Stack tests for metals also available for existing heavy fuel sources.	DOE
Fugitive emissions from the IOL Refinery should be characterized for specific Volatile Organic Compounds (VOCs) to enable assessment of the assumptions in the PHRA regarding these emissions (i.e. the VOC emissions will not significantly increase). This need not to be an extensive program. Initial characterization of the hydrocarbons from the IOL fugitive emission abatement program would provide information that would be applicable for air dispersion modelling to provide estimates for ground level air concentrations of the VOCs from this source in the community. This information could then be used to eliminate the uncertainties in the estimation of potential health risks, or odours, related to fugitive emissions could be evaluated by interpolation of the specific VOC analyses with the hydrocarbon analysis to eliminate specific VOCs as necessary.	Ambient VOC monitoring results at Forest Hills and Champlain Heights School for 13 and 5 years respectively. Comparative data from Point Lepreau available.	DOE
With respect to the evaluation of existing ambient chemical loads in the Saint John area, site specific ambient concentrations of Methyl, Tertiary, Butyl, Ether (MTBE) were unavailable. Therefore, MTBE concentrations used in the existing ambient scenario were based on concentrations found in ambient air in 3 cities with refineries in the US. Since MTBE is a combustion product from vehicles and is used to a limited extent at the IOL Refinery, levels of MTBE in ambient air should be confirmed.	Ambient MTBE monitoring results at Forest Hills and Champlain Heights School. IOL MTBE emissions data.	DOE NPRI
A wide range of parameters should be monitored after start-up of the IOL Refinery Upgrade to confirm the following:		
<ul style="list-style-type: none"> <li>Stack emission rates for Sulphur Dioxide (SO<sub>2</sub>), Nitrogen Oxides (NO<sub>x</sub>), Carbon Monoxide (CO) and Total Suspended Particulate (TSP) (and particulate breakdown); if there is a substantial change in the estimated versus measured rates for these substances then the results of the risk assessment would need to be re-evaluated.</li> </ul>	Monthly and annual reports. Stack tests. Continuous Emission Monitors (CEM) data.	DOE
<ul style="list-style-type: none"> <li>Analyse stack emissions of TSP to characterize the PAH profile in the emissions to assess the validity of the TSP: PAH ratios used in the PHRA. The conclusions of the PHRA depend on these ratios although they were derived from ambient PAH data (including all sources of PAH, such as diesel truck traffic), and therefore are considered to over-estimate PAH emission from the IOL Refinery Upgrade. If the ratios used prove invalid, an addendum to the</li> </ul>	Stack Tests on new sources including FGS, TGU and SARU. Limited ambient TSP monitoring results as well as several years of PM <sub>2.5</sub> and PM <sub>10</sub> monitoring.	DOE



**Table 1.1 Validation/Data Sources**

Validation Step	Primary Data Sources	
PHRA should be prepared using the additional information.		
<ul style="list-style-type: none"> <li>Verify ambient ground level air concentrations of SO<sub>2</sub> and particulate estimates once the IOL Refinery Upgrade is operational.</li> </ul>	Ambient SO <sub>2</sub> (5+ stations) and particulate (2+ stations) monitoring results.	DOE IOL
<ul style="list-style-type: none"> <li>Evaluate the validity of the SO<sub>2</sub>: NO<sub>x</sub> and SO<sub>2</sub>: CO ratios used, and modify PHRA as necessary (following the same rationale as outlined above for PAHs).</li> </ul>	Stack tests for new and existing equipment. Ambient monitoring results for NO <sub>x</sub> at 3+ stations.	DOE
An appropriate odour monitoring, similar to that conducted historically, should be conducted once the upgrade is operational. This program should be linked and coordinated with the fugitive emission monitoring and analysis program outlined above for VOCs.	Odour observation tours and complaint files.	DOE IOL
The IOL program in place for training staff and bringing the new technologies in the upgrade on line should be communicated with the public to address concerns regarding possible failures, and resulting impacts of various kinds on the community should bringing the upgrade on-line fail.	Annual reports. Community Liaison Committee, Newsletters, Notification letters, Community Connections, Open Houses. Other documented programs carried out by IOL.	DOE IOL
Due to the lack of qualitative data related to upset the accident scenarios, and the concerns raised by the public in this area, an assessment of these issues should be conducted.		
IOL should focus on improved communication with the public regarding their maintenance, and resulting emergency-response programs. Lack of information about the operation of the refinery promote feelings and concerns by the public related to lack of control over their lives, and fears about the operation of the refinery next to their neighbourhoods. These issues raise concerns of psychosocial effects on their health that then foster distrust and complaints about the operation of the refinery. The implementation of a Public Health Management Program, as discussed below, would provide a means for improved communication with the public.		
Noise levels are not expected to change once the Upgrade is operational. However, an appropriate program, such as that conducted historically, should be implemented to monitor noise from the upgraded facility so that an appropriate noise management program can be implemented if required.	Complaints. Noise level monitoring results. Reports prepared by Irving Oil.	DOE IOL
It is not expected that the intensity of light emissions from the refinery will change once the upgrade is operational. This conclusion should be verified, and if night time light levels change significantly as a result of the upgrade and this poses concern to local residents, options to mitigate this problem should be identified and implemented.	Complaints	DOE IOL

task at hand. AMEC prepared and submitted a document outlining its proposed approach, and following comments and further discussion, a final "Methodology Report" was accepted and is attached as Appendix A. In general, with some variation which will be described, the validation study was based on Table 1.1 as described in the proposal.

## 1.2 Background

In August of 1998, pursuant to IOL's registration of its intent to substantially upgrade its Saint John refinery, the New Brunswick Minister of the Environment, under the authority of the New Brunswick Environmental Impact Assessment Regulation, issued a Certificate of Determination (Appendix B) (which was later amended in March of 2000). The Certificate included the requirement that:

*"The proponent must participate in a public health risk assessment in relation to the refinery operation undertaken by the Department of Health and Community Services and be completed by September 30, 1999. The cost of the study will be funded by the Department of Health and Community Services and fully recovered from the proponent."*

The PHRA was prepared by Cantox Environmental Inc., and the 'Final Technical Document' was submitted in December, 1999. As noted in Section 1, the Air Quality Approval (I-4904), which superseded I-2091, subsequently required that the assumptions used in the PHRA be validated following experience with the operation of the upgraded refinery.

## 1.3 Objective

The overall objective of this project is to help ensure that the "*Public Health Risk Assessment of the Irving Oil Refinery Upgrade in Saint John, NB*" (PHRA) based its risk assessment conclusions on appropriate environmental data, both previously monitored, as well as forecast. The health risk methodology used is assumed to be appropriate, although, as noted, a supplemental assessment of health risks from VOCs (inhalation route only) has been completed as part of this report. The air quality modeling, performed to allow for the completion of the PHRA, has not been validated as part of this exercise; however, it has been previously reviewed, and further independent modeling led to comparable results within reasonable limits.





## 2.0 AIR QUALITY

### 2.1 Emission Data Analysis

As per discussions with the Steering Committee, it was agreed that all emissions data would be obtained from the Department of the Environment, in order to ensure a consistent focal point for communications and to verify that the data had been accepted as valid by the Department. Wherever possible, the emissions data has been placed in the context of comparison to both applicable conditions of IOL's Air Quality Approval, as well as to the assumptions which were used to develop the PHRA. In addition, the post-upgrade emissions have been compared to the pre-upgrade emissions. In this analysis, unless otherwise noted, pre-upgrade emissions reflect the period from January 1996 to December 1999, post-upgrade being January 2000 to December 2006.

#### 2.1.1 Sulphur Dioxide (SO<sub>2</sub>) Emissions

Table 2.1 indicates, in a summary form, the total SO<sub>2</sub> emissions from the IOL refinery, both for the pre- and post-upgrade eras, as well as the PHRA's assumed annual emissions and related Air Quality Approval limits. An emission data set for individual units is contained in electronic format under separate cover as Appendix C.

The data indicates that the PHRA used as its basis (for modeling purposes) an annual emission rate which was projected to be up to 29% less than the pre-upgrade quantity. The actual data from the post-upgrade era indicates that SO<sub>2</sub> emissions have decreased by some 18%. Therefore, one can infer that the air quality basis for the PHRA's considerations of health risk is somewhat optimistic; nonetheless, a significant reduction in emissions was realized. However, it must be noted that one would have to consider the changes in source parameters in order to be more certain of potential changes in air quality. Nevertheless, the assumptions that SO<sub>2</sub> emissions would decrease were sound, and IOL's intended implementation of a new Hydrogenation Amine Tail Gas Unit in 2008 is expected to reduce annual emissions by a further amount of approximately 1000 tonnes per year (a reduction of some 19%, based on current emissions).

**Table 2.1 IOL Annual Sulphur Dioxide (SO<sub>2</sub>) Emissions (tonnes/year)**

Years	Reported Annual Average Emissions (tonnes/year)	PHRA Basis (tonnes/year)
Jan/96-Dec/99	6560	
Jan/00-Dec/06	5384	4899
Oct/00-Sept/05		
Oct/05-Sept/09		



### 2.1.2 Nitrogen Oxides (NO<sub>x</sub>) Emissions

Table 2.2 indicates, in a summary form, the emissions of NO<sub>x</sub> from both the pre- and post-upgrade IOL facility, as well as the total projected emissions which formed the basis for the PHRA. The PHRA assumed that NO<sub>x</sub> emissions from the IOL facility would increase by some 28.5% (meaning an increase of 21.1% from the combined industrial facilities as considered for modeling purposes). The actual increase in NO<sub>x</sub> emissions has been in the order of an average of 37.1%, thus one would expect the models to somewhat underestimate downwind impacts (keeping in mind, however, that dispersion models tend to more significantly overestimate ground level impacts, and that source parameters may not be as predicted).

**Table 2.2 IOL Annual Nitrogen Oxides (NO<sub>2</sub>) Emissions (tonnes/year)**

Years	Emissions (Tonnes /Year)	PHRA Assumption
May/96-Dec/99	3280	
Jan/00-Dec/06	4500	4214

### 2.1.3 Carbon Monoxide (CO) Emissions

Table 2.3 presents the CO emissions as averaged for the pre- and post-upgraded refinery. The PHRA based its ambient air quality assessment on the assumption that IOL's CO emissions would increase by some 37%. However, as indicated, the actual average annual increase which has occurred is of the order of 30%. Thus, the CO emissions basis was conservative.

**Table 2.3 IOL's Annual Emissions of CO (tonnes/year)**

Years	Emissions	PHRA
May/96-Dec/99	1047	
Jan/00-Dec/06	1360	1435

### 2.1.4 Total Suspended Particulate Emissions (TSP)

Table 2.4 presents the TSP emissions as reported for both the pre- and post-upgraded IOL refinery. As can be seen, the average TSP emissions are virtually unchanged over the time periods considered. Since the PHRA used mathematical relationships in deriving PM<sub>2.5</sub> as well as PM<sub>10</sub> emission data, both of which were based on TSP data, neither of these parameters, as used for the health assessment, will have changed significantly. The modeling used by the PHRA assumed a substantial (88%) increase in TSP emissions; however, emissions data indicates that TSP emissions have remained constant, at a level some 6% less than modeled for. Nonetheless, the actual ground level impacts, derived through modeling, are dependent on source parameters, as well as the aerodynamics of the particles themselves.



**Table 2.4 TSP Emissions (tonnes/year)**

Years	Emissions	PHRA
Jan/98-Dec/99	442	251
Jan/00-Dec/06	442	470

### 2.1.5 Fugitive Volatile Organic Compounds (VOCs)

Table 2.5 gives a summary of the fugitive VOCs as emitted by the IOL refinery, both pre- and post-upgrade. It should be noted that fugitive VOC emissions are generally the result of the leakage of materials through seals, flanges, valves, etc. Modern refineries (indeed, all process industries), such as IOL, have instituted vigorous maintenance procedures in order to minimize leaks to the environment, in order to protect workers, nearby residents, and to maintain equipment in proper working order. Naturally, measurements taken just prior to, as well as just after maintenance procedures, represent the worst and best cases for emission reduction respectively. The data in Table 2.5 reflects the summary of the average of the two cases for the pre- and post-upgrade era. As can be seen, fugitive VOC emissions decreased by approximately 39%. A complete data set for fugitive VOC emissions is included as part of an electronic database appended to this report, as Appendix D. It should be noted that the fugitive VOC emission data do not include those from the tank farm or the loading rack.

**Table 2.5 IOL Annual Average Fugitive VOC Emissions (tonnes/year)**

Years	Emissions
1996-1999	204
2000-2006	124

## 2.2 Ambient Data Analysis

### 2.2.1 Sources of Data

Further to discussion with and direction from the Steering Committee, it was agreed that all ambient air quality data would be obtained from/through the Department of the Environment. This was done in order to ensure that there was a focal point for communication, as well as to ensure that the data was considered by the Department to be of acceptable quality for the validation exercises. In order to present some further context for the ambient air quality in the vicinity of the IOL Refinery, additional annual average air quality data is presented for a number of randomly selected Canadian urban sites. These data have all been extracted from Environment Canada's National Air Pollution Surveillance Network (NAPS).

As mentioned previously, the ambient air quality impact of the refinery has been modeled (dispersion modeling), and this work has been independently confirmed. The PHRA identified and described the following scenarios:

1. Existing Ambient Scenario: Evaluation of the potential exposures to ambient concentrations of emissions in various areas of the communities based on the current ambient air monitoring data collected near the IOL Refinery.
2. Existing Study Area Scenario: Evaluation of the potential exposures of the selected receptors to predicted ground level concentrations of emissions from industrial sources near the refinery, including the IOL Refinery in its present state (i.e., without the upgrade.)
3. Future Study Area Scenario: Evaluation of the potential exposures of the selected receptors to predicted future ground level air concentrations of emissions from industrial sources near the refinery, including the IOL Refinery following the upgrade.
4. Background Scenario: All of the emissions considered in this assessment can be found within the environment, independent of their presence in emissions from the IOL Refinery Upgrade, either from natural sources or other sources related to a wide range of human activities (e.g., residential heating, other industries, vehicle exhaust, long range transport of air pollution from other locations). The sole purpose of the inclusion of an assessment of this background scenario was to provide a benchmark or reference for comparison to the assessment of results from other scenarios.

Scenarios 2 and 3 include the modeled contributions of the Irving Oil Refinery, the Courtenay Bay Power Plant, and the Irving Paper Mill.

### **2.2.2 Pre- and Post-Upgrade Results**

The tables contained within Sections 2.2.3 to 2.2.10 present the ambient monitoring results for the pollutants under consideration, as well as typical results from some other Canadian cities (Appendix E contains specific information for these sites, which fall under the National Air Pollution Surveillance Network (NAPS)). (Note: The selection of the 'typical' monitoring sites was primarily based on which ones which yielded reportable data for most, if not all of the pollutants being considered.) In addition, information for the modeling scenarios is included for context, although actual monitored data is preferable in validating the outcome of the PHRA.

The air quality objectives noted in the tables are those adopted by New Brunswick, and are representative of Canadian "Acceptable" Objectives, or Canada-Wide Standards, except for SO<sub>2</sub>, which New Brunswick has established as 50% of the Canadian Objective for the Saint John Region (Saint John, Charlotte and Kings Counties).

### **2.2.3 Ambient Sulphur Dioxide (SO<sub>2</sub>)**

The ambient air quality for SO<sub>2</sub> is presented in Table 2.6, which shows ambient monitoring statistics for both the pre- and post-upgrade time periods, as well as some typical results from other Canadian cities.

**Table 2.6 Ambient Sulphur Dioxide (SO<sub>2</sub>)**

Averaging Time	Location	Scenario 1: Pre-upgrade Monitoring	Post Upgrade Monitoring (2000 - 2006, except where otherwise stated)	Scenario 2: Pre-Upgrade Model	Post-Upgrade Model	Data from Some Typical Canadian Sites	Standards / Objectives
1 hour	Forest Hills	1994 50th% = 5.2 ug/m <sup>3</sup>	50th % = 0 - 7.9 ug/m <sup>3</sup>			St. John's, NL <sup>1</sup> 95th % = 21 ug/m <sup>3</sup> Toronto, ON <sup>2</sup> 95th % = 39 ug/m <sup>3</sup> Montreal, PQ <sup>3</sup> 95th % = 77.5 ug/m <sup>3</sup>	NAQO <sup>4</sup> avg. = 450 ug/m <sup>3</sup>
		1994 95th % = 113 ug/m <sup>3</sup> 1997 95th % = 112 ug/m <sup>3</sup>	95th % = 52.4 - 102.2 ug/m <sup>3</sup>				
		1997 Max = 759.8 ug/m <sup>3</sup>	Max = 707.4 ug/m <sup>3</sup> (2003)	Max = 20960 ug/m <sup>3</sup>	Max = 20960 ug/m <sup>3</sup>		
	Champlain Heights	1999 95th % = 49.8 ug/m <sup>3</sup>	95th % = 18.3 - 52.4 ug/m <sup>3</sup>				
		1999 50th % = 2.6 ug/m <sup>3</sup>	50th % = 0 - 2.6 ug/m <sup>3</sup>				
		1999 max = 311.8 ug/m <sup>3</sup>	Max = 906.5 ug/m <sup>3</sup> (2005)	Max = 31440 ug/m <sup>3</sup>	Max = 31440 ug/m <sup>3</sup>		
	Silver Falls	1997 95th % = 141.5 ug/m <sup>3</sup>	95th % = 21.0 - 102.2 ug/m <sup>3</sup>	not modeled	not modeled		
		1997 50th % = 2.6 ug/m <sup>3</sup>	50th % = 0 - 2.6 ug/m <sup>3</sup>	not modeled	not modeled		
		1997 max = 746.7 ug/m <sup>3</sup>	Max = 872.5 ug/m <sup>3</sup> (2003)	Max = 20290 ug/m <sup>3</sup>	Max = 20290 ug/m <sup>3</sup>		
	Three Mile Irving	1997 95th % = 39.3 ug/m <sup>3</sup>	95th % = 5.2 - 10.5 ug/m <sup>3</sup> (2000 - 2002)				
		1997 50th % = 2.6 ug/m <sup>3</sup>	50th % = 0 ug/m <sup>3</sup>	not modeled	not modeled		
		1997 max = 230.6 ug/m <sup>3</sup>	Max = 180.8 ug/m <sup>3</sup>	not modeled	not modeled		
Forest Products	1997 95th % = 178.2 ug/m <sup>3</sup>	95th % = 31.4 - 76.0 ug/m <sup>3</sup>	not modeled	not modeled			
	1997 50th % = 5.2 ug/m <sup>3</sup>	50th % = 0 - 2.6 ug/m <sup>3</sup>	not modeled	not modeled			
	1997 max = 1215.7 ug/m <sup>3</sup>	Max = 649.8 ug/m <sup>3</sup> (2003)	not modeled	not modeled			
24 hour	Forest Hills	1994 50th % = 10 ug/m <sup>3</sup>	50th % = 2.6 - 15.7 ug/m <sup>3</sup>	not modeled	not modeled	St. John's, NL <sup>1</sup> 95th % = 16 ug/m <sup>3</sup> Toronto, ON <sup>2</sup> 95th % = 24 ug/m <sup>3</sup> Montreal, PQ <sup>3</sup> 95th % = 56 ug/m <sup>3</sup>	NAQO <sup>4</sup> avg. = 150 ug/m <sup>3</sup>
		1994 95th % = 84 ug/m <sup>3</sup> 1997 95th % = 83 ug/m <sup>3</sup>	95th % = 36.7 - 72.8 ug/m <sup>3</sup>	95th % = 227 ug/m <sup>3</sup>	95th % = 166 ug/m <sup>3</sup>		
		Maximum = 149.3 ug/m <sup>3</sup>	Max = 170.3 ug/m <sup>3</sup> (2003)	not modeled	not modeled		
	Champlain Heights	1999 50th % = 2.6 ug/m <sup>3</sup>	50th % = 2.6 - 5.2 ug/m <sup>3</sup>	not modeled	not modeled		
		1999 95th % = 33.1 ug/m <sup>3</sup>	95th % = 15.7 - 44.5 ug/m <sup>3</sup>	95th % = 736 ug/m <sup>3</sup>	95th % = 547 ug/m <sup>3</sup>		
		1999 Maximum = 70.7 ug/m <sup>3</sup>	Max = 178.2 ug/m <sup>3</sup> (2000)	not modeled	not modeled		

**Table 2.6 Ambient Sulphur Dioxide (SO<sub>2</sub>)**

Averaging Time	Location	Scenario 1: Pre-upgrade Monitoring	Post Upgrade Monitoring (2000 - 2006, except where otherwise stated)	Scenario 2: Pre-Upgrade Model	Post-Upgrade Model	Data from Some Typical Canadian Sites	Standards / Objectives
	Silver Falls	1997 50th % = 10 ug/m <sup>3</sup>	50th % = 2.6 - 7.9 ug/m <sup>3</sup>	not modeled	not modeled		
		1997 95th % = 83 ug/m <sup>3</sup>	95th % = 18.3 - 88.3 ug/m <sup>3</sup>	not modeled	not modeled		
		Maximum = 149.3 ug/m <sup>3</sup>	Max = 225.3 ug/m <sup>3</sup> (2001)	95th % = 384 ug/m <sup>3</sup>	95th % = 328 ug/m <sup>3</sup>		
	Three Mile Irving	1997 50th % = 2.6 ug/m <sup>3</sup>	50th % = 0 ug/m <sup>3</sup>	not modeled	not modeled		
		1997 95th % = 31.4 ug/m <sup>3</sup>	95th % = 5.2 - 10.5 ug/m <sup>3</sup>	not modeled	not modeled		
		Maximum = 55.0 ug/m <sup>3</sup>	Max = 44.5 ug/m <sup>3</sup> (2000)	not modeled	not modeled		
	Forest Products	1997 50th % = 10.5 ug/m <sup>3</sup>	50th % = 2.6 - 5.2 ug/m <sup>3</sup>	not modeled	not modeled		
		1997 95th % = 136.0 ug/m <sup>3</sup>	95th % = 28.3 - 75.7 ug/m <sup>3</sup>	not modeled	not modeled		
		Maximum = 214.8 ug/m <sup>3</sup>	Max = 133.6 ug/m <sup>3</sup> (2000 & 2003)	not modeled	not modeled		
Annual	Forest Hills	1996 mean(SD) = 18(37) ug/m <sup>3</sup> 1997 mean(SD) = 21(45) ug/m <sup>3</sup>	mean(SD) = 10.1 - 23.9 (21.9 - 36.8) ug/m <sup>3</sup>	mean(SD) = 103(475) ug/m <sup>3</sup>	mean(SD) = 98(472) ug/m <sup>3</sup>	St. John's, NL <sup>1</sup> avg. = 5.3 ug/m <sup>3</sup> Toronto, ON <sup>2</sup> avg. = 13.3 ug/m <sup>3</sup> Montreal, PQ <sup>3</sup> avg. = 18.7 ug/m <sup>3</sup>	NAQO <sup>4</sup> annual mean = 30 ug/m <sup>3</sup>
	Champlain Heights	1998 mean = 13 ug/m <sup>3</sup>	mean(SD) = 4.9 - 12.1 (16.6 - 36.6) ug/m <sup>3</sup>	mean(SD) = 254(932) ug/m <sup>3</sup>	mean(SD) = 233(915) ug/m <sup>3</sup>		
	Silver Falls	1998 mean = 18 ug/m <sup>3</sup>	mean(SD) = 4.4 - 19.0 (11.6 - 50.6) ug/m <sup>3</sup>	mean(SD) = 165(702) ug/m <sup>3</sup>	mean(SD) = 154(695) ug/m <sup>3</sup>		
	Three Mile Irving	1998 mean = 8 ug/m <sup>3</sup>	mean(SD) = 1.2 - 8.4 (2.8 - 17.1) ug/m <sup>3</sup> (2000 - 2002)	not modeled	not modeled		
	Forest Products	1998 mean = 26 ug/m <sup>3</sup>	mean(SD) = 2.3 - 5.7 (6.2 - 13.3) ug/m <sup>3</sup>	not modeled	not modeled		

Notes:

<sup>1</sup> NAPS Station #010102 year 2004

<sup>2</sup> NAPS Station #060415 year 2002

<sup>3</sup> NAPS Station #050103 year 2005

<sup>4</sup> NAQO = National Air Quality Objectives

The PHRA report indicates that only maximum SO<sub>2</sub> concentrations were available from the modeling results, and that they are considered to be both conservative by nature, as well as a possible *“result from the predicted coincidence of SO<sub>2</sub> emissions with highly infrequent meteorological conditions”*. Thus, the ambient measurements of pre- and post-upgrade SO<sub>2</sub> represent the best possible method of considering whether the basis for the PHRA assessment was suitable.

As can be seen, at the Forest Hills location there is little change in the 50<sup>th</sup> percentile figure, nor in the 95<sup>th</sup> percentile figure. In fact, there is a small decrease in both results, as well as in the maximum one hour concentration. The same trend holds true for the Champlain Heights monitor, with the exception that the one hour maximum is significantly higher (in 2005), and indeed represents an exceedence of the New Brunswick one hour SO<sub>2</sub> Objective of 450 ug/m<sup>3</sup>. *These New Brunswick Objectives are for the three county area in Southern New Brunswick, and are twice as stringent as the Objectives for the rest of the province.* The Three Mile Irving, Silver Falls and Forest Products monitors show similar patterns, with the latter two also indicating maximums which exceed the Objective; however, the Forest Products location had a higher one hour maximum in the pre-upgrade era. Given the post-upgrade range of 95<sup>th</sup> percentile results (5-102 ug/m<sup>3</sup>) it is likely that the elevated maximum one hour concentrations are representative of ‘outliers’ which occurred due to source upset conditions and/or unusual meteorological factors.

The 24 hour averages depicted in Table 2.6 yield a similar conclusion, in that the 95<sup>th</sup> percentile results, as well as three of the five 50<sup>th</sup> percentile results are lower for the post-upgrade years, and substantially lower than the modeled results for both scenarios. Once again, some of the maximum 24 hour results exceeded the New Brunswick Objective (150 ug/m<sup>3</sup>).

The annual averages for all of the stations show post-upgrade reductions in SO<sub>2</sub> concentrations, and are all significantly below the New Brunswick Objective (30 ug/m<sup>3</sup>), as well as far lower than the modeled scenarios. Although one must be cautious when there are multiple sources involved, one might expect the decreases in annual averages given the significant reduction in SO<sub>2</sub> emissions from a major source (i.e. IOL), having gone from some 6560 tonnes/year to an average of 5384 tonnes/year. Nonetheless, given changes in refinery source configuration, source parameters, meteorological conditions, as well as the unknown changes to the other industries, one cannot make an absolute direct linkage to improved air quality. However, with reference to SO<sub>2</sub>, one can conclude that the future scenario used for the PHRA was a conservative one (i.e. it assumed higher concentrations than actually experienced.)

Table 2.6E portrays the number of monitored exceedences of the 1-hour and 24-hour objectives for SO<sub>2</sub> at the Forest Hills, Champlain Heights, and Silver Falls sites for the years 1996-2005. As can be seen, the one-hour objective is rarely exceeded at these sites, and there does not appear to be any particular trend for the entire period, both pre- and post-upgrade. However, the 24-hour objective indicates a number of exceedences, with Silver Falls indicating the most frequent number of excursions, but again there is no clear trend indicated. It is worth noting that



**Table 2.6E Monitored Results – SO<sub>2</sub> Exceedences 1-Hour and 24-Hour**

Location	# Per Year (1-hour) (>450 µg/m <sup>3</sup> )									
	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Forest Hills	2	4	5	2	1	0	0	1	0	1
Silver Falls	2	3	1	0	3	4	0	10	2	4
Champlain Heights	0	0	4	0	4	1	0	1	0	3
# Per Year (24-hour) (>150 µg/m <sup>3</sup> )										
Forest Hills	NA	7	9	25	0	0	0	23	0	0
Silver Falls	NA	52	0	0	0	47	14	117	31	16
Champlain Heights	NA	47	26	0	35	4	0	47	0	0

NA - not available





a 24-hour exceedence is based on each 'rolling 24-hour period', so that every calendar day has 24 data points for both the one-hour objective as well as the 24-hour objective. This factor tends to skew the 24-hour data, in that a few one-hour levels which are relatively high (but below the one-hour objective) may cause the 24-hours objective to be exceeded several times before the 'averaging' function will bring it back down below limits.

Table 2.6M indicates a measure of the SO<sub>2</sub> 1-hour and 24-hour exceedences which were both modeled and monitored at Forest Hills, Silver Falls and Champlain Heights for the years 2000, 2001 and 2002. As can be seen, the two model runs (as reported by MGI, IOL Refinery Upgrade PHRA and Follow-up, Saint John Refinery, Saint John, New Brunswick, Feb/2005), performed by Stantec and CRA, predicted numerous exceedences of both the 1-hour ambient objective as well as the 24-hour objective. However, the number of actual exceedences as monitored (see Table 2.6E) was far fewer, again highlighting the conservative nature of modeled results.

**Table 2.6M Model Results – SO<sub>2</sub> Exceedences**  
**Predicted # of 1-Hour Exceedences (>450 µg/m<sup>3</sup>)**

Location	Year			Modeled by
	2000	2001	2002	
Forest Hills	27	50	38	Stantec
	3	9	10	CRA
Silver Falls	48	94	73	Stantec
	20	41	30	CRA
Champlain Heights	312	299	236	Stantec
	71	60	37	CRA
<b>Predicted # of 24 - Hour Exceedences (&gt;150 µg/m<sup>3</sup>)</b>				
Forest Hills	0	0	0	Stantec
	0	0	0	CRA
Silver Falls	2	18	6	Stantec
	0	0	0	CRA
Champlain Heights	83	56	53	Stantec
	13	3	3	CRA

#### 2.2.4 Ambient Nitrogen Dioxide (NO<sub>2</sub>)

The ambient air quality data for NO<sub>2</sub> are shown in Table 2.7. The dispersion modeling scenarios had indicated that both the 24 hour 95<sup>th</sup> percentile and the annual means would increase slightly post-upgrade. Considering the change in modeling inputs in isolation, this would appear to be consistent with the fact that the PHRA assumed that "The net increase at the stack (as opposed to at ground level) will be roughly 28.5% over existing conditions". When considering the NO<sub>2</sub> contributions from Courtenay Bay Power Plant (CB) and Irving Paper (IP)

**Table 2.7 Ambient Nitrogen Dioxide (NO<sub>2</sub>)**

Averaging Time	Location	Scenario 1: pre-upgrade Monitoring	Post Upgrade Monitoring (2000 - 2006)	Scenario 2: Pre-Upgrade Model	Post-Upgrade Model	Averages of Some Typical Canadian Sites	Standards / Objectives
1 hr	Forest Hills	1994 95th % = 45 ug/m <sup>3</sup> 1997 95th % = 34 ug/m <sup>3</sup>	95th % = 24.4 - 52.4 ug/m <sup>3</sup>		not modeled	na	NAQO <sup>4</sup> avg. = 400 ug/m <sup>3</sup>
		1997 max = 92.1 ug/m <sup>3</sup>	max = 115.3 ug/m <sup>3</sup> (2003 & 2004)	max = 8384 ug/m <sup>3</sup>	max = 8384 ug/m <sup>3</sup>		
24 hr	Forest Hills	1994 95th % = 36 ug/m <sup>3</sup> 1997 95th % = 24 ug/m <sup>3</sup>	95th % = 15.04 - 28.0 ug/m <sup>3</sup>	95th % = 73 ug/m <sup>3</sup>	95th % = 78 ug/m <sup>3</sup>	St. John's, NL <sup>1</sup> 95th % = 24.7 ug/m <sup>3</sup> Toronto, ON <sup>2</sup> 95th % = 61.7 ug/m <sup>3</sup> Montreal, PQ <sup>3</sup> 95th % = 65.7 ug/m <sup>3</sup>	NAQO <sup>4</sup> avg. = 200 ug/m <sup>3</sup>
annual	Forest Hills	1994 mean(SD) = 13(17) ug/m <sup>3</sup> 1995 mean(SD) = 11(11) ug/m <sup>3</sup> 1997 mean(SD) = 11(11) ug/m <sup>3</sup>	mean = 6.5 - 13.8 ug/m <sup>3</sup>	mean(SD) = 33(151) ug/m <sup>3</sup>	mean(SD) = 46(210) ug/m <sup>3</sup>	St. John's, NL <sup>1</sup> avg. = 13.3 ug/m <sup>3</sup> Toronto, ON <sup>2</sup> avg. = 36.1 ug/m <sup>3</sup> Montreal, PQ <sup>3</sup> avg. = 31.7 ug/m <sup>3</sup>	NAQO <sup>4</sup> mean = 100 ug/m <sup>3</sup>

Notes:

- <sup>1</sup> NAPS Station #010102 year 2004
- <sup>2</sup> NAPS Station #060415 year 2002
- <sup>3</sup> NAPS Station #050103 year 2005
- <sup>4</sup> NAQO = National Air Quality Objectives

Mill), the overall increase in emission rates is 21.1%. In fact, the actual increase in average annual refinery NO<sub>x</sub> emissions post-upgrade appears to be approximately 37.1%. The models also assumed a linear relationship between the downwind concentrations of NO<sub>x</sub> and SO<sub>2</sub> which, while being a reasonable approach, would not take into account the differences between the two pollutants in terms of atmospheric reactivity. Additionally, the lack of significant change in the ambient levels may well reflect changes in the other two industrial sources, and/or the significant impact of other sources (eg. traffic, domestic space heating).

Nevertheless, the assumptions adopted by the PHRA in using the two modeling scenarios appear to be reasonable. Thus, any health risk methodology used for NO<sub>2</sub>, given the differences in the upgrade's NO<sub>x</sub> emissions, would likely approximate the impact of the upgrade. Furthermore, all of the NO<sub>2</sub> data indicate values which are well below the relevant New Brunswick Air Quality Objectives (1-hour/400 ug/m<sup>3</sup>, 24-hour/200 ug/m<sup>3</sup>, and annual/100 ug/m<sup>3</sup>).

### 2.2.5 Ambient Carbon Monoxide (CO)

Table 2.8 presents the (available) data for CO, as well as the modeled results from the PHRA. The relative lack of data for CO may, in fact, reflect the fact that ambient levels are generally well below the standard (National Acceptable Air Quality One Hour Objective is 35,000 ug/m<sup>3</sup>). The models indicated a relatively modest increase in CO, based upon expected increases in stack emissions from sources within IOL. Additionally, the contribution (modeled) of the three industrial sources, pre- and post-upgrade, is small when compared to typical levels found in an urban environment. This is likely due to the more closely linked contribution from vehicles, domestic heating, or small commercial enterprises, as well as to 'background' levels. Although the lack of monitored data prevents an actual assessment of changes to ambient CO in the vicinity of the refinery, the conclusion by the PHRA (*"This worst case approach would result in an increase of the ambient ground level CO concentrations from 2600 ug/m<sup>3</sup> 95<sup>th</sup>% of 1-hr averaging time by 37.1% to 3565 ug/m<sup>3</sup>."*) This would still be in the range of only 10% of the New Brunswick Objective.

### 2.2.6 Ambient PM<sub>10</sub>

The ambient air quality data for PM<sub>10</sub> are shown in Table 2.9. Given the relative paucity of measured data, the PHRA relied on the modeling scenarios, and their generally conservative outcomes (i.e. calculated ground level contributions from the source(s) considered are generally higher than would actually occur) for its analysis. Additionally, the model for PM<sub>10</sub> used TSP emissions as a surrogate, based on the formula:

$$PM_{10} = 10^{(0.826 \times \log TSP)}$$

As indicated in Table 2.9, the expected (i.e. modeled) increases in the upgraded refinery's contribution to PM<sub>10</sub> would range from 7.5-11%, based on the 24-hour, 95<sup>th</sup> percentile. More importantly, using the 24-hour 95<sup>th</sup> percentile (1997) for Forest Hills, one can estimate that the

**Table 2.8 Ambient Carbon Monoxide (CO)**

Averaging Time	Location	Scenario 1: pre-upgrade Monitoring	Post Upgrade Monitoring	Scenario 2: Pre-Upgrade Model	Post-Upgrade Model	Averages of Some Typical Canadian Sites	Standards / Objectives
1 hr	189 Prince William	1994 95th % = 1719 ug/m <sup>3</sup> 1997 95th % = 2600 ug/m <sup>3</sup>	no data			na	NAQO <sup>4</sup> avg. = 35 mg/m <sup>3</sup>
	Forest Hills	no data	no data	max = 1886 ug/m <sup>3</sup>	max = 1886 ug/m <sup>3</sup>		
	Champlain Heights	no data	no data	max = 2830 ug/m <sup>3</sup>	max = 2830 ug/m <sup>3</sup>		
	Silver Falls	no data	no data	max = 1826 ug/m <sup>3</sup>	max = 1826 ug/m <sup>3</sup>		
24 hr	189 Prince William	1997 95th % = 2400 ug/m <sup>3</sup>	no data			St. John's, NL <sup>1</sup> 95th % = 576 ug/m <sup>3</sup> Toronto, ON <sup>2</sup> 95th % = 1499 ug/m <sup>3</sup> Montreal, PQ <sup>3</sup> 95th % = 692 ug/m <sup>3</sup>	
	Forest Hills	no data	no data	95th % = 16 ug/m <sup>3</sup>	95th % = 18 ug/m <sup>3</sup>		
	Champlain Heights	no data	no data	95th % = 52 ug/m <sup>3</sup>	95th % = 60 ug/m <sup>3</sup>		
	Silver Falls	no data	no data	95th % = 27 ug/m <sup>3</sup>	95th % = 36 ug/m <sup>3</sup>		
annual	189 Prince William	1997 mean(SD) = 1300(600) ug/m <sup>3</sup>	no data	mean(SD) = 7.2(33) ug/m <sup>3</sup>	mean(SD) = 10.8(50) ug/m <sup>3</sup>	St. John's, NL <sup>1</sup> avg. = 230 ug/m <sup>3</sup> Toronto, ON <sup>2</sup> avg. = 807 ug/m <sup>3</sup> Montreal, PQ <sup>3</sup> avg. = 346 ug/m <sup>3</sup>	
	Forest Hills	no data	no data				
	Champlain Heights	no data	no data	mean(SD) = 17.8(49) ug/m <sup>3</sup>	mean(SD) = 25.7(71) ug/m <sup>3</sup>		
	Silver Falls	no data	no data	mean(SD) = 11.5(65) ug/m <sup>3</sup>	mean(SD) = 16.9(95) ug/m <sup>3</sup>		

Notes:

<sup>1</sup> NAPS Station #010102 year 2004

<sup>2</sup> NAPS Station #060415 year 2002

<sup>3</sup> NAPS Station #050103 year 2005

<sup>4</sup> NAQO = National Air Quality Objective

**Table 2.9 Ambient PM<sub>10</sub>**

Averaging Time	Location	Scenario 1: Pre-upgrade Monitoring	Post Upgrade Monitoring	Scenario 2: Pre-Upgrade Model	Post-Upgrade Model	Averages of Some Typical Canadian Sites	Standards / Objectives
24 hour	Forest Hills	1994 50th % = 12 ug/m <sup>3</sup> (estimated) 1997 95th % = 30 ug/m <sup>3</sup> (measured)	95th % = 15.7 - 34.0 ug/m <sup>3</sup>	95th % = 2.0 ug/m <sup>3</sup>	95th % = 2.2 ug/m <sup>3</sup>	St. John's, NL <sup>1</sup> no data Toronto, ON <sup>2</sup> no data Montreal, PQ <sup>3</sup> 90th% = 33 ug/m <sup>3</sup> ; 50th% = 19 ug/m <sup>3</sup>	Accepted Standard <sup>4</sup> = 50 ugm <sup>3</sup>
	Champlain Heights	no data	no data	95th % = 6.6 ug/m <sup>3</sup>	95th % = 7.1 ug/m <sup>3</sup>		
	Silver Falls	no data	no data	95th % = 3.7 ug/m <sup>3</sup>	95th % = 4.1 ug/m <sup>3</sup>		
	110 Charlotte St.	1994 50th % = 15 ug/m <sup>3</sup> (estimated) 1994 90th % = 24 ug/m <sup>3</sup> (estimated)	no data	not modeled	not modeled		

Notes:

<sup>1</sup> NAPS Station #010102 year 2004

<sup>2</sup> NAPS Station #060415 year 2002

<sup>3</sup> NAPS Station #050103 year 2005

<sup>4</sup> The PM10 standard of 50 ug/m<sup>3</sup> is accepted and used in the Greater Vancouver Regional District and in Newfoundland, and has been applied here as New Brunswick does not have a standard for PM10.

increase in 24-hour 95<sup>th</sup> percentile ambient concentrations from the three industrial sources would be in the order of 0.7-1.6%, although this would assume that the 95<sup>th</sup> percentiles remain approximately the same. Thus, although the outcomes cannot be definitively validated, it is reasonable to expect that the ambient changes in PM<sub>10</sub>, if any, would be marginal, justifying the PHRA's basis for health risk analysis. The expected ambient PM<sub>10</sub> levels would be well below the most common objectives/standards in general use presently (50 ug/m<sup>3</sup> – 24-hour), although New Brunswick has, at present, established no objective.

### 2.2.7 Ambient PM<sub>2.5</sub> (and Sulphates)

The ambient PM<sub>2.5</sub> levels, as well as the modeled scenarios are shown in Table 2.10. As with the modeling of the PM<sub>10</sub> emissions, the PHRA assessment based the PM<sub>2.5</sub> emissions on a calculation which, in this case, used the formula:

$$PM_{2.5} = 10^{(0.636 \times \log TSP)}$$

As can be seen, the estimated impact of the upgrade on the refinery's contributions is, once again, small when compared to the actual ambient levels. The increases in the 24-hour 95<sup>th</sup> percentile were modeled at between, 0.1-0.2 ug/m<sup>3</sup> for the three locations used in the PHRA assessment, or in the range of 0.5% of the impact from the three industrial sources combined.

As was noted in the PHRA, *"...it must be recognized that the PM<sub>2.5</sub> values used in the...assessment were based on values calculated from total suspended particulate matter, and were not actually measured values. Therefore, the...conclusions are contingent on validation of the PM<sub>2.5</sub> concentrations in the community."* The 24-hour 95<sup>th</sup> percentile measurements from 2000-2006 for Forest Hills would indicate that the basis for the PHRA conclusion was justified, and the annual means over the same period further bolster the validation of the assumptions used. Indeed, the mean of the annual PM<sub>2.5</sub> averages for the period 2000-2006 is 5.4 ug/m<sup>3</sup>, whereas the mean for 1997 at Forest Hills was 6.4 ug/m<sup>3</sup>.

Given the lack of data on sulphates, as well as the PHRA's use of the formula:

$$[SO_4^{2-}] = -0.33 + 0.37*[PM_{2.5}]$$

as cited from Environment Canada, it is likely that, on the evidence of minimal changes in PM<sub>2.5</sub>, the conclusion that the IOL upgrade *"...would not likely have measurable adverse health outcomes on public health in the community"* with respect to sulphate concentrations is well-founded.

### 2.2.8 Ambient Total Suspended Particulates (TSP)

The ambient TSP data (pre-upgrade) as well as the modeled scenarios are shown in Table 2.11. TSP (total suspended particulate) has generally diminished in its use as an air quality indicator; since evidence has evolved that the finer particulates (PM<sub>10</sub>-“inhalable”, PM<sub>2.5</sub>-“respirable”) are more closely linked to human health effects. Thus, there are no relevant

**Table 2.10 Ambient PM<sub>2.5</sub>**

Averaging Time	Location	Scenario 1: Pre-upgrade Monitoring	Post Upgrade Monitoring (2000 - 2006)	Scenario 2: Pre-Upgrade Model	Post-Upgrade Model	Averages of Some Typical Canadian Sites	Standards/Objectives
24-hour	Forest Hills	1994 50th % = 7 ug/m <sup>3</sup> (estimated) 1984-1995 90th % = 16.2 ug/m <sup>3</sup> (measured) 1997 95th % = 19 ug/m <sup>3</sup>	95th % = 11.2 - 20.6 ug/m <sup>3</sup>	95th % = 1.7 ug/m <sup>3</sup>	95th % = 1.8 ug/m <sup>3</sup>	St. John's, NL 1 95th % = 8 ug/m <sup>3</sup> Toronto, ON 2 95th % = 23 ug/m <sup>3</sup> Montreal, PQ 3 95th % = 27 ug/m <sup>3</sup>	CWS <sup>4</sup> avg. = 30 ug/m <sup>3</sup>
	Champlain Heights	no data	no data	95th % = 4.3 ug/m <sup>3</sup>	95th % = 4.5 ug/m <sup>3</sup>		
	Silver Falls	no data	no data	95th % = 2.8 ug/m <sup>3</sup>	95th % = 3.0 ug/m <sup>3</sup>		
	110 Charlotte St.	1994 50th % = 8 ug/m <sup>3</sup> (estimated) 1994 90th % = 11.6 ug/m <sup>3</sup> (estimated) 1994 maximum = 12.2 ug/m <sup>3</sup> (estimated)	no data	not modeled	not modeled		
Annual	Forest Hills	1997 mean = 6.4 ug/m <sup>3</sup> 1997 avg. = 9 +/- 7 ug/m <sup>3</sup>	mean = 4.2 - 7.6 ug/m <sup>3</sup>	not modeled	not modeled	St. John's, NL avg. = 4 ug/m <sup>3</sup> Toronto, ON avg. = 9 ug/m <sup>3</sup> Montreal, PQ avg. = 10 ug/m <sup>3</sup>	

Notes:

<sup>1</sup> NAPS Station #010102 year 2004

<sup>2</sup> NAPS Station #060415 year 2002

<sup>3</sup> NAPS Station #050103 year 2005

<sup>4</sup> CWS is the Canada Wide Standard (Achievement to be based on the 98th percentile annually, averaged over 3 years - standard takes effect in 2010.)

**Table 2.11 Ambient Total Suspended Particulate (TSP)**

Averaging Time	Location	Scenario 1: Pre-upgrade Monitoring	Post Upgrade Monitoring (2000 - 2006)	Scenario 2: Pre-Upgrade Model	Scenario 3: Post-Upgrade Model	Averages of Some Typical Canadian Sites	Standards / Objectives
24 hr	Forest Hills	1994 50th % = 21 ug/m <sup>3</sup> 1997 50th % = 12.6 ug/m <sup>3</sup> 1997 95th % = 72.3 ug/m <sup>3</sup>	no data	95th % = 2.3 ug/m <sup>3</sup>	95th % = 2.6 ug/m <sup>3</sup>	St. John's, NL <sup>1</sup> 90th% = 39 ug/m <sup>3</sup> Toronto, ON <sup>2</sup> 90th% = 78 ug/m <sup>3</sup> Montreal, PQ <sup>3</sup> 90th% = 58 ug/m <sup>3</sup>	NAQO <sup>4</sup> avg. = 120 ug/m <sup>3</sup>
annual	Forest Hills	1994 geomean(SD) = 20(16) ug/m <sup>3</sup> 1997 geomean(SD) = 23(2) ug/m <sup>3</sup>	no data	geomean(SD) = 0.009(3.743) ug/m <sup>3</sup>	geomean(SD) = 0.018(4.008) ug/m <sup>3</sup>	St. John's, NL avg. <sup>5</sup> = 24 ug/m <sup>3</sup> Toronto, ON avg. <sup>5</sup> = 46 ug/m <sup>3</sup> Montreal, PQ avg. <sup>5</sup> = 36 ug/m <sup>3</sup>	NAQO <sup>4</sup> geometric mean = 70 ug/m <sup>3</sup>

Notes:

<sup>1</sup> NAPS Station #010102 year 1998 (last available year)

<sup>2</sup> NAPS Station #060415 year 1993 (last available year)

<sup>3</sup> NAPS Station #050103 year 1997 (last available year)

<sup>4</sup> CWS is the Canada Wide Standards

<sup>5</sup> The annual average is the arithmetic mean of monthly averages. Geometric mean could not be calculated due to lack of original data.



ambient statistics for TSP in the area of concern for the post-upgrade era. However, given the results of the PM<sub>10</sub> and the PM<sub>2.5</sub> ambient data, and the fact that the (conservative) modeling scenarios used TSP as the basis for estimating PM<sub>10</sub> and PM<sub>2.5</sub>, one would expect that the modeling results for TSP would also yield higher TSP numbers than would actually be experienced. Thus, the impact of the upgraded refinery would show changes in the 24-hour 95<sup>th</sup> percentile of between 0.3 ug/m<sup>3</sup> and 1.1 ug/m<sup>3</sup> for the three sites shown, and of less than 1 ug/m<sup>3</sup> for each of the three sites. Since the New Brunswick Objectives for 24-hours and Annual averages are 120 ug/m<sup>3</sup> and 70 ug/m<sup>3</sup>, respectively, one would expect that the basis for predicting no adverse health effects is accurate. The PHRA goes further in that it examines the modeled impact making an assumption that all of the TSP (at these sites) is due to the refinery operations. Even in this case, the expected annual average TSP would not exceed the Objective of 70 ug/m<sup>3</sup>.

### **2.2.9 Ambient Ozone (O<sub>3</sub>)**

The monitoring data for O<sub>3</sub> is shown in Table 2.12, as well as the data from some typical Canadian cities, and the national "Acceptable Air Quality Objective" of 82 ppb (1 hour average). (Note: The Canada-Wide Standard for O<sub>3</sub> has been established as a 'numeric' of 65 ppb, 8-hour averaging time, achievement based on the 4<sup>th</sup> highest annual measurement, averaged over three years, with achievement by 2010. General provisions are included to allow for trans-boundary influences.)

As is mentioned in the PHRA, 'background' ambient air concentrations of O<sub>3</sub> range from 20-50 ppb, thus, long range transport of both O<sub>3</sub> and its precursors is an important factor for any region which lies downwind of highly populated and industrialized areas. In terms of the IOL upgrade project, while its emissions of NO<sub>x</sub> (a precursor for O<sub>3</sub> formation) have shown some increase (as predicted), its fugitive VOC emissions have gone down substantially (approximately 39%). Although no modeling was done to predict downwind impacts on O<sub>3</sub> levels, the PHRA suggests that *"It is considered unlikely that the estimated change at ground level (of NO<sub>2</sub>) (14 to 18.3% increase) would significantly impact on the production of ground level ozone and the subsequent accumulation of photochemical smog in the Saint John Region."* Given the fact that the emissions of NO<sub>2</sub> increased less than anticipated, and that ambient levels of O<sub>3</sub> have not changed, the basis for the PHRA's risk analysis appears to be sound.

### **2.2.10 Ambient Polycyclic Aromatic Hydrocarbons (PAHs)**

With respect to PAHs, the PHRA was based on ambient data as well as formulated relationships to TSP levels. While there may be some lack of clarity as to the overall basis for the PHRA with respect to ambient air quality, its conclusion that the IOL upgrade would not be expected to adversely impact public health (with respect to PAHs) appears to be supported by both the ambient data shown in Table 2.13, as well as by the stack tests done for IOL in 2004, which indicated low emission rates for PAHs from both the *Residue Fluid Catalytic Cracking Unit* stack as well as from the *Sulphuric Acid Regeneration Unit* stack.

**Table 2.12 Ambient Ozone (O<sub>3</sub>)**

Averaging Time	Location	Scenario 1: Pre-upgrade Monitoring	Post Upgrade Monitoring (2000 - 2006)	Scenario 2: Pre-Upgrade Model	Post-Upgrade Model	Averages of Some Typical Canadian Sites	Standards / Objectives
1 hr	Forest Hills	95th % = 43 ppb average = 24.1 ppb	95th % = 33 - 44 ppb average = 18.9 - 27.3 ppb	not modeled	not modeled	na	NAQO <sup>4</sup> avg. = 160 mg/m <sup>3</sup> (82 ppb)
24 hr	Forest Hills	95th %: 1990 = 49 ppb; 1991 = 51 ppb; 1992 = 33 ppb; 1993 = 42 ppb; 1994 = 40 ppb; 1995 = 42 ppb; 1996 = 47 ppb; 1997 = 40 ppb	95th % = 30 - 42 ppb average = 24.1 ppb	not modeled	not modeled	St. John's, NL <sup>1</sup> 95th % = 64.3 ug/m <sup>3</sup> (32.8 ppb) Toronto, ON <sup>2</sup> 95th % = 87.7 ug/m <sup>3</sup> (44.7 ppb) Montreal, PQ <sup>3</sup> 95th % = 72 ug/m <sup>3</sup> (36.7 ppb)	na
Annual	Forest Hills	mean: 1990 = 26 ppb; 1991 = 24 ppb; 1992 = 16 ppb; 1993 = 23 ppb; 1994 = 21 ppb; 1995 = 23 ppb; 1996 = 26 ppb; 1997 = 24 ppb	mean = 19.0 - 27.3 ppb	not modeled	not modeled	St. John's, NL avg. = 46.8 ug/m <sup>3</sup> (23.9 ppb) Toronto, ON avg. = 44.8 ug/m <sup>3</sup> (22.8 ppb) Montreal, PQ avg. = 41 ug/m <sup>3</sup> (20.9 ppb)	na

Notes:

<sup>1</sup> NAPS Station #010102 year 1998 (last available year)

<sup>2</sup> NAPS Station #060415 year 1993 (last available year)

<sup>3</sup> NAPS Station #050103 year 1997 (last available year)

<sup>4</sup> NAQO is the National Air Quality Objective

**Table 2.13 Ambient PAH**

Averaging Time	Location	PAH Group	Scenario 1: Pre-upgrade Monitoring	Post Upgrade Monitoring (2002 - 2004)	Scenario 2: Pre-Upgrade Model	Post-Upgrade Model	Averages of Some Typical Canadian Sites	Standards / Objectives
24 hr	Forest Hills	anthracene group	1995 (mean, SD, 95th%) = (1.3e-5, 1e-6, 1.48e-5) ug/m <sup>3</sup>	Mean = 4.25e-4 ug/m <sup>3</sup> (2002), 7.25e-4 ug/m <sup>3</sup> (2003), 3.38e-4 ug/m <sup>3</sup> (2004)	Mean = 0 ug/m <sup>3</sup>	Mean = 0 ug/m <sup>3</sup>		
		benzo-a-pyrene group <sup>1</sup>	1995 (mean, SD, 95th%) = (5.95e-4, 1.24e-4, 8.52e-4) ug/m <sup>3</sup>	Mean = 4.79e-4 ug/m <sup>3</sup> (2002), 5.29e-4 ug/m <sup>3</sup> (2003), 3.09e-4 ug/m (2004)	Mean = 1.35e-5 ug/m <sup>3</sup>	Mean = 1.69e-5 ug/m <sup>3</sup>		
		benzo-a-pyrene group <sup>2</sup>	1995 (mean, SD, 95th%) = (1.46e-4, 4.29e-5, 2.25e-4) ug/m <sup>3</sup>	Mean = 6.05e-6 ug/m <sup>3</sup> (2002), 2.31e-5 ug/m <sup>3</sup> (2003), 2 .41e-5 ug/m (2004)	Mean = 3e-6 ug/m <sup>3</sup>	Mean = 4e-6 ug/m <sup>3</sup>		
		fluorene group	1995 (mean, SD, 95th%) = (0.01, 2.22e-3, 1.46e-2) ug/m <sup>3</sup>	Mean = 9.47e-3 ug/m <sup>3</sup> (2002), 0.013 ug/m <sup>3</sup> (2003), 6.3e-3 ug/m (2004)	Mean = 2.27e-4 ug/m <sup>3</sup>	Mean = 2.25e-5 ug/m <sup>3</sup>		
		naphthalene group	1995 (mean, SD, 95th%) = (7.94e-4, 2.22e-3, 1.53e-3) ug/m <sup>3</sup>	Mean = 3.02e-4 ug/m <sup>3</sup> (2002), 1.09e-3 ug/m <sup>3</sup> (2003), 7.47e-4 ug/m (2004)	Mean = 1.8e-5 ug/m <sup>3</sup>	Mean = 2.84e-4 ug/m <sup>3</sup>		

Notes:

<sup>1</sup> evaluated in the PHRA using the individual PAH model.

<sup>2</sup> Evaluated in the PHRA using the whole mixture model for PAH.

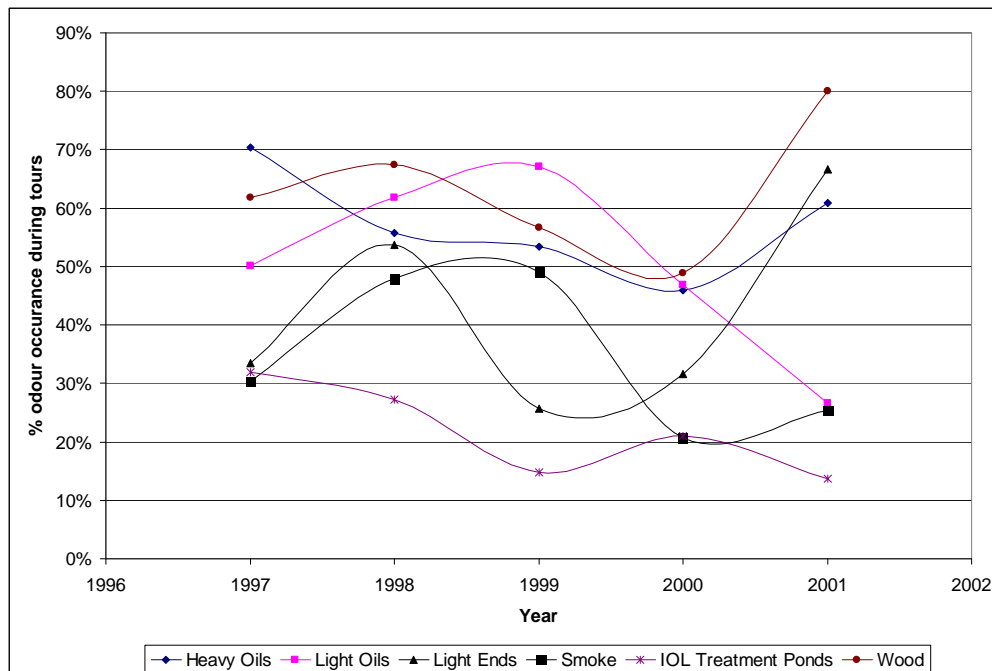


## 2.3 Odour Assessment

A review of logged concern calls to IOL and NBENV show that odour is the number one complaint of residents living in close proximity to the Refinery. The logged concern calls from 2003 to 2006 indicate that 42 to 61 % of all calls in a given year are related to odours. The PHRA indicated that approximately 41% of all calls logged by the NBENV 24 hour Air Quality Response Program from 1995 to 1997 were regarding odour. However, it should be noted that not all odour complaints can be attributed to the Refinery, as there are other potential sources of odour in East Saint John. In addition, due to privacy issues, AMEC was not provided with a list of people who made the concern calls, therefore it is possible that more than one phone call could be placed by the same individual regarding the same odour issue.

Odour has been difficult to measure and control as different chemicals have differing odour thresholds and individuals have differing sensitivities to various odours. The Department of the Environment began daily odour tours at 12 different monitoring stations. Two additional monitoring stations were added in 2002. From 1997 to May 2002, the number of times a particular odour was encountered at a monitoring station was recorded. There was no ranking system used to indicate the degree of odour (i.e. faint versus strong).

The dominant odours noted in 1997 to early 2002 were heavy oil, light oil, light ends, wood, smoke and IOL treatment ponds. The results are plotted in Figure 2.1, below. The 2002 odour tour data was missing some information (the 'total tours with each odour') and therefore could not be compared to the 1997-2001 data.



**Figure 2.1 Results of Refinery Odour Tours from 1997 - 2001**



In general, it was found that heavy oil odour was encountered in 46 to 70% of all odour tours at one or more monitoring locations. Wood odours were encountered in 49 – 80% of tours, light oil odours from 27-62% of tours, light ends in 26-67% of tours, smoke in 21-49% of tours, and IOL treatment pond odours in 14-32% of tours. Septic and sour water odours were also detected in a smaller percentage of tours. Based on the data, it appears as though the IOL treatment pond odours may be decreasing, however the remaining odour types do not show a definitive trend.

The PHRA refers to a “mean odour index” calculated for data collected as part of the 24 hour air quality emergency program. The PHRA indicates a mean odour index of 1.7 (between fair to good, and poor) between 1995 and 1997, and 2.5 (fair to poor) for 1998. The method of calculating the mean odour index was not described in the PHRA report or the supporting documents, therefore this method could not be used to assess pre-upgrade odours to post-upgrade odours.

Further, post upgrade monitoring was completed daily from June 2002 to the present. Readings in this time period were recorded using a different method from the 1997 to early 2002 measurements. Similar to the pre-upgrade, odours were categorized as effluent, wood, sulphur, heavy oil, light oil, light ends, septic, exhaust, smoke, chemical, and other. The odour categories are defined in Table 2.14, below.

**Table 2.14 Odour Category Descriptions**

<b>Term</b>	<b>Definition</b>
Air Quality	The highest ranking of the different odour categories
Effluent	Treatment ponds, industrial waste
Wood	Irving Paper wood chips, etc.
Sulphur	Mercaptans, rotten egg smell (H <sub>2</sub> S)
Heavy Oil	Bunker, residuals, asphalt
Light Oil	Gasoline
Light Ends	Vapours
Septic	Sewage
Exhaust	Burning of fossil fuels (flares, boiler stacks, vehicle emissions)
Smoke	Burning of woodwaste, garbage (typically woodstoves)
Chemical	Ammonia, chlorine, toluene, acetone, MTBE
Other	All other scents not described above
Comments	Further odour details

Odours at each station are categorized then ranked from 1 to 5 depending on the severity of the odour, where 1 is equal to no odour and 5 is very strong. The ranking system is described in Table 2.15, below.

A separate column called “Air Quality” is used to record the highest ranking of all the odour categories. For instance if an area has a heavy oil odour with a ranking of 3, a wood ranking of 1, and a smoke odour with a ranking of 2, the overall Air Quality ranking for that station is 3. Wind direction and other important weather information are also recorded to assess whether the odour is coming from the direction of the refinery.

**Table 2.15 Ranking System Used for Odour Measurements (2002-Present)**

Ranking	Definition
1	No odour detected (very good)
2	Faint odour (good)
3	Notable odour - easily detected (fair)
4	Distinct and strong odour (poor)
5	Very strong odour - overwhelming (very poor)

The PHRA predicted that the incidence of heavy oil odours would decrease as a result of the reduction in production of Bunker C following the upgrade. Due to the differences in the method used to collect data, it is difficult to directly compare the odour data from 1997-2001 to the 2002-2007 data.

It was possible to calculate the occurrence of each odour type per monitoring station. For example, heavy oil odours occurred in 3.7 to 6.7% of annual odour measurements from 2002 to 2007. In 1997, it was found that heavy oils occurred in 70% of all tours, where tours included 12 monitoring stations. If you assume the worst case scenario, that heavy oil odour was observed at every station where heavy oil odour occurred on a tour, then heavy oil odours would have occurred in 70% of all odour measurements for 1997. Considering the best case scenario, where heavy oil odours only occurred at one station where heavy oil odours occurred on a tour, then heavy oil odours would have occurred in 5.9% of all odour measurements. In 1998, the best case scenario for heavy oil odours is 4.6% of all odour measurements and in 1999, it is 4.5% of all odour measurements. However, if heavy oil odours occurred at more than one station during a tour, these percentages would increase. Based on a review of the 1997 data, heavy oil odours for each month occurred at two to 10 different stations depending on the month. Therefore, the 5.9% of occurrences is highly conservative and is more likely to be approximately 12% or more (based on heavy oil occurrence at two stations per tour). Therefore, it appears as though the occurrence of heavy oil odours have decreased somewhat from pre-upgrade to post upgrade. However, it should be noted that this analysis is fairly limited due to the fact that a number of assumptions were used, and that due to a variety of factors, consistency of measurement was not assured.

In terms of other major odours, total light oil odours occurred in a best case scenario of 5.6% odour measurements in 1999. From 2002 to 2007, light oil odour occurred in 0.6% (2002) to a high of 4% (2004 and 2005). Wood odour went from a pre-upgrade high of 5.6% of measurements in 1998, to a post-upgrade high of 7.1% in 2002. Since 2002, the occurrence of wood odours decreased to 3.9% in 2006. Again, the best case scenario is highly conservative and actual occurrences were likely higher.

In terms of the degree of odour observed, an assessment can be made for post-upgrade conditions, but there was no information available for the pre-upgrade. The Forest Hills area was monitored from 2002 to 2005 at two monitoring stations. The results show that most odours were ranked as a 1, or no odour. The highest ranking in the Forest Hills area was a 4, which

occurred on two occasions (out of 636 measurements), twice in July 2004; once as a result of an effluent odour and once as the result of a septic odour.

At Champlain Heights, odours were recorded at two different stations from 2002 to 2006. Most of the odours recorded in the Champlain Height area for this period were ranked 1, or no odour. The highest ranking during this time period was 5 (out of 2088 measurements), which occurred one time in August 2004 as a result of a strong heavy oil odour and a strong sulphur odour at the Champlain Heights School monitoring station. The second highest ranking, 4, occurred 10 times during the time period at the same monitoring station. These odours were categorized as heavy oil, light ends, light oil and/or sulphur. At the other Champlain Heights monitoring station (Grandview Avenue and Champlain Drive), odours were ranked 4 on six occasions, three of these being heavy oils and three being septic odours.

At other stations, rankings of 5 occurred on only three occasions (of 13,241 measurements), and rankings of 4 occurred on 93 occasions (0.7% of all readings). It was observed that most of the high rankings (one of the 5 rankings and several 4 rankings) occurred at Vince Auto Salvage on Grandview Avenue, and at the monitoring station on Creighton Drive (several 4 rankings), and that most of these high rankings were a result of heavy oil odours.

It is AMEC's understanding that IOL has hired ODOTTECH, an environmental company specializing in odour control, to complete an odour study in the vicinity of the Refinery. The results of this study, which was under review, should give a better indication of current odours in the area.

## **2.4 Noise Assessment**

Health Canada, in the *"Canadian Handbook on Health Impacts Assessment – Volume 4: Health Impacts by Industry Sector"*, notes noise as being "any acoustic energy capable of altering the physical or psychological well-being of individuals." Elsewhere in the Health Canada website, noise is defined as "any unwanted sound". The most common unit for measuring noise is an equivalent sound pressure measured in decibels, measured on an A-weighted scale, accounting for sensitivity of the human ear (dBA). Problems that can arise as a result of noise include diminished physical, mental or social well-being due to interference with communication, disturbance of rest, sleep or concentration, hearing damage, or stress on the body leading to stress related illness.

A review of calls to IOL and NBENV makes it apparent that noise is a concern for residents living near the refinery. Based on a review of calls from 2003 to 2006, the number of calls related to noise increased in this time frame from 9 calls in 2003 to about 36 calls in 2006. However, it should be noted that there is no information on who made the calls, therefore some of the calls may have been made by the same person, for the same issue, on the same day. This does not diminish the importance of each call; however, the same noise event may be responsible for two or more complaints. Also, there is no information on concern calls prior to 2003, therefore, because the number of calls regarding noise has increased from 2003 to 2006

does not necessarily mean that the actual noise itself has increased post-upgrade. For this determination, a review of noise monitoring data was made and is described below.

Condition 10 of the Minister's Determination, dated August 13, 1998 indicated that *"The noise levels between 9 pm and 7 am originating from construction activities shall not exceed those levels presently experienced at the nearest residential property boundary during the same hours."* In fulfillment of this condition, pre-upgrade sound measurements were made from September 16 to 28, 1998 between 9:00 pm and 7:00 am each day. Sound was measured at 14 different stations, along the northern fence line of the property (Fencelines 1, 2, and 3), along the eastern property boundary (Granview Avenue), at key locations adjacent to residential areas (Creighton Avenue, Champlain Drive, Bayside Drive, etc.).

The PHRA reported the 1998 noise levels from the property boundary nearest to a residential neighbourhood (Champlain Heights). Measurements from this monitoring station, "Fenceline 2", were collected between 1:00 and 3:00 am in the early morning. Since the refinery operates 24 hours a day, early morning noise measurements are considered more representative of refinery noise, as readings are unlikely to be influenced by other factors such as traffic or other industries during this time of day. The results of the 1998 measurements indicated that the average noise level at Fenceline 2 was 57 dBA. At this location, the minimum value recorded during this time was 51.8 dBA and the maximum was 64 dBA, where the next highest was 58.5 dBA. Results of other measurements indicated that along Creighton Avenue and Champlain Drive, noise levels were all 50 dBA or lower, noise levels taken next to existing refinery units on site ranged from 62.3 to 86.8 dBA, and noise levels at the site of the proposed new units (as a result of existing operations) ranged from 52 to 68 dBA (Cantox 1999).

Point sound surveys were also completed during the day at various locations along the perimeter of the refinery, prior to the upgrade on April 27, 1998 (8:00 – 10:30 am), May 13, 1998 (9:00 – 11:00 am), July 21, 1998 (9:00 am – 12:00 pm) and June 16, 1999 (10:00 am – 12:00 pm). There were between 14 and 46 points surveyed during these events. The results show that the average sound measurement ranged from 41.1 to 59.5 dBA in April '98, from 44 to 65 dBA in May '98, from 43.2 to 59.4 dBA in July '98 and from 45.5 to 75.1 dBA in July '99.

Cantox also reported noise measurements taken by NBENV from October 1998 to January 1999. Noise levels were recorded from four locations: the closest residence to the refinery at Champlain Heights, at the northeast corner of the refinery at Grandview Avenue, the first residence on Red Head Road, and at the top of Midwood Avenue (Cantox 1999). The noise levels were found to be quite variable, ranging from 38 to 89.2 dBA, where higher readings were noted to be coincident with high traffic areas (Cantox 1999).

In New Brunswick, the only noise level guideline is an industrial hygiene guideline related to exposure to workers in a plant and it is not really relevant to exposures to residents in the community surrounding the refinery. There are guidelines for noise in residential areas from other jurisdictions that can be used for comparison purposes, as follows:



- Nova Scotia Environment and Labour, guidelines for Environmental Noise Measurements (NSEL 1990): 65 dBA (daytime from 7:00 to 19:00); 60 dBA (evening from 19:00 to 23:00); 55 dBA (night from 23:00 to 7:00 and on Sundays and Holidays).
- Alberta Energy and Utilities Board (EUB) Permissible Sound Levels: The old guideline ranged from 40 to 76 dBA depending on the time of day. The newest revised guideline that went into effect in February 2007 requires a sound level of 40 dBA or less at 1.5 km from facility fence line during night time (EUB 2007).
- The US EPA, in its NSW Industrial Noise Policy notes that in urban areas the acceptable day time noise level adjacent to residences is 60 dBA and the recommended maximum is 65 dBA. In the evening, the acceptable noise level is 50 dBA and the recommended maximum is 55 dBA. During the night time the acceptable noise level is 45 dBA and the recommended maximum is 50 dBA.
- The World Health Organization (WHO) recommendation for an outdoor noise limit is 55 dBA during the day and 45 dBA at night in residential areas. Sound levels above these guidelines are considered to be “seriously annoying” but not life threatening.

The monitoring results from the fence line nearest to a residential neighbourhood (Fenceline 2) are within the Nova Scotia noise guidelines, but are slightly above the US EPA and the WHO guidelines. These measurements were taken at the fence line of the refinery property boundary; therefore, noise measurements are expected to be less at the nearest residence due to environmental factors such as wind, trees and other physical structures that would reduce noise. The EUB guideline is not relevant in this case because it relates to a point 1.5 km from the fence line of the industrial facility, where Fenceline 2 measurements were taken at the fence line.

Condition #69 of the Certificate of Approval I-2091 (October 2000 to September 2005) indicated that the IOL must complete a Sound Level Monitoring Study. In fulfillment of the condition, a second sound monitoring program was initiated in June 2001 for the post-upgrade.

Noise measurements from 2000 to 2002 were available for review during this study. During this time, levels at most of the 14 monitoring stations were recorded. It should be noted however, that during some monitoring events, the time of day when measurements were collected was not consistent and therefore average noise levels for the time frame may be slightly higher than they would have been if all readings were made during the night time. It is anticipated that other facilities in the area such as the NB Power Generation Station, the NB Power Substation, the Irving paper mill, and the industrial park also contributed to the noise that was measured surrounding the refinery, particularly during the day time. No attempt was made to separate other noise contributions from the measurements, such as other industries, the industrial park and traffic.

In 2000, noise levels were measured from January to the end of May (a period which was pre-upgrade). Most readings were recorded in the early hours of the morning, but some were recorded during the daytime. At Fenceline 2, noise was measured to be on average 52.3 dBA, a

decrease of 9% over the 1998 average level. In 2001 measurements were made over the period of June 21 to August 20. During this time period most measurements were recorded in the morning between 12:00 am and 10:00 am, however it was noted that some were recorded during the afternoon. The results indicated an average noise level at Fenceline 2 of 56.3 dBA. Measurements from December 21, 2001 to January 15, 2002 were all recorded at late night / early morning. The average measurement for this time frame was 54.6 dBA at Fenceline 2.

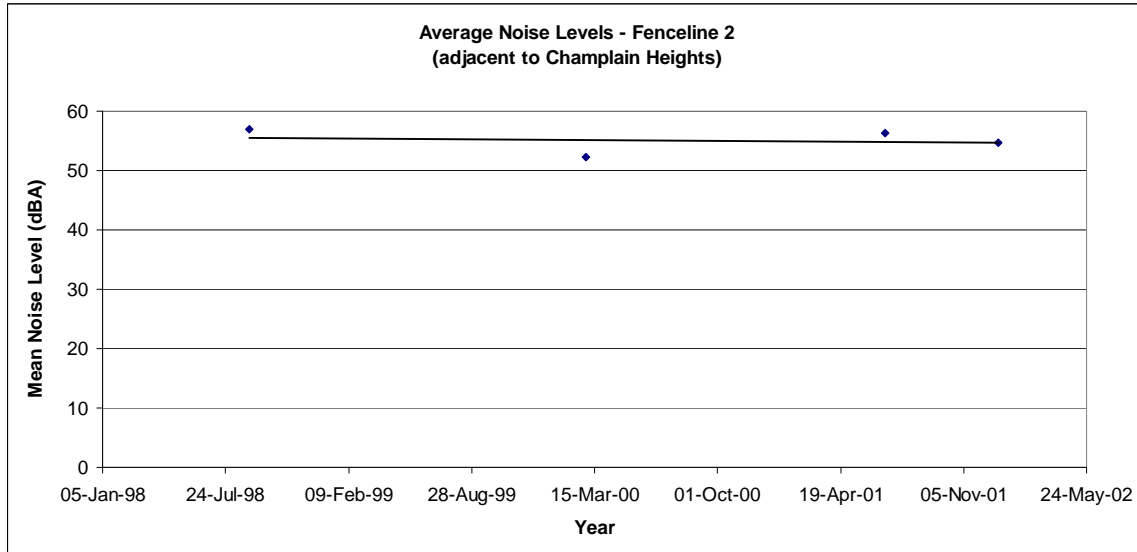
No measurements were available for 2003 or 2004. However, noise monitoring has occurred on a regular basis since 2005. Currently there are daily tours, conducted in conjunction with the odour tours that include measurements of sound levels, to determine if noise from the refinery is within acceptable limits.

Results for 2005 and 2006 were reviewed as part of this study. It should be noted that all measurements from 2005 to December 2006 were recorded during the day and some during peak traffic hours. Therefore, average noise levels from 2005 – 2006 are anticipated to be higher than previous readings and not entirely representative of refinery-generated noise. According to the data, at Fenceline 2, the annual average for 2005 was 60.2 dBA, calculated from the monthly averages. In 2006, the annual average decreased to 59.0 dBA. These levels are within the day time permissible and maximum recommended values quoted by NSEL and the US EPA. The levels are slightly higher than the WHO day time guideline, however as noted above, levels at the nearest residence will be lower due to reduction from other environmental factors such as wind, trees and other structures.

Cantox predicted that noise levels were unlikely to increase as a result of the upgrade, because all new units had low noise levels built into their design. They also indicated that noise levels could potentially decline as a result of the demolition of Crude Unit #2 and the relegation to backup status of Crude Unit #1 (Cantox 1999). They noted that there was little information on the potential change to noise as a result of flares, therefore, Cantox noted that, although flaring is often a cause of anxiety and annoyance to neighbours, the frequency of flaring is small and the noise associated with flaring decreases quickly with time (Cantox 1999). Cantox also noted that there was little information on noise levels from planned startup and shutdowns but indicated that the noise is expected to be minimized by following detailed procedures for each unit in addition to using vent silencers. Finally, Cantox concluded that noise levels were not expected to increase as a result of the upgrade and that no adverse impacts related to noise were expected to occur in adjacent residential areas (Cantox 1999).

Because the 1998, 2000-2002 and 2006-2007 noise levels were all measured at differing times of the day, they can not be directly compared. In general 2005-2006 daytime data were equal to or slightly greater than the 1998 data. Measurements from 2000 to 2002, which were predominantly recorded in the night time, with some readings during the day, are more comparable to the 1998 levels. The trend in these measurements is shown in Figure 2.2, below. The results show that levels have not increased since the upgrade but may have decreased

slightly. However, further monitoring during the night time should be conducted to establish a more definitive trend.



**Figure 2.2 Average Noise Levels, Fenceline 2 from 1998 to 2002**

It is AMEC's understanding that IOL has hired HGC Engineering, with approval from NBENV, to complete a sound survey at and in the vicinity of the Refinery. The study was reportedly completed in 2006 and since that time several silencers have been installed and several process changes were made. The results of the study were not available for review at the time of writing of this report.

### 3.0 COMMUNICATIONS

Three of the Validation Steps, outlined in the PHRA, centre around communication, particularly with the public as it relates to:

- training;
- new technologies;
- upsets and accidents;
- emergency response programs;
- complaint resolution mechanisms; and
- implementation of a Public Health Management Plan.

This section describes how these concerns were addressed and communicated to the public, and provides:

- an assessment of the public's level of satisfaction with the communication process; and
- whether IOL's efforts to fulfil the validation steps have been adequate.

For the purposes of the report, 'concern' is defined as: *something that interests a stakeholder because it is important or affects them, or a stated actual or perceived problem, raised by an individual or stakeholder that is either strategic or local.*

The validation steps described in the PHRA are listed below:

**Communications Validation Step #1:** *The IOL program for training staff and bringing the new technologies in the upgrade on line should be communicated with the public to address concerns regarding possible failures, and resulting impacts of various kinds on the community should bringing the upgrade on-line fail.*

The goal of Communications Validation Step #1 is to ensure that nearby residents are kept abreast of the new technologies that may have an impact on their community.

**Communications Validation Step #2:** *Due to the lack of quantitative data related to upset and accident scenarios, and the concerns raised by the public in this area, an assessment of these issues should be conducted.*

The goal of the Communications Validation Step #2 is to determine how upsets are dealt with in terms of informing the public and responding to concerns.

**Communications Validation Step #3:** *IOL should focus on improved communication with the public regarding their maintenance, and resulting emergency-response programs. Lack of information about the operation of the refinery promote feelings and concerns by the public related to lack of control over their lives, and fears about the operation of the refinery next to*

*their neighbourhoods. These issues raise concerns of psychosocial effects on their health that then foster distrust and complaints about the operation of the refinery. The implementation of a Public Health Management Program, as discussed below, would provide a means for improved communication with the public.*

The goal of the Communications Validation Step #3 is to keep the public informed about maintenance and emergency-response programs in order to curb public fears surrounding the refinery operations. This validation step also refers to a Public Health Management Program. This program was not considered to be the responsibility of IOL. In this context, the NB Department of Health has adopted a multi-targeted approach to monitoring potential emissions related effects on the health of the Saint John community and conducted health promotion efforts related to decreased smoking, better diet and exercise.

### **3.1 Methods**

The assessment is based on records and other objective evidence arising from:

- minutes of Community Liaison Committee (CLC) meetings;
- interviews with various members of the CLC;
- interviews with IOL representatives;
- newsletters;
- notification letters;
- information on open houses; and
- other relevant documentation.

### **3.2 Sources of Guidance for Public Communication**

The three Communications Validation Steps outline the need for improved communications with the public regarding refinery operations. There are several guidelines that exist in Canada and New Brunswick that relate to public participation at the project design or assessment level. Although a formal public participation process was not prescribed for IOL prior to the refinery upgrade, the existing guidelines are useful in undertaking the validation process.

#### **3.2.1 The Canadian Standards Association (CSA)**

The CSA publishes various guidelines related to environmental work including the CSA Standard Z764-96, "A Guide to Public Involvement". This document can be used to guide industry to incorporate public input into the design of a project. The public involvement process described in CSA Z764-96 is not considered appropriate if the project is already decided and public comments are not going to be incorporated. If the goal is only to inform stakeholders, or promote a project, a good communication program should include, but not be limited to: published reports, media releases, brochures, and open houses to let the public know about the project. Table 3.1, from CSA Z764-96, shows the different types of mechanisms for public involvement and ranks them in relation to various criteria.

**Table 3.1 Mechanisms of Public Involvement**

<b>Characteristics ----- Mechanism</b>	<b>Range of Issues That Can Be Accommodated</b>	<b>Degree of Interaction among Participants</b>	<b>Number of People Who Can Participate</b>	<b>Time Commitment to Plan and Implement</b>	<b>Cost of Running Mechanism</b>	<b>Potential for Public/Media Visibility</b>	<b>Expertise Required to Run Mechanism</b>	<b>Ability to Accommodate Different Levels of Participation</b>
Public Meeting	0	0	+	0	-	+	-	-
Open House	0	+	+	0	-	+	-	-
Focus Groups	0	+	-	0	-	-	+	-/0
Community Visits	+	+	-	0	-	+	-	-/0
Electronic Bulletin Board	+	0	0	-	-	-	+	-/0
Panels	0	0	0	0	-	0	+	-/+
Town Meeting	+	+	+	0	0	+	0	-
Site Visits	-	+	0	0	-	+	0	-
Polls	0	-	+	+	0/+	0	+	-/0
Questionnaire/Surveys	0	-	+	+	0/+	0	0	-/0
Public Input by Phone	0	-	+	0/+	0/+	-	0	-/0
Conferences	+	0	+	+	0/+	+	0	-/+
Public Seminar	+	0	0/+	0/+	0	+	0	-/0
Exchanges	-	+	-	0	0	0/-	0	-
Delphi Process		-	-	+0	0	-	+	0/+
Task Force	-	+	-	+	0/+	0/+	0	0/+
Workshops	0	0/+	-/0	0	0	-/0	+	-/+
Nominal Group Process		0/+	-	0	0	-	0	-/+
Open Space	0/+	+	0	0	-/0	-	0	0/+
Participatory Television	0/+	-	0/+	+	+	+	+	-/0
Electronic Discussion Groups	+	0	+	0	-	-	-/0	-
Samoan Circle	0	+	+	+	0/-	0	0	-/+
Public Hearings	-	0/+	-/+	+	0/+	0/+	+	-
Games & Role-Playing	-	+	-	+	0	-	0	-/+
Advisory Committees	0	+	-	+	0/+	0/+	0	-/0
Charrettes	0/+	+	0	+	0	0	0/+	-
Negotiation	0	+	-	0/+	-/0	0	0	-

**Legend:**      - = Low      0 = Medium      + = High

Source: CSA Z764-96 (Reaffirmed 2007) - A Guide to Public Involvement.

### **3.2.2 The Canadian Environmental Assessment Act (CEAA)**

The *Canadian Environmental Assessment Act* (CEAA) relates to projects that have had or are undergoing either a screening level environmental assessment or a comprehensive study. The refinery upgrade was not subject to an environmental assessment under CEAA, however, CEAA can be used as a guide for appropriate methods of engaging the community. One of the purposes of the Act is to ensure that there are opportunities for meaningful and timely public participation throughout the environmental assessment process. CEAA specifically enables the incorporation of public comments from the public on a project, and also mandates the use of public meetings/hearings to inform and collect input from the public.

### **3.2.3 Provincial Environmental Impact Assessment (EIA)**

In New Brunswick, the Environmental Impact Assessment (EIA) process is governed by “A Guide to Environmental Impact Assessment in New Brunswick” published by the New Brunswick Department of Environment (NBENV). Similar to CEAA, the guide establishes the requirement for public participation in the EIA process by enabling public comment on the draft report and through public meetings. The purpose of the public meeting is to give the public an opportunity to make comments, raise concerns, or ask questions about any matter contained in the EIA report. A panel of experts oversee the public meetings, receives public input, and responds to questions and concerns. The panel then prepares a report on public involvement, incorporating meeting comments and written comments submitted throughout the public comment period.

Appendix C of the New Brunswick EIA guide provides the minimum proponent sponsored public involvement standards for registered projects, some of which may be used as a comparison for IOL public communication methods employed to date. Item 1 states that the proponent shall communicate directly with elected officials, local service districts, community groups, environmental groups, other key stakeholder groups, and First Nations as appropriate, enabling them to become familiar with the proposed project, to ask questions and/or raise concerns. Suggestions for implementing these activities include organizing meetings or workshops, appearing at a stakeholder or community group’s regular meeting or sending letters or information flyers. Item 2 requires that the proponent give direct written notification (letter, information flyer, etc.) about the project to potentially affected persons (residents, landowners, etc.). The written notification must include a number of items, including a brief description of the project, a description of the location, a statement that the public can ask questions or raise concerns, and the proponent contact information (name, address, phone number, etc.). Item 7 requires that the proponent must advertise and host an open house or public meeting so that the public has an opportunity to become familiar with the project and they may ask questions or raise concerns.

### **3.2.4 IOL Corporate Communication Plan**

The IOL Corporate Communication Plan identifies a need and process for addressing public communication related to the refinery upgrade. This plan was prepared about five years ago and could not be located by IOL personnel.

### **3.3 Public Communication – Initial and Ongoing**

The methods used by IOL to keep the public informed about the refinery upgrade are described in detail in the following subsections. Results of interviews with various CLC members and IOL representatives are included in the following sections where appropriate.

#### **3.3.1 Community Liaison Committee**

The Community Liaison Committee (CLC) was established by IOL in 2000 as the Community Awareness Liaison Committee (CALC). The committee changed its name to Community Liaison Committee in 2002.

The current mandate of the CLC is to:

*“assess ways for the Irving Oil Refinery to continue to be a good neighbour and whose membership will contribute to, and benefit from, a regular information exchange. The Committee will assess community issues associated with the Saint John refinery and make recommendations to Irving Oil for consideration. The Committee will communicate with the community.”*

The Terms of Reference (TOR) for the CLC was last revised on March 15, 2006. The TOR stipulates that the CLC will meet on a quarterly basis in March, June, September and December of each year and the Co-chairs have the authorization to call special meetings. The agenda and minutes will be delivered two weeks prior to the next meeting. Changes to the agenda can be made one week prior to the subsequent meeting. One IOL representative and one community member co-chair the meetings. The TOR also stipulates that membership may change to maximize the contribution from the community. The CLC, in conjunction with IOL, may appoint applicants for specified terms. The CLC will continue to deal with issues raised by non-members. The CLC will draft an annual report to submit to IOL, the Provincial government, and the City of Saint John, and the report will also be made available to the public. The TOR is provided in Appendix F.

AMEC reviewed all available minutes of CLC and CALC meetings for 2000, 2002, 2003, 2004, 2005, and 2006. There were no minutes of meetings available for 2001. According to an IOL representative, the CALC did not meet during 2001 due to a lack of staff to keep the committee and the meetings going, but then began meeting again in February of 2002.

##### **3.3.1.1 Meeting Frequency and Participation**

When the CALC was formed at the beginning of the refinery upgrade in 2000, meetings were held every one to two months. There were 8 meetings in total in 2000. When the CALC reassembled in 2002, the community members decided and IOL agreed, that future meetings should be held on a quarterly basis. The CLC continues to meet quarterly. According to interviews with current members of the group, some members indicated that they would like the meetings to be more frequent, but others indicated that sustaining interest has not always been easy.



Based on available minutes of meetings, membership appeared to be fairly good in 2000, during the refinery upgrade, with approximately 19 members, including IOL representatives and other resources such as NBENV (who were not technically members, but support to members). However, not all members attended all meetings. In 2000, there was on average 14 people who regularly attended meetings, where approximately 3 to 5 of these were support resource persons (IOL and NBENV). Through 2002, the CLC comprised approximately 9 community members.

According to interviews, some of the earlier members of the CALC had been asked to join at a public meeting (possibly for the PHRA). Through 2000, there appears to have been no new recruitment efforts for members. The available minutes for early 2002 note that there were discussions on recruiting new members. At that time, the CALC decided on criteria for accepting new members, as follows:

- unanimous decision among members;
- submission of a letter of application;
- indication of reason for interest; and
- indication of potential contribution given background and experience.

From 2003 to the end of 2005, the minutes of meetings continually noted the need to recruit new members. Action items on several minutes called for CLC members to bring forth suggestions for new members and for IOL representatives to approach local groups such as the Champlain Heights School, the New Brunswick Community College, and the St. Joachim Church to see if there was anyone interested in joining the committee. According to an IOL representative, they did not have much success in recruiting members this way. They had approached three schools and the New Brunswick Community College, with no interest. The CLC attempts to recruit one community member to represent each area around the refinery. The members reportedly had considered disbanding the CLC due to a perceived lack of interest, as attendance by community members was continually low during this time.

It was not until the winter of 2005 that there was a general announcement in the Community Connections newsletter indicating that the CLC was looking for new members. According to an IOL representative, only one person from the community responded to this ad.

In 2006, new members were added to the CLC. According to several interviewees, meetings over the past couple of years have involved about 10 attendees, including appointed resource persons and usually about 4 to 5 community members. It was indicated by an IOL representative that since the appointment of a new Community Relations Representative, the CLC seems to have a good membership base, and there have been no discussions about recruiting new members in the last year.

### **3.3.1.2 Meeting Format and Content**

The original format of the CALC meetings in 2000, is different from the post-upgrade CLC meeting format. Generally, the CALC meeting started with the acceptance by the group of the minutes from the previous meeting. Some meetings were kicked off with a presentation from an IOL representative regarding new construction or maintenance activity. Following acceptance of the minutes, members were given time to ask questions or raise concerns (either their own or on behalf of a non-member), then IOL representatives would respond to the question or concern. If they did not know the answer to the question, they indicated that they would find the answer and report back to the person in the next meeting. Following questions and concerns, the discussion focused on any other issues brought forward by the community members. The training for new refinery technicians during the upgrade, was also presented to the committee during one of the meetings.

At the first CALC meeting, the PHRA report was presented. The CALC arranged a meeting with Cantox in March 2000 to discuss the report. However, there is no documentation of that meeting.

In 2002, when the CALC resumed meetings, the mandate, TOR, purpose of the committee, and nominations for chair, co-chair and new members were reviewed. Further meetings in 2002 began with updates on the refinery activities, followed by new business, old business and any action items.

From 2003 to the present, the committee operates as the CLC. The meeting format included the introduction of new members at the beginning of each meeting, followed by a discussion on concern calls to NBENV and the Refinery. The number and nature of concern calls was reported by an IOL representative, and the actions that were taken for each of the calls were described. The discussion on concern calls was followed by refinery news, which included discussions on any new refinery issues. The refinery news is followed generally by outstanding issues and action items. Some meetings had additional items on the agenda, but most followed this general format. Other meetings included a general discussion about the Community Connections newsletter, information on when the next issue would be distributed, the contents of the next issue and requests for input into future issues.

There were also two occasions where the regular meetings were substituted for tours of the refinery in June 2004 and September 2006.

### **3.3.1.3 Opportunities for Feedback**

The format of the meetings allows for the members of the CLC to ask questions and raise any concerns that they might have about any the refinery's operations. The CLC members are also given opportunities to make suggestions on the content of the Community Connections newsletter and on future dealings with IOL. It was noted by one community member that they have had influence on IOL communications in the past and have succeeded in having information released to the public.

According to a representative of IOL, it has often been difficult to engage the members at the meetings and identify topics to discuss, due to a lack of feedback from community members.

#### **3.3.1.4 Assessment of the CLC**

According to interviews, most members of the CLC have indicated that they feel that their voice is being heard at the meetings and that IOL is very supportive and responsive. One of the interviewees indicated that there are usually 3 - 4 IOL representatives at each meeting, who respond to questions and if they do not have an immediate answer, report back to the CLC fairly quickly.

All interviewees generally agreed that the process is useful: meetings are well organized and run; serves the purpose of obtaining information on refinery operations; a great networking tool; and ensures IOL's accountability to the public. All CLC members interviewed indicated that they had input to each meeting's agenda.

Some interviewees indicated a desire to have some meetings at the refinery, to actually see what is going on first hand. Others indicated that they should alternate meeting locations between the different communities surrounding the refinery.

Other suggestions from CLC members about improvements that can be made included:

- Enhanced direct communications with the committee on issues so that the committee doesn't have to read about them in the paper first. They suggest that as much information as possible (unless it is confidential) should be shared with the CLC.
- More emails from IOL to the CLC between meetings to keep them informed. Several interviewees indicated that they would like to see the meetings be more frequent.
- Improved meetings records – more detail and comprehensive reporting on deliberations that occurred.
- Public access to minutes of meetings - the minutes could be posted on the IOL website.
- Invite more representatives from environmental groups to join.

The difficulties in recruiting CLC membership and limited attendance at meetings are either indicative of a lack of interest in refinery issues, general satisfaction with refinery operations or lack of awareness regarding the existence and function of the CLC. All interviewees indicate satisfaction with IOL's participation on the CLC and their rapid response to investigating and rectifying problems. However, poor awareness is possible. The CLC member names were provided in each newsletter published in 2000. But since that time newsletters have not provided CLC member names or information about the CLC and its activities.

When asked if the CLC should advertise more, one member noted that it could be a good idea but could also lead to new problems, where residents would then be calling CLC members all the time.

The TOR for the CLC identify a requirement to produce an annual report. However, this has never been completed. An annual report posted to the website would heighten community awareness of the CLC.

### **3.3.2 Newsletters**

The community newsletter has undergone three changes since its inception in early 2000. The Community Awareness (CA) newsletter, first published in January 2000 and continued through to the end of 2000, was distributed monthly to approximately 5000 households within a 5 km radius of the refinery.

The purpose of the newsletter was to inform the public about the status of the refinery upgrade and provide information on the addition of new components. Some newsletters provided information on the number of people employed for a particular portion of the upgrade. The first newsletter, January 21, 2000, also noted that the PHRA was complete and available through the Department of Health and Community Services.

Each newsletter also included an invitation to the public to contact members of the CLC regarding questions or concerns. The phone numbers of some CLC members were listed. The November 21, 2000 newsletter included thanks from IOL for the constructive recommendation to improve communications received from the public.

From 2000 through 2001 and most of 2002, no newsletters were published. The newsletter was revived in the fall of 2002 as the Community Connections (CC) newsletter. There have been approximately three to four newsletters each for 2003 to 2006, with distribution to approximately 6000 households within a 5 km radius of the refinery. The newsletter is also available on line through the Irving Oil website.

A review of the newsletters from fall 2002 to end of 2006, reveals articles about the refinery operations, IOL in general, successful community programs that IOL is involved with (Operation Clean Up, Champlain Heights school playground), quick facts about certain IOL products, facts on air quality, and updates on studies regarding the refinery (odour study by ODOTTECH, noise study by HGC Engineering). Articles on health and safety and training also appear in many of the newsletters. In some of the newsletters a professional and personal profile of a refinery employee is provided, giving the refinery a more personal appeal.

#### **3.3.2.1 Opportunities for Feedback**

The Community Connections newsletter was written and published by IOL. However, at the back of each newsletter, there is an invitation for the public to make suggestions on the newsletter, by calling a contact person at IOL or contacting a CLC member. A contact at IOL was listed with a phone number and email address, but the CLC members were not listed. Based on information observed in the minutes of CLC meetings and on interviews with CLC members, it is understood that the CLC members are also encouraged to make suggestions on content for newsletters. According to interviews from CLC members and IOL representatives, there have been no submissions of articles by residents of the community.

There was one survey published in a Community Connections (CC) newsletter (Winter 2004), asking for feedback on the publication. The results were reported at the February 2005 meeting of the CLC, but were not reported to the general public. It was noted in the CLC minutes that based on the survey, changes/improvements were made to the publication. These changes included adding more photos in the newsletter to personalize the publication and the refinery, publishing findings from the air monitoring study, and including more articles on how the refinery works. The results of the survey are presented in Section 3.3.4.1.

### **3.3.2.2 Assessment of the Newsletters**

According to the survey posted in the CC newsletter, readers were generally satisfied with the content and frequency of the newsletter. However, it should be noted that the survey only received 15 respondents out of a distribution of 6000 households. The minimal response to the newsletter survey is a possible indication of several issues: either the residents do not read the newsletter, or they have no problems with the newsletter and/or IOL.

The interviewees generally thought that the newsletters were good and they were impressed with IOL efforts to publish them. Some interviewees indicated that the newsletter was a bit on the “fluffy” side, that it was evident that it was published by IOL because it only reported the “good stuff”, and that it did not deal with more challenging issues. However, most agreed that the newsletter is a quality publication and serves the purpose of informing the public about the refinery operations.

Interviewee suggestions for improvements to the newsletter include:

- Publish a profile on CLC members and articles on what goes on in their meetings. This would give the public an indication of who the group is, what they do, and may spark interest in potential new members.
- Provide more information on violations, compliance related articles, and complaints logs.

The newsletter is distributed to 6,000 people around the refinery but reaches a wider audience through its publication online. However, the newsletter does not reference the website and therefore most people would not know that it is available online unless they happened to already be on the Irving Oil website.

There is no information on the level of satisfaction of the public regarding the previous CA newsletter.

### **3.3.3 Open Houses**

Open houses rank high on the CSA public participation mechanisms (see Table 3.1), in terms of the degree of interaction among participants, the number of people who can participate, and on the potential for public and media visibility. It ranks medium on the range of issues that can be accommodated and the time commitment to plan and implement. There have been about 10 open houses hosted by IOL over the last six years. For example, IOL hosted its first Annual Open House in 2005, followed by a second in 2006.

The purpose of an open house is to give the public information on the refinery operations, new technologies, training, etc. It allows the public to meet with IOL staff face to face, and it allows them to ask questions in a comfortable one-on-one setting.

The open houses generally include a number of booths showing displays about a different aspect of the refinery operations. Each booth is manned by an IOL staff member knowledgeable about the particular process, who is available to respond to any questions or concerns.

Open houses are advertised in the Telegraph Journal and invitations are mailed out to neighbourhood residents.

There is limited documentation regarding open house attendance. According to a newsletter article, the 2006 open house had 25 attendees. CLC members who attended most or all of the open houses indicated that, in their opinion, the attendance was generally modest.

### **3.3.3.1 Assessment of Open Houses**

There were no advertisements of open houses contained within the newsletters. In a few newsletters, an article was posted about an open house after the event. Most interviewees indicated that the open houses are well advertised, however, one person indicated that they could do better, perhaps public service announcements on the radio as not everyone reads the Telegraph Journal.

Most interviewees indicated that there was sufficient technical information provided at the open house, that there was sufficient technical staff on hand to answer questions and that the open houses were very informative. However, one community member noted that there should be more technical information such as National Pollutant Release Inventory (NPRI) reports, results of studies, and more official Ministry reports available at the open houses. Some CLC members indicated a preference for a town hall presentation, then a question and answer period, with the media present. One interviewee indicated that open houses should be more frequent than once per year.

### **3.3.4 Surveys**

In 2000 a survey was published in a newsletter (see Section 3.3.2.1) relating to reader satisfaction. The results are described in more detail below.

#### **3.3.4.1 Newsletter Survey**

The survey published in the CC newsletter consisted of three separate parts. The first was a list of four items that asked to rate on a scale of 0 to 5 where 0 is least satisfied and 5 is the most satisfied. The four items were the content of the newsletter, the writing style of the newsletter, the frequency of distribution, and addressing matters that are important to the reader. The second part was a yes/no question: would the reader like to receive the newsletter more frequently. The last part is an open question asking for suggestions to make the newsletter better.

There were only 15 responses received, out of a distribution to 6000 households. The results of the survey indicated that most people (60% or more) rated the four top questions in the top two ranking spots (4 and 5). Three of the four top questions did not have any respondents rank below 3. In response to the frequency of the newsletter 7% ranked a 2 (or slightly dissatisfied). Approximately 53% of respondents said that they would not like to receive newsletters more frequently and 47% said they would like them to be more frequent.

Many of the respondents commented that they had no recommendations and that the publishers were doing a good job. Others made suggestions on the content of the newsletter which were incorporated into future publications (see Section 3.3.2.1).

### **3.3.4.2 Assessment of Surveys**

In the seven years since the upgrade, there has only been one survey about the newsletter. More surveys during this period, with more opportunity for residents to give feedback on how IOL communicates to the public, would have given a better indication on the public perception of IOL communication efforts.

### **3.3.5 Concern Calls Line**

Residents who encounter an odour, noise or any other issue can call the refinery (506-202-3000) at any time and log a complaint. Similarly, they can call NBENV. IOL and NBENV have maintained a record of complaint calls received from 2003 to 2006. Calls to IOL are recorded and summarized for NBENV submission on a monthly basis. From 2003 to 2006, it appears as if the number of calls has increased. For the purposes of the validation, the important issue is how IOL deals with the calls and the caller.

It was observed that in the minutes of every meeting, concern calls for the time period are summarized and discussed among the CLC members, and resolutions to the problems communicated. According to all of the persons interviewed, the way IOL deals with concern calls has been very good. If you call, someone reportedly gets back to you almost immediately. It was noted that IOL will send someone to your house or to the area in question to investigate no matter what time of day. The people that respond to phone calls are always friendly and take the calls very seriously. A few interviewees noted that the concern calls line and how residents are dealt with was IOL's strongest point: "IOL goes above and beyond the call of duty" to provide people with information. It was also observed that in some issues of the newsletter, when there had been a significant number of calls about a specific problem, IOL wrote a notice thanking residents for calling in, as it helped them to find and fix the problem.

#### **3.3.5.1 Assessment of Concern Calls**

All information indicates that IOL takes concern calls from residents very seriously and responds quickly. There was no criticism of this area of IOL communication to the public. One CLC member also noted that he didn't call the concern line, instead he called the shift supervisor directly and that they were very nice and helpful.

### **3.3.6 Letters to Residents**

The community is made aware of any scheduled maintenance operation, or other events at the refinery that may create dust, noise, or odour in letters that are mailed out or hand delivered to households.

Letters are also distributed to residents to notify them of upcoming events (open houses), to provide them with information on new systems or units, responses to media reports, and some letters are apologies for various events that may have had an impact to the neighbourhood (excessive noise or odour). One letter included a coupon for car cleaning after a release of catalyst resulted in a number of concern calls about a white substance on some neighbourhood vehicles. Other letters included fact sheets about specific projects.

#### **3.3.6.1 Assessment of Letters to Residents**

There was not a lot of information available on the level of satisfaction of the public in relation to letters received from IOL. However, a review of the letters indicated that they were sufficient in content for their purpose – to inform the resident about an upcoming event that may affect them.

### **3.3.7 Public Consultation**

The public participation process as required by the Public Participation Regulation of the *Clean Air Act* was undertaken by DENV and IOL was a participant. In April 2005 the refinery undertook a 120-day public consultation process for the renewal of their approval to operate under the Clean Air Act. The public has a limited amount of time to comment on the draft report submitted to NBENV for the renewal. According to the NBENV, only eight people provided comments on the report. However, according to a CLC member, who had submitted comments, they believed that community concerns were reflected in the final condition of approval as it was more stringent. NBENV keeps a record of all comments submitted during this process. These comments were not available for review at the time of this assessment.

The previous public consultation process occurred during the completion of the PHRA in 1999. At that time, IOL hosted a public meeting for the PHRA. There were reportedly only 14 attendees at the open house, as the Conservation Council of New Brunswick had reportedly told people to boycott the public meeting. Among the people who did attend the meeting, it was noted that there was a lot of negativity and not many people were interested in the report.

### **3.3.8 Other Communication Mechanisms**

In addition to the formation and maintenance of the CLC, the publication of newsletters, the distribution of newsletters concerning shutdowns and maintenance, hosting of open houses and administration of surveys, IOL has utilized other mechanisms to keep the community informed and to enhance its image as a “good neighbour”. These additional efforts are described in this section.

IOL developed a Refinery Education Kit to teach kids at the elementary school level, about refinery operations. These kits help teachers explain to their students the types of products that



are produced at the refinery, how they are made, and why it is essential that the refinery maintain a flaring system. Six kits were given to Champlain Elementary School in January of 2004.

Since the refinery upgrade, IOL has undertaken a number of extra activities that were intended as good corporate citizenship. For instance, where there may have been excessive dust after an event, IOL has offered to clean household windows in areas that were affected. Employees also participate in an annual neighbourhood clean up project around the community. IOL has also fully or partially sponsored the construction of two neighbourhood playgrounds in Forest Hills (2003) and Champlain Heights (2005).

As was noted earlier, when any anticipated shutdowns, turnarounds, or maintenance activities might cause an impact to surrounding residents, the residents are notified by a letter, often hand delivered. According to a CLC member, larger shutdown and turnaround events are often announced in the newspaper as well, for the information of the wider community.

In relation to the odour impact study that is currently being undertaken, residents were invited to participate in an Odour Observer Panel in July 2006. The panel will help IOL in managing the odour emissions and impacts to the community and raise community awareness of ongoing efforts to minimize odours. Fourteen members of the community attended the kick off meeting on July 26, 2006. Over the year, these participants were to give daily odour observations to ODOTTECH to help them with the study. Periodic information sessions were also to occur. An invitation to join the panel was posted in the article "Odour Study" in Summer, 2006 CC newsletter.

IOL and the CLC sent one of the community CLC members to a national workshop in Ottawa, on a National Framework for Petroleum Emissions Reductions, with government support for travel expenses.

Communication Validation Step #3 relates to improved communication with the public regarding emergency-response programs. IOL communicated to the CLC that they have an Emergency Response Plan in place but that they could not provide any detailed information as it would compromise security.

### **3.4 Conclusions**

Most of interviewees had lived in the area since about the 1970's and there was a unanimous response regarding IOL communication to the public, indicating that what is being done now is far better than efforts of a decade ago. One interviewee noted that since the upgrade there have been huge improvements. It was stated that IOL seems to be doing all that they can and that there are not as many complaints as there used to be.



The only area of criticism regarding IOL communication is that there appears to be a little bit of bias in everything published or released to the community. The message is that IOL should be more comprehensive with their communications: "tell us the good and the bad".

In terms of the three Communication Validation Steps, IOL has provided sufficient and frequent information to the public on new technologies to fulfill validation step #1. However, there has been a lack of information on the IOL program in place for training staff, although several newsletters published short articles on training for new technicians.

In terms of validation step #2, IOL appears to take the concerns of the public very seriously and there is sufficient evidence to support this claim. The concerns of the public are being heard and responded to as quickly as possible and to the satisfaction of the community.

Through the newsletters and open houses the community has been provided with a variety of technical and non technical information to support validation step #3, with the exception of the information on emergency response programs, which has not been publicly communicated due to security issues. One improvement that could be made in relation to validation step #3 is to improve the visibility of the CLC to the public, either through articles in the newsletters, publication of minutes, or posting of information online.

## 4.0 INHALATION RISK ASSESSMENT OF VOCs

AMEC has conducted a human health risk assessment of potential inhalation risks from chronic exposure to volatile organic compounds (VOCs) in the vicinity of the IOL Refinery in Saint John, New Brunswick. This risk assessment is a supplementary task performed by AMEC in conjunction with its Validation of the PHRA for the Irving Oil Refinery Upgrade.

The current risk assessment was conducted according to the human health risk assessment framework endorsed by Health Canada (2004a), which includes the following steps:

- problem formulation;
- exposure assessment;
- toxicity assessment; and
- risk characterization.

### 4.1 Problem Formulation

The problem formulation step of the risk assessment identified the chemicals of potential concern (COPCs), the receptors, and the exposure pathways. The COPCs that were identified included VOCs for which recent (post-expansion) ambient monitoring data are available. The 17 VOCs for which risks were assessed included:

- Acetaldehyde,
- Acrolein,
- Benzaldehyde,
- Benzene,
- Crotonaldehyde,
- Ethylbenzene,
- Formaldehyde,
- Hexanal,
- Isovaleraldehyde,
- Methyl tertiary-butyl ether (MTBE),
- Propionaldehyde,
- m-Tolualdehyde,
- p-Tolualdehyde,
- Toluene,
- Valeraldehyde,
- m- and p-Xylenes, and
- o-Xylene.

Potential receptors were assumed to be residents in the vicinity of the Site, and inhalation was the pathway of concern via which residents would be exposed to VOCs.

## 4.2 Exposure Assessment

The exposure assessment step of the risk assessment determined the VOC concentrations to which a receptor would be exposed in the vicinity of the Site and characterized any receptor-specific parameters that may influence potential human health risks.

Post-expansion ambient air monitoring data exists for VOCs for two areas in the vicinity of the Site: Champlain Heights and Forest Hills. Data for these two areas are summarized in Tables 4.1 and 4.2, respectively. It is important to note that these data indicate mean VOC concentrations in air but provide no information as to the source of these VOCs.

For comparison purposes, typical exposure levels in air for selected VOCs are presented in Table 4.3. As shown, the exposure concentrations for VOCs at Champlain Heights and Forest Hills are comparable to typical exposure concentrations for other parts of Canada.

Non-carcinogenic risks were assessed assuming continuous exposure for a resident in the vicinity of the Site; therefore, no additional resident exposure parameters were required. Carcinogenic risks were assessed for a resident who is assumed to be exposed for the duration of adulthood (56 years) with lifetime cancer risks amortized over the entire life expectancy of 75 years (Health Canada, 2004a).

## 4.3 Toxicity Assessment

The toxicity assessment step of the risk assessment identified carcinogenic and/or non-carcinogenic dose-response values for each VOC. Dose-response values used in Cantox (1999) were reviewed to determine if they were still valid for use in the current risk assessment. Dose-response values that were used in Cantox (1999) are summarized in Table 4.4 and those that were used in the current risk assessment are summarized in Table 4.5.

Health Canada was the primary source that was investigated for VOC dose-response values. It was determined that the Health Canada dose-response values for toluene, *m*- and *p*-xylenes, *o*-xylene, and MTBE that were used in Cantox (1999) were still valid for use in the current risk assessment. Also, it was found that Health Canada developed guidance for inhalation exposure to acetaldehyde, acrolein, benzene, and formaldehyde subsequent to the completion of Cantox (1999). This guidance therefore superseded the U.S. EPA-derived dose-response values that were used by Cantox (1999).

For example, although Cantox (1999) identified both non-carcinogenic and carcinogenic dose-response values for formaldehyde, Health Canada (2006), states: "the risk of cancer associated with formaldehyde levels sufficiently low to prevent irritation and inflammatory responses appears ... to be negligible". Health Canada has therefore developed an 8-hour residential exposure limit for non-carcinogenic effects, but it has not developed a carcinogenic dose-response value for formaldehyde. In accordance with this position, the current risk assessment uses the non-carcinogenic dose-response value for formaldehyde.

**Table 4.1 Mean Concentrations of Selected VOCs at Champlain Heights, Saint John, NB (2000-2006)**

VOC	Concentration ( $\mu\text{g}/\text{m}^3$ )							Mean
	2000	2001	2002	2003	2004	2005	2006	
Acetaldehyde	nd	nd	nd	2.21	1.40	2.27	nd	1.96
Acrolein	nd	nd	nd	0.03	0.03	0.15	nd	0.07
Benzaldehyde	nd	nd	nd	0.15	0.09	0.29	nd	0.18
Benzene	1.22	2.18	1.38	2.20	1.90	1.98	1.39	1.75
Crotonaldehyde	nd	nd	nd	0.04	0.03	0.07	nd	0.05
Ethylbenzene	0.93	1.25	0.68	1.28	0.97	1.19	0.62	0.99
Formaldehyde	nd	nd	nd	2.67	2.32	4.28	nd	3.09
Hexanal	nd	nd	nd	0.45	0.38	2.05	nd	0.96
Isovaleraldehyde	nd	nd	nd	0.13	0.08	0.15	nd	0.12
MTBE	9.98	27.41	15.65	31.64	12.44	15.29	2.90	16.47
Propionaldehyde	nd	nd	nd	0.71	0.35	0.60	nd	0.55
<i>m</i> -Tolualdehyde	nd	nd	nd	0.01	0.002	0.001	nd	0.004
<i>p</i> -Tolualdehyde	nd	nd	nd	0.003	0.001	0.001	nd	0.002
Toluene	3.89	6.02	3.57	7.77	4.57	5.10	3.17	4.87
Valeraldehyde	nd	nd	nd	0.32	0.36	1.29	nd	0.66
<i>m</i> - and <i>p</i> -Xylenes	2.67	3.49	1.84	3.62	2.66	3.28	1.69	2.75
<i>o</i> -Xylene	0.93	1.17	0.57	1.15	0.88	1.21	0.58	0.93

Notes:  
 nd: no data

**Table 4.2 Mean Concentrations of Selected VOCs at Forest Hills, Saint John, NB (2000-2006)**

VOC	Concentration ( $\mu\text{g}/\text{m}^3$ )							Mean
	2000	2001	2002	2003	2004	2005	2006	
Acetaldehyde	1.96	1.81	1.30	1.80	0.58	0.85	nd	1.38
Acrolein	0.06	0.01	0.05	0.04	0.02	0.04	nd	0.04
Benzaldehyde	0.17	0.10	0.07	0.10	0.07	0.07	nd	0.10
Benzene	0.87	1.39	0.75	1.20	0.83	1.00	0.81	0.98
Crotonaldehyde	0.10	0.22	0.07	0.04	0.03	0.05	nd	0.08
Ethylbenzene	0.57	0.53	0.24	0.44	0.27	0.31	0.22	0.37
Formaldehyde	2.45	3.13	1.54	1.72	0.79	0.91	nd	1.76
Hexanal	0.32	0.17	0.12	0.13	0.07	0.08	nd	0.15
Isovaleraldehyde	0.11	0.06	0.10	0.11	0.06	0.06	nd	0.08
MTBE	1.92	10.18	6.34	9.82	4.19	7.25	1.03	5.82
Propionaldehyde	0.52	0.43	0.36	0.48	0.14	0.21	nd	0.36
<i>m</i> -Tolualdehyde	0.001	0.00	0.01	0.004	0.0004	0.003	nd	0.002
<i>p</i> -Tolualdehyde	0.00	0.00	0.002	0.00	0.0004	0.0003	nd	0.0004
Toluene	10.75	4.02	1.53	3.68	1.67	1.72	1.15	3.50
Valeraldehyde	0.24	0.16	0.08	0.07	0.05	0.04	nd	0.11
<i>m</i> - and <i>p</i> -Xylenes	1.54	1.46	0.60	1.19	0.73	0.82	0.59	0.99
<i>o</i> -Xylene	0.55	0.50	0.21	0.39	0.25	0.28	0.21	0.34

Notes:  
 nd: no data

**Table 4.3 Typical Exposure Concentrations for Selected VOCs in Canada**

VOC	Concentration ( $\mu\text{g}/\text{m}^3$ )	Source
Acetaldehyde	1.50	Mean annual concentration from 5 NAPS monitors 60418, 50104, 70119, 40203*, 30501 (1998-2003) (Environment Canada, 2008)
	1.9	Mean ambient air concentration for 2805 24-hour samples (rural, suburban and urban locations at 14 sites in six provinces surveyed between 1989 and 1997; Environment Canada and Health Canada, 2000a)
Acrolein	0.09	Mean annual concentration from 4 NAPS monitors 60418, 50104, 70119, 40203* (1998-2003) (Environment Canada, 2008)
	0.18	Mean ambient air concentration for 2816 24-hour samples (rural, suburban and urban locations at 15 sites in five provinces surveyed between 1989 and 1996; Environment Canada and Health Canada, 2000b)
Benzaldehyde	0.15	Mean annual concentration from 4 NAPS monitors 60418, 50104, 70119, 40203* (1998-2003) (Environment Canada, 2008)
Benzene	1.23	Mean annual concentration from 5 NAPS monitors 60418, 50104, 70119, 40203*, 30501 (1998-2003) (Environment Canada, 2008)
	4.4	Mean ambient air concentration for 586 24-hour samples (10 cities surveyed between 1988 and 1990; Environment Canada and Health and Welfare Canada, 1993)
Crotonaldehyde	0.11	Mean annual concentration from 3 NAPS monitors 50104, 70119, 40203* (1998-2003) (Environment Canada, 2008)
Ethylbenzene	0.71	Mean annual concentration from 5 NAPS monitors 60418, 50104, 70119, 40203*, 30501 (1998-2003) (Environment Canada, 2008)
Formaldehyde	2.19	Mean annual concentration from 5 NAPS monitors 60418, 50104, 70119, 40203*, 30501 (1998-2003) (Environment Canada, 2008)
	30 - 40	Typical mean concentrations in air of Canadian homes (Health Canada, 2006)
Hexanal	0.16	Mean annual concentration from 4 NAPS monitors 60418, 50104, 70119, 40203* (1998-2003) (Environment Canada, 2008)
Isovaleraldehyde	NA	

**Table 4.3 Typical Exposure Concentrations for Selected VOCs in Canada**

VOC	Concentration ( $\mu\text{g}/\text{m}^3$ )	Source
MTBE	<30	No Canadian data was available, but concentrations of MTBE in ground-level air at three refineries in the United States were <30 (Environment Canada and Health and Welfare Canada, 1992a)
Propionaldehyde	0.65	Mean annual concentration from 5 NAPS monitors 60418, 50104, 70119, 40203*, 30501 (1998-2003) (Environment Canada, 2008)
<i>m</i> -Tolualdehyde	0.01	Mean annual concentration from 4 NAPS monitors 60418, 50104, 70119, 40203* (1998-2003) (Environment Canada, 2008)
<i>p</i> -Tolualdehyde	0.01	Mean annual concentration from 4 NAPS monitors 60418, 50104, 70119, 40203* (1998-2003) (Environment Canada, 2008)
Toluene	4.75	Mean annual concentration from 5 NAPS monitors 60418, 50104, 70119, 40203*, 30501 (1998-2003) (Environment Canada, 2008)
	3.5 - 44.2	Mean ambient air concentrations in six urban areas and at two rural sites in Canada, measured between 1983 and 1989 (Environment Canada and Health and Welfare Canada, 1992b)
Valeraldehyde	NA	
<i>m</i> - and <i>p</i> -Xylenes	2.23	Mean annual concentration from 5 NAPS monitors 60418, 50104, 70119, 40203*, 30501 (1998-2003) (Environment Canada, 2008)
	1.8 - 18.3	Mean ambient air concentrations at 17 Canadian urban or suburban sites in nine cities during 1988 and 1989 (Environment Canada and Health Canada, 1993)
<i>o</i> -Xylene	0.71	Mean annual concentration from 5 NAPS monitors 60418, 50104, 70119, 40203*, 30501 (1998-2003) (Environment Canada, 2008)
	0.7 - 7.6	Mean ambient air concentrations at 17 Canadian urban or suburban sites in nine cities during 1988 and 1989 (Environment Canada and Health Canada, 1993)

Notes:

NAPS: National Air Pollution Surveillance

\* mean concentration for NAPS monitor 40203 is not a true annual average (ranges between 2 and 9 months).

NA: typical Canadian data not available



**Table 4.4 Carcinogenic and Non-Carcinogenic Dose-Response Values used in the Cantox (1999) Risk Assessment**

VOC	Non-Carcinogenic Dose-Response Value ( $\mu\text{g}/\text{m}^3$ )	Carcinogenic Dose-Response Value ( $\text{mg}/\text{m}^3$ ) <sup>-1</sup>	Source
Acetaldehyde	9		RfC (U.S. EPA, 1999)
		0.0022	URF (U.S. EPA, 1999)
Acrolein	0.02		RfC (U.S. EPA, 1999)
Benzaldehyde	304		RfC estimated from RfD of 100 $\mu\text{g}/\text{kg}\text{-day}$ (U.S. EPA, 1999), multiplied by body weight of 70 kg (Health Canada, 1994) and divided by inhalation rate of 23 $\text{m}^3/\text{day}$ (Health Canada, 1994)
Benzene		0.0078	URF (U.S. EPA, 1999)
Crotonaldehyde		0.62	URF estimated from CSF of 1.9 ( $\text{mg}/\text{kg}\text{-day}$ ) <sup>-1</sup> (U.S. EPA, 1997), divided by body weight of 70 kg (Health Canada, 1994) and multiplied by inhalation rate of 23 $\text{m}^3/\text{day}$ (Health Canada, 1994)
Ethylbenzene	100		RfC (U.S. EPA, 1999)
Formaldehyde	2		RfC (CalEPA, 1997)
		0.013	URF (U.S. EPA, 1999)
Hexanal	0.02		RfC for acrolein (U.S. EPA, 1999) used as surrogate
Isovaleraldehyde	0.02		RfC for acrolein (U.S. EPA, 1999) used as surrogate
MTBE	37		TC (Health Canada, 1996)
Propionaldehyde	0.02		RfC for acrolein (U.S. EPA, 1999) used as surrogate
<i>m</i> -Tolualdehyde	0.02		RfC for acrolein (U.S. EPA, 1999) used as surrogate
<i>p</i> -Tolualdehyde	0.02		RfC for acrolein (U.S. EPA, 1999) used as surrogate
Toluene	3800		TC (Health Canada, 1996)

**Table 4.4 Carcinogenic and Non-Carcinogenic Dose-Response Values used in the Cantox (1999) Risk Assessment**

VOC	Non-Carcinogenic Dose-Response Value ( $\mu\text{g}/\text{m}^3$ )	Carcinogenic Dose-Response Value ( $\text{mg}/\text{m}^3$ ) <sup>-1</sup>	Source
Valeraldehyde	0.02		RfC for acrolein (U.S. EPA, 1999) used as surrogate
<i>m</i> - and <i>p</i> -Xylenes	180		TC (Health Canada, 1996)
<i>o</i> -Xylene	180		TC (Health Canada, 1996)

Notes:

TC: Tolerable Concentration

URF: Unit Risk Factor

RfC: Reference Concentration

RfD: Reference Dose

CSF: Cancer Slope Factor

**Table 4.5 Carcinogenic and Non-Carcinogenic Dose-Response Values used in the Current Risk Assessment**

VOC	Non-Carcinogenic Dose-Response Value ( $\mu\text{g}/\text{m}^3$ )	Carcinogenic Dose-Response Value ( $\text{mg}/\text{m}^3$ ) <sup>-1</sup>	Source	Endpoint
Acetaldehyde	390		TC (Health Canada, 2004c)	nasal effects
		0.00179	URF calculated as 0.05 divided by TC05 of 28 $\text{mg}/\text{m}^3$ (Health Canada, 2004c)	nasal tumours
Acrolein	0.4		TC (Health Canada, 2004c)	nasal effects
Benzaldehyde	447		RfC estimated from RfD of 100 $\mu\text{g}/\text{kg}\text{-day}$ (U.S. EPA, 2008a), multiplied by body weight of 70.7 kg (Health Canada, 2004a) and divided by inhalation rate of 15.8 $\text{m}^3/\text{day}$ (Health Canada, 2004a)	kidney effects
Benzene		0.0033	URF (Health Canada, 2004b)	leukemia
Crotonaldehyde	0.4		TC for acrolein (Health Canada, 2004c) used as surrogate	nasal effects
Ethylbenzene	1000		RfC (U.S. EPA, 2008a)	developmental toxicity
Formaldehyde	50		8-hr residential indoor air quality guideline (Health Canada, 2006)	asthma
Hexanal	390		TC for acetaldehyde (Health Canada, 2004c) used as surrogate	nasal effects
Isovaleraldehyde	390		TC for acetaldehyde (Health Canada, 2004c) used as surrogate	nasal effects
MTBE	37		TC (Health Canada, 2004b)	kidney effects
Propionaldehyde	390		TC for acetaldehyde (Health Canada, 2004c) used as surrogate	nasal effects
<i>m</i> -Tolualdehyde	447		Estimated RfC for benzaldehyde (U.S. EPA, 2008a; Health Canada, 2004a) used as surrogate	kidney effects

**Table 4.5 Carcinogenic and Non-Carcinogenic Dose-Response Values used in the Current Risk Assessment**

VOC	Non-Carcinogenic Dose-Response Value ( $\mu\text{g}/\text{m}^3$ )	Carcinogenic Dose-Response Value ( $\text{mg}/\text{m}^3$ ) <sup>-1</sup>	Source	Endpoint
<i>p</i> -Tolualdehyde	447		Estimated RfC for benzaldehyde (U.S. EPA, 2008a; Health Canada, 2004a) used as surrogate	kidney effects
Toluene	3800		TC (Health Canada, 2004b)	liver and kidney effects
Valeraldehyde	390		TC for acetaldehyde (Health Canada, 2004c) used as surrogate	nasal effects
<i>m</i> - and <i>p</i> -Xylenes	180		TC (Health Canada, 2004b)	liver effects
<i>o</i> -Xylene	180		TC (Health Canada, 2004b)	liver effects

Notes:

TC: Tolerable Concentration

TC05: Tumorigenic Concentration (5%)

URF: Unit Risk

Factor

RfC: Reference Concentration

RfD: Reference Dose

If no dose-response information could be identified in any Health Canada source, then current information was obtained from U.S. EPA, per Health Canada (2004a) recommendations. It was determined that U.S. EPA dose-response values for ethylbenzene and benzaldehyde that were used in Cantox (1999) were still valid for use in the current risk assessment. Note that Cantox (1999) estimated the inhalation dose-response value for benzaldehyde based on U.S. EPA oral dose-response information in conjunction with typical Canadian adult body weight and inhalation rate values obtained from Health Canada (1994); the current risk assessment used the same approach with the same U.S. EPA oral dose-response information, but used up-to-date typical Canadian adult body weight and inhalation rate values obtained from Health Canada (2004a). Crotonaldehyde was formerly assessed by Cantox (1999) using a U.S. EPA carcinogenic dose-response value obtained from HEAST (U.S. EPA, 1997). However, a review of HEAST indicates that the value in this guidance document was actually obtained from the U.S. EPA IRIS Program at the time. Given that U.S. EPA (2008a) currently states “a quantitative estimate of carcinogenic risk from inhalation exposure to crotonaldehyde has not been assessed under the IRIS Program”, a carcinogenic dose-response value for crotonaldehyde was not used in the current risk assessment.

If no dose-response information could be identified in any Health Canada or U.S. EPA source, then the information was searched for, in order of preference, in documents published by the World Health Organization (WHO), the Netherlands National Institute of Public Health and the Environment (RIVM), and the U.S. Agency for Toxic Substances and Disease Registry (ATSDR), per Health Canada (2004a) recommendations. No dose-response information was identified in any of these sources for crotonaldehyde, *m*-tolualdehyde, *p*-tolualdehyde, propionaldehyde, valeraldehyde, isovaleraldehyde, or hexanal. Therefore, similar to Cantox (1999), surrogate dose-response values were used for each of these VOCs. However, unlike Cantox (1999), which used the same inappropriately conservative surrogate (acrolein) for each VOC that lacked a dose-response value, the current risk assessment used a much more scientifically defensible approach by choosing individual surrogates for each of the above-listed VOCs based on structural (and thus chemical and toxicological) similarities. Upon review, it was determined that: acrolein was most appropriate to use as a surrogate for crotonaldehyde (both of these aldehydes contain a carbon-carbon double bond); benzaldehyde was most appropriate to use as a surrogate for *m*-tolualdehyde and *p*-tolualdehyde (each of these aldehydes contains an aromatic ring); and acetaldehyde was most appropriate to use as a surrogate for propionaldehyde, valeraldehyde, isovaleraldehyde, and hexanal (the carbon chain in each of these aldehydes is saturated).

U.S. EPA Acute Exposure Guideline Levels (AEGs), which are used to assess the risk resulting from once-in-a-lifetime, or rare, exposure to airborne chemicals (U.S. EPA, 2008b), provide additional evidence that the choice of surrogates in the current risk assessment is superior to the approach used by Cantox (1999). AEGs for acrolein and crotonaldehyde are very similar (0.030 ppm and 0.19 ppm, respectively), and they are much lower than the AEGs that exist for saturated aldehydes (AEGs for acetaldehyde and propionaldehyde are each 45 ppm).

#### 4.4 Risk Characterization

Risk characterization results for Champlain Heights and for Forest Hills are presented in Tables 4.6 and 4.7, respectively.

Potential non-carcinogenic risks due to chronic inhalation of a VOC were quantitatively assessed by calculating a Hazard Quotient (HQ), which is calculated as:

$$\text{HQ} = \frac{\text{Air Concentration} \left( \frac{\mu\text{g}}{\text{m}^3} \right) \times \text{fraction of time exposed} \left( \frac{1}{1} \right)}{\text{Non - Carcinogenic Dose - Response Value} \left( \frac{\mu\text{g}}{\text{m}^3} \right)}$$

The HQs for VOCs that have dose-response values based on similar toxicological endpoints (shown in Table 4.5) were added together to calculate a total Hazard Index (HI) for each endpoint. According to Atlantic Risk-Based Corrective Action guidance (Atlantic RBCA, 2007), non-carcinogenic risks are considered acceptable if HQs and HIs do not exceed 1.0. This target risk criterion was also used by Cantox (1999). As shown in Tables 4.6 and 4.7, each of the individual HQs, and each of the endpoint-specific HIs, are much less than 1.0.

Potential carcinogenic risks due to chronic inhalation of a VOC were quantitatively assessed by calculating the Incremental Lifetime Cancer Risk, which is calculated as:

$$\begin{aligned} \text{ILCR} = & \text{Air Concentration} \left( \frac{\text{mg}}{\text{m}^3} \right) \times \text{fraction of time exposed} \left( \frac{55}{75} \right) \\ & \times \text{Carcinogenic Dose - Response Value} \left( \frac{\text{mg}}{\text{m}^3} \right)^{-1} \end{aligned}$$

ILCRs were added together to calculate a total ILCR due to inhalation exposure to carcinogenic VOCs. According to Atlantic Risk-Based Corrective Action guidance (Atlantic RBCA, 2007), carcinogenic risks are considered acceptable if ILCRs do not exceed  $1 \times 10^{-5}$ . This target risk criterion was also used by Cantox (1999). As shown in Tables 4.6 and 4.7, each of the individual ILCRs, and the total ILCRs, are less than this criterion.

#### 4.5 Conclusion

AMEC has conducted a human health risk assessment of potential inhalation risks from VOCs in the vicinity of the IOL Refinery Upgrade in Saint John, NB, to determine if the levels of VOCs in Saint John ambient air pose undue chronic risks to residents of Saint John. The risk assessment cannot determine the chronic risks from VOCs caused by the IOL Refinery Upgrade, because it used exposure data from monitors that measure VOCs emitted from all sources in the vicinity of the Site. It is therefore impossible for this risk assessment to make any distinction between risks from VOCs emitted from the IOL Refinery, and risks from VOCs emitted from other sources in the area. Given that this highly conservative scenario has determined that residents living year-round in the areas of Champlain Heights and Forest Hills in Saint John, NB would not experience unacceptable non-carcinogenic or carcinogenic risks due to chronic VOC exposure, it can confidently be concluded that chronic risks due solely to VOCs emitted from the IOL Refinery upgrade would also be acceptable.

**Table 4.6 Carcinogenic and Non-Carcinogenic Risks due to Chronic Inhalation of VOCs at Champlain Heights, Saint John, NB (2000-2006)**

VOC	Hazard Quotient	Incremental Lifetime Cancer Risk
Acetaldehyde (a) (f)	5E-03	3E-06
Acrolein (a)	0.2	
Benzaldehyde (b)	4E-04	
Benzene (f)		4E-06
Crotonaldehyde (a)	0.1	
Ethylbenzene (c)	1E-03	
Formaldehyde (d)	0.06	
Hexanal (a)	2E-03	
Isovaleraldehyde (a)	3E-04	
MTBE (b)	0.4	
Propionaldehyde (a)	1E-03	
<i>m</i> -Tolualdehyde (b)	9E-06	
<i>p</i> -Tolualdehyde (b)	4E-06	
Toluene (b) (e)	1E-03	
Valeraldehyde (a)	2E-03	
<i>m</i> - and <i>p</i> -Xylenes (e)	0.02	
<i>o</i> -Xylene (e)	5E-03	
(a) Hazard Index for Nasal Effects	0.3	
(b) Hazard Index for Kidney Effects	0.4	
(c) Hazard Index for Developmental Effects	1E-03	
(d) Hazard Index for Asthma Effects	0.06	
(e) Hazard Index for Liver Effects	0.02	
(f) Total Incremental Lifetime Cancer Risk		7E-06

**Table 4.7 Carcinogenic and Non-Carcinogenic Risks due to Chronic Inhalation of VOCs at Forest Hills, Saint John, NB (2000-2006)**

VOC	Hazard Quotient	Incremental Lifetime Cancer Risk
Acetaldehyde (a) (f)	4E-03	1.85E-06
Acrolein (a)	0.1	
Benzaldehyde (b)	2E-04	
Benzene (f)		2.41E-06
Crotonaldehyde (a)	0.2	
Ethylbenzene (c)	4E-04	
Formaldehyde (d)	0.04	
Hexanal (a)	4E-04	
Isovaleraldehyde (a)	2E-04	
MTBE (b)	0.2	
Propionaldehyde (a)	9E-04	
<i>m</i> -Tolualdehyde (b)	5E-06	
<i>p</i> -Tolualdehyde (b)	1E-06	
Toluene (b) (e)	9E-04	
Valeraldehyde (a)	3E-04	
<i>m</i> - and <i>p</i> -Xylenes (e)	5E-03	
<i>o</i> -Xylene (e)	2E-03	
(a) Hazard Index for Nasal Effects	0.3	
(b) Hazard Index for Kidney Effects	0.2	
(c) Hazard Index for Developmental Effects	4E-04	
(d) Hazard Index for Asthma Effects	0.04	
(e) Hazard Index for Liver Effects	0.01	
(f) Total Incremental Lifetime Cancer Risk		4E-06



## 5.0 OVERALL CONCLUSIONS

Based on the information obtained and analyzed in conjunction with this study, AMEC has arrived at the following conclusions:

1. Emissions at the refinery have, for the most part, been in keeping with, or lower than the values predicted.
2. Ambient air quality, as measured at consistent site locations both pre- and post-upgrade have not shown significant changes/trends, either in average values, or in numbers of exceedences of Provincial Objectives
3. The de-novo risk assessment conducted for VOC's and an inhalation pathway confirmed that the residents living year-round in the areas of Champlain Heights and Forest Hills in Saint John, NB would not experience unacceptable non-carcinogenic or carcinogenic risks due to chronic VOC exposure from all sources in the area.
4. The risk of exposure to MTBE which was assessed as part of the 1999 Human Health Risk Assessment associated with the refinery upgrade is no longer relevant as MTBE is reportedly no longer used at the refinery.
5. Based on the findings of the de-novo risk assessment of VOCs from all sources, it can confidently be concluded that chronic risks due solely to VOCs emitted from the IOL refinery upgrade will also be acceptable.
6. The IOL communication program is adequate and supported by the overall positive responses received from individuals interviewed in conjunction with this study.

AMEC's overall conclusion is that the predictions of air quality changes which the PHRA depended upon were generally conservative in nature, and thus were suitable for use in Cantox's assessment of health risk. While the evidence with regard to odours and noise is much less detailed, there is sufficient data indicating that there is nothing to suggest health impacts from these parameters as a result of the upgrade.

## **6.0 CLOSING**

This report was prepared for the exclusive use of the New Brunswick Department of Health, for specific application to the subject Site. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of the third party. Should additional parties require reliance on this report, written authorization from AMEC will be required. With respect to third parties, AMEC has no liability or responsibility for losses of any kind whatsoever, including direct or consequential financial effects on transactions or property values, or requirements for follow-up actions and costs.

The report is based on data and information provided to AMEC during the Validation Study conducted by AMEC. It is based solely on the information provided which is assumed to be valid. Except as otherwise may be specified, AMEC disclaims any obligation to update this report for events taking place, or with respect to information that becomes available to AMEC after the time during which AMEC conducted the Validation Study.

In evaluating the Public Health Risk Assessment, AMEC has relied in good faith on information provided by other individuals and organizations noted in this report. AMEC has assumed that the information provided is factual and accurate. In addition, the findings in this report are based, to a large degree, upon information provided by the current owner/occupant. AMEC accepts no responsibility for any deficiency, misstatement or inaccuracy contained in this report as a result of omissions, misinterpretations or fraudulent acts of persons interviewed or contacted.

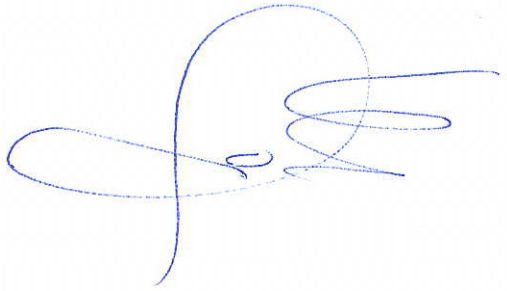
AMEC makes no other representations whatsoever, including those concerning the legal significance of its findings, or as to other legal matters touched on in this report, including, but not limited to, ownership of any property, or the application of any law to the facts set forth herein. With respect to regulatory compliance issues, regulatory statutes are subject to interpretation and change. Such interpretations and regulatory changes should be reviewed with legal counsel.

This Report is also subject to the further Standard Limitations contained in Appendix G.

The validation of the IOL Public Health Risk Assessment and this report were prepared by John Pugh, P.Eng., David Besner, PhD., P.Eng., Jacques Paynter, P.Eng., Brian Magee, PhD., and Michelle Doherty, P.Eng. and reviewed by Nabil Elhadi, PhD., P.Eng.

Prepared by:

Reviewed by:



---

John Pugh, M.Eng., P.Eng.  
Project Manager

---

Nabil Elhadi, Ph.D., P.Eng.  
Senior Reviewer

## REFERENCES

- Atlantic RBCA (Risk-Based Corrective Action). 2007. User Guidance. March 2007. [http://www.atlanticrbc.ca/data\\_eng/arbca\\_user\\_guide\\_v2\\_update\\_03-07\\_full.pdf](http://www.atlanticrbc.ca/data_eng/arbca_user_guide_v2_update_03-07_full.pdf). Accessed 10 January 2008.
- CalEPA (California Environmental Protection Agency). 1997. Air Toxics Hot Spots Program Risk Assessment Guidelines. As cited (as *OEHHA, 1997*) in: Cantox (1999).
- Canadian Standards Association (CSA) Z764-96 (Reaffirmed 2007), *A Guide to Public Involvement*.
- Cantox (Cantox Environmental Inc). 1999. Public Health Risk Assessment of the Irving Oil Refinery Upgrade, Final Technical Document. December 1999.
- Environment Canada and Health and Welfare Canada. 1992a. Priority Substances List Assessment Report: Methyl tertiary-Butyl Ether. ISBN 0-662-19941-3.
- Environment Canada and Health and Welfare Canada. 1992b. Priority Substances List Assessment Report: Toluene. ISBN 0-662-19950-2.
- Environment Canada and Health and Welfare Canada. 1993. Priority Substances List Assessment Report: Benzene. ISBN 0-662-20434-4.
- Environment Canada and Health Canada. 1993. Priority Substances List Assessment Report: Xylenes. ISBN 0-662-21040-9.
- Environment Canada and Health Canada. 2000a. Priority Substances List Assessment Report: Acetaldehyde. ISBN 0-662-28654-5.
- Environment Canada and Health Canada. 2000b. Priority Substances List Assessment Report: Acrolein. ISBN 0-662-28575-1.
- Environment Canada. 2008. NAPS (National Air Pollution Surveillance) Network. <http://www.etc-cte.ec.gc.ca/napsstations/Default.aspx>. Accessed 16 January 2008.
- Government of Canada, Department of Justice 1992, *Canadian Environmental Assessment Act*.
- Health Canada 2004, *Canadian Handbook on Health Impacts Assessment – Volume 4: Health Impacts by Industry Sector*. ISBN: 0-662-38011-8.
- Health Canada. 1994. Human Health Risk Assessment for Priority Substances. ISBN 0-662-22126-5. As cited in: Cantox (1999).
- Health Canada. 1996. Health-Based Tolerable Daily Intakes/Concentrations and Tumorigenic Doses/Concentrations for Priority Substances. ISBN 0-662-24858-9.

- Health Canada. 2004a. Federal Contaminated Site Risk Assessment in Canada, Part I: Guidance on Human Health Preliminary Quantitative Risk Assessment (PQRA). ISBN 0-662-38244-7.
- Health Canada. 2004b. Federal Contaminated Site Risk Assessment in Canada, Part II: Health Canada Toxicological Reference Values (TRVs). ISBN 0-662-38245-5.
- Health Canada. 2004c. Health-Based Guidance Values for Substances on the Second Priority Substances List. ISBN 0-662-37275-1.
- Health Canada. 2006. Residential Indoor Air Quality Guideline: Formaldehyde. ISBN: 0-662-42661-4.
- IOL Refinery Upgrade PHRA Validation and Follow-up, Saint John Oil Refinery, Saint John, New Brunswick, MGI Limited, Feb., 2005.
- Irving Oil Limited, 2000 *Community Awareness, newsletters*.
- Irving Oil Limited, 2002 – 2007 *Community Connections, newsletters*.
- Irving Oil Limited, 2007 *Neighbourly News, newsletter*.
- National Air Pollution Surveillance Summaries (various years), Environmental Protection Series, Environment Canada.
- NBENV April 2005, *A Guide to Environmental Impact Assessment in New Brunswick*.
- New Brunswick Air Quality Monitoring Results (various years), New Brunswick Department of the Environment.
- Public Health Risk Assessment of the Irving Oil Refinery Upgrade, Cantox Environmental Inc., December, 1999.
- U.S. EPA (Environmental Protection Agency). 1997. HEAST (Health Effects Assessment Summary Tables). EPA-540-R-97-036. *As cited in: Cantox (1999)*.
- U.S. EPA (Environmental Protection Agency). 1999. IRIS (Integrated Risk Information System). *As cited in: Cantox (1999)*.
- U.S. EPA (Environmental Protection Agency). 2008a. IRIS (Integrated Risk Information System) <http://cfpub.epa.gov/ncea/iris/index.cfm>. Accessed 10 January 2008.
- U.S. EPA (Environmental Protection Agency). 2008b. AEGL (Acute Exposure Guideline Levels) <http://www.epa.gov/oppt/aegl/>. Accessed 10 January 2008.

**Appendix A**  
**Methodology Report**

October 17, 2007

TE71022

New Brunswick Department of Environment  
Marysville Place  
P.O. Box 6000  
Fredericton NB  
E3B 5H1

Attention: Mr. Mike Cormier

Dear Mr. Cormier:

**Re: Methods Report for Validation of the Public Health Risk Assessment for the Irving Oil Refinery Upgrade**

**Introduction**

This report outlines the methodologies to be employed during the validation of the Public Health Risk Assessment (PHRA) for the Irving Oil Refinery in Saint John, New Brunswick. The methodology has been broken down into a total of 8 tasks as detailed below.

**Task 1 - Project Initiation Meeting**

AMEC met with the Client/Steering Committee in order to review its proposal and help ensure that all items of concern to the Client have been covered in the Workplan, and that there are no additional task items, or issues regarding particular methodologies. In particular, the discussion will help to ensure that the Approval (I-4904) requirements are addressed.

The kick off meeting was conducted on February 22, 2007 where the senior members of the study team met with the members of the steering committee and reviewed the project scope and discussed various aspects of the project. During the course of the meeting, it was first agreed that it would be worthwhile to provide a methodology, or methods scoping document for the communications evaluation aspect of the project. It was later determined that it would be beneficial to provide a document that outlined how the entire project scope would be addressed. This methods report document has been prepared to fulfill the request of the steering committee to provide additional detail on how the work will be completed to fulfill the project mandate.

**Task 2 - Obtain Data from NBENV and IOL and Conduct Preliminary Review**

AMEC will review the relevant files held by both the New Brunswick Department of Environment (NBENV) and the Department of Health & Wellness (DH&W) in order to extract information with respect to:

- Emissions data, including stack tests reported as well as data from continuous emission monitors (CEMS);

TE71022-Methods Report-Oct17\_07\_bm-md-jp.doc

AMEC Earth & Environmental,  
a division of AMEC Americas Limited  
25 Waggoners Lane  
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- Ambient air quality data as reported by both Government and industrial networks in the vicinity of IOL;
- Ambient air quality data from specific studies in the vicinity of IOL;
- Data with respect to ambient noise studies;
- Incident reports with respect to IOL operations – While AMEC appreciates that incident reports are only available in hard copy format, at least a sampling of reports is considered necessary to evaluate response/communication;
- Public complaints with respect to air pollution, noise pollution and light pollution;
- Relevant reports from Environment and Health officials; and
- Odour Studies, if available.

Additional relevant supplemental information will also be provided by IOL to assist in the completion of the validation study.

Collection of data will be limited to that which is reasonably available as per the RFP, and does not include further data collection and assembly. Should the validation study indicate that the available data is insufficient to allow one or more validation steps, AMEC will recommend appropriate method(s) for obtaining the necessary data.

### **Task 3 - Review Relevant Files with IOL Staff**

AMEC will review relevant files with IOL staff at the refinery in order to obtain further information, which may be available with regard to:

- Emissions data;
- Upset conditions/frequencies/characteristics;
- Modelling studies;
- Public complaint logs;
- Communications plan(s) and implementation steps;
- Available communication documents including but not limited to newsletters, minutes of Liaison committee meetings, open house documentation, letters to community members, etc.; and
- Current and expired Approvals to Operate and Approvals to Construct.

### **Task 4 - Review the Ambient and Emissions Data**

AMEC will review the ambient data as well as the emissions and source testing data, and will confirm that the N.B. Department of the Environment is satisfied with the validity of the data. In addition, the data will be evaluated to ensure that all of the validation requirements are responded to. Should there be a discrepancy, AMEC will contact NBENV, DH&W and IOL to ascertain whether the required data is available. Should the necessary data not be available, AMEC will recommend to the Client a possible method(s) for satisfying the Validation requirements.

A number of reports and other data have been provided to AMEC for review thus far, including:



- Ambient air data from 1996 to the present at 11 different monitoring stations. The ambient air quality data includes concentrations of SO<sub>2</sub>, NO<sub>2</sub>, NO, NO<sub>x</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, total reduced sulphur (TRS), and O<sub>3</sub> (at one station only) on a daily basis.
- An ambient air monitoring assessment completed by Conestoga-Rovers & Associates (CRA) in 2005.
- Odour data from 1997 to 2002.
- Volatile Organic Carbons (VOCs), polycyclic aromatic hydrocarbons (PAHs), polychlorinated dibenzo-p-dioxins and-furans (PCDD/F), and metals data from 1995 to 2006.
- A PM Dispersion Study completed by Stantec Consulting Ltd. (Stantec) in 1999.
- A SO<sub>2</sub> Dispersion Study completed by Stantec in 1999.
- Ambient noise data (1998 to 2007, no data from 2003-2004).
- The PHRA (Cantox).

Data are presented in the PHRA for several constituent groupings, such as the anthracene group, the fluorene group, the naphthalene group, and the benzo[a]pyrene group. AMEC will need to consult Appendix G of the PHRA and convert recent ambient monitoring data for individual constituent into these constituent groups before they can be compared to any values reported in the PHRA.

AMEC will compare late 1990's ambient air quality measurements with recent ambient measurements. Because current measurements reflect the effects of all sources near and far and not just the refinery expansion, these pre- and post-expansion comparisons do not directly measure the impacts of the refinery expansion. However, such comparisons will provide interesting perspective on the recent air quality in the area in the years after the refinery expansion.

AMEC will compare predicted ambient levels with recent ambient measurements. Cantox estimated ambient concentrations for selected constituents at Forest Hills, Champlain Heights, and Silver Falls for the refinery after expansion plus several other selected sources. Comparing these predictions to recent ambient concentrations of selected constituents for selected averaging times and statistical summaries to predictions can be performed for about 20 constituent/averaging time/statistic at the 3 locations, allowing for 60 comparisons to be made.

Note that risk assessment calculations were performed for VOCs, but the Cantox document does not present the predicted ambient concentrations in the report. Thus, AMEC cannot make any comparisons to predicted VOC levels.

In addition, measured stack emission levels will be compared to the estimated emissions levels assumed by CANTOX in their PHRA as well as against limitations cited in IOL's Air Quality Approval.

#### **Task 5 - Preparation of Methods Report and Submit for Review by Steering Committee**

At the request of the Steering Committee during the kick off meeting, conducted on February 22, 200, AMEC has prepared this Methods Report and submitted it for review by the Steering

Committee on April 27, 2007. This methods report outlines the methodology for completion of Tasks 1 – 9, in order to fulfill the project mandate and incorporates comments received from the Steering Committee after review of the Draft Methods Report.

### **Task 6 - Review Public Concerns and Communications**

Three of the Validation Steps, outlined in the Cantox Report, center around communication, particularly with the public as it relates to training, new technologies, upsets and accidents, emergency response programs, complaint resolution mechanisms and the implementation of a Public Health Management Plan. AMEC will review the IOL and NBENV files for information documenting how these concerns were addressed and communicated to the public, where 'concern' can be defined as: *something that interests a stakeholder because it is important or affects them or a stated actual or perceived problem, raised by an individual or stakeholder that is either strategic or local.* AMEC understands that ENV occurrence files do not include comments on how IOL communicated information regarding incidents to the public, however AMEC would like to review a sample of occurrence files in addition to a sample of electronic complaint files from NBENV.

In general, records and other objective evidence arising from Community Liaison Committees, Newsletters, Notification letters, Open Houses and other documented programs carried out by IOL will be assessed. The review findings will be evaluated from a communications perspective in an effort to determine if public concerns surrounding the Validation Steps are adequate. Should the necessary data not be available, AMEC will develop recommendations which outline possible methods to satisfy the Validation requirements which will be presented to the Client. The methodology for each of the relevant validations steps are detailed below.

**Validation Step:** *"The IOL program in place for training staff and bringing the new technologies in the upgrade on line should be communicated with the public to address concerns regarding possible failures, and resulting impacts of various kinds on the community should bringing the upgrade on-line fail."*

The goal of the above validation step is to ensure that nearby residents are kept abreast of the new technologies that may have an impact on their community. The various tools employed by IOL with respect to the validation step included:

- Distribution of Community Awareness Newsletters during the upgrade (2000). This included 10 newsletters throughout the year, distributed to households surrounding the refinery. It details the status of upgrades and new technologies. It also gives a contact name and number so that the public can call for questions.
- Distribution of the Community Connections Newsletter from 2002 to the present. This included distributed to approximately 6000 households surrounding the refinery and contains information to keep the community informed of new upgrades, processes, enhancements, etc.
- Open Houses. There have been reportedly about 10 open houses in the last six years.
- Refinery Education Kit. IOL developed the education kit to help teachers explain to their students the types of products that are produced at the refinery, how they are made, and

why it is essential that the refinery maintain a flaring system. There were six classroom kits given to Champlain Elementary School.

Newsletters and any available documentation on the open houses, including surveys/questionnaires, will be reviewed to assess the effectiveness of these methods in keeping the public informed. The documents will be reviewed for readability and content. The review will attempt to answer a number of questions including:

- What is/was the distribution for the newsletters? What is the radius from the refinery that is associated with households "surrounding" the refinery? Is the distribution adequate?
- Are there minutes or records documenting the Open Houses? How many people attended? What is the format of the Open Houses?
- Why were there so little responses to surveys/questionnaires? What is the process for the surveys? Is this process adequate for getting responses?

**Validation Step:** *"Due to the lack of qualitative data related to upset the accident scenarios, and the concerns raised by the public in this area, an assessment of these issues should be conducted."*

The goal of the above validation step is to determine how upsets are dealt with in terms of informing the public and responding to concerns. There are a number of venues that have been set up to accommodate the concerns of the community. The two main methods include:

- Dedicated Phone Line - IOL has set up a telephone number in which citizens can call with questions or complaints. These calls are recorded and summarized for NBENV submission on a monthly basis. The caller is then provided with answers and other information where applicable.
- The Community Liaison Committee (CLC) was set up by IOL in 2000 and includes a number of community members. Its mandate includes assessing ways for the Irving Oil Refinery to continue to be a good neighbour and whose membership will contribute to, and benefit from, a regular information exchange, assessing community issues associated with the Saint John refinery and making recommendations to Irving Oil for consideration, and communicating with the community. The CLC meets regularly where issues and complaints are discussed and resolved where possible. There were 10 meetings in 2000, 1 in 2003, and 4 in 2004, 2005, and 2006. Announcements have been made in newsletters inviting community members to join the group and IOL has made calls to other groups to invite representatives to join. Committee contact names and numbers are published in the Community Connections newsletter for the community to use.
- Newsletters - Answer to questions or concerns are often discussed in articles in the newsletters which are distributed to the community.
- Open Houses - There have also been open houses in which public concerns have been discussed.

A review of the complaints log will be made, a review of the CLC meeting minutes. Interviews, in the form of a focus group, rather than on an individual basis, with CLC members, former members, and possibly people who have been invited to be members but who have turned the offer down will be completed. Interviews will also be completed with residents who have called the complaints line, in the form of a focus group (approximately 10 people). The review and interviews will be assessed in an attempt to answer a number of questions including the following questions:

- CLC - What methods are being used to recruit members? Are the methods adequate? How has attendance at the meetings been through the years? Are meeting times convenient? Are members happy/unhappy with meetings, is action being taken, etc.?
- Phone Line - How effective is call response satisfaction? If no answer, how quickly does an IOL representative get back to the caller after they have left a message? Are callers happy with the responses they have received from IOL. Did the problem get solved?

**Validation Step:** *"IOL should focus on improved communication with the public regarding their maintenance, and resulting emergency-response programs. Lack of information about the operation of the refinery promote feelings and concerns by the public related to lack of control over their lives, and fears about the operation of the refinery next to their neighbourhoods. These issues raise concerns of psychosocial effects on their health that then foster distrust and complaints about the operation of the refinery. The implementation of a Public Health Management Program, as discussed below, would provide a means for improved communication with the public."*

The goal of the above validation step is to keep the public informed about maintenance and emergency-response programs in order to curb public fears surrounding the refinery operations. There are a number of methods used by IOL to keep the public informed, including:

- Letters and newsletters - The community is made aware of any scheduled maintenance operation, or other events at the refinery that may create dust, noise, or odour in letters that are mailed out the households. The newsletters also provide information on processes, upgrades, etc.
- Open Houses - source of information on maintenance and emergency response.

To assess the effectiveness of these methods, a review of letters and newsletters for content and readability will be completed as well as a review of any open house material for content and readability where applicable. The review and assessment will attempt to answer a number of questions including the following:

- What is the distribution of the neighbour letters? Is it dependent on the content of the letter? Is the distribution adequate to cover the necessary area?
- Why has the attendance at open houses been low? How are open houses advertised? Does the community not care anymore? Is the content and information at the open houses effective for keeping the public aware of maintenance and emergency response programs?

The above noted validation step refers to a Public Health Management Program that should be implemented. It is our understanding that a Saint John specific Public Health Management Program was not implemented.

### ***Extra Communication Activities***

In addition to the communication efforts that have been described above, IOL, of its own accord, has undertaken a number of extra activities that were intended as good corporate citizenship. For instance, where there may have been excessive dust after an event, IOL has offered to clean household windows in areas that were affected. Employees have also participated in a neighbourhood clean up project around the community. IOL also releases several media articles regarding the refinery and Irving in general.

Any additional communication information will be reviewed to see if any may be relevant to the validation steps described above.

### **Task 7 - Evaluation of the Overall Findings and Presentation of Preliminary Findings**

Once Workplan Tasks 1 through 6 has been completed, the Project Team will conduct an evaluation of the overall findings of the Validation Assessment and identify areas where any information gaps may be present. A brief overview of the findings will be prepared and a meeting convened with the Steering Committee. This meeting will afford an opportunity to openly discuss the progress of the Project, findings to-date and present and discuss any preliminary recommendations to address information gaps which may have been identified during the Assessment. During the meeting, preliminary options surrounding the most appropriate method(s) to disseminate the Study findings to the public and any interest groups will be discussed.

### **Task 8 - Gather Additional Data to Address Gaps**

Based on the outcome of the presentation outlined in Task 7, there may be a requirement to gather additional data to address gaps that were identified during the assessment process. This may require further meetings with government or IOL representatives to obtain the information necessary to assess data gaps. If it is determined that the required information is not available or does not exist, a meeting with the Steering Committee will be convened to determine an appropriate course of action. Finally, a *de novo* risk assessment will be performed for VOCs. This risk assessment will evaluate chronic risks posed by the inhalation of VOCs for which post-expansion ambient data are available.

### **Task 9 -Preparation of Draft and Final Reports**

Once the final assessment of the available information and any new data collected to address any potential gaps has been completed, a concise draft report detailing the Validation Study findings will be produced for review and comment by the various members of the steering Committee. During the development of the draft report, the Project Team will take into consideration the communication options discussed with the Steering Committee and the report will attempt to conform to the agreed format in an effort to effectively communicate the study findings to the various stakeholder groups. Following an agreed to review period, any

comments will be discussed and the final report will be produced. The required number of copies of the final report will be provided in both French and English and made available to the steering committee for final distribution in keeping with the Terms of Reference. While Project Team members will be available to assist with any public consultation and communication needs, all control of the communication of the report findings will remain with the Client. The Project Team will treat all information obtained, reviewed or developed for the completion of the Study as Client confidential.

I hope this information meets your current needs. Feel free to contact the undersigned with any questions or concerns.

Regards,

A handwritten signature in blue ink, appearing to read "John Pugh".

John Pugh, P.Eng  
Project Manager  
Direct Tel.: 1+ (506) 458-1000  
Direct Fax: 1+ (506) 450-0829  
E-mail:john.pugh@amec.com

MD/cjy

**Appendix B**  
**Certificate of Determination**

**CERTIFICATE OF DETERMINATION  
CERTIFICAT DE LA DÉCISION**

**NEW BRUNSWICK ENVIRONMENTAL IMPACT ASSESSMENT REGULATION  
RÈGLEMENT SUR L'ÉTUDE D'IMPACT ENVIRONNEMENTAL AU NOUVEAU-BRUNSWICK**

File Number/Numéro du dossier: 4561-3-620

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This Certificate of Determination to **PROCEED** is hereby issued to the following proponent:  
Ce Certificat de la décision pour **PROCÉDER** est accordé au promoteur suivant:

**IRVING OIL LIMITED, REFINERY DIVISION**

Description of undertaking:  
Description de l'ouvrage:

**PETROLEUM REFINERY UPGRADE**

Location of undertaking and PID:  
Emplacement de l'ouvrage et NID:

**00322354**


Address of proponent :  
Adresse postale du promoteur:

**LOCH LOMAOND RAOD, SAINT JOHN  
P.O. BOX 1260  
SAINT JOHN, NEW BRUNSWICK  
E2L 4H6**

Conditions of approval :  
Conditions d'agrément :

**AS PER THE ATTACHED DOCUMENT "A"  
DOCUMENT 'A' CI-JOINT**

Date of issue : **13 August 1998**  
Date d'émission : **Le 13 août 1998**

Recommended by :   
Recommandé par : \_\_\_\_\_  
Director, Assessment and Approvals  
Directeur, Évaluation et Agréments

Determination by :   
Décision par : \_\_\_\_\_  
Minister of the Environment  
Ministre de l'Environnement



DOCUMENT "A"MINISTER'S DETERMINATION  
File Number: 4561-3-620  
CONDITIONS OF APPROVAL

- 
1. In accordance with section 6(6) of the Regulation, it has been determined that the undertaking may proceed following approval under all other applicable acts and regulations.
  2. Irving Oil Limited shall establish a Community Environmental Liaison Committee for the construction and operation of the facility. Membership, terms of reference and mandate of the committee shall be determined in consultation with the Department of the Environment. The committee shall be established by November 30, 1998.
  3. The proponent must submit a plan, for approval, to the Director, Assessment and Approvals Branch, by December 31, 2001 for the cessation of the release of effluent to Little River.
  4. The proponent must install a Continuous Emission Monitoring (CEM) system consistent with the Environment Canada publication (EPS 1/PG/7) "Protocols and Performance Specification of Continuous Monitoring of Gaseous Emissions from Thermal Power Generations" Environmental Protection Series, September 1993, to monitor the emissions of sulphur dioxide (SO<sub>2</sub>) and nitrogen oxides (NO<sub>x</sub>) from all new stacks, except the wet scrubber. This system must be fully operational upon initial startup of the upgrade, and certified one-year there after.
  5. The proponent must conduct a feasibility study for the installation of a Continuous Emission Monitoring (CEM) system on the wet scrubber unit. The study must be completed and a report submitted to the Director of the Assessment and Approvals Branch, Department of the Environment no later than 6 months from the date of this approval.
  6. The proponent must participate in a public health risk assessment in relation to the refinery operation undertaken by the Department of Health and Community Services and be completed by September 30, 1999. The cost of the study will be funded by the Department of Health and Community Services and fully recovered from the proponent.
  7. Once the selected scrubber technology has been established, the proponent must provide design efficiency records, identify scrubbing agents and their waste disposal requirements to the Department of the Environment prior to obtaining the Certificate of Approval to Construct the unit.
  8. The proponent must install and operate two (2) high volume samplers for monitoring of particulate matter from emitting facility stacks. The location of the monitors must be approved by the Director of the Assessment and Approvals Branch of the Department of the Environment prior to installation.
  9. The proponent is presently undertaking an air quality-modeling program for SO<sub>2</sub> and particulate matter. All results from the study must be submitted to the Director of Assessment and Approvals Branch, Department of the Environment upon completion. The air quality-modeling program will be used to determine the potential need for additional monitoring stations in the Saint John area.



10. The noise levels between the hours of 9 p.m. and 7 a.m. originating from the construction activities shall not exceed those levels presently experienced at the nearest residential property boundary during the same hours.
11. The proponent must re-examine the number, the location and the air quality parameters monitored by the present monitoring stations and determine their effectiveness. A report must be submitted to the Director of Assessment and Approvals Branch, Department of the Environment six (6) months following start up of the new equipment.



~~AG~~  
~~AG~~  
~~AG~~  
file

New  
Nouveau  Brunswick

March 14, 2000  
File 4561-3-620

Mr. Robert Chalmers  
General Manager  
IRVING OIL LIMITED  
Refining Division  
P.O. Box 1260  
Saint John, NB.  
E2L 4H6

Dear Mr. Chalmers:

RE: EIA Determination 4561-3-620 - The Irving Oil Refinery Upgrade Project - IRVING OIL LIMITED

This letter is to advise you that condition #8 of the Environmental Impact Assessment Determination 4561-3-620 has been amended. The amended condition reads as follows:

Condition #8 - The proponent must install and operate one (1) particulate matter ambient monitor capable of continuous recording of hourly average concentrations of PM2.5 with the option of recording 30-minute averages. The location of the monitor must be approved by the Director of the Assessment and Approvals Branch and be within the area of predicted maximum impact which is in Champlain Heights. The technology selected shall be capable of collecting samples on filter media for analysis of metals should this be required in the future. NBDOE should have electronic access to the data generated in near-real time (hourly updates).

This condition does not preclude the possibility that additional monitors may be required in the future. If you require any additional information please contact Louise Steward at (506) 444-5382.

Sincerely,



Kim Jardine  
Minister

**Appendix C  
Emissions Data  
(provided on CD)**

## Daily

## Sulphur Dioxide (kgs/d)

Date	Fuel (SO <sub>2</sub> )	Fuel Gas	S plts (SO <sub>2</sub> )	FCCU (SO <sub>2</sub> )	RFCCU (SO <sub>2</sub> )
1996.01.01	6955		6105	3033	
1996.01.02	5244		6661	3324	
1996.01.03	7203		7536	3402	
1996.01.04	6794		8126	3359	
1996.01.05	812		7173	1531	
1996.01.06	6532		8412	1525	
1996.01.07	6916		9239	1290	
1996.01.08	7730		10008	3633	
1996.01.09	5745		10373	3147	
1996.01.10	4715		11123	3242	
1996.01.11	3025		12322	3664	
1996.01.12	5782		14071	4296	
1996.01.13	5730		16591	3440	
1996.01.14	3170		16532	4205	
1996.01.15	5782		15186	4073	
1996.01.16	5180		12598	3682	
1996.01.17	5102		12222	3143	
1996.01.18	6988		10816	3619	
1996.01.19	2591		10566	2914	
1996.01.20	5592		10554	2351	
1996.01.21	6859		13200	3226	
1996.01.22	4575		12895	3301	
1996.01.23	4214		12984	3228	
1996.01.24	5538		13604	3189	
1996.01.25	4351		14057	3181	
1996.01.26	5326		13688	1408	
1996.01.27	5138		12712	2674	
1996.01.28	5361		12761	3057	
1996.01.29	7294		12375	3010	
1996.01.30	9462		10922	2379	
1996.01.31	6720		10290	2572	
1996.02.01	8173		9939	2644	
1996.02.02	8449		9841	2633	
1996.02.03	8735		12320	3228	
1996.02.04	8087		13088	3583	
1996.02.05	9108		13049	3702	
1996.02.06	9024		13178	3879	
1996.02.07	7640		12870	3653	
1996.02.08	6194		12569	3149	
1996.02.09	5975		13601	2183	
1996.02.10	4342		13630	3927	
1996.02.11	5686		12550	1519	
1996.02.12	4629		10199	3308	
1996.02.13	1590		9890	1736	
1996.02.14	4460		10078	2388	
1996.02.15	7709		11813	3673	
1996.02.16	5299		12789	3679	
1996.02.17	7629		13252	3810	
1996.02.18	4337		13807	1496	
1996.02.19	6911		14356	3602	
1996.02.20	7334		14295	2263	
1996.02.21	7422		13756	3958	
1996.02.22	6200		13906	3889	

Daily

1996.02.23	6442	13983	3628
1996.02.24	7477	14093	3537
1996.02.25	5810	14731	3869
1996.02.26	7255	13839	3739
1996.02.27	7128	11488	3305
1996.02.28	6683	10035	3103
1996.02.29	6483	10255	3577
1996.03.01	7159	10904	3178
1996.03.02	7087	11532	3200
1996.03.03	7329	12120	1339
1996.03.04	8190	7746	4692
1996.03.05	8066	8707	4675
1996.03.06	8562	8414	4945
1996.03.07	7860	8042	4499
1996.03.08	8692	7619	4743
1996.03.09	8895	8086	4544
1996.03.10	8633	7759	4606
1996.03.11	4031	6260	4420
1996.03.12	5756	5588	4507
1996.03.13	7582	7068	4026
1996.03.14	5789	9415	4537
1996.03.15	7517	11166	3151
1996.03.16	7156	12273	3390
1996.03.17	4944	9855	5385
1996.03.18	7409	11785	3394
1996.03.19	7624	11614	2200
1996.03.20	8272	12506	3661
1996.03.21	8371	12424	3711
1996.03.22	6859	11706	3618
1996.03.23	7097	12249	3487
1996.03.24	7630	13256	3611
1996.03.25	7746	12376	3447
1996.03.26	8022	10813	3247
1996.03.27	5342	11125	3541
1996.03.28	5110	10870	2883
1996.03.29	7425	10767	2861
1996.03.30	7643	11211	2176
1996.03.31	7703	11508	1688
1996.04.01	6853	11836	3253
1996.04.02	5682	11995	3391
1996.04.03	7329	12120	1339
1996.04.04	6964	12061	3031
1996.04.05	6436	11442	3122
1996.04.06	7784	10310	2733
1996.04.07	6632	10204	2521
1996.04.08	8695	9635	2782
1996.04.09	8493	9401	2752
1996.04.10	7360	10216	2728
1996.04.11	6710	10204	2298
1996.04.12	6777	8044	2322
1996.04.13	7461	8392	2673
1996.04.14	6337	7118	2741
1996.04.15	7508	7042	2726
1996.04.16	7349	7880	2783
1996.04.17	7283	8027	3437
1996.04.18	3603	6182	3327
1996.04.19	10172	2797	3200

Daily

1996.04.20	5884	2977	2675
1996.04.21	6430	3276	2800
1996.04.22	5355	6964	3176
1996.04.23	6415	8713	3130
1996.04.24	5651	9297	2840
1996.04.25	3377	10288	2801
1996.04.26	3695	11029	2808
1996.04.27	3744	11078	2844
1996.04.28	3565	11195	3990
1996.04.29	4520	9758	2740
1996.04.30	6052	8124	2208
1996.05.01	3618	9595	2573
1996.05.02	6241	11537	2617
1996.05.03	5933	14395	2981
1996.05.04	7351	16419	3246
1996.05.05	5757	17589	3224
1996.05.06	5703	17407	3289
1996.05.07	5409	12582	3283
1996.05.08	4471	12852	3595
1996.05.09	6053	13120	3016
1996.05.10	6438	12615	2962
1996.05.11	6386	12578	2944
1996.05.12	6266	13044	2940
1996.05.13	5194	14800	2898
1996.05.14	3085	15641	3462
1996.05.15	5394	15665	3312
1996.05.16	5117	16971	3305
1996.05.17	5753	16279	1701
1996.05.18	6382	15900	2575
1996.05.19	6535	15100	2421
1996.05.20	6613	14765	2623
1996.05.21	6679	14857	2544
1996.05.22	10122	14150	3461
1996.05.23	5443	12778	3102
1996.05.24	6034	11978	2761
1996.05.25	4563	11260	2535
1996.05.26	2751	11387	2501
1996.05.27	4455	12164	2501
1996.05.28	3774	12836	2505
1996.05.29	4996	12702	2535
1996.05.30	5786	13284	3341
1996.05.31	5420	14465	3320
1996.06.01	3900	13257	1302
1996.06.02	2717	11600	1186
1996.06.03	2155	11048	1239
1996.06.04	5127	10797	2732
1996.06.05	1548	11031	2679
1996.06.06	2960	11989	2719
1996.06.07	4092	12925	2762
1996.06.08	4338	14259	3185
1996.06.09	3871	15004	2999
1996.06.10	3090	15227	3606
1996.06.11	2342	15038	3626
1996.06.12	6142	13036	3660
1996.06.13	6204	10982	3652
1996.06.14	6618	10354	3657
1996.06.15	5133	13072	2979

Daily

1996.06.16	5912	14596	3239
1996.06.17	7029	14234	3537
1996.06.18	7378	14444	3086
1996.06.19	4426	14521	3620
1996.06.20	5683	14454	5053
1996.06.21	7021	13561	2414
1996.06.22	7366	12498	3034
1996.06.23	7674	9739	2824
1996.06.24	6783	12245	2649
1996.06.25	7796	13703	3286
1996.06.26	6856	14313	3574
1996.06.27	4023	15027	3468
1996.06.28	3978	13649	3493
1996.06.29	4556	13762	3502
1996.06.30	5189	13997	3540
1996.07.01	6260	13780	3333
1996.07.02	6277	14259	3307
1996.07.03	6776	13453	2941
1996.07.04	6933	11875	3030
1996.07.05	7293	10052	1140
1996.07.06	8856	8746	2379
1996.07.07	8680	9867	2392
1996.07.08	8226	11015	2267
1996.07.09	7167	11722	2400
1996.07.10	6005	13012	2515
1996.07.11	4587	13420	2610
1996.07.12	5875	12103	2509
1996.07.13	6281	9927	2541
1996.07.14	5209	9687	2522
1996.07.15	5558	9056	2524
1996.07.16	7061	8849	2507
1996.07.17	6770	8479	1973
1996.07.18	5989	8653	1747
1996.07.19	6510	8631	1938
1996.07.20	5984	9459	2290
1996.07.21	5305	9553	2118
1996.07.22	5753	9389	2177
1996.07.23	5451	9268	2079
1996.07.24	5445	9049	1954
1996.07.25	5679	8945	1955
1996.07.26	6615	10035	4234
1996.07.27	4058	11554	2197
1996.07.28	2873	12005	2681
1996.07.29	3973	12232	2916
1996.07.30	3217	12874	2908
1996.07.31	4626	13007	2968
1996.08.01	4492	14014	1137
1996.08.02	4603	14713	2793
1996.08.03	6842	13690	3069
1996.08.04	5377	12691	1197
1996.08.05	6430	10119	2320
1996.08.06	3527	10280	1985
1996.08.07	4527	9706	1985
1996.08.08	188	10595	2547
1996.08.09	1728	13010	3361
1996.08.10	5299	13295	2923
1996.08.11	4425	13382	3013



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1996.08.12	4052	13437	3027
1996.08.13	4639	13513	3174
1996.08.14	4556	13281	3201
1996.08.15	7329	12120	1339
1996.08.16	4956	9792	2160
1996.08.17	7268	6667	1922
1996.08.18	7296	8974	2052
1996.08.19	6106	8997	806
1996.08.20	5797	10053	2581
1996.08.21	5035	12166	1712
1996.08.22	5141	12114	3011
1996.08.23	4945	12653	3166
1996.08.24	3661	13148	3106
1996.08.25	3976	12239	3079
1996.08.26	3554	11140	1236
1996.08.27	6673	10397	1571
1996.08.28	6519	10241	1459
1996.08.29	4746	8956	1311
1996.08.30	6030	8533	1326
1996.08.31	6205	9088	1556
1996.09.01	4698	10847	1552
1996.09.02	6039	10982	1540
1996.09.03	4035	11782	2452
1996.09.04	4510	12033	2416
1996.09.05	4391	12131	2422
1996.09.06	3122	11728	2238
1996.09.07	4810	9751	1440
1996.09.08	5418	8939	1344
1996.09.09	7345	8860	1333
1996.09.10	6046	8827	1672
1996.09.11	6085	8778	1661
1996.09.12	6224	8566	1803
1996.09.13	7815	8432	1794
1996.09.14	6921	9556	1858
1996.09.15	6511	9514	855
1996.09.16	6511	9546	3239
1996.09.17	6971	8458	1830
1996.09.18	6733	7917	4317
1996.09.19	8310	6632	541
1996.09.20	7906	8506	1445
1996.09.21	6723	8136	1414
1996.09.22	6313	5061	2790
1996.09.23	5966	5894	2974
1996.09.24	6358	8604	2990
1996.09.25	6337	8517	3314
1996.09.26	6863	8103	3097
1996.09.27	7144	8561	3349
1996.09.28	7037	8615	3545
1996.09.29	6895	8860	3627
1996.09.30	6898	7046	3461
1996.10.01	6891	8511	3465
1996.10.02	6426	8346	3441
1996.10.03	6721	7779	3470
1996.10.04	6580	7561	3527
1996.10.05	7621	8016	1680
1996.10.06	6030	8463	1900
1996.10.07	7093	8936	2243

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1996.10.08	6774	9268	2326
1996.10.09	6738	10880	2422
1996.10.10	6683	12484	2672
1996.10.11	5870	12369	2616
1996.10.12	6810	12459	2933
1996.10.13	6894	12022	2973
1996.10.14	6888	12468	2662
1996.10.15	6752	11162	790
1996.10.16	2999	10329	1689
1996.10.17	6037	9477	2001
1996.10.18	6604	9088	2002
1996.10.19	6622	9222	1847
1996.10.20	6327	9996	2556
1996.10.21	6986	9295	2752
1996.10.22	7077	9801	2822
1996.10.23	6590	11309	3012
1996.10.24	7193	12446	3156
1996.10.25	7127	13061	3127
1996.10.26	6871	12506	3291
1996.10.27	6771	13230	3315
1996.10.28	6677	12650	3607
1996.10.29	7541	8780	5435
1996.10.30	6701	7619	4536
1996.10.31	7245	7918	1796
1996.11.01	7492	8642	1901
1996.11.02	7765	10498	2268
1996.11.03	7970	11537	2299
1996.11.04	7015	11287	2318
1996.11.05	7519	11467	2241
1996.11.06	7855	10179	2302
1996.11.07	7571	9563	2040
1996.11.08	7559	9556	1792
1996.11.09	6990	8882	1730
1996.11.10	7780	9747	2099
1996.11.11	7817	10656	2394
1996.11.12	7818	10770	2704
1996.11.13	7297	10694	2680
1996.11.14	7987	8631	2028
1996.11.15	9010	7893	1615
1996.11.16	9197	7889	1546
1996.11.17	8518	8245	842
1996.11.18	8307	9048	865
1996.11.19	7650	9627	867
1996.11.20	7543	10280	2919
1996.11.21	7173	10721	2526
1996.11.22	7735	10428	3044
1996.11.23	8934	10901	3361
1996.11.24	6800	11445	3315
1996.11.25	6147	11156	3246
1996.11.26	7441	12087	3405
1996.11.27	7782	12871	3170
1996.11.28	7477	11733	3151
1996.11.29	7117	9703	2379
1996.11.30	7965	9523	1955
1996.12.01	7871	9233	1803
1996.12.02	7258	7167	1408
1996.12.03	6863	9483	1778

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1996.12.04	6529	10384	2565
1996.12.05	5715	10959	2813
1996.12.06	7760	11989	2782
1996.12.07	7849	12180	2776
1996.12.08	8746	12854	3035
1996.12.09	7912	12696	3282
1996.12.10	8478	12365	1147
1996.12.11	8415	10715	1102
1996.12.12	8457	9916	0
1996.12.13	6922	10634	0
1996.12.14	8465	10188	2069
1996.12.15	8372	9622	620
1996.12.16	6589	9512	1085
1996.12.17	8229	8624	2230
1996.12.18	6455	8575	1066
1996.12.19	7973	8108	972
1996.12.20	8592	8348	1848
1996.12.21	8115	9248	1863
1996.12.22	8988	10252	1838
1996.12.23	8674	11170	1848
1996.12.24	9372	11383	2787
1996.12.25	9302	12044	2873
1996.12.26	9457	12359	3087
1996.12.27	9389	12686	1208
1996.12.28	10501	12512	1610
1996.12.29	7132	12936	1258
1996.12.30	9213	12860	1290
1996.12.31	7553	12767	2587
1997.01.01	8291	14112	2338
1997.01.02	6186	11923	2156
1997.01.03	9898	9640	1966
1997.01.04	9703	9852	215
1997.01.05	9445	10536	2406
1997.01.06	8949	10356	2522
1997.01.07	8231	10904	2538
1997.01.08	6429	10955	2594
1997.01.09	8548	11043	2772
1997.01.10	9474	10489	2459
1997.01.11	9524	10629	2079
1997.01.12	6833	10105	1933
1997.01.13	7597	9600	1931
1997.01.14	7238	9371	755
1997.01.15	4968	9365	1486
1997.01.16	8388	9072	1631
1997.01.17	8754	10606	1917
1997.01.18	8147	12198	2546
1997.01.19	6838	12691	2748
1997.01.20	7549	13572	2788
1997.01.21	7512	12604	2781
1997.01.22	5996	11428	2278
1997.01.23	4698	12599	2572
1997.01.24	8505	13197	2583
1997.01.25	8531	12780	2623
1997.01.26	7957	12201	2873
1997.01.27	8488	11020	2824
1997.01.28	7313	8916	1976
1997.01.29	6608	10069	1343

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1997.01.30	7447	10643	1855
1997.01.31	8983	10035	2225
1997.02.01	9337	10378	1187
1997.02.02	8139	10955	2698
1997.02.03	8506	11004	2604
1997.02.04	8757	11173	2110
1997.02.05	9229	10966	2572
1997.02.06	5283	11182	2373
1997.02.07	3884	10627	2682
1997.02.08	8302	11123	2647
1997.02.09	8247	11350	2568
1997.02.10	7425	9522	2585
1997.02.11	9024	9688	2414
1997.02.12	9217	9541	1068
1997.02.13	8705	9688	1723
1997.02.14	8939	9703	1862
1997.02.15	9530	10063	2167
1997.02.16	7102	10906	2536
1997.02.17	8436	11848	2693
1997.02.18	6919	13116	2502
1997.02.19	7322	12468	2309
1997.02.20	8769	12974	2834
1997.02.21	5639	13203	2772
1997.02.22	8351	12482	1964
1997.02.23	7344	9978	2922
1997.02.24	5647	6837	4275
1997.02.25	7540	6942	6305
1997.02.26	7125	6544	6571
1997.02.27	7228	6327	6083
1997.02.28	7261	7093	8171
1997.03.01	7215	6383	6644
1997.03.02	9265	6354	6695
1997.03.03	9696	6599	6433
1997.03.04	9991	5928	5825
1997.03.05	7880	5494	5314
1997.03.06	9636	5420	5310
1997.03.07	9396	5228	4859
1997.03.08	8786	5324	5283
1997.03.09	8690	5420	5488
1997.03.10	8686	5268	3967
1997.03.11	8554	5132	4236
1997.03.12	7582	5194	4676
1997.03.13	7021	6197	5364
1997.03.14	8242	8654	3916
1997.03.15	8557	8385	1030
1997.03.16	7967	9574	917
1997.03.17	7786	10588	2650
1997.03.18	6841	10710	3179
1997.03.19	8384	11690	1320
1997.03.20	8106	12049	3046
1997.03.21	5883	12468	3010
1997.03.22	7595	12511	2993
1997.03.23	7382	12600	3138
1997.03.24	7385	12622	3129
1997.03.25	4447	13186	3135
1997.03.26	8993	12756	3477
1997.03.27	8366	13060	2942

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1997.03.28	7037	11609	2707
1997.03.29	7223	9807	2697
1997.03.30	9534	9279	2273
1997.03.31	9346	9181	1853
1997.04.01	9127	9176	1857
1997.04.02	9237	8958	1881
1997.04.03	8826	8978	1657
1997.04.04	7713	9840	2136
1997.04.05	6615	9252	2290
1997.04.06	5738	9132	1970
1997.04.07	6126	9328	2366
1997.04.08	6991	8860	2278
1997.04.09	4737	8424	1650
1997.04.10	6671	7799	1499
1997.04.11	6850	7741	107
1997.04.12	7033	8284	0
1997.04.13	7766	8801	0
1997.04.14	7545	8210	0
1997.04.15	7313	8916	1976
1997.04.16	7040	8348	0
1997.04.17	7408	7942	0
1997.04.18	7695	7867	0
1997.04.19	7687	7973	0
1997.04.20	7268	7875	0
1997.04.21	6521	7875	0
1997.04.22	6868	8169	0
1997.04.23	6607	8385	0
1997.04.24	7317	7778	0
1997.04.25	7229	7413	0
1997.04.26	7115	7569	0
1997.04.27	6925	7078	0
1997.04.28	7134	7141	0
1997.04.29	4980	7208	0
1997.04.30	4631	6783	0
1997.05.01	5175	6743	2064
1997.05.02	5806	7684	1635
1997.05.03	6730	6773	1843
1997.05.04	6872	2685	1844
1997.05.05	7000	2650	1677
1997.05.06	7474	2718	1983
1997.05.07	7506	3136	1010
1997.05.08	7234	3971	1132
1997.05.09	6341	6822	1733
1997.05.10	6759	10120	1623
1997.05.11	6082	9186	2117
1997.05.12	5464	9444	1196
1997.05.13	5536	9795	1554
1997.05.14	3928	9726	1554
1997.05.15	5341	9808	1691
1997.05.16	6190	10078	1672
1997.05.17	4883	9681	2589
1997.05.18	3959	9707	2522
1997.05.19	5373	9613	2614
1997.05.20	6197	9717	2518
1997.05.21	4184	9658	2459
1997.05.22	4573	10117	2644
1997.05.23	5882	10030	2745

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1997.05.24	6842	10226	1126
1997.05.25	6625	10340	2745
1997.05.26	7024	10460	2301
1997.05.27	6507	10101	2854
1997.05.28	5602	10127	2692
1997.05.29	6686	9578	1589
1997.05.30	6280	9803	1029
1997.05.31	6214	10139	966
1997.06.01	6037	9939	890
1997.06.02	5974	10170	2575
1997.06.03	5897	10199	1536
1997.06.04	7486	10433	2730
1997.06.05	7735	10295	2955
1997.06.06	8311	10204	2815
1997.06.07	8193	10155	1537
1997.06.08	8470	9703	2815
1997.06.09	7492	9513	1173
1997.06.10	7024	9244	1782
1997.06.11	7512	8702	1206
1997.06.12	4668	8597	974
1997.06.13	7889	9165	1636
1997.06.14	8280	10833	1296
1997.06.15	7535	10628	1384
1997.06.16	3845	10149	2774
1997.06.17	5853	9670	2378
1997.06.18	6576	9539	1318
1997.06.19	6400	9667	1430
1997.06.20	3856	9550	1405
1997.06.21	6976	9686	1421
1997.06.22	6662	9595	1522
1997.06.23	5954	9328	2704
1997.06.24	7025	9453	1593
1997.06.25	7634	9493	1439
1997.06.26	5588	10032	1266
1997.06.27	6486	9621	1487
1997.06.28	5805	9868	2623
1997.06.29	5606	9773	2343
1997.06.30	5474	9799	1239
1997.07.01	5955	8966	1332
1997.07.02	5199	9266	1867
1997.07.03	6682	10550	2572
1997.07.04	3131	11614	2653
1997.07.05	5459	8680	2955
1997.07.06	8244	8865	1334
1997.07.07	5770	11981	2512
1997.07.08	6400	11345	1224
1997.07.09	8311	9654	4401
1997.07.10	8244	8865	2009
1997.07.11	7335	9176	4042
1997.07.12	7258	9160	1502
1997.07.13	6971	9040	1819
1997.07.14	7686	8477	4869
1997.07.15	7568	8530	1445
1997.07.16	6840	8131	1600
1997.07.17	6873	9158	1768
1997.07.18	6393	10147	1767
1997.07.19	6151	10559	1782

Daily

1997.07.20	6530	10974	2699
1997.07.21	7602	11253	2732
1997.07.22	7901	11426	1621
1997.07.23	7872	11537	2719
1997.07.24	6275	11940	1651
1997.07.25	6663	11353	2802
1997.07.26	7101	11094	2645
1997.07.27	7520	10892	2308
1997.07.28	6597	10207	2671
1997.07.29	7652	8979	2271
1997.07.30	7859	8659	2108
1997.07.31	6592	8786	2093
1997.08.01	6797	9726	2204
1997.08.02	6765	10364	1239
1997.08.03	5154	11468	2686
1997.08.04	5368	11831	1515
1997.08.05	6458	11265	1259
1997.08.06	7654	13012	1321
1997.08.07	6883	15489	1712
1997.08.08	2895	12838	2580
1997.08.09	6155	12542	2168
1997.08.10	6895	12695	2459
1997.08.11	7088	11885	2339
1997.08.12	7436	9807	1858
1997.08.13	7563	9583	1635
1997.08.14	6685	10813	795
1997.08.15	6966	13840	868
1997.08.16	5973	12654	1533
1997.08.17	5439	11085	1521
1997.08.18	5688	11218	1543
1997.08.19	5781	11193	2509
1997.08.20	6927	11383	1924
1997.08.21	6942	11424	2500
1997.08.22	3668	13013	2445
1997.08.23	6149	13121	2624
1997.08.24	5608	13237	2567
1997.08.25	6930	13083	2549
1997.08.26	8098	12788	1500
1997.08.27	7439	12484	2725
1997.08.28	6673	11528	2712
1997.08.29	6546	10814	2734
1997.08.30	5668	11543	2615
1997.08.31	6025	12211	2636
1997.09.01	6986	11962	2625
1997.09.02	7183	11528	2636
1997.09.03	7771	11292	2666
1997.09.04	6869	11098	2829
1997.09.05	7102	11586	2647
1997.09.06	8070	10819	2115
1997.09.07	6916	9976	2497
1997.09.08	6586	9807	2476
1997.09.09	7301	9888	2315
1997.09.10	8150	8800	1868
1997.09.11	8463	9201	1801
1997.09.12	7026	13296	1716
1997.09.13	6497	13237	1662
1997.09.14	6024	8354	1610

Daily

1997.09.15	6367	8501	1629
1997.09.16	6157	9461	1645
1997.09.17	6303	9883	2083
1997.09.18	6815	10296	1418
1997.09.19	6204	10975	1567
1997.09.20	6633	9905	2098
1997.09.21	6282	9625	3241
1997.09.22	4568	10210	2492
1997.09.23	4373	10346	895
1997.09.24	5964	11062	2560
1997.09.25	8640	11924	2592
1997.09.26	6067	11782	1452
1997.09.27	5696	9573	1936
1997.09.28	6123	9194	1887
1997.09.29	5197	9883	1791
1997.09.30	5473	10971	2058
1997.10.01	6831	11107	2140
1997.10.02	6815	11684	2371
1997.10.03	4339	12288	2290
1997.10.04	4434	11657	2584
1997.10.05	3576	11914	2632
1997.10.06	2706	12844	2724
1997.10.07	2761	13367	2825
1997.10.08	6003	13124	2925
1997.10.09	3971	13616	3013
1997.10.10	4031	13865	2680
1997.10.11	3910	13941	2702
1997.10.12	3537	14259	2862
1997.10.13	4238	12958	2786
1997.10.14	8658	10248	2685
1997.10.15	8798	9736	2596
1997.10.16	8774	9385	2582
1997.10.17	9569	8529	2565
1997.10.18	9116	8475	1842
1997.10.19	8497	8790	1678
1997.10.20	7730	5663	1150
1997.10.21	6871	4882	834
1997.10.22	7185	4616	1583
1997.10.23	6970	5328	1452
1997.10.24	6803	6375	1733
1997.10.25	7993	6548	4151
1997.10.26	7122	7127	1780
1997.10.27	6913	6981	1777
1997.10.28	7535	7567	1698
1997.10.29	6202	8947	1763
1997.10.30	6489	8118	1692
1997.10.31	6563	10207	1797
1997.11.01	6471	8199	1746
1997.11.02	5205	11379	2097
1997.11.03	6541	10523	2431
1997.11.04	6459	10098	2667
1997.11.05	6971	10239	2930
1997.11.06	7295	10334	2470
1997.11.07	7610	11427	2831
1997.11.08	7435	9911	2201
1997.11.09	7695	9586	2478
1997.11.10	6809	9410	1351



Daily

1997.11.11	1303	9721	2757
1997.11.12	2239	10183	2707
1997.11.13	2003	9921	2718
1997.11.14	6153	10275	2845
1997.11.15	7714	13018	2935
1997.11.16	7286	15004	2968
1997.11.17	7014	10288	2795
1997.11.18	6878	10545	2599
1997.11.19	6949	9524	2628
1997.11.20	6287	7918	2082
1997.11.21	5758	7558	1678
1997.11.22	7698	6905	1876
1997.11.23	7504	7264	1210
1997.11.24	6779	7439	1211
1997.11.25	6288	7347	1784
1997.11.26	4065	8272	2272
1997.11.27	6938	7782	1786
1997.11.28	6017	7886	2387
1997.11.29	7400	7897	2450
1997.11.30	5975	7684	2664
1997.12.01	8573	9170	2676
1997.12.02	7786	8419	2661
1997.12.03	7253	8481	2227
1997.12.04	5984	7913	1914
1997.12.05	8044	7314	2187
1997.12.06	5698	7663	2120
1997.12.07	7882	8265	1911
1997.12.08	7766	8797	1443
1997.12.09	7542	9747	1500
1997.12.10	7503	10063	2539
1997.12.11	7225	7585	2134
1997.12.12	6984	6318	2047
1997.12.13	6095	6487	1977
1997.12.14	6994	7113	1690
1997.12.15	6725	7683	1999
1997.12.16	7993	8936	1976
1997.12.17	5830	10104	2360
1997.12.18	6512	10808	2724
1997.12.19	5886	11165	2380
1997.12.20	4504	11111	2730
1997.12.21	8060	11022	2784
1997.12.22	7282	9344	1260
1997.12.23	6767	9293	1761
1997.12.24	7290	9248	1686
1997.12.25	7758	9187	1674
1997.12.26	6522	11065	2082
1997.12.27	5904	10277	2481
1997.12.28	5157	9883	2629
1997.12.29	9314	10353	1373
1997.12.30	7183	10929	2838
1997.12.31	7572	10607	2740
1998.01.01	7838	10720	2766
1998.01.02	7429	11216	2869
1998.01.03	5598	11006	3090
1998.01.04	6524	10939	3171
1998.01.05	7773	10988	3104
1998.01.06	8662	10982	2868

Daily

1998.01.07	8662	11956	3324
1998.01.08	7686	11164	3065
1998.01.09	8113	11592	1200
1998.01.10	7050	10454	2644
1998.01.11	5458	9449	2095
1998.01.12	4160	8550	1128
1998.01.13	7425	8386	2004
1998.01.14	5753	8261	1434
1998.01.15	5530	9242	1080
1998.01.16	7431	10465	1879
1998.01.17	7658	10438	2638
1998.01.18	7036	11842	2726
1998.01.19	5978	11913	2824
1998.01.20	8920	12258	3005
1998.01.21	6130	12706	1365
1998.01.22	7471	12049	1951
1998.01.23	8254	8217	2605
1998.01.24	7011	9339	2434
1998.01.25	6549	9600	2639
1998.01.26	6537	9747	2927
1998.01.27	6423	9741	2646
1998.01.28	7506	8449	2431
1998.01.29	7849	7888	1841
1998.01.30	7701	7799	2079
1998.01.31	8168	7501	1060
1998.02.01	7859	7396	2080
1998.02.02	8082	7831	1213
1998.02.03	7897	8925	2406
1998.02.04	7836	8473	2701
1998.02.05	7130	8163	2745
1998.02.06	7156	8534	2653
1998.02.07	6060	9227	2812
1998.02.08	6732	8747	3093
1998.02.09	7278	7468	2350
1998.02.10	7161	7190	2165
1998.02.11	6915	9927	1874
1998.02.12	6590	6942	765
1998.02.13	6428	6424	1369
1998.02.14	5803	6459	2361
1998.02.15	7122	9092	2783
1998.02.16	6420	10505	1617
1998.02.17	6756	10220	1588
1998.02.18	7243	9116	1602
1998.02.19	6094	10727	1588
1998.02.20	6844	10852	1592
1998.02.21	6216	10453	2947
1998.02.22	6514	9537	2932
1998.02.23	7196	12927	2255
1998.02.24	7783	8429	1278
1998.02.25	7775	5823	1785
1998.02.26	7340	7483	1728
1998.02.27	7406	7510	1661
1998.02.28	7136	10405	2387
1998.03.01	7951	11705	2248
1998.03.02	8099	12327	3033
1998.03.03	7694	12600	1418
1998.03.04	7089	13366	2721

Daily

1998.03.05	6531	12778	2995
1998.03.06	5573	12569	3084
1998.03.07	7898	12405	3098
1998.03.08	7455	10501	2414
1998.03.09	7783	10179	2063
1998.03.10	7132	10229	896
1998.03.11	5609	10431	985
1998.03.12	6469	10619	1836
1998.03.13	6939	12656	2214
1998.03.14	8210	13131	2528
1998.03.15	8159	13131	2623
1998.03.16	8346	12969	1447
1998.03.17	8177	11814	1417
1998.03.18	7512	11754	1321
1998.03.19	8085	11210	1380
1998.03.20	7990	10769	1135
1998.03.21	8544	10759	2066
1998.03.22	8540	9170	1931
1998.03.23	7792	9774	1956
1998.03.24	7616	11407	2208
1998.03.25	7798	11510	1349
1998.03.26	6453	11507	2263
1998.03.27	5796	11260	2093
1998.03.28	6900	10506	2156
1998.03.29	8216	9315	1486
1998.03.30	8018	9687	1740
1998.03.31	6483	10090	1653
1998.04.01	7901	10161	1711
1998.04.02	6667	10137	1634
1998.04.03	7961	11351	1015
1998.04.04	7790	12269	2064
1998.04.05	7955	11865	2166
1998.04.06	6879	12376	2146
1998.04.07	7592	12365	2177
1998.04.08	6753	11320	2060
1998.04.09	6542	12669	2341
1998.04.10	7270	14272	2922
1998.04.11	7133	11240	2605
1998.04.12	6852	11152	2043
1998.04.13	8008	12671	1821
1998.04.14	8449	14024	1710
1998.04.15	7733	8639	1916
1998.04.16	7970	6522	1726
1998.04.17	7283	6286	1041
1998.04.18	6601	6116	1032
1998.04.19	6719	7430	1030
1998.04.20	8424	8803	1652
1998.04.21	7655	9506	1614
1998.04.22	7967	9410	1827
1998.04.23	8135	7178	1904
1998.04.24	7603	6460	2137
1998.04.25	7205	6950	2444
1998.04.26	6195	7626	1269
1998.04.27	6656	7829	2498
1998.04.28	7057	8293	1486
1998.04.29	6199	6654	1306
1998.04.30	7485	4463	1294

Daily

1998.05.01	7606	4840	1297
1998.05.02	7582	5662	1288
1998.05.03	7738	5774	1277
1998.05.04	6411	6191	1853
1998.05.05	6072	7541	1523
1998.05.06	5894	7119	1620
1998.05.07	6609	8659	1084
1998.05.08	6473	8296	2001
1998.05.09	5764	7997	2424
1998.05.10	5343	8101	2687
1998.05.11	5826	10321	2475
1998.05.12	6582	9379	2860
1998.05.13	6187	8502	1643
1998.05.14	6668	8090	2930
1998.05.15	6658	9678	2936
1998.05.16	7431	9638	3045
1998.05.17	8059	9366	3161
1998.05.18	8462	7761	2937
1998.05.19	8708	5388	2884
1998.05.20	7922	5030	1233
1998.05.21	8054	4806	1979
1998.05.22	8495	5010	1218
1998.05.23	7344	6249	1743
1998.05.24	6789	7073	1653
1998.05.25	8360	7621	1922
1998.05.26	8658	9012	1789
1998.05.27	8041	8654	1906
1998.05.28	6580	8221	2610
1998.05.29	5792	8250	2018
1998.05.30	5809	8862	2126
1998.05.31	7053	9512	1730
1998.06.01	7552	8397	1475
1998.06.02	7337	7510	1475
1998.06.03	7537	6438	1366
1998.06.04	8642	5801	1347
1998.06.05	8104	5380	1351
1998.06.06	8028	4564	912
1998.06.07	7214	5166	1642
1998.06.08	7933	6584	1783
1998.06.09	7161	5290	1771
1998.06.10	7251	3913	4532
1998.06.11	4610	4109	4640
1998.06.12	4690	4272	4831
1998.06.13	4500	4488	4766
1998.06.14	6172	4366	4965
1998.06.15	7756	4430	5078
1998.06.16	6564	4143	4826
1998.06.17	5993	4076	1696
1998.06.18	6250	3121	1707
1998.06.19	6345	2090	3750
1998.06.20	6906	2868	4469
1998.06.21	6914	4461	4557
1998.06.22	6236	5631	3483
1998.06.23	5979	5946	2582
1998.06.24	5941	6757	1886
1998.06.25	4760	6160	1892
1998.06.26	4154	5671	1869

Daily

1998.06.27	3639	3303	1862
1998.06.28	4417	2737	1801
1998.06.29	6008	3004	5012
1998.06.30	4955	4739	4782
1998.07.01	2622	4118	4998
1998.07.02	2750	4119	2230
1998.07.03	1445	3870	5430
1998.07.04	1128	3605	5784
1998.07.05	735	2043	5665
1998.07.06	1250	1510	5778
1998.07.07	1905	1754	1911
1998.07.08	3454	1191	1257
1998.07.09	2966	1158	1280
1998.07.10	3084	1220	1254
1998.07.11	3006	1268	2318
1998.07.12	3079	1137	2195
1998.07.13	3022	1197	2134
1998.07.14	3274	1208	2107
1998.07.15	2008	1151	2032
1998.07.16	820	1291	1947
1998.07.17	994	1056	1939
1998.07.18	943	2061	1198
1998.07.19	602	1876	827
1998.07.20	1044	1319	1933
1998.07.21	1250	1679	3032
1998.07.22	1195	1644	4245
1998.07.23	1129	2484	1677
1998.07.24	1718	3441	2290
1998.07.25	1462	3508	2928
1998.07.26	1183	6013	2277
1998.07.27	1092	4456	5223
1998.07.28	2122	3185	5069
1998.07.29	2323	5193	3924
1998.07.30	4851	6199	4715
1998.07.31	5748	5643	3676
1998.08.01	6384	6966	4555
1998.08.02	6079	3327	4258
1998.08.03	3876	2182	6850
1998.08.04	2563	2131	5537
1998.08.05	2298	4093	5484
1998.08.06	2061	4044	4722
1998.08.07	1889	3777	5117
1998.08.08	1927	3905	5160
1998.08.09	1778	3672	5275
1998.08.10	1861	3422	5485
1998.08.11	1873	3382	5347
1998.08.12	1851	3217	4017
1998.08.13	2730	1586	4018
1998.08.14	4178	1478	3749
1998.08.15	3371	1390	3205
1998.08.16	3489	2932	2089
1998.08.17	4423	3093	0
1998.08.18	3364	3477	0
1998.08.19	4805	3122	0
1998.08.20	4673	3297	0
1998.08.21	2414	3048	0
1998.08.22	2161	2688	0

Daily

1998.08.23	1957	2980	0
1998.08.24	2054	2768	0
1998.08.25	2405	2974	0
1998.08.26	4328	4280	5286
1998.08.27	1858	5078	8149
1998.08.28	1987	4093	8566
1998.08.29	2513	2166	3997
1998.08.30	1894	4015	2807
1998.08.31	2761	1714	4023
1998.09.01	3072	2495	3022
1998.09.02	2515	2222	5303
1998.09.03	2786	4253	5422
1998.09.04	2808	7346	5728
1998.09.05	4049	7428	6084
1998.09.06	2923	7608	2999
1998.09.07	2771	6414	5763
1998.09.08	3562	6356	3189
1998.09.09	3414	6021	6282
1998.09.10	3443	6052	6257
1998.09.11	4324	4879	2846
1998.09.12	7507	4196	4403
1998.09.13	6303	4849	3493
1998.09.14	5859	4958	8646
1998.09.15	6007	5845	2743
1998.09.16	5563	6465	2222
1998.09.17	4139	6815	2140
1998.09.18	6861	9003	2460
1998.09.19	6854	9947	2622
1998.09.20	4518	10459	2903
1998.09.21	2887	9616	3410
1998.09.22	3889	8845	2371
1998.09.23	5059	8610	3330
1998.09.24	5429	7848	2737
1998.09.25	5830	7337	2666
1998.09.26	1900	7731	2652
1998.09.27	6464	6287	2579
1998.09.28	3422	39660	2065
1998.09.29	3412	12593	2755
1998.09.30	3820	4522	2679
1998.10.01	5278	3189	2481
1998.10.02	7227	3973	1781
1998.10.03	3088	7461	1079
1998.10.04	5236	11949	1306
1998.10.05	151	13752	1554
1998.10.06	3662	12863	3609
1998.10.07	4458	11776	3556
1998.10.08	5375	11785	3344
1998.10.09	3433	10940	3073
1998.10.10	3327	10920	3218
1998.10.11	3443	10618	3189
1998.10.12	4319	10717	3200
1998.10.13	4222	10602	3417
1998.10.14	3585	10047	2179
1998.10.15	4878	9208	3259
1998.10.16	4970	7777	3293
1998.10.17	5934	7347	3293
1998.10.18	6602	6743	3252

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1998.10.19	6306	6898	3244
1998.10.20	6826	8566	2473
1998.10.21	7666	9577	1711
1998.10.22	4962	9296	1645
1998.10.23	5744	9010	2652
1998.10.24	6526	8929	1884
1998.10.25	5614	9464	2595
1998.10.26	6846	8758	2680
1998.10.27	6394	7725	2395
1998.10.28	7402	7268	1986
1998.10.29	6338	7105	1949
1998.10.30	7744	7709	1019
1998.10.31	7263	7216	1014
1998.11.01	8575	8256	1930
1998.11.02	8015	9714	2455
1998.11.03	6865	10166	3010
1998.11.04	6234	9753	2958
1998.11.05	5722	9875	2833
1998.11.06	4298	10071	2937
1998.11.07	2770	10634	3008
1998.11.08	6619	11015	3101
1998.11.09	7333	11011	3173
1998.11.10	7216	9927	3503
1998.11.11	6878	10187	3438
1998.11.12	6839	8952	3639
1998.11.13	7653	10030	1644
1998.11.14	2909	9827	3484
1998.11.15	7317	9823	3253
1998.11.16	9214	8838	3276
1998.11.17	9923	6040	1455
1998.11.18	9790	5400	2464
1998.11.19	9731	4787	2476
1998.11.20	9483	4886	1237
1998.11.21	9537	4910	1323
1998.11.22	8963	4947	1680
1998.11.23	5063	5034	2180
1998.11.24	7751	4836	2084
1998.11.25	9093	5176	2683
1998.11.26	8872	4914	2147
1998.11.27	6048	5148	2177
1998.11.28	2628	7255	2001
1998.11.29	7734	8067	1238
1998.11.30	6732	9514	3151
1998.12.01	5324	9588	2504
1998.12.02	5345	9203	3212
1998.12.03	5857	10071	3234
1998.12.04	5191	10699	3208
1998.12.05	7527	10574	3329
1998.12.06	7115	10532	3121
1998.12.07	4185	9656	2925
1998.12.08	4026	7463	2416
1998.12.09	3965	7627	1144
1998.12.10	4154	7189	2181
1998.12.11	5796	6274	2100
1998.12.12	8476	5542	2155
1998.12.13	7351	5626	2263
1998.12.14	6084	6945	2293

Daily

1998.12.15	5840	8268	2216
1998.12.16	5452	9631	2698
1998.12.17	5601	10027	3011
1998.12.18	4913	10569	3089
1998.12.19	5316	10907	3122
1998.12.20	4912	10612	3418
1998.12.21	6066	10498	3295
1998.12.22	4866	10200	3454
1998.12.23	5504	10306	3490
1998.12.24	7715	9881	1593
1998.12.25	6065	8206	2670
1998.12.26	5861	7672	2381
1998.12.27	6520	7472	2470
1998.12.28	8854	7549	1513
1998.12.29	8261	9001	2268
1998.12.30	7692	9023	2585
1998.12.31	4791	10157	1352
1999.01.01	8788	9618	3175
1999.01.02	6906	9959	3150
1999.01.03	7467	9342	2363
1999.01.04	7866	9265	3063
1999.01.05	7195	9639	3001
1999.01.06	6168	9253	3251
1999.01.07	7864	10034	1337
1999.01.08	7138	10369	1544
1999.01.09	8159	10283	3667
1999.01.10	8502	10498	3910
1999.01.11	8575	9769	3364
1999.01.12	8932	7743	2866
1999.01.13	8866	6307	2473
1999.01.14	6540	7156	2821
1999.01.15	9467	8566	3003
1999.01.16	9229	9400	3010
1999.01.17	7527	9873	3293
1999.01.18	7875	9606	3273
1999.01.19	6972	9649	3156
1999.01.20	6027	9399	3118
1999.01.21	8077	9050	2223
1999.01.22	8488	9916	2495
1999.01.23	8863	9814	2809
1999.01.24	6920	9884	2141
1999.01.25	6491	10146	3073
1999.01.26	3597	11101	3536
1999.01.27	7177	9834	3094
1999.01.28	8876	8016	2785
1999.01.29	6803	6675	2347
1999.01.30	8628	6765	2200
1999.01.31	8574	6671	2332
1999.02.01	5581	10317	4739
1999.02.02	7793	10421	4940
1999.02.03	5085	9009	5063
1999.02.04	6743	8700	5182
1999.02.05	6642	9284	5048
1999.02.06	6577	9491	3036
1999.02.07	8001	7380	2638
1999.02.08	8556	6954	1244
1999.02.09	8242	7444	2363



Daily

1999.02.10	5530	7463	1220
1999.02.11	4773	7926	2330
1999.02.12	7693	6872	1415
1999.02.13	7314	6607	1218
1999.02.14	7838	7327	1234
1999.02.15	7966	8045	1871
1999.02.16	7892	8578	3054
1999.02.17	7539	8502	3354
1999.02.18	7058	8989	3355
1999.02.19	7939	9261	3156
1999.02.20	7814	8272	3277
1999.02.21	8162	7135	2716
1999.02.22	7810	6737	2428
1999.02.23	7429	7592	1336
1999.02.24	8618	7535	2129
1999.02.25	7873	7375	2221
1999.02.26	8211	9119	2693
1999.02.27	8516	9206	2874
1999.02.28	8495	8564	2871
1999.03.01	7881	8371	2834
1999.03.02	7682	8395	2828
1999.03.03	8222	7210	2945
1999.03.04	8145	6122	1308
1999.03.05	7226	5119	2590
1999.03.06	5694	6684	1180
1999.03.07	7835	8419	1297
1999.03.08	7885	10291	3127
1999.03.09	8054	9660	3240
1999.03.10	7643	10008	3216
1999.03.11	8471	8767	2790
1999.03.12	8702	7347	2062
1999.03.13	8401	6922	2297
1999.03.14	8500	6753	1662
1999.03.15	8424	6539	2153
1999.03.16	8367	7570	2156
1999.03.17	8347	9174	2473
1999.03.18	6953	9660	2795
1999.03.19	6951	9883	2905
1999.03.20	7659	10213	1921
1999.03.21	7424	9813	2737
1999.03.22	8464	9712	2824
1999.03.23	6175	9395	2800
1999.03.24	5527	9932	3045
1999.03.25	7577	9725	3073
1999.03.26	6204	9197	2855
1999.03.27	7430	8844	2292
1999.03.28	7151	10899	2132
1999.03.29	7600	7705	1907
1999.03.30	8055	7788	1866
1999.03.31	7589	7845	1358
1999.04.01	8081	8103	1154
1999.04.02	9712	7956	2834
1999.04.03	8596	7864	2859
1999.04.04	9111	7548	2950
1999.04.05	9512	7557	1706
1999.04.06	9168	6762	1468
1999.04.07	8936	6067	1559

Daily

1999.04.08	8681	6020	1646
1999.04.09	7643	6199	1612
1999.04.10	8933	6346	1514
1999.04.11	8901	6944	1925
1999.04.12	9381	7195	4395
1999.04.13	9356	7892	4368
1999.04.14	7589	7385	4603
1999.04.15	7692	7474	2164
1999.04.16	8449	7568	2861
1999.04.17	5500	7551	2561
1999.04.18	7026	7048	2010
1999.04.19	8650	6694	2045
1999.04.20	8361	6493	1830
1999.04.21	7926	6337	2840
1999.04.22	6540	6105	1344
1999.04.23	7519	5884	2191
1999.04.24	8187	4697	2375
1999.04.25	7531	5176	1874
1999.04.26	7754	6084	1829
1999.04.27	8421	8473	2096
1999.04.28	7803	8857	2207
1999.04.29	8447	8647	2155
1999.04.30	7061	8954	2065
1999.05.01	6533	8712	1732
1999.05.02	6872	8825	1611
1999.05.03	7132	8082	1677
1999.05.04	8042	7706	1858
1999.05.05	6969	8550	1977
1999.05.06	6280	9388	2082
1999.05.07	6607	8880	2123
1999.05.08	5183	8453	2093
1999.05.09	4974	9580	2127
1999.05.10	4439	9145	2127
1999.05.11	4776	9464	2161
1999.05.12	5793	8620	1935
1999.05.13	7693	7129	792
1999.05.14	5982	6090	1566
1999.05.15	3829	6018	1587
1999.05.16	4514	5288	1672
1999.05.17	5086	5910	960
1999.05.18	5963	6265	958
1999.05.19	5456	4452	1821
1999.05.20	4463	5486	1807
1999.05.21	5808	6988	2187
1999.05.22	6268	7483	2274
1999.05.23	6947	8084	3080
1999.05.24	6961	9406	2889
1999.05.25	7668	8556	2958
1999.05.26	7696	8004	2529
1999.05.27	8459	8691	2301
1999.05.28	8091	7461	2152
1999.05.29	6996	6977	1683
1999.05.30	8706	6590	1598
1999.05.31	6419	6918	1688
1999.06.01	6278	7706	1441
1999.06.02	5817	7694	1661
1999.06.03	6747	5582	835

Daily

1999.06.04	7604	8120	1408
1999.06.05	7000	10846	1497
1999.06.06	8011	10721	1495
1999.06.07	6340	11048	1129
1999.06.08	7219	9843	1760
1999.06.09	8614	10805	2171
1999.06.10	8489	10059	1308
1999.06.11	6290	9593	2618
1999.06.12	8080	8082	967
1999.06.13	9679	7396	2807
1999.06.14	7221	7358	1410
1999.06.15	8065	6955	1332
1999.06.16	7873	7080	1422
1999.06.17	9278	7172	1475
1999.06.18	9549	7765	1381
1999.06.19	7812	10313	1980
1999.06.20	8171	10672	2068
1999.06.21	8551	7880	2081
1999.06.22	7258	7848	2204
1999.06.23	7262	9086	2099
1999.06.24	5080	10931	2234
1999.06.25	6899	10082	2263
1999.06.26	7254	9359	1360
1999.06.27	4600	9234	1333
1999.06.28	6166	8207	1415
1999.06.29	7314	6895	1385
1999.06.30	7373	6405	1389
1999.07.01	6304	8283	1337
1999.07.02	5698	8750	1289
1999.07.03	5717	10539	1830
1999.07.04	4416	10890	1911
1999.07.05	4076	10747	2190
1999.07.06	5743	10936	2064
1999.07.07	5342	11205	2032
1999.07.08	6543	10079	2105
1999.07.09	6815	8620	1615
1999.07.10	6803	8479	1473
1999.07.11	7976	8245	1516
1999.07.12	7272	7547	1112
1999.07.13	8159	6804	1459
1999.07.14	5917	7140	1468
1999.07.15	6303	6759	1469
1999.07.16	7115	7641	1427
1999.07.17	6647	8571	1723
1999.07.18	3130	9292	2391
1999.07.19	4108	8928	2557
1999.07.20	5055	7700	2533
1999.07.21	6117	5667	1753
1999.07.22	6456	5126	1639
1999.07.23	7162	6183	1737
1999.07.24	8209	6500	1642
1999.07.25	7210	6194	1478
1999.07.26	6608	5202	1528
1999.07.27	6812	5218	1648
1999.07.28	5473	5739	2066
1999.07.29	4830	7669	2026
1999.07.30	4327	7380	2162

Daily

1999.07.31	4286	7244	2182
1999.08.01	4975	7287	2128
1999.08.02	5589	8098	2127
1999.08.03	5476	7871	2200
1999.08.04	5081	7852	2212
1999.08.05	5059	7742	2041
1999.08.06	4841	7976	1599
1999.08.07	3810	7793	1539
1999.08.08	7004	6830	1240
1999.08.09	7474	5301	2092
1999.08.10	8418	6297	1569
1999.08.11	7558	9053	1208
1999.08.12	8231	9651	2175
1999.08.13	7541	9305	2582
1999.08.14	5809	9554	2513
1999.08.15	4831	9839	2523
1999.08.16	4957	9633	2611
1999.08.17	5478	9322	2766
1999.08.18	4896	8653	2812
1999.08.19	6495	8179	2614
1999.08.20	6073	7473	1015
1999.08.21	8237	7137	2000
1999.08.22	5889	7278	1895
1999.08.23	5484	8321	1886
1999.08.24	5024	9714	2182
1999.08.25	5532	8283	2149
1999.08.26	7366	8016	2400
1999.08.27	6312	9205	1162
1999.08.28	5385	9063	2366
1999.08.29	4962	8521	2443
1999.08.30	4978	8600	1194
1999.08.31	4208	8408	2464
1999.09.01	4561	7554	1961
1999.09.02	6034	6933	1747
1999.09.03	6372	7091	1569
1999.09.04	5346	6970	1581
1999.09.05	5505	6551	1608
1999.09.06	6495	6946	1507
1999.09.07	3711	7840	1613
1999.09.08	5439	7303	1694
1999.09.09	6195	7439	1976
1999.09.10	5380	7978	2172
1999.09.11	5335	7581	2171
1999.09.12	6317	7427	1011
1999.09.13	3836	7990	1549
1999.09.14	6332	8879	2235
1999.09.15	5737	9578	2579
1999.09.16	4677	10613	2994
1999.09.17	3900	9371	2893
1999.09.18	5961	8182	2242
1999.09.19	5777	7012	1542
1999.09.20	5763	7186	1708
1999.09.21	4980	7385	1529
1999.09.22	6351	7221	1472
1999.09.23	6317	7690	1267
1999.09.24	4531	8608	1961
1999.09.25	6063	9798	2083

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1999.09.26	5931	10060	2177
1999.09.27	5942	9718	2312
1999.09.28	6155	8580	1067
1999.09.29	6318	7706	2039
1999.09.30	4252	7394	1936
1999.10.01	125	7112	1571
1999.10.02	38	6835	1384
1999.10.03	85	3971	1381
1999.10.04	3355	6939	852
1999.10.05	6141	6846	1160
1999.10.06	6043	5762	1345
1999.10.07	6055	5710	1288
1999.10.08	5710	4754	1245
1999.10.09	6149	5731	1663
1999.10.10	5911	6073	1951
1999.10.11	6814	6182	1782
1999.10.12	6268	7085	1884
1999.10.13	6106	6966	1883
1999.10.14	5932	7515	1475
1999.10.15	4813	8160	1595
1999.10.16	5564	6098	1572
1999.10.17	4978	6030	1492
1999.10.18	6563	5284	1097
1999.10.19	6834	6936	1263
1999.10.20	5701	7596	1252
1999.10.21	5658	8884	1239
1999.10.22	6004	9428	1656
1999.10.23	5812	9521	1804
1999.10.24	5888	8936	1812
1999.10.25	2354	7505	1517
1999.10.26	4310	7412	2938
1999.10.27	3009	8194	2903
1999.10.28	1376	5582	1438
1999.10.29	2567	6615	3292
1999.10.30	2109	5654	1478
1999.10.31	4152	6170	1086
1999.11.01	2029	7136	720
1999.11.02	2543	7153	698
1999.11.03	2489	7989	960
1999.11.04	2556	8844	978
1999.11.05	2413	10900	1704
1999.11.06	1755	9693	1803
1999.11.07	1917	8080	1391
1999.11.08	2917	7575	1162
1999.11.09	2999	6914	1197
1999.11.10	2720	10882	1706
1999.11.11	2976	12431	2166
1999.11.12	1468	12554	2250
1999.11.13	2906	12217	2235
1999.11.14	2746	12065	2413
1999.11.15	2672	11132	2385
1999.11.16	3147	7372	1105
1999.11.17	3330	4440	1639
1999.11.18	3522	4424	1545
1999.11.19	5498	6405	1175
1999.11.20	3695	7352	1147
1999.11.21	4537	5824	1132

Daily

1999.11.22	5481	5632	1177
1999.11.23	6182	5574	1046
1999.11.24	6795	7587	1100
1999.11.25	4151	6248	1079
1999.11.26	7678	5024	1423
1999.11.27	7479	6476	983
1999.11.28	4760	8615	2007
1999.11.29	4298	10411	2244
1999.11.30	7020	11380	2363
1999.12.01	6815	12322	2408
1999.12.02	6961	12804	2457
1999.12.03	7544	12714	2536
1999.12.04	7701	13147	2056
1999.12.05	8321	10226	1790
1999.12.06	7299	7628	1660
1999.12.07	7612	7173	1622
1999.12.08	7273	5524	1257
1999.12.09	6473	8753	1699
1999.12.10	6017	9634	842
1999.12.11	8008	9619	796
1999.12.12	8361	8293	843
1999.12.13	8275	11450	2180
1999.12.14	7332	10110	2389
1999.12.15	8658	11771	2389
1999.12.16	8221	9722	2626
1999.12.17	7654	15584	2845
1999.12.18	7156	12602	3038
1999.12.19	8356	13090	3179
1999.12.20	7876	11738	1379
1999.12.21	8292	10003	1906
1999.12.22	6764	8773	1949
1999.12.23	6485	8707	1884
1999.12.24	6888	8207	1790
1999.12.25	8494	8240	1127
1999.12.26	8137	8549	823
1999.12.27	8399	8114	1416
1999.12.28	8620	6972	1397
1999.12.29	8828	8283	1419
1999.12.30	9326	7614	1373
1999.12.31	8461	7412	1376
2000.01.01	8455	7592	1494
2000.01.02	8701	7966	1382
2000.01.03	7968	7948	810
2000.01.04	8507	7805	1312
2000.01.05	8249	7015	1291
2000.01.06	8215	7456	1049
2000.01.07	7478	7799	1509
2000.01.08	8082	7450	1573
2000.01.09	8287	7848	1634
2000.01.10	8776	7704	1760
2000.01.11	8459	7667	1703
2000.01.12	8780	6928	1244
2000.01.13	7548	6115	1141
2000.01.14	8872	6088	1051
2000.01.15	8166	6210	1071
2000.01.16	9854	6200	1013
2000.01.17	10007	6806	1015

Daily

2000.01.18	10187	9674	1303
2000.01.19	11125	9951	1683
2000.01.20	11048	9763	1827
2000.01.21	11333	9209	2205
2000.01.22	11268	9095	2116
2000.01.23	12512	6639	1746
2000.01.24	9715	5549	1634
2000.01.25	12625	5805	1329
2000.01.26	10867	5402	1725
2000.01.27	11037	5784	1316
2000.01.28	8270	6738	1289
2000.01.29	10659	9748	1901
2000.01.30	10772	12913	2379
2000.01.31	10431	12517	2478
2000.02.01	9692	11917	2624
2000.02.02	8642	12468	1444
2000.02.03	9010	10646	1180
2000.02.04	10741	7360	1853
2000.02.05	10246	8575	2501
2000.02.06	10004	8782	1827
2000.02.07	14286	7668	1937
2000.02.08	11229	8841	2465
2000.02.09	2384	11945	2498
2000.02.10	7184	12449	2966
2000.02.11	8852	13068	3076
2000.02.12	8478	14060	1523
2000.02.13	7946	14591	1368
2000.02.14	8166	10077	2733
2000.02.15	8331	9903	2244
2000.02.16	8883	7949	1950
2000.02.17	9023	7773	2035
2000.02.18	8720	7863	1741
2000.02.19	8644	6006	1537
2000.02.20	8666	5822	1363
2000.02.21	8415	6790	843
2000.02.22	8174	7380	917
2000.02.23	7013	7787	1361
2000.02.24	8125	6066	1489
2000.02.25	7844	4785	1341
2000.02.26	7395	4833	1244
2000.02.27	7810	5662	1118
2000.02.28	8630	7769	1108
2000.02.29	8225	7656	667
2000.03.01	7356	8904	735
2000.03.02	6959	9974	1552
2000.03.03	7220	10408	1710
2000.03.04	7271	8717	1882
2000.03.05	6389	7644	1821
2000.03.06	7356	8511	847
2000.03.07	6356	8112	785
2000.03.08	6643	8023	737
2000.03.09	6439	7737	707
2000.03.10	5636	5298	3695
2000.03.11	5299	10965	5079
2000.03.12	5785	11291	2212
2000.03.13	5916	10503	2107
2000.03.14	5893	11863	1377

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2000.03.15	5660	10132	2078
2000.03.16	5611	8666	854
2000.03.17	5733	8487	1403
2000.03.18	5731	8487	1279
2000.03.19	2876	7270	834
2000.03.20	5880	8413	1241
2000.03.21	5564	8311	1223
2000.03.22	6782	9139	785
2000.03.23	5784	9980	1000
2000.03.24	6824	10658	1200
2000.03.25	6521	11046	1728
2000.03.26	6193	10062	1986
2000.03.27	6052	8707	1488
2000.03.28	6200	9312	1515
2000.03.29	5549	10149	1925
2000.03.30	5978	8971	848
2000.03.31	5830	8829	408
2000.04.01	5860	7046	754
2000.04.02	7159	7938	697
2000.04.03	7161	8146	1119
2000.04.04	7553	8015	1161
2000.04.05	7585	8079	1121
2000.04.06	8758	8099	1164
2000.04.07	8819	6494	1112
2000.04.08	8277	8754	708
2000.04.09	8052	6849	1003
2000.04.10	8127	4406	1353
2000.04.11	7445	8402	904
2000.04.12	7181	7553	1238
2000.04.13	7371	5946	1250
2000.04.14	6319	7704	1023
2000.04.15	3923	8723	632
2000.04.16	4151	10231	775
2000.04.17	4912	9873	1159
2000.04.18	7090	8923	826
2000.04.19	7712	8180	1329
2000.04.20	7589	8696	1326
2000.04.21	7387	10230	1285
2000.04.22	6339	95615	1551
2000.04.23	6607	9127	791
2000.04.24	6899	8480	1317
2000.04.25	6831	9034	967
2000.04.26	6650	8271	1390
2000.04.27	6425	10341	1389
2000.04.28	6399	10537	1372
2000.04.29	6054	10386	1351
2000.04.30	8918	10320	1459
2000.05.01	5983	10340	832
2000.05.02	6102	9546	783
2000.05.03	6026	10345	880
2000.05.04	6078	10029	1600
2000.05.05	5873	11356	1397
2000.05.06	5575	9681	1444
2000.05.07	5459	8861	1563
2000.05.08	6068	9828	1654
2000.05.09	5604	11539	1154
2000.05.10	5799	12109	2356



Daily

2000.05.11	6012	12330	2101
2000.05.12	6085	12379	2079
2000.05.13	6102	12073	1895
2000.05.14	6432	9403	1657
2000.05.15	5886	8415	1419
2000.05.16	6442	8276	1380
2000.05.17	6895	8186	1466
2000.05.18	7034	8130	1332
2000.05.19	7244	8076	1310
2000.05.20	7298	8138	1272
2000.05.21	7041	8302	1173
2000.05.22	6735	7646	1210
2000.05.23	6643	8363	1546
2000.05.24	6535	8734	1746
2000.05.25	6899	8867	2089
2000.05.26	6107	8813	2201
2000.05.27	7623	8210	2040
2000.05.28	7580	5800	1686
2000.05.29	7836	4983	1461
2000.05.30	7522	4933	1557
2000.05.31	7945	5108	1434
2000.06.01	7395	5243	1347
2000.06.02	6425	4893	1312
2000.06.03	6986	4676	753
2000.06.04	6272	4914	703
2000.06.05	6568	5373	939
2000.06.06	6514	6693	1169
2000.06.07	6215	11587	1573
2000.06.08	5485	16290	1686
2000.06.09	3825	14961	1223
2000.06.10	4472	16124	1678
2000.06.11	4926	14393	1724
2000.06.12	5873	14485	1534
2000.06.13	5138	15676	1519
2000.06.14	4748	14741	1448
2000.06.15	5054	14392	1468
2000.06.16	4628	14014	1537
2000.06.17	4579	13272	1453
2000.06.18	3555	14009	4012
2000.06.19	4269	13866	854
2000.06.20	4860	10790	1046
2000.06.21	3389	13375	907
2000.06.22	4844	14456	1910
2000.06.23	3801	15099	1889
2000.06.24	3153	14778	954
2000.06.25	4774	15236	1898
2000.06.26	4541	14995	1058
2000.06.27	4456	15398	2136
2000.06.28	3576	14503	1995
2000.06.29	4454	12049	1905
2000.06.30	5105	6493	1786
2000.07.01	5674	7604	2072
2000.07.02	5825	8355	1818
2000.07.03	6431	7431	2151
2000.07.04	7081	6106	935
2000.07.05	6453	6950	929
2000.07.06	5760	5410	930

Daily

2000.07.07	4922	6964	912
2000.07.08	5946	5281	1552
2000.07.09	6594	5524	1439
2000.07.10	6735	5782	1483
2000.07.11	4996	3255	1395
2000.07.12	5666	3169	1274
2000.07.13	5945	3358	1285
2000.07.14	6747	3798	1245
2000.07.15	6193	4241	1371
2000.07.16	6673	5389	1564
2000.07.17	6728	6485	1451
2000.07.18	6312	8091	1509
2000.07.19	5859	7155	1439
2000.07.20	5823	8346	881
2000.07.21	5636	12236	873
2000.07.22	5678	12450	774
2000.07.23	5866	12383	1477
2000.07.24	5947	12174	1299
2000.07.25	5518	12022	1292
2000.07.26	3890	10983	2160
2000.07.27	3956	12126	2017
2000.07.28	4151	12159	1680
2000.07.29	4764	11890	1600
2000.07.30	4673	11457	1469
2000.07.31	3665	11398	1797
2000.08.01	4239	11147	1578
2000.08.02	4466	11364	1540
2000.08.03	4437	11722	1466
2000.08.04	4438	11781	1356
2000.08.05	4393	11741	819
2000.08.06	4259	11742	937
2000.08.07	4098	11824	1249
2000.08.08	4570	12189	1019
2000.08.09	4485	7961	3507
2000.08.10	4284	5458	4374
2000.08.11	4341	3679	2751
2000.08.12	4432	4751	2184
2000.08.13	4332	7525	2263
2000.08.14	4140	4063	2296
2000.08.15	3657	4287	2185
2000.08.16	3087	2860	2218
2000.08.17	3944	3109	2371
2000.08.18	4436	2964	2466
2000.08.19	2957	3310	2444
2000.08.20	5584	3779	2347
2000.08.21	4636	3129	2281
2000.08.22	3730	3280	1307
2000.08.23	4512	3336	1369
2000.08.24	4649	3208	1522
2000.08.25	3603	2834	2229
2000.08.26	3269	2398	2204
2000.08.27	3121	2057	2139
2000.08.28	3337	1762	2149
2000.08.29	3271	2226	1131
2000.08.30	3279	1805	1094
2000.08.31	3848	2000	2012
2000.09.01	3347	2257	1872

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2000.09.02	3500		2328	1819	
2000.09.03	3548		2845	808	
2000.09.04	3662		1867	1707	
2000.09.05	3854		1735	1315	
2000.09.06	3742		2263	1700	
2000.09.07	3524		1937	1796	
2000.09.08	3172		2101	1669	
2000.09.09	3765		2050	870	
2000.09.10	3737		2176	1757	
2000.09.11	3890		1808	1766	
2000.09.12	3447		1705	1791	
2000.09.13	5476		1808	1722	
2000.09.14	3844		1981	859	
2000.09.15	4243		2019	1762	
2000.09.16	4478		2597	772	
2000.09.17	4281		3969	5832	
2000.09.18	3267		5297	6398	
2000.09.19	4353		5599	3439	
2000.09.20	4328		4975	2622	
2000.09.21	4298		4631	2652	
2000.09.22	4320		6126	1525	
2000.09.23	3968		6744	2075	
2000.09.24	3952		8477	805	
2000.09.25	4176		6695	1131	
2000.09.26	4732		6128	1128	
2000.09.27	4280		6315	2160	
2000.09.28	4640		11248	3751	
2000.09.29	4644		10470	3697	
2000.09.30	4687		7116	3254	
2000.10.01	4639	0	34493	2763	
2000.10.02	3148	0	21904	2184	
2000.10.03	7429	0	6182	825	
2000.10.04	6557	0	5703	1566	
2000.10.05	5719	0	6573	1403	
2000.10.06	5974	0	6704	1668	
2000.10.07	5811	0	7089	1803	
2000.10.08	5493	0	9151	1657	0
2000.10.09	5068	0	8294	1648	0
2000.10.10	5642	0	8100	1685	0
2000.10.11	6219	0	8334	1498	0
2000.10.12	5751	0	7792	1415	0
2000.10.13	3495	0	7240	1560	0
2000.10.14	4462	0	7349	1575	0
2000.10.15	3576	0	6959	1224	0
2000.10.16	5668	0	6936	756	0
2000.10.17	3185	3	7981	1543	0
2000.10.18	1075	5	8232	1492	0
2000.10.19	4970	7	7493	1614	0
2000.10.20	4528	8	6754	1556	0
2000.10.21	4596	8	7091	1293	0
2000.10.22	5348	5	6830	1781	0
2000.10.23	5898	3	8305	1976	0
2000.10.24	2459	3	8077	1023	0
2000.10.25	4667	5	7750	1473	0
2000.10.26	5150	5	8724	727	0
2000.10.27	5434	5	7559	700	0
2000.10.28	5751	4	7511	738	0

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2000.10.29	6307	3	7114	2037	0
2000.10.30	6140	3	6304	2040	0
2000.10.31	5858	2	4004	1877	0
2000.11.01	5517	2	4275	963	1415
2000.11.02	5580	2	4588	1698	1415
2000.11.03	5595	2	4847	888	1415
2000.11.04	5516	4	5910	1753	1415
2000.11.05	3744	4	7510	1509	1415
2000.11.06	2994	9	8302	1390	1415
2000.11.07	2363	5	5502	615	1415
2000.11.08	2988	5	5629	1273	1415
2000.11.09	3433	5	6204	1293	1415
2000.11.10	3967	6	8466	670	1415
2000.11.11	2531	7	13265	2259	1415
2000.11.12	2868	5	11035	3317	1415
2000.11.13	3247	5	10776	2631	1415
2000.11.14	3203	5	11517	2696	1415
2000.11.15	2467	5	12171	2979	1415
2000.11.16	1985	7	12161	3117	1415
2000.11.17	1795	8	13154	1503	1415
2000.11.18	2120	8	13334	1398	1415
2000.11.19	2333	9	13431	1718	1415
2000.11.20	2256	10	13548	1155	1415
2000.11.21	2029	8	13605	2654	1415
2000.11.22	3633	7	12621	2648	1415
2000.11.23	4260	8	12457	3336	1415
2000.11.24	5580	8	12376	3424	1415
2000.11.25	5348	9	12881	1639	1415
2000.11.26	4115	9	12671	1319	1415
2000.11.27	4376	10	12523	2758	1415
2000.11.28	3289	10	12837	3004	1415
2000.11.29	1649	9	12855	2581	1415
2000.11.30	1605	9	12659	2828	1415
2000.12.01	1675	10	12527	3284	1463
2000.12.02	1629	11	12786	3223	1463
2000.12.03	2801	6	10779	2688	1463
2000.12.04	2692	7	10568	2738	1463
2000.12.05	2625	7	7585	1851	1463
2000.12.06	5278	5	6829	1854	1463
2000.12.07	5090	5	6868	1466	1463
2000.12.08	4760	5	7038	797	1463
2000.12.09	4483	5	7100	1535	1463
2000.12.10	4841	6	6699	1294	1463
2000.12.11	5512	6	6747	585	1463
2000.12.12	3974	6	8445	645	1463
2000.12.13	3810	7	6227	708	1463
2000.12.14	3683	7	7116	935	1463
2000.12.15	3261	6	6999	1025	1463
2000.12.16	3862	6	6546	1292	1463
2000.12.17	4711	7	7983	1344	1463
2000.12.18	3828	6	6665	960	1463
2000.12.19	1957	6	6727	1355	1463
2000.12.20	2282	3908	4887	0	1463
2000.12.21	3792	1220	77183	0	1463
2000.12.22	4472	2	10244	0	1463
2000.12.23	4814	2	5600	0	1463
2000.12.24	4551	3	9720	0	1463

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2000.12.25	3496	4	12016	651	1463
2000.12.26	4115	4	11641	1331	1463
2000.12.27	3512	4	11788	976	1463
2000.12.28	3562	4	13066	967	1463
2000.12.29	3395	6	13303	1927	1463
2000.12.30	3524	7	13147	2211	1463
2000.12.31	3258	7	13097	2852	1463
2001.01.01	3270	150	13670	2264	1393
2001.01.02	3522	145	13834	2222	1393
2001.01.03	3474	134	13764	2329	1393
2001.01.04	3764	146	12685	2134	1393
2001.01.05	2924	149	13237	2139	1393
2001.01.06	3371	161	14094	2513	1393
2001.01.07	3088	159	13593	2522	1393
2001.01.08	3029	157	13172	2371	1393
2001.01.09	2687	169	12759	2644	1393
2001.01.10	2445	172	13493	2584	1393
2001.01.11	2480	158	13559	2473	1393
2001.01.12	2610	162	13678	2578	1393
2001.01.13	2700	161	14761	2733	1393
2001.01.14	2740	131	9116	1722	1393
2001.01.15	2298	132	7303	1554	1393
2001.01.16	2510	151	7615	1572	1393
2001.01.17	2411	140	7252	1295	1393
2001.01.18	2403	121	7270	1316	1393
2001.01.19	2400	146	8743	854	1393
2001.01.20	2431	132	9137	1604	1393
2001.01.21	2327	138	8016	1623	1393
2001.01.22	2625	124	7536	1532	1393
2001.01.23	2856	173	13566	1819	1393
2001.01.24	2563	178	13461	1898	1393
2001.01.25	2554	161	14896	2472	1393
2001.01.26	2694	174	13815	2502	1393
2001.01.27	2712	184	13887	2659	1393
2001.01.28	2753	162	13964	2507	1393
2001.01.29	2745	190	15127	2887	1393
2001.01.30	2835	141	14622	2795	1393
2001.01.31	2718	215	15293	2303	1393
2001.02.01	2584	215	15326	2729	25
2001.02.02	1895	283	15000	2704	25
2001.02.03	2363	284	14350	1351	25
2001.02.04	2399	307	14371	2668	25
2001.02.05	2729	276	14435	2238	25
2001.02.06	2910	224	14979	2383	26
2001.02.07	2020	267	15053	2750	26
2001.02.08	2826	220	13673	2089	26
2001.02.09	2881	244	13259	3005	26
2001.02.10	2780	252	14671	3200	26
2001.02.11	2845	213	13058	3145	26
2001.02.12	2975	232	13801	3161	26
2001.02.13	3758	228	12958	1444	25
2001.02.14	3454	143	9009	1779	27
2001.02.15	2581	151	8697	2068	28
2001.02.16	3532	167	8702	1812	28
2001.02.17	3970	175	8568	1954	28
2001.02.18	5507	165	9131	1891	28
2001.02.19	4091	177	11218	1756	27

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2001.02.20	2994	143	7944	1686	28
2001.02.21	3578	122	7256	1626	28
2001.02.22	5127	144	6475	977	25
2001.02.23	3956	58	7972	1061	22
2001.02.24	5011	87	8080	1549	27
2001.02.25	4927	76	7966	1631	28
2001.02.26	2234	95	8312	1540	28
2001.02.27	170	103	7826	1463	28
2001.02.28	4449	103	7950	2746	28
2001.03.01	4448	100	8597	1459	28
2001.03.02	3737	92	8044	951	28
2001.03.03	3024	120	12479	1222	26
2001.03.04	2633	150	13159	2019	24
2001.03.05	2398	172	14245	2308	25
2001.03.06	3093	138	13072	2322	26
2001.03.07	3670	135	12927	2339	27
2001.03.08	3532	146	12636	2610	27
2001.03.09	3432	152	12560	2834	27
2001.03.10	4242	162	13356	3016	26
2001.03.11	5332	162	13594	3401	25
2001.03.12	5175	168	14081	2123	26
2001.03.13	4532	193	14703	3551	26
2001.03.14	3732	194	15276	3517	27
2001.03.15	4238	205	14241	3250	26
2001.03.16	5287	207	13800	3154	27
2001.03.17	5088	140	13812	3151	26
2001.03.18	5301	196	14037	3099	25
2001.03.19	5768	213	13420	1922	25
2001.03.20	4470	213	14034	2764	25
2001.03.21	4011	225	13973	2966	26
2001.03.22	3102	179	13861	3161	26
2001.03.23	3994	160	14139	3174	26
2001.03.24	3447	141	13887	3329	26
2001.03.25	4338	167	8766	2718	27
2001.03.26	3158	146	7220	2521	27
2001.03.27	3341	150	7312	1907	27
2001.03.28	3259	129	7501	2133	27
2001.03.29	3151	108	7408	2071	27
2001.03.30	3405	106	7979	1937	27
2001.03.31	3547	113	7924	1800	27
2001.04.01	3629	0	7875	1734	27
2001.04.02	3676	0	7963	1736	27
2001.04.03	3881	99	7968	1020	28
2001.04.04	3883	88	7465	1712	29
2001.04.05	2980	88	7941	1644	29
2001.04.06	3102	80	8104	1615	29
2001.04.07	3231	81	8429	1590	28
2001.04.08	3127	75	8457	1563	28
2001.04.09	3270	78	8295	1541	28
2001.04.10	3659	83	13263	1251	27
2001.04.11	4228	88	13271	1999	27
2001.04.12	4656	110	13193	3583	27
2001.04.13	4468	101	14056	3853	27
2001.04.14	4275	108	13237	3673	27
2001.04.15	4877	112	12971	3185	28
2001.04.16	5357	104	12181	2325	27
2001.04.17	4835	102	10340	2735	27

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2001.04.18	4738	128	11805	2606	27
2001.04.19	4823	142	13363	3391	27
2001.04.20	3453	136	12771	3756	27
2001.04.21	3523	137	13254	3668	27
2001.04.22	3465	150	13648	3636	27
2001.04.23	3093	163	12816	3873	27
2001.04.24	3711	128	11666	3445	26
2001.04.25	4645	143	11441	2227	26
2001.04.26	3376	162	11763	1404	26
2001.04.27	4049	141	11444	1795	27
2001.04.28	4434	161	12004	2576	27
2001.04.29	4293	168	11641	2647	27
2001.04.30	3251	194	12156	3045	27
2001.05.01	2911	156	12070	3183	27
2001.05.02	2624	134	7832	2052	28
2001.05.03	3282	107	6654	2196	29
2001.05.04	2668	109	6834	2006	28
2001.05.05	3381	112	6149	1753	28
2001.05.06	3991	119	6199	1973	29
2001.05.07	3268	148	6873	1912	29
2001.05.08	3450	117	6910	1932	29
2001.05.09	3146	120	6908	1914	28
2001.05.10	2319	139	6957	1748	28
2001.05.11	2130	140	6869	1760	28
2001.05.12	2245	151	7819	1651	28
2001.05.13	2657	136	7059	1732	27
2001.05.14	3705	133	7015	1116	27
2001.05.15	5446	129	6676	1723	28
2001.05.16	5800	116	5861	1504	27
2001.05.17	5736	123	5629	1442	26
2001.05.18	4563	108	10704	1439	24
2001.05.19	3436	143	14104	2339	23
2001.05.20	2811	129	13462	1495	23
2001.05.21	3402	130	12910	2743	23
2001.05.22	4168	110	12455	3249	22
2001.05.23	4998	115	11336	1823	20
2001.05.24	3118	127	12281	1819	21
2001.05.25	3735	100	11250	2371	20
2001.05.26	4088	121	10811	2360	21
2001.05.27	4396	131	11973	2779	23
2001.05.28	3950	159	11499	2558	23
2001.05.29	5296	153	10616	2116	23
2001.05.30	5639	118	10234	2981	20
2001.05.31	5256	86	8853	2382	16
2001.06.01	6819	107	9517	2123	17
2001.06.02	6373	95	10163	2688	17
2001.06.03	6731	97	10788	2793	17
2001.06.04	6683	64	11049	2537	17
2001.06.05	6609	124	10813	2605	17
2001.06.06	6683	110	11229	3297	17
2001.06.07	6695	115	12012	3220	17
2001.06.08	6401	104	11543	3513	17
2001.06.09	6894	100	7800	2961	18
2001.06.10	6388	84	4891	2278	18
2001.06.11	6582	80	4695	1871	18
2001.06.12	6862	90	5329	1932	18
2001.06.13	6774	91	5565	1805	19

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2001.06.14	7034	86	5752	1753	18
2001.06.15	7385	86	5781	1687	18
2001.06.16	6117	83	6970	1320	19
2001.06.17	6711	83	6798	1055	19
2001.06.18	5017	107	5792	1158	19
2001.06.19	2514	121	5992	1484	21
2001.06.20	5111	111	6118	1380	20
2001.06.21	4903	91	5799	1352	19
2001.06.22	5581	104	6167	1363	19
2001.06.23	5453	122	6861	1475	20
2001.06.24	5585	110	7388	1595	21
2001.06.25	4009	120	7014	1500	22
2001.06.26	3161	107	6293	1407	22
2001.06.27	3367	134	5970	1400	23
2001.06.28	2083	124	6122	1316	22
2001.06.29	4163	136	6448	1300	23
2001.06.30	3849	142	7000	1424	23
2001.07.01	3720	128	7409	1428	24
2001.07.02	4791	175	7928	1319	24
2001.07.03	4115	125	7354	1506	24
2001.07.04	4239	174	12474	1607	22
2001.07.05	3464	164	13800	2567	22
2001.07.06	3288	173	12209	2206	22
2001.07.07	3632	182	11442	2747	21
2001.07.08	3407	181	11599	4409	21
2001.07.09	3020	166	11338	2484	21
2001.07.10	3206	179	12310	3147	22
2001.07.11	2821	160	11294	2444	22
2001.07.12	4096	159	10590	2900	23
2001.07.13	5019	171	11654	1343	22
2001.07.14	4938	161	12276	3203	22
2001.07.15	4343	176	12101	3082	22
2001.07.16	4307	177	11562	2144	22
2001.07.17	4254	186	12864	1913	22
2001.07.18	3250	362	14353	2977	22
2001.07.19	3286	240	14471	3339	21
2001.07.20	4266	213	13717	3375	21
2001.07.21	3894	218	13312	3302	21
2001.07.22	2879	218	13088	3404	20
2001.07.23	260	182	12760	3124	20
2001.07.24	294	94	10635	2938	20
2001.07.25	2401	91	7100	2170	20
2001.07.26	4728	75	4054	2830	20
2001.07.27	4755	94	3027	1544	20
2001.07.28	3544	129	3088	1625	20
2001.07.29	2649	118	857	1541	20
2001.07.30	2596	94	1657	1445	20
2001.07.31	2755	57	2470	1589	20
2001.08.01	3711	82	1474	1535	21
2001.08.02	4226	64	1463	1542	22
2001.08.03	3790	88	2837	1503	23
2001.08.04	3787	46	2835	1551	23
2001.08.05	3885	34	638	1559	22
2001.08.06	4968	31	2442	1526	23
2001.08.07	4695	30	2620	1687	22
2001.08.08	2757	43	2594	1002	22
2001.08.09	4186	51	1256	1612	22



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2001.08.10	4132	59	1563	1625	22
2001.08.11	2493	73	1776	1421	22
2001.08.12	1937	69	2146	2395	22
2001.08.13	1838	69	6317	3290	22
2001.08.14	1830	90	7000	2364	22
2001.08.15	1997	100	6062	3500	22
2001.08.16	1960	102	5239	3714	22
2001.08.17	2142	100	3892	3930	22
2001.08.18	2842	118	4702	4210	22
2001.08.19	2562	126	2335	3447	22
2001.08.20	2568	134	2618	3539	22
2001.08.21	2537	121	11620	3278	22
2001.08.22	2430	101	6148	2299	22
2001.08.23	2429	102	4377	2299	22
2001.08.24	2767	112	9263	4059	22
2001.08.25	2687	152	8853	4196	22
2001.08.26	3048	118	9182	4079	20
2001.08.27	2820	131	10276	3773	21
2001.08.28	2774	190	11456	4053	22
2001.08.29	2303	176	11538	3811	21
2001.08.30	2285	189	10431	3815	22
2001.08.31	2265	182	9427	3663	22
2001.09.01	2400	152	7850	3688	22
2001.09.02	3031	131	3624	1652	23
2001.09.03	2760	124	3272	1546	22
2001.09.04	2355	147	3209	896	23
2001.09.05	2340	129	2551	1350	22
2001.09.06	2468	98	1891	1448	22
2001.09.07	2482	151	2243	1305	22
2001.09.08	2616	132	3578	1332	22
2001.09.09	2634	114	2686	1430	22
2001.09.10	2634	101	1610	1432	22
2001.09.11	2656	110	549	1433	23
2001.09.12	2594	103	1146	1420	22
2001.09.13	3699	93	2839	1380	22
2001.09.14	4217	73	5895	1402	22
2001.09.15	5950	68	6344	1446	22
2001.09.16	5108	78	7207	1449	21
2001.09.17	3527	103	7016	1439	21
2001.09.18	3811	95	6559	1404	22
2001.09.19	4062	87	6374	1478	21
2001.09.20	3611	115	6022	1444	22
2001.09.21	3469	111	6475	1346	21
2001.09.22	2964	105	12965	1220	22
2001.09.23	2703	174	13353	3946	21
2001.09.24	2514	175	13448	4405	22
2001.09.25	2644	159	15590	3580	20
2001.09.26	2456	202	13029	2222	21
2001.09.27	4893	73	11373	1433	0
2001.09.28	5110	67	9348	1527	0
2001.09.29	3338	51	8566	1865	0
2001.09.30	2915	49	7749	1845	0
2001.10.01	2015	34	7646	1998	4
2001.10.02	2010	27	7673	2115	4
2001.10.03	1834	48	7783	1246	4
2001.10.04	1838	44	7974	1954	4
2001.10.05	2270	38	8888	1775	4

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2001.10.06	3177	36	10947	1916	4
2001.10.07	3707	35	10044	1967	4
2001.10.08	4251	102	12215	3627	5
2001.10.09	5001	120	7474	1935	5
2001.10.10	2323	141	6759	1905	4
2001.10.11	3202	50	7004	2417	4
2001.10.12	3557	54	7724	2052	4
2001.10.13	2975	47	9727	2594	4
2001.10.14	2260	49	13581	2816	4
2001.10.15	2680	148	9882	3537	5
2001.10.16	2372	31	4348	1854	4
2001.10.17	3126	18	7166	1698	4
2001.10.18	4029	12	4459	1575	5
2001.10.19	4620	19	4619	1668	11
2001.10.20	5431	20	6091	1589	25
2001.10.21	5588	25	9542	1708	22
2001.10.22	5435	16	8698	1474	17
2001.10.23	4429	35	18178	2127	18
2001.10.24	2283	28	14588	2695	19
2001.10.25	2006	136	15350	2953	20
2001.10.26	2013	139	14347	3542	20
2001.10.27	4011	134	12974	3107	21
2001.10.28	5240	128	13638	3015	22
2001.10.29	5426	192	12447	3567	22
2001.10.30	2814	184	12293	2890	23
2001.10.31	2206	197	13067	3633	24
2001.11.01	3163	135	13003	3431	23
2001.11.02	4507	214	12581	3321	23
2001.11.03	3450	161	12745	4213	23
2001.11.04	2872	195	12446	4199	22
2001.11.05	4873	185	12348	3632	24
2001.11.06	5263	200	12188	4083	24
2001.11.07	4153	193	11746	3525	24
2001.11.08	4105	213	12689	3544	25
2001.11.09	2664	150	12767	3470	25
2001.11.10	3356	152	12615	3855	25
2001.11.11	2572	97	13217	3390	25
2001.11.12	4601	83	5072	1994	25
2001.11.13	5592	90	6127	2042	25
2001.11.14	3874	135	6699	1949	25
2001.11.15	2746	177	11927	1882	26
2001.11.16	2448	138	8879	1835	26
2001.11.17	2410	154	7969	1820	26
2001.11.18	2369	141	8782	1832	26
2001.11.19	2279	138	6039	1879	26
2001.11.20	2394	127	5938	1911	27
2001.11.21	2761	213	5737	3845	28
2001.11.22	2568	137	5546	1306	28
2001.11.23	3059	146	4916	1780	28
2001.11.24	3096	133	5387	1663	28
2001.11.25	2898	151	7944	1663	28
2001.11.26	2765	172	1962	1700	28
2001.11.27	2740	144	3361	1682	28
2001.11.28	2912	151	816	1709	28
2001.11.29	4233	148	297	1687	28
2001.11.30	2331	215	9549	1441	27
2001.12.01	2205	258	10041	3809	27

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2001.12.02	2238	245	7278	4726	27
2001.12.03	2278	251	2119	4355	28
2001.12.04	2270	239	1957	3849	28
2001.12.05	2325	239	2191	3732	28
2001.12.06	2146	109	2708	3807	28
2001.12.07	1997	104	4024	3983	28
2001.12.08	2026	127	3583	3935	29
2001.12.09	2024	116	3041	4899	29
2001.12.10	2015	128	4657	4787	29
2001.12.11	2167	142	2082	4713	28
2001.12.12	2283	76	2042	4843	28
2001.12.13	2117	108	5607	2827	28
2001.12.14	2023	78	4692	4617	28
2001.12.15	4156	92	3983	4828	28
2001.12.16	3849	94	3906	4508	29
2001.12.17	2804	104	4382	5227	29
2001.12.18	1985	102	4558	5084	29
2001.12.19	2166	98	2307	2243	29
2001.12.20	2322	92	708	1953	29
2001.12.21	2445	87	395	1808	29
2001.12.22	2764	112	455	1767	29
2001.12.23	3336	116	141	1712	29
2001.12.24	2742	114	418	1604	29
2001.12.25	3668	108	618	1584	29
2001.12.26	2651	72	329	1696	29
2001.12.27	2650	73	222	1945	29
2001.12.28	2603	68	246	1890	28
2001.12.29	2562	76	201	1858	28
2001.12.30	2782	107	132	1844	28
2001.12.31	2686	103	85	1763	28
2002.01.01	2687	100	114	1719	29
2002.01.02	2728	97	54	1558	29
2002.01.03	2829	74	221	1535	29
2002.01.04	2961	79	1174	1544	29
2002.01.05	2902	66	1208	1604	29
2002.01.06	2808	51	1754	1588	28
2002.01.07	2810	79	1222	1554	29
2002.01.08	2839	143	3098	3830	29
2002.01.09	2749	152	3737	4302	28
2002.01.10	2615	148	2305	4714	27
2002.01.11	2650	144	1156	4899	27
2002.01.12	2680	102	4782	1675	27
2002.01.13	2738	103	4538	1644	27
2002.01.14	3650	117	4982	4200	28
2002.01.15	5415	136	5274	5339	28
2002.01.16	2893	133	4938	5971	27
2002.01.17	2703	85	6572	5454	27
2002.01.18	2687	166	11146	5621	27
2002.01.19	3230	130	5940	4010	27
2002.01.20	2777	195	9926	5549	27
2002.01.21	2753	129	10228	4297	27
2002.01.22	2578	130	9060	5553	28
2002.01.23	2601	132	7822	5661	28
2002.01.24	2369	123	6676	5425	28
2002.01.25	2583	121	8120	5386	29
2002.01.26	4911	97	6741	5109	27
2002.01.27	4630	118	3536	2087	27

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2002.01.28	5122	103	3878	1805	27
2002.01.29	4908	86	3935	1802	28
2002.01.30	6039	100	3210	1633	29
2002.01.31	6369	47	2877	1730	29
2002.02.01	6380	56	3624	1595	29
2002.02.02	6693	86	3653	1479	29
2002.02.03	6663	70	3634	1537	29
2002.02.04	4387	62	3776	1492	28
2002.02.05	4593	80	3277	1478	29
2002.02.06	6077	75	3388	1476	29
2002.02.07	6141	82	3480	1495	28
2002.02.08	6151	54	4234	1519	29
2002.02.09	5192	23	3878	1539	29
2002.02.10	5794	70	4177	1582	28
2002.02.11	5761	41	4417	1537	29
2002.02.12	4918	58	5138	1481	29
2002.02.13	4461	59	5951	1533	29
2002.02.14	4752	55	5728	1711	29
2002.02.15	3370	83	4247	1720	29
2002.02.16	3190	68	4367	1864	29
2002.02.17	3469	77	3862	1842	29
2002.02.18	3204	76	3381	1710	29
2002.02.19	2990	65	3691	1658	29
2002.02.20	4115	67	3716	1615	29
2002.02.21	4241	99	9580	3655	28
2002.02.22	3014	90	10199	5580	28
2002.02.23	5861	89	9432	4185	29
2002.02.24	4658	140	9789	4368	29
2002.02.25	4262	97	9853	5118	29
2002.02.26	2842	112	9681	4769	29
2002.02.27	1777	123	9773	5076	28
2002.02.28	3093	126	9507	5702	28
2002.03.01	6683	132	10372	5144	27
2002.03.02	6689	163	10483	4669	25
2002.03.03	4250	137	12346	4187	25
2002.03.04	3903	100	13089	4293	26
2002.03.05	5417	130	9744	4717	27
2002.03.06	4034	100	8007	5615	27
2002.03.07	2356	169	9821	5278	28
2002.03.08	2131	178	9003	4602	29
2002.03.09	3818	237	11512	5953	28
2002.03.10	5386	35	7049	3467	0
2002.03.11	5154	15	4207	2454	10
2002.03.12	3628	14	2893	1552	4
2002.03.13	5341	18	553	1409	4
2002.03.14	3902	20	454	1300	4
2002.03.15	3839	17	998	1740	5
2002.03.16	4424	17	612	1470	4
2002.03.17	4658	18	266	1432	9
2002.03.18	6076	17	215	1547	18
2002.03.19	5893	16	402	1555	20
2002.03.20	2505	101	4366	1626	21
2002.03.21	2761	81	6715	1608	25
2002.03.22	5003	137	5094	1931	28
2002.03.23	5904	126	4393	2041	29
2002.03.24	4898	143	3855	1779	29
2002.03.25	3143	141	3986	1702	29

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2002.03.26	2926	122	3850	4407	29
2002.03.27	3170	203	6312	1876	29
2002.03.28	3096	155	8426	1807	30
2002.03.29	3098	169	10173	4971	29
2002.03.30	3684	206	9129	4230	29
2002.03.31	3859	224	9057	4216	29
2002.04.01	2888	177	10233	7235	28
2002.04.02	2295	155	8280	4207	29
2002.04.03	2031	217	9795	3768	29
2002.04.04	1963	268	8939	3941	29
2002.04.05	2673	221	10512	4075	29
2002.04.06	2954	247	11912	4051	29
2002.04.07	3409	184	11355	4239	29
2002.04.08	3666	164	10666	3661	29
2002.04.09	3420	144	10017	3510	29
2002.04.10	2923	158	9533	3189	28
2002.04.11	3193	199	8561	3399	29
2002.04.12	3477	188	9023	3206	29
2002.04.13	3106	186	8476	3615	29
2002.04.14	2195	137	9129	4188	29
2002.04.15	1815	208	10018	3991	29
2002.04.16	3430	127	2803	2312	29
2002.04.17	3328	133	1266	2187	29
2002.04.18	3950	107	1966	2206	29
2002.04.19	3709	104	2030	1815	29
2002.04.20	3515	87	1647	2097	29
2002.04.21	4854	61	1436	2034	29
2002.04.22	4845	89	1911	2015	29
2002.04.23	3956	81	2039	1880	29
2002.04.24	3015	77	1791	1849	29
2002.04.25	3193	85	2137	1816	30
2002.04.26	3191	69	1679	1817	30
2002.04.27	3971	60	1105	1828	29
2002.04.28	3835	50	950	1790	29
2002.04.29	5066	42	821	1913	29
2002.04.30	4344	55	789	1932	29
2002.05.01	2771	68	1790	1986	29
2002.05.02	3261	56	3516	1992	29
2002.05.03	3736	90	2147	2019	29
2002.05.04	3334	83	1296	1983	29
2002.05.05	3627	85	1310	1994	29
2002.05.06	3891	54	1257	1983	29
2002.05.07	2650	78	1811	1872	29
2002.05.08	2610	44	1270	1822	29
2002.05.09	3073	54	1656	1698	29
2002.05.10	3730	93	10065	3292	29
2002.05.11	4552	91	11824	2896	29
2002.05.12	5982	73	10288	2883	29
2002.05.13	4561	80	10671	3627	29
2002.05.14	5353	102	12329	3621	30
2002.05.15	3907	115	11257	3072	29
2002.05.16	3764	87	11032	3058	29
2002.05.17	2871	85	11139	3019	29
2002.05.18	2827	92	11250	3469	29
2002.05.19	2768	93	10842	3175	29
2002.05.20	2812	100	10387	3096	29
2002.05.21	3019	84	10751	3070	29

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2002.05.22	3370	98	10714	3304	29
2002.05.23	3409	123	10965	3306	29
2002.05.24	3590	151	9307	2815	29
2002.05.25	2994	160	4292	3028	29
2002.05.26	3104	132	1771	3042	29
2002.05.27	3389	114	1505	3179	29
2002.05.28	2928	90	1590	2566	29
2002.05.29	4298	70	1412	2275	30
2002.05.30	4545	65	980	2005	30
2002.05.31	5002	84	1375	1948	30
2002.06.01	5273	81	1946	1409	29
2002.06.02	2799	73	1517	1994	29
2002.06.03	3296	67	1523	2064	30
2002.06.04	4177	58	814	1143	30
2002.06.05	3187	50	1352	1978	29
2002.06.06	3317	55	1566	1915	30
2002.06.07	3080	55	1303	1922	30
2002.06.08	2823	53	1473	1896	30
2002.06.09	2676	52	1702	1646	29
2002.06.10	2534	62	2121	1917	30
2002.06.11	2722	59	3148	1926	29
2002.06.12	3026	52	3471	1917	29
2002.06.13	2742	60	3168	1948	29
2002.06.14	2974	55	3028	1932	29
2002.06.15	1985	49	6069	1931	29
2002.06.16	3163	49	4309	1946	29
2002.06.17	3199	52	4368	1822	29
2002.06.18	2582	53	1989	1684	29
2002.06.19	3861	53	1741	1726	29
2002.06.20	3033	72	1826	1727	29
2002.06.21	2729	66	1513	1762	29
2002.06.22	2524	69	1944	979	29
2002.06.23	2517	54	2621	1713	26
2002.06.24	2872	39	2230	1620	25
2002.06.25	2168	44	1088	1659	29
2002.06.26	2181	62	7609	2453	29
2002.06.27	3161	54	13394	2830	29
2002.06.28	2080	128	9906	2765	29
2002.06.29	2228	117	7234	2628	29
2002.06.30	1873	110	6584	2688	29
2002.07.01	2135	112	6302	2783	29
2002.07.02	2779	81	6716	2853	29
2002.07.03	1956	80	13839	3400	29
2002.07.04	1738	102	7625	3377	29
2002.07.05	1709	136	17468	2852	29
2002.07.06	1671	116	7786	3674	29
2002.07.07	1513	111	6259	3952	29
2002.07.08	1633	117	6026	3247	29
2002.07.09	1732	120	5498	4205	29
2002.07.10	1746	113	6391	5145	28
2002.07.11	2122	114	4781	4893	29
2002.07.12	4312	112	4735	4961	28
2002.07.13	3629	106	5271	4244	29
2002.07.14	3958	56	4522	2400	29
2002.07.15	4521	56	1889	2074	29
2002.07.16	2640	60	1637	2151	29
2002.07.17	2313	69	4494	1245	29

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2002.07.18	2735	68	2559	2010	29
2002.07.19	2776	54	1916	1912	29
2002.07.20	2776	45	1554	1653	29
2002.07.21	2695	40	1170	1869	29
2002.07.22	2288	43	1529	1853	29
2002.07.23	3084	42	1615	1852	29
2002.07.24	3275	53	1858	1908	29
2002.07.25	2426	53	2162	1916	29
2002.07.26	2317	51	1659	1854	29
2002.07.27	2278	49	2123	1879	29
2002.07.28	2288	54	2165	1875	29
2002.07.29	2903	51	2450	2085	29
2002.07.30	2953	51	2043	2130	29
2002.07.31	2495	54	3082	2129	29
2002.08.01	2325	44	3796	2162	29
2002.08.02	2315	68	2982	2215	29
2002.08.03	1776	49	2307	2228	29
2002.08.04	3134	50	2813	2166	29
2002.08.05	2024	58	2483	2099	29
2002.08.06	3659	53	2394	2079	29
2002.08.07	3091	51	2670	1960	29
2002.08.08	2947	38	1529	1982	29
2002.08.09	2461	62	3619	3121	29
2002.08.10	2079	53	2987	4659	29
2002.08.11	3136	45	3194	4922	28
2002.08.12	3364	54	2929	4902	29
2002.08.13	1804	60	2888	5563	29
2002.08.14	2990	75	3191	5442	29
2002.08.15	2764	86	3245	5693	29
2002.08.16	2602	73	3115	5820	29
2002.08.17	2604	73	3415	5129	29
2002.08.18	2016	72	3271	5795	29
2002.08.19	2039	69	3393	5979	28
2002.08.20	1643	74	4243	5397	28
2002.08.21	1655	89	5376	5404	29
2002.08.22	2374	95	4889	5543	29
2002.08.23	1968	120	5683	5398	29
2002.08.24	2711	112	6799	5844	29
2002.08.25	2992	122	7389	5405	29
2002.08.26	2766	114	6150	5307	29
2002.08.27	2562	116	1567	2438	29
2002.08.28	2648	59	787	2250	29
2002.08.29	3673	61	943	2246	29
2002.08.30	3436	68	1009	2158	29
2002.08.31	3026	53	612	1638	29
2002.09.01	2952	55	1557	2327	29
2002.09.02	2747	65	944	2231	29
2002.09.03	2602	62	1095	2235	29
2002.09.04	4395	59	2211	2410	28
2002.09.05	5147	31	3470	1924	22
2002.09.06	3171	51	1253	3329	28
2002.09.07	3045	50	983	3368	29
2002.09.08	2805	50	980	3380	29
2002.09.09	2795	53	1001	2117	29
2002.09.10	3190	53	775	2132	29
2002.09.11	2751	52	972	2166	29
2002.09.12	3761	44	1096	2048	29

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2002.09.13	3442	43	883	2131	29
2002.09.14	3449	49	550	2228	29
2002.09.15	3716	54	736	2190	29
2002.09.16	3263	46	1224	2376	29
2002.09.17	3566	42	1171	2275	29
2002.09.18	3087	44	2462	2295	29
2002.09.19	2744	75	4330	4460	30
2002.09.20	2747	105	5706	5247	29
2002.09.21	2745	103	5312	5585	29
2002.09.22	2712	98	4862	6244	29
2002.09.23	2711	98	5190	5773	29
2002.09.24	3837	68	4986	6200	29
2002.09.25	3662	77	6332	6255	29
2002.09.26	3127	64	5928	6367	29
2002.09.27	4473	40	4895	3313	29
2002.09.28	3475	52	2566	399	29
2002.09.29	1672	52	3463	0	29
2002.09.30	3616	50	3582	0	29
2002.10.01	3405	49	4682	0	29
2002.10.02	3515	54	5508	0	29
2002.10.03	3392	52	6063	0	30
2002.10.04	3137	50	3753	0	29
2002.10.05	3619	49	9282	0	29
2002.10.06	2727	36	5702	0	29
2002.10.07	2859	33	4996	0	29
2002.10.08	3364	32	2420	0	29
2002.10.09	3259	31	2465	0	29
2002.10.10	2819	31	4063	0	29
2002.10.11	2632	33	4345	0	29
2002.10.12	2594	31	3608	0	29
2002.10.13	2664	33	4736	0	29
2002.10.14	2652	47	5850	0	28
2002.10.15	2534	36	5694	0	28
2002.10.16	2727	64	5836	0	29
2002.10.17	2784	101	5704	0	29
2002.10.18	3455	70	4709	0	29
2002.10.19	2768	80	4416	0	29
2002.10.20	2634	98	2902	0	29
2002.10.21	2578	63	1896	0	29
2002.10.22	2589	63	2004	0	29
2002.10.23	2706	54	3600	0	29
2002.10.24	2727	48	5460	0	29
2002.10.25	3114	62	8729	0	30
2002.10.26	4087	86	13351	0	29
2002.10.27	1532	103	12654	4885	29
2002.10.28	2012	103	10300	5039	29
2002.10.29	3565	113	8677	4553	29
2002.10.30	5243	115	8805	5861	30
2002.10.31	4230	86	9415	5991	30
2002.11.01	2443	88	6795	3585	30
2002.11.02	5705	61	5013	2221	14
2002.11.03	6705	15	1560	3748	11
2002.11.04	4600	39	1286	2401	16
2002.11.05	3874	21	660	3172	14
2002.11.06	0	31	1641	2836	17
2002.11.07	3167	40	1391	3009	21
2002.11.08	0	41	732	1156	24



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2002.11.09	3048	28	1278	2466	25
2002.11.10	3066	36	2577	2494	27
2002.11.11	3199	47	1590	2390	28
2002.11.12	3360	50	1333	2463	29
2002.11.13	4227	41	1571	2329	29
2002.11.14	3093	44	2385	2368	29
2002.11.15	3059	48	2603	2645	27
2002.11.16	2927	48	4173	2598	27
2002.11.17	2449	39	1946	2694	27
2002.11.18	2668	24	2496	2578	27
2002.11.19	2919	105	3339	6305	28
2002.11.20	2595	39	2703	2537	28
2002.11.21	2952	36	4437	2496	28
2002.11.22	3884	32	4593	2364	28
2002.11.23	5547	52	4419	2314	28
2002.11.24	5655	54	4685	2354	29
2002.11.25	2597	52	3924	2203	29
2002.11.26	3697	61	6865	2278	28
2002.11.27	3956	69	7390	4406	28
2002.11.28	4932	129	6878	5885	28
2002.11.29	5462	180	3879	2700	29
2002.11.30	5247	153	3958	6056	28
2002.12.01	3948	180	4073	4800	28
2002.12.02	4481	185	5266	4647	29
2002.12.03	5424	174	4024	5069	29
2002.12.04	4501	108	3995	5353	29
2002.12.05	5291	100	4020	2779	29
2002.12.06	5226	104	11687	5371	22
2002.12.07	2125	85	4646	5363	24
2002.12.08	2598	70	2726	4920	26
2002.12.09	2809	77	2480	4775	26
2002.12.10	2895	89	3206	4654	26
2002.12.11	5406	54	5040	4046	20
2002.12.12	5863	53	4317	4100	20
2002.12.13	4621	84	4949	2603	24
2002.12.14	4741	68	3271	2796	26
2002.12.15	4916	95	2827	2593	28
2002.12.16	2683	107	4173	2621	27
2002.12.17	4841	109	1533	2496	29
2002.12.18	4648	112	2049	2475	30
2002.12.19	5102	99	1836	2447	30
2002.12.20	5123	116	3032	2206	30
2002.12.21	5146	112	1715	2056	29
2002.12.22	3261	90	1514	2029	29
2002.12.23	4865	93	2432	2117	29
2002.12.24	4769	111	3110	2186	30
2002.12.25	4721	58	1748	2078	30
2002.12.26	4851	70	2106	2128	30
2002.12.27	4296	125	7397	1173	30
2002.12.28	4324	136	12588	2219	30
2002.12.29	4286	162	10257	2188	30
2002.12.30	4067	153	11546	2292	30
2002.12.31	3900	121	15624	2237	29
2003.01.01	4090	128	12136	2270	29
2003.01.02	4248	118	13654	2268	29
2003.01.03	4344	143	14875	2245	29
2003.01.04	3631	149	17049	2247	22

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2003.01.05	5123	138	16984	2234	30
2003.01.06	4975	138	16570	2178	31
2003.01.07	5401	140	13151	2248	30
2003.01.08	5493	120	13515	5249	30
2003.01.09	5798	151	13429	4533	29
2003.01.10	6005	156	12112	4941	29
2003.01.11	3990	112	11563	5132	29
2003.01.12	6202	143	9331	5278	22
2003.01.13	5836	148	11559	5391	22
2003.01.14	3073	136	12825	4382	20
2003.01.15	4688	50	13926	5524	20
2003.01.16	4420	41	10913	5499	10
2003.01.17	4507	102	11858	5668	21
2003.01.18	5536	129	12652	6361	16
2003.01.19	5674	127	12001	5702	23
2003.01.20	2969	135	11980	5601	26
2003.01.21	3251	134	11367	6125	27
2003.01.22	3114	185	15266	6000	27
2003.01.23	3079	159	16495	6182	27
2003.01.24	6970	167	12015	6422	28
2003.01.25	6871	190	11165	6224	29
2003.01.26	7218	157	10392	5937	29
2003.01.27	7221	153	9877	4824	28
2003.01.28	5539	124	9049	3102	28
2003.01.29	7503	142	5998	2698	28
2003.01.30	8657	158	6827	2934	29
2003.01.31	7966	186	8282	3260	28
2003.02.01	7098	161	8402	3338	28
2003.02.02	8318	189	8351	3395	28
2003.02.03	9330	113	8462	3585	29
2003.02.04	8813	113	8935	3431	29
2003.02.05	1922	113	9199	1186	29
2003.02.06	9049	63	6077	3278	19
2003.02.07	8029	45	5006	3452	7
2003.02.08	9812	34	5391	3650	8
2003.02.09	9161	31	5668	3588	20
2003.02.10	8980	29	5887	3364	22
2003.02.11	8992	17	6113	3491	20
2003.02.12	10343	85	9209	3414	20
2003.02.13	9298	90	7426	3468	22
2003.02.14	2817	76	7296	3760	22
2003.02.15	5010	171	7182	3271	23
2003.02.16	7394	146	7054	3452	24
2003.02.17	7758	180	7090	4130	24
2003.02.18	6950	217	13730	3785	24
2003.02.19	2130	220	13828	6073	26
2003.02.20	5786	234	12166	6393	29
2003.02.21	5440	164	11940	8825	29
2003.02.22	6557	112	10458	8307	29
2003.02.23	3038	114	11705	8680	29
2003.02.24	1225	71	12015	9190	28
2003.02.25	3407	102	10883	8829	29
2003.02.26	3410	73	15127	8125	29
2003.02.27	10039	72	16133	7087	29
2003.02.28	5825	78	15015	6978	29
2003.03.01	7883	71	14554	6885	29
2003.03.02	7976	98	11516	7462	29

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2003.03.03	5948	73	10151	7575	29
2003.03.04	4800	112	10611	3228	30
2003.03.05	6607	133	13299	7210	29
2003.03.06	7184	151	13234	7491	30
2003.03.07	6761	182	14274	7542	30
2003.03.08	7758	92	14771	7249	30
2003.03.09	6620	87	9965	4803	30
2003.03.10	5033	117	8405	3969	30
2003.03.11	7030	119	8054	2811	30
2003.03.12	3833	134	11161	2748	30
2003.03.13	6755	135	13146	2848	30
2003.03.14	7951	791	12869	2903	30
2003.03.15	5423	180	13850	2771	30
2003.03.16	7524	194	14586	2860	31
2003.03.17	6510	171	15062	2431	30
2003.03.18	6551	244	13908	3023	30
2003.03.19	3860	146	13554	3648	30
2003.03.20	4643	123	13815	2945	30
2003.03.21	6485	122	13637	2907	30
2003.03.22	5987	107	13323	2463	30
2003.03.23	7817	87	13725	2478	30
2003.03.24	1091	87	13725	2179	30
2003.03.25	2214	178	10931	546	30
2003.03.26	6600	176	15473	507	30
2003.03.27	6209	187	15375	6550	30
2003.03.28	3215	107	14507	6433	30
2003.03.29	4738	190	15594	6590	30
2003.03.30	2438	185	16402	5658	30
2003.03.31	121	219	16646	6216	30
2003.04.01	2994	213	14396	5371	30
2003.04.02	5656	221	14396	5408	30
2003.04.03	0	172	15781	5968	30
2003.04.04	1552	155	16142	6968	31
2003.04.05	5472	163	14623	6396	31
2003.04.06	5569	139	14700	6356	30
2003.04.07	1129	160	12618	5277	31
2003.04.08	3584	201	12953	6189	30
2003.04.09	5040	219	14045	6415	30
2003.04.10	5019	204	13727	6348	30
2003.04.11	5391	239	14381	6338	30
2003.04.12	5056	278	14871	6769	29
2003.04.13	1039	224	15326	6399	30
2003.04.14	7345	235	13319	6632	30
2003.04.15	7042	111	8890	4697	30
2003.04.16	4632	171	9960	3244	30
2003.04.17	7119	89	7378	3451	31
2003.04.18	4828	78	6745	1764	30
2003.04.19	3094	80	7084	3029	30
2003.04.20	3768	70	7209	3007	29
2003.04.21	4598	71	8339	3025	29
2003.04.22	4774	100	7209	2841	29
2003.04.23	5876	102	7489	2691	29
2003.04.24	5441	128	7243	2458	29
2003.04.25	5302	128	6952	2521	29
2003.04.26	6837	86	6690	2456	30
2003.04.27	5096	101	6837	1206	30
2003.04.28	5516	188	6872	2444	30

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2003.04.29	5516	215	7212	2438	30
2003.04.30	5516	227	8466	2416	30
2003.05.01	5094	227	11338	1390	30
2003.05.02	3392	227	13335	3461	30
2003.05.03	1339	157	13335	3546	30
2003.05.04	3291	161	13402	4199	30
2003.05.05	2999	164	13402	4176	30
2003.05.06	3210	146	13745	3725	30
2003.05.07	2631	115	14325	4460	30
2003.05.08	3066	206	13489	4434	30
2003.05.09	3118	202	15229	4392	30
2003.05.10	3394	196	15181	4023	30
2003.05.11	7775	196	14076	4025	30
2003.05.12	3056	196	14778	4073	30
2003.05.13	2129	240	13497	4047	30
2003.05.14	3522	211	12242	3690	30
2003.05.15	3831	220	11930	3547	30
2003.05.16	4023	247	11639	3675	31
2003.05.17	5512	274	12751	3580	31
2003.05.18	4364	176	12082	3499	30
2003.05.19	4731	208	11351	3615	30
2003.05.20	4119	200	5940	2642	30
2003.05.21	7377	119	3717	2388	30
2003.05.22	5747	118	4071	2289	30
2003.05.23	6281	127	3453	2260	30
2003.05.24	6955	180	3860	2167	30
2003.05.25	4738	106	3994	2212	30
2003.05.26	5609	75	4123	2227	30
2003.05.27	5002	78	4288	2278	30
2003.05.28	4648	78	4959	2246	30
2003.05.29	5796	43	5122	2178	30
2003.05.30	6363	52	6149	2158	30
2003.05.31	5571	63	6759	2003	30
2003.06.01	5529	110	6928	1831	30
2003.06.02	4532	116	6727	1733	29
2003.06.03	4944	88	7359	1100	30
2003.06.04	5486	55	10102	1675	30
2003.06.05	5109	54	7341	1839	30
2003.06.06	5015	78	6819	1844	30
2003.06.07	4992	83	6401	1878	30
2003.06.08	5120	99	6477	1829	30
2003.06.09	5133	123	12055	2720	30
2003.06.10	4982	135	12896	3136	30
2003.06.11	3442	111	11358	4482	30
2003.06.12	3864	240	13156	3833	30
2003.06.13	5534	199	14685	5364	28
2003.06.14	6017	229	12654	3883	30
2003.06.15	5683	127	12609	3223	30
2003.06.16	2601	193	11844	3412	30
2003.06.17	5460	269	14463	4078	30
2003.06.18	5121	224	14255	3469	30
2003.06.19	5157	306	14794	3806	30
2003.06.20	1543	144	15033	4277	29
2003.06.21	3642	311	15737	4148	29
2003.06.22	3405	157	15766	3831	29
2003.06.23	3914	242	14392	3662	29
2003.06.24	4053	750	14912	4148	29

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2003.06.25	4917	314	22930	4392	29
2003.06.26	5352	235	9855	4541	29
2003.06.27	4449	201	6548	2875	29
2003.06.28	4901	217	6954	2603	29
2003.06.29	5844	221	6764	2478	29
2003.06.30	5776	195	10766	2254	29
2003.07.01	5285	236	8472	2038	29
2003.07.02	5667	190	6964	2145	29
2003.07.03	5303	166	7824	2209	29
2003.07.04	5303	147	7824	2036	29
2003.07.05	5330	139	7531	1919	29
2003.07.06	3574	163	6595	1769	29
2003.07.07	4846	157	5020	1926	29
2003.07.08	5242	117	5333	1785	29
2003.07.09	5253	121	5613	1774	29
2003.07.10	3916	167	6390	1901	29
2003.07.11	4311	116	6525	1871	29
2003.07.12	4656	163	12302	2825	29
2003.07.13	2817	292	20779	3131	29
2003.07.14	3654	527	18138	3694	29
2003.07.15	4536	341	18703	4029	29
2003.07.16	3327	182	18646	4173	29
2003.07.17	3645	224	18177	4120	29
2003.07.18	2879	193	19990	4229	29
2003.07.19	2738	231	20305	4070	27
2003.07.20	2527	167	21351	4084	33
2003.07.21	2213	242	21843	4003	29
2003.07.22	1087	253	21192	3810	29
2003.07.23	1904	307	19500	3617	29
2003.07.24	1904	307	19500	3617	43
2003.07.25	92	199	19038	4031	29
2003.07.26	1413	363	19993	3485	29
2003.07.27	2035	273	19541	3441	29
2003.07.28	1935	244	19472	3495	35
2003.07.29	2236	197	15824	3464	29
2003.07.30	2236	132	16662	2293	29
2003.07.31	2236	134	16736	2307	29
2003.08.01	2236	161	11760	2033	29
2003.08.02	3317	144	11174	2030	29
2003.08.03	3002	124	11854	2018	29
2003.08.04	2576	121	11115	2008	29
2003.08.05	2549	134	11164	1960	29
2003.08.06	2168	196	11165	1898	28
2003.08.07	2282	124	12756	1900	28
2003.08.08	2276	193	15964	1847	28
2003.08.09	2204	133	10138	1930	29
2003.08.10	2285	177	9698	1986	29
2003.08.11	3271	182	9213	1687	29
2003.08.12	2952	199	13426	1765	28
2003.08.13	3398	159	15415	1617	29
2003.08.14	3093	174	9017	1785	28
2003.08.15	3979	175	8777	1671	29
2003.08.16	4699	171	8464	1687	29
2003.08.17	3881	170	9075	1672	28
2003.08.18	2,872	257	11,224	1,965	29
2003.08.19	3,071	242	21,896	2,853	28
2003.08.20	2,151	375	22,253	3,006	28

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2003.08.21	2,165	325	20,935	3,406	28
2003.08.22	2,132	330	20,597	3,448	28
2003.08.23	2,087	185	18,789	1,686	28
2003.08.24	1847	185	18125	1692	29
2003.08.25	2509	182	20102	1720	29
2003.08.26	2654	372	20519	3959	29
2003.08.27	971	398	20346	4120	29
2003.08.28	2334	340	20804	3296	29
2003.08.29	3083	348	20054	3441	29
2003.08.30	1740	377	21459	3215	29
2003.08.31	547	393	22279	2975	29
2003.09.01	0	359	20262	2864	29
2003.09.02	24	312	18575	3046	29
2003.09.03	42	222	20254	3240	30
2003.09.04	10	282	21306	3304	29
2003.09.05	363	105	13320	2,384	29
2003.09.06	12	221	16143	1,827	29
2003.09.07	94	158	13068	1778	29
2003.09.08	13	150	10198	1912	29
2003.09.09	11	155	9810	1524	30
2003.09.10	1321	162	9989	1630	29
2003.09.11	3200	172	9,632	1954	30
2003.09.12	5402	165	9377	2044	30
2003.09.13	3832	174	9775	2081	30
2003.09.14	4064	228	9365	2084	30
2003.09.15	3185	245	9447	2124	30
2003.09.16	373	229	10664	1642	30
2003.09.17	3,026	241	9723	1719	29
2003.09.18	1896	141	8973	1498	30
2003.09.19	1981	222	11,247	1775	30
2003.09.20	2188	172	13,238	1796	30
2003.09.21	958	147	10123	2,195	30
2003.09.22	9	225	11564	3033	30
2003.09.23	101	64	8473	2323	30
2003.09.24	178	121	9579	2199	30
2003.09.25	391	166	10730	2056	30
2003.09.26	1,372	194	10,720	1,651	30
2003.09.27	2213	207	10749	1923	30
2003.09.28	2229	187	9,359	1712	30
2003.09.29	2,218	205	9,443	1602	30
2003.09.30	1332	163	5249	1741	31
2003.10.01	1098	205	7072	1833	31
2003.10.02	1477	132	6543	1704	30
2003.10.03	370	143	5583	1864	31
2003.10.04	374	75	5913	1850	31
2003.10.05	205	76	6077	1726	30
2003.10.06	985	67	7060	1988	30
2003.10.07	1577	130	6555	2063	30
2003.10.08	1743	87	6580	1915	30
2003.10.09	2016	119	6479	1671	29
2003.10.10	1995	209	12136	1536	25
2003.10.11	1941	178	12620	1524	25
2003.10.12	1723	194	3505	5385	27
2003.10.13	618	342	8827	4391	25
2003.10.14	1753	324	5822	5603	25
2003.10.15	1723	194	3505	5385	27
2003.10.16	1809	215	2358	6398	29

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2003.10.17	2765	197	2309	3096	29
2003.10.18	3042	191	1955	3851	29
2003.10.19	2955	194	3824	4125	30
2003.10.20	3135	198	1859	3801	30
2003.10.21	3904	189	4143	4198	29
2003.10.22	3696	115	4665	4888	30
2003.10.23	3798	78	3916	4750	30
2003.10.24	4783	329	7904	4896	30
2003.10.25	5322	576	10562	5084	30
2003.10.26	6233	354	12149	4879	29
2003.10.27	6142	407	10698	2730	29
2003.10.28	5703	203	9989	3009	29
2003.10.29	5772	318	8071	2534	29
2003.10.30	5298	282	8042	1953	29
2003.10.31	5219	301	8667	2002	30
2003.11.01	4547	321	9420	2045	30
2003.11.02	4402	309	8433	992	30
2003.11.03	5711	240	10115	2045	30
2003.11.04	5529	215	10678	1070	30
2003.11.05	4373	306	8680	2222	30
2003.11.06	4994	307	8018	2132	30
2003.11.07	5004	598	8567	2558	30
2003.11.08	4175	588	9220	2581	30
2003.11.09	4290	597	9550	2547	30
2003.11.10	3709	613	12958	2528	30
2003.11.11	4905	629	13248	2528	30
2003.11.12	4990	636	14604	2535	30
2003.11.13	4814	507	14861	1483	29
2003.11.14	4556	289	10171	3092	29
2003.11.15	4124	247	10217	3586	30
2003.11.16	5149	672	11798	2599	30
2003.11.17	5421	694	12048	3512	30
2003.11.18	5635	438	13845	3762	30
2003.11.19	5069	439	16961	3752	30
2003.11.20	3823	438	16999	3663	29
2003.11.21	1907	431	17355	3650	29
2003.11.22	3453	424	15895	3737	30
2003.11.23	0	412	14877	3753	31
2003.11.24	3290	245	15296	4563	31
2003.11.25	4894	220	14928	4762	31
2003.11.26	4802	239	7867	4546	31
2003.11.27	4625	237	5802	4564	31
2003.11.28	4173	133	5609	2191	30
2003.11.29	4523	134	6573	2224	30
2003.11.30	5166	141	4452	2179	30
2003.12.01	5080	137	4819	2173	30
2003.12.02	5487	132	2901	2239	31
2003.12.03	4761	120	2385	2215	31
2003.12.04	4760	149	2601	2244	31
2003.12.05	4589	135	3951	2085	31
2003.12.06	3950	109	4911	2113	31
2003.12.07	4490	156	4927	1986	30
2003.12.08	4863	405	6283	4150	30
2003.12.09	1263	34	9163	2071	31
2003.12.10	4359	34	10661	2089	31
2003.12.11	4085	34	11216	2059	30
2003.12.12	4926	84	10665	2046	30

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2003.12.13	4733	49	9976	2102	31
2003.12.14	4771	61	8566	2078	30
2003.12.15	5166	50	12178	2771	29
2003.12.16	4708	54	13890	2902	29
2003.12.17	4725	56	13608	2866	30
2003.12.18	4357	54	13605	2857	28
2003.12.19	4503	49	16208	2774	30
2003.12.20	4837	86	13545	3319	30
2003.12.21	4859	59	13645	2087	30
2003.12.22	4451	59	14066	2074	30
2003.12.23	4001	64	15550	2000	30
2003.12.24	3299	66	13817	2292	29
2003.12.25	2165	87	14482	3824	29
2003.12.26	4594	82	13704	3828	30
2003.12.27	16121	64	13460	2336	30
2003.12.28	5113	81	13037	3979	30
2003.12.29	4204	80	13528	4002	30
2003.12.30	6200	81	13059	3969	30
2003.12.31	4662	54	2864	2069	30
2004.01.01	5608	44	2031	2925	30
2004.01.02	5038	33	2938	2499	30
2004.01.03	5230	33	4403	2475	30
2004.01.04	5178	31	4865	2394	29
2004.01.05	3199	31	6691	2431	30
2004.01.06	5264	31	9935	2486	30
2004.01.07	5636	41	10053	2417	30
2004.01.08	3984	41	10589	2433	30
2004.01.09	5657	46	8983	2575	30
2004.01.10	5694	48	10650	2471	30
2004.01.11	5750	46	9995	2379	30
2004.01.12	6626	72	10010	2351	30
2004.01.13	4550	71	7334	2400	29
2004.01.14	5515	72	8416	2460	30
2004.01.15	4759	79	15548	3144	29
2004.01.16	4303	45	13628	3600	28
2004.01.17	2923	50	13313	2563	30
2004.01.18	5354	42	11956	2536	30
2004.01.19	5474	40	14721	3535	29
2004.01.20	6278	31	14426	3469	29
2004.01.21	5665	29	13962	3347	30
2004.01.22	6219	29	12253	3412	30
2004.01.23	5241	30	12709	3382	30
2004.01.24	5648	28	12444	3424	29
2004.01.25	5836	28	13603	2497	29
2004.01.26	3063	92	14203	3885	29
2004.01.27	3543	81	13205	4114	29
2004.01.28	5245	80	12170	4131	30
2004.01.29	6088	66	13838	4148	30
2004.01.30	2360	66	14048	4130	30
2004.01.31	4778	46	7335	2645	30
2004.02.01	6382	46	5721	2555	30
2004.02.02	5017	44	5458	2600	31
2004.02.03	6013	44	6463	2698	31
2004.02.04	5970	44	7059	2690	30
2004.02.05	4656	44	6217	2758	31
2004.02.06	2753	116	9366	2499	30
2004.02.07	5533	95	5553	2187	30



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2004.02.08	4821	87	5321	2324	30
2004.02.09	6345	105	5866	2195	30
2004.02.10	3949	131	6060	2208	30
2004.02.11	5925	113	5471	2186	30
2004.02.12	5390	137	4822	2135	30
2004.02.13	5389	137	4181	2120	30
2004.02.14	5873	143	4622	2035	30
2004.02.15	5835	143	4375	2035	31
2004.02.16	6041	70	3986	1977	31
2004.02.17	6129	101	5609	1812	31
2004.02.18	5348	106	5002	1963	30
2004.02.19	4483	56	8585	1771	30
2004.02.20	5608	83	11180	1499	30
2004.02.21	4371	84	8288	1570	30
2004.02.22	5544	57	6467	1726	22
2004.02.23	5256	28	2208	1623	18
2004.02.24	4697	42	1160	1263	8
2004.02.25	4874	30	780	1385	5
2004.02.26	5307	32	4090	1432	5
2004.02.27	5384	32	6686	1399	5
2004.02.28	5563	32	4469	1390	6
2004.02.29	5692	32	4922	1393	8
2004.03.01	6157	74	7789	2278	6
2004.03.02	6263	120	10949	2345	6
2004.03.03	6042	135	9598	2311	6
2004.03.04	5824	135	10149	2297	6
2004.03.05	5412	68	8465	2423	22
2004.03.06	6445	127	6749	2357	22
2004.03.07	4415	100	9328	2826	20
2004.03.08	2886	120	11629	3436	24
2004.03.09	2147	77	14022	3456	29
2004.03.10	2227	94	11830	3595	31
2004.03.11	2449	83	12713	4082	26
2004.03.12	2201	218	12779	3539	29
2004.03.13	3069	365	13539	4158	30
2004.03.14	2759	285	13369	5288	30
2004.03.15	2543	289	14240	5013	30
2004.03.16	2036	294	14459	5073	30
2004.03.17	2517	291	7556	5141	31
2004.03.18	4650	72	3164	3538	31
2004.03.19	4852	231	3726	2435	31
2004.03.20	4971	167	3554	2386	31
2004.03.21	5620	83	4662	3537	30
2004.03.22	5469	83	4971	3572	31
2004.03.23	5572	84	6687	3623	31
2004.03.24	6301	206	8144	2339	31
2004.03.25	7484	169	12474	2502	31
2004.03.26	6803	342	7563	2371	31
2004.03.27	5129	349	13236	3305	30
2004.03.28	5952	513	12725	3511	31
2004.03.29	5689	379	13394	3754	31
2004.03.30	2052	328	14040	3681	30
2004.03.31	1132	375	13435	4613	30
2004.04.01	1271	404	14941	4185	30
2004.04.02	1851	417	14636	4884	30
2004.04.03	3096	343	14519	4998	30
2004.04.04	538	248	14660	4928	30

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2004.04.05	2919	418	13086	4994	30
2004.04.06	4734	418	10664	4543	30
2004.04.07	5519	487	8955	2484	30
2004.04.08	5383	407	7156	5542	28
2004.04.09	4715	302	8444	5296	28
2004.04.10	4517	422	11371	5649	30
2004.04.11	4062	427	8664	5874	30
2004.04.12	5744	302	7383	3898	30
2004.04.13	5612	499	8514	3571	30
2004.04.14	5182	523	9788	2901	30
2004.04.15	2022	468	9012	5905	30
2004.04.16	3126	567	8375	1573	30
2004.04.17	3184	654	8011	2914	30
2004.04.18	4647	340	4411	2630	30
2004.04.19	4789	338	3519	2646	30
2004.04.20	4136	429	3029	2282	30
2004.04.21	4826	368	2842	2053	30
2004.04.22	3491	349	7507	2084	30
2004.04.23	4950	301	7897	2060	30
2004.04.24	4411	253	7723	2138	30
2004.04.25	5311	324	7917	2108	30
2004.04.26	5227	463	8153	1969	30
2004.04.27	4732	370	13241	2064	30
2004.04.28	3427	336	13714	1995	29
2004.04.29	4062	427	8664	5874	30
2004.04.30	4400	414	12823	4094	29
2004.05.01	5322	627	15800	3393	29
2004.05.02	4827	525	11997	3482	29
2004.05.03	3039	650	13536	3320	29
2004.05.04	3310	1022	13343	3257	30
2004.05.05	4715	564	12240	2970	30
2004.05.06	4625	596	14360	3377	30
2004.05.07	4597	1065	12677	3191	30
2004.05.08	4425	245	12153	3354	30
2004.05.09	3310	1022	13343	3257	30
2004.05.10	3775	191	14106	3828	30
2004.05.11	5216	157	15264	3987	30
2004.05.12	3930	197	15193	4024	30
2004.05.13	3593	246	11469	4030	31
2004.05.14	5183	227	13383	4055	31
2004.05.15	4438	246	13215	3529	29
2004.05.16	4793	159	7657	2449	29
2004.05.17	6031	145	8231	2251	29
2004.05.18	5472	227	7456	3485	28
2004.05.19	2670	164	7533	2311	28
2004.05.20	1794	232	6732	2133	28
2004.05.21	1886	142	7255	2216	29
2004.05.22	2200	116	7769	2101	29
2004.05.23	3989	121	8089	2195	29
2004.05.24	4281	154	6274	1955	29
2004.05.25	3488	139	4992	1937	29
2004.05.26	4006	121	2782	1963	29
2004.05.27	3890	116	2836	1968	29
2004.05.28	4113	108	2046	1938	29
2004.05.29	4285	87	1823	1799	29
2004.05.30	4529	87	1773	1718	29
2004.05.31	4769	94	3111	1787	29

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2004.06.01	4431	97	2435	1906	29
2004.06.02	2147	88	2764	1158	29
2004.06.03	1990	120	3738	1725	29
2004.06.04	2262	123	2884	1897	29
2004.06.05	1919	128	7260	3800	29
2004.06.06	1686	156	7988	3703	29
2004.06.07	1602	120	7377	3812	29
2004.06.08	1541	134	7584	3651	29
2004.06.09	1528	144	8716	3664	28
2004.06.10	635	159	6687	2868	28
2004.06.11	1536	173	7174	2864	29
2004.06.12	3578	205	7370	3352	29
2004.06.13	2081	220	7460	3400	29
2004.06.14	1020	225	8593	3556	29
2004.06.15	1911	218	3805	3542	29
2004.06.16	1498	157	1993	3702	29
2004.06.17	1720	225	2584	4133	29
2004.06.18	2388	322	6168	4057	28
2004.06.19	2270	317	5859	4137	29
2004.06.20	1696	330	6833	4389	29
2004.06.21	2294	160	4317	2190	29
2004.06.22	2291	161	3656	2648	29
2004.06.23	1866	192	3233	2423	29
2004.06.24	1938	256	3040	2344	29
2004.06.25	2317	204	3208	2128	29
2004.06.26	2249	172	3077	1895	29
2004.06.27	1858	184	3620	2148	29
2004.06.28	1677	148	3275	2347	29
2004.06.29	2499	226	3823	2503	29
2004.06.30	2487	202	3506	2238	29
2004.07.01	2244	172	3931	2444	29
2004.07.02	2059	202	4998	2300	29
2004.07.03	2051	232	4890	2461	29
2004.07.04	2011	285	8534	2570	29
2004.07.05	1886	170	10080	3250	29
2004.07.06	1843	162	10848	3120	29
2004.07.07	1892	211	10454	3082	28
2004.07.08	1794	130	10190	3157	28
2004.07.09	1901	306	11994	3018	29
2004.07.10	999	233	15732	2968	29
2004.07.11	1444	267	11195	3556	29
2004.07.12	1613	257	10322	3607	29
2004.07.13	925	268	10078	3404	29
2004.07.14	651	279	11357	3386	29
2004.07.15	1940	250	11405	3535	29
2004.07.16	3885	253	11811	3514	29
2004.07.17	2943	321	11142	3279	29
2004.07.18	2225	281	10369	3539	29
2004.07.19	3420	241	8256	3581	29
2004.07.20	2920	146	3580	2420	29
2004.07.21	3597	151	3529	2108	29
2004.07.22	2911	200	3590	2178	29
2004.07.23	3809	132	3687	2122	29
2004.07.24	3845	106	3776	2232	28
2004.07.25	3939	110	3447	2237	28
2004.07.26	4078	132	3357	2101	28

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2004.07.27	3821	143	2941	1329	28
2004.07.28	3488	111	3004	2205	28
2004.07.29	4735	139	2764	2127	28
2004.07.30	3809	157	4332	1943	28
2004.07.31	3625	65	6873	1905	28
2004.08.01	4433	198	7230	1673	28
2004.08.02	3404	197	5580	2315	28
2004.08.03	2174	259	8047	2221	28
2004.08.04	1477	276	7668	3029	28
2004.08.05	1287	238	5591	2753	28
2004.08.06	1395	262	4129	3081	28
2004.08.07	1017	307	2810	3191	28
2004.08.08	1459	420	9050	3176	28
2004.08.09	1682	1703	4387	3373	28
2004.08.10	1614	509	2827	3415	28
2004.08.11	1884	605	2768	3484	28
2004.08.12	1452	517	2445	3480	28
2004.08.13	1350	445	2204	3652	28
2004.08.14	1291	503	6712	3527	28
2004.08.15	1353	343	8410	3189	28
2004.08.16	1222	321	4653	3336	29
2004.08.17	2243	388	4797	3208	28
2004.08.18	4437	348	5025	3195	29
2004.08.19	3056	287	5960	2757	29
2004.08.20	4453	166	6061	2404	29
2004.08.21	3979	163	4887	1520	28
2004.08.22	4284	157	2786	468	29
2004.08.23	3234	193	2146	2105	29
2004.08.24	2036	119	2741	1976	29
2004.08.25	459	121	2265	2013	30
2004.08.26	112	134	2586	1828	30
2004.08.27	0	126	2579	1733	30
2004.08.28	0	178	3883	1721	29
2004.08.29	0	172	4550	399	29
2004.08.30	0	156	4323	1425	29
2004.08.31	1226	154	5124	864	29
2004.09.01	0	157	5213	1730	29
2004.09.02	1350	204	1831	1754	29
2004.09.03	2898	291	2639	1930	29
2004.09.04	3733	228	3081	1771	29
2004.09.05	2844	283	7912	2995	29
2004.09.06	1893	270	6890	3246	29
2004.09.07	1764	293	7364	3301	29
2004.09.08	1839	455	8012	140	29
2004.09.09	1789	334	5941	4510	29
2004.09.10	2404	416	2556	4828	29
2004.09.11	2948	297	3255	4465	21
2004.09.12	3218	192	4807	3651	22
2004.09.13	2209	410	6152	3676	27
2004.09.14	3383	408	3649	3225	29
2004.09.15	3357	440	2012	4974	29
2004.09.16	2673	444	2029	4420	29
2004.09.17	4273	413	2072	4920	29
2004.09.18	3724	380	2573	4276	29
2004.09.19	3119	291	2434	4583	29
2004.09.20	3358	264	2296	4700	29
2004.09.21	2711	252	3915	4150	29

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2004.09.22	4348	220	7038	2087	28
2004.09.23	6203	7	2692	1660	16
2004.09.24	5274	28	2127	1384	6
2004.09.25	3791	38	3143	1486	5
2004.09.26	4582	52	3670	2472	5
2004.09.27	5206	64	3160	2543	5
2004.09.28	4354	75	2736	2815	5
2004.09.29	3887	72	5547	2859	5
2004.09.30	4140	70	2214	2641	5
2004.10.01	4158	68	5985	2927	5
2004.10.02	3142	40	5286	3165	5
2004.10.03	3342	42	4760	2961	5
2004.10.04	3346	42	8225	3060	5
2004.10.05	3231	40	10699	3195	5
2004.10.06	3837	67	7358	3001	5
2004.10.07	4919	74	7267	3142	5
2004.10.08	3733	74	7775	2859	5
2004.10.09	1048	43	7141	2488	5
2004.10.10	4007	0	6137	2510	5
2004.10.11	700	0	2466	2679	5
2004.10.12	0	0	2415	2212	5
2004.10.13	3194	0	1924	1919	5
2004.10.14	1727	0	997	1714	5
2004.10.15	3242	0	1085	1736	5
2004.10.16	3166	0	1053	1320	5
2004.10.17	3215	0	960	1625	5
2004.10.18	3473	0	883	1679	5
2004.10.19	3472	0	1741	2050	5
2004.10.20	3438	0	2587	2198	5
2004.10.21	3663	0	3773	2421	5
2004.10.22	4125	6	3534	2486	5
2004.10.23	4185	76	6253	2629	5
2004.10.24	4024	36	6311	2587	11
2004.10.25	4881	0	4726	4687	18
2004.10.26	4050	156	4853	4346	21
2004.10.27	2919	188	6272	4363	21
2004.10.28	1331	233	11597	3523	23
2004.10.29	4111	13	11769	3694	25
2004.10.30	5081	13	10733	4355	29
2004.10.31	3839	23	14615	4975	29
2004.11.01	1681	24	15042	5651	30
2004.11.02	1327	14	11220	5836	30
2004.11.03	4933	26	11698	5272	30
2004.11.04	4238	16	5572	3486	30
2004.11.05	5497	27	9443	2453	31
2004.11.06	5489	20	8959	2361	31
2004.11.07	4753	20	8665	2351	30
2004.11.08	5325	25	4197	2275	31
2004.11.09	5111	31	5018	2344	31
2004.11.10	4272	31	9783	2355	31
2004.11.11	5121	24	11640	2173	31
2004.11.12	3918	30	7766	2125	31
2004.11.13	4779	26	9085	2156	31
2004.11.14	2649	31	8342	2193	31
2004.11.15	1832	31	8141	2242	31
2004.11.16	1257	34	7458	1913	31
2004.11.17	0	20	7828	1642	31

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2004.11.18	913	27	8489	2002	31
2004.11.19	3893	22	8489	2111	30
2004.11.20	4409	27	8849	2134	30
2004.11.21	4410	22	8429	2076	30
2004.11.22	3832	26	5465	2054	30
2004.11.23	3575	25	5093	2008	30
2004.11.24	3893	15	5925	1969	30
2004.11.25	3625	13	9715	1840	30
2004.11.26	4461	15	6978	1745	28
2004.11.27	4805	22	8024	3015	26
2004.11.28	4674	24	7599	2761	26
2004.11.29	4370	20	8166	2685	26
2004.11.30	2846	108	13571	2957	28
2004.12.01	3795	47	12428	3228	28
2004.12.02	3816	25	12590	3194	30
2004.12.03	3882	77	13126	3387	30
2004.12.04	3561	58	14190	3613	30
2004.12.05	4814	74	14050	3415	30
2004.12.06	5288	71	13055	3229	30
2004.12.07	2378	43	12572	3596	27
2004.12.08	4793	49	12607	2862	30
2004.12.09	4420	41	13330	3131	29
2004.12.10	4209	50	11795	2839	27
2004.12.11	4980	49	10359	3060	27
2004.12.12	4353	48	8716	3378	27
2004.12.13	5059	46	5540	3499	28
2004.12.14	5687	33	4737	2897	28
2004.12.15	5980	37	6511	2361	28
2004.12.16	2443	39	8981	2365	29
2004.12.17	5517	38	11681	2499	29
2004.12.18	5249	38	7624	2162	30
2004.12.19	4620	39	8800	2231	29
2004.12.20	5684	133	15446	3290	28
2004.12.21	3225	70	14033	3413	28
2004.12.22	3061	70	14044	3375	27
2004.12.23	3682	53	14126	3459	27
2004.12.24	1684	61	13098	3464	28
2004.12.25	2732	92	12841	3590	27
2004.12.26	1340	97	12320	3627	28
2004.12.27	1771	79	12795	3475	27
2004.12.28	2881	92	12259	3316	27
2004.12.29	1597	92	13896	3327	28
2004.12.30	1023	82	12940	3455	29
2004.12.31	546	80	13335	3522	28
2005.01.01	810	81	13167	3401	28
2005.01.02	645	80	13039	3416	27
2005.01.03	757	61	11475	3470	28
2005.01.04	733	103	11826	3497	28
2005.01.05	1724	17	7156	3443	28
2005.01.06	2543	25	2854	2408	28
2005.01.07	3078	22	3260	2393	29
2005.01.08	3739	18	3432	2512	30
2005.01.09	2734	17	3091	2280	29
2005.01.10	3633	24	4458	2255	29
2005.01.11	2466	64	11209	2856	28
2005.01.12	1485	104	11564	4226	29
2005.01.13	1143	58	11113	4002	30

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2005.01.14	970	78	10138	4279	30
2005.01.15	1169	102	9993	4588	29
2005.01.16	1158	119	10718	4524	30
2005.01.17	1440	96	10452	5110	30
2005.01.18	1825	76	5500	4200	29
2005.01.19	2324	62	7827	3859	29
2005.01.20	3609	60	10267	4087	30
2005.01.21	2974	60	10267	4087	30
2005.01.22	1889	54	17059	3964	28
2005.01.23	1874	20	10196	1820	28
2005.01.24	3211	62	4590	2520	29
2005.01.25	4130	62	3566	580	30
2005.01.26	3389	9	3101	2159	31
2005.01.27	3372	15	3597	2082	29
2005.01.28	4125	19	5119	2175	30
2005.01.29	3522	19	4551	2114	30
2005.01.30	3381	21	3709	2151	31
2005.01.31	3519	21	3047	1280	29
2005.02.01	4193	23	3881	2084	31
2005.02.02	2777	23	12387	2126	29
2005.02.03	1476	85	13261	3171	30
2005.02.04	1390	61	12229	3646	29
2005.02.05	386	63	10364	3240	28
2005.02.06	1079	57	9891	3356	28
2005.02.07	1345	57	10342	3333	28
2005.02.08	1358	59	8777	3411	29
2005.02.09	901	73	7520	2844	30
2005.02.10	724	64	12946	2840	30
2005.02.11	898	74	13615	3040	30
2005.02.12	878	67	13612	3444	31
2005.02.13	875	115	11627	2856	29
2005.02.14	1220	112	8232	3515	30
2005.02.15	1482	54	3984	3602	30
2005.02.16	1014	79	12513	3470	31
2005.02.17	0	71	21196	4348	31
2005.02.18	0	53	17941	4503	31
2005.02.19	0	78	16308	5040	32
2005.02.20	736	29	11972	2372	31
2005.02.21	1789	27	7212	2449	31
2005.02.22	2517	25	7894	2331	31
2005.02.23	2335	21	7760	2297	31
2005.02.24	1828	24	8149	2129	30
2005.02.25	1579	25	8058	2163	31
2005.02.26	2708	25	7637	1545	31
2005.02.27	2938	51	11708	2556	30
2005.02.28	1768	43	6799	3115	31
2005.03.01	1635	41	9332	3369	30
2005.03.02	1479	53	8162	3479	31
2005.03.03	2085	81	7798	4123	30
2005.03.04	3488	119	9352	4224	30
2005.03.05	3663	46	2082	3379	30
2005.03.06	2920	33	2993	3827	31
2005.03.07	1881	89	1704	4040	30
2005.03.08	1021	57	2036	3821	31
2005.03.09	1326	42	4065	4157	30
2005.03.10	1536	46	7373	3420	30
2005.03.11	1089	74	4019	3335	31

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2005.03.12	2162	65	3046	4210	30
2005.03.13	3036	57	4764	3200	31
2005.03.14	4760	9	6558	1796	28
2005.03.15	2216	5	5140	1810	19
2005.03.16	5039	12	3381	2525	21
2005.03.17	3026	21	4877	2278	28
2005.03.18	2763	28	7010	2771	29
2005.03.19	2534	26	3167	2347	29
2005.03.20	2842	26	2439	2280	30
2005.03.21	2723	32	3715	4377	31
2005.03.22	1825	19	1959	2362	31
2005.03.23	1458	13	1752	1399	30
2005.03.24	2146	18	3537	3105	31
2005.03.25	1367	34	9568	4343	31
2005.03.26	1729	41	9378	4030	31
2005.03.27	2011	34	3526	4042	31
2005.03.28	2126	32	3715	4377	31
2005.03.29	1287	42	5025	5088	31
2005.03.30	0	44	5834	5452	30
2005.03.31	0	44	4704	5430	31
2005.04.01	674	53	4798	14087	31
2005.04.02	1435	42	2688	3551	30
2005.04.03	1335	44	2098	3606	29
2005.04.04	1503	49	4368	2733	30
2005.04.05	1633	41	4132	2690	30
2005.04.06	2064	27	5609	2792	30
2005.04.07	1918	21	6830	1735	31
2005.04.08	2817	17	7724	2180	31
2005.04.09	3581	19	6826	2193	31
2005.04.10	3317	19	6859	2073	30
2005.04.11	1828	17	5268	2506	31
2005.04.12	1987	18	4732	2332	31
2005.04.13	2502	24	3386	2250	31
2005.04.14	1788	22	3058	2166	31
2005.04.15	1452	20	3410	2253	31
2005.04.16	2299	23	3141	2157	31
2005.04.17	2451	27	3141	2076	31
2005.04.18	2113	16	4975	2464	30
2005.04.19	2287	18	7204	2180	30
2005.04.20	1919	17	7179	2314	30
2005.04.21	2480	20	6620	1258	30
2005.04.22	2814	34	5672	2015	31
2005.04.23	1417	21	5742	2082	31
2005.04.24	2137	28	5821	2002	31
2005.04.25	2443	21	6463	1894	31
2005.04.26	2224	15	6129	1215	31
2005.04.27	1516	18	5457	1194	30
2005.04.28	2010	13	6069	2113	31
2005.04.29	1880	16	6190	1902	31
2005.04.30	1819	15	5613	1906	31
2005.05.01	1902	14	6476	1984	31
2005.05.02	2450	15	5076	1814	31
2005.05.03	2670	14	6383	1823	31
2005.05.04	2214	14	9239	1834	30
2005.05.05	633	14	6497	1893	30
2005.05.06	1212	14	9553	1702	31
2005.05.07	311	25	10556	2798	31



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2005.05.08	279	29	8829	3605	30
2005.05.09	440	31	10153	3449	30
2005.05.10	9	30	5067	3453	31
2005.05.11	86	35	4409	4333	31
2005.05.12	356	38	3868	4165	31
2005.05.13	1191	40	7679	3642	29
2005.05.14	141	46	9530	5110	31
2005.05.15	771	37	9418	4160	31
2005.05.16	947	49	8278	5209	30
2005.05.17	1208	67	7998	3385	30
2005.05.18	755	59	3560	3352	29
2005.05.19	916	56	3736	3484	30
2005.05.20	731	62	3774	3723	31
2005.05.21	325	63	6230	4212	31
2005.05.22	3833	30	8208	2096	25
2005.05.23	4711	10	8022	1579	20
2005.05.24	5373	24	10281	1911	25
2005.05.25	5307	27	10145	2294	27
2005.05.26	3845	33	8164	1681	27
2005.05.27	1950	18	6881	1630	29
2005.05.28	196	18	6586	1649	30
2005.05.29	582	24	4636	1686	30
2005.05.30	2826	20	7091	1563	31
2005.05.31	3317	21	8055	1682	30
2005.06.01	1610	28	7791	3424	30
2005.06.02	418	34	9785	3025	29
2005.06.03	1764	32	6928	2905	31
2005.06.04	635	31	5291	3266	30
2005.06.05	82	34	5907	3784	29
2005.06.06	105	31	6239	3587	30
2005.06.07	120	28	6775	4679	29
2005.06.08	206	27	6856	3655	30
2005.06.09	82	39	5658	4170	31
2005.06.10	216	61	5639	3072	31
2005.06.11	1190	54	5500	3151	31
2005.06.12	35	45	5304	2960	31
2005.06.13	472	79	5229	3168	31
2005.06.14	16	53	5241	3848	31
2005.06.15	16	54	5535	3979	31
2005.06.16	0	56	5762	3890	31
2005.06.17	31	57	6281	4438	30
2005.06.18	35	44	7458	4060	30
2005.06.19	0	49	15032	3877	30
2005.06.20	479	32	8747	5352	30
2005.06.21	839	24	2210	2307	31
2005.06.22	974	29	2299	1905	30
2005.06.23	816	31	1868	1844	30
2005.06.24	1140	22	5712	1627	31
2005.06.25	1099	18	6905	1822	31
2005.06.26	280	29	3276	1556	30
2005.06.27	696	20	3066	1583	30
2005.06.28	1140	22	5712	1627	31
2005.06.29	1099	18	6905	1822	31
2005.06.30	755	21	12535	1765	30
2005.07.01	868	22	4168	1701	30
2005.07.02	183	57	10051	3480	30
2005.07.03	0	44	9395	3721	29

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2005.07.04	0	46	8390	3861	30
2005.07.05	0	62	10093	3710	30
2005.07.06	105	35	17761	3693	31
2005.07.07	4	58	10648	3668	30
2005.07.08	1	55	10317	4793	30
2005.07.09	0	24	7911	3422	31
2005.07.10	0	18	6828	4994	31
2005.07.11	8	15	5197	3372	30
2005.07.12	3274	15	4592	3575	30
2005.07.13	0	16	4701	4187	30
2005.07.14	0	18	4680	4421	31
2005.07.15	0	1014	8278	4496	30
2005.07.16	0	983	11509	3745	30
2005.07.17	0	236	8719	3739	31
2005.07.18	286	33	7926	2591	31
2005.07.19	755	9	5205	1915	31
2005.07.20	1981	6	4593	1985	30
2005.07.21	437	8	4468	1616	30
2005.07.22	734	17	5385	1820	31
2005.07.23	339	9	6294	1906	30
2005.07.24	776	5	6894	1996	31
2005.07.25	809	2	7368	2015	31
2005.07.26	845	0	5949	1403	31
2005.07.27	842	1	3838	1743	30
2005.07.28	772	3	4532	1888	30
2005.07.29	759	0	4438	1946	30
2005.07.30	759	0	5641	2069	30
2005.07.31	400	43	9700	4670	30
2005.08.01	0	24	10853	3774	31
2005.08.02	9	50	9402	3695	30
2005.08.03	4	110	7932	3519	30
2005.08.04	78	100	7000	3522	30
2005.08.05	13	105	8367	4467	29
2005.08.06	73	5	10444	3619	28
2005.08.07	43	138	12115	3951	29
2005.08.08	67	224	13065	4520	30
2005.08.09	9	130	9787	4070	31
2005.08.10	0	173	9106	4340	30
2005.08.11	0	128	9072	4088	30
2005.08.12	0	51	8172	3990	30
2005.08.13	4	81	5725	3936	30
2005.08.14	0	21	7572	3647	29
2005.08.15	109	6	9733	2653	29
2005.08.16	528	6	2959	2035	30
2005.08.17	547	6	1426	1974	30
2005.08.18	1005	6	1140	1840	30
2005.08.19	579	0	1567	1720	31
2005.08.20	338	3	3507	1573	30
2005.08.21	1149	0	3336	1363	30
2005.08.22	115	1	2182	1377	29
2005.08.23	1708	1	2028	1522	22
2005.08.24	9	7	3469	1612	27
2005.08.25	291	3	3072	1842	30
2005.08.26	223	5	2820	1737	30
2005.08.27	277	3	2524	1734	30
2005.08.28	144	155	7885	1454	30
2005.08.29	0	16	12422	3263	30

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2005.08.30	54	14	15829	2789	31
2005.08.31	1	30	24779	2864	30
2005.09.01	1	58	24306	2923	30
2005.09.02	0	96	24740	3270	30
2005.09.03	1	41	17614	3047	31
2005.09.04	0	43	9632	3018	30
2005.09.05	0	19	7360	1412	31
2005.09.06	11	35	7393	2875	31
2005.09.07	0	33	7127	2887	31
2005.09.08	0	10	5616	3062	31
2005.09.09	0	7	2246	3054	30
2005.09.10	0	1	2577	3177	31
2005.09.11	0	0	3042	3205	30
2005.09.12	0	0	1988	3836	29
2005.09.13	4	0	3350	3942	30
2005.09.14	48	0	1051	2264	31
2005.09.15	0	3	529	2148	30
2005.09.16	247	3	368	1684	30
2005.09.17	264	2	604	1993	30
2005.09.18	218	0	3684	1998	30
2005.09.19	210	0	4518	1958	30
2005.09.20	239	3	3257	1903	30
2005.09.21	295	2	3054	1888	30
2005.09.22	370	5	3693	2096	30
2005.09.23	222	10	6408	1889	30
2005.09.24	0	18	12244	3830	30
2005.09.25	59	17	11799	4051	31
2005.09.26	17	7	5560	2647	29
2005.09.27	7	8	5691	1705	29
2005.09.28	4	17	5307	1944	30
2005.09.29	0	15	6933	1985	30
2005.09.30	21	20	8259	2968	30
2005.10.01	166	20	8341	2524	30
2005.10.02	0	10	7860	2586	30
2005.10.03	276	17	11955	2485	30
2005.10.04	0	17	9339	2502	30
2005.10.05	0	15	9532	2970	30
2005.10.06	0	13	8412	3525	30
2005.10.07	0	17	8120	3406	30
2005.10.08	19	14	8735	3447	30
2005.10.09	23	17	6652	3419	31
2005.10.10	11	18	7260	2956	30
2005.10.11	9	11	7073	2603	30
2005.10.12	177	15	6802	2859	31
2005.10.13	539	12	9142	2340	31
2005.10.14	682	8	6135	2387	31
2005.10.15	684	8	3437	2357	30
2005.10.16	694	8	2954	2057	30
2005.10.17	1188	6	1148	2122	30
2005.10.18	1798	6	4225	1997	31
2005.10.19	1584	6	1211	2010	31
2005.10.20	1932	6	4789	1088	31
2005.10.21	2473	6	1614	1852	31
2005.10.22	2020	4	2285	1788	31
2005.10.23	1782	5	5800	1000	30
2005.10.24	1442	5	1937	2038	31
2005.10.25	1789	2	4263	2081	31

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2005.10.26	1846	11	9854	2059	31
2005.10.27	2257	23	3678	1988	31
2005.10.28	2388	19	3226	2571	31
2005.10.29	1489	20	9066	2708	31
2005.10.30	108	25	10991	1356	31
2005.10.31	629	36	7704	0	31
2005.11.01	1428	23	6626	0	30
2005.11.02	1415	33	7591	0	31
2005.11.03	1165	31	8814	0	30
2005.11.04	1594	16	7704	0	30
2005.11.05	1894	15	9460	0	31
2005.11.06	1523	18	9948	0	31
2005.11.07	1590	11	8252	0	30
2005.11.08	1483	9	7183	0	30
2005.11.09	1382	7	8099	0	30
2005.11.10	1441	8	4420	0	31
2005.11.11	1603	8	3523	0	31
2005.11.12	1620	8	7408	0	32
2005.11.13	2308	8	2933	0	32
2005.11.14	2859	9	2015	0	31
2005.11.15	1442	7	1842	0	31
2005.11.16	1008	5	3966	0	31
2005.11.17	2577	4	8286	0	29
2005.11.18	2512	4	8966	0	31
2005.11.19	2465	4	1148	0	31
2005.11.20	2515	4	2401	0	30
2005.11.21	1952	4	5235	0	30
2005.11.22	1081	5	5283	0	30
2005.11.23	2640	5	6273	0	30
2005.11.24	2464	4	10387	0	30
2005.11.25	1196	11	11508	0	30
2005.11.26	2436	7	15011	0	30
2005.11.27	1212	8	19326	1806	31
2005.11.28	266	13	13631	1682	31
2005.11.29	1	17	6404	2048	30
2005.11.30	0	7	3870	2151	31
2005.12.01	0	6	4613	2313	31
2005.12.02	150	8	12167	2419	31
2005.12.03	732	6	7093	2584	31
2005.12.04	1392	3	5592	2601	32
2005.12.05	1241	15	4530	3272	31
2005.12.06	2091	24	2956	3269	31
2005.12.07	1874	17	6525	3388	29
2005.12.08	1319	14	2755	3666	28
2005.12.09	2198	7	2823	3678	27
2005.12.10	2422	9	2545	1972	29
2005.12.11	2475	12	2416	2205	30
2005.12.12	2484	9	2149	1969	30
2005.12.13	905	8	2280	2115	29
2005.12.14	943	13	1088	2114	29
2005.12.15	2211	17	1209	2089	29
2005.12.16	2369	10	2625	2297	29
2005.12.17	2159	9	2599	2161	30
2005.12.18	1870	29	3610	2612	30
2005.12.19	1050	34	5779	2996	30
2005.12.20	812	28	7287	3614	31
2005.12.21	1069	33	6838	4016	30

Daily

2005.12.22	1814	15	6833	2190	30
2005.12.23	1690	15	6613	2175	30
2005.12.24	495	15	6617	2193	30
2005.12.25	493	43	7584	3648	30
2005.12.26	479	63	7690	4448	30
2005.12.27	422	58	13165	4543	30
2005.12.28	624	38	5024	4366	30
2005.12.29	430	38	6770	4322	30
2005.12.30	642	35	13468	4401	30
2005.12.31	1741	30	12169	4408	30
2006.01.01	1062	31	9484	4404	30
2006.01.02	1345	41	9565	6059	31
2006.01.03	2732	41	9548	6021	30
2006.01.04	297	43	8770	4697	31
2006.01.05	1999	48	8291	5159	31
2006.01.06	2548	34	6764	4908	30
2006.01.07	2645	13	2699	2637	30
2006.01.08	2689	10	2074	2681	30
2006.01.09	2681	11	5458	2693	30
2006.01.10	3426	15	2579	2276	30
2006.01.11	2885	16	8184	2279	30
2006.01.12	4036	12	7482	2244	30
2006.01.13	3130	19	4677	3195	30
2006.01.14	3457	16	5071	5551	30
2006.01.15	2455	19	6758	3187	13
2006.01.16	2484	70	6972	3030	25
2006.01.17	1997	46	6114	3372	27
2006.01.18	1422	19	3117	3267	23
2006.01.19	957	47	3735	3389	25
2006.01.20	1182	23	17284	3333	26
2006.01.21	685	38	6013	3370	25
2006.01.22	643	49	3010	3398	25
2006.01.23	968	34	8034	3809	24
2006.01.24	1019	33	2266	3741	17
2006.01.25	643	6	8484	3174	10
2006.01.26	1548	11	4599	3313	6
2006.01.27	1725	5	4169	34	6
2006.01.28	1611	7	9215	3092	6
2006.01.29	1913	9	4686	3420	6
2006.01.30	1712	13	4713	3500	6
2006.01.31	973	3	8393	2606	5
2006.02.01	1490	9	2063	2543	5
2006.02.02	1506	3	1386	2284	19
2006.02.03	1294	3	1289	2256	19
2006.02.04	1386	9	1230	2240	13
2006.02.05	1430	19	2793	2125	24
2006.02.06	1098	13	3540	2131	25
2006.02.07	1411	13	4076	2346	28
2006.02.08	1243	25	4270	2364	30
2006.02.09	1433	39	5334	2145	30

Daily

2006.02.10	1433	39	5334	2145	30
2006.02.11	1538	38	5253	2181	30
2006.02.12	1520	34	5397	2134	30
2006.02.13	1059	25	5193	2083	29
2006.02.14	566	26	7032	1934	27
2006.02.15	227	14	3972	1929	26
2006.02.16	285	19	8029	2152	27
2006.02.17	176	63	16101	2041	28
2006.02.18	0	69	10951	2104	28
2006.02.19	69	84	8061	2120	28
2006.02.20	0	91	6221	6725	28
2006.02.21	0	92	6556	3344	28
2006.02.22	0	70	5819	4603	28
2006.02.23	0	41	7021	4131	28
2006.02.24	0	59	8495	5859	29
2006.02.25	0	46	5443	5991	30
2006.02.26	0	45	5944	6050	30
2006.02.27	0	57	6195	6077	30
2006.02.28	312	64	8675	4103	31
2006.03.01	280	64	13364	3734	31
2006.03.02	844	81	10576	3615	31
2006.03.03	963	45	5923	3015	31
2006.03.04	1085	25	2710	2254	31
2006.03.05	1386	25	2224	2195	31
2006.03.06	1398	13	3629	2238	24
2006.03.07	1030	5	1595	2013	11
2006.03.08	857	9	1275	2042	6
2006.03.09	1779	9	1347	2039	6
2006.03.10	1446	9	1562	2061	6
2006.03.11	1252	8	1423	1302	21
2006.03.12	2277	5	2369	1704	20
2006.03.13	726	132	4002	2610	24
2006.03.14	408	49	5379	3090	27
2006.03.15	438	29	7871	3267	28
2006.03.16	491	29	8240	3512	28
2006.03.17	676	79	8175	3594	29
2006.03.18	377	62	6528	3626	30
2006.03.19	380	98	5313	3611	30
2006.03.20	350	78	5572	4139	30
2006.03.21	337	86	5972	4191	31
2006.03.22	49	72	4374	3897	31
2006.03.23	0	74	5914	3140	30
2006.03.24	0	82	3699	3520	30
2006.03.25	186	58	7058	3619	31
2006.03.26	153	88	6940	3644	31
2006.03.27	102	63	17451	3666	29
2006.03.28	296	29	8614	3661	31
2006.03.29	457	25	6794	2363	31
2006.03.30	521	27	6613	2288	31

Daily

2006.03.31	233	26	15961	5033	32
2006.04.01	640	26	3103	1720	31
2006.04.02	66	27	2377	1651	31
2006.04.03	751	27	5801	1586	30
2006.04.04	458	19	2581	1484	29
2006.04.05	79	11	4604	1154	29
2006.04.06	113	5	4616	1214	29
2006.04.07	111	6	2882	1210	29
2006.04.08	153	6	2955	1569	29
2006.04.09	167	4	2793	1528	29
2006.04.10	112	6	3894	2374	28
2006.04.11	113	7	1716	1768	30
2006.04.12	195	21	563	1848	30
2006.04.13	106	7	2445	1883	29
2006.04.14	81	2	727	1919	28
2006.04.15	46	0	502	1964	29
2006.04.16	31	3	2015	1980	30
2006.04.17	36	9	4062	1917	30
2006.04.18	98	9	7270	2789	30
2006.04.19	94	7	1732	3710	31
2006.04.20	29	7	1119	2714	31
2006.04.21	0	4	1886	2718	31
2006.04.22	8	0	2337	2697	29
2006.04.23	0	2	2096	2684	30
2006.04.24	0	8	2412	2688	31
2006.04.25	0	5	3436	2710	30
2006.04.26	0	5	3633	3740	30
2006.04.27	0	9	2873	3963	31
2006.04.28	0	9	1447	4131	31
2006.04.29	0	9	456	4112	31
2006.04.30	6	9	1210	4136	31
2006.05.01	2	2	386	4112	31
2006.05.02	0	1	1059	4172	31
2006.05.03	0	4	1892	4092	30
2006.05.04	0	5	4269	4114	31
2006.05.05	0	7	3950	1739	31
2006.05.06	0	9	1114	2123	31
2006.05.07	0	4	22	1942	31
2006.05.08	0	6	8	1808	31
2006.05.09	1	6	169	1736	31
2006.05.10	0	6	830	1783	31
2006.05.11	0	6	979	1785	31
2006.05.12	0	3	6468	1763	30
2006.05.13	0	4	6553	1767	31
2006.05.14	0	4	2075	1768	31
2006.05.15	76	5	4392	1810	32
2006.05.16	0	2	4291	1815	31
2006.05.17	0	4	4094	1974	31
2006.05.18	0	4	3644	2014	31

Daily

2006.05.19	0	2	3614	2006	31
2006.05.20	0	2	3218	2022	31
2006.05.21	0	2	3545	2038	31
2006.05.22	0	2	2987	2033	31
2006.05.23	0	5	2544	2017	31
2006.05.24	0	3	1614	2007	31
2006.05.25	127	3	3146	1992	31
2006.05.26	279	3	2683	1947	31
2006.05.27	311	3	2405	1901	31
2006.05.28	305	3	2549	1866	31
2006.05.29	297	2	1926	1871	31
2006.05.30	319	2	1788	1450	30
2006.05.31	274	2	1631	1481	31
2006.06.01	302	2	1667	1479	31
2006.06.02	282	2	3026	1778	31
2006.06.03	192	1	1562	1795	31
2006.06.04	258	4	1484	1838	31
2006.06.05	270	9	2074	3493	31
2006.06.06	247	9	1705	4401	31
2006.06.07	247	6	2186	4387	31
2006.06.08	267	2	2780	4422	31
2006.06.09	255	8	2553	4426	31
2006.06.10	249	21	3480	4364	30
2006.06.11	266	11	2395	4401	30
2006.06.12	253	10	2121	4048	26
2006.06.13	246	21	2524	4037	26
2006.06.14	120	23	5418	3685	28
2006.06.15	0	26	5740	3777	30
2006.06.16	0	35	10458	3777	30
2006.06.17	0	26	6150	3827	31
2006.06.18	0	25	5652	3829	31
2006.06.19	0	10	6241	3796	31
2006.06.20	0	10	7123	3812	30
2006.06.21	199	7	841	3697	31
2006.06.22	417	16	754	2193	31
2006.06.23	500	3	1086	2112	31
2006.06.24	432	4	1080	2132	31
2006.06.25	438	6	1006	1946	31
2006.06.26	651	3	1244	1956	31
2006.06.27	625	6	2194	1732	31
2006.06.28	223	27	5569	1737	30
2006.06.29	0	31	8245	1731	30
2006.06.30	0	26	14239	4017	30
2006.07.01	0	24	6751	4215	30
2006.07.02	0	26	10372	3639	30
2006.07.03	0	42	7576	3686	30
2006.07.04	0	30	7753	3973	30
2006.07.05	0	33	8089	3957	30
2006.07.06	0	26	6019	3948	30
2006.07.07	0	42	8952	3929	30
2006.07.08	0	36	4973	3943	30
2006.07.09	0	46	4638	3965	30
2006.07.10	0	40	5535	4000	30
2006.07.11	0	55	4038	4019	30
2006.07.12	0	76	5499	3887	30



Daily

2006.07.13	0	49	3616	3829	30
2006.07.14	0	40	3506	3883	30
2006.07.15	0	24	6265	3844	30
2006.07.16	0	25	4209	3920	30
2006.07.17	0	21	2938	3864	30
2006.07.18	0	26	3547	1927	30
2006.07.19	0	29	2951	1890	30
2006.07.20	0	35	2385	1907	30
2006.07.21	0	25	2408	1933	29
2006.07.22	0	50	4176	2071	30
2006.07.23	0	43	9155	4120	30
2006.07.24	0	74	2045	4482	29
2006.07.25	0	54	2268	4487	29
2006.07.26	0	62	4318	4537	30
2006.07.27	0	65	3417	4501	29
2006.07.28	0	73	5154	4592	30
2006.07.29	0	68	5112	4051	29
2006.07.30	0	73	5288	4623	29
2006.07.31	0	59	5428	4386	29
2006.08.01	0	45	6075	4456	30
2006.08.02	0	51	4817	4825	29
2006.08.03	0	32	7256	4935	29
2006.08.04	0	46	5858	4971	29
2006.08.05	0	48	5491	4957	30
2006.08.06	0	38	7514	4970	29
2006.08.07	0	34	1934	3971	30
2006.08.08	0	34	2065	3884	30
2006.08.09	237	20	2739	1963	30
2006.08.10	290	18	1669	1968	30
2006.08.11	309	24	1692	1993	30
2006.08.12	282	19	2759	2009	30
2006.08.13	301	16	2529	1985	30
2006.08.14	277	22	9432	1974	30
2006.08.15	220	30	9096	1986	30
2006.08.16	102	32	9530	2049	30
2006.08.17	0	45	4713	3668	29
2006.08.18	0	39	4669	4072	29
2006.08.19	0	40	3196	4101	29
2006.08.20	0	21	2805	4147	29
2006.08.21	0	39	2783	3671	30
2006.08.22	0	38	2586	4193	30
2006.08.23	0	43	2387	4202	29
2006.08.24	0	43	7987	4031	30
2006.08.25	0	38	2652	4378	30
2006.08.26	0	42	3339	3994	30
2006.08.27	0	43	7987	4031	30
2006.08.28	0	31	3204	4026	30
2006.08.29	0	30	4030	4745	30
2006.08.30	0	30	2241	4792	29
2006.08.31	0	33	4357	4862	30
2006.09.01	0	28	5224	4823	30
2006.09.02	59	27	3359	4862	31
2006.09.03	138	26	4198	4830	31
2006.09.04	261	29	4227	2033	31
2006.09.05	260	31	4609	2016	30
2006.09.06	278	18	4020	2254	30
2006.09.07	510	14	5572	2251	24

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2006.09.08	466	23	5073	2321	28
2006.09.09	0	26	10829	2327	29
2006.09.10	0	32	5824	2321	30
2006.09.11	0	33	8533	2295	30
2006.09.12	0	45	7960	2282	30
2006.09.13	0	48	6103	3629	30
2006.09.14	0	51	5871	3975	30
2006.09.15	0	29	5203	4285	30
2006.09.16	0	19	5083	4238	30
2006.09.17	0	40	4757	4968	29
2006.09.18	0	40	4456	5393	30
2006.09.19	0	20	6031	5697	29
2006.09.20	260	51	5828	3183	24
2006.09.21	477	46	5946	2670	24
2006.09.22	436	25	3308	4724	24
2006.09.23	443	21	2255	2618	24
2006.09.24	428	27	2653	1925	24
2006.09.25	451	26	2742	2321	24
2006.09.26	507	22	1046	1911	24
2006.09.27	494	13	1299	2332	24
2006.09.28	513	9	1477	2618	24
2006.09.29	480	16	3808	2461	24
2006.09.30	322	19	5323	2126	24
2006.10.01	407	17	3647	1827	24
2006.10.02	382	7	5110	1690	24
2006.10.03	471	15	2771	1736	24
2006.10.04	724	14	3449	1670	24
2006.10.05	758	14	3661	1743	24
2006.10.06	904	13	2200	1753	24
2006.10.07	936	13	1391	2235	24
2006.10.08	942	17	975	1726	24
2006.10.09	949	14	1601	1879	24
2006.10.10	934	9	13233	2047	24
2006.10.11	609	8	12974	1915	25
2006.10.12	283	13	13539	2001	24
2006.10.13	0	11	12545	1653	24
2006.10.14	0	9	12743	1808	24
2006.10.15	0	9	12867	2242	25
2006.10.16	0	12	11610	2114	24
2006.10.17	0	13	10482	2095	24
2006.10.18	0	11	11168	2064	24
2006.10.19	0	22	11403	2043	24
2006.10.20	0	20	12406	2096	24
2006.10.21	0	9	13147	2219	24
2006.10.22	167	14	12163	1896	24
2006.10.23	273	8	7673	1901	24
2006.10.24	282	11	5253	3154	24
2006.10.25	255	12	5954	2439	24
2006.10.26	178	12	5673	2794	24
2006.10.27	292	13	5930	2858	26
2006.10.28	297	13	10362	2547	27
2006.10.29	344	12	9017	1791	28
2006.10.30	513	11	8104	1957	29
2006.10.31	729	35	10454	1570	30
2006.11.01	597	31	5504	1726	30
2006.11.02	891	54	4738	3314	31
2006.11.03	1016	59	4544	3565	31

Daily

2006.11.04	875	53	4269	3798	31
2006.11.05	937	55	4404	4906	31
2006.11.06	897	68	3521	4899	31
2006.11.07	678	105	16620	4657	31
2006.11.08	470	122	12083	4804	30
2006.11.09	497	54	8828	4819	30
2006.11.10	541	60	11112	4806	30
2006.11.11	537	54	8233	5828	31
2006.11.12	513	37	7103	5525	31
2006.11.13	511	32	6063	5304	31
2006.11.14	1033	29	5391	5611	30
2006.11.15	1703	31	6646	5129	30
2006.11.16	1655	37	6500	5407	31
2006.11.17	1687	35	11420	4422	30
2006.11.18	1604	28	11145	4479	31
2006.11.19	1266	28	10422	4349	31
2006.11.20	1082	19	5333	2601	31
2006.11.21	1482	16	3976	2364	31
2006.11.22	1405	25	3133	2107	31
2006.11.23	1373	23	3273	2197	31
2006.11.24	1268	20	4336	2024	31
2006.11.25	1108	28	7242	1923	31
2006.11.26	682	31	4920	1927	31
2006.11.27	718	25	10533	1858	31
2006.11.28	745	24	7170	1735	29
2006.11.29	696	20	4579	1703	31
2006.11.30	790	23	1121	1889	31
2006.12.01	901	25	753	2124	31
2006.12.02	1060	15	726	2256	31
2006.12.03	1660	17	983	2287	30
2006.12.04	1554	12	3027	2354	28
2006.12.05	1919	10	5749	2415	26
2006.12.06	1574	17	7304	2140	22
2006.12.07	1282	10	8813	2556	18
2006.12.08	1277	11	8402	2460	23
2006.12.09	1325	11	1886	2278	23
2006.12.10	1272	11	1255	2117	26
2006.12.11	1575	12	1241	2192	31
2006.12.12	1361	18	1539	2324	30
2006.12.13	78	21	1435	2199	30
2006.12.14	1279	18	1350	2125	30
2006.12.15	1569	25	1665	2092	30
2006.12.16	1438	26	1583	1925	30
2006.12.17	1439	27	2942	1914	30
2006.12.18	707	28	14378	1925	30
2006.12.19	131	28	14795	3458	30
2006.12.20	126	27	12968	3400	385
2006.12.21	52	36	10503	3587	337
2006.12.22	0	37	3255	2873	341
2006.12.23	0	28	3344	3823	229
2006.12.24	0	22	3849	4344	254
2006.12.25	0	24	3782	4210	319
2006.12.26	72	18	3716	4191	257
2006.12.27	105	27	3333	4358	254
2006.12.28	665	19	2932	4538	209
2006.12.29	908	22	2988	4447	208
2006.12.30	1088	24	2684	4054	262

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2006.12.31

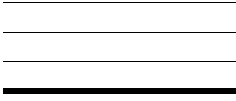
1510

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2583

3922

315



Daily

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FLARES (SO <sub>2</sub> )	SARU (SO <sub>2</sub> )	TGU (SO <sub>2</sub> )	Total Sulphur Block	Total (SO <sub>2</sub> )	tonnes/day
				16093	16
				15229	15
				18141	18
				18279	18
				9516	10
				16469	16
				17445	17
				21371	21
				19265	19
				19080	19
				19011	19
				24149	24
				25761	26
				23907	24
				25041	25
				21460	21
				20467	20
				21423	21
				16071	16
				18497	18
				23285	23
				20771	21
				20426	20
				22331	22
				21589	22
				20422	20
				20524	21
				21179	21
				22679	23
				22763	23
				19582	20
				20756	21
				20923	21
				24283	24
				24758	25
				25859	26
				26081	26
				24163	24
				21912	22
				21759	22
				21899	22
				19755	20
				18136	18
				13216	13
				16926	17
				23195	23
				21767	22
				24691	25
				19640	20
				24869	25
				23892	24
				25136	25
				23995	24

Daily

24053	24
25107	25
24410	24
24833	25
21921	22
19821	20
20315	20
21241	21
21819	22
20788	21
20628	21
21448	21
21921	22
20401	20
21054	21
21525	22
20998	21
14711	15
15851	16
18676	19
19741	20
21834	22
22819	23
20184	20
22588	23
21438	21
24439	24
24506	25
22183	22
22833	23
24497	24
23569	24
22082	22
20008	20
18863	19
21053	21
21030	21
20899	21
21942	22
21068	21
20788	21
22056	22
21000	21
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13	190	7026	7
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13	154	8408	8
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7	42	6467	6
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32	921	0	13537	14
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23	1222	0	11174	11
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13	931	38	5746	6
17	920	34	6098	6
17	928	41	6320	6
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15	985	43	5692	6
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18	1627	46	17883	18
16	1669	49	15696	16
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16	0	218	14855	15
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28	2961	127	20626	21
32	2863	132	22220	22
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22	2932	235	21375	21
19	3156	216	20511	21
21	3423	157	19432	19
26	3772	179	19358	19
24	3729	194	19870	20
24	2992	268	18696	19
18	3168	246	19110	19
27	2983	140	19211	19
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16	2205	241	10720	11
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13	2022	237	9647	10
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13	2321	159	11382	11
12	2488	186	10671	11
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12	2244	160	9677	10
10	2379	171	9346	9
10	2405	215	9623	10
8	2704	150	9516	10
7	3199	106	11183	11
8	3167	149	10473	10
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8	65	132	9059	9
13	1098	37	9169	9
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13	2235	47	9340	9
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7	2094	27	7903	8
8	2634	35	9187	9
13	3217	56	20495	20
13	22	22	19449	19
10	3	23	19291	19
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14	0	37	21486	21
15	0	54	18449	18
12	0	43	18025	18
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13	0	62	17742	18
13	0	49	16969	17
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19	1189	49	9335	9
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8	2669	120	9072	9
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9	1502	92	8267	8
9	579	69	8541	9
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9	2	59	8017	8
8	754	19	8799	9
7	2113	15	12198	12
7	1357	7	10867	11
8	878	13	10369	10
8	1448	24	7817	8
8	1857	22	9297	9
10	1666	25	8388	8
10	1691	28	7828	8
10	1657	38	7250	7
9	1057	32	8029	8
5	321	25	7137	7
6	910	62	5966	6
9	2202	37	14582	15
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16	3136	67	15455	15
15	2997	53	14349	14
16	3156	57	14590	15
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11	252	20	19587	20
14	1177	34	14096	14
18	311	10	22533	23
15	2489	33	15813	16
15	3447	55	15381	15
16	3408	54	14530	15
17	3410	32	15043	15
15	3144	20	16602	17
16	2920	24	14899	15
16	3343	25	17532	18
15	3046	24	16364	16
8	1544	8	12525	13
8	1318	12	9907	10
9	1372	10	7908	8
10	1415	5	9580	10

Daily

10	1407	6	8824	9
9	1360	11	8067	8
7	1272	10	7346	7
6	1328	13	7150	7
6	1312	14	7074	7
6	1473	15	8116	8
8	1478	12	8621	9
8	1364	9	7967	8
8	1233	12	7163	7
8	1127	10	7503	8
8	1229	14	7662	8
8	1240	11	8777	9
8	1295	9	8518	9
8	1270	10	9077	9
6	1448	12	9822	10
10	1512	17	9148	9
7	1464	21	7881	8
8	1425	20	9645	10
20	1447	20	8180	8
8	1377	22	9621	10
8	1239	19	9067	9
6	1259	26	7816	8
9	1393	32	10726	11
8	2120	65	12000	12
7	2586	52	13970	14
8	2755	44	14085	14
9	2142	18	12513	13
10	1954	19	13710	14
12	2044	21	13894	14
10	2044	24	13717	14
10	1940	25	13225	13
10	2023	24	13240	13
10	2065	22	13605	14
10	1968	19	13382	13
12	1776	23	14364	14
14	1193	34	14171	14
19	972	28	14217	14
18	1125	24	16662	17
19	1164	22	17142	17
16	1137	41	15560	16
17	777	9	7515	8
9	903	11	6696	7
9	1146	10	8117	8
10	1141	8	7859	8
8	1429	2	6797	7
8	1508	9	8445	8
10	1701	11	7738	8
9	1837	11	7880	8
8	1188	12	10311	10
6	1	411	11012	11
7	1056	14	8909	9
7	1090	15	8587	9
7	1184	19	8454	8
8	1223	18	7244	7
8	1227	20	7434	7
8	1405	21	7404	7
7	1539	18	8542	9

Daily

7	1487	25	8047	8
8	1359	28	7700	8
9	1439	34	8207	8
7	1625	17	8587	9
6	1592	13	8694	9
6	1821	15	9759	10
11	3386	30	15066	15
15	3435	26	17310	17
14	3561	31	17380	17
13	3541	32	17531	18
14	2571	21	16407	16
10	1080	31	16241	16
11	615	26	17007	17
10	1161	19	16705	17
7	1601	11	14369	14
9	1522	25	8077	8
9	737	24	5986	6
8	987	16	8288	8
8	1210	15	9398	9
9	877	15	10007	10
8	662	16	10223	10
8	1350	19	8346	8
8	64	29	13080	13
6	69	11	8580	9
5	0	14	7936	8
5	0	29	5879	6
5	0	16	5805	6
5	2	15	6964	7
5	7	12	7063	7
5	4	13	6284	6
5	0	17	7484	7
7	0	13	8597	9
5	1	15	8313	8
9	0	15	8680	9
15	0	14	8647	9
11	0	19	8293	8
13	0	16	7322	7
15	1070	17	6765	7
10	2194	13	6783	7
10	3877	15	8587	9
9	3403	17	9818	10
8	575	18	8865	9
10	215	18	12178	12
12	0	15	17580	18
14	159	13	19389	19
14	525	16	18038	18
15	1410	14	18376	18
15	2626	15	22710	23
12	1406	15	21185	21
14	1238	19	14212	14
10	641	15	13680	14
2	1	10	12052	12
4	139	16	8501	9
4	30	12	7787	8
4	15	182	4726	5
5	678	116	8427	8
5	1012	10	2980	3



Daily

4	1146	17	8012	8
5	963	255	9423	9
6	1435	12	8707	9
7	1800	6	9048	9
6	2255	38	10496	10
7	2103	7	10036	10
7	1343	9	9741	10
7	746	36	10562	11
5	822	24	8006	8
4	412	380	8589	9
18	0	522	13236	13
6	18	80	8006	8
6	33	36	10024	10
5	20	0	10926	11
8	13	37	12418	12
8	6	36	12827	13
8	0	75	8888	9
8	3	13	12953	13
10	13	35	15907	16
19	645	78	18594	19
26	1820	14	14110	14
22	3178	16	18658	19
25	2830	17	15901	16
26	2833	19	17486	17
25	1366	18	16129	16
16	809	20	14831	15
15	834	13	13081	13
13	410	3	22836	23
12	1925	14	14194	14
10	2088	25	12463	12
11	2247	24	12449	12
13	977	27	11887	12
11	97	21	14695	15
10	2	116	14481	14
13	488	53	12835	13
11	1083	121	12117	12
15	1101	25	11600	12
16	746	36	10409	10
17	876	13	9914	10
18	1019	73	10424	10
15	1015	145	10689	11
18	958	17	11500	12
17	937	25	10037	10
14	659	53	7649	8
14	205	25	9780	10
17	358	15	10596	11
9	416	16	9076	9
11	439	38	9673	10
19	0	65	13105	13
23	0	0	19320	19
27	337	0	17287	17
25	400	0	18513	19
20	12	0	21943	22
21	8	0	18682	19
20	2	0	20339	20
23	2	0	21661	22
25	0	0	23123	23

Daily

22	519	0	25050	25
23	548	0	24463	24
23	630	0	21623	22
19	707	0	25133	25
23	1175	0	25138	25
24	2236	0	25503	26
20	1801	0	22647	23
25	797	0	21798	22
22	613	0	23591	24
19	437	0	20892	21
6	280	0	24494	24
5	192	0	21080	21
13	227	0	22396	22
23	175	0	24892	25
17	526	0	24070	24
17	943	0	21671	22
20	877	0	21801	22
26	279	0	24897	25
22	374	0	26338	26
23	365	0	25990	26
26	329	0	24834	25
22	378	0	24133	24
21	1258	0	23382	23
18	948	0	18808	19
21	263	0	16653	17
23	136	0	18764	19
26	153	0	19901	20
23	541	0	19591	20
27	848	0	21156	21
16	795	0	22330	22
16	1198	0	22535	23
16	1046	0	13511	14
16	485	0	18987	19
12	5	0	16556	17
10	3	0	18908	19
9	3	0	18480	18
8	0	0	18290	18
5	30	0	18668	19
13	219	0	23303	23
15	1101	0	21420	21
13	1029	0	15013	15
25	1207	0	16889	17
20	1866	0	19956	20
24	2449	0	21655	22
27	2585	0	27318	27
29	2916	0	25222	25
32	2564	0	27204	27
22	2506	0	28926	29
15	2551	0	28029	28
17	2732	0	26315	26
10	365	0	22904	23
15	1172	0	24437	24
11	11	0	26786	27
10	13	0	33383	33
11	17	0	27953	28
11	0	0	29433	29
15	691	0	27787	28

Daily

11	2466	0	26253	26
17	2807	0	21605	22
20	2886	0	30184	30
22	2891	0	31003	31
26	3041	0	31856	32
13	2617	0	32530	33
13	896	0	22414	22
18	618	0	18190	18
18	710	0	18772	19
21	610	0	18537	19
21	0	0	22935	23
21	0	0	24565	25
29	0	0	22283	22
31	0	0	25226	25
27	0	0	24231	24
40	0	0	23796	24
23	0	0	21261	21
20	0	0	21576	22
19	0	0	23200	23
17	0	0	21927	22
14	0	0	24151	24
13	0	0	17125	17
28	0	0	13927	14
26	0	0	22812	23
27	0	0	28378	28
16	0	0	24308	24
28	0	0	27170	27
28	0	0	24741	25
33	0	0	23265	23
41	0	0	23045	23
34	1	0	25746	26
25	6	0	21982	22
22	4	0	24874	25
23	9	0	26717	27
20	13	0	26827	27
23	1009	0	20247	20
29	2147	0	25133	25
32	2255	0	28036	28
30	2456	0	27814	28
33	3390	0	29802	30
39	2822	0	29864	30
32	2456	0	25506	26
34	2940	0	30535	31
17	2123	0	22910	23
26	1488	0	19551	20
14	1179	0	19261	19
12	1130	0	14587	15
12	1116	0	14445	14
12	1171	0	15266	15
12	1211	0	17285	17
16	1239	0	16208	16
16	1267	0	17470	17
20	1261	0	16580	17
20	1252	0	16204	16
17	1185	0	17301	17
16	1160	0	14446	14
29	1271	0	16350	16

Daily

33	1258	0	16702	17
33	1210	0	17898	18
31	1318	0	19428	19
31	1257	0	21733	22
22	1257	0	19686	20
22	1132	0	22237	22
22	1132	0	21925	22
19	1161	0	22036	22
16	1231	0	22808	23
28	1408	0	22661	23
28	1073	0	24072	24
27	1139	0	23990	24
27	1348	0	27477	27
27	897	0	23057	23
32	1029	0	21004	21
29	1486	0	21210	21
30	1168	0	20756	21
34	1191	0	20840	21
38	1665	0	23851	24
24	1349	0	21524	22
30	1077	0	21042	21
31	1686	0	14648	15
19	1244	0	14894	15
19	983	0	13257	13
20	1196	0	13367	13
29	1185	0	14406	14
17	1119	0	12216	12
12	1344	0	13420	13
13	1468	0	13157	13
13	864	0	12838	13
7	1222	0	14398	14
8	726	0	15486	15
10	428	0	14864	15
17	380	0	14825	15
19	426	0	13582	14
14	420	0	13955	14
9	925	0	18282	18
8	1345	0	15726	16
11	1070	0	14867	15
13	1215	0	14612	15
15	1498	0	15068	15
17	1105	0	21183	21
18	1930	0	23127	23
15	1839	0	21277	21
33	1765	0	22921	23
31	740	0	26581	27
31	1454	0	24298	24
17	1376	0	23065	23
26	1343	0	19449	19
39	1613	0	25952	26
31	1201	0	24331	24
42	1266	0	25401	25
20	1294	0	22340	22
44	1711	0	25622	26
22	1462	0	24672	25
33	1438	0	23710	24
103	1863	0	25858	26

Daily

44	1834	0	34460	34
33	2193	0	22238	22
29	1918	0	16049	16
31	2092	0	16827	17
31	2141	0	17508	18
30	233	0	19283	19
34	465	0	16559	17
29	957	0	15981	16
27	1273	0	16831	17
24	1273	0	16636	17
22	1634	0	16604	17
25	1338	0	13493	13
26	1112	0	13116	13
19	1034	0	13559	14
19	1112	0	13921	14
27	1063	0	13493	13
18	1120	0	13990	14
24	1663	0	21662	22
40	1998	0	29086	29
73	2319	0	28434	28
47	2596	0	30281	30
25	2117	0	28499	28
31	2184	0	28410	28
34	2384	0	29738	30
29	2435	0	29835	30
29	2395	0	30586	31
29	2370	0	30729	31
34	1747	0	28152	28
36	1912	0	27305	27
29	1589	0	26989	27
28	1544	0	24961	25
51	1665	0	26999	27
38	1794	0	27151	27
35	1520	0	26736	27
30	678	0	22458	22
20	25	0	21397	21
21	58	0	21521	22
26	990	0	17235	17
23	1069	0	17786	18
20	1078	0	18125	18
19	1086	0	16954	17
21	1152	0	17009	17
30	1146	0	16631	17
19	264	0	17373	17
28	0	0	20336	20
20	440	0	14894	15
26	1254	0	15455	15
27	1234	0	15643	16
30	232	0	18632	19
25	0	0	20643	21
26	1033	0	15156	15
27	1126	0	15784	16
27	1406	0	16483	16
27	1428	0	16281	16
39	1381	0	17767	18
33	1901	0	30024	30
51	2064	0	29928	30

Daily

45	1871	0	28775	29
45	1978	0	28558	29
25	1864	0	24664	25
25	1885	0	23788	24
25	1803	0	26370	26
38	1803	0	29374	29
57	1392	0	27313	27
48	1373	0	28224	28
52	2202	0	29209	29
55	3298	0	30173	30
58	2898	0	29179	29
51	2739	0	26304	26
44	3071	0	25101	25
31	3001	0	26820	27
40	2420	0	27391	27
16	1241	0	17458	17
36	1285	0	19553	20
26	1204	0	16357	16
25	1077	0	13404	13
25	920	0	12475	12
25	1038	0	14194	14
27	1069	0	16084	16
25	1070	0	18113	18
27	1082	0	17001	17
35	1110	0	16916	17
36	1104	0	16171	16
35	932	0	13905	14
31	767	0	15536	16
18	744	0	13300	13
28	502	0	15785	16
23	12	0	17459	17
20	1040	0	14513	15
30	1173	0	16064	16
8	1163	0	12162	12
16	704	0	12827	13
22	420	0	13815	14
27	306	0	14300	14
29	469	0	15620	16
26	902	0	14445	14
28	1167	0	14693	15
20	1114	0	9650	10
27	1488	0	11754	12
18	644	0	10548	11
18	490	0	8499	8
10	454	0	8707	9
10	430	0	8554	9
9	460	0	10599	11
17	475	0	10847	11
12	379	0	10746	11
17	379	4	10714	11
30	509	4	16444	16
16	2300	0	18604	19
27	1861	0	12722	13
33	1881	7	16124	16
42	1905	17	15491	15
27	1861	46	12768	13
29	1677	40	12555	13

Daily

29	1512	22	9959	10
27	1517	16	10628	11
27	1324	40	12519	13
28	546	35	9632	10
29	540	21	13053	13
19	743	96	14252	14
13	944	33	13562	14
53	863	38	18896	19
89	1088	45	22796	23
52	255	52	24003	24
59	544	47	20656	21
31	0	22	18986	19
52	0	15	16791	17
52	0	52	15708	16
53	0	47	16319	16
53	0	46	16462	16
45	0	37	14248	14
35	0	41	18217	18
33	0	31	17586	18
46	0	54	15711	16
45	0	65	15591	16
91	8	65	16921	17
90	54	49	16787	17
87	483	49	17633	18
87	1814	57	21796	22
90	1814	80	23324	23
91	1814	87	24787	25
67	1814	84	23659	24
37	1814	85	20073	20
32	1814	93	20143	20
87	1814	105	22254	22
94	1814	111	23724	24
60	1814	93	25677	26
60	1814	61	28186	28
60	1814	123	26949	27
61	1814	109	25356	25
62	1814	109	25524	26
62	1814	109	21058	21
37	686	109	24257	24
32	483	109	25459	25
37	545	46	18113	18
37	817	53	16166	16
21	847	61	13065	13
21	1054	109	14668	15
21	445	31	12465	12
21	438	34	12732	13
21	592	51	11454	11
19	842	81	10454	10
23	1327	129	11264	11
21	1814	59	12685	13
17	1814	69	13014	13
24	1237	63	12913	13
65	1249	54	17099	17
6	734	57	13359	13
6	3	73	17256	17
6	49	73	17552	18
15	6	61	17833	18

Daily

8	4	78	16981	17
10	199	82	15797	16
8	1154	74	21430	21
8	987	73	22651	23
9	1050	80	22424	22
9	1244	58	22212	22
7	1041	41	24653	25
12	2839	95	24763	25
9	2611	89	23389	23
9	2561	88	23338	23
10	2230	86	23971	24
10	2655	75	22243	22
13	2841	78	23519	24
13	2728	60	25039	25
10	2809	58	34888	35
12	2763	81	25096	25
12	2839	95	24790	25
12	2838	91	26280	26
9	1446	75	11209	11
7	1393	77	12115	12
5	1285	73	11901	12
5	1151	77	13404	13
5	1289	75	13866	14
5	514	82	12983	13
5	2	90	17843	18
7	2	90	18276	18
7	2	94	17180	17
7	10	91	17399	17
7	3	84	18987	19
7	2	92	18301	18
10	198	83	19380	19
10	821	83	15298	15
11	1030	70	17604	18
11	1451	168	25189	25
6	0	220	21830	22
8	0	66	18953	19
7	0	68	19993	20
7	424	78	24308	24
4	1603	94	25934	26
5	1648	83	24769	25
5	1739	97	23784	24
5	1687	94	23178	23
4	1633	94	23304	23
4	1580	91	23668	24
14	1542	87	22915	23
12	1771	93	22848	23
12	1869	173	23710	24
10	1468	139	25787	26
10	962	87	21693	22
7	297	0	15138	15
7	811	81	15633	16
7	760	99	14016	14
7	750	145	16151	16
7	967	112	16879	17
7	1025	114	14852	15
19	257	76	15116	15
15	1163	5	14581	15



Daily

14	1205	2	13804	14
16	1290	2	15849	16
19	1181	20	13598	14
17	1219	31	14992	15
21	1192	39	13766	14
21	950	39	12867	13
22	775	38	13538	14
22	766	42	13249	13
10	753	48	12916	13
15	599	46	14342	14
16	279	30	12774	13
9	29	15	14978	15
12	5	15	18432	18
12	9	6	14370	14
13	6	11	13846	14
8	5	30	9176	9
12	6	35	7223	7
8	7	47	7136	7
9	261	51	11187	11
8	1260	108	14882	15
9	1251	59	12779	13
10	1313	72	13442	13
22	778	57	17161	17
33	8	52	19776	20
38	5	62	18197	18
38	4	80	18533	19
22	301	79	16792	17
38	1899	73	17710	18
29	935	73	17726	18
19	778	47	18939	19
11	1087	52	20881	21
14	764	15	18570	19
12	1312	80	20757	21
36	1641	36	20479	20
56	1557	60	22834	23
44	1730	71	23576	24
44	1736	44	23939	24
45	1756	58	23751	24
46	1409	50	17041	17
12	1183	43	12693	13
37	1106	29	12447	12
27	1044	41	12221	12
14	1035	41	15022	15
14	913	29	15082	15
14	287	50	16348	16
33	9	51	17114	17
28	3	107	22798	23
55	699	57	17921	18
53	1541	64	23707	24
77	1536	66	24411	24
55	1553	64	24919	25
49	1575	61	21816	22
54	1362	65	21066	21
58	1354	75	22318	22
61	1664	70	23613	24
50	1726	71	24833	25
37	1925	69	22435	22

Daily

56	2050	61	23614	24
56	1994	57	22496	22
71	1874	63	19483	19
59	1484	53	20112	20
48	1590	55	20478	20
69	1627	58	23743	24
70	1452	-10	20569	21
49	6	54	17466	17
78	2	52	18358	18
80	0	49	18553	19
73	23	46	17579	18
97	52	46	13866	14
117	4	51	14965	15
60	1240	48	13406	13
60	1566	52	13000	13
71	1419	50	11446	11
62	1453	54	11688	12
57	1446	11	14975	15
46	1813	0	17097	17
40	1820	0	16415	16
52	1607	0	17349	17
76	1768	0	17686	18
60	650	0	21147	21
54	569	2	20126	20
70	1452	0	20579	21
62	901	41	22764	23
93	1099	51	26414	26
80	2520	56	23516	24
96	2505	49	23224	23
152	2391	54	23559	24
86	2296	45	22946	23
92	2309	44	25433	25
155	2373	48	24136	24
38	2371	52	22668	23
152	2391	54	23559	24
29	2508	53	24520	25
24	2419	54	27151	27
29	2350	40	25793	26
39	2224	46	21678	22
36	2239	55	25209	25
41	1926	56	23480	23
28	0	45	15160	15
26	0	43	16756	17
39	0	44	16751	17
27	0	47	12780	13
37	0	45	11001	11
23	0	44	11595	12
19	0	41	12275	12
20	18	44	14505	15
25	201	40	12959	13
23	994	26	11628	12
20	1402	45	10368	10
21	1396	45	10301	10
18	1619	49	9920	10
15	1530	57	9625	10
15	1516	57	9724	10
16	1530	41	11377	11

Daily

17	1515	44	10474	10
15	1415	35	7651	8
20	1340	31	8993	9
21	1215	45	8476	8
21	1652	63	14872	15
25	1874	76	15537	16
20	1872	83	14915	15
22	1870	99	14930	15
22	1870	78	16050	16
25	1452	92	11946	12
26	1526	79	13407	13
32	2043	79	16688	17
34	2471	78	15773	16
33	2408	86	15950	16
32	1994	54	11585	12
23	1964	61	9427	9
34	2176	125	11026	11
47	2149	100	15259	15
46	2191	113	14962	15
47	2313	132	15769	16
24	1775	53	10842	11
25	1665	39	10514	11
30	1648	40	9461	9
39	1644	43	9333	9
30	1655	45	9616	10
25	1651	54	9152	9
26	1763	50	9678	10
21	1619	41	9157	9
33	1594	37	10744	11
30	1578	42	10112	10
26	1643	41	10530	11
31	1700	41	11360	11
35	1837	50	11585	12
42	2403	61	15935	16
25	2780	105	18325	18
24	2825	88	18939	19
31	2770	81	18549	19
19	2659	69	18046	18
44	2280	67	19639	20
34	2881	46	22922	23
39	2175	47	18752	19
38	2277	45	18188	18
40	2259	54	17057	17
41	2421	67	18231	18
36	2591	65	19851	20
38	2676	67	22273	22
48	2732	79	20573	21
42	2717	174	19376	19
37	2423	206	18193	18
24	1144	42	10305	10
24	1627	51	11116	11
32	1555	53	10548	11
21	1688	46	11534	12
17	1584	51	11639	12
17	1550	55	11383	11
21	1508	46	11271	11

Daily

22	1532	57	9873	10
18	1595	55	10504	11
22	1601	59	11475	11
23	790	68	11150	11
10	0	91	12597	13
30	0	90	13682	14
28	2361	83	13996	14
37	3207	185	16158	16
38	3180	351	16047	16
33	3180	807	13917	14
36	3343	590	12864	13
43	3400	330	11126	11
58	2767	192	17150	17
235	2197	369	13974	14
71	2209	457	11130	11
85	2377	422	11653	12
73	2216	340	10551	11
63	2152	354	10248	10
71	1959	180	14271	14
48	1924	123	15418	15
46	1842	297	11746	12
56	1838	198	12756	13
52	657	46	13789	14
43	0	48	12180	12
24	0	64	13201	13
27	0	35	10639	11
26	0	45	7795	8
32	0	36	7775	8
13	0	40	6954	7
12	0	39	4939	5
14	0	31	4735	5
15	0	43	4526	5
21	0	44	5876	6
21	0	43	5214	5
19	76	43	6071	6
19	18	46	7480	7
20	1029	32	8210	8
31	1549	28	6776	7
44	1066	34	8931	9
33	1117	34	10026	10
40	1942	54	16099	16
38	1891	63	14320	14
41	2163	62	15017	15
63	2157	63	12758	13
47	1911	178	14739	15
59	1950	266	12508	13
58	1922	168	13134	13
41	1957	52	13940	14
59	1857	198	14588	15
57	1882	282	12915	13
62	1857	382	13113	13
64	1915	386	11960	12
61	2004	355	14127	14
57	2153	321	13513	14
44	2241	384	13125	13
39	1869	217	12772	13
37	993	46	12133	12

Daily

34	486	46	14287	14
3	3	3	10587	11
12	0	19	8850	9
16	3	28	8510	9
22	8	101	10912	11
27	1	88	11094	11
31	0	158	10174	10
30	2	72	12474	12
29	156	173	9428	9
29	313	44	13529	14
17	0	150	11805	12
18	5	198	11331	11
18	543	139	15378	15
18	2886	64	20138	20
18	720	42	15048	15
23	445	55	15930	16
23	1599	84	16152	16
23	969	105	11822	12
23	623	158	13463	13
0	1490	165	7505	8
0	437	44	5113	5
0	3	18	7063	7
0	1	16	4460	4
0	2	18	6088	6
0	1	18	5563	6
0	3	15	5823	6
0	4	15	6059	6
0	3	195	7466	7
0	3	176	8407	8
0	143	112	10117	10
1	571	92	10820	11
22	566	81	13817	14
14	975	102	14060	14
0	13	175	14500	15
53	5	14	13498	13
41	407	49	14260	14
37	853	56	17653	18
2	829	50	20493	20
2	714	44	20971	21
3	948	55	24487	24
3	1017	91	23539	24
2	1081	41	19551	20
4	1268	41	23272	23
2	881	41	14266	14
4	0	41	17496	17
3	0	41	16904	17
3	2	41	15865	16
4	1	172	12030	12
5	1	97	12638	13
5	2	6	16485	16
4	5	32	19030	19
5	2	57	13934	14
4	1	43	16125	16
5	2	63	13316	13
5	2	62	12346	12
5	2	112	10812	11
3	2	74	9600	10

Daily

4	2	78	11546	12
3	2	47	14597	15
4	2	64	15519	16
4	2	51	15024	15
4	2	27	11440	11
4	3	39	10777	11
2	3	42	11879	12
2	1	39	15265	15
3	2	40	13272	13
4	3	48	15947	16
4	4	37	15129	15
3	3	35	15308	15
17	3	18	19548	20
7	5	73	19611	20
4	3	76	19738	20
12	3	62	20579	21
9	3	73	21537	22
11	3	69	22466	22
11	3	87	21774	22
7	2	55	18680	19
8	1	56	20406	20
6	2	51	21010	21
8	2	102	19032	19
7	1	241	18724	19
7	2	280	16811	17
7	3	137	14319	14
6	3	104	13495	13
6	3	48	14974	15
6	4	36	13903	14
6	0	69	19839	20
6	0	87	15196	15
6	4	101	15830	16
21	2800	143	27545	28
11	2800	81	23661	24
11	2800	77	23465	23
8	2800	83	24238	24
10	2800	84	21229	21
14	2800	100	22196	22
15	2800	145	20372	20
13	2800	180	21140	21
14	2800	138	21527	22
14	2800	145	21899	22
13	2800	262	20604	21
12	2800	188	20511	21
12	2800	146	20445	20
12	2800	127	20146	20
9	2800	108	18708	19
16	2800	76	19079	19
3	900	10	13281	13
4	900	40	8802	9
4	652	41	9479	9
3	892	40	10666	11
3	873	38	9065	9
4	933	56	11392	11
10	1422	11	18066	18
16	1490	8	18922	19
9	1650	11	18016	18

Daily

12	1681	13	17201	17
16	1527	10	17434	17
19	1635	6	18209	18
15	1667	19	18829	19
12	1631	44	13317	13
10	1634	35	15780	16
10	902	114	19079	19
10	902	114	18444	18
9	1625	68	24696	25
3	1258	18	15217	15
11	1027	11	11461	11
10	469	23	8870	9
1	415	21	9126	9
3	775	27	9900	10
3	266	15	11752	12
3	726	4	10969	11
4	775	9	10081	10
3	440	11	8350	8
4	80	5	10301	10
4	0	7	17353	17
13	0	7	18043	18
9	665	1	18030	18
10	1346	1	15438	15
9	1407	0	15827	16
9	1441	0	16555	17
9	1416	0	15059	15
11	1345	3	12727	13
10	1349	7	17970	18
11	965	48	18681	19
10	712	270	19024	19
18	1316	81	16917	17
18	1670	87	14884	15
9	1786	225	11172	11
12	749	648	18516	19
11	3	309	25969	26
8	1321	0	23857	24
13	1937	0	23408	23
5	1229	0	16374	16
4	980	0	12492	12
4	558	0	13360	13
3	67	0	12514	13
4	88	0	12252	12
4	760	0	12620	13
4	1176	0	13126	13
8	1388	0	18679	19
7	1771	105	13639	14
6	868	467	15748	16
8	1129	372	14713	15
13	2376	474	16980	17
19	2290	552	20074	20
7	2234	580	12021	12
5	2236	953	12998	13
14	2195	924	10877	11
9	2260	1011	10246	10
7	2105	860	12592	13
7	2158	949	15519	16
12	2355	847	11762	12

Daily

10	2454	1009	12986	13
9	1209	986	13292	13
2	735	622	14510	15
3	1	156	9350	9
4	46	207	11235	11
4	74	148	10456	10
5	70	450	13126	13
4	268	390	8765	9
4	254	249	8124	8
5	2204	187	13274	13
3	1293	229	7721	8
2	1031	498	6183	6
3	1598	513	10951	11
5	2176	280	17804	18
7	2093	170	17479	17
5	2116	208	11973	12
5	2204	882	13372	13
6	2222	895	14596	15
7	2300	557	14224	14
7	2271	317	12804	13
8	2251	735	22637	23
7	2185	951	10889	11
7	2288	926	10333	10
8	2291	0	10982	11
7	2292	0	10825	11
4	1382	0	11908	12
4	0	0	10539	11
3	0	121	12893	13
3	0	109	12762	13
3	0	125	12426	12
3	0	180	9833	10
3	0	251	9354	9
4	0	278	8475	8
4	0	307	7376	7
3	0	281	7450	7
4	0	355	8010	8
4	0	455	8185	8
3	0	436	10037	10
3	0	266	11988	12
3	0	404	11866	12
3	0	324	10735	11
5	0	368	10939	11
3	0	314	9610	10
4	0	265	10288	10
3	0	228	11083	11
2	0	180	9796	10
3	0	208	8426	8
2	0	280	10518	11
2	0	279	10300	10
2	0	243	9629	10
2	0	735	11144	11
2	0	951	10339	10
2	0	926	11849	12
2	0	236	13569	14
2	0	166	9235	9
2	904	346	13764	14
4	2320	753	16798	17



Daily

4	1472	501	14749	15
5	1892	404	16404	16
4	2765	361	11720	12
5	2210	438	11547	12
6	1977	565	11006	11
6	1893	387	14867	15
7	1613	146	16624	17
5	1512	159	16093	16
7	1608	1000	17128	17
10	2297	1000	15995	16
9	2009	1000	10773	11
8	2002	1000	11232	11
9	2146	1000	11476	11
9	1873	43	12786	13
6	793	11	15002	15
2	0	7	14351	14
5	0	0	17619	18
5	838	0	18643	19
6	2346	0	16102	16
3	738	0	11249	11
3	910	8	9400	9
4	985	15	7962	8
4	237	32	11804	12
3	184	77	13369	13
4	1564	735	15186	15
5	2031	141	15468	15
5	2260	151	14076	14
4	1966	297	11520	12
5	2032	242	12115	12
4	1867	190	12053	12
4	2280	231	14146	14
4	2197	714	13689	14
6	2038	508	12532	13
9	1923	607	11558	12
8	1904	562	12400	12
7	1214	746	10342	10
12	924	1391	11306	11
8	864	1060	11121	11
8	826	703	11152	11
8	755	1043	11545	12
8	1261	879	12985	13
6	1607	988	14228	14
7	1636	296	20927	21
5	1523	565	16733	17
4	1124	42	6581	7
4	1039	124	6404	6
5	1130	37	5761	6
3	386	71	8992	9
2389	206	38	12508	13
4777	1186	32	11166	11
4776	832	32	11035	11
4776	386	71	13765	14
4775	206	38	14894	15
4776	590	639	21111	21
3	960	69	7821	8
8	1642	602	16053	16
6	1715	642	15552	16

Daily

7	1731	689	14754	15
9	237	882	15023	15
5	0	342	21972	22
8	0	975	15391	15
8	0	170	15374	15
4	583	110	12085	12
3	1018	96	12988	13
2	1197	99	9920	10
2	1201	65	12754	13
2	1157	99	10192	10
3	1355	146	10654	11
143	1646	619	16226	16
145	1702	227	18341	18
34	1798	532	15089	15
5	1417	200	12489	12
1	1262	43	9221	9
1	1208	39	9843	10
1	1175	46	7781	8
3	1180	96	9266	9
1	687	69	9335	9
1	0	119	9822	10
0	978	197	11400	11
0	384	120	8732	9
0	1018	145	7617	8
0	1090	123	8438	8
0	1187	108	8468	8
0	1235	82	9816	10
6	1764	164	16777	17
3	2099	155	16939	17
7	1957	418	15568	16
16	1671	400	13682	14
14	1928	445	13117	13
16	1569	455	15021	15
1	1085	316	15571	16
22	984	134	17416	17
36	1052	175	19169	19
21	1185	379	15612	16
27	1435	714	15825	16
20	1556	674	15568	16
7	1537	726	14513	15
12	1634	1286	12708	13
3	1491	888	13651	14
1	1481	335	14347	14
1	1099	50	6708	7
1	414	32	4430	4
1	542	29	4593	5
0	647	81	4625	5
0	621	133	6205	6
0	608	114	6600	7
0	730	94	4528	5
0	12	111	5404	5
1	443	83	5651	6
0	438	122	5798	6
1	893	144	5853	6
0	1136	321	6025	6
21	1315	699	11703	12
2	1848	1000	18581	19

Daily

2	2005	367		21091	21
4	2045	10		29763	30
8	2039	0		29365	29
14	2054	8		30212	30
6	2113	191		23044	23
6	1974	311		15014	15
3	1626	233		10684	11
5	1583	430		12363	12
5	1471	288		11842	12
1	743	62		9525	10
1	676	248		6262	6
0	1058	77		6921	7
0	1388	64		7729	8
0	1045	384		7282	7
0	563	309		8198	8
0	449	86		3929	4
0	812	62		3584	4
0	765	44		3141	3
0	756	40		3689	4
0	716	61		6707	7
0	698	62		7476	7
0	688	80		6200	6
0	723	99		6091	6
1	677	77		6949	7
1	907	155		9622	10
3	1477	222		17824	18
2	1699	163		17821	18
1	1401	126		9788	10
1	489	248		8178	8
2	1660	360		9324	9
2	2022	207		11194	11
3	1768	110		13179	13
3	2276	234	10851	13594	14
1	1423	271	9554	12181	12
2	749	110	12814	15624	16
2	512	236	10087	12638	13
2	514	234	10280	13297	13
2	1307	431	10150	13720	14
2	970	441	9531	12986	13
2	606	651	9992	13504	14
2	668	460	7780	11272	11
3	827	400	8487	11505	12
2	776	310	8159	10814	11
2	1002	302	8106	11190	11
2	2360	576	12078	15002	15
1	324	352	6811	9920	10
1	557	995	4989	8069	8
1	907	658	4519	7309	7
1	997	339	2484	5831	6
1	951	229	5405	9238	9
1	887	352	2450	6082	6
1	758	254	5801	8859	9
1	758	390	2762	7125	7
1	750	379	3414	7258	7
1	750	724	7274	10092	10
1	680	278	2895	6412	6
0	769	761	5793	9696	10

Daily

2	1209	208	11271	15220	15
4	1149	286	5113	9416	9
3	1053	224	4503	9515	10
3	624	174	9864	14115	14
4	1195	155	12341	13865	14
6	2052	224	9980	10682	11
4	806	637	8069	9554	10
6	950	489	9030	10514	11
5	900	802	10516	11747	12
2	887	1309	9900	11542	12
2	864	1053	11377	13319	13
3	769	1008	11725	13300	13
2	665	1370	10286	11918	12
1	1334	1501	10018	11543	12
1	1369	1221	10688	12109	12
1	950	1563	6933	8415	8
1	1038	1566	6127	7770	8
1	198	953	8558	10219	10
1	0	465	3399	5748	6
1	0	409	2424	5324	5
1	0	617	2459	3942	4
1	0	1112	5078	6122	6
1	0	815	9101	11712	12
1	0	178	9144	11692	12
1	0	1384	2532	5033	5
1	0	670	3071	5621	6
1	0	924	6159	8146	8
1	0	1035	6318	7435	7
1	0	704	6977	9653	10
1	0	660	11046	13545	14
2	0	1453	12961	14201	14
1	0	673	15684	18159	18
1	0	131	19457	22515	23
2	0	736	14367	16362	16
2	0	677	7081	9179	9
1	0	1229	5099	7288	7
1	206	611	5429	7780	8
1	2304	115	14587	17194	17
1	3430	123	10646	14000	14
0	2490	108	8190	12218	12
2	2439	726	7695	12255	12
3	1827	726	5508	10926	11
3	895	484	7904	13214	13
2	792	104	3651	8680	9
1	821	89	3734	9646	10
2	839	88	3472	7905	8
2	830	131	3377	8101	8
2	893	140	3183	7677	8
1	803	108	3191	6250	6
2	661	136	1885	4987	5
3	625	165	1999	6349	6
2	587	175	3386	8093	8
2	557	193	3349	7709	8
4	970	819	5399	9944	10
5	1116	1417	8312	12429	12
4	1033	1482	9802	14291	14
5	1102	1270	9210	14363	14

Daily

2	1074	491	8398	12450	12
2	1121	1433	9167	13079	13
2	1114	1382	9112	11847	12
6	1092	1568	10244	14464	14
9	1058	1627	10375	15404	15
8	1261	777	15203	20265	20
6	1002	1633	7659	12722	13
5	1034	1569	9373	14199	14
5	1068	921	15457	20572	21
5	1147	782	14097	20310	20
5	1204	1114	11802	17334	17
6	1108	1088	11762	19243	19
6	1000	1338	11886	20715	21
6	886	1407	11063	16136	16
7	801	1633	10725	17969	18
5	485	1222	8472	15998	16
2	108	137	2944	8270	8
2	347	691	3112	8524	9
2	0	941	6399	11816	12
3	0	915	3494	9243	9
3	3	516	8703	13915	14
2	327	172	7981	14305	14
3	584	142	5403	11781	12
3	1061	380	6512	15568	16
5	2191	736	9686	15366	15
11	1487	1318	9777	15397	15
7	1294	1625	9032	14481	14
3	1240	1356	5713	10448	10
7	997	1272	6004	10430	10
3	1279	482	19045	23611	24
6	2295	1229	9537	13660	14
8	2648	1393	7051	11173	11
5	1895	802	10730	15570	16
8	652	781	3698	8518	9
2	1112	295	9890	13724	14
3	763	251	5614	10494	10
1	729	193	5092	6863	7
2	758	148	10120	14838	15
2	748	147	5582	10931	11
4	659	131	5502	10736	11
1	0	74	8467	12055	12
3	0	153	2216	6265	6
1	0	58	1444	5257	5
1	2	50	1341	4913	5
2	2	37	1269	4919	5
3	1192	97	4082	7684	8
2	1108	91	4739	8007	8
2	939	80	5094	8894	9
4	798	109	5177	8843	9
6	545	133	6011	9664	10

Daily

6	545	133	6011	9665	10
6	590	134	5978	9771	10
5	616	140	6152	9875	10
4	477	150	5820	9020	9
4	465	757	8254	10810	11
2	525	1378	5874	8072	8
3	458	1167	9654	12139	12
9	714	716	17530	19848	20
61388	919	1069	12939	76527	77
61388	973	792	9826	73515	74
13	756	1417	8394	15251	15
13	823	1601	8981	12458	12
10	937	1597	8354	13065	13
6	912	1526	9459	13665	14
9	1057	1364	10916	16872	17
7	986	1633	8061	14134	14
7	1078	1633	8654	14786	15
8	1140	1611	8946	15120	15
9	1082	1403	11161	15680	16
9	1311	1669	16345	20462	20
11	1047	2379	14002	18585	19
7	1046	2068	9037	13098	13
4	962	307	3980	7378	7
4	888	282	3394	7034	7
2	378	216	4223	7898	8
1	0	242	1837	4898	5
3	0	258	1533	4450	4
2	0	270	1617	5452	5
2	0	408	1970	5494	5
2	0	458	1881	4466	4
2	670	430	3470	7478	7
20	1385	1693	7079	10591	11
7	582	2575	8536	12117	12
4	1057	1581	10510	14276	14
4	1087	1062	10390	14455	14
12	1129	2813	12117	16507	17
9	999	2987	10514	14617	15
14	1007	3260	9580	13713	14
12	1044	3255	9872	14482	14
12	1057	3040	10070	14726	15
11	1059	3049	8481	12540	13
11	1061	2578	9553	12808	13
12	1040	836	5576	9221	9
9	1072	907	9037	12939	13
13	1161	836	8936	12866	13
9	1066	501	19018	22887	23
4	132	215	8960	12981	13
4	0	167	6961	9841	10
4	0	177	6790	9661	10

Daily

4	0	157	16119	21447	21
4	0	859	3961	6383	6
4	1	725	3103	4883	5
4	2	343	6145	8543	9
3	1	457	3039	5033	5
1	1	714	5319	6593	7
0	1	334	4952	6313	6
1	1	184	3067	4424	4
1	2	668	3625	5384	5
1	1	722	3516	5244	5
1	2	1332	5229	7750	8
1	634	711	3061	4979	5
3	431	14	1008	3105	3
1	663	9	3117	5143	5
0	548	34	1309	3339	3
0	516	52	1070	3109	3
0	619	31	2664	4709	5
1	1112	0	5175	7168	7
1	1776	0	9046	11973	12
1	1862	110	3705	7547	8
1	1752	112	2984	5766	6
1	1677	92	3654	6408	6
0	1614	84	4035	6769	7
0	1686	52	3833	6550	7
1	1663	72	4146	6875	7
1	1673	75	5185	7931	8
1	1708	70	5411	9187	9
1	1838	60	4771	8774	9
1	1798	133	3378	7550	8
1	1371	142	1970	6123	6
1	1616	142	2968	7151	7
0	795	107	1289	5436	5
0	514	141	1713	5917	6
1	407	640	2940	7067	7
1	0	444	4712	8863	9
1	17	1844	5811	7589	8
2	1232	181	2527	4692	5
1	854	122	998	2976	3
1	758	90	856	2703	3
1	745	78	993	2769	3
1	742	82	1655	3476	3
1	531	101	1611	3435	3
0	402	148	7018	8815	9
1	416	199	7167	8971	9
1	325	88	2487	4291	4
1	329	77	4798	6721	7
0	1876	280	6447	8296	8
1	2596	716	7406	9416	9
1	382	912	4937	6988	7

Daily

0	423	1347	5383	7423	7
0	545	950	4712	6768	7
0	434	1301	5279	7351	7
0	503	27	3517	5583	6
0	483	25	3052	5105	5
0	570	26	2210	4251	4
0	837	527	4509	6663	7
0	1214	2168	6066	8325	8
0	971	720	4096	6342	6
0	888	2440	5877	8081	8
0	1064	1724	4714	6915	7
0	1359	140	3287	5088	5
0	1509	79	3219	5008	5
0	1792	45	3504	5320	5
0	2288	24	5338	7432	7
0	3403	45	5010	7029	7
1	3842	125	5451	7583	8
1	678	134	2887	6691	7
1	724	261	2689	7378	7
1	679	347	3211	7882	8
0	1209	348	4337	9059	9
1	1291	368	4213	8934	9
3	1393	665	5539	10206	10
2	1354	539	4289	8999	9
2	1171	383	3674	8013	8
3	1161	426	4111	8445	8
4	1195	189	6801	10661	11
4	715	558	7012	10850	11
5	0	581	11039	14887	15
4	1560	80	7790	11677	12
4	1282	118	7052	10940	11
2	1258	55	7555	11393	11
2	991	67	8181	12035	12
1	752	63	1657	5592	6
2	1171	46	1971	4630	5
1	1600	61	2747	5393	5
1	1633	84	2797	5396	5
1	1569	44	2619	5040	5
1	1544	51	2839	5481	5
1	1258	91	3543	5938	6
4	1915	1500	8984	11004	11
4	2103	1500	11848	13643	14
4	2175	1500	17914	21991	22
3	2258	917	9926	14198	14
4	2286	900	13558	17257	17
6	2240	1200	11015	14780	15
4	2151	973	10877	14914	15
5	2230	2686	13005	17029	17
4	2303	4235	12558	16566	17
6	2288	3643	14883	18890	19
5	2271	2504	9748	13763	14
7	2341	2891	9869	13917	14
6	2475	4862	12872	16948	17
8	2531	4898	11468	15580	16
10	2193	4625	12316	16320	16



Daily

7	2037	4898	10551	14465	14
6	1516	2644	7666	11625	12
4	787	445	7496	11398	11
4	1125	137	5472	9451	9
3	1717	89	4744	8663	9
4	1672	86	5304	7291	7
5	1716	62	4729	6683	7
6	1687	72	4144	6121	6
4	1382	67	3857	5848	6
7	1911	865	6951	9110	9
6	2161	2073	13389	17588	18
11	2187	3725	7957	12553	13
8	2118	3832	8219	12797	13
9	2246	3441	10006	14643	15
9	2107	4654	10178	14783	15
11	2127	4346	11627	16333	16
10	2113	4715	11940	16098	16
11	2103	4780	12171	16907	17
9	2110	4748	12286	16769	17
7	2140	4575	12791	17328	17
7	2143	4540	11500	16411	16
5	2038	3979	13273	18273	18
7	2069	2459	10387	15440	15
7	2139	1267	8897	13939	14
6	1144	1766	10424	15467	15
5	1203	53	3190	7229	7
5	813	40	2918	6870	7
3	376	1294	4410	6663	7
3	446	939	3055	5364	5
4	498	121	2311	4671	5
3	575	53	3386	5728	6
2	562	45	3136	5471	5
3	294	2168	11894	14200	14
5	11	87	9194	11465	11
5	1484	1343	12357	14575	15
7	2348	4156	11217	14965	15
6	939	2847	8455	12600	13
6	1531	1889	6616	10792	11
3	1856	731	5392	9593	10
5	1869	481	5133	8877	9
5	1879	809	5275	9541	10
6	1869	438	4694	8975	9
6	1927	571	10485	14594	15
5	1703	467	4821	9273	9
0	1830	996	6165	10232	10
6	1927	571	10485	14594	15
0	1981	1160	6345	10432	10
4	2025	1637	7692	12501	13
4	2024	2023	6289	11144	11
6	1997	1760	8114	13045	13
5	1275	109	6608	11494	11
5	1025	56	4441	9424	9
5	1101	49	5348	10378	10
5	1149	60	5436	7794	8
5	1331	76	6017	8358	8
3	1477	80	5577	8161	8
3	479	41	6092	8895	9

Daily

4	222	80	5375	8217	8
4	1470	133	12432	14817	15
5	1767	605	8196	10585	11
5	1986	613	11133	13497	13
7	2135	1712	11807	14171	14
8	2117	2547	10767	14483	14
7	2071	1573	9515	13578	14
4	1866	2614	9684	14033	14
3	1864	1782	8728	13017	13
6	1884	2051	8691	13735	14
6	1940	1777	8173	13642	14
3	1772	1169	8971	14720	15
5	1034	75	6937	10461	10
4	1302	356	7604	10827	11
2	1827	106	5241	10453	10
2	842	66	3163	6272	6
3	947	157	3757	6165	6
3	1473	75	4290	7115	7
3	993	86	2125	4591	5
2	934	89	2322	5187	5
1	768	152	2398	5562	6
2	427	348	4583	7565	8
2	382	80	5785	8278	8
2	530	111	4288	6565	7
1	650	137	5896	8001	8
2	888	309	3967	6215	6
2	698	280	4427	6861	7
2	558	372	4591	7132	7
1	626	231	3057	5753	6
2	581	342	2313	5524	6
2	548	402	1924	4635	5
2	552	576	2730	5598	6
1	647	3	13882	16898	17
1	588	0	13562	16120	16
2502	681	0	14220	19043	19
2501	852	0	13397	17588	18
2501	849	0	13592	17934	18
2501	898	0	13765	18542	19
2501	913	0	12524	17176	17
2502	901	0	11383	16017	16
2501	887	0	12054	16655	17
2502	920	0	12323	16914	17
2	927	1	13334	15476	15
1	933	3	14083	16336	16
1	952	0	13115	15217	15
1	1042	18	8732	10939	11
1	1037	31	6322	9794	10
1	1132	42	7128	9859	10
1	1155	54	6881	9890	10
2	1192	46	7168	10358	10
2	63	158	10582	13469	13
2	2343	51	11411	13586	14
2	1610	29	9744	12257	12
6	1867	32	12353	14723	15
5	2029	331	7863	10252	10
8	1410	356	6504	10801	11
9	1651	298	6494	11173	11

Daily

8	1229	557	6055	10820	11
8	764	564	5732	11669	12
10	547	912	4979	10884	11
25942	537	307	17463	48876	49
18	77	1272	13433	18877	19
8	2693	1860	13381	18789	19
9	1935	799	13846	19293	19
8	1696	1056	10984	17441	17
5	1665	1855	10623	16735	17
5	1663	1916	9642	15524	16
4	1657	2507	9555	16263	16
5	1624	873	9143	16042	16
6	76	3856	10432	17568	18
5	0	1578	12999	19179	19
4	0	1023	12168	18315	18
4	0	1231	11653	17330	17
3	0	298	5631	9366	9
2	9	237	4222	8117	8
4	13	192	3337	6909	7
3	12	185	3469	7097	7
3	4	138	4478	7823	8
4	6	83	7330	10424	10
5	7	147	5074	7749	8
4	11	62	10606	13241	13
3	8	58	7236	9773	10
3	205	125	4909	7363	7
4	213	384	1718	4454	4
4	54	464	1271	4356	4
2	39	416	1180	4543	5
3	24	145	1152	5149	5
2	30	157	3214	7163	7
2	0	1062	6811	11183	11
3	51	180	7535	11290	11
1	0	46	8859	12726	13
1	9	199	8611	12383	12
1	2	89	1977	5614	6
1	9	120	1385	4812	5
2	1	266	1508	5320	5
3	1718	183	3441	7177	7
3	393	52	1880	4211	4
3	357	65	1771	5226	5
4	377	86	2128	5848	6
4	562	98	2243	5666	6
4	767	127	3837	7250	7
4	1081	71	15530	18223	18
4	1596	0	16391	20042	20
4	1848	0	14815	18757	19
5	1961	51	12515	16533	17
6	1501	253	5010	8267	8
4	1095	575	5014	9099	9
3	934	406	5188	9811	10
4	1083	324	5189	9746	10
3	1280	408	5404	9944	10
4	1179	514	5026	9774	10
3	1254	538	4724	10158	10
4	1270	416	4674	10263	10
4	1481	638	4803	10236	10

Daily

3	1532	509	4623	10394	10
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Daily

Annual

DOE  
Rolling Average

IOL-DOE RA

30-day  
Rolling Average Limits

16093	27700
15661	27700
16488	27700
16936	27700
15452	27700
15621	27700
15882	27700
16568	27700
16868	27700
17089	27700
17264	27700
17837	27700
18447	27700
18837	27700
19250	27700
19389	27700
19452	27700
19562	27700
19378	27700
19334	27700
19522	27700
19579	27700
19616	27700
19729	27700
19803	27700
19827	27700
19853	27700
19900	27700
19996	27700
20088	27700
20204	27700
20389	27700
20481	27700
20682	27700
21190	27700
21503	27700
21790	27700
21884	27700
21972	27700
22061	27700
22157	27700
22011	27700
21757	27700
21400	27700
21130	27700
21188	27700
21231	27700
21340	27700
21459	27700
21671	27700
21692	27700
21837	27700
21956	27700

Daily

22013	27700
22131	27700
22264	27700
22407	27700
22432	27700
22337	27700
22255	27700
22310	27700
22346	27700
22341	27700
22220	27700
22109	27700
21978	27700
21789	27700
21685	27700
21672	27700
21647	27700
21407	27700
21277	27700
21295	27700
21512	27700
21676	27700
21664	27700
21611	27700
21541	27700
21601	27700
21586	27700
21607	27700
21508	27700
21470	27700
21484	27700
21433	27700
21355	27700
21195	27700
21093	27700
21134	27700
21158	27700
21146	27700
21150	27700
21160	27700
21165	27700
21185	27700
21155	27700
21169	27700
21112	27700
21098	27700
21087	27700
21273	27700
21385	27700
21334	27700
21294	27700
21106	27700
20921	27700
20848	27700
20720	27700
20443	27700
20167	27700

Daily

19735	27700
19412	27700
19168	27700
18960	27700
18767	27700
18580	27700
18497	27700
18457	27700
18381	27700
18247	27700
18096	27700
17891	27700
17869	27700
17953	27700
18118	27700
18304	27700
18490	27700
18553	27700
18547	27700
18598	27700
18655	27700
18745	27700
18916	27700
19061	27700
19261	27700
19497	23200
19743	23200
19910	23200
20301	23200
20564	23200
20979	23200
21365	23200
21773	23200
21875	23200
21975	23200
22038	23200
22008	23200
22057	23200
22069	23200
22176	23200
22377	23200
22624	23200
22560	23200
22299	23200
21880	23200
21616	23200
21245	23200
21125	23200
21087	23200
21073	23200
21069	23200
21069	23200
21028	23200
21026	23200
20981	23200
20856	23200
20716	23200

Daily

20716	23200
20714	23200
20743	23200
20695	23200
20732	23200
20574	23200
20627	23200
20609	23200
20719	23200
20991	23200
21178	23200
21292	23200
21321	23200
21302	23200
21286	23200
21450	23200
21728	23200
22018	23200
22125	23200
22232	23200
22309	23200
22348	23200
22339	23200
22319	23200
22306	23200
22293	23200
22215	23200
22145	23200
22038	23200
21903	23200
21726	23200
21473	23200
21189	23200
21006	23200
20758	23200
20557	23200
20371	23200
20256	23200
20082	23200
19808	23200
19680	23200
19523	23200
19404	23200
19314	23200
19190	23200
19098	23200
18958	23200
18922	23200
18981	23200
19007	23200
18970	23200
18798	23200
18622	23200
18357	23200
18242	23200
18272	23200
18283	23200



Daily

18342	23200
18473	23200
18603	23200
18682	23200
18671	23200
18653	23200
18695	23200
18634	23200
18683	23200
18736	23200
18851	23200
18995	23200
19106	23200
19053	23200
18991	23200
19027	23200
18997	23200
18864	23200
18707	23200
18614	23200
18447	23200
18279	23200
18245	23200
18248	23200
18353	23200
18382	23200
18471	23200
18392	23200
18259	23200
18116	23200
17983	23200
17826	23200
17726	23200
17644	23200
17643	23200
17758	27700
17722	27700
17824	27700
17726	27700
17691	27700
17558	27700
17338	27700
17168	27700
17123	27700
17198	27700
17179	27700
17207	27700
17346	27700
17462	27700
17481	27700
17540	27700
17528	27700
17518	27700
17475	27700
17421	27700
17398	27700
17474	27700

Daily

17563	27700
17646	27700
17822	27700
17967	27700
18154	27700
18282	27700
18405	27700
18466	27700
18323	27700
18332	27700
18289	27700
18363	27700
18397	27700
18489	27700
18673	27700
18876	27700
19037	27700
19209	27700
19362	27700
19504	27700
19629	27700
19708	27700
19757	27700
19693	27700
19687	27700
19772	27700
19910	27700
20020	27700
20182	27700
20250	27700
20277	27700
20239	27700
20098	27700
20057	27700
20013	27700
19993	27700
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6122

Daily

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Daily

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Daily

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Daily

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Daily

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Daily

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Daily

6028

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Daily

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Daily

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16663	11	27700
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17390	12	27700
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15063	2	23200
15085	2	23200
15147	1	23200
15113	0	23200
15094	-1	23200
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15046	-1	23200
15243	-1	23200
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Daily

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Daily

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11989	0	27700
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11822	0	27700
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Daily

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13556	0	27700
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13988	-1	27700
14255	-1	27700
14497	-1	27700
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14666	-27	27700
14663	-27	27700
14602	-27	27700
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14630	-27	27700
14812	-27	27700
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16987	-24	27700
17153	-24	27700
17354	-24	27700
17336	-25	27700
17537	-24	27700
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18046	-28	27700
18243	-18	27700
18125	-11	27700
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18090	29	27700
18147	29	27700
18238	29	27700
18334	29	27700
18273	29	27700
18088	29	27700
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16964	29	27700
16762	28	27700
16372	29	27700
15934	28	27700
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15088	26	27700
14912	26	27700
14817	26	27700

Daily

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	14001	26	27700
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	13002	26	27700
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	12443	26	27700
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	11835	4	27700
	11842	3	27700
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	10525	-1	27700
	10876	0	27700
	11137	-1	27700
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Daily

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12706	0	27700
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13126	-1	27700
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13596	0	27700
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13212	-1	27700
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15260	0	27700
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Daily

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13884	-1	27700
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16438	-1	27700
16364	0	27700
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16186	0	27700
16063	-1	27700
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15543	0	27700
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14270	403	27700
13984	358	27700
13678	349	27700
13302	365	27700
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12410	618	27700
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11583	886	27700
11619	617	27700
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11602	298	27700
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11692	153	27700
11667	103	23200
11903	-127	23200
12157	-340	23200
12391	-593	23200
12623	-939	23200
12851	-1341	23200
13059	-1809	23200

Daily

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13506	-2571	23200
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13756	-3236	23200
13755	-3326	23200
13791	-3459	23200
13803	-3510	23200
13779	-3541	23200
13778	-3804	23200
13885	-4285	23200
13933	0	23200
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14063	-18	23200
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12968	0	23200
12622	0	23200
12173	0	23200
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10082	1	23200
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12490	0	23200
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12998	0	23200
13277	0	23200
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13199	0	23200

Daily

13233	0	23200
13192	0	23200
13157	0	23200
13135	0	23200
13129	0	23200
13132	0	23200
13181	0	23200
13248	0	23200
13001	0	23200
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11639	1	23200
11466	1	23200
11118	1	23200
10911	0	23200
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10227	0	23200
10035	0	23200
9853	0	23200
9612	0	23200
9416	0	23200
9320	0	23200
9201	0	23200
9125	0	23200
9124	1	23200
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9451	0	23200
9589	0	23200
9735	1	23200
9908	0	23200
10116	1	23200
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10769	0	23200
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11847	-1	23200
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11602	-1	23200
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11593	0	23200
11434	0	23200
11216	0	23200
10993	0	23200
10861	0	23200

Daily

10672	0	23200
10466	0	23200
10282	0	23200
10128	0	27700
9976	0	27700
9848	0	27700
9904	0	27700
10002	0	27700
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10966	1	27700
10955	1	27700
10934	0	27700
10848	0	27700
10800	0	27700
10784	0	27700
10773	0	27700
10698	0	27700
10679	0	27700
10709	0	27700
10712	1	27700
10715	1	27700
10714	0	27700
10665	0	27700
10407	0	27700
10055	1	27700
9702	0	27700
9404	0	27700
9184	1	27700
8938	1	27700
8777	1	27700
8807	0	27700
8974	0	27700
9306	0	27700
9719	0	27700
10200	0	27700
10593	0	27700
10733	0	27700
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10972	1	27700
10819	0	27700
10792	1	27700
10685	1	27700
10770	1	27700
10676	0	27700



Daily

10711	0	27700
10790	0	27700
10871	0	27700
10923	0	27700
10986	0	27700
11043	1	27700
11079	0	27700
11143	0	27700
11133	0	27700
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11657	0	27700
11367	0	27700
11152	1	27700
11081	0	27700
11089	0	27700
10802	0	27700
10718	0	27700
10774	0	27700
10901	0	27700
11037	0	27700
11248	0	27700
11424	0	27700
12028	0	27700
12220	0	27700
12536	0	27700
12684	0	27700
12766	0	27700
12966	0	27700
13147	0	27700
13225	0	27700
13294	0	27700
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13311	0	27700
13236	0	27700
13243	0	27700
13133	0	27700
13040	15	27700
13064	25	27700
13170	25	27700
13165	30	27700
13367	29	27700
13407	30	27700
13547	29	27700
13775	30	27700
14109	30	27700

4477

Daily

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14525	30	27700
14831	29	27700
15253	30	27700
15695	30	27700
16055	30	27700
16328	29	27700
16626	30	27700
17009	29	27700
17319	29	27700
17788	30	27700
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18559	30	27700
19033	29	27700
19452	29	27700
19840	29	27700
20311	30	27700
20815	30	27700
21340	30	27700
21904	29	27700
22409	30	27700
22777	15	27700
22912	5	27700
22963	5	27700
22901	0	27700
22795	0	27700
22836	-1	27700
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22318	0	27700
22231	-1	27700
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21503	0	27700
21358	0	27700
21253	0	27700
21244	0	27700
21261	0	27700
20945	0	27700
20806	-1	27700
20724	0	27700
20616	0	27700
20725	-1	27700
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21157	0	27700
21214	0	27700
21225	-1	27700
21160	0	27700
21170	0	27700
21284	0	27700
21770	0	27700
22146	0	27700
22502	0	27700
22765	0	27700

Daily

22987	0	27700
23002	0	27700
23264	0	27700
23546	0	27700
24157	1	27700
24609	0	27700
24804	0	27700
24780	0	27700
24790	0	27700
24798	0	27700
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24982	1	27700
25011	0	27700
25352	0	27700
25596	1	27700
25724	1	27700
25711	1	27700
25520	0	27700
25452	91	27700
25277	0	27700
25117	1	27700
24754	0	27700
24341	0	27700
24338	0	27700
24469	1	27700
24387	0	27700
24180	0	27700
24073	0	27700
23867	0	27700
23709	0	27700
23692	0	27700
23705	0	27700
23528	0	27700
23385	0	27700
23217	0	27700
22808	0	27700
22898	0	27700
23226	1	27700
23528	0	27700
23903	1	27700
24134	0	27700
24166	0	27700
24441	0	27700
24364	0	27700
24208	0	27700
24056	0	27700
23834	0	27700
23596	0	27700
23332	0	27700
23177	0	27700
22912	0	27700
22924	0	27700
23012	0	27700
22792	0	27700
22423	0	27700
22094	0	27700
21733	0	27700

Daily

21465	0	27700
21286	0	27700
21166	-782	27700
21032	-751	27700
20956	-913	27700
20868	-885	27700
20708	-906	27700
20548	-905	27700
20634	-808	27700
20551	-779	27700
20419	-769	27700
20292	-769	27700
20214	-735	27700
19987	-675	27700
19837	-675	27700
19526	-675	27700
19454	-675	23200
19497	-675	23200
19650	-604	23200
19882	-610	23200
20102	-129	23200
20081	-196	23200
20001	-197	23200
19903	-198	23200
19766	-204	23200
19694	-23	23200
19561	-6	23200
19431	51	23200
19388	2	23200
19271	2	23200
19195	1	23200
19114	2	23200
18962	2	23200
18732	1	23200
18528	724	23200
18252	755	23200
18131	755	23200
17920	756	23200
17656	755	23200
17387	755	23200
17087	755	23200
16994	743	23200
16849	732	23200
16789	799	23200
16853	799	23200
17032	799	23200
17150	799	23200
17225	798	23200
17078	799	23200
17225	799	23200
17335	828	23200
17694	830	23200
17942	830	23200
18354	831	23200
18731	815	23200
19041	800	23200
19496	800	23200

Daily

20197	498	23200
20500	514	23200
20607	568	23200
20688	627	23200
20755	671	23200
20902	671	23200
20960	672	23200
21040	-52	23200
21136	-84	23200
21081	-84	23200
21110	-84	23200
21065	-84	23200
21015	-84	23200
20964	-83	23200
20722	-72	23200
20401	-60	23200
20158	-127	23200
20116	-127	23200
20200	-128	23200
20338	-128	23200
20578	-127	23200
20880	-128	23200
20962	-128	23200
21142	-202	23200
21290	-206	23200
21565	-232	23200
21735	-239	23200
21851	-158	23200
21971	-109	23200
22008	-108	23200
21692	193	23200
21851	176	23200
22221	123	23200
22551	64	23200
22716	20	23200
22786	21	23200
22952	20	23200
22994	19	23200
23025	20	23200
23075	19	23200
23087	19	23200
23204	19	23200
23321	19	23200
23448	20	23200
23662	19	23200
23709	19	23200
23758	19	23200
23557	19	23200
23208	20	23200
22949	19	23200
22445	19	23200
22021	19	23200
21623	19	23200
21175	64	23200
20772	67	23200
20754	92	23200
20727	107	23200

Daily

20748	41	23200
20789	8	23200
20712	-3	23200
20673	-3	23200
20652	-4	23200
20726	-34	23200
20745	-30	23200
20937	-30	23200
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21486	-30	23200
21884	-30	23200
22168	-118	23200
22401	-30	23200
22730	-30	23200
23076	-30	23200
23103	-30	23200
23176	-30	23200
23043	-30	23200
22994	-30	23200
22894	-30	23200
22846	-30	23200
22761	-30	23200
22677	17	23200
22738	-30	23200
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21206	-30	27700
20738	-30	27700
20451	-30	27700
20064	-30	27700
19612	-30	27700
19094	0	27700
18660	0	27700
18240	0	27700
17748	1	27700
17232	1	27700
16581	0	27700
16096	-341	27700
15610	-339	27700
15000	-346	27700
14377	-351	27700
14080	-357	27700
13782	-358	27700
13598	-356	27700
13509	-363	27700
13451	-376	27700
13526	-383	27700
13610	-453	27700
13430	-452	27700
13401	-452	27700
13353	-452	27700
13240	-454	27700
13195	-455	27700

Daily

13009	-455	27700
12920	-397	27700
12811	-319	27700
12550	-147	27700
12501	-151	27700
12441	-122	27700
12488	-123	27700
12690	-124	27700
12989	-162	27700
13313	-187	27700
13481	-168	27700
13632	-168	27700
13702	-94	27700
13904	-94	27700
14056	-93	27700
14253	-93	27700
14445	-94	27700
14762	-94	27700
15063	-94	27700
15233	-93	27700
15391	-93	27700
15597	-93	27700
15800	-81	27700
15839	-80	27700
15946	-30	27700
16299	-30	27700
16588	-30	27700
16860	-29	27700
17104	-28	27700
17357	-27	27700
17766	-26	27700
18203	-26	27700
18642	-27	27700
19260	-26	27700
19723	-26	27700
20093	-24	27700
20492	-26	27700
20564	-28	27700
20613	5	27700
20661	5	27700
20577	-15	27700
20483	-14	27700
20358	-14	27700
20324	-3	27700
20195	-2	27700
20071	-3	27700
19978	-3	27700
19719	-3	27700
19508	-3	27700
19407	-2	27700
19322	-3	27700
19188	-3	27700
19198	-2	27700
19056	-3	27700
18905	-3	27700
18712	-3	27700
18480	-3	27700

Daily

7447

18258	-3	27700
18115	-3	27700
18158	-3	27700
18171	-3	27700
18128	-3	27700
18013	-4	27700
17895	-3	27700
17822	-3	27700
17756	-1	27700
17683	2	27700
17781	5	27700
17713	9	27700
17649	0	27700
17880	0	27700
18504	0	27700
18905	0	27700
19242	79	27700
19703	-12	27700
19652	-12	27700
19674	-11	27700
19722	-11	27700
19793	-11	27700
19833	-11	27700
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19996	-11	27700
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20231	-11	27700
20311	-11	27700
20294	-11	27700
20167	-11	27700
20251	-11	27700
20232	-12	27700
20123	-11	27700
19968	22	27700
19952	23	27700
20037	22	27700
20085	22	27700
20079	22	27700
20110	22	27700
20103	33	27700
20057	67	27700
19658	317	27700
19583	67	27700
19547	67	27700
19531	66	27700
19880	67	27700
19981	70	27700
20105	71	27700
20126	63	27700
20202	81	27700
20332	81	27700
20232	82	27700
20127	81	27700
20040	175	27700



Daily

19920	174	27700
19816	82	27700
19659	81	27700
19512	82	27700
19461	81	27700
19304	82	27700
18915	81	27700
18629	81	27700
18428	81	27700
18240	48	27700
17855	48	27700
17490	47	27700
17279	48	27700
16965	123	27700
16654	122	27700
16183	123	27700
15635	89	27700
15109	89	27700
14720	-104	27700
14426	89	27700
13992	90	27700
13717	89	27700
13785	86	27700
13923	86	27700
14062	92	27700
14141	74	27700
14138	75	27700
14234	74	27700
14321	74	27700
14466	74	27700
14702	74	27700
14793	74	27700
15031	75	27700
15214	74	27700
15516	75	27700
15873	75	27700
16220	75	27700
16570	79	27700
16708	78	27700
16653	78	27700
16642	78	27700
16550	78	27700
16436	79	27700
16460	1	27700
16543	1	27700
16808	1	27700
17327	1	27700
17687	0	27700
18104	0	27700
18422	0	27700
18826	1	27700
19105	1	27700
19236	0	27700
19320	3	27700
19501	3	27700
19711	3	27700
19899	8	27700

Daily

20096	8	27700
20255	8	27700
20273	8	27700
20247	9	27700
20311	8	27700
20410	9	27700
20413	-5	27700
20234	-5	27700
20060	-5	27700
19881	-5	27700
19675	-8	27700
19569	-8	27700
19645	-8	27700
19677	-9	27700
19703	-8	27700
19584	107	27700
19471	107	27700
19425	107	27700
19424	107	27700
19212	106	27700
19193	106	27700
18992	107	27700
18883	107	27700
18723	161	27700
18682	161	27700
18739	160	27700
18875	161	27700
18872	161	27700
18818	161	27700
18856	110	27700
18834	111	27700
18931	111	27700
19087	111	27700
19172	155	27700
19274	156	27700
19300	156	27700
19520	169	27700
19797	169	27700
19908	169	27700
20130	169	27700
20327	196	23200
20370	195	23200
20429	195	23200
20541	195	23200
20534	196	23200
20519	80	23200
20516	79	23200
20426	80	23200
20339	81	23200
20224	80	23200
20033	84	23200
19789	84	23200
19428	83	23200
19088	29	23200
18722	6	23200
18288	-8	23200
17787	-42	23200

Daily

17352	29	23200
16833	29	23200
16347	29	23200
15865	29	23200
15513	29	23200
15226	29	23200
14968	29	23200
14680	-284	23200
14398	-511	23200
13891	-418	23200
13478	-171	23200
13312	-319	23200
12997	-282	23200
12746	-150	23200
12627	-267	23200
12383	-214	23200
12192	60	23200
12275	109	23200
12407	116	23200
12546	-38	23200
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12147	37	23200
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12202	43	23200
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12537	43	23200
12652	44	23200
12766	43	23200
12887	43	23200
12991	43	23200
13110	44	23200
13476	47	23200
13654	47	23200
13704	47	23200
13747	54	23200
13823	58	23200
14099	57	23200
14527	49	23200
14845	55	23200
14982	56	23200
15090	55	23200
14908	55	23200
14917	76	23200
14918	75	23200
14987	71	23200
15064	43	23200
15123	42	23200
15194	36	23200

Daily

15200	36	23200
15245	36	23200
15269	37	23200
15304	36	23200
15373	36	23200
15450	36	23200
15531	36	23200
15538	36	23200
15462	36	23200
15295	36	23200
15105	36	23200
14875	36	23200
14792	36	23200
14493	36	23200
14239	36	23200
14022	42	23200
13805	35	23200
13539	31	23200
13353	31	23200
13124	32	23200
12830	26	23200
12609	26	23200
12462	31	23200
12525	30	23200
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12344	11	23200
12196	11	23200
11985	11	23200
11814	11	23200
11615	11	23200
11428	11	23200
11230	94	23200
11013	94	23200
10806	94	23200
10613	11	23200
10300	12	23200
10063	11	23200
9933	12	23200
10041	11	23200
10148	11	23200
10077	11	23200
10036	11	23200
10156	12	23200
10185	4	23200
10271	5	23200
10394	5	23200
10405	4	23200
10321	5	23200
10367	4	23200
10340	5	27700
10352	0	27700
10396	0	27700
10393	0	27700
10465	-1	27700
10609	0	27700

Daily

10826	0	27700
10947	0	27700
11078	0	27700
11204	1	27700
11416	0	27700
11590	0	27700
11756	0	27700
11969	0	27700
12034	0	27700
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11136	-1	27700
10887	0	27700
10699	-1	27700
10553	0	27700
10486	0	27700
10370	0	27700
10478	0	27700
10652	-1	27700
10851	0	27700
10938	-1	27700
11043	0	27700
11292	0	27700
11560	-1	27700
11944	0	27700
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12701	0	27700
12975	0	27700
13238	0	27700
13042	0	27700
13124	-1	27700
13156	0	27700
13147	-1	27700
13154	-1	27700
13126	0	27700
13425	0	27700
13889	0	27700
14118	-37	27700
14507	-37	27700
14748	-37	27700
14974	-37	27700
15141	-38	27700
15259	-37	27700

Daily

15395	-26	27700
15601	-4	27700
15781	-3	27700
15921	-3	27700
15842	-4	27700
15732	-3	27700
15645	-3	27700
15704	-124	27700
15671	-124	27700
15614	-124	27700
15435	-124	27700
15247	-125	27700
15082	-124	27700
14951	-124	27700
14957	-124	27700
14868	-125	27700
15110	-124	27700
15276	-125	27700
15438	-124	27700
15532	-125	27700
15811	-124	27700
16090	-124	27700
16175	-124	27700
16165	-125	27700
16261	-88	27700
16200	-87	27700
16206	-87	27700
16294	-87	27700
16397	-87	27700
16738	-88	27700
16860	-98	27700
16901	-121	27700
17302	-121	27700
17590	-121	27700
17991	-121	27700
18439	-120	27700
18751	-121	27700
18982	0	27700
19219	0	27700
19392	0	27700
19605	0	27700
19825	0	27700
19860	0	27700
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19914	0	27700
19899	1	27700
19805	0	27700
19692	0	27700
19409	0	27700
19080	0	27700
18715	1	27700
18371	0	27700
18038	0	27700
17794	0	27700
17836	0	27700
17989	1	27700
18140	1	27700

5709

Daily

18214	1	27700
18332	0	27700
18277	1	27700
18399	0	27700
18315	0	27700
17923	0	27700
17770	-222	27700
17603	-222	27700
17618	-222	27700
17417	-222	27700
17060	-222	27700
16676	-222	27700
16276	-222	27700
15888	-221	27700
15550	-222	27700
15229	-222	27700
14881	-221	27700
14478	-222	27700
14150	-222	27700
14105	-222	27700
14070	-222	27700
14228	-222	27700
14450	-222	27700
14661	-222	27700
14857	-222	27700
15057	-222	27700
15102	-222	27700
15099	-222	27700
15091	-224	27700
15124	-232	27700
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15030	-239	27700
14795	-246	27700
14785	-268	27700
15206	-277	27700
15476	-278	27700
15620	-55	27700
15551	-55	27700
15144	-55	27700
15082	-55	27700
15117	-55	27700
15230	-55	27700
15347	-56	27700
15454	-55	27700
15685	-56	27700
15774	-59	27700
15963	7	27700
16175	55	27700
16398	33	27700
16488	-87	27700
16288	52	27700
16120	153	27700
15968	318	27700
15782	497	27700
15650	593	27700
15665	591	27700
15633	711	27700

Daily

15467	785	27700
15287	842	27700
15137	851	27700
14884	1026	27700
14763	1132	27700
14739	1263	27700
14559	1300	27700
13986	1461	27700
13461	1627	27700
13123	1605	27700
12835	1757	27700
12625	1953	27700
12544	1988	27700
12721	1795	27700
12895	1613	27700
12873	1612	27700
12882	1562	27700
12746	1467	27700
12765	1385	27700
12667	1340	27700
12931	1934	27700
12728	1954	27700
12403	2076	27700
12369	1936	27700
12296	1836	27700
12331	1670	27700
12340	1491	27700
12350	1395	27700
12259	1398	27700
12281	1276	27700
12176	1202	27700
12044	1147	27700
11843	1136	27700
11777	963	27700
11651	856	27700
11570	724	27700
11405	688	27700
11447	527	27700
11576	361	27700
11529	384	27700
11630	230	27700
11788	34	27700
11743	1	27700
11493	0	27700
11280	0	27700
11207	0	27700
11042	0	27700
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10287	-17	27700
10268	-41	27700
10319	-63	27700
10405	-62	27700
10352	-62	27700
10414	-62	27700
10623	-63	27700



Daily

10684	-62	27700
10806	-62	27700
10782	-62	27700
10839	-62	27700
10895	-63	27700
11108	-63	27700
11416	-62	27700
11704	-60	23200
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12616	-60	23200
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13113	-60	23200
13323	-60	23200
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13380	125	23200
13302	234	23200
13374	234	23200
13449	251	23200
13610	257	23200
13731	277	23200
13748	277	23200
13824	277	23200
13769	277	23200
13611	277	23200
13591	277	23200
13500	277	23200
13527	277	23200
13527	278	23200
13574	277	23200
13423	277	23200
13246	277	23200
13080	275	23200
12881	275	23200
12733	274	23200
12806	275	23200
12906	275	23200
13221	275	23200
13353	275	23200
13072	275	23200
12807	275	23200
12412	275	23200
12090	275	23200
11970	275	23200
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12022	90	23200
12216	-19	23200
12319	-19	23200
12577	-19	23200
12331	0	23200
12351	-1	23200
12400	0	23200

Daily

12508	-1	23200
12605	-1	23200
12935	0	23200
12977	0	23200
13033	0	23200
13018	0	23200
13066	-1	23200
12983	0	23200
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13026	0	23200
13011	0	23200
13180	0	23200
13406	0	23200
13476	1	23200
13419	1	23200
13028	1	23200
12799	0	23200
12839	0	23200
12934	0	23200
13053	0	23200
13081	0	23200
13044	0	23200
12963	0	23200
12849	0	23200
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12457	0	23200
12081	0	23200
12379	0	23200
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12373	-1	23200
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12084	-1	23200
12152	-1	23200
12388	-1	23200
12476	-2	23200
12673	-2	23200
12767	-2	23200
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11884	-2	23200
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11742	-1	23200
11582	-1	23200
11435	-2	23200
11243	-1	23200
11146	-2	23200
11087	-2	23200
11006	-1	23200
11114	-2	23200
11406	-1	23200

Daily

11550	-1	23200
11978	-1	23200
12437	0	23200
12988	0	23200
13319	0	23200
13319	0	23200
13156	0	23200
12988	0	23200
12744	-1	23200
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12222	64	23200
11934	63	23200
11708	64	23200
11527	63	23200
11345	64	23200
10998	63	23200
10893	64	23200
10851	64	27700
10820	64	27700
10890	64	27700
10932	64	27700
10919	64	27700
10971	64	27700
11022	64	27700
11155	64	27700
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11654	64	27700
11324	64	27700
10771	64	27700
10246	63	23200
9645	64	23200
9397	64	23200
9318	64	23200
9405	64	23200
9450	64	23200
9488	64	23200
9621	64	23200
9788	0	23200
9941	0	23200
10044	0	23200
10174	0	23200
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11045	0	23200
10998	0	23200
11087	0	23200
11121	0	23200
11132	0	23200
11147	0	23200
10767	0	23200
10496	0	23200

Daily

10677	0	23200
10718	0	23200
10725	-1	23200
10822	-1	23200
10845	-1	23200
10748	-1	23200
10660	-1	23200
10490	-1	23200
10460	-1	23200
10402	-1	23200
10388	-1	23200
10399	-1	23200
10346	-1	23200
10355	-1	23200
10375	-1	23200
10295	-1	23200
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10022	-1	23200
9883	-1	23200
9791	-1	23200
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9689	-1	23200
9771	-1	23200
9958	-1	23200
9831	-1	23200
9780	-1	23200
9810	-1	23200
9721	-1	23200
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9924	-1	23200
10215	-1	23200
10649	0	23200
10723	0	23200
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10454	0	23200
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10618	0	23200
10693	0	23200
10715	0	23200
10680	0	23200
10601	0	23200
10644	0	23200
10549	0	23200
10466	0	23200
10449	0	23200
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10392	0	23200
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10461	0	23200
10527	0	23200
10394	0	23200
10335	0	23200
10582	0	23200
10871	0	23200
11078	0	23200

Daily

4515

11245	0	23200
11360	-57	23200
11303	0	23200
11312	0	23200
11220	0	23200
11145	0	23200
11024	0	23200
11191	0	23200
11634	0	23200
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12231	0	23200
12514	0	23200
12643	0	23200
12878	0	23200
12971	0	23200
12957	0	23200
12920	0	23200
13050	0	23200
13088	0	23200
13296	0	23200
13565	0	23200
13791	0	23200
14099	0	23200
14341	0	23200
14597	0	23200
14748	0	23200
14682	112	23200
14554	0	23200
14862	0	23200
14902	0	23200
14839	0	23200
14963	0	23200
14765	0	23200
14709	0	23200
14383	0	23200
14188	0	23200
14209	0	23200
13888	0	23200
13569	0	23200
13393	0	23200
12960	0	23200
12445	0	23200
12071	0	23200
11636	0	23200
11358	0	23200
11350	0	23200
11362	0	23200
11263	0	23200
11277	-3	23200

Daily

11135	-3	23200
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10921	-3	23200
10702	244	23200
10551	244	23200
10306	-3	23200
10228	-3	23200
10542	-3	23200
12745	-3	23200
14408	-3	23200
14461	133	23200
14504	-4095	23200
14421	-4095	23200
14592	-4095	23200
14697	-4095	23200
14819	-4095	23200
15083	-4095	23200
15092	-4095	23200
15250	-4095	23200
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16091	-4095	23200
16161	-4095	23200
16261	-4095	23200
16168	-4095	23200
16049	-4095	23200
15935	-4095	23200
15823	-4095	23200
15650	-4092	23200
15577	-4092	23200
15604	-4092	23200
15679	-4092	23200
15854	-4092	23200
15976	-4092	23200
16257	-4092	23200
16339	-4092	23200
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11900	-5	23200
11876	-5	23200
11742	-5	23200
12034	0	23200
11974	0	23200
11798	0	23200
11597	0	23200

Daily

11630	0	23200
11223	0	23200
10950	0	23200
10988	0	23200
10922	0	23200
10878	0	23200
10925	0	23200
10925	0	23200
10922	0	23200
10914	-3	23200
11023	0	23200
10940	0	23200
10691	0	23200
10458	0	23200
10094	0	23200
9715	0	23200
9322	0	23200
9074	0	23200
9016	0	23200
8785	0	23200
8486	0	23200
8282	0	23200
8080	0	23200
7991	0	23200
7789	0	23200
7625	0	23200
7168	0	23200
7028	0	23200
6951	0	23200
6833	0	23200
6357	0	23200
6325	0	23200
6360	0	23200
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6438	0	23200
6471	0	23200
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6003	0	23200
6194	0	23200
6321	0	23200
6353	0	23200
6473	0	23200
6593	0	23200
6668	0	23200
6502	0	23200

Daily

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6562	0	23200
6523	0	23200
6475	0	23200
6387	0	23200
6345	0	23200
6316	0	23200
6235	0	23200
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6127	0	23200
6194	0	23200
6341	0	23200
6513	0	23200
6723	0	23200
6905	0	23200
7131	0	23200
7137	0	23200
7105	0	23200
7243	0	23200
7375	0	23200
7460	0	23200
7642	0	23200
7798	0	23200
7916	0	23200
8070	0	23200
8226	0	23200
8226	0	23200
8210	0	23200
8248	0	23200
8206	0	23200
8097	0	23200
8068	0	23200
7996	0	23200
8133	0	23200
8418	0	23200
8984	0	23200
9280	0	23200
9608	0	23200
9866	0	23200
10110	0	23200
10455	0	23200
10761	0	23200
11128	0	23200
11285	0	23200
11451	0	23200
11676	0	23200
11895	0	23200
12172	0	23200



Daily

12373	0	23200
12405	0	23200
12423	0	23200
12242	0	23200
12141	0	23200
12020	0	23200
11863	0	23200
11666	0	23200
11674	0	23200
11823	0	23200
12230	0	23200
12469	0	23200
12727	0	23200
13032	0	23200
13327	0	23200
13505	0	23200
13587	0	23200
13417	0	23200
13503	0	23200
13505	0	23200
13560	0	23200
13672	0	23200
13619	0	23200
13531	0	23200
13417	0	23200
13199	25	23200
12964	35	23200
12622	35	23200
12281	35	23200
11893	35	23200
11602	35	23200
11396	35	23200
11490	35	23200
11557	35	23200
11754	35	23200
12010	35	23200
12207	35	23200
12363	35	23200
12488	35	23200
12480	35	23200
12212	35	23200
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11973	-160	23200
11821	-160	23200
11764	-160	23200
11575	-159	23200
11428	-159	23200
11240	-159	23200
11097	-159	23200
10934	-159	23200
10639	-159	23200
10470	-159	23200
10265	-159	23200
10028	-159	23200
10059	-184	23200
10127	-194	23200

Daily

10178	-194	23200
10494	-194	23200
10691	-194	23200
10950	-194	23200
11240	-194	23200
11249	-194	23200
11320	-194	23200
11301	-194	23200
11237	-194	23200
11274	-194	23200
11369	-194	23200
11540	-194	23200
11593	-194	23200
11636	-194	23200
11685	-194	23200
11408	0	23200
11304	0	23200
11200	104	23200
10867	0	23200
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10461	0	23200
10341	0	23200
10183	0	23200
10018	0	23200
9971	0	23200
9832	0	23200
9801	0	23200
9760	0	23200
9680	0	23200
9567	0	23200
9448	0	23200
9141	0	23200
9351	0	23200
9439	0	23200
9601	0	23200
9704	0	23200
9850	0	23200
10000	0	23200
10139	0	23200
10215	0	23200
10315	0	23200
10388	0	23200
10555	0	23200
10739	0	23200
10898	0	23200
11053	0	23200
11174	0	23200
11266	0	23200
11442	0	23200
11615	0	23200
11878	0	23200
12079	0	23200
12212	0	23200
12484	0	23200
12559	0	23200
12712	0	23200
12855	0	23200

Daily

12978	0	23200
13175	0	23200
13354	0	23200
14829	0	23200
15271	0	23200
15334	0	23200
15440	0	23200
15387	0	23200
15358	0	23200
15278	0	23200
15202	0	23200
15164	0	23200
15216	0	23200
15300	0	23200
15347	0	23200
15409	0	23200
15176	0	23200
14940	0	23200
14805	0	23200
14715	0	23200
14648	0	23200
14665	0	23200
14578	0	23200
14571	0	23200
14444	0	23200
14281	0	23200
13938	0	23200
13742	0	23200
13533	0	23200
13332	0	23200
13210	0	23200
13194	0	23200
13208	0	23200
12003	0	23200
11786	0	23200
11347	0	23200
10864	0	23200
10460	0	23200
10142	0	23200
9765	0	23200
9397	0	23200
9057	0	23200
8660	0	23200
8263	0	23200
8260	0	23200
8350	0	23200
8663	0	23200
8944	0	23200
8989	0	23200
9055	0	23200
9122	0	23200
9099	0	23200
9172	0	23200
9057	0	23200
9070	0	23200
9166	0	23200
9359	0	23200

Daily

4040

9560

0

23200

7446.739

SO <sub>2</sub> (Limits - DOE Calculated RA)	Total (tonnes/ day)
11607	12
12039	12.04
11212	11.21
10765	10.76
12248	12.25
12079	12.08
11818	11.82
11132	11.13
10832	10.83
10611	10.61
10436	10.44
9863	9.86
9253	9.25
8863	8.86
8450	8.45
8311	8.31
8248	8.25
8139	8.14
8322	8.32
8366	8.37
8178	8.18
8121	8.12
8084	8.08
7971	7.97
7897	7.90
7873	7.87
7847	7.85
7800	7.80
7704	7.70
7612	7.61
7496	7.50
7311	7.31
7219	7.22
7018	7.02
6510	6.51
6197	6.20
5910	5.91
5816	5.82
5728	5.73
5639	5.64
5543	5.54
5689	5.69
5943	5.94
6300	6.30
6570	6.57
6512	6.51
6469	6.47
6360	6.36
6241	6.24
6029	6.03
6008	6.01
5863	5.86
5744	5.74

Daily

5687	5.69
5569	5.57
5436	5.44
5293	5.29
5268	5.27
5363	5.36
5445	5.44
5390	5.39
5354	5.35
5359	5.36
5481	5.48
5591	5.59
5722	5.72
5911	5.91
6015	6.02
6028	6.03
6053	6.05
6293	6.29
6423	6.42
6405	6.41
6188	6.19
6024	6.02
6037	6.04
6089	6.09
6159	6.16
6099	6.10
6114	6.11
6093	6.09
6192	6.19
6230	6.23
6216	6.22
6267	6.27
6345	6.34
6505	6.51
6607	6.61
6566	6.57
6542	6.54
6554	6.55
6550	6.55
6540	6.54
6535	6.54
6515	6.51
6545	6.55
6531	6.53
6588	6.59
6602	6.60
6613	6.61
6427	6.43
6315	6.31
6366	6.37
6406	6.41
6594	6.59
6779	6.78
6852	6.85
6980	6.98
7257	7.26
7533	7.53

Daily

7965	7.97
8288	8.29
8532	8.53
8740	8.74
8933	8.93
9120	9.12
9203	9.20
9243	9.24
9319	9.32
9453	9.45
9604	9.60
9809	9.81
9831	9.83
9747	9.75
9582	9.58
9396	9.40
9210	9.21
9147	9.15
9153	9.15
9102	9.10
9045	9.04
8955	8.95
8784	8.78
8639	8.64
8439	8.44
3703	3.70
3457	3.46
3290	3.29
2899	2.90
2636	2.64
2221	2.22
1835	1.83
1427	1.43
1325	1.32
1225	1.23
1162	1.16
1192	1.19
1143	1.14
1131	1.13
1024	1.02
823	0.82
576	0.58
640	0.64
901	0.90
1320	1.32
1584	1.58
1955	1.95
2075	2.08
2113	2.11
2127	2.13
2131	2.13
2131	2.13
2172	2.17
2174	2.17
2219	2.22
2344	2.34
2484	2.48

Daily

2484	2.48
2486	2.49
2457	2.46
2505	2.50
2468	2.47
2626	2.63
2573	2.57
2591	2.59
2481	2.48
2209	2.21
2022	2.02
1908	1.91
1879	1.88
1898	1.90
1914	1.91
1751	1.75
1473	1.47
1182	1.18
1076	1.08
968	0.97
891	0.89
852	0.85
861	0.86
881	0.88
894	0.89
907	0.91
985	0.99
1055	1.05
1162	1.16
1297	1.30
1474	1.47
1727	1.73
2011	2.01
2194	2.19
2442	2.44
2643	2.64
2829	2.83
2944	2.94
3118	3.12
3392	3.39
3520	3.52
3677	3.68
3796	3.80
3886	3.89
4010	4.01
4102	4.10
4242	4.24
4278	4.28
4219	4.22
4193	4.19
4230	4.23
4402	4.40
4578	4.58
4843	4.84
4958	4.96
4928	4.93
4917	4.92



Daily

4858	4.86
4727	4.73
4597	4.60
4518	4.52
4529	4.53
4547	4.55
4505	4.51
4566	4.57
4518	4.52
4464	4.46
4349	4.35
4205	4.20
4094	4.09
4147	4.15
4209	4.21
4173	4.17
4203	4.20
4336	4.34
4493	4.49
4586	4.59
4753	4.75
4921	4.92
4955	4.95
4952	4.95
4847	4.85
4818	4.82
4729	4.73
4809	4.81
4941	4.94
5084	5.08
5217	5.22
5374	5.37
5474	5.47
5556	5.56
5557	5.56
9942	9.94
9978	9.98
9876	9.88
9974	9.97
10009	10.01
10143	10.14
10363	10.36
10532	10.53
10577	10.58
10502	10.50
10521	10.52
10493	10.49
10354	10.35
10238	10.24
10219	10.22
10160	10.16
10172	10.17
10182	10.18
10225	10.22
10279	10.28
10302	10.30
10226	10.23

Daily

10137	10.14
10054	10.05
9878	9.88
9733	9.73
9546	9.55
9418	9.42
9295	9.30
9234	9.23
9377	9.38
9368	9.37
9411	9.41
9337	9.34
9303	9.30
9211	9.21
9027	9.03
8824	8.82
8663	8.66
8491	8.49
8338	8.34
8196	8.20
8071	8.07
7992	7.99
7944	7.94
8007	8.01
8013	8.01
7928	7.93
7790	7.79
7680	7.68
7519	7.52
7450	7.45
7423	7.42
7461	7.46
7602	7.60
7643	7.64
7687	7.69
7707	7.71
7752	7.75
7754	7.75
7637	7.64
7600	7.60
7603	7.60
7585	7.59
7610	7.61
7553	7.55
7529	7.53
7519	7.52
7506	7.51
7564	7.56
7635	7.63
7648	7.65
7618	7.62
7598	7.60
7586	7.59
7504	7.50
7475	7.47
7631	7.63
7754	7.75

Daily

7792	7.79
7850	7.85
7777	7.78
7656	7.66
7465	7.46
7255	7.26
7176	7.18
7198	7.20
7295	7.29
7399	7.40
7330	7.33
7326	7.33
7375	7.37
7325	7.33
7396	7.40
7432	7.43
7498	7.50
7537	7.54
7542	7.54
7592	7.59
7526	7.53
7403	7.40
7338	7.34
7356	7.36
7280	7.28
7209	7.21
7079	7.08
6945	6.95
6648	6.65
6577	6.58
6510	6.51
6500	6.50
6505	6.50
6538	6.54
6636	6.64
6767	6.77
6754	6.75
6681	6.68
6553	6.55
6509	6.51
6562	6.56
6604	6.60
6649	6.65
6649	6.65
6476	6.48
6282	6.28
6165	6.17
6009	6.01
5949	5.95
6015	6.01
6137	6.14
6135	6.14
6167	6.17
6176	6.18
6252	6.25
6356	6.36
6534	6.53

Daily

6633	6.63
6750	6.75
6728	6.73
6719	6.72
6641	6.64
6652	6.65
6621	6.62
6715	6.72
6808	6.81
6818	6.82
6827	6.83
6917	6.92
6841	6.84
6818	6.82
6726	6.73
6570	6.57
6481	6.48
6506	6.51
6503	6.50
6494	6.49
6554	6.55
6498	6.50
6435	6.43
6337	6.34
6472	6.47
6711	6.71
6786	6.79
6856	6.86
6808	6.81
6658	6.66
6648	6.65
6612	6.61
6551	6.55
6553	6.55
6667	6.67
6723	6.72
6832	6.83
6814	6.81
6734	6.73
6872	6.87
7013	7.01
7083	7.08
7167	7.17
7135	7.13
7206	7.21
7274	7.27
7299	7.30
7293	7.29
7345	7.35
7323	7.32
7348	7.35
7397	7.40
7347	7.35
7336	7.34
7318	7.32
7036	7.04
6917	6.92

Daily

6879	6.88	Blue bar
6876	6.88	
6924	6.92	
6920	6.92	
6992	6.99	
7080	7.08	
7156	7.16	
7123	7.12	
7196	7.20	
7284	7.28	
7337	7.34	
7386	7.39	
7490	7.49	
7555	7.55	
7646	7.65	
7755	7.76	
7897	7.90	
7971	7.97	
7979	7.98	
8167	8.17	
8346	8.35	
8541	8.54	
8792	8.79	
8999	9.00	
9289	9.29	
9559	9.56	
9830	9.83	
10019	10.02	
10372	10.37	
10695	10.70	
10940	10.94	
11122	11.12	
11418	11.42	
11717	11.72	
11923	11.92	
12088	12.09	
12225	12.23	
12502	12.50	
12729	12.73	
12885	12.88	
13090	13.09	
13283	13.28	
13281	13.28	
13196	13.20	
13107	13.11	
13080	13.08	
13070	13.07	
13088	13.09	
8634	8.63	Yellow bar
8548	8.55	
8488	8.49	
8468	8.47	
8403	8.40	
8293	8.29	
8230	8.23	
8153	8.15	
8031	8.03	

Daily

7928	7.93
7759	7.76
7589	7.59
7407	7.41
7269	7.27
7080	7.08
6890	6.89
6779	6.78
6721	6.72
6608	6.61
6400	6.40
6090	6.09
5796	5.80
5473	5.47
5222	5.22
5019	5.02
5030	5.03
5007	5.01
4963	4.96
5052	5.05
4936	4.94
4817	4.82
4763	4.76
4776	4.78
4719	4.72
4724	4.72
4756	4.76
4805	4.81
4780	4.78
4810	4.81
4816	4.82
4871	4.87
4912	4.91
4998	5.00
5025	5.03
5010	5.01
4990	4.99
5017	5.02
5037	5.04
5117	5.12
5045	5.04
5153	5.15
5283	5.28
5379	5.38
5366	5.37
5434	5.43
5294	5.29
5258	5.26
5154	5.15
5031	5.03
5060	5.06
5039	5.04
5106	5.11
5112	5.11
5116	5.12
5087	5.09
5054	5.05

Daily

4874	4.87
4757	4.76
4651	4.65
4513	4.51
4454	4.45
4378	4.38
4247	4.25
4142	4.14
4103	4.10
4064	4.06
3993	3.99
3953	3.95
3873	3.87
3921	3.92
3857	3.86
3803	3.80
3785	3.79
3728	3.73
3557	3.56
3692	3.69
3634	3.63
3584	3.58
3471	3.47
3429	3.43
3504	3.50
3479	3.48
3309	3.31
3230	3.23
3239	3.24
3240	3.24
3264	3.26
3309	3.31
3312	3.31
3412	3.41
3344	3.34
3325	3.32
3267	3.27
3212	3.21
3106	3.11
3039	3.04
2990	2.99
2911	2.91
2840	2.84
2733	2.73
2665	2.67
2565	2.56
2504	2.50
2526	2.53
2629	2.63
2593	2.59
2659	2.66
2744	2.74
2827	2.83
2815	2.82
2707	2.71
2603	2.60
2793	2.79

Daily

2915	2.91	
7441	7.44	
7447	7.45	
7479	7.48	
7528	7.53	
7603	7.60	
7602	7.60	
7756	7.76	
7949	7.95	
8048	8.05	
8023	8.02	
8134	8.13	
8258	8.26	
8354	8.35	
8453	8.45	
8532	8.53	
8582	8.58	
8597	8.60	
8691	8.69	
8762	8.76	
8869	8.87	
8960	8.96	
8975	8.97	
8868	8.87	
8832	8.83	
8773	8.77	
8737	8.74	
8783	8.78	
8830	8.83	
8643	8.64	
8489	8.49	
8373	8.37	
8293	8.29	
8263	8.26	
8256	8.26	
8392	8.39	
8611	8.61	
8740	8.74	
8803	8.80	
8958	8.96	
9107	9.11	
9216	9.22	
9267	9.27	
9281	9.28	
9280	9.28	
9353	9.35	
9403	9.40	
9552	9.55	
9560	9.56	
9532	9.53	
9496	9.50	
9433	9.43	
9395	9.40	
9401	9.40	
9436	9.44	
9464	9.46	
9563	9.56	



Daily

9792	9.79
9954	9.95
10186	10.19
10248	10.25
10150	10.15
9997	10.00
9975	9.97
9940	9.94
9788	9.79
9664	9.66
9611	9.61
9520	9.52
9484	9.48
9593	9.59
9613	9.61
9649	9.65
9658	9.66
9679	9.68
9631	9.63
9706	9.71
9572	9.57
9566	9.57
9617	9.62
9731	9.73
9817	9.82
9971	9.97
10098	10.10
10150	10.15
10182	10.18
10098	10.10
9992	9.99
9985	9.98
9988	9.99
10103	10.10
10345	10.35
10557	10.56
10617	10.62
10617	10.62
10606	10.61
10537	10.54
10308	10.31
10261	10.26
10200	10.20
10106	10.11
10000	10.00
9831	9.83
9759	9.76
9713	9.71
9604	9.60
9449	9.45
9433	9.43
9351	9.35
9232	9.23
9103	9.10
9000	9.00
8787	8.79
8639	8.64

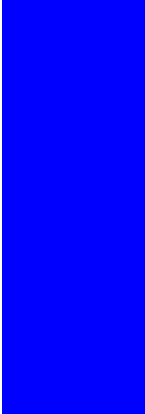
Daily

8441	8.44
8337	8.34
8310	8.31
8203	8.20
8148	8.15
8172	8.17
8105	8.10
8137	8.14
8238	8.24
8189	8.19
8166	8.17
8094	8.09
8015	8.01
7937	7.94
7860	7.86
7739	7.74
7710	7.71
7705	7.70
7734	7.73
7716	7.72
7678	7.68
7766	7.77
7879	7.88
7990	7.99
8143	8.14
8282	8.28
8368	8.37
8415	8.41
8510	8.51
8659	8.66
8846	8.85
8973	8.97
9051	9.05
9152	9.15
9169	9.17
9006	9.01
9123	9.12
9164	9.16
9205	9.21
9231	9.23
9304	9.30
9406	9.41
9497	9.50
9690	9.69
9720	9.72
9782	9.78
9785	9.79
9665	9.67
9709	9.71
9836	9.84
9912	9.91
9972	9.97
9894	9.89
9749	9.75
9525	9.53
9379	9.38
9177	9.18

Daily

9075	9.07
9001	9.00
8822	8.82
8755	8.75
8691	8.69
8701	8.70
8703	8.70
8623	8.62
8520	8.52
8201	8.20
7878	7.88
7607	7.61
7526	7.53
7458	7.46
7388	7.39
7323	7.32
7225	7.22
7213	7.21
7216	7.22
7141	7.14
7198	7.20
7107	7.11
6982	6.98
6881	6.88
6800	6.80
6816	6.82
6939	6.94
7062	7.06
7171	7.17
7266	7.27
7272	7.27
7246	7.25
7313	7.31
7254	7.25
7251	7.25
7141	7.14
6893	6.89
6824	6.82
6883	6.88
6929	6.93
6920	6.92
7069	7.07
7242	7.24
7441	7.44
7672	7.67
7829	7.83
7912	7.91
7941	7.94
7952	7.95
8085	8.09
8234	8.23
8355	8.35
8490	8.49
8576	8.58
8649	8.65
8825	8.82
8991	8.99

Daily

9192	9.19	
9322	9.32	
9507	9.51	
9763	9.76	
9991	9.99	
10216	10.22	
10409	10.41	
10521	10.52	
10700	10.70	
10978	10.98	
11056	11.06	
11097	11.10	
11303	11.30	
11519	11.52	
6987	6.99	
6857	6.86	
6658	6.66	
6477	6.48	
6417	6.42	
6574	6.57	
6705	6.70	
6854	6.85	
6917	6.92	
6940	6.94	
6896	6.90	
6751	6.75	
6697	6.70	
6678	6.68	
6614	6.61	
6496	6.50	
6344	6.34	
6248	6.25	
6196	6.20	
6167	6.17	
6145	6.15	
6138	6.14	
6233	6.23	
6325	6.32	
6321	6.32	
6385	6.38	
6482	6.48	
6664	6.66	
6749	6.75	
6880	6.88	
7006	7.01	
7101	7.10	
7269	7.27	
7516	7.52	
7712	7.71	
7779	7.78	
7799	7.80	
7759	7.76	
7758	7.76	
7792	7.79	
7902	7.90	
8124	8.12	
8354	8.35	

Daily

8641	8.64
8878	8.88
8970	8.97
9098	9.10
9287	9.29
9528	9.53
9681	9.68
9857	9.86
10070	10.07
10236	10.24
10517	10.52
10864	10.86
11158	11.16
11496	11.50
11721	11.72
11967	11.97
12214	12.21
12511	12.51
12914	12.91
13296	13.30
13555	13.56
13785	13.78
14081	14.08
14412	14.41
14744	14.74
15020	15.02
15327	15.33
15565	15.57
15729	15.73
15803	15.80
15737	15.74
15690	15.69
15776	15.78
15733	15.73
15622	15.62
15329	15.33
15231	15.23
15152	15.15
15092	15.09
14981	14.98
14806	14.81
14643	14.64
14457	14.46
14284	14.28
14145	14.15
14005	14.01
13914	13.91
13856	13.86
13716	13.72
13585	13.59
13435	13.43
13324	13.32
13206	13.21
13085	13.09
13018	13.02
13073	13.07
13087	13.09

Daily

13171	13.17	Yellow	
13273	13.27		
13410	13.41		
13306	13.31		
13149	13.15		
13042	13.04		
13278	13.28		
13490	13.49		
13804	13.80		
13973	13.97		
14068	14.07		
13994	13.99		
13860	13.86		
13636	13.64		
13544	13.54		
13413	13.41		
13333	13.33		
13168	13.17		
12997	13.00		
12898	12.90		
12639	12.64		
12464	12.46		
12081	12.08		
11878	11.88		
16153	16.15		Blue
15945	15.95		
15598	15.60		
15217	15.22		
14803	14.80		
14434	14.43		
14095	14.10		
13689	13.69		
13335	13.33		
13270	13.27		
13363	13.36		
13341	13.34		
12125	12.12		
11790	11.79		
11706	11.71		
11627	11.63		
11529	11.53		
11557	11.56		
11470	11.47		
11540	11.54		
11320	11.32		
11159	11.16		
10912	10.91		
10855	10.85		
10797	10.80		
10624	10.62		
10553	10.55		
10433	10.43		
10555	10.55		
10463	10.46		
10404	10.40		
10288	10.29		
10345	10.35		

Daily

10444	10.44
10445	10.44
10343	10.34
10317	10.32
10303	10.30
10259	10.26
10198	10.20
9998	10.00
9958	9.96
10908	10.91
11020	11.02
10839	10.84
10687	10.69
10494	10.49
10209	10.21
10158	10.16
10041	10.04
10098	10.10
10181	10.18
10317	10.32
10208	10.21
10073	10.07
9959	9.96
9884	9.88
9844	9.84
9727	9.73
9764	9.76
9619	9.62
9461	9.46
9434	9.43
9393	9.39
9422	9.42
9534	9.53
9538	9.54
9599	9.60
9768	9.77
9868	9.87
9912	9.91
9931	9.93
10041	10.04
10158	10.16
10139	10.14
10009	10.01
10054	10.05
10134	10.13
10164	10.16
10159	10.16
10059	10.06
9943	9.94
9931	9.93
10159	10.16
10452	10.45
10689	10.69
10900	10.90
11009	11.01
11145	11.15
11175	11.18

Daily

11311	11.31
11429	11.43
11388	11.39
11358	11.36
11279	11.28
11168	11.17
11032	11.03
10934	10.93
10700	10.70
10549	10.55
10550	10.55
10550	10.55
10447	10.45
10246	10.25
10163	10.16
10167	10.17
10204	10.20
10076	10.08
10048	10.05
10046	10.05
10087	10.09
10118	10.12
10054	10.05
9877	9.88
9666	9.67
9380	9.38
9089	9.09
8904	8.90
8761	8.76
8683	8.68
8677	8.68
8568	8.57
8468	8.47
8398	8.40
8351	8.35
8323	8.32
8367	8.37
8339	8.34
8286	8.29
8209	8.21
8142	8.14
8016	8.02
7957	7.96
7884	7.88
7879	7.88
7995	7.99
7952	7.95
8085	8.09
8064	8.06
7932	7.93
7966	7.97
7940	7.94
7863	7.86
7867	7.87
7902	7.90
8080	8.08
8242	8.24



Daily

8492	8.49
8643	8.64
8698	8.70
8744	8.74
8899	8.90
9024	9.02
9063	9.06
9108	9.11
9121	9.12
9060	9.06
9060	9.06
9156	9.16
9306	9.31
9393	9.39
9440	9.44
9466	9.47
9468	9.47
9438	9.44
9301	9.30
9251	9.25
9207	9.21
9282	9.28
9535	9.53
9676	9.68
9911	9.91
10025	10.03
9952	9.95
9854	9.85
9717	9.72
9651	9.65
9521	9.52
9435	9.43
9404	9.40
9338	9.34
9281	9.28
9211	9.21
9215	9.21
9203	9.20
9190	9.19
9203	9.20
9148	9.15
9137	9.14
9086	9.09
8952	8.95
8953	8.95
8916	8.92
8911	8.91
9023	9.02
9097	9.10
9174	9.17
9226	9.23
9155	9.16
9031	9.03
8875	8.87
8701	8.70
8706	8.71
8864	8.86

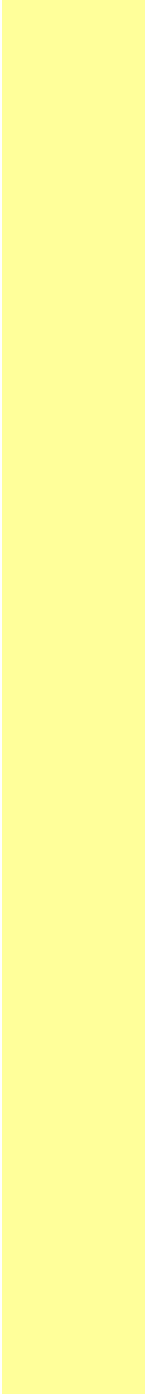
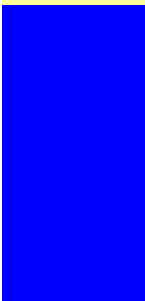
Daily

9018	9.02
9198	9.20
9306	9.31
9317	9.32
9205	9.21
9049	9.05
8967	8.97
8992	8.99
9029	9.03
9156	9.16
9278	9.28
9358	9.36
9468	9.47
9597	9.60
9743	9.74
9840	9.84
10011	10.01
10134	10.13
10230	10.23
10270	10.27
10215	10.21
10163	10.16
10120	10.12
10132	10.13
10239	10.24
10320	10.32
10387	10.39
10429	10.43
10418	10.42
10383	10.38
10403	10.40
10362	10.36
10398	10.40
10444	10.44
10598	10.60
10798	10.80
10996	11.00
6693	6.69
6939	6.94
7061	7.06
7158	7.16
7347	7.35
7511	7.51
7582	7.58
7514	7.51
7430	7.43
7297	7.30
7143	7.14
7058	7.06
7042	7.04
7081	7.08
7201	7.20
7240	7.24
7306	7.31
7368	7.37
7426	7.43
7574	7.57

Daily

7586	7.59
7533	7.53
7445	7.45
7353	7.35
7281	7.28
7085	7.09
6970	6.97
6898	6.90
6848	6.85
6640	6.64
6488	6.49
6325	6.33
6178	6.18
6020	6.02
5788	5.79
5509	5.51
5312	5.31
5229	5.23
5256	5.26
5283	5.28
5314	5.31
5280	5.28
5329	5.33
5414	5.41
5409	5.41
5453	5.45
5448	5.45
5431	5.43
5413	5.41
5249	5.25
5246	5.25
5323	5.32
5373	5.37
5371	5.37
5374	5.37
5525	5.53
5629	5.63
5654	5.65
5694	5.69
5809	5.81
5858	5.86
5919	5.92
5925	5.93
5958	5.96
6087	6.09
6238	6.24
6425	6.43
6591	6.59
6727	6.73
6840	6.84
6903	6.90
7048	7.05
7203	7.20
7252	7.25
7336	7.34
7372	7.37
7415	7.41

Daily

7489	7.49	
7533	7.53	
7609	7.61	
7665	7.66	
7727	7.73	
7857	7.86	
7996	8.00	
8182	8.18	
8248	8.25	
8311	8.31	
8359	8.36	
8296	8.30	
8175	8.18	
8012	8.01	
7900	7.90	
7867	7.87	
7858	7.86	
7766	7.77	
7741	7.74	
7674	7.67	
7640	7.64	
7501	7.50	
7502	7.50	
7524	7.52	
7456	7.46	
7369	7.37	
7232	7.23	
7118	7.12	
7042	7.04	
6974	6.97	
6938	6.94	
6915	6.92	
6973	6.97	
7001	7.00	
7005	7.00	
7036	7.04	
7061	7.06	
7001	7.00	
7065	7.06	
7079	7.08	
7102	7.10	
7178	7.18	
7343	7.34	
7499	7.50	
7649	7.65	
7641	7.64	
7618	7.62	
12094	12.09	
12100	12.10	
12130	12.13	
12138	12.14	
12229	12.23	
12268	12.27	
12289	12.29	
12344	12.34	
12373	12.37	
12367	12.37	

Daily

12318	12.32
12279	12.28
12283	12.28
12240	12.24
12290	12.29
12466	12.47
12681	12.68
13001	13.00
13093	13.09
13077	13.08
13136	13.14
13140	13.14
13231	13.23
13300	13.30
13353	13.35
13363	13.36
13347	13.35
13295	13.29
13379	13.38
13490	13.49
13658	13.66
13780	13.78
13895	13.89
13871	13.87
13875	13.88
13812	13.81
13744	13.74
13682	13.68
13631	13.63
13850	13.85
13967	13.97
14095	14.10
14342	14.34
14462	14.46
14607	14.61
14520	14.52
14466	14.47
14301	14.30
14291	14.29
14350	14.35
14288	14.29
14281	14.28
14292	14.29
14355	14.35
14449	14.45
14431	14.43
14353	14.35
14309	14.31
14228	14.23
14140	14.14
14041	14.04
14070	14.07
14188	14.19
14373	14.37
14422	14.42
14541	14.54
14728	14.73

Daily

14890	14.89
15017	15.02
14880	14.88
14987	14.99
14986	14.99
14768	14.77
14671	14.67
14414	14.41
14102	14.10
13713	13.71
13319	13.32
12941	12.94
12590	12.59
12412	12.41
12301	12.30
12134	12.13
12054	12.05
11860	11.86
11820	11.82
11792	11.79
11751	11.75
11600	11.60
11513	11.51
11292	11.29
10994	10.99
10438	10.44
9994	9.99
9610	9.61
9316	9.32
9026	9.03
8853	8.85
8710	8.71
8664	8.66
8451	8.45
8338	8.34
8238	8.24
8185	8.18
8132	8.13
8214	8.21
8357	8.36
8513	8.51
8671	8.67
8877	8.88
8968	8.97
8969	8.97
8958	8.96
8867	8.87
8861	8.86
8819	8.82
8825	8.82
8814	8.81
8979	8.98
9146	9.15
9373	9.37
9544	9.54
9844	9.84
10010	10.01

Daily


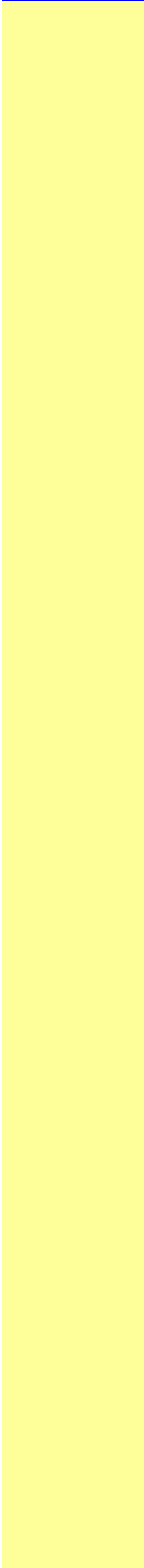
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10067	10.07
9985	9.99
9810	9.81
9630	9.63
9496	9.50
9528	9.53
9453	9.45
9451	9.45
9413	9.41
9487	9.49
9354	9.35
9060	9.06
8797	8.80
8591	8.59
8397	8.40
8290	8.29
8177	8.18
8023	8.02
7896	7.90
7669	7.67
7511	7.51
7558	7.56
7399	7.40
7131	7.13
6822	6.82
6559	6.56
6375	6.37
6261	6.26
6229	6.23
6307	6.31
6455	6.45
6670	6.67
6900	6.90
7114	7.11
7261	7.26
7286	7.29
7422	7.42
7556	7.56
7712	7.71
7769	7.77
7929	7.93
8246	8.25
8527	8.53
8718	8.72
8826	8.83
8924	8.92
9061	9.06
9215	9.21
9393	9.39
9676	9.68
9931	9.93
10005	10.00
10047	10.05
10237	10.24
10421	10.42
10580	10.58

Daily

10684	10.68
10862	10.86
10967	10.97
11079	11.08
11323	11.32
11345	11.35
11370	11.37
11348	11.35
11339	11.34
11254	11.25
11134	11.13
10992	10.99
10899	10.90
10818	10.82
10814	10.81
10839	10.84
10903	10.90
11064	11.06
11182	11.18
11230	11.23
11201	11.20
11199	11.20
11107	11.11
11073	11.07
10977	10.98
10935	10.93
11183	11.18
11268	11.27
11353	11.35
11505	11.51
11599	11.60
11661	11.66
11677	11.68
11662	11.66
11467	11.47
11410	11.41
11327	11.33
11253	11.25
8362	8.36
8434	8.43
8521	8.52
8567	8.57
8565	8.57
8528	8.53
8505	8.50
8438	8.44
8251	8.25
8134	8.13
8113	8.11
8086	8.09
8053	8.05
7992	7.99
8036	8.04
8054	8.05
8060	8.06
7980	7.98
7768	7.77





Daily

7645	7.64	
7492	7.49	
7309	7.31	
7227	7.23	
2646	2.65	
2614	2.61	
2594	2.59	
2606	2.61	
2625	2.63	
2656	2.66	
2735	2.74	
5666	5.67	
5665	5.66	
5654	5.65	
5620	5.62	
5593	5.59	
5602	5.60	
5710	5.71	
5827	5.83	
6050	6.05	
6139	6.14	
6221	6.22	
6375	6.37	
6551	6.55	
6776	6.78	
6903	6.90	
6953	6.95	
6892	6.89	
6720	6.72	
6729	6.73	
6668	6.67	
6651	6.65	
6590	6.59	
6429	6.43	
6255	6.26	
6095	6.09	
5974	5.97	
5880	5.88	
5715	5.72	
5639	5.64	
5633	5.63	
5564	5.56	
5408	5.41	
5283	5.28	
5248	5.25	
5089	5.09	
4998	5.00	
4767	4.77	
4574	4.57	
4428	4.43	
4464	4.46	
4419	4.42	
4307	4.31	
4187	4.19	
4112	4.11	
4064	4.06	
4140	4.14	

Daily

4359	4.36
4715	4.71
4930	4.93
5206	5.21
5586	5.59
5979	5.98
6370	6.37
6675	6.67
6979	6.98
7197	7.20
7352	7.35
7540	7.54
7692	7.69
7747	7.75
7711	7.71
7788	7.79
7823	7.82
7805	7.81
7908	7.91
8026	8.03
8156	8.16
8226	8.23
8231	8.23
8090	8.09
8040	8.04
8008	8.01
7963	7.96
7846	7.85
7738	7.74
7576	7.58
7438	7.44
7291	7.29
7151	7.15
7086	7.09
6937	6.94
6915	6.91
6889	6.89
6811	6.81
6855	6.85
6971	6.97
7188	7.19
7404	7.40
7557	7.56
7768	7.77
8003	8.00
8298	8.30
8678	8.68
9018	9.02
9333	9.33
9612	9.61
9953	9.95
10309	10.31
10676	10.68
11042	11.04
11398	11.40
11701	11.70
12031	12.03

Daily

12363	12.36		
12709	12.71		
13033	13.03		
13368	13.37		
13683	13.68		
14034	14.03		
14334	14.33		
14582	14.58		
14685	14.69		
14815	14.82		
15055	15.05		
15104	15.10		
15219	15.22		
15224	15.22		
19777	19.78		
19636	19.64		
19428	19.43		
19372	19.37		
19309	19.31		
19200	19.20		
19108	19.11		
18995	18.99		
18842	18.84		
18705	18.70		
18549	18.55		
18366	18.37		
17932	17.93		
17511	17.51		
17271	17.27		
16124	16.12		
15471	15.47		
15229	15.23		
15010	15.01		
14783	14.78		
14562	14.56		
14314	14.31		
14002	14.00		
13724	13.72		
13466	13.47		
13180	13.18		
12912	12.91		
12803	12.80		
12579	12.58		
12455	12.45		
12271	12.27		
12317	12.32		
12455	12.46		
12432	12.43		
12402	12.40		
12355	12.35		
12288	12.29		
12175	12.18		
12231	12.23		
12168	12.17		
12080	12.08		
12049	12.05		
12237	12.24		

Daily

12348	12.35
12367	12.37
13373	13.37
13875	13.87
13913	13.91
13949	13.95
13919	13.92
13924	13.92
13944	13.94
14158	14.16
14281	14.28
14384	14.38
14434	14.43
14284	14.28
14072	14.07
13916	13.92
13680	13.68
13491	13.49
13292	13.29
13056	13.06
12916	12.92
12714	12.71
12535	12.53
12343	12.34
12205	12.20
11874	11.87
11577	11.58
11355	11.35
11160	11.16
10924	10.92
10755	10.75
10620	10.62
10395	10.39
10168	10.17
9974	9.97
9808	9.81
9712	9.71
9734	9.73
9690	9.69
9523	9.52
9432	9.43
9357	9.36
9364	9.36
9537	9.54
9674	9.67
9869	9.87
10057	10.06
10266	10.27
10450	10.45
10529	10.53
10707	10.71
10954	10.95
11149	11.15
9017	9.02
9155	9.16
9475	9.48
9711	9.71

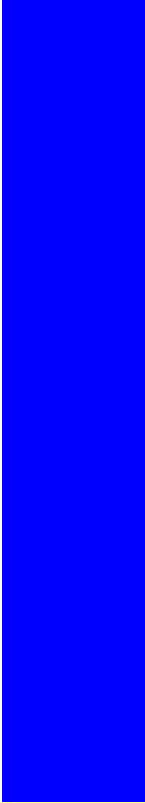
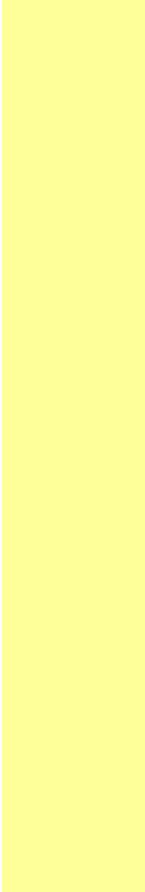
Daily

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9865	9.87
9976	9.98
10026	10.03
9973	9.97
9912	9.91
9855	9.85
9800	9.80
9688	9.69
9567	9.57
9347	9.35
9200	9.20
8979	8.98
8756	8.76
8571	8.57
8393	8.39
8200	8.20
8016	8.02
7743	7.74
7458	7.46
7379	7.38
7396	7.40
7471	7.47
7486	7.49
7453	7.45
7419	7.42
9718	9.72
9807	9.81
9763	9.76
9627	9.63
9565	9.57
9468	9.47
9373	9.37
9314	9.31
9292	9.29
9225	9.23
9188	9.19
9149	9.15
9156	9.16
9195	9.19
9252	9.25
9254	9.25
9314	9.31
9321	9.32
9320	9.32
9347	9.35
9368	9.37
9339	9.34
9376	9.38
9427	9.43
9315	9.32
9257	9.26
9246	9.25
9187	9.19
9113	9.11
9006	9.01
8920	8.92

Daily

8942	8.94
8962	8.96
9196	9.20
9409	9.41
9633	9.63
9830	9.83
10117	10.12
10489	10.49
10724	10.72
10962	10.96
11263	11.26
11397	11.40
11462	11.46
11436	11.44
11474	11.47
11494	11.49
11547	11.55
11584	11.58
11518	11.52
11415	11.42
11394	11.39
11270	11.27
11185	11.18
11066	11.07
10798	10.80
10508	10.51
10227	10.23
10005	10.01
9846	9.85
9715	9.71
9463	9.46
9168	9.17
8898	8.90
8800	8.80
8856	8.86
8919	8.92
8892	8.89
8786	8.79
8847	8.85
8888	8.89
8874	8.87
8989	8.99
9156	9.16
9355	9.36
9554	9.55
9760	9.76
9947	9.95
10139	10.14
10392	10.39
10533	10.53
10599	10.60
10647	10.65
10655	10.66
10677	10.68
10721	10.72
10795	10.80
10950	10.95

Daily

11018	11.02		
11010	11.01		
11046	11.05		
11037	11.04		
11056	11.06		
11084	11.08		
10986	10.99		
10805	10.81		
10672	10.67		
10525	10.53		
10310	10.31		
10133	10.13		
9957	9.96		
9787	9.79		
9812	9.81		
9836	9.84		
9887	9.89		
9928	9.93		
9949	9.95		
9986	9.99		
10013	10.01		
10050	10.05		
10286	10.29		
10575	10.58		
10897	10.90		
11260	11.26		
11571	11.57		
7310	7.31		
7533	7.53		
7702	7.70		
7785	7.78		
7841	7.84		
7915	7.92		
7962	7.96		
7993	7.99		
8049	8.05		
8103	8.10		
8137	8.14		
8115	8.11		
8053	8.05		
8087	8.09		
8106	8.11		
8096	8.10		
8155	8.15		
7957	7.96		
7722	7.72		
7429	7.43		
7132	7.13		
6870	6.87		
6566	6.57		
6246	6.25		
5930	5.93		
5711	5.71		
5620	5.62		
5575	5.58		
5488	5.49		
5413	5.41		

Daily

5392	5.39
5337	5.34
5285	5.29
5358	5.36
5623	5.62
5882	5.88
6098	6.10
6359	6.36
6528	6.53
6642	6.64
6735	6.73
6893	6.89
7170	7.17
7413	7.41
7698	7.70
7929	7.93
8067	8.07
8263	8.26
8432	8.43
8676	8.68
8736	8.74
8741	8.74
8856	8.86
8990	8.99
9055	9.06
9080	9.08
8906	8.91
8789	8.79
8671	8.67
8539	8.54
8340	8.34
8181	8.18
8057	8.06
7904	7.90
7607	7.61
7233	7.23
6937	6.94
6651	6.65
6438	6.44
6357	6.36
6381	6.38
6411	6.41
6387	6.39
6434	6.43
6475	6.48
6703	6.70
6923	6.92
7113	7.11
7354	7.35
7541	7.54
7878	7.88
8267	8.27
8655	8.66
8955	8.96
9307	9.31
9659	9.66
10049	10.05



Daily

10357	10.36
10748	10.75
11116	11.12
11407	11.41
11684	11.68
11896	11.90
12162	12.16
12516	12.52
12816	12.82
13233	13.23
13602	13.60
13654	13.65
13823	13.82
13964	13.96
13809	13.81
13666	13.67
13432	13.43
13143	13.14
12698	12.70
12295	12.30
11965	11.96
11673	11.67
11451	11.45
11447	11.45
11466	11.47
11452	11.45
11538	11.54
11642	11.64
11648	11.65
11630	11.63
11648	11.65
11653	11.65
11727	11.73
11943	11.94
12055	12.05
12063	12.06
11979	11.98
16362	16.36
16372	16.37
16278	16.28
16201	16.20
16429	16.43
16425	16.42
16173	16.17
16048	16.05
15895	15.89
15712	15.71
15684	15.68
15711	15.71
15775	15.77
15878	15.88
15985	15.98
16068	16.07
15958	15.96
15854	15.85
15683	15.68
15465	15.47

Daily

15129	15.13
14813	14.81
14397	14.40
14144	14.14
13969	13.97
13712	13.71
13445	13.44
13203	13.20
12967	12.97
12859	12.86
13034	13.03
13038	13.04
13098	13.10
13135	13.13
13070	13.07
12888	12.89
12943	12.94
12791	12.79
12823	12.82
12874	12.87
12803	12.80
12720	12.72
12520	12.52
12258	12.26
12070	12.07
11822	11.82
11557	11.56
11232	11.23
10939	10.94
10713	10.71
10547	10.55
10346	10.35
10364	10.36
10163	10.16
9899	9.90
9654	9.65
9457	9.46
9576	9.58
9736	9.74
9882	9.88
9610	9.61
9553	9.55
9462	9.46
9366	9.37
9427	9.43
9612	9.61
9682	9.68
10152	10.15
10433	10.43
10736	10.74
10938	10.94
11328	11.33
11766	11.77
12253	12.25
12612	12.61
12788	12.79
12883	12.88

Daily

13053	13.05
13384	13.38
13699	13.70
14059	14.06
14432	14.43
14698	14.70
15011	15.01
15257	15.26
15495	15.49
15781	15.78
15812	15.81
15866	15.87
15858	15.86
15930	15.93
15923	15.92
15883	15.88
15902	15.90
16016	16.02
16190	16.19
16450	16.45
16603	16.60
16765	16.77
16948	16.95
17180	17.18
17271	17.27
17368	17.37
17407	17.41
17462	17.46
17726	17.73
18100	18.10
18430	18.43
18601	18.60
18754	18.75
18870	18.87
18996	19.00
19145	19.15
19294	19.29
19303	19.30
19307	19.31
19272	19.27
19274	19.27
19317	19.32
19387	19.39
19386	19.39
19254	19.25
19198	19.20
19095	19.09
18676	18.68
18382	18.38
17926	17.93
17546	17.55
17175	17.18
16824	16.82
16563	16.56
16211	16.21
15844	15.84
15692	15.69

Daily

15518	15.52
15356	15.36
15175	15.18
14994	14.99
14785	14.79
14574	14.57
14400	14.40
14299	14.30
14222	14.22
14076	14.08
14080	14.08
14104	14.10
14138	14.14
14107	14.11
14079	14.08
14052	14.05
14138	14.14
14324	14.32
14531	14.53
14758	14.76
15129	15.13
15345	15.35
15711	15.71
15974	15.97
15966	15.97
15883	15.88
15723	15.72
15635	15.63
15555	15.55
15320	15.32
15124	15.12
14868	14.87
14488	14.49
14122	14.12
13814	13.81
13499	13.50
13228	13.23
12956	12.96
12680	12.68
12509	12.51
12151	12.15
12018	12.02
11980	11.98
12097	12.10
12245	12.24
12440	12.44
12619	12.62
12808	12.81
12906	12.91
12955	12.96
12982	12.98
12957	12.96
12836	12.84
12710	12.71
12847	12.85
13078	13.08
13384	13.38

Daily

13601	13.60
13813	13.81
13899	13.90
13802	13.80
13791	13.79
13905	13.91
13901	13.90
14048	14.05
14173	14.17
14251	14.25
14164	14.16
14017	14.02
13816	13.82
13840	13.84
13690	13.69
13439	13.44
13068	13.07
12653	12.65
12222	12.22
11808	11.81
11389	11.39
11243	11.24
11193	11.19
11120	11.12
11093	11.09
11174	11.17
11262	11.26
11336	11.34
11381	11.38
11418	11.42
11514	11.51
11638	11.64
11814	11.81
12157	12.16
12413	12.41
12699	12.70
13178	13.18
13430	13.43
13716	13.72
14022	14.02
14398	14.40
14815	14.81
15290	15.29
15739	15.74
16117	16.12
16081	16.08
16078	16.08
16098	16.10
16087	16.09
16008	16.01
11533	11.53
11297	11.30
11043	11.04
10809	10.81
10577	10.58
10349	10.35
10141	10.14

Daily

9935	9.94
9694	9.69
9475	9.48
9444	9.44
9445	9.44
9409	9.41
9397	9.40
9421	9.42
9422	9.42
9315	9.31
9267	9.27
9258	9.26
9206	9.21
9196	9.20
9197	9.20
9137	9.14
9089	9.09
9092	9.09
9501	9.50
9874	9.87
10232	10.23
10578	10.58
11027	11.03
11349	11.35
11543	11.54
11754	11.75
12000	12.00
12305	12.30
12545	12.54
12832	12.83
13156	13.16
13510	13.51
13775	13.77
13890	13.89
14002	14.00
13873	13.87
13526	13.53
13284	13.28
13118	13.12
13010	13.01
12873	12.87
12687	12.69
12373	12.37
12225	12.23
11797	11.80
11597	11.60
11397	11.40
11215	11.21
10988	10.99
10710	10.71
10498	10.50
10202	10.20
9923	9.92
9799	9.80
9876	9.88
9974	9.97
10001	10.00

Daily

9967	9.97
10008	10.01
10043	10.04
10065	10.07
10071	10.07
10068	10.07
10019	10.02
9952	9.95
10199	10.20
10625	10.62
10960	10.96
11182	11.18
11377	11.38
11561	11.56
11734	11.73
12082	12.08
12289	12.29
12719	12.72
12973	12.97
13165	13.16
13347	13.35
13588	13.59
13784	13.78
13880	13.88
13999	14.00
14075	14.08
14076	14.08
13949	13.95
13749	13.75
13611	13.61
13465	13.46
13292	13.29
13084	13.08
12876	12.88
12633	12.63
12431	12.43
12244	12.24
11955	11.95
11622	11.62
11353	11.35
11358	11.36
11428	11.43
11441	11.44
11482	11.48
11583	11.58
11606	11.61
11611	11.61
11670	11.67
11599	11.60
11552	11.55
11557	11.56
11532	11.53
11607	11.61
11766	11.77
11984	11.98
12207	12.21
12339	12.34

Daily

12528	12.53	Yellow
12734	12.73	
12918	12.92	Blue
17572	17.57	
17724	17.72	
17852	17.85	
17796	17.80	
17698	17.70	
17591	17.59	
17480	17.48	
17489	17.49	
17519	17.52	
17471	17.47	
17164	17.16	
16909	16.91	
16910	16.91	
16972	16.97	
16923	16.92	
16891	16.89	
16815	16.82	
16737	16.74	
16803	16.80	
16734	16.73	
16745	16.74	
16766	16.77	
16852	16.85	
16900	16.90	
16916	16.92	
16927	16.93	
17002	17.00	
17021	17.02	
16991	16.99	
16988	16.99	
16985	16.98	
16986	16.99	
17035	17.04	
17293	17.29	
17645	17.64	
17998	18.00	
18296	18.30	
18516	18.52	
18762	18.76	
18923	18.92	
18893	18.89	
18726	18.73	
18394	18.39	
17981	17.98	
17500	17.50	
17107	17.11	
16967	16.97	
16852	16.85	
16729	16.73	
16881	16.88	
16908	16.91	
17015	17.01	
16930	16.93	
17024	17.02	



Daily

16989	16.99
16910	16.91
16829	16.83
16777	16.78
16714	16.71
16657	16.66
16621	16.62
16557	16.56
16567	16.57
16525	16.52
16309	16.31
16268	16.27
16220	16.22
16183	16.18
16065	16.06
16043	16.04
16333	16.33
16548	16.55
16619	16.62
16611	16.61
16898	16.90
16982	16.98
16926	16.93
16799	16.80
16663	16.66
16452	16.45
16276	16.28
15672	15.67
15480	15.48
15164	15.16
15016	15.02
14934	14.93
14734	14.73
14553	14.55
14475	14.48
14406	14.41
14344	14.34
14349	14.35
14285	14.29
14224	14.22
14309	14.31
14192	14.19
14192	14.19
14301	14.30
14389	14.39
14464	14.46
14457	14.46
14567	14.57
14660	14.66
14636	14.64
14530	14.53
14535	14.53
14333	14.33
14294	14.29
14153	14.15
13926	13.93
13591	13.59

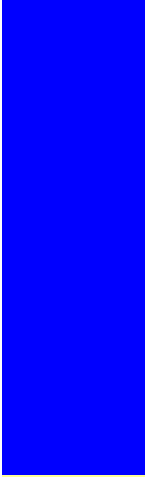
Daily

13517	13.52
13175	13.17
12869	12.87
12447	12.45
12005	12.00
11645	11.64
11372	11.37
11074	11.07
10691	10.69
10381	10.38
9912	9.91
9540	9.54
9141	9.14
8667	8.67
8248	8.25
7860	7.86
7389	7.39
6885	6.88
6360	6.36
5796	5.80
5291	5.29
4923	4.92
4788	4.79
4737	4.74
4799	4.80
4905	4.91
4865	4.86
4889	4.89
4906	4.91
4933	4.93
5017	5.02
5382	5.38
5469	5.47
5755	5.76
5963	5.96
6197	6.20
6342	6.34
6447	6.45
6456	6.46
6439	6.44
6755	6.75
6894	6.89
6976	6.98
7084	7.08
6975	6.98
6857	6.86
6677	6.68
6543	6.54
6486	6.49
6475	6.48
6540	6.54
6530	6.53
6416	6.42
5930	5.93
5554	5.55
5198	5.20
4935	4.94

Daily

4713	4.71
4698	4.70
4436	4.44
4154	4.15
3543	3.54
3091	3.09
2896	2.90
2920	2.92
2910	2.91
2902	2.90
2760	2.76
2718	2.72
2689	2.69
2348	2.35
2104	2.10
1976	1.98
1989	1.99
2180	2.18
2248	2.25
2423	2.42
2583	2.58
2946	2.95
3359	3.36
3362	3.36
3231	3.23
3313	3.31
3520	3.52
3627	3.63
3833	3.83
3991	3.99
4008	4.01
3995	4.00
4172	4.17
4315	4.32
4483	4.48
4892	4.89
4802	4.80
4474	4.47
4172	4.17
3797	3.80
3566	3.57
3534	3.53
3259	3.26
3336	3.34
3492	3.49
3644	3.64
3866	3.87
4104	4.10
4368	4.37
4523	4.52
4788	4.79
4776	4.78
4688	4.69
4908	4.91
5277	5.28
5606	5.61
5967	5.97

Daily

6235	6.23	
6414	6.41	
6534	6.53	
6668	6.67	
6744	6.74	
6832	6.83	
6992	6.99	
7152	7.15	
7066	7.07	
7149	7.15	
7281	7.28	
7408	7.41	
7486	7.49	
7713	7.71	
7863	7.86	
8174	8.17	
3746	3.75	
3703	3.70	
3550	3.55	
3318	3.32	
3098	3.10	
3119	3.12	
3199	3.20	
3297	3.30	
3434	3.43	
3506	3.51	
3639	3.64	
3769	3.77	
3812	3.81	
3929	3.93	
4005	4.01	
4086	4.09	
4238	4.24	
4468	4.47	
4672	4.67	
4948	4.95	
5069	5.07	
5280	5.28	
5544	5.54	
5813	5.81	
6113	6.11	
6206	6.21	
6351	6.35	
6411	6.41	
6347	6.35	
6168	6.17	
6050	6.05	
5975	5.98	
6122	6.12	
5975	5.97	
5865	5.86	
5507	5.51	
5258	5.26	
4846	4.85	
4469	4.47	
4159	4.16	
3704	3.70	

Daily

3003	3.00
2700	2.70
2593	2.59
2512	2.51
2445	2.45
2298	2.30
2240	2.24
2160	2.16
2064	2.06
2119	2.12
2090	2.09
2135	2.14
2185	2.19
2236	2.24
2478	2.48
2799	2.80
3042	3.04
3084	3.08
3000	3.00
2862	2.86
2622	2.62
2320	2.32
2238	2.24
2058	2.06
1910	1.91
1635	1.64
1465	1.47
1349	1.35
1229	1.23
1192	1.19
1508	1.51
1349	1.35
979	0.98
649	0.65
484	0.48
414	0.41
248	0.25
206	0.21
175	0.17
125	0.12
113	0.11
-4	0.00
-121	-0.12
-248	-0.25
-462	-0.46
-509	-0.51
-558	-0.56
-357	-0.36
-8	-0.01
251	0.25
755	0.76
1179	1.18
1577	1.58
2025	2.03
2428	2.43
2446	2.45
2473	2.47

Daily

2452	2.45
2411	2.41
2488	2.49
2527	2.53
2548	2.55
2474	2.47
2455	2.45
2263	2.26
2002	2.00
1714	1.71
1316	1.32
1032	1.03
799	0.80
470	0.47
124	0.12
97	0.10
24	0.02
157	0.16
206	0.21
306	0.31
354	0.35
439	0.44
523	0.52
462	0.46
424	0.42
434	0.43
5014	5.01
5088	5.09
5645	5.65
6117	6.12
6494	6.49
6962	6.96
7249	7.25
7636	7.64
8088	8.09
8606	8.61
9040	9.04
9460	9.46
9953	9.95
10469	10.47
11119	11.12
11604	11.60
12090	12.09
12700	12.70
13323	13.32
13620	13.62
13918	13.92
14102	14.10
14191	14.19
14249	14.25
14174	14.17
14090	14.09
14270	14.27
14299	14.30
14347	14.35
14460	14.46
14505	14.51

Daily

14691	14.69
14780	14.78
14889	14.89
15150	15.15
15199	15.20
15259	15.26
15212	15.21
15010	15.01
14711	14.71
14387	14.39
14219	14.22
14068	14.07
13998	14.00
13796	13.80
13644	13.64
13447	13.45
13255	13.26
12938	12.94
12637	12.64
12467	12.47
12309	12.31
12103	12.10
11900	11.90
11861	11.86
11754	11.75
11401	11.40
11112	11.11
10840	10.84
10596	10.60
10343	10.34
9934	9.93
9497	9.50
9058	9.06
8440	8.44
7977	7.98
7607	7.61
7208	7.21
7136	7.14
7087	7.09
7039	7.04
7123	7.12
7217	7.22
7342	7.34
7376	7.38
7505	7.50
7629	7.63
7722	7.72
7981	7.98
8192	8.19
8293	8.29
8378	8.38
8512	8.51
8502	8.50
8644	8.64
8795	8.80
8988	8.99
9220	9.22

Daily

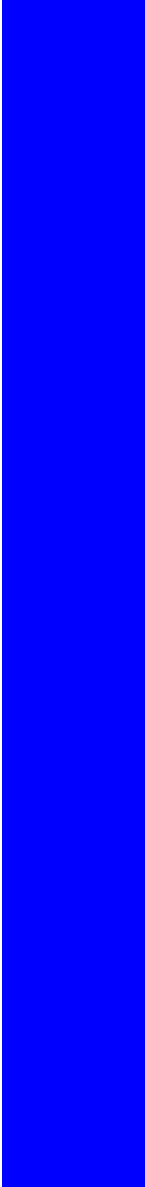
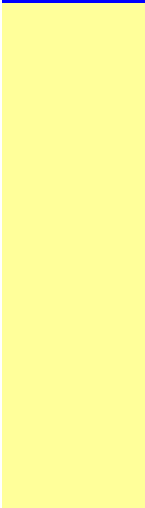
9442	9.44
9585	9.58
9542	9.54
9529	9.53
9572	9.57
9687	9.69
9805	9.81
9878	9.88
9944	9.94
10017	10.02
9919	9.92
9987	9.99
10051	10.05
9820	9.82
9196	9.20
8795	8.80
8458	8.46
7997	8.00
8048	8.05
8026	8.03
7978	7.98
7907	7.91
7867	7.87
7868	7.87
7704	7.70
7665	7.66
7537	7.54
7533	7.53
7485	7.48
7469	7.47
7389	7.39
7406	7.41
7533	7.53
7449	7.45
7468	7.47
7577	7.58
7732	7.73
7748	7.75
7663	7.66
7615	7.62
7621	7.62
7590	7.59
7597	7.60
7643	7.64
8042	8.04
8117	8.12
8153	8.15
8169	8.17
7820	7.82
7719	7.72
7595	7.59
7574	7.57
7498	7.50
7368	7.37
7468	7.47
7573	7.57
7660	7.66



Daily

7780	7.78
7885	7.88
8041	8.04
8188	8.19
8239	8.24
8397	8.40
8785	8.78
9071	9.07
9272	9.27
9461	9.46
9845	9.84
10210	10.21
10421	10.42
10735	10.74
11046	11.05
11517	11.52
12065	12.07
12591	12.59
12980	12.98
13274	13.27
13708	13.71
13983	13.98
13916	13.92
13777	13.78
13638	13.64
13559	13.56
13562	13.56
13466	13.47
13379	13.38
13234	13.23
12998	13.00
12907	12.91
12669	12.67
12486	12.49
12184	12.18
11827	11.83
11480	11.48
11130	11.13
10992	10.99
11047	11.05
11058	11.06
11150	11.15
11264	11.26
11240	11.24
11157	11.16
10892	10.89
10373	10.37
10013	10.01
9596	9.60
9278	9.28
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8595	8.59
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8380	8.38
8199	8.20
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7801	7.80

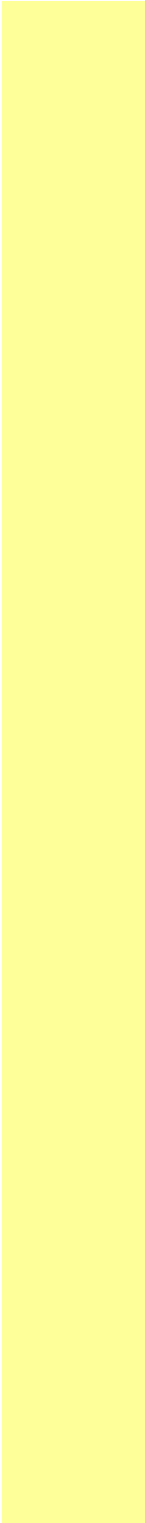
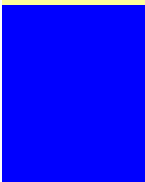
Daily

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7445	7.45	
7427	7.43	
7453	7.45	
7389	7.39	
7290	7.29	
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7466	7.47	
7640	7.64	
7819	7.82	
8025	8.02	
8131	8.13	
8055	8.05	
8023	8.02	
7997	8.00	
8116	8.12	
8229	8.23	
8275	8.28	
8276	8.28	
8488	8.49	
8507	8.51	
8708	8.71	
8817	8.82	
8977	8.98	
9018	9.02	
8961	8.96	
8825	8.82	
8828	8.83	
8882	8.88	
8844	8.84	
8867	8.87	
8769	8.77	
8614	8.61	
8528	8.53	
8426	8.43	
8400	8.40	
8180	8.18	
7903	7.90	
7792	7.79	
7570	7.57	
2874	2.87	
2830	2.83	
2771	2.77	
2659	2.66	
2667	2.67	
2681	2.68	
2684	2.68	
2774	2.77	
2861	2.86	
2976	2.98	
3167	3.17	
3411	3.41	
3772	3.77	
4112	4.11	
4478	4.48	
4912	4.91	
5413	5.41	

Daily

5848	5.85
6367	6.37
6853	6.85
7335	7.34
7687	7.69
7974	7.97
8232	8.23
8520	8.52
8802	8.80
9309	9.31
9722	9.72
9888	9.89
10203	10.20
10454	10.45
10573	10.57
10817	10.82
11008	11.01
10925	10.93
10793	10.79
10654	10.65
10702	10.70
10835	10.84
10952	10.95
11028	11.03
11053	11.05
11092	11.09
11100	11.10
11115	11.12
11081	11.08
11123	11.12
11122	11.12
10998	11.00
10911	10.91
10663	10.66
10548	10.55
10434	10.43
10313	10.31
10209	10.21
10090	10.09
9724	9.72
9546	9.55
9496	9.50
9453	9.45
9377	9.38
9101	9.10
8673	8.67
8355	8.35
8218	8.22
8110	8.11
8292	8.29
8283	8.28
8282	8.28
8213	8.21
8136	8.14
8077	8.08
8006	8.01

Daily

8000	8.00	
7955	7.95	
7931	7.93	
7896	7.90	
7827	7.83	
7750	7.75	
7669	7.67	
7662	7.66	
7738	7.74	
7905	7.91	
8095	8.09	
8325	8.33	
8408	8.41	
8707	8.71	
8961	8.96	
9178	9.18	
9395	9.40	
9661	9.66	
9847	9.85	
10076	10.08	
10370	10.37	
10591	10.59	
10738	10.74	
10675	10.68	
10606	10.61	
10603	10.60	
10727	10.73	
10856	10.86	
11004	11.00	
11215	11.21	
11386	11.39	
11585	11.59	
11772	11.77	
11970	11.97	
12187	12.19	
12394	12.39	
12587	12.59	
12900	12.90	
13137	13.14	
13267	13.27	
13159	13.16	
13052	13.05	
13123	13.12	
13164	13.16	
13044	13.04	
13015	13.02	
12929	12.93	
12806	12.81	
12795	12.80	
12879	12.88	
12833	12.83	
17360	17.36	
17348	17.35	
17304	17.30	
17307	17.31	
17235	17.24	
17091	17.09	

Daily

16874	16.87
16753	16.75
16622	16.62
16497	16.50
16284	16.28
16110	16.11
15944	15.94
15731	15.73
15666	15.67
15489	15.49
15321	15.32
15241	15.24
15063	15.06
14928	14.93
14904	14.90
14873	14.87
14760	14.76
14857	14.86
14826	14.83
15013	15.01
15307	15.31
15558	15.56
15840	15.84
16074	16.07
16288	16.29
16564	16.56
16813	16.81
17001	17.00
17147	17.15
17214	17.21
17330	17.33
17222	17.22
17048	17.05
16849	16.85
16763	16.76
16657	16.66
16408	16.41
16140	16.14
15756	15.76
15390	15.39
14999	15.00
14725	14.73
14462	14.46
14658	14.66
14576	14.58
14544	14.54
14553	14.55
14546	14.55
14574	14.57
14275	14.27
13811	13.81
13582	13.58
13193	13.19
12952	12.95
12726	12.73
12559	12.56
12441	12.44

Daily

12305	12.31
12099	12.10
11919	11.92
11779	11.78
11858	11.86
11968	11.97
12055	12.05
11996	12.00
12029	12.03
12086	12.09
12265	12.26
12453	12.45
12618	12.62
12749	12.75
12743	12.74
12832	12.83
12590	12.59
12424	12.42
12262	12.26
12168	12.17
11889	11.89
11610	11.61
11525	11.53
11535	11.54
11439	11.44
11500	11.50
11494	11.49
11406	11.41
11303	11.30
10962	10.96
10840	10.84
10799	10.80
10398	10.40
10110	10.11
9709	9.71
9261	9.26
8949	8.95
8718	8.72
8481	8.48
8308	8.31
8095	8.09
7875	7.88
7840	7.84
7810	7.81
7786	7.79
7801	7.80
7895	7.90
8008	8.01
8291	8.29
8620	8.62
8985	8.98
9329	9.33
9662	9.66
9906	9.91
9864	9.86
9711	9.71
9560	9.56

Daily

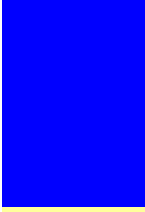
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10082	10.08
10283	10.28
10640	10.64
11024	11.02
11424	11.42
11812	11.81
12150	12.15
12471	12.47
12819	12.82
13222	13.22
13550	13.55
13595	13.60
13630	13.63
13472	13.47
13250	13.25
13039	13.04
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12598	12.60
12601	12.60
12610	12.61
12576	12.58
12585	12.59
12670	12.67
12905	12.90
12915	12.92
12494	12.49
12224	12.22
12080	12.08
12149	12.15
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12618	12.62
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12470	12.47
12354	12.35
12246	12.25
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11525	11.53
11302	11.30
11212	11.21
11412	11.41
11580	11.58
11732	11.73
11918	11.92
12050	12.05
12035	12.04
12067	12.07

Daily

12233	12.23
12413	12.41
12563	12.56
12816	12.82
12937	12.94
12961	12.96
13141	13.14
13714	13.71
14239	14.24
14577	14.58
14865	14.86
15075	15.08
15156	15.16
14979	14.98
14805	14.81
14827	14.83
14818	14.82
14954	14.95
14935	14.93
15033	15.03
14769	14.77
14972	14.97
15297	15.30
15331	15.33
15404	15.40
15369	15.37
15360	15.36
15350	15.35
15442	15.44
15419	15.42
15524	15.52
15656	15.66
15857	15.86
15923	15.92
16049	16.05
16130	16.13
16295	16.30
16253	16.25
16124	16.12
16171	16.17
16070	16.07
15912	15.91
15957	15.96
16207	16.21
16420	16.42
16493	16.49
16658	16.66
16794	16.79
16924	16.92
17030	17.03
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17432	17.43
17381	17.38
17295	17.29
17348	17.35
17286	17.29
17077	17.08



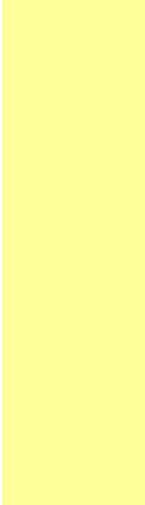
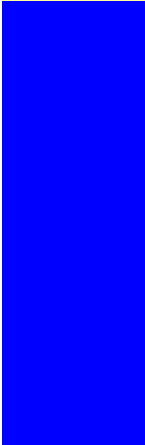
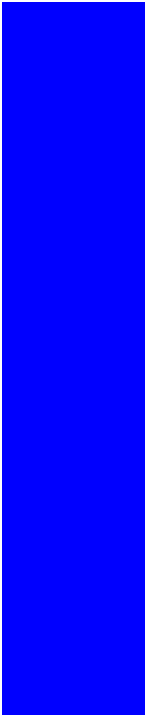
Daily

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11496	11.50	
11192	11.19	
10932	10.93	
10907	10.91	
10932	10.93	
10945	10.95	
10877	10.88	
10742	10.74	
10584	10.58	
10339	10.34	
10087	10.09	
9877	9.88	
9783	9.78	
9820	9.82	
9898	9.90	
9826	9.83	
9752	9.75	
9590	9.59	
9469	9.47	
9452	9.45	
9376	9.38	
9431	9.43	
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9700	9.70	
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9777	9.78	
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10319	10.32	
10467	10.47	
10394	10.39	
10294	10.29	
9979	9.98	
9847	9.85	
10128	10.13	
10393	10.39	
10788	10.79	
11110	11.11	
11230	11.23	
11232	11.23	
11178	11.18	
10984	10.98	
10881	10.88	
10623	10.62	
10869	10.87	
10849	10.85	
10800	10.80	

Daily

10692	10.69
10595	10.60
10265	10.26
10223	10.22
10167	10.17
10182	10.18
10134	10.13
10217	10.22
10137	10.14
10174	10.17
10189	10.19
10020	10.02
9794	9.79
9724	9.72
9782	9.78
10172	10.17
10401	10.40
10361	10.36
10266	10.27
10147	10.15
10119	10.12
10156	10.16
10237	10.24
10351	10.35
10529	10.53
10743	10.74
11119	11.12
10821	10.82
10791	10.79
10791	10.79
10827	10.83
10890	10.89
11122	11.12
11116	11.12
11048	11.05
10812	10.81
10724	10.72
10527	10.53
10434	10.43
10289	10.29
10221	10.22
10307	10.31
10440	10.44
10719	10.72
10988	10.99
11142	11.14
11316	11.32
11369	11.37
11458	11.46
11618	11.62
11765	11.77
11957	11.96
12055	12.05
12113	12.11
12194	12.19
12086	12.09
11794	11.79

Daily

11650	11.65	
11222	11.22	
10763	10.76	
10212	10.21	
9881	9.88	
9881	9.88	
10044	10.04	
10212	10.21	
10456	10.46	
10659	10.66	
10978	10.98	
11266	11.27	
11493	11.49	
11673	11.67	
11855	11.86	
12202	12.20	
12307	12.31	
16850	16.85	
16880	16.88	
16810	16.81	
16768	16.77	
16781	16.78	
16729	16.73	
16678	16.68	
16545	16.55	
16144	16.14	
15745	15.75	
15620	15.62	
15738	15.74	
16046	16.05	
16376	16.38	
16929	16.93	
12954	12.95	
13556	13.56	
13803	13.80	
13882	13.88	
13795	13.79	
13750	13.75	
13712	13.71	
13579	13.58	
13412	13.41	
13259	13.26	
13156	13.16	
13026	13.03	
12799	12.80	
12600	12.60	
12450	12.45	
12311	12.31	
12240	12.24	
12155	12.16	
12202	12.20	
12113	12.11	
12079	12.08	
12068	12.07	
12053	12.05	
12433	12.43	
12704	12.70	

Daily

12523	12.52
12482	12.48
12475	12.48
12378	12.38
12355	12.36
12452	12.45
12540	12.54
12710	12.71
12740	12.74
12798	12.80
12812	12.81
12801	12.80
12854	12.85
12845	12.84
12825	12.82
12905	12.90
13019	13.02
13178	13.18
13317	13.32
13409	13.41
13521	13.52
13511	13.51
13429	13.43
13242	13.24
13369	13.37
13420	13.42
13390	13.39
13479	13.48
13371	13.37
13242	13.24
13276	13.28
12985	12.98
12551	12.55
12477	12.48
12633	12.63
12746	12.75
12805	12.80
12582	12.58
12507	12.51
12485	12.48
12520	12.52
12599	12.60
12556	12.56
12651	12.65
12734	12.73
12751	12.75
12740	12.74
12824	12.82
12808	12.81
12819	12.82
12739	12.74
12673	12.67
12806	12.81
12865	12.86
12618	12.62
12329	12.33
12122	12.12

Daily

11955	11.95
11840	11.84
11897	11.90
11888	11.89
11980	11.98
12055	12.06
12176	12.18
12009	12.01
11566	11.57
11149	11.15
11144	11.14
10969	10.97
10686	10.69
10557	10.56
10322	10.32
10229	10.23
10243	10.24
10280	10.28
10150	10.15
10112	10.11
9904	9.90
9635	9.64
9409	9.41
9101	9.10
8859	8.86
8603	8.60
8452	8.45
8518	8.52
8646	8.65
8338	8.34
8298	8.30
8361	8.36
8237	8.24
8435	8.44
8491	8.49
8817	8.82
9012	9.01
8991	8.99
9312	9.31
9631	9.63
9807	9.81
10240	10.24
10755	10.76
11129	11.13
11564	11.56
11842	11.84
11850	11.85
11838	11.84
11937	11.94
11923	11.92

Daily

12065	12.06
12216	12.22
12279	12.28
12498	12.50
12649	12.65
12894	12.89
12972	12.97
12658	12.66
10455	10.46
8792	8.79
8739	8.74
8696	8.70
8779	8.78
8608	8.61
8503	8.50
8381	8.38
8117	8.12
8108	8.11
7950	7.95
7625	7.63
7408	7.41
7180	7.18
7109	7.11
7039	7.04
6939	6.94
7032	7.03
7151	7.15
7265	7.27
7377	7.38
7550	7.55
7623	7.62
7596	7.60
7521	7.52
7346	7.35
7224	7.22
6943	6.94
6861	6.86
7065	7.07
9133	9.13
11093	11.09
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11172	11.17
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11324	11.32
11458	11.46
11166	11.17
11226	11.23
11402	11.40
11603	11.60

Daily

11570	11.57
11977	11.98
12250	12.25
12212	12.21
12278	12.28
12322	12.32
12275	12.27
12275	12.28
12278	12.28
12286	12.29
12177	12.18
12260	12.26
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13106	13.11
13485	13.48
13878	13.88
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14184	14.18
14415	14.42
14714	14.71
14918	14.92
15120	15.12
15209	15.21
15411	15.41
15575	15.58
16032	16.03
16172	16.17
16249	16.25
16367	16.37
16843	16.84
16875	16.87
16840	16.84
16889	16.89
16762	16.76
16729	16.73
16783	16.78
16831	16.83
16920	16.92
17003	17.00
17145	17.15
17197	17.20
17006	17.01
16879	16.88
16847	16.85
16727	16.73
16607	16.61
16532	16.53
16698	16.70

Daily



16702	16.70
16669	16.67
16638	16.64
16677	16.68
16725	16.73
16813	16.81
16855	16.85
16884	16.88
16965	16.96
16947	16.95
16921	16.92
16989	16.99
17004	17.00
17024	17.02
17011	17.01
17073	17.07
17073	17.07
17006	17.01
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16095	16.10
15957	15.96
15825	15.83
15740	15.74
15558	15.56
15402	15.40
15284	15.28
15130	15.13
14974	14.97
14974	14.97
14990	14.99
14952	14.95
14994	14.99
15103	15.10
15132	15.13
15204	15.20
15067	15.07
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13592	13.59
13334	13.33
13090	13.09
12745	12.75
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11915	11.92
11749	11.75
11524	11.52
11305	11.30
11028	11.03



Daily

10827	10.83
10795	10.80
10777	10.78
10958	10.96
11059	11.06
11180	11.18
11337	11.34
11534	11.53
11526	11.53
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9695	9.69
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10578	10.58
10919	10.92
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11598	11.60
11804	11.80
11710	11.71
11643	11.64
11446	11.45
11190	11.19
10993	10.99
10837	10.84
10712	10.71
10720	10.72
10988	10.99
11108	11.11
11048	11.05
11227	11.23
11379	11.38
11436	11.44
11625	11.63
11772	11.77
11960	11.96
12103	12.10
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12561	12.56
12730	12.73
12935	12.93
13172	13.17
13141	13.14
13073	13.07

Daily

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12250	12.25		
11960	11.96		
11951	11.95		
11880	11.88		
11899	11.90		
11963	11.96		
11926	11.93		
11831	11.83		
11660	11.66		
11607	11.61		
11564	11.56		
11515	11.51		
11792	11.79		
11896	11.90		
12000	12.00		
12333	12.33		
12508	12.51		
12739	12.74		
12859	12.86		
13017	13.02		
13182	13.18		
13229	13.23		
13368	13.37		
13399	13.40		
13440	13.44		
13520	13.52		
13633	13.63		
13752	13.75		
14059	14.06		
13849	13.85		
13761	13.76		
13599	13.60		
13496	13.50		
13350	13.35		
13200	13.20		
13061	13.06		
12985	12.99		
12885	12.88		
12812	12.81		
12645	12.64		
12461	12.46		
12302	12.30		
12147	12.15		
12026	12.03		
11934	11.93		
11758	11.76		
11585	11.59		
11322	11.32		
11121	11.12		
10988	10.99		
10716	10.72		
10641	10.64		
10488	10.49		
10345	10.34		

Daily

10222	10.22
10025	10.02
9846	9.85
8371	8.37
7929	7.93
7866	7.87
7760	7.76
7813	7.81
7842	7.84
7922	7.92
7998	8.00
8036	8.04
7984	7.98
7900	7.90
7853	7.85
7791	7.79
8024	8.02
8260	8.26
8395	8.39
8485	8.48
8552	8.55
8535	8.53
8622	8.62
8629	8.63
8756	8.76
8919	8.92
9262	9.26
9458	9.46
9667	9.67
9868	9.87
9990	9.99
10006	10.01
9992	9.99
11197	11.20
11414	11.41
11853	11.85
12336	12.34
12740	12.74
13058	13.06
13435	13.44
13803	13.80
14143	14.14
14540	14.54
14937	14.94
14940	14.94
14850	14.85
14537	14.54
14256	14.26
14211	14.21
14145	14.14
14078	14.08
14101	14.10
14028	14.03
14143	14.14
14130	14.13
14034	14.03
13841	13.84

Daily

13640

13.64  
20



Month	Carbon Monoxide					
	Kg/Day					
	FGS	FCCU	SRU	Fuel	Flares	Total CO
October-00	0	2442	0	1407	0	3849
November-00	682	2442	0	1771	0	4895
December-00	749	2048	0	1481	0	4278
January-01	923	2048	0	1334	732	5037
February-01	161	2442	324	1353	1096	5376
March-01	161	2442	324	1173	1048	5148
April-01	161	1909	324	1133	824	4351
May-01	161	1909	324	1109	1098	4601
June-01	161	1909	324	1257	1010	4661
July-01	161	1909	324	1115	812	4321
August-01	161	1909	236	1122	1053	4481
September-01	161	1909	236	1134	1025	4465
October-01	161	1909	236	1094	865	4265
November-01	161	1909	236	1126	720	4152
December-01	161	1909	236	1150	867	4323
January-02	161	1909	236	1152	981	4439
February-02	161	1909	236	990	795	4091
March-02	161	1909	236	1018	1029	4353
April-02	161	1909	10	1018	890	3988
May-02	161	1909	10	972	894	3946
June-02	161	1909	9	949	965	3993
July-02	161	1909	9	941	920	3940
August-02	161	1909	9	956	938	3973
September-02	161	1909	9	913	925	3917
October-02	161	1909	9	976	903	3958
November-02	161	1909	9	1053	873	4005
December-02	161	1909	9	1100	972	4151
January-03	161	1909	9	1112	933	4124
February-03	161	1909	9	1103	816	3998
March-03	161	1909	9	1186	1093	4358
April-03	161	1909	9	1179	933	4191
May-03	161	1909	9	1117	972	4168
June-03	161	1909	9	1157	944	4180
July-03	161	1909	9	1116	1012	4207
August-03	161	1909	9	996	972	4047
September-03	161	1909	9	976	972	4027
October-03	161	1909	9	1012	782	3873
November-03	84	477	9	1101	983	2654
December-03	84	477	9	1132	1002	2704
January-04	84	477	9	1088	977	2635
February-04	84	477	9	1171	982	2723
March-04	84	477	9	1112	1268	2950
April-04	84	477	9	1088	1014	2672
May-04	84	477	9	1100	1010	2680
June-04	84	477	9	1100	1001	2671
July-04	84	477	9	1100	1006	2676
August-04	84	477	9	1078	876	2524
September-04	84	477	9	1104	929	2603
October-04	84	477	9	1083	872	2525

**Appendix D**  
**Fugitive VOC Emissions Data**

Table A-4: Yearly Record of Reduced Emissions

UNIT	1993	1995	1996	1996	1997	1997	1998	1998	1999	1999	2000	2000	2001	2001	2002	2002	2003	2003	2004	2004	2005	2005	2006	2006
	Total Emissions	Total Emissions	Total Emissions	Total Emissions	Total Emissions	Total Emissions	Total Emissions	Total Emissions	Total Emissions	Total Emissions	Total Emissions	Total Emissions	Total Emissions	Total Emissions	Total Emissions	Total Emissions	Total Emissions	Total Emissions	Total Emissions	Total Emissions	Total Emissions	Total Emissions	Total Emissions	Total Emissions
	(as of 01/09/93)	(as of 01/09/95)	Before Repairs	After Repairs	Before Repairs	After Repairs	Before Repairs	After Repairs	Before Repairs	After Repairs	Before Repairs	After Repairs	Before Repairs	After Repairs	Before Repairs	After Repairs	Before Repairs	After Repairs	Before Repairs	After Repairs	Before Repairs	After Repairs	Before Repairs	After Repairs
	kg/yr	kg/yr	kg/yr	kg/yr	kg/yr	kg/yr	kg/yr	kg/yr	kg/yr	kg/yr	kg/yr	kg/yr	kg/yr	kg/yr	kg/yr	kg/yr	kg/yr	kg/yr	kg/yr	kg/yr	kg/yr	kg/yr	kg/yr	kg/yr
#2 Rheniformer	35405	24599	33011	15524	11222	5592	5515	5515	21680	13071	8838	4953	11711	6240	5019	2756	6683	2035	2102	2102	1795	1414	4459	3474
NHT	191971	162196	145391	82550	71674	35444	47596	26209	97421	70416	64620	56717	77562	66754	49763	40100	42337	31709	15377	13496	15159	9857	N/A	N/A
HDS	N/A	669	276	276	1016	363	207	207	487	487	528	200	588	233	930	274	930	930	176	176	N/A	N/A	431	431
Dehexanizer	N/A	1681	1681	1681	1444	1444	2211	2211	2735	1532	959	959	1883	1883	1799	1143	1786	1766	791	791	794	794	N/A	N/A
Butamer	N/A	42151	40421	34559	24520	8157	13713	10000	21286	15545	12906	10541	17760	15161	15211	9950	18495	11709	20996	15252	8640	6474	21692	15108
#1 Rheni	N/A	N/A	46883	40300	28808	11935	12756	10691	22304	18990	9092	7293	11463	11463	12715	7615	1918	1174	11572	7600	2409	2029	7298	7298
Alkylation 1	N/A	N/A	76250	76250	76116	21011	21207	12335	37130	23855	24199	18227	13677	11533	3193	3089	24441	11936	12387	8144	7984	6145	8757	6530
Hydrogen Plant	N/A	N/A	N/A	N/A	15863	5315	10848	10848	12730	6493	16362	13261	7881	4816	10913	8470	7133	4812	3641	1824	813	813	9284	7670
Hydrocracker	N/A	N/A	N/A	N/A	8422	2945	N/A	N/A	18951	8421	4695	3190	14594	9471	9601	9273	5735	1924	1891	1563	1309	1309	2002	2002
FCCU	N/A	N/A	N/A	N/A	N/A	N/A	24133	19363	39131	30280	26365	20370	33930	32548	23916	20448	17278	15453	8071	6190	3644	2601	19328	19328
Sulfur Block	N/A	N/A	N/A	N/A	N/A	N/A	986	986	127	127	877.4016	168.4548	550	550	2088	1051	1558	1454	970	577	548	548	116	116
#3 Crude	N/A	N/A	N/A	N/A	N/A	N/A	4069	4069	6226	3645	4803.5552	3443.2056	6097	3470	4463	3271	3019	2767	3059	3059	2867	2616	4014	4014
#4 Crude	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	498	498	1529	1529	1646	1646	2747	2747	3128	2471	3856	2214	2900	2900
ASU	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1433	694	1712.45088	1401.21696	2186	2186	2716	2612	5422	1507	1564	1564	1047	1047	1206	1206
RFCCU	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	13301.8848	9852.1968	12014	10733	8869	7966	11557	10157	31087	28051
SARU	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	447	447	814	487	264	264	73	73	62	62
#3 Recovery Plant	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	185	185	126	126	115	115	121	121	213	213
Alkylation 2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1656	1656	3545	3048	2592	1936	4580	3414	4408	3544
HRSR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	219	219	181	181	247	247	111	111	491	491
Boiler Plants	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	787	536	909	909
<b>Total</b>	<b>227,376</b>	<b>231,296</b>	<b>343,913</b>	<b>251,140</b>	<b>239,085</b>	<b>92,206</b>	<b>143,241</b>	<b>102,434</b>	<b>281,641</b>	<b>193,556</b>	<b>176,255</b>	<b>141,222</b>	<b>201,410</b>	<b>167,836</b>	<b>159,782</b>	<b>124,057</b>	<b>156,142</b>	<b>106,498</b>	<b>97,812</b>	<b>75,337</b>	<b>68,093</b>	<b>53,756</b>	<b>118,657</b>	<b>103,347</b>

**Appendix E**  
**National Air Pollution Surveillance Network (NAPS) Stations**



## **NAPS Stations**

Station # 050103 1050 A, Boul. Saint-Jean Baptiste, Montreal, Que. Sampling Height = 2 metres

Station # 060415 Queensway W & Hurontario, Toronto, ON Sampling Height=1 metre

Station # 010102 354 Water Street, St. John's, NL Sampling Height=1 metre

**Appendix F**  
**Terms of Reference for the**  
**Community Liaison Committee**



## Irving Oil Refinery Community Liaison Committee

### Terms of Reference

- ◆ Meet on a quarterly basis and as required:
  - ◆ 2<sup>nd</sup> Wednesday of March, June, September and December
  - ◆ Co-chair to call special meetings;
- ◆ Agenda and minutes will be delivered two weeks prior;
- ◆ Changes to the agenda will be made one week prior;
- ◆ Irving Oil and citizens' representative will co-chair;
- ◆ The New Brunswick Department of Environment will attend as a resource;
- ◆ Irving Oil Representative(s) will attend as (a) resource(s);
- ◆ Continue to develop understanding of refining and associated environmental aspects;
- ◆ Exchange information to foster better understanding throughout our neighbourhood;
- ◆ Maintain effective communication while respecting the confidential nature of a highly competitive petroleum refining industry;
- ◆ Membership may change to maximize contribution from community. Prospective members must apply in writing to the Committee for consideration. The Committee, in conjunction with Irving Oil Limited, may appoint applicants for specified terms;
- ◆ Continue to deal with issues raised by non-members; and
- ◆ Draft annual report and submit to Irving Oil, Province, and City of Saint John and make available to the public.

*\*All changes to the terms of Reference were voted on and passed unanimously by the committee.*



**Irving Oil Refinery  
Community Liaison Committee**

**Mandate**

The Community Liaison Committee will assess ways for the Irving Oil Refinery to continue to be a good neighbour and whose membership will contribute to, and benefit from, a regular information exchange.

The Committee will assess community issues associated with the Saint John refinery and make recommendations to Irving Oil for consideration. The Committee will communicate with the community.

*\*All changes to the Mandate were voted on and passed unanimously by the committee.*

**Appendix G  
Limitations**

## LIMITATIONS

1. The work performed in this report was carried out in accordance with the Standard Terms and Conditions made part of our contract. The conclusions presented herein are based solely upon the scope of services and time and budgetary limitations described in our contract.
2. The report has been prepared in accordance with generally accepted environmental study and/or engineering practices. No other warranties, either expressed or implied, are made as to the professional services provided under the terms of our contract and included in this report.
3. The services performed and outlined in this report were based, in part, upon information supplied by others.
4. The objective of this report was to validate the Public Health Risk Assessment, given the context of our contract, with respect to existing environmental regulations within the applicable jurisdiction. Compliance of past or current owners with applicable local, provincial and federal government laws and regulations was not included in our contract for services.
5. The site history research performed herein relies on information supplied by others, such as local, provincial and federal agencies as well as plant personnel. No attempt has been made to independently verify the accuracy of such information, unless specifically noted in our report.
6. Our observations relating to known contaminant materials in the environment at the site are described in this report. It should be noted that other compounds or material may be present in the site environment.
7. The conclusions of this report are based in part, on the information provided by others. The possibility remains that unexpected environmental conditions may be encountered at the site in locations not specifically investigated. Should such an event occur, AMEC Earth & Environmental must be notified in order that we may determine if modifications to our conclusions are necessary.
8. The utilization of AMEC Earth & Environmental services during the implementation of any remedial measures will allow AMEC Earth & Environmental to observe compliance with the conclusions and recommendations contained herein. It will also provide for changes as necessary to suit field conditions as they are encountered.
9. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it are the responsibility of such third parties. AMEC Earth & Environmental accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions taken based on this report.