

THE EVOLUTION OF OXYGEN AND IRON FLUENCE DURING SOLAR
PARTICLE EVENTS AND THEIR CONTRIBUTION TO SKIN
DOSE FOR EVENTS FROM OCTOBER 1997 TO DECEMBER 2005

A Thesis

by

MARCUS EVAN HILL

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

May 2009

Major Subject: Health Physics

THE EVOLUTION OF OXYGEN AND IRON FLUENCE DURING SOLAR
PARTICLE EVENTS AND THEIR CONTRIBUTION TO SKIN
DOSE FOR EVENTS FROM OCTOBER 1997 TO DECEMBER 2005

A Thesis

by

MARCUS EVAN HILL

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

Approved by:

Chair of Committee,	Leslie A. Braby
Committee Members,	John R. Ford Jr.
	Michael A. Walker
Head of Department,	Raymond J. Juzaitis

May 2009

Major Subject: Health Physics

ABSTRACT

The Evolution of Oxygen and Iron Fluence During Solar Particle Events and Their Contribution to Skin Dose for Events From October 1997 to December 2005. (May 2009)

Marcus Evan Hill, B.S., Thomas Edison State College

Chair of Advisory Committee: Dr. Leslie A. Braby

One of the primary concerns with space travel is the protection of astronauts from potentially lethal radiation. A major source of potentially lethal radiation is our own sun. During Solar Cycle 23 there were 97 detected Solar Particle Events (SPEs). In order to develop radiation protection guidelines and establish methods to protect astronauts the spectrum of particles emitted during a SPE must be understood.

Data for oxygen and iron particle fluence was taken from the Solar Isotope Spectrometer. The fluence was sorted and formatted for each solar particle event. After determining the contribution to skin dose for oxygen, the time evolution of each event was analyzed. After analyzing the raw count data, a threshold was set that could be applied to each event. Using this threshold count rate as the starting point, each event was plotted and fitted with a smoothing polynomial function. The slope calculated from this function was then plotted against the previously calculated skin dose and a Weibull function was fitted to the data. The resulting plot provides a method to predict the cumulative dose due to the oxygen fluence over the first 24 hours of an event and

thereby provide a warning of future high dose rate in time to achieve significant dose sparing for most events. For the ten events that delivered the highest oxygen dose, the dose sparing that could be achieved by taking shelter when the high dose rate was predicted was greater than 70 percent for all but one event. The one outlier achieved a dose sparing of only 57 percent.

ACKNOWLEDGEMENTS

I would like to thank my committee chair, Dr. Braby, for allowing me to work on this project and for his guidance. I would also like to specifically thank Dr. Poston for accepting me into this program of study and the other members of my committee, Dr. Walker and Dr. Ford, for all their assistance

I would also like to thank all the other faculty of the Nuclear Engineering Department that I had the opportunity to know and learn from.

Finally, I would like to thank my beautiful wife for all her encouragement and understanding.

TABLE OF CONTENTS

	Page
ABSTRACT	iii
ACKNOWLEDGEMENTS	v
TABLE OF CONTENTS	vi
LIST OF FIGURES.....	viii
LIST OF TABLES	x
CHAPTER	
I INTRODUCTION: THE IMPORTANCE OF THIS STUDY	1
II BACKGROUND.....	2
Solar Particle Events	2
The Unique Problem Solar Particle Events Present	3
The Study of the Heavy Ion Component of Solar Particle Events.	6
III METHODS.....	7
Collection of Data	7
Establishing a Method of Comparison	8
Analyzing the Characteristics of Each Event	14
IV RESULTS.....	18
Integral Fluence for Oxygen and Iron	18
Determination of Skin Dose for Each Event	29
Slope Versus Dose Plot for Oxygen.....	32
Predicting a Dose from Iron Ions	40
V CONCLUSION	43
Conclusions	43
Future Work	43

	Page
REFERENCES	45
APPENDIX A	47
APPENDIX B	61
APPENDIX C	68
APPENDIX D	326
VITA	1089

LIST OF FIGURES

FIGURE	Page
1 A comparison of the proton fluence during the August 4, 1972 SPE and the cosmic ray protons accumulated over one week	5
2 A graphical representation of the actual data generated by the program SRIM	10
3 An illustration of how the particles were passed through the EVA glove using MATLAB	11
4 Plot of oxygen fluence rate versus time after the threshold count had been met	15
5 The total oxygen fluence versus energy $\langle E \rangle$ curve for the SPE that occurred on October 28, 2003.	19
6 A normalized plot of the curve fits for type O events.	20
7 A plot of the b/d ratio for O type events.	21
8 A normalized plot of the curve fits for S type events.	22
9 A plot of the b/d ratio for S type events	23
10 A normalized plot of the curve fits for the 10 largest events, any type	24
11 A normalized plot of the curve fits for P type events.	25
12 A plot of the b/d ratio for P type events	26
13 The oxygen fluence for energy Bins 4 through 8 versus energy for the SPE that occurred on October 28, 2003.	28
14 Plot of the sum of the first six hour slope values versus dose.	33
15 Plot of the sum of the first four hour slope values versus dose.	35
16 Peak proton fluence versus oxygen dose for the fourteen largest events. ...	39

FIGURE	Page
17 Plot of the Bin 1 fluence rate versus time for two separate events	42

LIST OF TABLES

TABLE		Page
1	The construction of the EVA spacesuit glove	8
2	A list of normalization factors (A_{BT}) and the corresponding energy $\langle E \rangle$ used for plotting	13
3	Calculated skin dose from oxygen ions and relative uncertainty due to oxygen fluence..	30
4	Calculated skin dose from iron ions and relative uncertainty due to iron fluence.....	31
5	Actual versus predicted skin dose for the first 24 hours. Calculated from the six hour plot.....	34
6	Actual versus predicted skin dose for the first 24 hours. Calculated from the four hour plot.....	36
7	The dose sparing accomplished by taking shelter six hours after the count threshold had been reached.	38
8	A comparison of the total iron fluence for Events 2 and 73 and the associated skin dose from iron ions.....	41

CHAPTER I
INTRODUCTION: THE IMPORTANCE
OF THIS STUDY

Since the time man first entered space, it was known that a radiation exposure hazard existed beyond the protection of our planet's atmosphere. The potential lethality of these radiation levels were not understood until the study of one particular solar particle event that occurred on August 4, 1972 revealed a potentially lethal dose in a very short time (Wilson et al. 1997) Although these large events occur infrequently, the establishment of permanent outposts in space and continued push for missions back to the moon and beyond can make the improbable, probable. Because of the variation in dose for different solar particle events (SPEs) and the loss of the productivity if shelter is taken when not necessary, it is important to look for ways to predict the evolution of an event shortly after its onset. If events which will eventually lead to large doses can be identified reliably it will be unnecessary to take shelter during the large number of events that produce only small doses. With the enormous amount of capital at stake it is critically important that we be able to accurately and reliably identify these events soon after their onset in order to protect our astronauts and accomplish the mission at hand.

This thesis follows the style of Health Physics Journal.

CHAPTER II

BACKGROUND

Solar Particle Events

Solar Particle Events (SPEs) have been studied for decades. Modeling of these events have been ongoing and the classification of SPEs into two distinct populations, ordinary and anomalously large, go back 30 years (Jun et al. 2007). High energy solar particles are ions that originated within the corona. They are accelerated outward from the sun due to large eruptive solar events on the Sun's surface. Events can be in the form of solar flares or coronal mass ejections (CMEs) and previously SPEs were further classified into two types: gradual or impulsive. Gradual events are thought to be driven by a CME, in which the associated shock accelerates the particles outward from the Sun. These events were believed to have the same relative abundances as might be found within the corona and the solar wind. Impulsive events were thought to be driven by solar flares and are thought to originate deep in the corona. Impulsive events typically have enhanced heavy ion abundances (Reames 1995). The classification of these events has recently been shown to be not as simple as just gradual or impulsive. Detailed studies of recent events show that some CME driven events may have impulsive characteristics and likewise narrow CMEs have been observed with impulsive type events (Lario 2007).

The Unique Problem Solar Particle Events Present

Previous work involving heavy ions has been mostly concerned with variations in ion abundances from event to event, the factors that may determine their abundances and where within the Sun did these particles originate. Much of this previous work may not be pertinent from a radiation protection standpoint. For instance should there be concern about the behavior of oxygen ions less than 10 MeV/nucleon if they have no impact on dose? If however these particles could provide some sort of forewarning as to the fluence of higher energy particles, which are of more concern, then we might. It is not apparent whether the contribution of these particles to dose will follow the same model as galactic cosmic ray (GCR) dose. For GCR, iron and oxygen are major contributors to the overall dose even though they make up a small fraction of the total fluence (NCRP 1989). For SPEs, protons make up about 98% of the total fluence and the remaining 2% is divided between helium and heavy ions. The average proton to He ratio is about 60:1. This leaves less than 0.5% of the total fluence for heavier particles (Reedy 1998). Contrast that to GCR in which protons make up about 87% of the total fluence, He 12% and heavier ions about 1%. One other factor that may result in a difference in how each ion species contributes to dose is the energy distribution of the particles. For SPEs, lower energy particles are much more abundant than higher energy particles. Among GCR, lower energy particles, less than 100 MeV/nucleon, have relatively low fluence rate due to shielding provided by the solar wind (NCRP 1989).

GCR and SPEs each present different problems from a radiation protection standpoint. GCR act as a constant source background radiation; whereas SPEs are

transient and can deliver much higher dose rates (NCRP 1989). Figure 1 illustrates this point by showing the proton fluence for the SPE that occurred on August 4, 1972 superimposed over an accumulated GCR spectrum over one week. As the figure shows the proton fluence during a large SPE greatly exceeds that from cosmic rays. The two separate GCR spectrums are due to shielding effects by the solar wind during solar maximum and minimum (NCRP 1989). From a radiation protection standpoint, minimizing the dose to an astronaut can be especially challenging when the only thing protecting him from radiation is his space suit. While conducting an extravehicular activity (EVA), the risks from GCR can be mitigated by establishing dose limits and by controlling the amount of time spent outside the protection of a shelter. However these methods are inappropriate for dealing with SPEs since dose limits can be exceeded rapidly and lethal or sublethal radiobiological effects can be seen as a result (Wilson et al. 1997). The optimal solution to protect astronauts conducting an EVA is prevention. By being able to predict solar particle events before they occur or by having the ability to predict the evolution of these events shortly after their onset we can prevent or greatly diminish the dose an astronaut would receive.

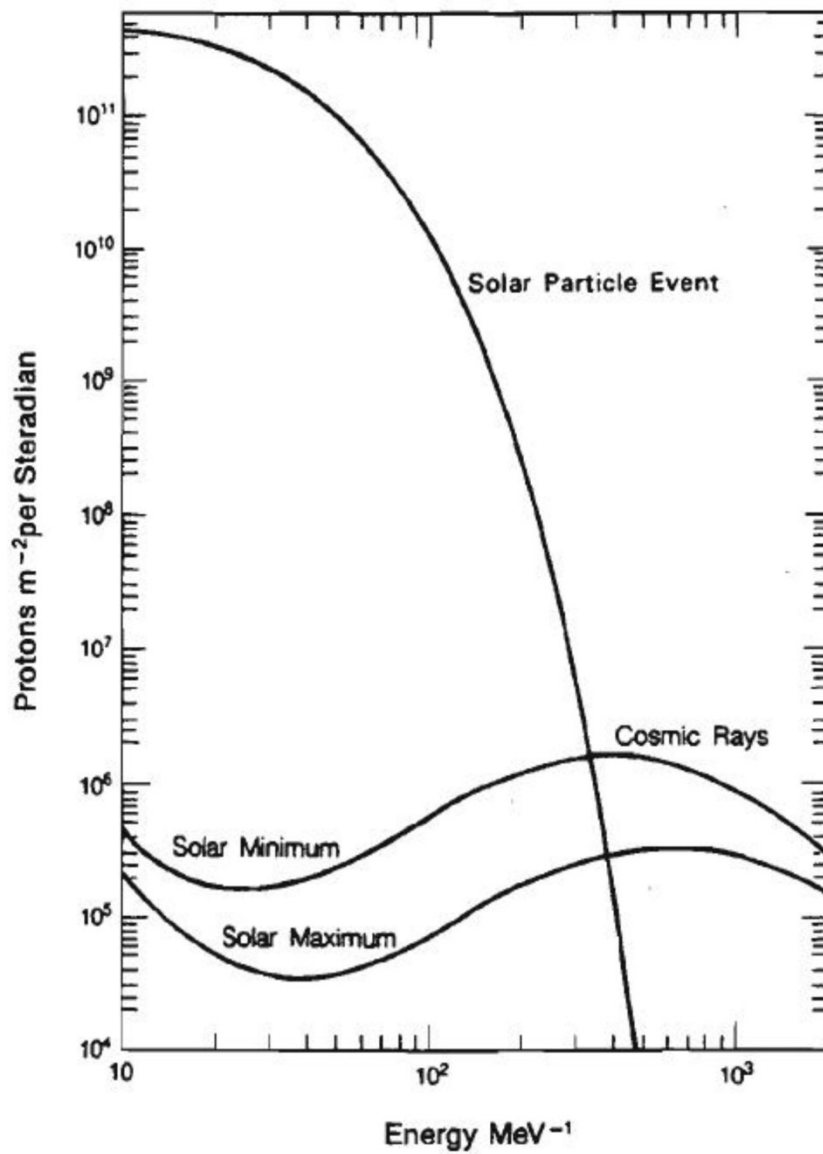


Fig. 1. A comparison of the proton fluence during the August 4, 1972 SPE and the cosmic ray protons accumulated over one week (NCRP 1989).

The Study of the Heavy Ion Component of Solar Particle Events

A more detailed study of the heavy ion component of SPEs is now possible following the launch of the Advanced Composition Explorer (ACE) in 1997. The Solar Isotope Spectrometer (SIS) is one of nine instruments onboard ACE and it was designed to measure isotopic abundances of energetic particles ranging in size from helium to zinc with energies from below 10 MeV/nucleon to just over 100 MeV/nucleon. The instrument is located at Lagrange Point 1 which is about 2×10^6 km from earth (Stone et al. 1998). The data from SIS is collected and published by the SIS team at The Space Radiation Lab at the California Institute of Technology. SIS and the other instruments on ACE have greatly enhanced scientific understanding of solar particle events. Data provided by this instrument is the main source for this study.

CHAPTER III

METHODS

Collection of Data

Research data was obtained from a website provided by the SIS team with the dates ranging from 1997 until the end of 2005. The processed data is open source and presented as a high density file (HDF) format. The data was initially accessed using the program HDFview. The entire data file was then imported into Microsoft Excel, for the program's ability to easily manipulate large amounts of information. Using the information presented by Cane et al. and the National Oceanic and Atmospheric Administration website, the data was sorted into 97 separate events. Cane et al. went on to classify the events from Solar Cycle 23 as S, O, or P type. This classification was based on how quickly the event reached its peak fluence and the behavior of the fluence after the peak was reached. This method of classification was adopted and used to further sort the events into three distinct groups (Cane et al. 2006). Of these 97 events only 72 were used for this study. Some events were excluded because they were too small to provide any statistically relevant information; while others occurred so close together that it was extremely difficult to determine beginning and end points. In the latter case many events were combined. The fluence for each ion was separated into eight different energy bins. The data was presented as an hourly fluence in particles per $\text{cm}^2\text{-Sr-sec-MeV/nucleon}$ along with their associated counts. Once the available data

was sorted, formatted, and reviewed, the task was to establish a method to analyze and compare the data for individual events.

Establishing a Method of Comparison

A method to compare each event had to be established before the characteristics of each event could be analyzed. The fluence in each energy bin peaked, seemingly at different times and with haphazard values. Choosing a method of comparison that was relevant from a radiation protection standpoint was also an important factor. Due to its simplicity and relevance the skin dose of an astronaut inside the minimas shielding of an EVA spacesuit was chosen as the method to compare one event to another over either a peak fluence or total fluence. To make the dose somewhat realistic, the U.S. EVA spacesuit glove, also known as the extramobility unit glove, was chosen as shielding. It represents the thinnest part of the spacesuit and therefore provides the least amount of shielding. The construction of the EVA glove can be seen in Table 1.

Table 1. The construction of the EVA spacesuit glove. (Adapted from Moyers et al.)

Item	Material	Thickness (in)	Density(g/cm ³)
Thermal and meteoroid garment	Teflon/Kevlar/nomex	0.02	0.957
	5 plies of aluminized mylar	0.025	0.219
	Neoprene coated nylon ripstop	0.009	1.215
Pressure restraint	Dacron polyester	0.011	0.746
Pressure bladder	Urethane coated nylon ripstop	0.011	0.497

The program “The Stopping Power and Range of Ions in Matter” (SRIM) was used to develop a set of stopping power and range tables for each layer of the glove and a layer of skin. The energies used to generate the table ranged from less than 1 MeV/nucleon to 400 MeV/nucleon. The lower bound was chosen because it represented the minimum energy for an oxygen particle to make it through the dead layer of skin, and since the majority of the dose was believed to be delivered by the fluence between 20 and 100 MeV/nucleon the upper bound gave a wide margin of error. SRIM requires the elemental composition as an input for each material. The compound dictionary in SRIM provided the elemental composition for mylar, teflon, polyester, skin, and nylon. The remaining compositions which had to be manually loaded into SRIM were obtained from Principles of Polymer Science by Bahadur and Sastry (2006). Figure 2 provides a graphical representation of the stopping powers in skin generated by SRIM for both oxygen and iron.

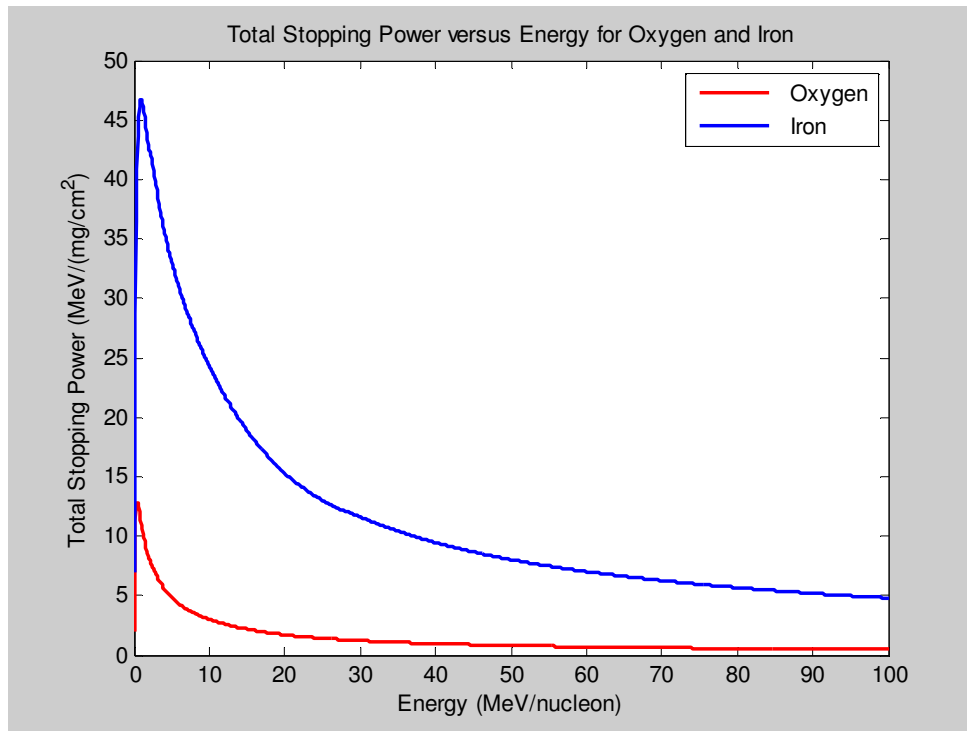


Fig. 2. A graphical representation of the actual data generated by the program SRIM.

The stopping power and range tables were loaded into data files and an interpolation code was written utilizing the program MATLAB to pass the particles through the shielding material. The energy range of 1 to 400 MeV/nucleon was divided into 3,192 individual bins. Each bin represented a particle of given energy and incremented 0.125 MeV/nucleon per bin. The value of 0.125 MeV/nucleon was chosen for the bin width because the change in stopping power over that small of an increment was negligible. After passing through each layer a new energy value was calculated for each bin. If the particle's range happened to be less than the thickness of the material then the program output indicated zero as the final energy for that bin. After the particle passed through each layer of the EVA glove and the layer of dead skin, a new stopping power was

determined for each bin based on the remaining energy. The resulting output was a data file 3,192 lines long that gave a stopping power for each energy bin after passing through the EVA glove and the dead layer of skin. Figure 3 provides an illustration of how MATLAB was used to interpolate the final energy and stopping power after passing through the layers of the glove and the skin.

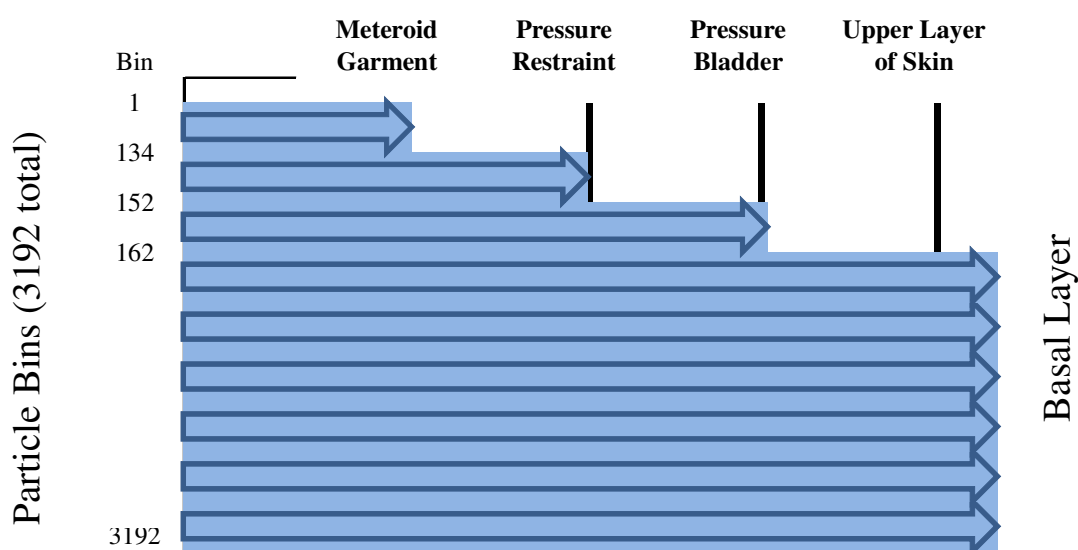


Fig 3. An illustration of how the particles were passed through the EVA glove using MATLAB.

To calculate the dose, the corresponding fluence for each bin had to be determined. The fluence rate values provided by the SIS team are total fluence in the specified energy bin over one hour. The fluence value for a specific energy is plotted by multiplying the fluence rate in each energy bin by the normalization factor. The normalization factors used for oxygen and iron and the effective energy, $\langle E \rangle$, value that

corresponds with that fluence rate are provided in Table 2. A double exponential function was chosen to fit the total event fluence versus energy. A double exponential function was used because it provided a better fit for the tail of each event. After analysis of the curve fit using the double exponential function a second fit was performed, this time using a single exponential function, but just over the energy bins that contributed to the skin dose. This second fit was then used to calculate an integral fluence rate for each of the 3,192 particle bins used in MATLAB. The curve was integrated from 1 to 400 MeV/nucleon using the same interval of 0.125 MeV/nucleon. Equation 1 illustrates how the integration was performed for each bin and Equation 2 is how the dose contribution for each particle bin was calculated.

$$\varphi(x) = \int_x^{x+0.125} a e^{-bx} dx, \text{ where } \varphi \text{ is the fluence rate} \quad (1)$$

$$D = 1.602 \times 10^{-10} \Phi(x) \left(\frac{dT}{\rho dx} \right) \text{ Gy}, \text{ where } \Phi \text{ is the fluence and} \quad (2)$$

$\left(\frac{dT}{\rho dx} \right)$ is the stopping power

Before the dose could be calculated, the integral fluence rate had to be first converted into fluence. The fluence rate was multiplied by a geometry factor of 4π , since isotropy is achieved shortly after the arrival of the first particles (Wilson et al. 1997). The fluence rate was then multiplied by 3,600 seconds to obtain fluence. Finally the relative error due to counting statistics was determined for each dose. The relative error was calculated for each energy bin and error propagation was performed to determine the

total relative error. Background GCR was not subtracted from the fluence used to determine dose. Their contribution to the dose is insignificant for all but the smallest SPEs.

Table 2. A list of normalization factors (A_{BT}) and the corresponding energy $\langle E \rangle$ used for plotting. (Adapted from Cohen 2006¹)

Range	E_{min} (MeV/n)	E_{max} (MeV/n)	$\langle E \rangle$ (MeV/n)	A_{BT}
Oxygen				
1	7.05	9.99	8.71 ± 0.12	0.843 ± 0.047
2	9.99	13.07	11.9 ± 0.11	0.899 ± 0.034
3	13.07	15.63	15.0 ± 0.081	0.881 ± 0.019
4	15.63	20.97	19.0 ± 0.18	0.940 ± 0.036
5	20.97	29.42	25.7 ± 0.28	0.970 ± 0.043
6	29.42	38.94	34.8 ± 0.30	0.933 ± 0.032
7	38.94	63.77	50.8 ± 1.14	0.916 ± 0.082
8	63.77	89.78	76.2 ± 0.82	0.968 ± 0.042
Range	E_{min} (MeV/n)	E_{max} (MeV/n)	$\langle E \rangle$ (MeV/n)	A_{BT}
Iron				
1	10.47	15.83	13.3 ± 0.27	0.853 ± 0.068
2	15.83	21.53	19.3 ± 0.24	0.891 ± 0.044
3	21.53	26.3	25.1 ± 0.17	0.873 ± 0.023
4	26.3	36.31	32.5 ± 0.37	0.937 ± 0.042
5	36.31	52.22	45.1 ± 0.58	0.962 ± 0.049
6	52.22	70.23	62.3 ± 0.59	0.935 ± 0.036
7	70.23	117.53	92.7 ± 2.27	0.904 ± 0.089
8	117.53	167.66	$141. \pm 1.62$	0.967 ± 0.044

*Christina Cohen performed the Bow Tie Analysis for the normalization factors. The table was adapted from the ACE memo: 2006.1.11.CMSC and the provided open source documentation from the SIS team.

Analyzing the Characteristics of Each Event

The 21 events that delivered the largest skin dose due to oxygen were chosen and an analysis of their fluence curves was performed. Events peaked at different times: some events peaked shortly after onset while other events peaked more than a day into the event. If an event does not peak until a day after onset, looking at the first ten hours will not provide any significant information about its eventual dose. A set of criteria that could be applied to each event in order to capture the point at which the fluence in Bin 5, which provided 95% of the total oxygen dose for each event, starts to increase and eventually peak were developed. After analyzing the raw count data, the following criteria were applied to each event. First the count rate in Bin 5 had to exceed 59 counts in one hour. Next, the counts in bin five had to double from event onset. Finally the counts in bin five for the following hour had to be greater than the previous hour. The criteria used ensured that the time in the event in which it began its ascension to the peak would be captured. This also eliminated the problem that arose when events occurred in close proximity to one another. In this case the tail of one event may bleed into the beginning of another event, thereby resulting in increased counts early in that event. The hope was that using this method would provide clues to the eventual outcome of the event. Using the established criteria, the fluence for the next twelve hours was plotted for bin five and six for each of the aforementioned 21 events.

After the threshold was met the fluence data was plotted for the following 12 hours and was then fit with a simple three term polynomial seen in equation 4. Figure 4 provides an example of the resulting polynomial curve.

$$f(x) = ax^3 + bx^4 + cx + d \quad (4)$$

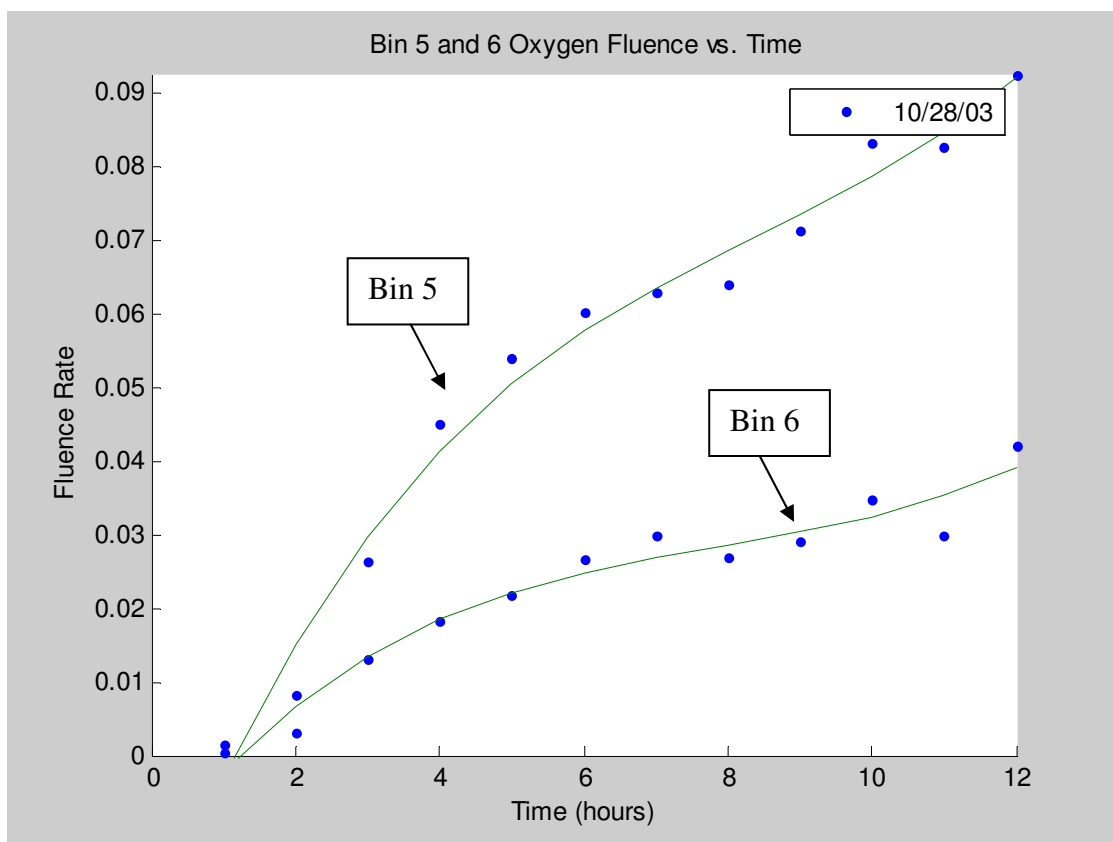


Fig. 4. Plot of oxygen fluence rate versus time after the threshold count had been met.

The first and second derivatives were then calculated each hour for each fitted curve. The slope of the line for the first four and six hours was then summed. The sum and the dose contribution of that bin for the first 24 hours were then plotted. A Weibull function imbedded within the MATLAB program was used to fit the data for the four hour and six hour plot. The general form for the Weibull function is shown in equation 5.

$$f(x) = \left(\frac{\beta}{\alpha}\right) \left(\frac{x-v}{\alpha}\right)^{(\beta-1)} e^{-\left(\frac{x-v}{\alpha}\right)^\beta}, \quad \text{where } v \text{ was set to } 0 \quad (5)$$

and β , α , and $x > 0$

A Weibull function was chosen because of its flexibility to fit a wide range of data and its ability to cover a wide range of shapes. Finally a plot was made using the actual event dose versus the peak proton fluence, greater than 10 MeV, to see if any correlation could be made between the two.

Attempting to analyze iron fluence was problematic, partially because the fluence rates were much lower than those of oxygen, so there was a higher statistical uncertainty. Also, the largest events had some of the lowest Fe/O ratios. The events that showed enhanced iron abundance were generally ones that had a prompt onset followed by a slower decay. These events also tended to have a smaller peak proton fluence (Cane et al. 2006) and a lower calculated oxygen dose. Because of the properties of the SIS instrument and the low fluence rates of iron compared to some of the lighter ions, a simple count threshold method, specific to iron, was not possible. However the initial analysis of the fluence data for both oxygen and iron did show, in the energy ranges that contributed the most to dose, the fluence rates peaked at approximately the same time in most events; therefore the threshold time used for the oxygen analysis was also used to analyze iron for each event. Because of the statistical uncertainty for many of the events, the lower energy bins that do not contribute to the dose will also be analyzed to see if any relationship exists between the fluence rates in the lower energy bins versus the dose from the iron fluence.

CHAPTER IV

RESULTS

Integral Fluence for Oxygen and Iron

Using the data for Oxygen, the 72 events were plotted using the normalized total fluence in each bin versus their $\langle E \rangle$ value. A fit was performed for the entire event using the curve fitting software in MATLAB. Figure 5 provides an example of how the curve fit was performed. The double exponential function used for the fit can be seen in equation 6.

$$f(x) = ae^{bx} + ce^{dx} \quad (6)$$

As Figure 5 illustrates, the coefficient terms b and d are almost identical, suggesting that the curve is shifting to a single exponential function. The October 28, 2003 SPE was a very large event and this type of fit was characteristic with all of the larger SPEs from Solar Cycle 23. As expected, due to their better statistics, the larger events had much better fits than the smaller SPEs.

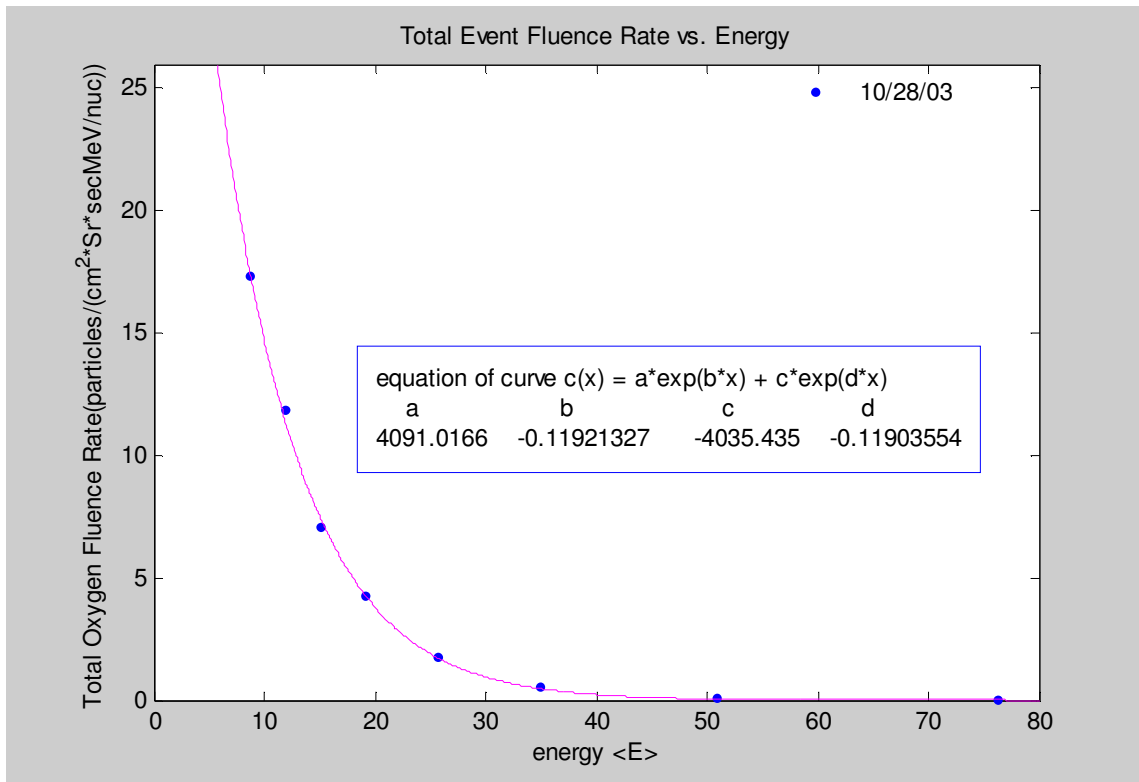


Fig. 5. The total oxygen fluence versus energy $\langle E \rangle$ curve for the SPE that occurred on October 28, 2003.

Figure 6 is a plot of the events classified as O type events. These are events that had prompt onsets but maintained elevated intensities until the associated shock passed (Cane et al. 2006).

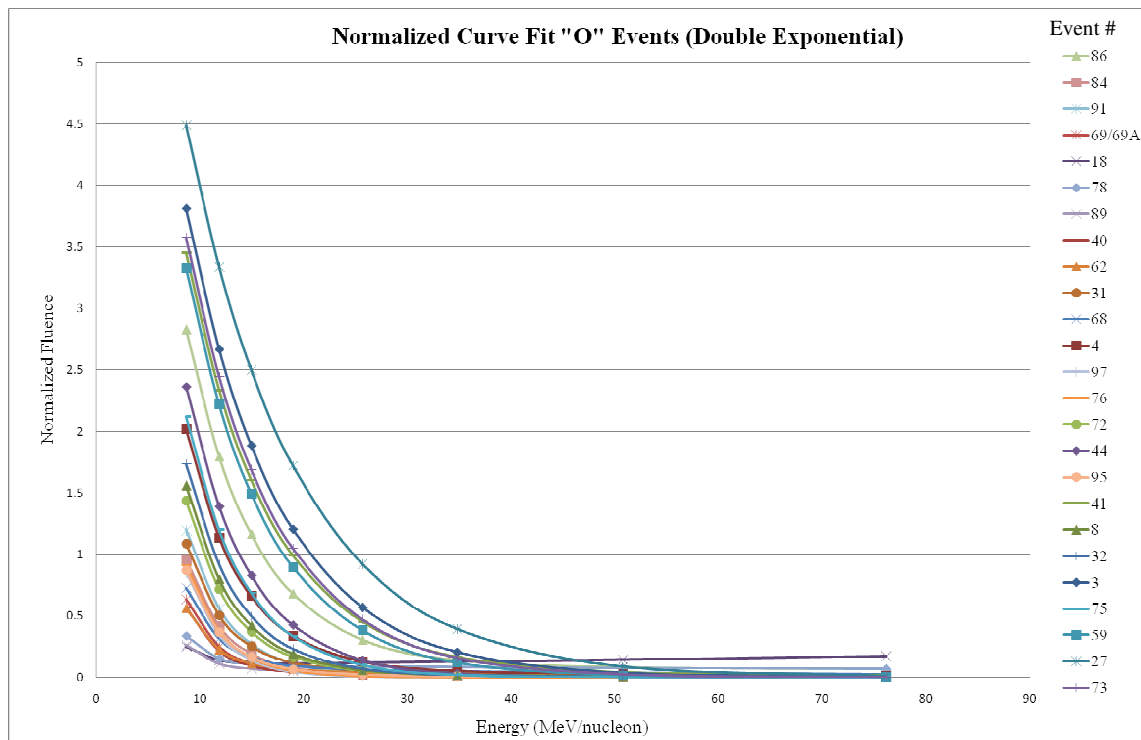


Fig. 6. A normalized plot of the curve fits for type O events.

This plot was generated using the double exponential function that was fitted to the fluence for each event. The goal was to analyze the shape of the curves and to see how the relationship between high and low energy particles, of the same species, varied between each event. The curves from Figure 6 were normalized by setting the coefficients a and c , as seen in Equation 6, equal to each other for all events. The events that delivered a large dose from oxygen ions have much steeper curves than the lower dose events. A conclusion one can draw from this change in shape is the fluence of the higher energy particles tends to make up a greater portion of the overall fluence for the larger events. Figure 7 provides a better example of how the fitted curves shift as the skin dose delivered from oxygen ions increases. By using a ratio of the b and d terms

from Equation 6 and plotting the ratio against each event the shift towards a single exponential function is more evident. The events are arranged in order from the lowest (Event 18) to highest (Event 73) dose delivered by oxygen ions.

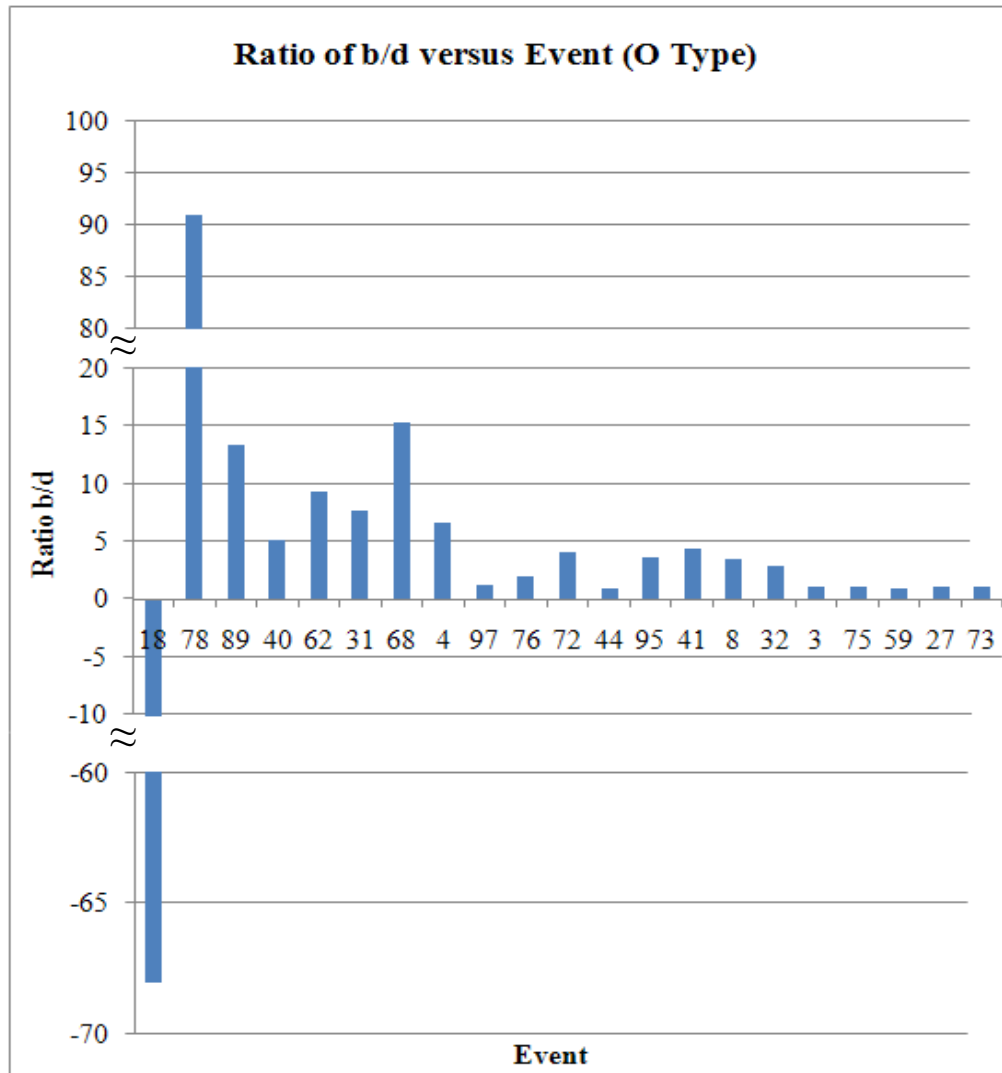


Fig 7. A plot of the b/d ratio for O type events.

Figure 7 includes only single events and as the plot illustrates the ratio goes from extremely large values to ratios equaling one. The ratios given for events 18 and 78 are simply a function of their poor fit which is most probably due to not subtracting the GCR background. For low fluence rate events a single cosmic ray could have a large impact on the total fluence measured in a bin. Figure 8 is a plot of the S type events. These are events that peaked at the time of the associated shock passage and had a slow decay (Cane et al. 2006). The fluence curves were normalized using the same method employed for the O type events. The two events that clearly stand out from the rest are events 20 and 47. Both had much higher calculated skin doses from oxygen ions when compared to the rest of the S events.

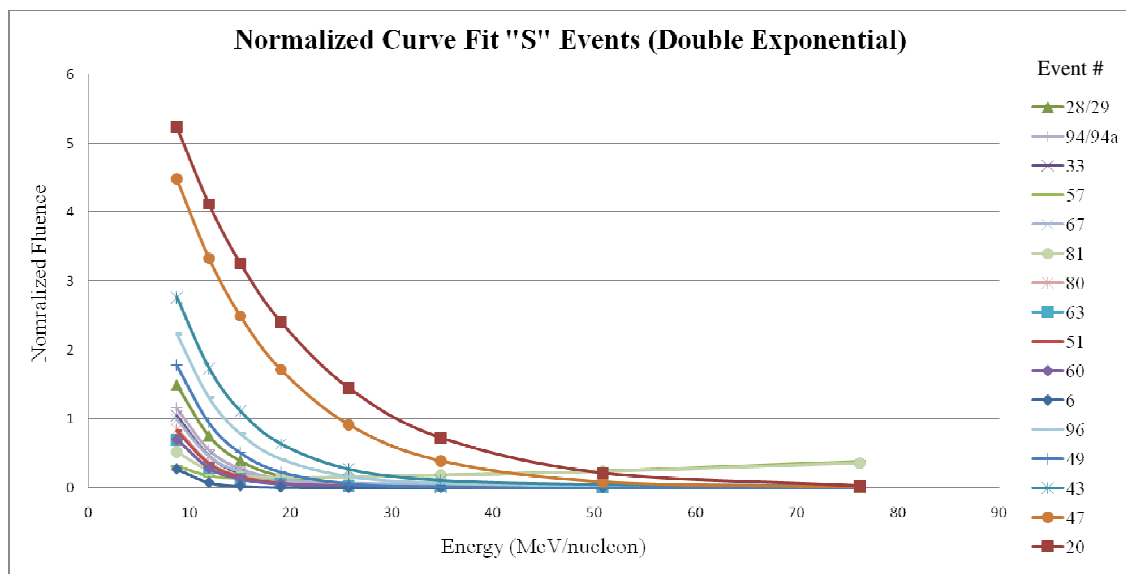


Fig. 8. A normalized plot of the curve fits for S type events.

Figure 9 presents the ratio of b and d for the S type events. This plot follows the same trend as the previous O type plot. One unique characteristic is that events 80, 63, 51, and 60 all had a ratio around five and their dose delivered from oxygen ions was nearly identical. However the relationship between the ratio and skin dose does not hold when comparing S and O type events with similar doses and ratios.

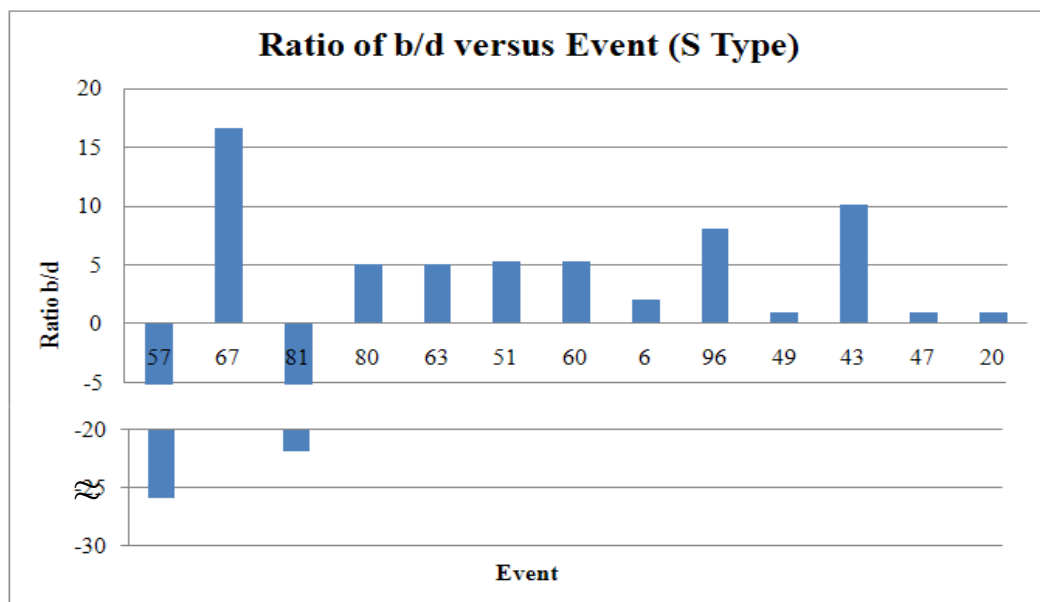


Fig. 9. A plot of the b/d ratio of S type events.

Figure 10 is a combined plot of the ten events that delivered that largest dose from oxygen ions. All ten of these events were classified as O or S type. From this plot we see that the event of October 28, 2003, which happens to have delivered the highest skin dose from oxygen ions, falls in the middle of the plot with the other events distributed around it.

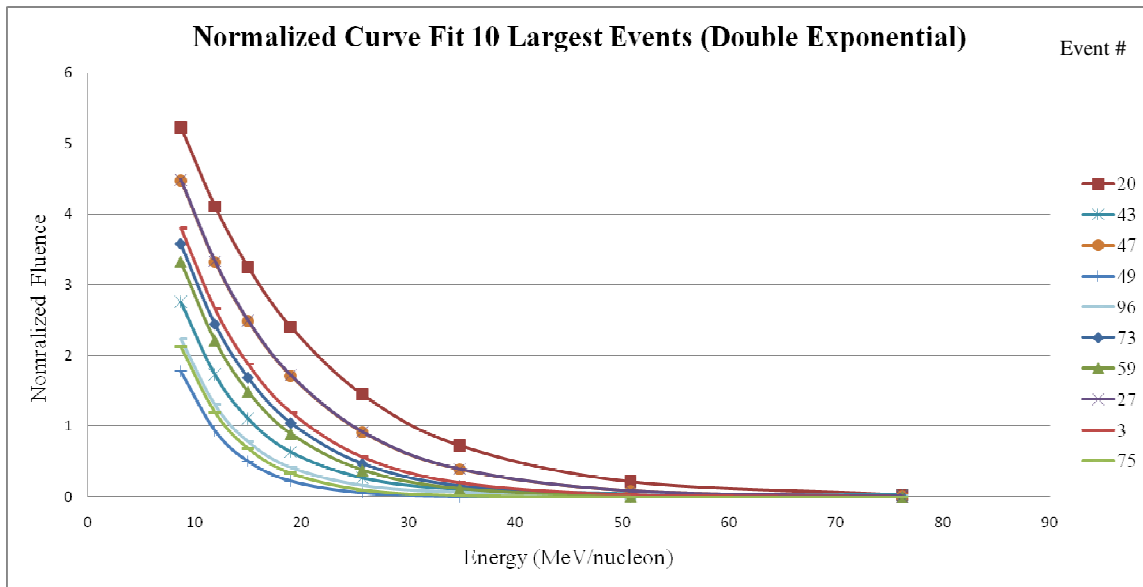


Fig. 10. A normalized plot of the curve fits for the 10 largest events, any type.

For all 10 of the events depicted in Figure 10, with the exception of Event 43, MATLAB returned a curve fit with the b and d coefficients, as seen in Equation 6, equal to each other. Finally, Figure 11 contains the 15 largest P events, as classified by their dose from oxygen ions. These events made up a third of all the events and are classified as having a prompt onset followed by a slower decay (Cane et al. 2006). As a group, these events tended to deliver a smaller dose from oxygen ions compared to the S and O type events. Events classified as P type initially appeared to not follow the same trend as the S and O events. The larger events, as classified by their skin dose delivered by oxygen ions, fell in the middle of the plot with the statistically less significant ones distributed around them. Figure 12 is a plot of the b/d ratio for P type events.

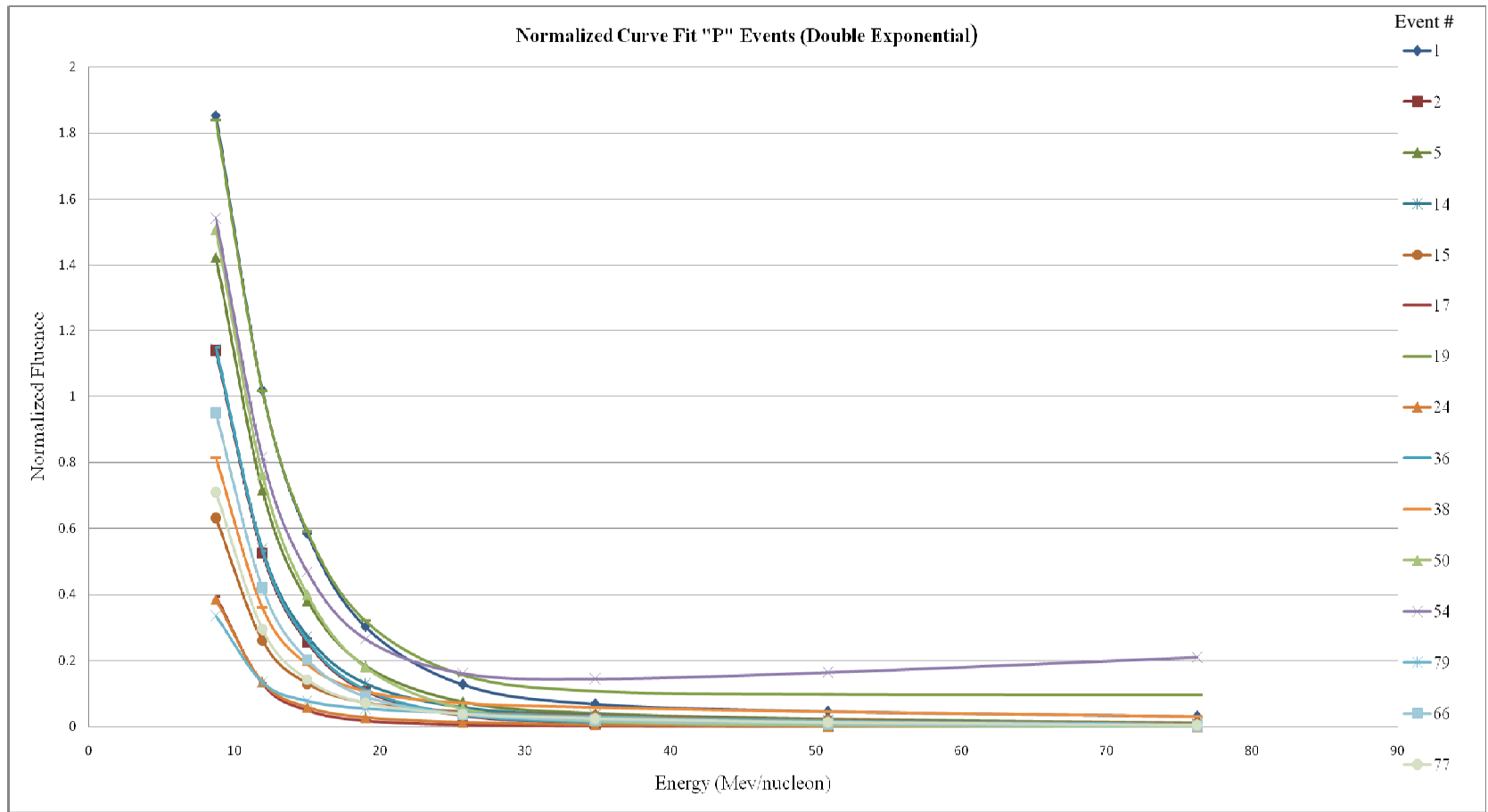


Fig. 11. A normalized plot of the curve fits for P type events.

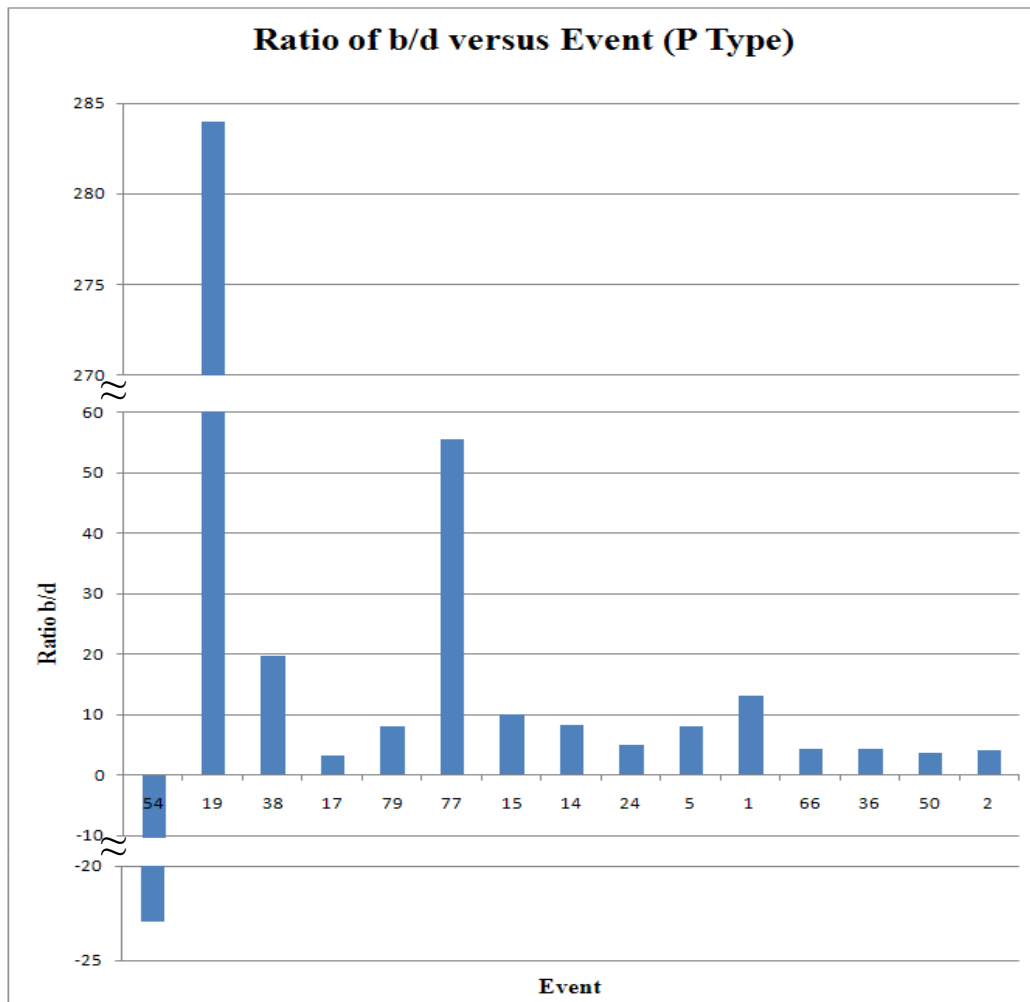


Fig. 12. A plot of the b/d ratio for P type events.

For Events 77 and 19 the curve fit behaved more like a single exponential function because the second term, ce^{dx} , is much smaller when compared to the first term as seen in Equation 6. This leads to one term in the double exponential dominating the second term and thereby dictating the shape of the curve. This resulted in what appeared to be a distribution of the statistically less significant events around the larger dose events. If

we eliminate the four events with the lowest dose due to oxygen ions from figure 11 the same relationship that was seen with the O and S type events becomes evident.

It was clear after plotting and analyzing the curves that finding a single shaped curve to fit every event was not possible. The differences found between individual events were too great and they could not be explained by statistical variations. In order to provide the most accurate estimation of skin dose, each event was plotted again and a single exponential function was used to fit only Energy Bins 4 through 8. This provided a much better fit for the energy ranges of most concern and assured that the curve would asymptotically approach zero. This latter factor was a major problem with using the double exponential function. Equation 7 provides the general form for the function used to fit the curves.

$$f(x) = ae^{bx} \quad (7)$$

The curve fitting data, including the goodness of fit information and the MATLAB code used to generate all curves, can be found in the appendices C and D. Figure 13 shows one example of the fit used for the dose calculation.

The same process was used to fit the iron fluence and it had the same outcome. The fluence rates for iron were much lower than for oxygen and the distribution of the plots most resembled that of the P type oxygen events, with the smaller events distributed around the most statistically significant ones. A main difference was that there were only 19 events that had an iron fluence large enough to fit a curve and

calculate a skin dose with any reasonable statistical certainty. It was not unusual for an event to average less than one count per hour in the energy ranges that would be of concern for dose determination. This resulted in plotting only the largest events or those events with elevated iron abundance.

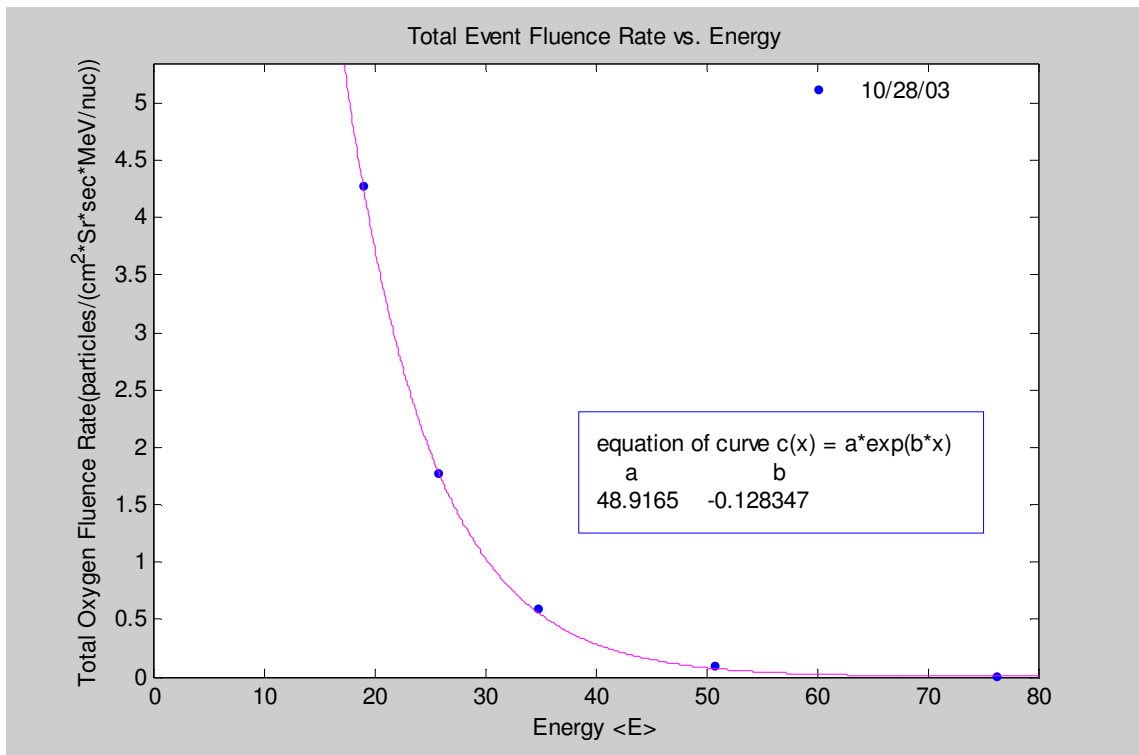


Fig. 13. The oxygen fluence for energy Bins 4 through 8 versus energy for the SPE that occurred on October 28, 2003.

Determination of Skin Dose of Each Event

The integral fluence, along with the calculated stopping power values, was used to calculate the skin dose due to oxygen and iron ions for each event. Table 3 presents the total event skin dose for the 15 largest events due to oxygen ions and Table 4 presents the same for iron ions. The dose contribution for each energy bin along with the statistical uncertainty of each dose based on the total counts obtained in each bin is also shown. The error shown does not take into account errors in the determination of stopping power or errors associated with the curve fit.

As Table 3 shows, for the larger events the oxygen ions alone can deliver a significant skin dose and for many of the events, a majority of the dose was delivered within the first 24 hours. The S type events tended to be lower peaking and longer lasting, with the exception of event 20, which occurred on July 14, 2000 and was one of the largest events of solar cycle 23. S type events generally delivered little dose within the first 24 hours. Events 86, 87, and 88 occurred within days of each other, and because the similarity of the size of each allows no clear separation between these three events, they are grouped together. Table 4 is similar to Table 3 in how most of the dose is delivered in the first 24 hours for all but the S type events. Both tables are arranged in order of the largest to the smallest dose delivered by the respective ion. The dose delivered by the iron spectrum is dependent on two factors. The first being the overall size of the event as measured by peak proton fluence and the second and much more significant factor is the abundance of iron for each particular event. By examining Event 73, which is the largest event of Solar Cycle 23 in terms of the dose delivered by oxygen

Table 3. Calculated skin dose from oxygen ions and relative uncertainty due to oxygen fluence.

Event	Oxygen Skin Dose (Gy)				Total Counts				Total dose (Gy)	Total Dose error due to counting statistics (relative)	Dose Delivered the first 24 hours (Gy)
	Bin 5	Bin 6	Bin 7	Bin 8	Bin 5	Bin 6	Bin 7	Bin 8			
73	4.2E-01	5.7E-02	1.7E-02	4.2E-04	26948	12007	5977	634	4.9E-01	0.67%	4.3E-01
20	3.1E-01	3.8E-02	9.5E-03	1.8E-04	12845	5215	2310	353	3.5E-01	0.97%	2.7E-01
47	2.6E-01	3.5E-02	1.0E-02	2.5E-04	35363	13092	5428	495	3.0E-01	0.60%	5.4E-02
27/27A	1.8E-01	2.9E-02	1.0E-02	3.9E-04	15876	8051	3818	206	2.2E-01	0.89%	2.0E-01
43	7.1E-02	9.1E-03	2.4E-03	4.9E-05	32492	12391	4980	308	8.3E-02	0.62%	3.0E-02
86/87/88	5.4E-02	7.0E-03	1.9E-03	3.8E-05	37314	13266	6009	882	6.3E-02	0.58%	N/A
49	5.8E-02	4.3E-03	6.1E-04	2.9E-06	12526	3554	1117	98	6.2E-02	0.97%	2.2E-02
59	5.0E-02	5.9E-03	1.4E-03	2.4E-05	37404	11223	3431	187	5.7E-02	0.59%	3.9E-02
96	3.1E-02	4.0E-03	1.0E-03	2.1E-05	26851	13218	9892	1944	3.6E-02	0.65%	5.7E-04
75	3.2E-02	2.2E-03	2.7E-04	9.6E-07	10672	3289	1435	183	3.5E-02	1.0%	3.1E-02
3	3.0E-02	2.5E-03	3.9E-04	2.5E-06	37663	9515	2074	89	3.3E-02	0.57%	1.1E-02
32	7.6E-03	9.3E-04	2.4E-04	4.5E-06	11981	4553	2472	369	8.7E-03	1.0%	7.2E-03
2	4.1E-03	8.9E-04	4.7E-04	4.1E-05	9111	5282	4516	1296	5.5E-03	1.2%	4.2E-03
8	3.6E-03	4.1E-04	9.4E-05	1.4E-06	4494	1775	968	177	4.1E-03	1.6%	4.0E-03
50	3.3E-03	4.4E-04	1.2E-04	2.8E-06	5148	2258	1567	332	3.9E-03	1.5%	3.7E-03

Table 4. Calculated skin dose from iron ions and relative uncertainty due to iron fluence.

Event	Iron Skin Dose (Gy)					Total Counts					Total dose (Gy)	Total Dose Error Due to Counting Statistics (relative)	Dose Delivered the First 24 Hours (Gy)
	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8			
20	4.9E-03	3.3E-02	2.8E-03	3.5E-04	1.5E-06	1589	767	300	139	30	4.1E-02	3.7%	3.5E-02
47	2.7E-03	1.6E-02	9.6E-04	7.7E-05	1.2E-07	1119	555	183	133	16	2.0E-02	4.2%	3.7E-03
73	2.1E-03	1.4E-02	1.1E-03	1.2E-04	3.9E-07	1318	559	177	119	16	1.7E-02	4.3%	6.7E-03
2	1.2E-03	1.1E-02	2.3E-03	8.9E-04	4.7E-05	5898	3728	1766	1242	266	1.5E-02	1.8%	1.3E-02
86/87/88	1.2E-03	9.3E-03	1.4E-03	3.3E-04	6.4E-06	1575	795	283	178	27	1.2E-02	3.8%	N/A
50	5.1E-04	4.2E-03	7.6E-04	2.3E-04	7.6E-06	1955	1117	510	337	68	5.8E-03	3.2%	5.7E-03
36	3.8E-04	3.4E-03	7.5E-04	3.0E-04	1.7E-05	1131	670	367	304	75	4.8E-03	4.1%	4.6E-03
32	4.7E-04	3.5E-03	4.3E-04	8.3E-05	9.8E-07	1870	823	243	127	18	4.4E-03	3.8%	4.0E-03
49	5.3E-04	3.5E-03	2.9E-04	3.3E-05	1.3E-07	470	148	32	16	10	4.3E-03	8.5%	5.8E-04
96	3.6E-04	2.6E-03	2.9E-04	4.8E-05	4.2E-07	1373	617	232	105	13	3.3E-03	4.2%	2.3E-04
75	3.4E-04	2.5E-03	2.7E-04	4.6E-05	4.1E-07	610	322	91	40	5	3.1E-03	6.0%	2.6E-03
8	1.9E-04	1.4E-03	1.6E-04	2.9E-05	3.0E-07	760	337	120	64	10	1.7E-03	5.7%	1.7E-03
43	2.3E-04	1.3E-03	5.8E-05	3.4E-06	2.4E-09	296	56	7	6	6	1.6E-03	13%	7.5E-04
59	1.8E-04	1.1E-03	5.9E-05	4.4E-06	5.8E-09	586	155	17	8	4	1.3E-03	8.3%	1.1E-03
72	1.1E-04	8.6E-04	1.4E-04	4.0E-05	1.1E-06	525	211	72	34	2	1.2E-03	7.7%	1.1E-03

ions, we can see that the iron dose was approximately eight percent of the oxygen dose. The normalized Fe/O ratio for this event was 0.097 (Cane et al. 2006). However, if we examine Event 2 which had a normalized Fe/O ratio of 6.40 (Cane et al. 2006) we see that the iron dose was almost three times the dose delivered by the oxygen.

Slope Versus Dose Plot for Oxygen

The calculated dose values for bin five and six and the sum of the first four and six hour slope values after the count threshold was reached were plotted together. Figure 14 is the result of the six hour plot. These plots include O, S, and P type events. As you can see from Figure 14, Event 27 and 75 were outliers. In both cases, the estimated 24-hour dose would have been higher than what actually occurred. The only major set of events excluded from the plot was Events 86, 87, and 88. These events overlapped each other and the data provided no clear point to separate the events from each other. Table 5 provides the results of the six-hour plot in a tabulated format. The events are arranged in order of the highest (event 73) to the lowest (event 6) total event skin dose. The estimated dose was calculated using the Weibull function generated from its respective plot. The actual curve fits can be found in appendix B

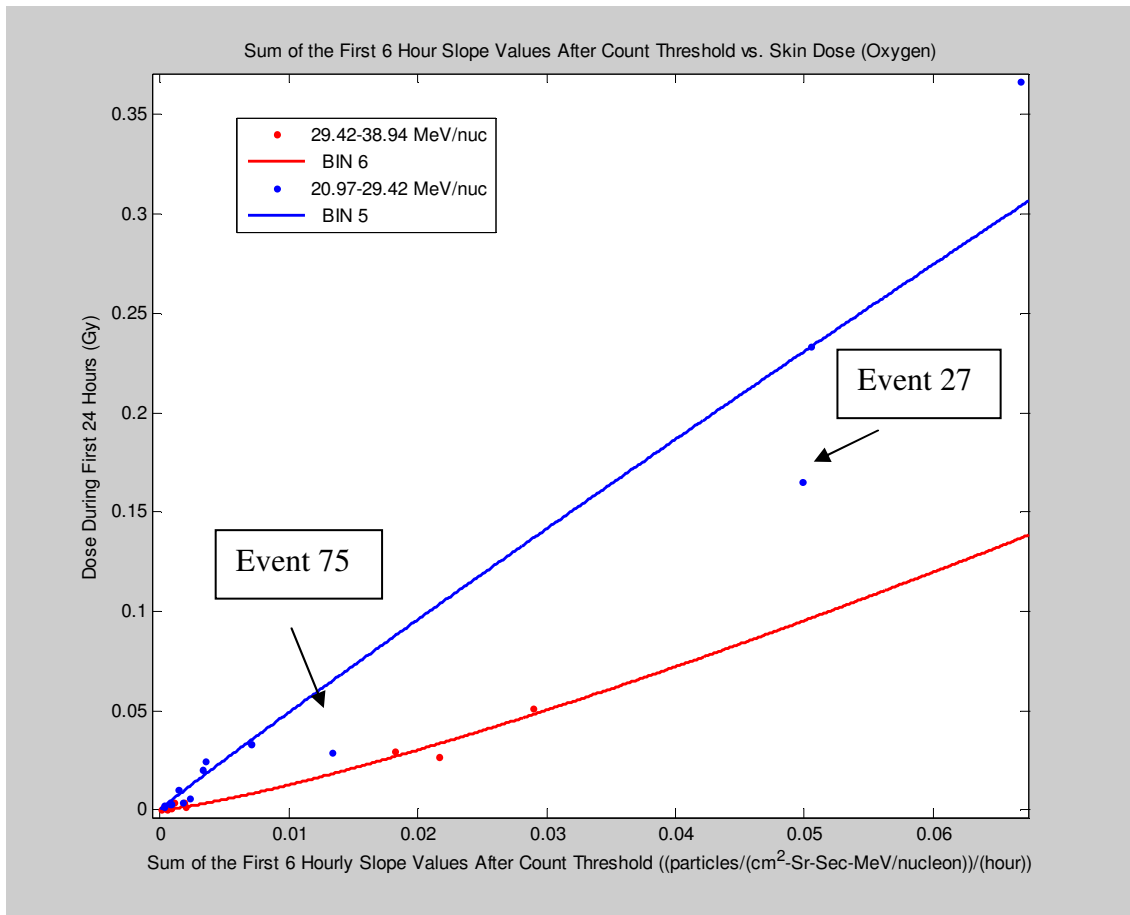


Fig. 14. Plot of the sum of the first six hour slope values versus dose.

Table 5. Actual versus predicted skin dose for the first 24 hours. Calculated from the six hour plot.

Event	Date	Estimated dose(Gy)	Actual (Gy)	% diff	Difference in Gy
73	10/28/2003	3.6E-01	4.3E-01	18%	7.7E-02
20	7/14/2000	2.6E-01	2.7E-01	3%	8.7E-03
47	11/4/2001	2.3E-02	5.4E-02	57%	3.1E-02
27/27A	11/8/2000	2.7E-01	2.0E-01	32%	-6.5E-02
43	9/24/2001	1.9E-02	3.0E-02	38%	1.1E-02
86/87/88	1/15/2005	2.7E-03	3.3E-03	20%	6.8E-04
49	11/22/2001	1.7E-02	2.2E-02	20%	4.4E-03
59	4/21/2002	3.7E-02	3.9E-02	4%	1.6E-03
96	9/7/2005	6.0E-04	5.7E-04	5%	-3.1E-05
75	11/2/2003	6.7E-02	3.1E-02	117%	-3.6E-02
3	4/20/1998	7.8E-03	1.1E-02	30%	3.3E-03
32	4/2/2001	1.2E-02	7.2E-03	73%	-5.3E-03
2	11/6/1997	4.4E-03	4.2E-03	4%	-1.6E-04
8	9/30/1998	9.6E-03	4.0E-03	138%	-5.6E-03
50	12/26/2001	4.9E-03	3.7E-03	31%	-1.1E-03
41	8/15/2001	1.5E-03	2.4E-03	39%	9.6E-04
95	8/22/2005	1.6E-03	2.6E-03	39%	1.0E-03
44	10/1/2001	1.2E-03	1.7E-03	31%	5.4E-04
72	10/26/2003	4.2E-03	2.8E-03	48%	-1.3E-03
76	11/4/2003	1.7E-03	1.8E-03	4%	7.9E-05
36	4/15/2001	1.6E-03	2.1E-03	26%	5.6E-04
6	8/24/1998	5.8E-04	6.1E-04	5%	2.9E-05
	Outlier events included on plot				
	Not included on plot				

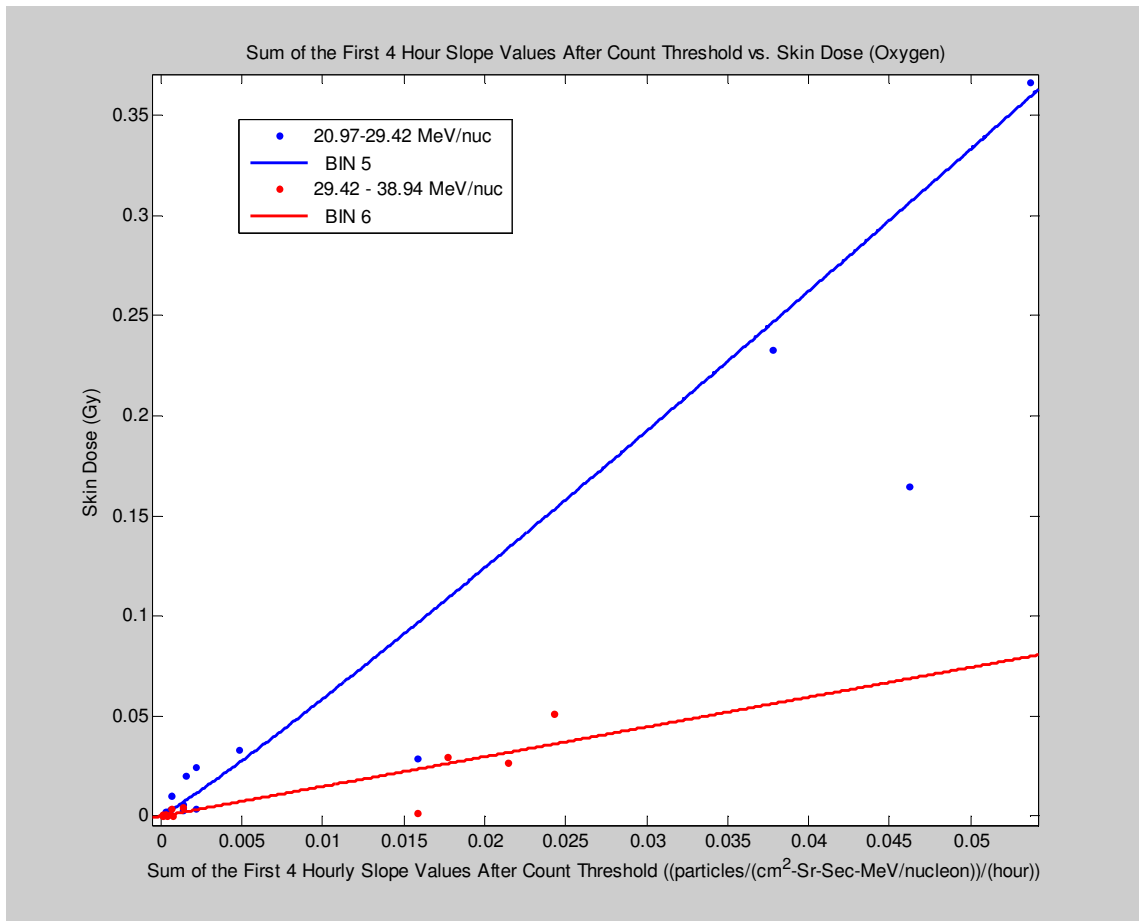


Fig 15. Plot of the sum of the first four hour slope values versus dose.

Figure 15 is the result of the four hour plot. The Weibull function used to fit the data in bin six for the four hour plot provided a poor fit. A simple linear polynomial function was used instead. Table 6 provides the data for the four hour plot in a tabulated format. For all but the two largest events, the difference between the estimated and actual dose is greater for the four hour plot. This is as one might expect since we are using fewer data points to try to predict the ultimate behavior of the fluence rate.

Table 6. Actual versus predicted skin dose for the first 24 hours. Calculated from the four hour plot.

Event	Date	Estimated dose(Gy)	Actual (Gy)	% diff	Difference in Gy
73	10/28/2003	4.0E-01	4.3E-01	9%	3.9E-02
20	7/14/2000	2.7E-01	2.7E-01	1%	-1.7E-03
47	11/4/2001	1.1E-02	5.4E-02	80%	4.3E-02
27/27A	11/8/2000	3.4E-01	2.0E-01	67%	-1.4E-01
43	9/24/2001	1.2E-02	3.0E-02	61%	1.8E-02
86/87/88	1/15/2005	1.6E-03	3.3E-03	53%	1.8E-03
49	11/22/2001	8.0E-03	2.2E-02	63%	1.4E-02
59	4/21/2002	2.8E-02	3.9E-02	26%	1.0E-02
96	9/7/2005	2.6E-05	5.7E-04	95%	5.5E-04
75	11/2/2003	1.2E-01	3.1E-02	285%	-8.8E-02
3	4/20/1998	3.1E-03	1.1E-02	72%	8.0E-03
32	4/2/2001	7.4E-03	7.2E-03	3%	-1.9E-04
2	11/6/1997	2.7E-03	4.2E-03	35%	1.5E-03
8	9/30/1998	1.2E-02	4.0E-03	202%	-8.2E-03
50	12/26/2001	7.1E-03	3.7E-03	91%	-3.4E-03
41	8/15/2001	1.1E-03	2.4E-03	55%	1.3E-03
95	8/22/2005	1.2E-03	2.6E-03	55%	1.4E-03
44	10/1/2001	7.0E-04	1.7E-03	60%	1.0E-03
72	10/26/2003	9.7E-04	2.8E-03	66%	1.8E-03
76	11/4/2003	1.2E-03	1.8E-03	32%	5.8E-04
36	4/15/2001	1.8E-03	2.1E-03	16%	3.3E-04
6	8/24/1998	2.5E-04	6.1E-04	58%	3.6E-04
	Outlier events included on plot				
	Not included on plot				

Clearly, overestimating a dose by almost 300% using this method is not acceptable, therefore using any time less than six hours to predict how the event may evolve would not be desirable. Without knowing the exact dose limits that might be employed it is hard to evaluate which events would have given a false positive indication to seek shelter. The outlier, Events 27 and 75, do provide some indication that false positives could result from using the four-hour plot. If we arranged the events from the highest to lowest estimated dose, Event 27 would become the second largest and Event 75 would become the third largest event. What is more worrisome than a false positive is a false negative. We can see that for the four-hour plot the chance of that increases greatly for larger events. The estimated dose for Event 47 is about five times less than the actual calculated dose using the four hour plot.

To determine whether or not using the curves from Figure 14 to estimate the dose would provide any benefit, the amount of dose sparing at six hours was determined. Table 7 illustrates the approximate percentage of total dose delivered in the first six hours and the amount of dose sparing accomplished, had an order been given to seek shelter.

Table 7. The dose sparing accomplished by taking shelter six hours after the count threshold had been reached.

Event	Date	Total Event Dose (cGy)	% of Total Dose Delivered at 6 Hours	Dose Spared (cGy)
73	10/28/2003	49	8.7%	45
20	7/14/2000	35	11.9%	31
47	11/4/2001	30	1.0%	30
27/27A	11/8/2000	22	27.6%	16
43	9/24/2001	8.3	2.0%	8.1
49	11/22/2001	6.2	2.9%	6.1
59	4/21/2002	5.7	10.3%	5.1
75	11/2/2003	3.5	43.4%	2.0
3	4/20/1998	3.3	2.9%	3.2
32	4/2/2001	0.87	13.2%	0.76
2	11/6/1997	0.55	20.3%	0.44
8	9/30/1998	0.41	57.8%	0.17
50	12/26/2001	0.39	60.5%	0.15
41	8/15/2001	0.36	19.9%	0.28
95	8/22/2005	0.34	24.3%	0.26
44	10/1/2001	0.29	10.1%	0.26
72	10/26/2003	0.29	25.7%	0.21
76	11/4/2003	0.28	23.8%	0.21
36	4/15/2001	0.23	45.0%	0.13
6	8/24/1998	0.18	13.2%	0.15

It is important to remember that the oxygen fluence only makes up a fraction of the total dose. So in reality, the total skin dose at six hours would be much greater. The amount of dose sparing is also dependant on shelter being readily available and the astronauts being able to transition into it rapidly.

Figure 16 demonstrates the relationship between oxygen dose and peak proton fluence. There may be some variations from event to event but the basic relationship holds for each event in Solar Cycle 23.

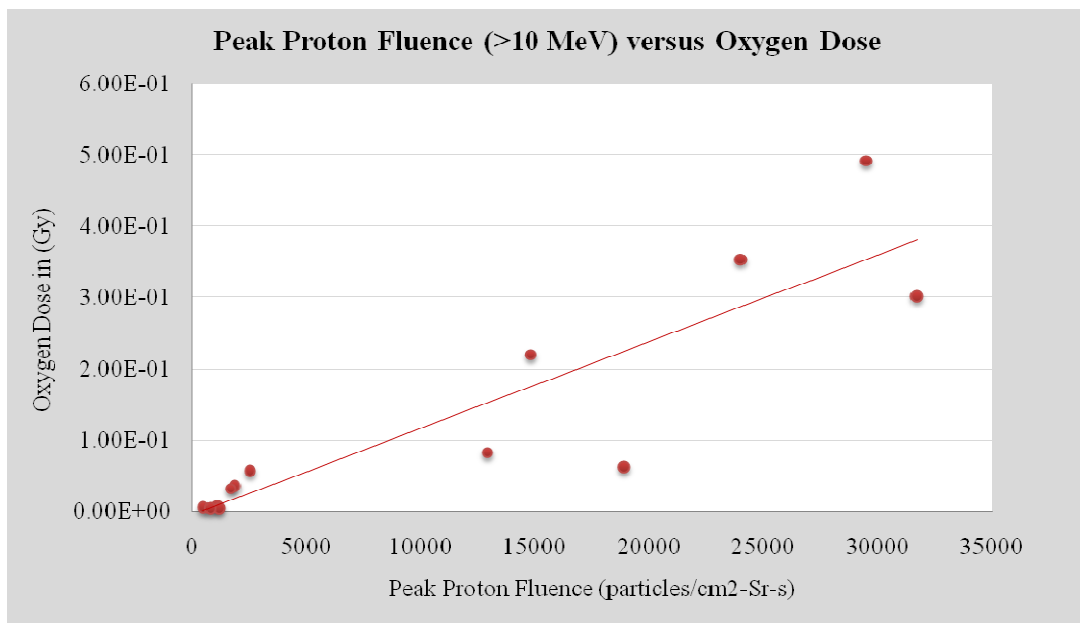


Fig. 16. Peak proton fluence versus oxygen dose for the fourteen largest events. (Proton fluence adapted from Cane et al 2006).

It should be noted that the proton energy used in Figure 16 is above the minimum energy to deliver a dose to an astronaut during an EVA. The minimum energy to penetrate an

extravehicular mobility unit spacesuit glove is about 11.1 MeV for protons (Moyers et al. 2006).

Predicting a Dose from Iron Ions

Attempting to use the same method employed for oxygen with the iron fluence proved to be as problematic as it first appeared. Event 96, which provided the tenth largest iron dose, had counts only reaching five to fifteen counts per hour in the period immediately preceding the peak. That corresponds to a statistical uncertainty of about 40% for the reported fluence values. A second problem with using the oxygen count threshold was that for many of the events, the iron fluence in Bin 5 peaked prior to the Bin 5 oxygen fluence. The goal was to identify when the fluence started to rise to its peak, so evaluating a curve that had almost peaked or already peaked defeated the purpose and resulted in negative six hour slope values for four of the ten largest events.

One alternative method was to determine whether or not the lower energy bins, which provide better statistical certainty, could be used to predict what would occur in the energy bins that contributed the most to dose. To illustrate why this did not work, a comparison of two events that provide approximately the same skin dose is used. Table 8 compares Events 2 and 73 using the dose delivered by iron ions and the total iron fluence in each of their first five energy bins.

Table 8. A comparison of the total iron fluence for Events 2 and 73 and the associated skin dose from iron ions.

Event	Bin								Dose (Gy)
	1	2	3	4	5	6	7	8	
73	7.3E-01	1.9E-01	4.8E-02	2.0E-02	4.9E-03	9.6E-04	5.0E-04	5.5E-05	1.7E-02
2	3.8E-02	2.1E-02	1.3E-02	9.4E-03	4.3E-03	1.9E-03	6.0E-04	1.7E-04	1.5E-02

As one might expect the fluence values for Bin 5 are relatively close. This bin delivers about two thirds of the total iron dose for each event with almost all the remaining being delivered by energy Bins 4 and 6. However the fluence in Bin 1, which offers the best statistics, is more than twenty times greater for Event 73. Figure 17 further illustrates this discrepancy by applying the count threshold used previously and plotting the fluence rate in Bin 1. The figure shows the six hour sum of the slope for event two is about twenty times less than for Event 73. There is clearly no reliable relationship between the lower and higher energy bins from one event to the next. This reaffirms the previous finding that one best fit curve could not be used to fit each event since the energy distribution of particles are different for each event. Applying the same analysis used for oxygen to try and predict the iron fluence is not possible.

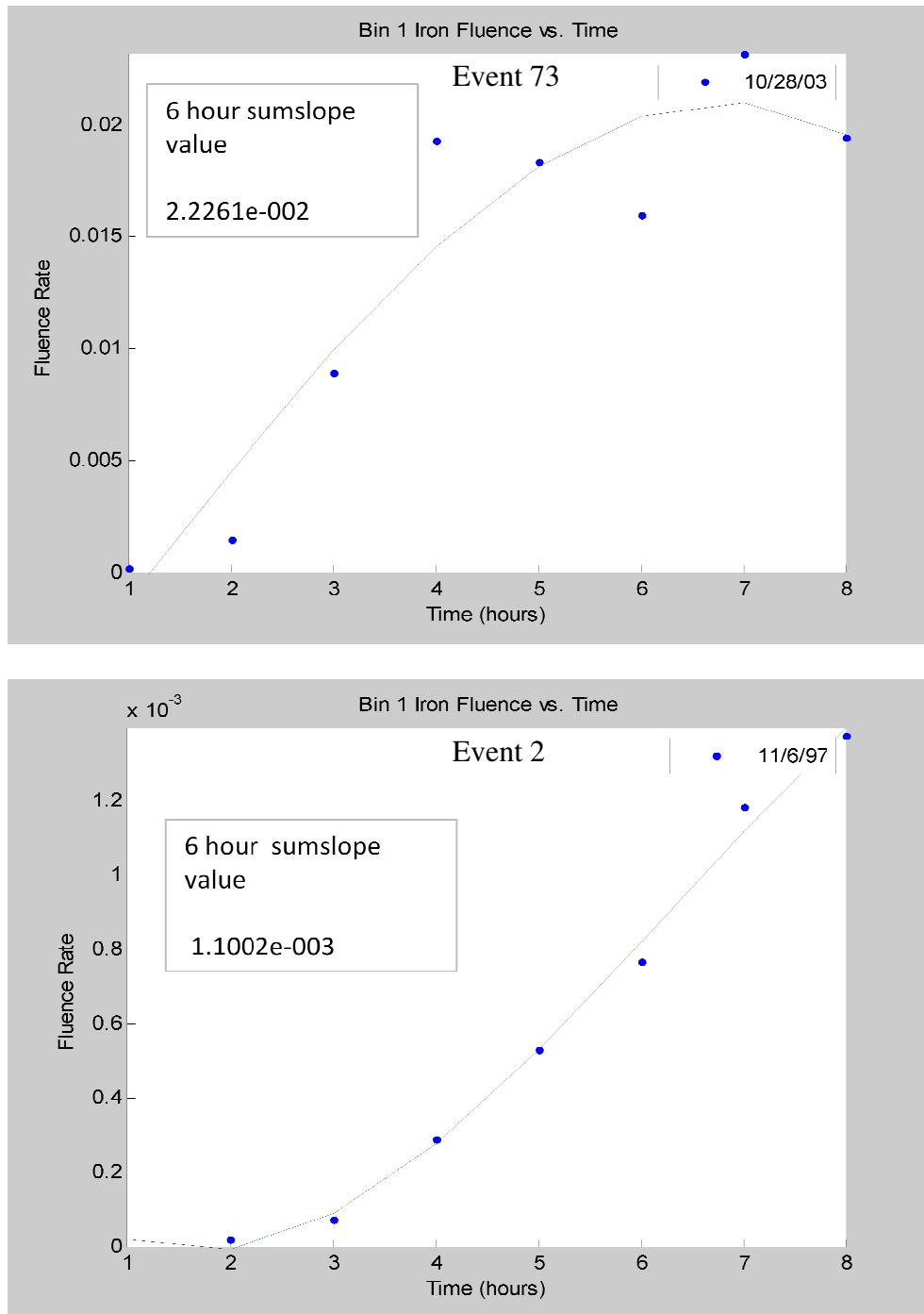


Fig 17. Plot of the Bin 1 fluence rate versus time for two separate events.

CHAPTER V

CONCLUSION

Conclusions

The thesis research has been able to accomplish its main goals. First, a method was established to estimate the dose delivered by oxygen ions based on its fluence early in an event. Secondly, this paper showed that because of iron's low fluence rates, prediction of the dose due to iron ions became problematic. The results also demonstrated that the overall size of the event, as measured by peak proton fluence, does provide some correlation to the dose delivered by the oxygen fluence but not necessarily to the iron fluence, and likewise one could use the data derived from the oxygen fluence to predict the proton fluence and thereby predict the proton dose delivered.

Future work

This research focused on the hourly fluence data to predict an events outcome. The SIS also provides two minute data for each ion species. While not possible for small events, this two minute data would show changes in the particle fluence more quickly than the hourly data and possibly provide a better prediction in a shorter period of time. The sooner the size of an event can be predicted, the more dose sparing can be accomplished. It is clear that more work needs to be performed predicting iron fluence. As this research showed, there may be some correlation between the proton and oxygen fluence but very little correlation with the iron fluence. As Event 2 demonstrated, even a

small event measured in terms of total fluence can deliver a substantial dose if the event has an overabundance of iron.

REFERENCES

- Bahadur P, Sastry NV. Principles of Polymer Science. Second Edition. Oxford: United Kingdom: Alpha Science International; 2006.
- Cane HV, Mewaldt RA, Cohen CMS, Rosenvinge TTV. Role of flares and shocks in determining solar energetic particle abundances. *Journal of Geophysical Research* 111: doi:10.1029/2005JA011071; 2006.
- Cohen CMS. SIS geometry factor and bow tie analysis. ACE Memo ID: 2006.1.11.CMSC; 2006.
- Jun I, Swimm RT, Ruzmaikin A, Fenman J, Tylka AJ, Dietrich WF. Statistics of solar energetic particle events: fluences, durations, and time intervals. *Advances in Space Research* 40: 304-312; 2007.
- Lario D. Solar energetic particles. Commission 49: Interplanetary Plasma and Heliosphere. 103-107; 2007.
- Moyers MF, Saganti PB, Nelson GA. EVA space suit proton and electron threshold energy measurements by XCT and range shifting. *Radiation Measurements* 41: 1216-1226; 2006.
- NCRP. National Council on Radiation Protection, Guidance on radiation received in space activities. Bethesda, Maryland, 1989.
- Reames DV. Coronal abundances determined from energetic particles. *Advances in Space Research* 15: 41-51; 1995.
- Reedy RC. Solar particle events and their radiation threats. Los Alamos: Los Alamos National Laboratory, New Mexico; 1998.
- Stone EC, Cohen CMS, Cook WR, Cummings AC, Gauld B, Keckman B, Leske RA, Mewaldt RA, Thayer MR, Dougherty BL, Grumm RL, Miliken BD, Radocinski RG, Wiedenbeck ME, Christian ER, Shuman S, Rosenvinge TTV. The solar isotope spectrometer for the advanced composition explorer. *Space Science Reviews* 86: 357-408; 1998.

Wilson JW, Shinn JL, Simonsen LC, Cucinotta FA, Dubey RR, Jordan WR, Jones TD, Chang CK, Kim MY. Exposures to solar particle events in deep space missions. Hampton, Virginia: National Aeronautics and Space Administration, Langley Research Center; NASA Technical Paper 3668; 1997.

APPENDIX A

ELEMENTAL COMPOSITION DATA AND SRIM GENERATED STOPPING
POWER AND RANGE TABLES

Elemental Composition Data Used in SRIM	
Material	% Atomic Composition
Kevlar/Nomex/Teflon	C-36.37% F-9.09 N-4.55% O-4.55% H-45.45%
Mylar	H-36.36% C-45.45% O-18.18%
Polyester	H-36.36% C-45.45% O-18.18%
Urethane coated Nylon Neoprene coated	H-57.90% C-31.58% N-5.26% O-5.26%
Nylon	H-53.58% C-35.72% N-3.57% O-3.57% Cl-3.57%
Skin	H-62.1% C-10.63% N-1.88% O-25.23% S-.04% Cl-.05% Na-.05% K-.02%

Fig A1. Elemental composition data used to generate stopping power and range tables in SRIM. (Adapted from SRIM and Bahudur and Sastry.)

Kevlar_Nomex_Teflon (Oxygen)			Mylar (Oxygen)		
Energy (MeV/nuc)	Stopping Power (Mev/mg/cm ²)	Range (μ m)	Energy (MeV/nuc)	Stopping Power (Mev/mg/cm ²)	Range (μ m)
9.38E-01	9.72E+00	1.71E+01	9.38E-01	9.85E+00	7.61E+01
1.00E+00	9.55E+00	1.81E+01	1.00E+00	9.67E+00	8.08E+01
1.06E+00	9.37E+00	1.92E+01	1.06E+00	9.49E+00	8.55E+01
1.13E+00	9.20E+00	2.02E+01	1.13E+00	9.32E+00	9.03E+01
1.25E+00	8.87E+00	2.24E+01	1.25E+00	8.98E+00	1.00E+02
1.41E+00	8.49E+00	2.52E+01	1.41E+00	8.59E+00	1.13E+02
1.56E+00	8.14E+00	2.82E+01	1.56E+00	8.24E+00	1.27E+02
1.72E+00	7.81E+00	3.13E+01	1.72E+00	7.91E+00	1.41E+02
1.88E+00	7.51E+00	3.45E+01	1.88E+00	7.60E+00	1.55E+02
2.03E+00	7.25E+00	3.79E+01	2.03E+00	7.34E+00	1.70E+02
2.19E+00	7.05E+00	4.14E+01	2.19E+00	7.15E+00	1.86E+02
2.34E+00	6.83E+00	4.50E+01	2.34E+00	6.94E+00	2.02E+02
2.50E+00	6.60E+00	4.87E+01	2.50E+00	6.71E+00	2.19E+02
2.81E+00	6.20E+00	5.64E+01	2.81E+00	6.30E+00	2.54E+02
3.13E+00	5.85E+00	6.47E+01	3.13E+00	5.95E+00	2.91E+02
3.44E+00	5.53E+00	7.35E+01	3.44E+00	5.64E+00	3.30E+02
3.75E+00	5.26E+00	8.28E+01	3.75E+00	5.36E+00	3.71E+02
4.06E+00	5.00E+00	9.26E+01	4.06E+00	5.10E+00	4.15E+02
4.38E+00	4.78E+00	1.03E+02	4.38E+00	4.88E+00	4.60E+02
5.00E+00	4.38E+00	1.25E+02	5.00E+00	4.48E+00	5.57E+02
5.63E+00	4.05E+00	1.49E+02	5.63E+00	4.14E+00	6.63E+02
6.25E+00	3.76E+00	1.75E+02	6.25E+00	3.86E+00	7.76E+02
6.88E+00	3.52E+00	2.02E+02	6.88E+00	3.61E+00	8.98E+02
7.50E+00	3.30E+00	2.32E+02	7.50E+00	3.39E+00	1.03E+03
8.13E+00	3.12E+00	2.63E+02	8.13E+00	3.20E+00	1.16E+03
8.75E+00	2.95E+00	2.97E+02	8.75E+00	3.03E+00	1.31E+03
9.38E+00	2.80E+00	3.32E+02	9.38E+00	2.88E+00	1.46E+03
1.00E+01	2.67E+00	3.68E+02	1.00E+01	2.74E+00	1.63E+03
1.06E+01	2.55E+00	4.07E+02	1.06E+01	2.62E+00	1.79E+03
1.13E+01	2.44E+00	4.47E+02	1.13E+01	2.51E+00	1.97E+03
1.25E+01	2.25E+00	5.33E+02	1.25E+01	2.31E+00	2.35E+03
1.41E+01	2.06E+00	6.51E+02	1.41E+01	2.11E+00	2.86E+03
1.56E+01	1.90E+00	7.78E+02	1.56E+01	1.95E+00	3.42E+03
1.72E+01	1.76E+00	9.17E+02	1.72E+01	1.81E+00	4.03E+03
1.88E+01	1.65E+00	1.07E+03	1.88E+01	1.69E+00	4.68E+03

Kevlar_Nomex_Teflon (Oxygen)			Mylar (Oxygen)		
Energy (MeV/nuc)	Stopping Power (Mev/mg/cm ²)	Range (μ m)	Energy (MeV/nuc)	Stopping Power (Mev/mg/cm ²)	Range (μ m)
2.03E+01	1.55E+00	1.22E+03	2.03E+01	1.58E+00	5.37E+03
2.19E+01	1.46E+00	1.39E+03	2.19E+01	1.49E+00	6.11E+03
2.34E+01	1.38E+00	1.57E+03	2.34E+01	1.41E+00	6.89E+03
2.50E+01	1.31E+00	1.76E+03	2.50E+01	1.33E+00	7.72E+03
2.81E+01	1.18E+00	2.17E+03	2.81E+01	1.20E+00	9.51E+03
3.13E+01	1.07E+00	2.62E+03	3.13E+01	1.09E+00	1.15E+04
3.44E+01	9.94E-01	3.12E+03	3.44E+01	1.01E+00	1.37E+04
3.75E+01	9.26E-01	3.64E+03	3.75E+01	9.43E-01	1.60E+04
4.06E+01	8.68E-01	4.21E+03	4.06E+01	8.83E-01	1.85E+04
4.38E+01	8.18E-01	4.81E+03	4.38E+01	8.32E-01	2.11E+04
5.00E+01	7.35E-01	6.12E+03	5.00E+01	7.48E-01	2.69E+04
5.63E+01	6.69E-01	7.57E+03	5.63E+01	6.81E-01	3.32E+04
6.25E+01	6.15E-01	9.15E+03	6.25E+01	6.26E-01	4.02E+04
6.88E+01	5.71E-01	1.09E+04	6.88E+01	5.81E-01	4.77E+04
7.50E+01	5.34E-01	1.27E+04	7.50E+01	5.43E-01	5.58E+04
8.13E+01	5.02E-01	1.47E+04	8.13E+01	5.10E-01	6.44E+04
8.75E+01	4.74E-01	1.67E+04	8.75E+01	4.82E-01	7.35E+04
9.38E+01	4.50E-01	1.89E+04	9.38E+01	4.57E-01	8.32E+04
1.00E+02	4.28E-01	2.12E+04	1.00E+02	4.36E-01	9.34E+04
1.06E+02	4.09E-01	2.37E+04	1.06E+02	4.16E-01	1.04E+05
1.13E+02	3.92E-01	2.62E+04	1.13E+02	3.99E-01	1.15E+05
1.25E+02	3.63E-01	3.16E+04	1.25E+02	3.70E-01	1.39E+05
1.41E+02	3.34E-01	3.89E+04	1.41E+02	3.40E-01	1.71E+05
1.56E+02	3.10E-01	4.67E+04	1.56E+02	3.16E-01	2.05E+05
1.72E+02	2.91E-01	5.52E+04	1.72E+02	2.96E-01	2.43E+05
1.88E+02	2.74E-01	6.42E+04	1.88E+02	2.79E-01	2.82E+05
2.03E+02	2.60E-01	7.37E+04	2.03E+02	2.65E-01	3.24E+05
2.19E+02	2.48E-01	8.37E+04	2.19E+02	2.52E-01	3.68E+05
2.34E+02	2.38E-01	9.41E+04	2.34E+02	2.42E-01	4.14E+05
2.50E+02	2.28E-01	1.05E+05	2.50E+02	2.32E-01	4.62E+05
2.81E+02	2.13E-01	1.28E+05	2.81E+02	2.17E-01	5.63E+05
3.13E+02	2.01E-01	1.53E+05	3.13E+02	2.04E-01	6.71E+05
3.44E+02	1.91E-01	1.78E+05	3.44E+02	1.94E-01	7.85E+05
3.75E+02	1.82E-01	2.06E+05	3.75E+02	1.85E-01	9.04E+05
4.00E+02	1.77E-01	2.28E+05	4.00E+02	1.80E-01	1.00E+06

Neoprene Coated Nylon Ripstop (Oxygen)			Pressure Restraint (Oxygen)		
Energy (MeV/nuc)	Stopping Power (Mev/mg/cm ²)	Range (μ m)	Energy (MeV/nuc)	Stopping Power (Mev/mg/cm ²)	Range (μ m)
9.38E-01	1.07E+01	1.25E+01	9.38E-01	9.85E+00	2.24E+01
1.00E+00	1.04E+01	1.33E+01	1.00E+00	9.67E+00	2.38E+01
1.06E+00	1.02E+01	1.41E+01	1.06E+00	9.49E+00	2.51E+01
1.13E+00	1.00E+01	1.49E+01	1.13E+00	9.32E+00	2.66E+01
1.25E+00	9.60E+00	1.65E+01	1.25E+00	8.98E+00	2.95E+01
1.41E+00	9.13E+00	1.87E+01	1.41E+00	8.59E+00	3.33E+01
1.56E+00	8.71E+00	2.10E+01	1.56E+00	8.24E+00	3.72E+01
1.72E+00	8.33E+00	2.34E+01	1.72E+00	7.91E+00	4.14E+01
1.88E+00	7.98E+00	2.59E+01	1.88E+00	7.60E+00	4.57E+01
2.03E+00	7.68E+00	2.85E+01	2.03E+00	7.34E+00	5.01E+01
2.19E+00	7.49E+00	3.12E+01	2.19E+00	7.15E+00	5.47E+01
2.34E+00	7.27E+00	3.40E+01	2.34E+00	6.94E+00	5.95E+01
2.50E+00	7.03E+00	3.68E+01	2.50E+00	6.71E+00	6.43E+01
2.81E+00	6.57E+00	4.28E+01	2.81E+00	6.30E+00	7.46E+01
3.13E+00	6.18E+00	4.92E+01	3.13E+00	5.95E+00	8.55E+01
3.44E+00	5.83E+00	5.60E+01	3.44E+00	5.64E+00	9.70E+01
3.75E+00	5.53E+00	6.32E+01	3.75E+00	5.36E+00	1.09E+02
4.06E+00	5.26E+00	7.08E+01	4.06E+00	5.10E+00	1.22E+02
4.38E+00	5.02E+00	7.88E+01	4.38E+00	4.88E+00	1.35E+02
5.00E+00	4.60E+00	9.58E+01	5.00E+00	4.48E+00	1.64E+02
5.63E+00	4.25E+00	1.14E+02	5.63E+00	4.14E+00	1.95E+02
6.25E+00	3.95E+00	1.34E+02	6.25E+00	3.86E+00	2.28E+02
6.88E+00	3.69E+00	1.56E+02	6.88E+00	3.61E+00	2.64E+02
7.50E+00	3.47E+00	1.78E+02	7.50E+00	3.39E+00	3.02E+02
8.13E+00	3.27E+00	2.03E+02	8.13E+00	3.20E+00	3.42E+02
8.75E+00	3.10E+00	2.28E+02	8.75E+00	3.03E+00	3.85E+02
9.38E+00	2.94E+00	2.55E+02	9.38E+00	2.88E+00	4.30E+02
1.00E+01	2.80E+00	2.84E+02	1.00E+01	2.74E+00	4.78E+02
1.06E+01	2.68E+00	3.14E+02	1.06E+01	2.62E+00	5.28E+02
1.13E+01	2.56E+00	3.45E+02	1.13E+01	2.51E+00	5.80E+02
1.25E+01	2.37E+00	4.11E+02	1.25E+01	2.31E+00	6.90E+02
1.41E+01	2.16E+00	5.02E+02	1.41E+01	2.11E+00	8.41E+02
1.56E+01	1.99E+00	6.00E+02	1.56E+01	1.95E+00	1.01E+03
1.72E+01	1.85E+00	7.06E+02	1.72E+01	1.81E+00	1.18E+03
1.88E+01	1.73E+00	8.21E+02	1.88E+01	1.69E+00	1.37E+03

Neoprene Coated Nylon Ripstop (Oxygen)			Pressure Restraint (Oxygen)		
Energy (MeV/nuc)	Stopping Power (Mev/mg/cm ²)	Range (μ m)	Energy (MeV/nuc)	Stopping Power (Mev/mg/cm ²)	Range (μ m)
2.03E+01	1.62E+00	9.43E+02	2.03E+01	1.58E+00	1.58E+03
2.19E+01	1.53E+00	1.07E+03	2.19E+01	1.49E+00	1.80E+03
2.34E+01	1.44E+00	1.21E+03	2.34E+01	1.41E+00	2.03E+03
2.50E+01	1.37E+00	1.36E+03	2.50E+01	1.33E+00	2.27E+03
2.81E+01	1.23E+00	1.67E+03	2.81E+01	1.20E+00	2.80E+03
3.13E+01	1.12E+00	2.02E+03	3.13E+01	1.09E+00	3.38E+03
3.44E+01	1.04E+00	2.40E+03	3.44E+01	1.01E+00	4.01E+03
3.75E+01	9.66E-01	2.81E+03	3.75E+01	9.43E-01	4.70E+03
4.06E+01	9.06E-01	3.24E+03	4.06E+01	8.83E-01	5.43E+03
4.38E+01	8.53E-01	3.71E+03	4.38E+01	8.32E-01	6.20E+03
5.00E+01	7.66E-01	4.72E+03	5.00E+01	7.48E-01	7.90E+03
5.63E+01	6.98E-01	5.83E+03	5.63E+01	6.81E-01	9.77E+03
6.25E+01	6.42E-01	7.05E+03	6.25E+01	6.26E-01	1.18E+04
6.88E+01	5.96E-01	8.38E+03	6.88E+01	5.81E-01	1.40E+04
7.50E+01	5.57E-01	9.79E+03	7.50E+01	5.43E-01	1.64E+04
8.13E+01	5.23E-01	1.13E+04	8.13E+01	5.10E-01	1.89E+04
8.75E+01	4.94E-01	1.29E+04	8.75E+01	4.82E-01	2.16E+04
9.38E+01	4.69E-01	1.46E+04	9.38E+01	4.57E-01	2.45E+04
1.00E+02	4.47E-01	1.64E+04	1.00E+02	4.36E-01	2.75E+04
1.06E+02	4.27E-01	1.83E+04	1.06E+02	4.16E-01	3.06E+04
1.13E+02	4.09E-01	2.02E+04	1.13E+02	3.99E-01	3.39E+04
1.25E+02	3.79E-01	2.44E+04	1.25E+02	3.70E-01	4.08E+04
1.41E+02	3.48E-01	3.00E+04	1.41E+02	3.40E-01	5.02E+04
1.56E+02	3.24E-01	3.61E+04	1.56E+02	3.16E-01	6.04E+04
1.72E+02	3.03E-01	4.26E+04	1.72E+02	2.96E-01	7.13E+04
1.88E+02	2.86E-01	4.95E+04	1.88E+02	2.79E-01	8.29E+04
2.03E+02	2.71E-01	5.69E+04	2.03E+02	2.65E-01	9.52E+04
2.19E+02	2.59E-01	6.46E+04	2.19E+02	2.52E-01	1.08E+05
2.34E+02	2.48E-01	7.26E+04	2.34E+02	2.42E-01	1.22E+05
2.50E+02	2.38E-01	8.10E+04	2.50E+02	2.32E-01	1.36E+05
2.81E+02	2.22E-01	9.88E+04	2.81E+02	2.17E-01	1.65E+05
3.13E+02	2.09E-01	1.18E+05	3.13E+02	2.04E-01	1.97E+05
3.44E+02	1.99E-01	1.38E+05	3.44E+02	1.94E-01	2.31E+05
3.75E+02	1.90E-01	1.59E+05	3.75E+02	1.85E-01	2.66E+05
4.00E+02	1.84E-01	1.76E+05	4.00E+02	1.80E-01	2.95E+05

Pressure Bladder (Oxygen)			Skin (Oxygen)		
Energy (MeV/nuc)	Stopping Power (Mev/mg/cm ²)	Range (μ m)	Energy (MeV/nuc)	Stopping Power (Mev/mg/cm ²)	Range (μ m)
9.38E-01	1.17E+01	2.81E+01	6.25E-01	1.23E+01	1.03E+01
1.00E+00	1.14E+01	2.98E+01	6.88E-01	1.21E+01	1.11E+01
1.06E+00	1.12E+01	3.16E+01	7.50E-01	1.19E+01	1.19E+01
1.13E+00	1.10E+01	3.34E+01	8.13E-01	1.16E+01	1.27E+01
1.25E+00	1.05E+01	3.71E+01	8.75E-01	1.14E+01	1.36E+01
1.41E+00	9.99E+00	4.20E+01	9.38E-01	1.17E+01	1.38E+01
1.56E+00	9.51E+00	4.71E+01	1.00E+00	1.09E+01	1.46E+01
1.72E+00	9.08E+00	5.25E+01	1.06E+00	1.07E+01	1.55E+01
1.88E+00	8.68E+00	5.81E+01	1.13E+00	1.05E+01	1.63E+01
2.03E+00	8.35E+00	6.39E+01	1.25E+00	1.01E+01	1.81E+01
2.19E+00	8.13E+00	7.00E+01	1.41E+00	9.57E+00	2.05E+01
2.34E+00	7.88E+00	7.62E+01	1.56E+00	9.13E+00	2.29E+01
2.50E+00	7.60E+00	8.27E+01	1.72E+00	8.73E+00	2.55E+01
2.81E+00	7.09E+00	9.63E+01	1.88E+00	8.36E+00	2.82E+01
3.13E+00	6.65E+00	1.11E+02	2.03E+00	8.05E+00	3.10E+01
3.44E+00	6.28E+00	1.26E+02	2.19E+00	7.85E+00	3.38E+01
3.75E+00	5.94E+00	1.43E+02	2.34E+00	7.63E+00	3.68E+01
4.06E+00	5.65E+00	1.60E+02	2.50E+00	7.37E+00	3.99E+01
4.38E+00	5.38E+00	1.78E+02	2.81E+00	6.88E+00	4.63E+01
5.00E+00	4.93E+00	2.17E+02	3.13E+00	6.47E+00	5.32E+01
5.63E+00	4.55E+00	2.59E+02	3.44E+00	6.11E+00	6.05E+01
6.25E+00	4.23E+00	3.04E+02	3.75E+00	5.80E+00	6.82E+01
6.88E+00	3.96E+00	3.53E+02	4.06E+00	5.53E+00	7.63E+01
7.50E+00	3.72E+00	4.05E+02	4.38E+00	5.28E+00	8.48E+01
8.13E+00	3.50E+00	4.61E+02	5.00E+00	4.86E+00	1.03E+02
8.75E+00	3.32E+00	5.19E+02	5.63E+00	4.50E+00	1.23E+02
9.38E+00	3.15E+00	5.81E+02	6.25E+00	4.20E+00	1.44E+02
1.00E+01	3.00E+00	6.46E+02	6.88E+00	3.94E+00	1.66E+02
1.06E+01	2.86E+00	7.14E+02	7.50E+00	3.71E+00	1.90E+02
1.13E+01	2.74E+00	7.85E+02	8.13E+00	3.51E+00	2.16E+02
1.25E+01	2.52E+00	9.37E+02	8.75E+00	3.33E+00	2.42E+02
1.41E+01	2.29E+00	1.15E+03	9.38E+00	3.16E+00	2.71E+02
1.56E+01	2.11E+00	1.37E+03	1.00E+01	3.01E+00	3.00E+02
1.72E+01	1.95E+00	1.62E+03	1.06E+01	2.88E+00	3.32E+02
1.88E+01	1.82E+00	1.88E+03	1.13E+01	2.75E+00	3.64E+02

Pressure Bladder (Oxygen)			Skin (Oxygen)		
Energy (MeV/nuc)	Stopping Power (Mev/mg/cm ²)	Range (μ m)	Energy (MeV/nuc)	Stopping Power (Mev/mg/cm ²)	Range (μ m)
2.03E+01	1.70E+00	2.17E+03	1.25E+01	2.53E+00	4.34E+02
2.19E+01	1.60E+00	2.47E+03	1.41E+01	2.30E+00	5.29E+02
2.34E+01	1.51E+00	2.79E+03	1.56E+01	2.11E+00	6.33E+02
2.50E+01	1.43E+00	3.13E+03	1.72E+01	1.94E+00	7.46E+02
2.81E+01	1.29E+00	3.86E+03	1.88E+01	1.80E+00	8.69E+02
3.13E+01	1.18E+00	4.67E+03	2.03E+01	1.68E+00	1.00E+03
3.44E+01	1.09E+00	5.55E+03	2.19E+01	1.57E+00	1.14E+03
3.75E+01	1.02E+00	6.50E+03	2.34E+01	1.48E+00	1.29E+03
4.06E+01	9.53E-01	7.51E+03	2.50E+01	1.40E+00	1.45E+03
4.38E+01	8.97E-01	8.59E+03	2.81E+01	1.27E+00	1.79E+03
5.00E+01	8.06E-01	1.09E+04	3.13E+01	1.17E+00	2.17E+03
5.63E+01	7.33E-01	1.35E+04	3.44E+01	1.08E+00	2.58E+03
6.25E+01	6.74E-01	1.64E+04	3.75E+01	1.01E+00	3.02E+03
6.88E+01	6.25E-01	1.95E+04	4.06E+01	9.43E-01	3.49E+03
7.50E+01	5.84E-01	2.28E+04	4.38E+01	8.88E-01	3.99E+03
8.13E+01	5.49E-01	2.63E+04	5.00E+01	7.97E-01	5.08E+03
8.75E+01	5.19E-01	3.00E+04	5.63E+01	7.26E-01	6.29E+03
9.38E+01	4.92E-01	3.40E+04	6.25E+01	6.68E-01	7.61E+03
1.00E+02	4.69E-01	3.81E+04	6.88E+01	6.19E-01	9.04E+03
1.06E+02	4.48E-01	4.25E+04	7.50E+01	5.79E-01	1.06E+04
1.13E+02	4.29E-01	4.70E+04	8.13E+01	5.44E-01	1.22E+04
1.25E+02	3.97E-01	5.67E+04	8.75E+01	5.14E-01	1.39E+04
1.41E+02	3.65E-01	6.98E+04	9.38E+01	4.88E-01	1.58E+04
1.56E+02	3.39E-01	8.40E+04	1.00E+02	4.64E-01	1.77E+04
1.72E+02	3.18E-01	9.92E+04	1.06E+02	4.44E-01	1.97E+04
1.88E+02	2.99E-01	1.15E+05	1.13E+02	4.25E-01	2.18E+04
2.03E+02	2.84E-01	1.33E+05	1.25E+02	3.94E-01	2.63E+04
2.19E+02	2.71E-01	1.51E+05	1.41E+02	3.62E-01	3.24E+04
2.34E+02	2.59E-01	1.69E+05	1.56E+02	3.36E-01	3.90E+04
2.50E+02	2.49E-01	1.89E+05	1.72E+02	3.15E-01	4.60E+04
2.81E+02	2.33E-01	2.30E+05	1.88E+02	2.97E-01	5.35E+04
3.13E+02	2.19E-01	2.75E+05	2.03E+02	2.82E-01	6.14E+04
3.44E+02	2.08E-01	3.21E+05	2.19E+02	2.69E-01	6.98E+04
3.75E+02	1.99E-01	3.70E+05	2.34E+02	2.58E-01	7.85E+04
4.00E+02	1.93E-01	4.11E+05	2.50E+02	2.48E-01	8.76E+04

Pressure Bladder (Oxygen)			Skin (Oxygen)		
Energy (MeV/nuc)	Stopping Power (Mev/mg/cm ²)	Range (μ m)	Energy (MeV/nuc)	Stopping Power (Mev/mg/cm ²)	Range (μ m)
			2.81E+02	2.31E-01	1.07E+05
			3.13E+02	2.18E-01	1.27E+05
			3.44E+02	2.07E-01	1.49E+05
			3.75E+02	1.98E-01	1.72E+05
			4.00E+02	1.92E-01	1.90E+05

Kevlar_Nomex_Teflon (Iron)			Mylar (Iron)		
Energy (MeV/nuc)	Stopping Power (Mev/mg/cm ²)	Range (μ m)	Energy (MeV/nuc)	Stopping Power (Mev/mg/cm ²)	Range (μ m)
9.82E-01	4.30E+01	2.15E+01	9.82E-01	4.12E+01	9.53E+01
1.07E+00	4.30E+01	2.27E+01	1.07E+00	4.12E+01	1.01E+02
1.16E+00	4.29E+01	2.39E+01	1.16E+00	4.11E+01	1.06E+02
1.25E+00	4.27E+01	2.51E+01	1.25E+00	4.10E+01	1.12E+02
1.43E+00	4.21E+01	2.76E+01	1.43E+00	4.06E+01	1.23E+02
1.61E+00	4.15E+01	3.00E+01	1.61E+00	4.00E+01	1.34E+02
1.79E+00	4.08E+01	3.26E+01	1.79E+00	3.94E+01	1.46E+02
1.96E+00	4.00E+01	3.51E+01	1.96E+00	3.88E+01	1.57E+02
2.14E+00	3.97E+01	3.77E+01	2.14E+00	3.86E+01	1.69E+02
2.32E+00	3.92E+01	4.04E+01	2.32E+00	3.82E+01	1.81E+02
2.50E+00	3.85E+01	4.30E+01	2.50E+00	3.75E+01	1.93E+02
2.68E+00	3.78E+01	4.57E+01	2.68E+00	3.69E+01	2.05E+02
2.86E+00	3.71E+01	4.85E+01	2.86E+00	3.63E+01	2.17E+02
3.04E+00	3.65E+01	5.13E+01	3.04E+00	3.58E+01	2.30E+02
3.21E+00	3.59E+01	5.42E+01	3.21E+00	3.52E+01	2.43E+02
3.57E+00	3.47E+01	6.01E+01	3.57E+00	3.42E+01	2.69E+02
4.02E+00	3.33E+01	6.77E+01	4.02E+00	3.29E+01	3.03E+02
4.46E+00	3.21E+01	7.56E+01	4.46E+00	3.18E+01	3.38E+02
4.91E+00	3.09E+01	8.39E+01	4.91E+00	3.07E+01	3.74E+02
5.36E+00	2.99E+01	9.24E+01	5.36E+00	2.97E+01	4.12E+02
5.80E+00	2.89E+01	1.01E+02	5.80E+00	2.87E+01	4.50E+02
6.25E+00	2.80E+01	1.10E+02	6.25E+00	2.79E+01	4.91E+02
6.70E+00	2.71E+01	1.20E+02	6.70E+00	2.70E+01	5.32E+02
7.14E+00	2.63E+01	1.30E+02	7.14E+00	2.62E+01	5.75E+02

8.04E+00	2.48E+01	1.50E+02	8.04E+00	2.48E+01	6.64E+02
8.93E+00	2.35E+01	1.71E+02	8.93E+00	2.35E+01	7.58E+02
9.82E+00	2.24E+01	1.94E+02	9.82E+00	2.23E+01	8.57E+02
1.07E+01	2.13E+01	2.18E+02	1.07E+01	2.13E+01	9.61E+02
1.16E+01	2.04E+01	2.43E+02	1.16E+01	2.03E+01	1.07E+03
1.25E+01	1.95E+01	2.69E+02	1.25E+01	1.95E+01	1.18E+03
1.43E+01	1.79E+01	3.24E+02	1.43E+01	1.79E+01	1.43E+03
1.61E+01	1.66E+01	3.84E+02	1.61E+01	1.66E+01	1.69E+03
1.79E+01	1.55E+01	4.49E+02	1.79E+01	1.55E+01	1.97E+03
1.96E+01	1.46E+01	5.18E+02	1.96E+01	1.46E+01	2.27E+03
2.14E+01	1.37E+01	5.91E+02	2.14E+01	1.38E+01	2.59E+03
Kevlar_Nomex_Teflon (Iron)			Mylar (Iron)		
Energy (MeV/nuc)	Stopping Power (Mev/mg/cm ²)	Range (µm)	Energy (MeV/nuc)	Stopping Power (Mev/mg/cm ²)	Range (µm)
2.32E+01	1.30E+01	6.69E+02	2.32E+01	1.30E+01	2.93E+03
2.50E+01	1.24E+01	7.51E+02	2.50E+01	1.24E+01	3.29E+03
2.68E+01	1.18E+01	8.37E+02	2.68E+01	1.18E+01	3.67E+03
2.86E+01	1.13E+01	9.27E+02	2.86E+01	1.13E+01	4.06E+03
3.04E+01	1.09E+01	1.02E+03	3.04E+01	1.08E+01	4.47E+03
3.21E+01	1.04E+01	1.12E+03	3.21E+01	1.04E+01	4.90E+03
3.57E+01	9.67E+00	1.32E+03	3.57E+01	9.62E+00	5.80E+03
4.02E+01	8.88E+00	1.60E+03	4.02E+01	8.83E+00	7.04E+03
4.46E+01	8.22E+00	1.91E+03	4.46E+01	8.18E+00	8.37E+03
4.91E+01	7.66E+00	2.23E+03	4.91E+01	7.62E+00	9.81E+03
5.36E+01	7.19E+00	2.58E+03	5.36E+01	7.15E+00	1.13E+04
5.80E+01	6.78E+00	2.95E+03	5.80E+01	6.74E+00	1.30E+04
6.25E+01	6.42E+00	3.35E+03	6.25E+01	6.39E+00	1.47E+04
6.70E+01	6.10E+00	3.76E+03	6.70E+01	6.07E+00	1.65E+04
7.14E+01	5.82E+00	4.20E+03	7.14E+01	5.79E+00	1.84E+04
8.04E+01	5.32E+00	5.13E+03	8.04E+01	5.30E+00	2.25E+04
8.93E+01	4.92E+00	6.14E+03	8.93E+01	4.89E+00	2.70E+04
9.82E+01	4.58E+00	7.24E+03	9.82E+01	4.56E+00	3.18E+04
1.07E+02	4.30E+00	8.40E+03	1.07E+02	4.28E+00	3.69E+04
1.16E+02	4.06E+00	9.65E+03	1.16E+02	4.04E+00	4.24E+04
1.25E+02	3.85E+00	1.10E+04	1.25E+02	3.83E+00	4.82E+04
1.43E+02	3.50E+00	1.38E+04	1.43E+02	3.48E+00	6.06E+04
1.61E+02	3.23E+00	1.69E+04	1.61E+02	3.21E+00	7.42E+04
1.79E+02	3.01E+00	2.02E+04	1.79E+02	2.99E+00	8.88E+04

1.96E+02	2.83E+00	2.38E+04	1.96E+02	2.81E+00	1.04E+05
2.14E+02	2.67E+00	2.75E+04	2.14E+02	2.66E+00	1.21E+05
2.32E+02	2.54E+00	3.15E+04	2.32E+02	2.53E+00	1.39E+05
2.50E+02	2.43E+00	3.57E+04	2.50E+02	2.42E+00	1.57E+05
2.68E+02	2.33E+00	4.01E+04	2.68E+02	2.32E+00	1.76E+05
2.86E+02	2.25E+00	4.46E+04	2.86E+02	2.23E+00	1.96E+05
3.04E+02	2.17E+00	4.93E+04	3.04E+02	2.16E+00	2.17E+05
3.21E+02	2.10E+00	5.41E+04	3.21E+02	2.09E+00	2.38E+05
3.57E+02	1.99E+00	6.43E+04	3.57E+02	1.98E+00	2.83E+05
4.00E+02	1.88E+00	7.71E+04	4.00E+02	1.87E+00	3.39E+05

Neoprene Coated Nylon Ripstop (Iron)			Pressure Restraint (Iron)		
Energy (MeV/nuc)	Stopping Power (Mev/mg/cm ²)	Range (μ m)	Energy (MeV/nuc)	Stopping Power (Mev/mg/cm ²)	Range (μ m)
9.82E-01	4.45E+01	1.57E+01	9.82E-01	4.12E+01	2.80E+01
1.07E+00	4.44E+01	1.66E+01	1.07E+00	4.12E+01	2.96E+01
1.16E+00	4.41E+01	1.75E+01	1.16E+00	4.11E+01	3.12E+01
1.25E+00	4.38E+01	1.85E+01	1.25E+00	4.10E+01	3.29E+01
1.43E+00	4.31E+01	2.03E+01	1.43E+00	4.06E+01	3.61E+01
1.61E+00	4.23E+01	2.23E+01	1.61E+00	4.00E+01	3.94E+01
1.79E+00	4.15E+01	2.42E+01	1.79E+00	3.94E+01	4.28E+01
1.96E+00	4.06E+01	2.62E+01	1.96E+00	3.88E+01	4.62E+01
2.14E+00	4.04E+01	2.82E+01	2.14E+00	3.86E+01	4.97E+01
2.32E+00	4.00E+01	3.02E+01	2.32E+00	3.82E+01	5.31E+01
2.50E+00	3.93E+01	3.23E+01	2.50E+00	3.75E+01	5.67E+01
2.68E+00	3.86E+01	3.44E+01	2.68E+00	3.69E+01	6.02E+01
2.86E+00	3.79E+01	3.65E+01	2.86E+00	3.63E+01	6.39E+01
3.04E+00	3.72E+01	3.87E+01	3.04E+00	3.58E+01	6.76E+01
3.21E+00	3.65E+01	4.09E+01	3.21E+00	3.52E+01	7.13E+01
3.57E+00	3.53E+01	4.55E+01	3.57E+00	3.42E+01	7.90E+01
4.02E+00	3.39E+01	5.14E+01	4.02E+00	3.29E+01	8.90E+01
4.46E+00	3.27E+01	5.75E+01	4.46E+00	3.18E+01	9.93E+01
4.91E+00	3.15E+01	6.39E+01	4.91E+00	3.07E+01	1.10E+02
5.36E+00	3.04E+01	7.05E+01	5.36E+00	2.97E+01	1.21E+02
5.80E+00	2.94E+01	7.73E+01	5.80E+00	2.87E+01	1.32E+02
6.25E+00	2.85E+01	8.43E+01	6.25E+00	2.79E+01	1.44E+02
6.70E+00	2.76E+01	9.16E+01	6.70E+00	2.70E+01	1.56E+02
7.14E+00	2.68E+01	9.91E+01	7.14E+00	2.62E+01	1.69E+02

8.04E+00	2.53E+01	1.15E+02	8.04E+00	2.48E+01	1.95E+02
8.93E+00	2.40E+01	1.31E+02	8.93E+00	2.35E+01	2.23E+02
9.82E+00	2.28E+01	1.49E+02	9.82E+00	2.23E+01	2.52E+02
1.07E+01	2.17E+01	1.67E+02	1.07E+01	2.13E+01	2.82E+02
1.16E+01	2.08E+01	1.86E+02	1.16E+01	2.03E+01	3.14E+02
1.25E+01	1.99E+01	2.06E+02	1.25E+01	1.95E+01	3.48E+02
1.43E+01	1.83E+01	2.49E+02	1.43E+01	1.79E+01	4.19E+02
1.61E+01	1.70E+01	2.96E+02	1.61E+01	1.66E+01	4.97E+02
1.79E+01	1.59E+01	3.45E+02	1.79E+01	1.55E+01	5.80E+02
1.96E+01	1.49E+01	3.98E+02	1.96E+01	1.46E+01	6.68E+02
2.14E+01	1.41E+01	4.55E+02	2.14E+01	1.38E+01	7.63E+02
Neoprene Coated Nylon Ripstop (Iron)			Pressure Restraint (Iron)		
Energy (MeV/nuc)	Stopping Power (Mev/mg/cm ²)	Range (μ m)	Energy (MeV/nuc)	Stopping Power (Mev/mg/cm ²)	Range (μ m)
2.32E+01	1.33E+01	5.14E+02	2.32E+01	1.30E+01	8.62E+02
2.50E+01	1.27E+01	5.77E+02	2.50E+01	1.24E+01	9.67E+02
2.68E+01	1.21E+01	6.43E+02	2.68E+01	1.18E+01	1.08E+03
2.86E+01	1.16E+01	7.12E+02	2.86E+01	1.13E+01	1.19E+03
3.04E+01	1.11E+01	7.84E+02	3.04E+01	1.08E+01	1.31E+03
3.21E+01	1.06E+01	8.59E+02	3.21E+01	1.04E+01	1.44E+03
3.57E+01	9.87E+00	1.02E+03	3.57E+01	9.62E+00	1.71E+03
4.02E+01	9.05E+00	1.23E+03	4.02E+01	8.83E+00	2.07E+03
4.46E+01	8.38E+00	1.47E+03	4.46E+01	8.18E+00	2.46E+03
4.91E+01	7.82E+00	1.72E+03	4.91E+01	7.62E+00	2.88E+03
5.36E+01	7.33E+00	1.99E+03	5.36E+01	7.15E+00	3.33E+03
5.80E+01	6.91E+00	2.28E+03	5.80E+01	6.74E+00	3.81E+03
6.25E+01	6.55E+00	2.58E+03	6.25E+01	6.39E+00	4.32E+03
6.70E+01	6.23E+00	2.90E+03	6.70E+01	6.07E+00	4.86E+03
7.14E+01	5.93E+00	3.24E+03	7.14E+01	5.79E+00	5.42E+03
8.04E+01	5.43E+00	3.96E+03	8.04E+01	5.30E+00	6.63E+03
8.93E+01	5.02E+00	4.74E+03	8.93E+01	4.89E+00	7.94E+03
9.82E+01	4.67E+00	5.58E+03	9.82E+01	4.56E+00	9.35E+03
1.07E+02	4.39E+00	6.48E+03	1.07E+02	4.28E+00	1.09E+04
1.16E+02	4.14E+00	7.44E+03	1.16E+02	4.04E+00	1.25E+04
1.25E+02	3.92E+00	8.46E+03	1.25E+02	3.83E+00	1.42E+04
1.43E+02	3.57E+00	1.06E+04	1.43E+02	3.48E+00	1.78E+04
1.61E+02	3.29E+00	1.30E+04	1.61E+02	3.21E+00	2.18E+04
1.79E+02	3.07E+00	1.56E+04	1.79E+02	2.99E+00	2.61E+04

1.96E+02	2.88E+00	1.83E+04	1.96E+02	2.81E+00	3.07E+04
2.14E+02	2.73E+00	2.13E+04	2.14E+02	2.66E+00	3.56E+04
2.32E+02	2.59E+00	2.43E+04	2.32E+02	2.53E+00	4.07E+04
2.50E+02	2.48E+00	2.76E+04	2.50E+02	2.42E+00	4.61E+04
2.68E+02	2.38E+00	3.09E+04	2.68E+02	2.32E+00	5.18E+04
2.86E+02	2.29E+00	3.44E+04	2.86E+02	2.23E+00	5.76E+04
3.04E+02	2.21E+00	3.80E+04	3.04E+02	2.16E+00	6.37E+04
3.21E+02	2.15E+00	4.18E+04	3.21E+02	2.09E+00	7.00E+04
3.57E+02	2.03E+00	4.96E+04	3.57E+02	1.98E+00	8.31E+04
4.00E+02	1.92E+00	5.95E+04	4.00E+02	1.87E+00	9.97E+04

Pressure Bladder (Iron)			Skin (Iron)		
Energy	Stopping	Range	Energy	Stopping	Range
9.82E-01	4.88E+01	3.53E+01	6.25E-01	4.55E+01	1.34E+01
1.07E+00	4.86E+01	3.74E+01	6.70E-01	4.60E+01	1.39E+01
1.16E+00	4.83E+01	3.95E+01	7.14E-01	4.63E+01	1.44E+01
1.25E+00	4.79E+01	4.15E+01	8.04E-01	4.66E+01	1.54E+01
1.43E+00	4.71E+01	4.57E+01	8.93E-01	4.67E+01	1.63E+01
1.61E+00	4.61E+01	5.00E+01	9.82E-01	4.67E+01	1.73E+01
1.79E+00	4.52E+01	5.44E+01	1.07E+00	4.65E+01	1.83E+01
1.96E+00	4.42E+01	5.89E+01	1.16E+00	4.62E+01	1.93E+01
2.14E+00	4.38E+01	6.34E+01	1.25E+00	4.59E+01	2.03E+01
2.32E+00	4.33E+01	6.80E+01	1.43E+00	4.51E+01	2.23E+01
2.50E+00	4.25E+01	7.26E+01	1.61E+00	4.43E+01	2.44E+01
2.68E+00	4.17E+01	7.74E+01	1.79E+00	4.35E+01	2.64E+01
2.86E+00	4.08E+01	8.22E+01	1.96E+00	4.26E+01	2.86E+01
3.04E+00	4.01E+01	8.71E+01	2.14E+00	4.23E+01	3.07E+01
3.21E+00	3.93E+01	9.22E+01	2.32E+00	4.20E+01	3.29E+01
3.57E+00	3.80E+01	1.02E+02	2.50E+00	4.12E+01	3.51E+01
4.02E+00	3.64E+01	1.16E+02	2.68E+00	4.04E+01	3.74E+01
4.46E+00	3.50E+01	1.30E+02	2.86E+00	3.97E+01	3.97E+01
4.91E+00	3.38E+01	1.44E+02	3.04E+00	3.89E+01	4.20E+01
5.36E+00	3.26E+01	1.59E+02	3.21E+00	3.83E+01	4.44E+01
5.80E+00	3.15E+01	1.75E+02	3.57E+00	3.70E+01	4.92E+01
6.25E+00	3.05E+01	1.91E+02	4.02E+00	3.56E+01	5.56E+01
6.70E+00	2.96E+01	2.08E+02	4.46E+00	3.44E+01	6.21E+01
7.14E+00	2.87E+01	2.25E+02	4.91E+00	3.33E+01	6.89E+01
8.04E+00	2.71E+01	2.61E+02	5.36E+00	3.22E+01	7.59E+01

8.93E+00	2.57E+01	2.98E+02	5.80E+00	3.12E+01	8.31E+01
9.82E+00	2.44E+01	3.38E+02	6.25E+00	3.03E+01	9.06E+01
1.07E+01	2.32E+01	3.80E+02	6.70E+00	2.95E+01	9.83E+01
1.16E+01	2.22E+01	4.24E+02	7.14E+00	2.87E+01	1.06E+02
1.25E+01	2.12E+01	4.70E+02	8.04E+00	2.72E+01	1.23E+02
1.43E+01	1.95E+01	5.69E+02	8.93E+00	2.58E+01	1.40E+02
1.61E+01	1.80E+01	6.75E+02	9.82E+00	2.45E+01	1.58E+02
1.79E+01	1.68E+01	7.90E+02	1.07E+01	2.34E+01	1.77E+02
1.96E+01	1.57E+01	9.13E+02	1.16E+01	2.23E+01	1.97E+02
2.14E+01	1.48E+01	1.04E+03	1.25E+01	2.13E+01	2.19E+02
Pressure Bladder (Iron)			Skin (Iron)		
Energy	Stopping	Range	Energy	Stopping	Range
2.32E+01	1.40E+01	1.18E+03	1.43E+01	1.95E+01	2.64E+02
2.50E+01	1.33E+01	1.33E+03	1.61E+01	1.80E+01	3.13E+02
2.68E+01	1.27E+01	1.48E+03	1.79E+01	1.67E+01	3.66E+02
2.86E+01	1.22E+01	1.64E+03	1.96E+01	1.55E+01	4.23E+02
3.04E+01	1.17E+01	1.81E+03	2.14E+01	1.46E+01	4.84E+02
3.21E+01	1.12E+01	1.99E+03	2.32E+01	1.37E+01	5.49E+02
3.57E+01	1.04E+01	2.36E+03	2.50E+01	1.30E+01	6.17E+02
4.02E+01	9.52E+00	2.86E+03	2.68E+01	1.25E+01	6.90E+02
4.46E+01	8.81E+00	3.40E+03	2.86E+01	1.20E+01	7.65E+02
4.91E+01	8.21E+00	3.99E+03	3.04E+01	1.16E+01	8.43E+02
5.36E+01	7.70E+00	4.62E+03	3.21E+01	1.11E+01	9.24E+02
5.80E+01	7.26E+00	5.28E+03	3.57E+01	1.03E+01	1.10E+03
6.25E+01	6.88E+00	5.99E+03	4.02E+01	9.42E+00	1.33E+03
6.70E+01	6.54E+00	6.74E+03	4.46E+01	8.72E+00	1.58E+03
7.14E+01	6.23E+00	7.52E+03	4.91E+01	8.13E+00	1.85E+03
8.04E+01	5.70E+00	9.19E+03	5.36E+01	7.63E+00	2.15E+03
8.93E+01	5.26E+00	1.10E+04	5.80E+01	7.19E+00	2.46E+03
9.82E+01	4.90E+00	1.30E+04	6.25E+01	6.81E+00	2.78E+03
1.07E+02	4.60E+00	1.51E+04	6.70E+01	6.48E+00	3.13E+03
1.16E+02	4.34E+00	1.73E+04	7.14E+01	6.17E+00	3.49E+03
1.25E+02	4.11E+00	1.97E+04	8.04E+01	5.65E+00	4.27E+03
1.43E+02	3.74E+00	2.48E+04	8.93E+01	5.22E+00	5.12E+03
1.61E+02	3.45E+00	3.03E+04	9.82E+01	4.86E+00	6.03E+03
1.79E+02	3.21E+00	3.63E+04	1.07E+02	4.56E+00	7.00E+03
1.96E+02	3.02E+00	4.27E+04	1.16E+02	4.30E+00	8.04E+03

2.14E+02	2.85E+00	4.95E+04	1.25E+02	4.08E+00	9.13E+03
2.32E+02	2.71E+00	5.67E+04	1.43E+02	3.71E+00	1.15E+04
2.50E+02	2.59E+00	6.42E+04	1.61E+02	3.42E+00	1.41E+04
2.68E+02	2.49E+00	7.21E+04	1.79E+02	3.19E+00	1.69E+04
2.86E+02	2.40E+00	8.03E+04	1.96E+02	3.00E+00	1.98E+04
3.04E+02	2.32E+00	8.87E+04	2.14E+02	2.83E+00	2.30E+04
3.21E+02	2.25E+00	9.75E+04	2.32E+02	2.70E+00	2.63E+04
3.57E+02	2.12E+00	1.16E+05	2.50E+02	2.58E+00	2.98E+04
4.00E+02	2.01E+00	1.39E+05	2.68E+02	2.47E+00	3.34E+04
Pressure Bladder (Iron)			Skin (Iron)		
Energy	Stopping	Range	Energy	Stopping	Range
	n/a		2.86E+02	2.38E+00	3.72E+04
			3.04E+02	2.30E+00	4.11E+04
			3.21E+02	2.23E+00	4.52E+04
			3.57E+02	2.11E+00	5.36E+04
			4.00E+02	2.00E+00	6.43E+04

APPENDIX B

CALCULATED DOSE FOR EACH EVENT AND WEIBULL FUNCTION

CURVE DATA

Event	Oxygen Skin Dose (Gy)				Total Counts				Total dose (Gy)	Total Dose error due to counting statistics (relative)
	Bin 5	Bin 6	Bin 7	Bin 8	Bin 5	Bin 6	Bin 7	Bin 8		
1	2.58E-04	4.16E-05	1.48E-05	5.75E-07	984	435	346	110	3.1E-04	3.52%
2	4.1E-03	8.9E-04	4.7E-04	4.1E-05	9111	5282	4516	1296	5.5E-03	1.2%
3	3.0E-02	2.5E-03	3.9E-04	2.5E-06	37663	9515	2074	89	3.3E-02	0.57%
4	2.55E-04	5.13E-05	2.44E-05	1.71E-06	912	527	461	156	3.3E-04	3.60%
5	2.61E-04	3.47E-05	9.70E-06	2.23E-07	656	254	160	56	3.1E-04	4.31%
6	1.65E-03	9.65E-05	1.04E-05	2.62E-08	3419	679	215	65	1.8E-03	1.86%
8	3.6E-03	4.1E-04	9.4E-05	1.4E-06	4494	1775	968	177	4.1E-03	1.6%
12	5.25E-05	1.02E-05	4.62E-06	2.93E-07	157	45	48	38	6.8E-05	9.50%
14	2.08E-04	3.84E-05	1.64E-05	9.14E-07	813	417	396	121	2.6E-04	3.82%
15	1.85E-04	1.62E-05	2.74E-06	2.02E-08	544	148	91	36	2.0E-04	4.68%
16	4.71E-06	1.49E-06	1.36E-06	3.24E-07	17	14	18	18	7.9E-06	24.58%
17	1.00E-04	8.28E-06	1.32E-06	8.44E-09	279	72	51	32	1.1E-04	6.52%
18	2.74E-05	5.26E-06	2.35E-06	1.45E-07	34	27	23	19	3.5E-05	17.73%
19	7.20E-05	1.39E-05	6.29E-06	3.97E-07	240	114	67	21	9.3E-05	7.35%
20	3.1E-01	3.8E-02	9.5E-03	1.8E-04	12845	5215	2310	353	3.5E-01	0.97%
21	2.37E-05	4.33E-06	1.81E-06	9.79E-08	51	27	19	13	3.0E-05	15.35%
22	1.04E-05	2.17E-06	1.09E-06	8.46E-08	28	7	14	7	1.4E-05	22.62%
24	2.59E-04	1.72E-05	2.13E-06	7.47E-09	441	114	60	16	2.8E-04	5.11%
25	1.44E-04	2.66E-05	1.13E-05	6.34E-07	544	191	140	27	1.8E-04	5.03%
26	2.90E-05	4.76E-06	1.73E-06	6.96E-08	98	21	18	8	3.6E-05	12.37%
30	1.19E-04	2.14E-05	8.75E-06	4.50E-07	380	138	86	30	1.5E-04	5.98%
31	2.26E-04	2.53E-05	5.72E-06	8.23E-08	772	304	157	32	2.6E-04	3.91%
32	7.6E-03	9.3E-04	2.4E-04	4.5E-06	11981	4553	2472	369	8.7E-03	1.0%
36	1.94E-03	2.95E-04	9.74E-05	3.21E-06	2838	1247	902	250	2.3E-03	2.06%
38	8.72E-05	1.14E-05	3.13E-06	6.89E-08	212	58	28	10	1.0E-04	7.96%
40	1.19E-04	1.20E-05	2.39E-06	2.56E-08	257	52	16	8	1.3E-04	7.26%

41	2.97E-03	4.42E-04	1.42E-04	4.42E-06	9626	4121	2466	408	3.6E-03	1.13%
43	7.1E-02	9.1E-03	2.4E-03	4.9E-05	32492	12391	4980	308	8.3E-02	0.62%
44	2.81E-03	1.08E-04	7.35E-06	5.79E-09	3697	497	110	15	2.9E-03	1.77%
45	2.57E-05	3.65E-06	1.11E-06	3.04E-08	81	36	20	15	3.0E-05	12.20%
46	4.74E-05	1.13E-05	6.84E-06	7.62E-07	182	90	82	34	6.6E-05	8.43%
47	2.6E-01	3.5E-02	1.0E-02	2.5E-04	35363	13092	5428	495	3.0E-01	0.60%
49	5.8E-02	4.3E-03	6.1E-04	2.9E-06	12526	3554	1117	98	6.2E-02	0.97%
50	3.3E-03	4.4E-04	1.2E-04	2.8E-06	5148	2258	1567	332	3.9E-03	1.5%
51	6.99E-04	3.44E-05	3.08E-06	4.82E-09	2155	426	125	44	7.4E-04	2.31%
54	3.58E-05	6.24E-06	2.46E-06	1.17E-07	128	40	22	15	4.5E-05	10.55%
57	5.73E-06	1.56E-06	1.13E-06	1.79E-07	11	6	13	12	8.6E-06	31.74%
58	1.12E-04	1.83E-05	6.67E-06	2.70E-07	356	128	67	15	1.4E-04	6.15%
59	5.0E-02	5.9E-03	1.4E-03	2.4E-05	37404	11223	3431	187	5.7E-02	0.59%
60	7.89E-04	6.84E-05	1.15E-05	8.32E-08	2232	813	331	37	8.7E-04	2.27%
61	2.85E-05	5.03E-06	2.02E-06	9.93E-08	89	31	19	11	3.6E-05	12.39%
62	2.27E-04	1.86E-05	2.91E-06	1.79E-08	616	185	73	19	2.5E-04	4.37%
63	6.57E-04	4.96E-05	7.13E-06	3.56E-08	2337	637	225	53	7.1E-04	2.25%
64	3.88E-05	6.04E-06	2.06E-06	7.23E-08	113	35	20	6	4.7E-05	10.99%
65	5.96E-05	1.22E-05	5.97E-06	4.39E-07	214	97	67	18	7.8E-05	7.86%
66	6.60E-04	4.56E-05	5.93E-06	2.33E-08	1464	512	290	84	7.1E-04	2.76%
67	1.18E-04	8.66E-06	1.20E-06	5.46E-09	320	70	34	18	1.3E-04	6.13%
68	2.57E-04	1.31E-05	1.22E-06	2.10E-09	511	92	31	9	2.7E-04	4.77%
70	2.66E-05	5.57E-06	2.80E-06	2.19E-07	93	36	30	12	3.5E-05	12.11%
72	2.51E-03	2.99E-04	7.26E-05	1.23E-06	4606	1830	1083	160	2.9E-03	1.60%
73	4.2E-01	5.7E-02	1.7E-02	4.2E-04	26948	12007	5977	634	4.9E-01	0.67%
75	3.2E-02	2.2E-03	2.7E-04	9.6E-07	10672	3289	1435	183	3.5E-02	1.0%
76	2.57E-03	1.76E-04	2.25E-05	8.60E-08	6199	1456	434	60	2.8E-03	1.39%
77	1.20E-04	2.45E-05	1.18E-05	8.49E-07	372	177	135	41	1.6E-04	5.86%
78	7.57E-05	6.36E-06	1.03E-06	6.87E-09	117	17	5	3	8.3E-05	10.84%
79	1.16E-04	1.96E-05	7.41E-06	3.25E-07	303	110	73	17	1.4E-04	6.61%
80	5.70E-04	2.88E-05	2.64E-06	4.41E-09	836	155	54	21	6.0E-04	3.72%
81	1.82E-04	8.64E-06	7.42E-07	1.05E-09	177	36	35	37	1.9E-04	7.97%
83	2.99E-05	6.62E-06	3.59E-06	3.25E-07	85	45	40	13	4.0E-05	12.09%
89	9.86E-05	5.01E-06	4.64E-07	7.91E-10	57	14	33	23	1.0E-04	13.91%
90	6.51E-05	1.54E-05	9.19E-06	9.99E-07	214	139	102	34	9.1E-05	7.54%
95	3.12E-03	2.24E-04	3.04E-05	1.32E-07	4234	1102	341	44	3.4E-03	1.67%
96	3.1E-02	4.0E-03	1.0E-03	2.1E-05	26851	13218	9892	1944	3.6E-02	0.65%
97	5.78E-04	2.20E-05	1.49E-06	1.16E-09	934	208	68	10	6.0E-04	3.43%

27/27A	1.8E-01	2.9E-02	1.0E-02	3.9E-04	15876	8051	3818	206	2.2E-01	0.89%
28/29	2.02E-03	2.02E-04	4.00E-05	4.26E-07	4928	1629	645	68	2.3E-03	1.57%
33/34	2.75E-03	2.39E-04	4.03E-05	2.94E-07	6518	2198	881	109	3.0E-03	1.34%
69/69A	3.57E-04	2.42E-05	3.08E-06	1.15E-08	831	201	87	21	3.8E-04	3.75%
84/85	3.40E-03	2.43E-04	3.27E-05	1.41E-07	8010	2221	838	168	3.7E-03	1.20%
86/87/88	5.4E-02	7.0E-03	1.9E-03	3.8E-05	37314	13266	6009	882	6.3E-02	0.58%
91/92/93	1.94E-03	1.64E-04	2.66E-05	1.79E-07	5239	1552	661	138	2.1E-03	1.50%
94/94a	2.79E-04	3.58E-05	4.29E-06	1.38E-08	1776	378	154	87	3.2E-04	2.76%

Event	Iron Skin Dose (Gy)					Total Counts					Total dose (Gy)	Total dose error due to counting statistics (relative)
	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8		
2	1.2E-03	1.1E-02	2.3E-03	8.9E-04	4.7E-05	5898	3728	1766	1242	266	1.5E-02	1.8%
3	1.6E-05	1.5E-04	3.7E-05	1.8E-05	1.4E-06	78	19	10	18	18	2.2E-04	24%
6	1.5E-05	1.4E-04	4.1E-05	2.3E-05	2.6E-06	105	73	45	34	10	2.3E-04	13%
8	1.9E-04	1.4E-03	1.6E-04	2.9E-05	3.0E-07	760	337	120	64	10	1.7E-03	5.7%
20	4.9E-03	3.3E-02	2.8E-03	3.5E-04	1.5E-06	1589	767	300	139	30	4.1E-02	3.7%
32	4.7E-04	3.5E-03	4.3E-04	8.3E-05	9.8E-07	1870	823	243	127	18	4.4E-03	3.8%
36	3.8E-04	3.4E-03	7.5E-04	3.0E-04	1.7E-05	1131	670	367	304	75	4.8E-03	4.1%
43	2.3E-04	1.3E-03	5.8E-05	3.4E-06	2.4E-09	296	56	7	6	6	1.6E-03	13%
47	2.7E-03	1.6E-02	9.6E-04	7.7E-05	1.2E-07	1119	555	183	133	16	2.0E-02	4.2%
49	5.3E-04	3.5E-03	2.9E-04	3.3E-05	1.3E-07	470	148	32	16	10	4.3E-03	8.5%
50	5.1E-04	4.2E-03	7.6E-04	2.3E-04	7.6E-06	1955	1117	510	337	68	5.8E-03	3.2%
59	1.8E-04	1.1E-03	5.9E-05	4.4E-06	5.8E-09	586	155	17	8	4	1.3E-03	8.3%
66	7.2E-05	6.4E-04	1.4E-04	5.9E-05	3.5E-06	476	329	125	79	10	9.2E-04	6.4%
72	1.1E-04	8.6E-04	1.4E-04	4.0E-05	1.1E-06	525	211	72	34	2	1.2E-03	7.7%
73	2.1E-03	1.4E-02	1.1E-03	1.2E-04	3.9E-07	1318	559	177	119	16	1.7E-02	4.3%
75	3.4E-04	2.5E-03	2.7E-04	4.6E-05	4.1E-07	610	322	91	40	5	3.1E-03	6.0%
76	2.1E-05	1.8E-04	3.4E-05	1.1E-05	4.2E-07	167	67	20	12	10	2.5E-04	14%
96	3.6E-04	2.6E-03	2.9E-04	4.8E-05	4.2E-07	1373	617	232	105	13	3.3E-03	4.2%
27/27A	6.7E-05	1.6E-04	3.3E-08	5.7E-12	9.7E-22	82	11	2	0	0	2.3E-04	24%
86/87/88	1.2E-03	9.3E-03	1.4E-03	3.3E-04	6.4E-06	1575	795	283	178	27	1.2E-02	3.8%

Bin 6 6 hour

General model Weibull:

$$f(x) = a*b*x^{(b-1)}*exp(-a*x^b)$$

Coefficients (with 95% confidence bounds):

$$a = 1.818 \text{ } (-0.5228, 4.158)$$

$$b = 2.255 \text{ } (1.861, 2.649)$$

Goodness of fit:

SSE: 7.655e-005

R-square: 0.9761

Adjusted R-square: 0.9741

RMSE: 0.002526

Bin 5 6 hour

General model Weibull:

$$f(x) = a*b*x^{(b-1)}*exp(-a*x^b)$$

Coefficients (with 95% confidence bounds):

$$a = 2.131 (1.455, 2.806)$$

$$b = 1.966 (1.835, 2.096)$$

Goodness of fit:

SSE: 0.001146

R-square: 0.9929

Adjusted R-square: 0.9923

RMSE: 0.009772

Bin 6 4 hour

Linear model Poly1:

$$f(x) = p1*x + p2$$

Coefficients (with 95% confidence bounds):

$$p1 = 1.487 (0.9748, 2)$$

$$p2 = -0.0001109 (-0.005615, 0.005393)$$

Goodness of fit:

SSE: 0.0007397

R-square: 0.7691

Adjusted R-square: 0.7499

RMSE: 0.007851

Bin 5 4 hour

General model Weibull:

$$f(x) = a*b*x^{(b-1)}*exp(-a*x^b)$$

Coefficients (with 95% confidence bounds):

a = 4.163 (1.279, 7.047)

b = 2.086 (1.822, 2.349)

Goodness of fit:

SSE: 0.004213

R-square: 0.9739

Adjusted R-square: 0.9717

RMSE: 0.01874

APPENDIX C

MATLAB GENERATED CODE FOR CURVE FITTING AND DOSE

CALCULATIONS

The code below was used to fit each event with a double exponential and plot each individual fluence versus time. It also generates a 3-D plot of the entire event.

```
%oxygen file%

date='10/28/03';
energy =[8.71,11.9,15,19,25.7,34.8,50.8,76.2];
load oxygen73.txt;
fluence=oxygen73;
%returns longest dimension of matrix which will correspond to the
number
%of columns(hours)
T=length (fluence);
fluencerate=fluence;
sumfluence=sum(fluencerate);
time=1:T;
%plotting the energy vs total fluence gives us the equation for the
%event to
j=sumfluence (1:1,1:1);
k=sumfluence (1:1,2:2);
l=sumfluence (1:1,3:3);
m=sumfluence (1:1,4:4);
n=sumfluence (1:1,5:5);
o=sumfluence (1:1,6:6);
p=sumfluence (1:1,7:7);
r=sumfluence (1:1,8:8);
maybe= [j k l m n o p r];

figure (1);

plot(energy,maybe, '.');
hold on
f = fittype('exp2');
%c is the curve gof is goodness of fit
[ctotal,goftotal]=fit(energy',maybe',f);

figure (1);
plot (ctotal,'m');
xlabel('energy <E>');
ylabel('Total Oxygen Fluence Rate(particles/(cm^2*Sr*sec*Mev/nuc))');
title('Total Event Fluence Rate vs. Energy');
legend (date);
ylim ([0 j*1.5]);
xlim ([0 inf]);
```

```

legend ('boxoff');
set(legend, 'Position', [0.704 0.8725 0.09375 0.03352]);
% this sets up the text box displaying c
x=coeffvalues(ctotal);
str1(1)={'equation of curve c(x) = a*exp(b*x) + c*exp(d*x) '};
str1(2)={'      a                b                c                d'};
str2=num2str (x);
text(20,k,[ str1, str2], 'edgecolor', 'blue', 'margin', 8);
%c and gof are sent to matlab screen
display (ctotal);
display (goftotal);
hold off

warning off

figure (5);
subplot(4,1,1);
p1= polyfit(time',fluence(1:T,1),7);
f1=polyval(p1,time);
plot(time',fluence(1:T,1),'.',time',f1)
slpe1=((f1(1:1,1)-f1(1:1,10))/(-9));
xlabel('Time (hours)');
ylabel('Fluence Rate ');
title(' Time Intensity Profile for 8.71 Mev/nucleon Oxygen Fluence vs.
Time');
legend (date);
legend ('boxon');
ylim ([0 inf]);
str7a={'Slope first 10 hrs '};
str7b=num2str (slpe1);
slpe4=((fluence(1:1,1)-fluence(4:4,1))/(-3));
slpe10=((fluence(1:1,1)-fluence(10:10,1))/(-9));
%disp(slpe4);
disp (slpe10);
uicontrol('Style','text','Position',[0 600 90 30],...
          'String',[str7a,str7b], 'backgroundcolor',[1 1 1],...
          'HorizontalAlignment','left','fontsize',7);

subplot(4,1,2);
p2= polyfit(time',fluence(1:T,2),7);
f2=polyval(p2,time);
plot(time',fluence(1:T,2),'.',time',f2)
slpe2=((f2(1:1,1)-f2(1:1,10))/(-9));
xlabel('Time (hours)');
ylabel('Fluence Rate ');
title(' Time Intensity Profile for 11.9 Mev/nucleon Oxygen Fluence vs.
Time');
legend (date);
legend ('boxon');
ylim ([0 inf]);
str10a={'Slope first 10 hrs '};
str10b=num2str (slpe2);
uicontrol('Style','text','Position',[0 425 90 30],...

```

```

        'String',[str10a,str10b], 'backgroundcolor',[1 1 1],...
        'HorizontalAlignment','left','fontsize',7);

subplot(4,1,3);
p3= polyfit(time',fluence(1:T,3),7);
f3=polyval(p3,time);
plot(time',fluence(1:T,3),'.',time',f3)
slpe3=((f3(1:1,1)-f3(1:1,10))/(-9));
xlabel('Time (hours)');
ylabel('Fluence Rate ');
title(' Time Intensity Profile for 15 Mev/nucleon Oxygen Fluence vs.
Time');
legend (date);
legend ('boxon');
ylim ([0 inf]);
str12a={'Slope first 10 hrs '};
str12b=num2str (slpe3);
uicontrol('Style','text','Position',[0 280 90 30],...
        'String',[str12a,str12b], 'backgroundcolor',[1 1 1],...
        'HorizontalAlignment','left','fontsize',7);

subplot(4,1,4);
p4= polyfit(time',fluence(1:T,4),7);
f4=polyval(p4,time);
plot(time',fluence(1:T,4),'.',time',f4)
slpe4=((f4(1:1,1)-f4(1:1,10))/(-9));
xlabel('Time (hours)');
ylabel('Fluence Rate ');
title(' Time Intensity Profile for 19 Mev/nucleon Oxygen Fluence vs.
Time');
legend (date);
legend ('boxon');
ylim ([0 inf]);
str16={'Slope first 10 hrs '};
str166=num2str (slpe4);
uicontrol('Style','text','Position',[0 125 90 30],...
        'String',[str16,str166], 'backgroundcolor',[1 1 1],...
        'HorizontalAlignment','left','fontsize',7);

figure (6);
subplot(4,1,1);
p5= polyfit(time',fluence(1:T,5),7);
f5=polyval(p5,time);
slpe5=((f5(1:1,1)-f5(1:1,10))/(-9));
plot(time',fluence(1:T,5),'.',time',f5)
xlabel('Time (hours)');
ylabel('Fluence Rate ');
title(' Time Intensity Profile for 25.7 Mev/nucleon Oxygen Fluence vs.
Time');
legend (date);
legend ('boxon');
ylim ([0 inf]);
str22={'Slope first 10 hrs '};

```



```

str23=num2str (slpe5);
uicontrol('Style','text','Position',[0 600 90 30],...
          'String',[str22,str23], 'backgroundcolor',[1 1 1],...
          'HorizontalAlignment','left','fontsize',7);

subplot(4,1,2);
p6= polyfit(time',fluence(1:T,6),7);
f6=polyval(p6,time);
plot(time',fluence(1:T,6),'.',time',f6)
slpe6=((f6(1:1,1)-f6(1:1,10))/(-9));
xlabel('Time (hours)');
ylabel('Fluence Rate ');
title(' Time Intensity Profile for 34.8 Mev/nucleon Oxygen Fluence vs.
Time');
legend (date);
legend ('boxon');
ylim ([0 inf]);
str29={'Slope first 10 hrs'};
str30=num2str (slpe6);
uicontrol('Style','text','Position',[0 425 90 30],...
          'String',[str29,str30], 'backgroundcolor',[1 1 1],...
          'HorizontalAlignment','left','fontsize',7);

subplot(4,1,3);
p7= polyfit(time',fluence(1:T,7),7);
f7=polyval(p7,time);
plot(time',fluence(1:T,7),'.',time',f7)
slpe7=((f7(1:1,1)-f7(1:1,10))/(-9));
xlabel('Time (hours)');
ylabel('Fluence Rate ');
title(' Time Intensity Profile for 50.8 Mev/nucleon Oxygen Fluence vs.
Time');
legend (date);
legend ('boxon');
ylim ([0 inf]);
str43={'Slope first 10 hrs '};
str44=num2str (slpe7);
uicontrol('Style','text','Position',[0 280 90 30],...
          'String',[str43,str44], 'backgroundcolor',[1 1 1],...
          'HorizontalAlignment','left','fontsize',7);

subplot(4,1,4);
p8= polyfit(time',fluence(1:T,8),7);
f8=polyval(p8,time);
plot(time',fluence(1:T,8),'.',time',f8)
slpe8=((f8(1:1,1)-f8(1:1,10))/(-9));
xlabel('Time (hours)');
ylabel('Fluence Rate ');
title(' Time Intensity Profile for 76.2 Mev/nucleon Oxygen Fluence vs.
Time');
legend (date);
legend ('boxon');
ylim ([0 inf]);

```

```

str64={'Slope first 10 hrs '};
str65=num2str (slpe8);
uicontrol('Style','text','Position',[0 125 90 30],...
          'String',[str64,str65], 'backgroundcolor',[1 1 1],...
          'HorizontalAlignment','left','fontSize',7);
%3d plot using polyfit line

figure (7);
fmatrix= [f1;f2;f3;f4;f5;f6;f7;f8];
surf(time,energy,fmatrix);
title ('Surface Plot of Time, Energy <E>, and Oxygen Fluence')
xlabel ('Time (hours)');
ylabel ('Energy <E>');
zlabel ('Fluence');
xlim ([0 T+5]);
ylim ([0 85]);
zlim ([0 inf]);
view ([ -168 8]);
legend (date);
legend ('boxoff');

warning on

clear

```

The next set of code fits the energy bins of concern to a single exponential function. It then integrates that curve and sends the output to a data file.

```

%oxygen file%
%curve fit
date='10/28/03';
energy =[19,25.7,34.8,50.8,76.2];
load oxygen73.txt;
fluence=oxygen73;
%returns longest dimension of matrix which will correspond to the
number
%of columns(hours)
T=length(fluence);

save time.ascii T -ASCII
fluencerate=fluence;
sumfluence=sum(fluencerate(1:T,1:8));
time=1:T;
%plotting the energy vs total fluence gives us the eqn for the event to
%particles/cm^2*mev/nuc*sr*sec
m=sumfluence (1:1,4:4);
n=sumfluence (1:1,5:5);

```

```

o=sumfluence (1:1,6:6);
p=sumfluence (1:1,7:7);
r=sumfluence (1:1,8:8);
maybe= [ m n o p r];
figure (1);
plot(energy,maybe, '.');
hold on
f = fitype('exp1');
%c is the curve gof is goodness of fit
[ctotal,goftotal]=fit(energy',maybe',f);
figure (1);
plot (ctotal,'m');
xlabel('energy <E>');
ylabel('Total Oxygen Fluence Rate(particles/(cm^2*Sr*sec*Mev/nuc))');
title('Total Event Fluence Rate vs. Energy');
legend (date);
ylim ([0 j*1.25]);
xlim ([0 inf]);
legend ('boxoff');
set(legend,'Position',[0.704 0.8725 0.09375 0.03352]);
% this sets up the text box displaying c
x=coeffvalues(ctotal);
str1(1)={'equation of curve c(x) = a*exp(b*x)  '};
str1(2)={'      a                b                '};
str2=num2str (x);
text(20,k,[ str1, str2],'edgecolor','blue','margin',8);
%c and gof are sent to matlab screen
display (ctotal);
display (goftotal);
hold off
% integrate ctotal in 0.125 Mev/nuc increments from 1 Mev/Nuc to 400
% mev/nuc to obtain fluence in Part/cm^2
%enter date
E=(8:3200)*.125;
dd=1;
for d=1:3192;
q(1:1,dd:dd)=quad (ctotal,E(1:1,d:d),E(1:1,d+1:d+1));
dd=dd+1;
end
%change date
qq='q';
save integralselftest.ascii qq -ASCII
clear

```

The code below uses the output integral file and the stopping power file generated to calculate skin dose.

```

load Oxygen_stoppingpower_at_70um.ascii

load integralselftest.ascii

seventyum=Oxygen_stoppingpower_at_70um;
fluence=integralselftest;

f=1;

%stopping power is in Mev mg/cm^2 so we have to multiply by 1000 mg %
%per g
%the fluence rate is multiplied by 4pi geo factor and 3600 sec

while f< 3193

    SkinDose(f:f,1:1)= seventyum(f:f,1:1)*1.60217e-10...
        *fluence(f:f,1:1)*4*pi*3600*1000;

    f=f+1;

end

TotalDose=sum(SkinDose);

binfive=sum(SkinDose(168:235,1:1));
binsix=sum(SkinDose(236:308,1:1));
binseven=sum(SkinDose(309:510,1:1));
bineight=sum(SkinDose(511:718,1:1));

disp (TotalDose);
disp (binfive);
disp (binsix);
disp (binseven);
disp (bineight);
clear

```

This file plots the bin five and six fluence after the count threshold has been reached. It then calculates and displays the sum of the first and second derivative for 6 hours. To calculate the sum for four hours the changeslope and sumslope lines are altered.

```

% load event data file
load oxygen6.txt;
fluence=oxygen6;
%set d to time count threshold met
d=16;

date = '8/24/98';

fluencerate=fluence;

sumfluence=sum(fluencerate);
time=1:12;

warning off

hold on

%bin5 slope

p1= polyfit(time',fluence(d:d+11,5),3);
f1=polyval(p1,time);
plot(time',fluence(d:d+11,5),'.',time',f1)
xlabel('Time (hours)');
ylabel('Fluence Rate ');
title(' Bin 5 and 6 Oxygen Fluence vs. Time');
legend (date);
legend ('boxon');
ylim ([0 inf]);

%bin 6 slope

p2= polyfit(time',fluence(d:d+11,6),3);
f2=polyval(p2,time);
plot(time',fluence(d:d+11,6),'.',time',f2)
xlabel('Time (hours)');
ylabel('Fluence Rate ');
title(' Bin 5 and 6 Oxygen Fluence vs. Time');
legend (date);
legend ('boxon');
ylim ([0 inf]);

hold off

```

```

first=diff(f1,1);
second=diff(f1,2);

first1=diff(f2,1);
second1=diff(f2,2);

first = first';
second =second';

first1=first1';
second1=second1';

slpe= [ first(1:10,1:1) second(1:10,1:1) first1(1:10,1:1) ...
        second1(1:10,1:1) ];

save slope6.ascii slpe -ascii

% calculates the sum of the first 6 hours.
changeslope= second (1:1,1)+second (2:2,1)+second (3:3,1) ...
             +second (4:4,1)+second (5:5,1)+second (6:6,1);

changeslope1= second1 (1:1,1)+second1 (2:2,1)+second1 (3:3,1) ...
             +second1 (4:4,1)+second1 (5:5,1)+second1 (6:6,1);

sumslope= sum(first (1:6,1));

sumslope1= sum(first1 (1:6,1));

disp('start here');

disp (sumslope);
disp (sumslope1);

disp (changeslope);
disp (changeslope1);

clear

```

The following code is the code used to pass the particle through the meteoroid garment of the EVA glove for both iron and Oxygen. The file was used for iron by changing the names of the files loaded into the program. For example instead of loading the stopping power file for oxygen load the iron data file.

```

%% The program passes an oxygen particle through an EVA glove
%%
E=(8:3200)*.125;
%build the matrix interpolated Ranges in skin

load stopping_pwr_oxygenkevlar.ascii

o=stopping_pwr_oxygenkevlar;

%1 Mev/nuc to 1.875 Mev/nuc

f=1;
x=2;

while E(1:1,f:f) < o(x+7:x+7,1:1)

    range(f:f,1:1)=o(x:x,3:3)+(E(1:1,f:f)-
o(x:x,1:1))*o(x+7:x+7,3:3)...
        -o(x:x,3:3))/(o(x+7:x+7,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [range];

%1.875 to 2.5

a=length(k);

f=1;
x=x+2;

while E(1:1,f+a:f+a) < o(x+9:x+9,1:1)

    range01(f:f,1:1)=o(x+5:x+5,3:3)+(E(1:1,f+a:f+a)-
o(x+5:x+5,1:1))*o(x+9:x+9,3:3)...
        -o(x+5:x+5,3:3))/(o(x+9:x+9,1:1)-o(x+5:x+5,1:1));

```

```

        f=f+1;

end

k= [k; range01];

%2.5 to 3.125

a=length(k);

f=1;
x=x+2;

while E(1:1,f+a:f+a) < o(x+9:x+9,1:1)

    range02(f:f,1:1)=o(x+7:x+7,3:3)+(E(1:1,f+a:f+a)-
o(x+7:x+7,1:1))* (o(x+9:x+9,3:3)...
    -o(x+7:x+7,3:3))/(o(x+9:x+9,1:1)-o(x+7:x+7,1:1));

    f=f+1;

end

k= [k; range02];

% 3.125 to 3.75

a=length(k);

f=1;
x=15;

while E(1:1,f+a:f+a) < o(x+2:x+2,1:1)

    range03(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))* (o(x+2:x+2,3:3)...
    -o(x:x,3:3))/(o(x+2:x+2,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range03];

% 4

a=length(k);

```



```

f=1;
x=x+2;

while E(1:1,f+a:f+a) < o(x+2:x+2,1:1)

    range04(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+2:x+2,3:3)...
    -o(x:x,3:3))/(o(x+2:x+2,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range04];

% 5
a=length(k);

f=1;
x=x+2;

while E(1:1,f+a:f+a) < o(x+2:x+2,1:1)

    range05(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+2:x+2,3:3)...
    -o(x:x,3:3))/(o(x+2:x+2,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range05];

% 6
a=length(k);

f=1;
x=x+2;

while E(1:1,f+a:f+a) < o(x+2:x+2,1:1)

    range06(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+2:x+2,3:3)...
    -o(x:x,3:3))/(o(x+2:x+2,1:1)-o(x:x,1:1));

    f=f+1;

end

```

```

k= [k; range06];

% 7

a=length(k);

f=1;
x=x+2;

while E(1:1,f+a:f+a) < o(x+2:x+2,1:1)

    range07(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+2:x+2,3:3)...
        -o(x:x,3:3))/o(x+2:x+2,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range07];

% 8

a=length(k);

f=1;
x=x+2;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range08(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range08];

% 9

a=length(k);

f=1;
x=x+1;

```

```

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range09(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range09];

% 10

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range10(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range10];

% 11

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range11(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range11];

```

```

% 12

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range12(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k=[k; range12];

% 14

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range14(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k=[k; range14];

% 15

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

```

```

        range15(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

        f=f+1;

end

k= [k; range15];

% 16

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

        range16(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

        f=f+1;

end

k= [k; range16];

% 17

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

        range17(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

        f=f+1;

end

k= [k; range17];

% 18

```

```

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range18(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range18];

% 19

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range19(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range19];

% 20

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range20(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...

```

```

        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));
    f=f+1;

end

k= [k; range20];

% 21
a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range21(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))* (o(x+1:x+1,3:3) ...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range21];

% 22
a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range22(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))* (o(x+1:x+1,3:3) ...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range22];

% 23
a=length(k);

f=1;
x=x+1;

```

```

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range23(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range23];

% 24

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range24(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range24];

% 25

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range25(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

```



```

k= [k; range25];

% 26

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range26(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range26];

% 27

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range27(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range27];

% 28

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

```

```

        range28(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

        f=f+1;

end

k= [k; range28];

% 29

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

        range29(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

        f=f+1;

end

k= [k; range29];

% 30

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

        range30(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

        f=f+1;

end

```

```

k= [k; range30];

% 31
a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range31(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range31];

% 32
a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range32(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range32];

% 33
a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range33(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...

```

```

        -o(x:x, 3:3) / (o(x+1:x+1, 1:1) - o(x:x, 1:1));

    f=f+1;

end

k= [k; range33];

% 34

a=length(k);

f=1;
x=x+1;

while E(1:1, f+a:f+a) < o(x+1:x+1, 1:1)

    range34(f:f, 1:1)=o(x:x, 3:3)+(E(1:1, f+a:f+a)-
o(x:x, 1:1)) * (o(x+1:x+1, 3:3) ...
        -o(x:x, 3:3) / (o(x+1:x+1, 1:1) - o(x:x, 1:1)));

    f=f+1;

end

k= [k; range34];

% 35

a=length(k);

f=1;
x=x+1;

while E(1:1, f+a:f+a) < o(x+1:x+1, 1:1)

    range35(f:f, 1:1)=o(x:x, 3:3)+(E(1:1, f+a:f+a)-
o(x:x, 1:1)) * (o(x+1:x+1, 3:3) ...
        -o(x:x, 3:3) / (o(x+1:x+1, 1:1) - o(x:x, 1:1)));

    f=f+1;

end

k= [k; range35];

% 36

a=length(k);

```

```

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range36(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range36];

% 37

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range37(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range37];

% 38

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range38(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

```

```

k= [k; range38];

% 39

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range39(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range39];

% 40

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range40(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range40];

% 41

a=length(k);

f=1;
x=x+1;

```

```

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range41(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range41];

% 42

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range42(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range42];

% 43

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range43(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

```

```

k= [k; range43];

% 44

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range44(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range44];

% 45

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range45(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range45];

% 46

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

```



```

        range46(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/o(x+1:x+1,1:1)-o(x:x,1:1));

        f=f+1;

end

k= [k; range46];

% 47

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

        range47(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/o(x+1:x+1,1:1)-o(x:x,1:1));

        f=f+1;

end

k= [k; range47];

% 48

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

        range48(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/o(x+1:x+1,1:1)-o(x:x,1:1));

        f=f+1;

end

```

```

k= [k; range48];

% 49

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range49(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range49];

% 50

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range50(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range50];

% 51

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

```

```

        range51(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

        f=f+1;

end

k= [k; range51];

% 52

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

        range52(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

        f=f+1;

end

k= [k; range52];

% 53

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

        range53(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

        f=f+1;

end

k= [k; range53];

```

```

%change date

combined=[E(1:1,1:3192)' k];

save kevlarrangeoxygen.ascii combined -ASCII

clear

%determine the remaining range after passing through kevlar in order to
%determine the stopping power at exit of kevlar

% using SRIM the thickness is 508 um at a density of 1.24g/cm3
%kevlarrangeoxygen is saved in 2 columns energy and penetration depth

load kevlarrangeoxygen.ascii

load stopping_pwr_oxygenkevlar.ascii

v=kevlarrangeoxygen;

f=1;

while f<3193

    %in micrmoeters
    kevlarrange(f:f,1:1)= v(f:f,2:2)-508;

    f=f+1;

end

%xxxx

brange=kevlarrange';
o=stopping_pwr_oxygenkevlar;
f=1;

while brange(1:1,f:f) <= 17.11

    energy00(f:f,1:1)=0;

```

```

        f=f+1;

end

k= [energy00];

%1

a=length(k);

f=1;
x=6;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy];

%2

a=length(k);

f=1;
x=x+4;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy01(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy01];

%3

```

```

a=length(k);

f=1;
x=x+4;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy02(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy02];

% 4

a=length(k);

f=1;
x=x+4;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy03(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy03];

% 4

a=length(k);
f=1;
x=x+4;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy04(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

```

```

end

k= [k; energy04];

% 5
a=length(k);

f=1;
x=x+4;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy05(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
    -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy05];

% 6
a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy06(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
    -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy06];

% 7
a=length(k);

f=1;
x=x+1;

```

```

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy07(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy07];

% 8

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy08(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy08];

% 9

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy09(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy09];

```



```

% 10

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy10(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1)/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k=[k; energy10];

% 11

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy11(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1)/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k=[k; energy11];

% 12

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

```

```

        energy12(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

        f=f+1;

end

k= [k; energy12];

% 14

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

        energy13(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

        f=f+1;

end

k= [k; energy13];

% 15

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

        energy14(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

        f=f+1;

end

k= [k; energy14];

% 16

```

```

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy15(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy15];

% 17

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy16(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy16];

% 18

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy17(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...

```

```

        -o(x:x,1:1))/ (o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy17];

% 19

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy19(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))* (o(x+2:x+2,1:1) ...
        -o(x:x,1:1))/ (o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy19];

% 20

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy20(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))* (o(x+2:x+2,1:1) ...
        -o(x:x,1:1))/ (o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy20];

% 21

a=length(k);

```

```

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy21(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy21];
% 22

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy22(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy22];
% 23

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy23(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

```

```

k= [k; energy23];

% 24

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy24(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy24];

% 25

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy25(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy25];

% 26

a=length(k);

f=1;
x=x+1;

```

```

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy26(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy26];

% 27

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy27(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy27];

% 28

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy28(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy28];

```

```

% 29

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy29(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy29];

% 30

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy30(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy30];

% 31

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

```



```

        energy31(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

        f=f+1;

end

k= [k; energy31];

% 32

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

        energy32(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

        f=f+1;

end

k= [k; energy32];

% 33

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

        energy33(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

        f=f+1;

end

k= [k; energy33];

% 34

```

```

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy34(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy34];

% 35

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy35(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy35];

% 36

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy36(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

```

```

        f=f+1;

end

k= [k; energy36];

% 37

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy37(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))* (o(x+2:x+2,1:1) ...
        -o(x:x,1:1)) / (o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy37];

% 38

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy38(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))* (o(x+2:x+2,1:1) ...
        -o(x:x,1:1)) / (o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy38];

% 39

a=length(k);

f=1;

```

```

x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy39(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy39];

% 40

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy40(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy40];

% 41

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy41(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

```

```

end

k= [k; energy41];

% 42

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy42(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy42];

% 43

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy43(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy43];

% 44

a=length(k);

f=1;
x=x+1;

```

```

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy44(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy44];

% 45

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy45(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy45];

% 46

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy46(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

```

```

k= [k; energy46];

% 47

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy47(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy47];

% 50

a=length(k);

f=1;
x=x+1;

while f <196

    energy50(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy50];

%k is the energy at 508 um depth in the EVA glove

save energykevlar.ascii k -ascii

```

```

clear

%push particles through pressure mylar

load energykevlar.ascii

E=energykevlar';

%build the matrix interpolated Ranges through mylar

load stopping_pwr_oxygenmylar.ascii

o=stopping_pwr_oxygenmylar;

f=1;

while E(1:1,f:f) <= 0

    range00(f:f,1:1)=0;

    f=f+1;

end

k= [range00];

%1

a=length(k);

f=1;
x=6;

while E(1:1,f+a:f+a) < o(x+2:x+2,1:1)

    range(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+2:x+2,3:3)...
    -o(x:x,3:3))/(o(x+2:x+2,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range];

%2

```



```

a=length(k);

f=1;
x=x+4;

while E(1:1,f+a:f+a) < o(x+2:x+2,1:1)

    range01(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+2:x+2,3:3)...
    -o(x:x,3:3))/(o(x+2:x+2,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range01];

%3

a=length(k);

f=1;
x=x+2;

while E(1:1,f+a:f+a) < o(x+2:x+2,1:1)

    range02(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+2:x+2,3:3)...
    -o(x:x,3:3))/(o(x+2:x+2,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range02];

% 4

a=length(k);

f=1;
x=x+2;

while E(1:1,f+a:f+a) < o(x+2:x+2,1:1)

    range03(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+2:x+2,3:3)...
    -o(x:x,3:3))/(o(x+2:x+2,1:1)-o(x:x,1:1));

```

```

        f=f+1;

end

k= [k; range03];

% 4

a=length(k);

f=1;
x=x+2;

while E(1:1,f+a:f+a) < o(x+2:x+2,1:1)

    range04(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+2:x+2,3:3)...
        -o(x:x,3:3))/o(x+2:x+2,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range04];

% 5

a=length(k);

f=1;
x=x+2;

while E(1:1,f+a:f+a) < o(x+2:x+2,1:1)

    range05(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+2:x+2,3:3)...
        -o(x:x,3:3))/o(x+2:x+2,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range05];

% 6

a=length(k);

f=1;

```

```

x=x+2;

while E(1:1,f+a:f+a) < o(x+2:x+2,1:1)

    range06(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+2:x+2,3:3)...
    -o(x:x,3:3))/(o(x+2:x+2,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range06];

% 7

a=length(k);

f=1;
x=x+2;

while E(1:1,f+a:f+a) < o(x+2:x+2,1:1)

    range07(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+2:x+2,3:3)...
    -o(x:x,3:3))/(o(x+2:x+2,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range07];

% 8

a=length(k);

f=1;
x=x+2;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range08(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

```

```

end

k= [k; range08];

% 9

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range09(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range09];

% 10

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range10(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range10];

% 11

a=length(k);

f=1;
x=x+1;

```

```

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    rangell(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; rangell];

% 12

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range12(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range12];

% 14

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range14(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range14];

```

```

% 15

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range15(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k=[k; range15];

% 16

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range16(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k=[k; range16];

% 17

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

```

```

        range17(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

        f=f+1;

end

k= [k; range17];

% 18

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

        range18(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

        f=f+1;

end

k= [k; range18];

% 19

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

        range19(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

        f=f+1;

end

k= [k; range19];

```

```

% 20

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range20(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));
    f=f+1;

end

k= [k; range20];

% 21

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range21(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range21];

% 22

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range22(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

```



```

end

k= [k; range22];

% 23

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range23(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range23];

% 24

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range24(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range24];

% 25

a=length(k);

f=1;

```

```

x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range25(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range25];

% 26

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range26(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range26];

% 27

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range27(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

```

```

k= [k; range27];

% 28

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range28(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range28];

% 29

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range29(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range29];

% 30

a=length(k);

f=1;
x=x+1;

```

```

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range30(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range30];

% 31
a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range31(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range31];

% 32
a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range32(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range32];

```

```

% 33

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range33(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k=[k; range33];

% 34

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range34(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k=[k; range34];

% 35

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

```

```

        range35(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

        f=f+1;

end

k= [k; range35];

% 36

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

        range36(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

        f=f+1;

end

k= [k; range36];

% 37

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

        range37(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

        f=f+1;

end

k= [k; range37];

% 38

a=length(k);

```

```

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range38(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range38];

% 39

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range39(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range39];

% 40

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range40(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

```

```

end

k= [k; range40];

% 41

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range41(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range41];

% 42

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range42(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range42];

% 43

a=length(k);

```



```

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range43(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range43];

% 44

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range44(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range44];

% 45

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range45(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

```

```

k= [k; range45];

% 46

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range46(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range46];

% 47

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range47(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range47];

% 48

a=length(k);

f=1;

```

```

x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range48(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range48];

% 49

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range49(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range49];

% 50

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range50(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

```

```

end

k= [k; range50];

% 51

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range51(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range51];

% 52

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range52(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range52];

% 53

a=length(k);

f=1;
x=x+1;

```

```

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range53(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range53];

% 58

a=length(k);

f=1;
x=x+1;
while f< 193

    range58(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range58];

%change date

combined=[E' k];

save mylarrangeoxygen.ascii combined -ASCII

clear

%determine the remaining range after passing through the mylar in order
to
%determine the energy at exit of mylar

```

```

% using SRIM the thickness is 508 um at a density of .0220472 g/cm3
mylar

%mylarrangeoxygen is saved in 2 columns energy and penetration depth

load mylarrangeoxygen.ascii

load stopping_pwr_oxygenmylar.ascii

v=mylarrangeoxygen;
f=1;

while f<3193

    %in micrmoeters
    mylarrange(f:f,1:1)= v(f:f,2:2)-635;

    f=f+1;

end

%using mylarrange matrix interpolate the remaining range back to a
energy

brange=mylarrange';

o=stopping_pwr_oxygenmylar;
f=1;

while brange(1:1,f:f) <= 76.1

    energy00(f:f,1:1)=0;

    f=f+1;

end

k= [energy00];

%1

a=length(k);

f=1;
x=4;

```

```

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy];

%2

a=length(k);

f=1;
x=x+4;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy01(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy01];

%3

a=length(k);

f=1;
x=x+4;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy02(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

```

```

k= [k; energy02];

% 4

a=length(k);

f=1;
x=x+4;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy03(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+4;

end

k= [k; energy03];

% 4

a=length(k);
f=1;
x=x+4;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy04(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy04];

% 5

a=length(k);

f=1;
x=x+4;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy05(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...

```



```

        -o(x:x,1:1))/ (o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy05];

% 6

a=length(k);

f=1;
x=x+2;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy06(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))* (o(x+2:x+2,1:1) ...
        -o(x:x,1:1))/ (o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy06];

% 7

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy07(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))* (o(x+2:x+2,1:1) ...
        -o(x:x,1:1))/ (o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy07];

% 8

```

```

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy08(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
    -o(x:x,1:1))/o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy08];

% 9

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy09(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
    -o(x:x,1:1))/o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy09];

% 10

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy10(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
    -o(x:x,1:1))/o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

```

```

end

k= [k; energy10];

% 11

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy11(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy11];

% 12

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy12(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy12];

% 14

a=length(k);

f=1;
x=x+1;

```

```

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy13(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy13];

% 15

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy14(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy14];

% 16

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy15(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

```

```

k= [k; energy15];

% 17

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy16(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy16];

% 18

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy17(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy17];

% 19

a=length(k);

f=1;
x=x+1;

```

```

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy19(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy19];

% 20

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy20(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy20];

% 21

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy21(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy21];
% 22

```

```

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy22(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy22];

% 23

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy23(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy23];

% 24

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy24(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

```

```

end

k= [k; energy24];

% 25

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy25(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy25];

% 26

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy26(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy26];

% 27

a=length(k);

f=1;

```



```

x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy27(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy27];

% 28

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy28(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy28];

% 29

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy29(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

```

```

end

k= [k; energy29];

% 30

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy30(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy30];

% 31

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy31(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy31];

% 32

a=length(k);

f=1;
x=x+1;

```

```

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy32(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy32];

% 33

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy33(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy33];

% 34

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy34(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy34];

```

```

% 35

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy35(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k=[k; energy35];

```

```

% 36

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy36(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k=[k; energy36];

```

```

% 37

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

```

```

        energy37(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/o(x+2:x+2,3:3)-o(x:x,3:3));

        f=f+1;

end

k= [k; energy37];

% 38
a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

        energy38(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/o(x+2:x+2,3:3)-o(x:x,3:3));

        f=f+1;

end

k= [k; energy38];

% 39
a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

        energy39(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/o(x+2:x+2,3:3)-o(x:x,3:3));

        f=f+1;

end

k= [k; energy39];

% 40
a=length(k);

```

```

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy40(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy40];

% 41

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy41(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy41];

% 42

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy42(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

```

```

        f=f+1;

end

k= [k; energy42];

% 43

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy43(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy43];

% 44

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy44(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy44];

% 45

a=length(k);

```

```

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy45(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy45];

% 47

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy47(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;
end

k= [k; energy47];

% 48

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy48(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;
end

```



```

k= [k; energy48];

% 49

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy49(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;
end

k= [k; energy49];

% 51

a=length(k);

f=1;
x=x+1;

while f<191

    energy51(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;
end

k= [k; energy51];

%k is the energy at depth in the EVA glove

save energymylar.ascii k -ascii

clear

%push particles through nylon ripstop

```

```

load energymylar.ascii

E=energymylar';

%build the matrix interpolated Ranges through mylar

load stopping_pwr_oxygennylon.ascii

o=stopping_pwr_oxygennylon;

f=1;

while E(1:1,f:f) <= 0

    range00(f:f,1:1)=0;

    f=f+1;

end

k= [range00];

%1

a=length(k);

f=1;
x=16;

while E(1:1,f+a:f+a) < o(x+2:x+2,1:1)

    range(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+2:x+2,3:3)...
    -o(x:x,3:3))/(o(x+2:x+2,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range];

%2

a=length(k);

f=1;
x=x+2;

```

```

while E(1:1,f+a:f+a) < o(x+2:x+2,1:1)

    range01(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+2:x+2,3:3)...
        -o(x:x,3:3))/(o(x+2:x+2,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range01];

%3

a=length(k);

f=1;
x=x+2;

while E(1:1,f+a:f+a) < o(x+2:x+2,1:1)

    range02(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+2:x+2,3:3)...
        -o(x:x,3:3))/(o(x+2:x+2,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range02];

% 4

a=length(k);

f=1;
x=x+2;

while E(1:1,f+a:f+a) < o(x+2:x+2,1:1)

    range03(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+2:x+2,3:3)...
        -o(x:x,3:3))/(o(x+2:x+2,1:1)-o(x:x,1:1));

    f=f+1;

end

```

```

k= [k; range03];

% 4

a=length(k);

f=1;
x=x+2;

while E(1:1,f+a:f+a) < o(x+2:x+2,1:1)

    range04(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+2:x+2,3:3)...
        -o(x:x,3:3))/(o(x+2:x+2,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range04];

% 5

a=length(k);

f=1;
x=x+2;

while E(1:1,f+a:f+a) < o(x+2:x+2,1:1)

    range05(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+2:x+2,3:3)...
        -o(x:x,3:3))/(o(x+2:x+2,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range05];

% 6

a=length(k);

f=1;
x=x+2;

while E(1:1,f+a:f+a) < o(x+2:x+2,1:1)

```

```

        range06(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+2:x+2,3:3)...
        -o(x:x,3:3))/(o(x+2:x+2,1:1)-o(x:x,1:1));

        f=f+1;

end

k= [k; range06];

% 7

a=length(k);

f=1;
x=x+2;

while E(1:1,f+a:f+a) < o(x+2:x+2,1:1)

        range07(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+2:x+2,3:3)...
        -o(x:x,3:3))/(o(x+2:x+2,1:1)-o(x:x,1:1));

        f=f+1;

end

k= [k; range07];

% 8

a=length(k);

f=1;
x=x+2;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

        range08(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

        f=f+1;

end

k= [k; range08];

```

```

% 9

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range09(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range09];

% 10

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range10(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range10];

% 11

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range11(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

```

```

        f=f+1;

end

k= [k; range11];

% 12

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range12(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))* (o(x+1:x+1,3:3) ...
-o(x:x,3:3)) / (o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range12];

% 14

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range14(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))* (o(x+1:x+1,3:3) ...
-o(x:x,3:3)) / (o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range14];

% 15

a=length(k);

```

```

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range15(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range15];

% 16

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range16(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range16];

% 17

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range17(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

```



```

k= [k; range17];

% 18

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range18(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range18];

% 19

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range19(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range19];

% 20

a=length(k);

f=1;
x=x+1;

```

```

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range20(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));
    f=f+1;

end

k= [k; range20];

% 21
a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range21(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range21];

% 22
a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range22(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range22];

% 23

```

```

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range23(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range23];

% 24

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range24(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range24];

% 25

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range25(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

```

```

        f=f+1;

end

k= [k; range25];

% 26

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range26(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))* (o(x+1:x+1,3:3) ...
-o(x:x,3:3)) / (o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range26];

% 27

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range27(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))* (o(x+1:x+1,3:3) ...
-o(x:x,3:3)) / (o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range27];

% 28

a=length(k);

```

```

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range28(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range28];

% 29

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range29(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range29];

% 30

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range30(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

```

```

        f=f+1;

end

k= [k; range30];

% 31
a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range31(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range31];

% 32
a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range32(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range32];

% 33
a=length(k);

f=1;
x=x+1;

```

```

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range33(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range33];

% 34

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range34(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range34];

% 35

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range35(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

```

```

k= [k; range35];

% 36

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range36(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range36];

% 37

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range37(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range37];

% 38

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range38(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...

```



```

        -o(x:x, 3:3)) / (o(x+1:x+1, 1:1) - o(x:x, 1:1));

    f=f+1;

end

k= [k; range38];

% 39

a=length(k);

f=1;
x=x+1;

while E(1:1, f+a:f+a) < o(x+1:x+1, 1:1)

    range39(f:f, 1:1)=o(x:x, 3:3)+(E(1:1, f+a:f+a) -
o(x:x, 1:1)) * (o(x+1:x+1, 3:3) ...
        -o(x:x, 3:3)) / (o(x+1:x+1, 1:1) - o(x:x, 1:1));

    f=f+1;

end

k= [k; range39];

% 40

a=length(k);

f=1;
x=x+1;

while E(1:1, f+a:f+a) < o(x+1:x+1, 1:1)

    range40(f:f, 1:1)=o(x:x, 3:3)+(E(1:1, f+a:f+a) -
o(x:x, 1:1)) * (o(x+1:x+1, 3:3) ...
        -o(x:x, 3:3)) / (o(x+1:x+1, 1:1) - o(x:x, 1:1));

    f=f+1;

end

k= [k; range40];

% 41

```

```

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range41(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range41];

% 42

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range42(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range42];

% 43

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range43(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

```

```

        f=f+1;

end

k= [k; range43];

% 44

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range44(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))* (o(x+1:x+1,3:3) ...
-o(x:x,3:3)) / (o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range44];

% 45

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range45(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))* (o(x+1:x+1,3:3) ...
-o(x:x,3:3)) / (o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range45];

% 46

```

```

a=length(k);

f=1;
x=x+1;
while f< 191

    range46(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range46];

%change date

combined=[E' k];

save nylonrangeoxygen.ascii combined -ASCII

clear

%determine the remaining range after passing through the nylon ripstop
in order to
%determine the energy at exit of nylon ripstop

% using SRIM the thickness is 228.6 um at a density of 1.13g/cm3 nylon

%nylonrangeoxygen is saved in 2 colums energy and penetration depth

load nylonrangeoxygen.ascii

load stopping_pwr_oxygennylon.ascii

v=nylonrangeoxygen;
f=1;

while f<3193

    %in micrmoeters
    nylonrange(f:f,1:1)= v(f:f,2:2)-228.6;

    f=f+1;

```

```

end

%using nylonrange matrix interpolate the remaining range back to a
energy

brange=nylonrange';

o=stopping_pwr_oxygennylnon;
f=1;

while brange(1:1,f:f) <= 12.49

    energy00(f:f,1:1)=0;

    f=f+1;

end

k= [energy00];

%1

a=length(k);

f=1;
x=6;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))* (o(x+2:x+2,1:1) ...
-o(x:x,1:1)) / (o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy];

%2

a=length(k);

f=1;

```

```

x=x+4;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy01(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy01];

%3

a=length(k);

f=1;
x=x+4;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy02(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy02];

% 4

a=length(k);

f=1;
x=x+4;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy03(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+4;

```

```

end

k= [k; energy03];

% 4

a=length(k);
f=1;
x=x+4;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy04(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
    -o(x:x,1:1)/o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy04];

% 5

a=length(k);

f=1;
x=x+4;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy05(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
    -o(x:x,1:1)/o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy05];

% 6

a=length(k);

f=1;
x=x+2;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

```

```

        energy06(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/o(x+2:x+2,3:3)-o(x:x,3:3));

        f=f+1;

end

k= [k; energy06];

% 7

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

        energy07(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/o(x+2:x+2,3:3)-o(x:x,3:3));

        f=f+1;

end

k= [k; energy07];

% 8

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

        energy08(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/o(x+2:x+2,3:3)-o(x:x,3:3));

        f=f+1;

end

k= [k; energy08];

```



```

% 9

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy09(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
    -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy09];

% 10

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy10(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
    -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy10];

% 11

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy11(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
    -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

```

```

        f=f+1;

end

k= [k; energy11];

% 12

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy12(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))* (o(x+2:x+2,1:1) ...
        -o(x:x,1:1)) / (o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy12];

% 14

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy13(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))* (o(x+2:x+2,1:1) ...
        -o(x:x,1:1)) / (o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy13];

% 15

a=length(k);

```

```

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy14(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy14];

% 16

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy15(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy15];

% 17

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy16(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

```

```

end

k= [k; energy16];

% 18

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy17(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy17];

% 19

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy19(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy19];

% 20

a=length(k);

f=1;

```

```

x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy20(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy20];

% 21
a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy21(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy21];
% 22
a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy22(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy22];

```

```

% 23

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy23(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy23];

% 24

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy24(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy24];

% 25

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

```

```

        energy25(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

        f=f+1;

end

k= [k; energy25];

% 26

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

        energy26(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

        f=f+1;

end

k= [k; energy26];

% 27

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

        energy27(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

        f=f+1;

end

k= [k; energy27];

% 28

```

```

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy28(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy28];

% 29

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy29(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy29];

% 30

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

```



```

        energy30(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

        f=f+1;

end

k= [k; energy30];

% 31
a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

        energy31(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

        f=f+1;

end

k= [k; energy31];

% 32
a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

        energy32(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

        f=f+1;

end

k= [k; energy32];

% 33
a=length(k);

```

```

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy33(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy33];

% 34

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy34(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy34];

% 35

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy35(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

```

```

end

k= [k; energy35];

% 36

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy36(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy36];

% 37

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy37(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy37];

% 38

a=length(k);

f=1;
x=x+1;

```

```

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy38(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy38];

% 39

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy39(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy39];

% 40

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy40(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy40];

```

```

% 41

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy41(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1)/o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy41];

% 42

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy42(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1)/o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy42];

% 43

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

```

```

        energy43(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/o(x+2:x+2,3:3)-o(x:x,3:3));

        f=f+1;

end

k= [k; energy43];

% 44

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

        energy44(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/o(x+2:x+2,3:3)-o(x:x,3:3));

        f=f+1;

end

k= [k; energy44];

% 45

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

        energy45(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/o(x+2:x+2,3:3)-o(x:x,3:3));

        f=f+1;

end

k= [k; energy45];

```

```

% 47

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy47(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;
end

k= [k; energy47];

% 48

a=length(k);

f=1;
x=x+1;

while f < 189

    energy48(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;
end

k= [k; energy48];

%k is the energy at xxx depth in the EVA glove

save energynylon.ascii k -ascii

clear

%push particles through pressure restraint

```

```

load energynylon.ascii

E=energynylon';

%build the matrix interpolated Ranges through pressure restraint

load stopping_pwr_oxygenrestraint.ascii

o=stopping_pwr_oxygenrestraint;

f=1;

while E(1:1,f:f) <= 0

    range00(f:f,1:1)=0;

    f=f+1;

end

k= [range00];

%1

a=length(k);

f=1;
x=16;

while E(1:1,f+a:f+a) < o(x+2:x+2,1:1)

    range(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+2:x+2,3:3)...
    -o(x:x,3:3))/(o(x+2:x+2,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range];

%2

a=length(k);

f=1;
x=x+2;

```



```

while E(1:1,f+a:f+a) < o(x+2:x+2,1:1)

    range01(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+2:x+2,3:3)...
        -o(x:x,3:3))/(o(x+2:x+2,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range01];

%3

a=length(k);

f=1;
x=x+2;

while E(1:1,f+a:f+a) < o(x+2:x+2,1:1)

    range02(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+2:x+2,3:3)...
        -o(x:x,3:3))/(o(x+2:x+2,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range02];

% 4

a=length(k);

f=1;
x=x+2;

while E(1:1,f+a:f+a) < o(x+2:x+2,1:1)

    range03(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+2:x+2,3:3)...
        -o(x:x,3:3))/(o(x+2:x+2,1:1)-o(x:x,1:1));

    f=f+1;

end

```

```

k= [k; range03];

% 4

a=length(k);

f=1;
x=x+2;

while E(1:1,f+a:f+a) < o(x+2:x+2,1:1)

    range04(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+2:x+2,3:3)...
    -o(x:x,3:3))/(o(x+2:x+2,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range04];

% 5

a=length(k);

f=1;
x=x+2;

while E(1:1,f+a:f+a) < o(x+2:x+2,1:1)

    range05(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+2:x+2,3:3)...
    -o(x:x,3:3))/(o(x+2:x+2,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range05];

% 6

a=length(k);

f=1;
x=x+2;

while E(1:1,f+a:f+a) < o(x+2:x+2,1:1)

    range06(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+2:x+2,3:3)...

```

```

        -o(x:x, 3:3)) / (o(x+2:x+2, 1:1) - o(x:x, 1:1));

    f=f+1;

end

k= [k; range06];

% 7

a=length(k);

f=1;
x=x+2;

while E(1:1, f+a:f+a) < o(x+2:x+2, 1:1)

    range07(f:f, 1:1)=o(x:x, 3:3)+(E(1:1, f+a:f+a)-
o(x:x, 1:1)) * (o(x+2:x+2, 3:3) ...
        -o(x:x, 3:3)) / (o(x+2:x+2, 1:1) - o(x:x, 1:1));

    f=f+1;

end

k= [k; range07];

% 8

a=length(k);

f=1;
x=x+2;

while E(1:1, f+a:f+a) < o(x+1:x+1, 1:1)

    range08(f:f, 1:1)=o(x:x, 3:3)+(E(1:1, f+a:f+a)-
o(x:x, 1:1)) * (o(x+1:x+1, 3:3) ...
        -o(x:x, 3:3)) / (o(x+1:x+1, 1:1) - o(x:x, 1:1));

    f=f+1;

end

k= [k; range08];

% 9

```

```

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range09(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range09];

% 10

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range10(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range10];

% 11

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range11(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

```

```

end

k= [k; range11];

% 12

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range12(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range12];

% 14

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range14(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range14];

% 15

a=length(k);

f=1;
x=x+1;

```

```

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range15(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range15];

% 16

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range16(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range16];

% 17

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range17(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

```

```

k= [k; range17];

% 18

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range18(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range18];

% 19

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range19(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range19];

% 20

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

```

```

        range20(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/o(x+1:x+1,1:1)-o(x:x,1:1));
        f=f+1;

end

k= [k; range20];

% 21
a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

        range21(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/o(x+1:x+1,1:1)-o(x:x,1:1));

        f=f+1;

end

k= [k; range21];

% 22
a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

        range22(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/o(x+1:x+1,1:1)-o(x:x,1:1));

        f=f+1;

end

k= [k; range22];

% 23
a=length(k);

```



```

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range23(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range23];

% 24

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range24(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range24];

% 25

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range25(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

```

```

        f=f+1;

end

k= [k; range25];

% 26

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range26(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range26];

% 27

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range27(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range27];

% 28

a=length(k);

f=1;

```

```

x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range28(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range28];

% 29

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range29(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range29];

% 30

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range30(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

```

```

end

k= [k; range30];

% 31
a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range31(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range31];

% 32
a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range32(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range32];

% 33
a=length(k);

f=1;
x=x+1;

```

```

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range33(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range33];

% 34

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range34(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range34];

% 35

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range35(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range35];

```

```

% 36

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range36(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k=[k; range36];

% 37

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range37(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k=[k; range37];

% 38

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range38(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

```

```

        f=f+1;

end

k= [k; range38];

% 39

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range39(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))* (o(x+1:x+1,3:3) ...
-o(x:x,3:3)) / (o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range39];

% 40

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range40(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))* (o(x+1:x+1,3:3) ...
-o(x:x,3:3)) / (o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range40];

% 41

a=length(k);

```

```

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range41(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range41];

% 42

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range42(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range42];

% 43

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range43(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

```



```

        f=f+1;

end

k= [k; range43];

% 44

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range44(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range44];

% 45

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range45(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range45];

% 46

a=length(k);

```

```

f=1;
x=x+1;
while f< 185
    range46(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range46];

%change date

combined=[E' k];

save restrainrangeoxygen.ascii combined -ASCII

clear

%determine the remaining range after passing through the pressure
restraint
%in order to
%determine the energy at exit of pressure restraint

% using SRIM the thickness is 279.4 um at a density of 0.7516 g/cm3
nylon

%nylonrangeoxygen is saved in 2 columns energy and penetration depth

load restrainrangeoxygen.ascii

load stopping_pwr_oxygenrestraint.ascii

v=restrainrangeoxygen;
f=1;

while f<3193

    %in micrmoeters
    restrainrange(f:f,1:1)= v(f:f,2:2)-279.4;

    f=f+1;

```

```

end

%using restrainrange matrix interpolate the remaining range back to a
energy

brange=restrainerange';

o=stopping_pwr_oxygenrestraint;
f=1;

while brange(1:1,f:f) <= 22.38

    energy00(f:f,1:1)=0;

    f=f+1;

end

k= [energy00];

%1

a=length(k);

f=1;
x=6;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))* (o(x+2:x+2,1:1) ...
-o(x:x,1:1)) / (o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy];

%2

a=length(k);

f=1;

```

```

x=x+4;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy01(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy01];

%3

a=length(k);

f=1;
x=x+4;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy02(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy02];

% 4

a=length(k);

f=1;
x=x+2;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy03(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+4;

```

```

end

k= [k; energy03];

% 4

a=length(k);
f=1;
x=x+2;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy04(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
    -o(x:x,1:1)/o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy04];

% 5

a=length(k);

f=1;
x=x+2;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy05(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
    -o(x:x,1:1)/o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy05];

% 6

a=length(k);

f=1;
x=x+2;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

```

```

        energy06(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/o(x+2:x+2,3:3)-o(x:x,3:3));

        f=f+1;

end

k= [k; energy06];

% 7

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

        energy07(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/o(x+2:x+2,3:3)-o(x:x,3:3));

        f=f+1;

end

k= [k; energy07];

% 8

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

        energy08(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/o(x+2:x+2,3:3)-o(x:x,3:3));

        f=f+1;

end

k= [k; energy08];

```

```

% 9

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy09(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
    -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy09];

% 10

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy10(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
    -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy10];

% 11

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy11(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
    -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

```

```

        f=f+1;

end

k= [k; energy11];

% 12

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy12(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))* (o(x+2:x+2,1:1) ...
    -o(x:x,1:1)) / (o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy12];

% 14

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy13(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))* (o(x+2:x+2,1:1) ...
    -o(x:x,1:1)) / (o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy13];

% 15

a=length(k);

```



```

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy14(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy14];

% 16

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy15(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy15];

% 17

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy16(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

```

```

end

k= [k; energy16];

% 18

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy17(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy17];

% 19

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy19(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy19];

% 20

a=length(k);

f=1;

```

```

x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy20(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy20];

% 21
a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy21(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy21];
% 22
a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy22(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy22];

```

```

% 23

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy23(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy23];

```

```

% 24

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy24(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy24];

```

```

% 25

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

```

```

        energy25(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

        f=f+1;

end

k= [k; energy25];

% 26

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

        energy26(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

        f=f+1;

end

k= [k; energy26];

% 27

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

        energy27(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

        f=f+1;

end

k= [k; energy27];

% 28

```

```

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy28(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy28];

% 29

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy29(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy29];

% 30

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

```

```

        energy30(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

        f=f+1;

end

k= [k; energy30];

% 31
a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

        energy31(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

        f=f+1;

end

k= [k; energy31];

% 32
a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

        energy32(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

        f=f+1;

end

k= [k; energy32];

% 33
a=length(k);

```

```

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy33(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy33];

% 34

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy34(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy34];

% 35

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy35(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

```



```

end

k= [k; energy35];

% 36

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy36(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy36];

% 37

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy37(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy37];

% 38

a=length(k);

f=1;
x=x+1;

```

```

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy38(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy38];

% 39

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy39(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy39];

% 40

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy40(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy40];

```

```

% 41

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy41(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy41];

% 42

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy42(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy42];

% 43

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

```

```

        energy43(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/o(x+2:x+2,3:3)-o(x:x,3:3));

        f=f+1;

end

k= [k; energy43];

% 44

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

        energy44(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/o(x+2:x+2,3:3)-o(x:x,3:3));

        f=f+1;

end

k= [k; energy44];

% 45

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

        energy45(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/o(x+2:x+2,3:3)-o(x:x,3:3));

        f=f+1;

end

k= [k; energy45];

```

```

% 47

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy47(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;
end

k= [k; energy47];

```

```

% 48

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy48(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;
end

k= [k; energy48];

```

```

% 49

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy49(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

```

```

        f=f+1;
end

k= [k; energy49];

% 50

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy50(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;
end

k= [k; energy50];

% 51

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy51(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;
end

k= [k; energy51];

% 52

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

```

```

        energy52(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/o(x+2:x+2,3:3)-o(x:x,3:3));

        f=f+1;
end

k= [k; energy52];

% 53

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

        energy53(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/o(x+2:x+2,3:3)-o(x:x,3:3));

        f=f+1;
end

k= [k; energy53];

% 56

a=length(k);

f=1;
x=x+1;

while f < 183

        energy56(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/o(x+2:x+2,3:3)-o(x:x,3:3));

        f=f+1;
end

k= [k; energy56];

```

```

%k is the energy at xxx depth in the EVA glove

save energyrestraint.ascii k -ascii

clear

%push particles through pressure restraint

load energyrestraint.ascii

E=energyrestraint';

%build the matrix interpolated Ranges through pressure restraint

load stopping_pwr_oxygenbladder.ascii

o=stopping_pwr_oxygenbladder;

f=1;

while E(1:1,f:f) <= 0

    range00(f:f,1:1)=0;

    f=f+1;

end

k= [range00];

%1

a=length(k);

f=1;
x=16;

while E(1:1,f+a:f+a) < o(x+2:x+2,1:1)

    range(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+2:x+2,3:3)...
    -o(x:x,3:3))/(o(x+2:x+2,1:1)-o(x:x,1:1));

    f=f+1;

```



```

end

k= [k; range];

%2

a=length(k);

f=1;
x=x+2;

while E(1:1,f+a:f+a) < o(x+2:x+2,1:1)

    range01(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+2:x+2,3:3)...
        -o(x:x,3:3))/o(x+2:x+2,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range01];

%3

a=length(k);

f=1;
x=x+2;

while E(1:1,f+a:f+a) < o(x+2:x+2,1:1)

    range02(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+2:x+2,3:3)...
        -o(x:x,3:3))/o(x+2:x+2,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range02];

% 4

a=length(k);

f=1;

```

```

x=x+2;

while E(1:1,f+a:f+a) < o(x+2:x+2,1:1)

    range03(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+2:x+2,3:3)...
        -o(x:x,3:3))/(o(x+2:x+2,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range03];

% 4

a=length(k);

f=1;
x=x+2;

while E(1:1,f+a:f+a) < o(x+2:x+2,1:1)

    range04(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+2:x+2,3:3)...
        -o(x:x,3:3))/(o(x+2:x+2,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range04];

% 5

a=length(k);

f=1;
x=x+2;

while E(1:1,f+a:f+a) < o(x+2:x+2,1:1)

    range05(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+2:x+2,3:3)...
        -o(x:x,3:3))/(o(x+2:x+2,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range05];

```

```

% 6

a=length(k);

f=1;
x=x+2;

while E(1:1,f+a:f+a) < o(x+2:x+2,1:1)

    range06(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+2:x+2,3:3)...
        -o(x:x,3:3))/(o(x+2:x+2,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range06];

% 7

a=length(k);

f=1;
x=x+2;

while E(1:1,f+a:f+a) < o(x+2:x+2,1:1)

    range07(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+2:x+2,3:3)...
        -o(x:x,3:3))/(o(x+2:x+2,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range07];

% 8

a=length(k);

f=1;
x=x+2;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

```

```

        range08(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

        f=f+1;

end

k= [k; range08];

% 9

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

        range09(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

        f=f+1;

end

k= [k; range09];

% 10

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

        range10(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

        f=f+1;

end

k= [k; range10];

% 11

```

```

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range11(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range11];

% 12

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range12(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range12];

% 14

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range14(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

```

```

        f=f+1;

end

k= [k; range14];

% 15

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range15(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))* (o(x+1:x+1,3:3) ...
-o(x:x,3:3)) / (o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range15];

% 16

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range16(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))* (o(x+1:x+1,3:3) ...
-o(x:x,3:3)) / (o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range16];

% 17

a=length(k);

```

```

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range17(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range17];

% 18

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range18(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range18];

% 19

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range19(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

```

```

end

k= [k; range19];

% 20

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range20(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/o(x+1:x+1,1:1)-o(x:x,1:1));
    f=f+1;

end

k= [k; range20];

% 21

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range21(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range21];

% 22

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

```



```

        range22(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/o(x+1:x+1,1:1)-o(x:x,1:1));

        f=f+1;

end

k= [k; range22];

% 23

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

        range23(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/o(x+1:x+1,1:1)-o(x:x,1:1));

        f=f+1;

end

k= [k; range23];

% 24

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

        range24(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/o(x+1:x+1,1:1)-o(x:x,1:1));

        f=f+1;

end

k= [k; range24];

```

```

% 25

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range25(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k=[k; range25];

% 26

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range26(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k=[k; range26];

% 27

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

```

```

        range27(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

        f=f+1;

end

k= [k; range27];

% 28

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

        range28(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

        f=f+1;

end

k= [k; range28];

% 29

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

        range29(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

        f=f+1;

end

k= [k; range29];

```

```

% 30

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range30(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range30];

% 31

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range31(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range31];

% 32

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range32(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

```

```

        f=f+1;

end

k= [k; range32];

% 33

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range33(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))* (o(x+1:x+1,3:3) ...
-o(x:x,3:3)) / (o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range33];

% 34

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range34(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))* (o(x+1:x+1,3:3) ...
-o(x:x,3:3)) / (o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range34];

% 35

a=length(k);

```

```

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range35(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range35];

% 36

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range36(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range36];

% 37

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range37(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

```

```

k= [k; range37];

% 38
a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range38(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range38];

% 39
a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range39(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range39];

% 40
a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

```

```

        range40(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/o(x+1:x+1,1:1)-o(x:x,1:1));

        f=f+1;

end

k= [k; range40];

% 41

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

        range41(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/o(x+1:x+1,1:1)-o(x:x,1:1));

        f=f+1;

end

k= [k; range41];

% 42

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

        range42(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/o(x+1:x+1,1:1)-o(x:x,1:1));

        f=f+1;

end

k= [k; range42];

```



```

% 43

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range43(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k=[k; range43];

% 44

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range44(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k=[k; range44];

% 45

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

```

```

    range45(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range45];

% 46

a=length(k);

f=1;
x=x+1;
while f< 179
    range46(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range46];

%change date

combined=[E' k];

save bladderrangeoxygen.ascii combined -ASCII

clear

%determine the remaining range after passing through the pressure
bladder
%in order to
%determine the energy at exit of pressure bladder

% using SRIM the thickness is 279.4 um at a density of 0.501 g/cm3
nylon

```

```

%bladderrangeoxygen is saved in 2 colums energy and penetration depth

load bladderrangeoxygen.ascii

load stopping_pwr_oxygenbladder.ascii

v=bladderrangeoxygen;
f=1;

while f<3193

    %in micrmoeters
    bladderrange(f:f,1:1)= v(f:f,2:2)-228.6;

    f=f+1;

end

%using bladderrange matrix interpolate the remaining range back to a
energy

brange=bladderrange';

o=stopping_pwr_oxygenbladder;
f=1;

while brange(1:1,f:f) <= 12.02

    energy00(f:f,1:1)=0;

    f=f+1;

end

k= [energy00];

%1

a=length(k);

f=1;
x=4;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

```

```

        energy(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

        f=f+1;

end

k= [k; energy];

%2

a=length(k);

f=1;
x=x+4;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

        energy01(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

        f=f+1;

end

k= [k; energy01];

%3

a=length(k);

f=1;
x=x+4;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

        energy02(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

        f=f+1;

end

k= [k; energy02];

```

```

% 4

a=length(k);

f=1;
x=x+2;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy03(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
    -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+4;

end

k= [k; energy03];

% 4

a=length(k);
f=1;
x=x+2;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy04(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
    -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy04];

% 5

a=length(k);

f=1;
x=x+2;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy05(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
    -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

```

```

end

k= [k; energy05];

% 6

a=length(k);

f=1;
x=x+2;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy06(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy06];

% 7

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy07(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy07];

% 8

a=length(k);

f=1;
x=x+1;

```

```

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy08(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy08];

% 9

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy09(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy09];

% 10

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy10(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

```

```

k= [k; energy10];

% 11

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy11(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy11];

% 12

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy12(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy12];

% 14

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

```



```

        energy13(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

        f=f+1;

end

k= [k; energy13];

% 15

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

        energy14(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

        f=f+1;

end

k= [k; energy14];

% 16

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

        energy15(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

        f=f+1;

end

k= [k; energy15];

```

```

% 17

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy16(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy16];

% 18

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy17(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy17];

% 19

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

```

```

        energy19(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

        f=f+1;

end

k= [k; energy19];

% 20

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

        energy20(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

        f=f+1;

end

k= [k; energy20];

% 21

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

        energy21(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

        f=f+1;

end

k= [k; energy21];
% 22

a=length(k);

```

```

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy22(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy22];

% 23

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy23(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy23];

% 24

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy24(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

```

```

k= [k; energy24];

% 25

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy25(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1)/o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy25];

% 26

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy26(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1)/o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy26];

% 27

a=length(k);

f=1;
x=x+1;

```

```

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy27(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy27];

% 28

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy28(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy28];

% 29

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy29(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

```

```

k= [k; energy29];

% 30

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy30(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy30];

% 31

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy31(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy31];

% 32

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

```

```

        energy32(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

        f=f+1;

end

k= [k; energy32];

% 33

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

        energy33(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

        f=f+1;

end

k= [k; energy33];

% 34

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

        energy34(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

        f=f+1;

end

k= [k; energy34];

% 35

```



```

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy35(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy35];

% 36

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy36(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy36];

% 37

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy37(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

```

```

        f=f+1;

end

k= [k; energy37];

% 38
a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy38(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy38];

% 39
a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy39(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy39];

% 40
a=length(k);

f=1;

```

```

x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy40(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy40];

% 41

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy41(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy41];

% 42

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy42(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

```

```

end

k= [k; energy42];

% 43

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy43(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1)/o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy43];

% 44

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy44(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1)/o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy44];

% 45

a=length(k);

f=1;
x=x+1;

```

```

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy45(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;

end

k= [k; energy45];

% 47

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy47(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;
end

k= [k; energy47];

% 48

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy48(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;
end

k= [k; energy48];

```

```

% 49

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy49(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;
end

k= [k; energy49];

% 50

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy50(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;
end

k= [k; energy50];

% 51

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy51(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

```

```

        f=f+1;
end

k= [k; energy51];

% 52

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy52(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;
end

k= [k; energy52];

% 53

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy53(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;
end

k= [k; energy53];

% 51

a=length(k);

f=1;
x=x+1;

```

```

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy54(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;
end

k= [k; energy54];

% 55

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    energy55(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;
end

k= [k; energy55];

% 56

a=length(k);

f=1;
x=x+1;

while f < 178

    energy56(f:f,1:1)=o(x:x,1:1)+(brange(1:1,f+a:f+a)-
o(x:x,3:3))*o(x+2:x+2,1:1)...
        -o(x:x,1:1))/(o(x+2:x+2,3:3)-o(x:x,3:3));

    f=f+1;
end

k= [k; energy56];

```



```

%k is the energy at exit depth in the EVA glove
save energybladder.ascii k -ascii
clear

```

This code passes the particle through the skin.

```

load energybladder.ascii
%build the matrix interpolated Ranges in skin

load stopping_pwr_oxygenskin.ascii

E=energybladder';

o=stopping_pwr_oxygenskin;

f=1;

while E(1:1,f:f) <= 0

    range00(f:f,1:1)=0;

    f=f+1;

end

k= [range00];

%0
a=length(k);

f=1;
x=5;

while E(1:1,f+a:f+a) < o(x+2:x+2,1:1)

    range(f:f,1:1)=o(x:x,3:3)+(E(1:1,f:f)-
o(x:x,1:1))* (o(x+2:x+2,3:3) ...
-o(x:x,3:3)) / (o(x+2:x+2,1:1)-o(x:x,1:1));

    f=f+1;

```

```

end

k= [k; range];

%1

a=length(k);

f=1;
x=x+7;

while E(1:1,f+a:f+a) < o(x+2:x+2,1:1)

    range01(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+2:x+2,3:3)...
        -o(x:x,3:3))/(o(x+2:x+2,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range01];

%2

a=length(k);

f=1;
x=x+4;

while E(1:1,f+a:f+a) < o(x+2:x+2,1:1)

    range02(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+2:x+2,3:3)...
        -o(x:x,3:3))/(o(x+2:x+2,1:1)-o(x:x,1:1));
    f=f+1;

end

k= [k; range02];

% 3

a=length(k);

f=1;
x=x+2;

```

```

while E(1:1,f+a:f+a) < o(x+2:x+2,1:1)

    range03(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+2:x+2,3:3)...
        -o(x:x,3:3))/(o(x+2:x+2,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range03];

% 4

a=length(k);

f=1;
x=x+2;

while E(1:1,f+a:f+a) < o(x+2:x+2,1:1)

    range04(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+2:x+2,3:3)...
        -o(x:x,3:3))/(o(x+2:x+2,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range04];

% 5

a=length(k);

f=1;
x=x+2;

while E(1:1,f+a:f+a) < o(x+2:x+2,1:1)

    range05(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+2:x+2,3:3)...
        -o(x:x,3:3))/(o(x+2:x+2,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range05];

% 6

```

```

a=length(k);

f=1;
x=x+2;

while E(1:1,f+a:f+a) < o(x+2:x+2,1:1)

    range06(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+2:x+2,3:3)...
    -o(x:x,3:3))/(o(x+2:x+2,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range06];

% 7

a=length(k);

f=1;
x=x+2;

while E(1:1,f+a:f+a) < o(x+2:x+2,1:1)

    range07(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+2:x+2,3:3)...
    -o(x:x,3:3))/(o(x+2:x+2,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range07];

% 8

a=length(k);

f=1;
x=x+2;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range08(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...

```

```

        -o(x:x, 3:3)) / (o(x+1:x+1, 1:1) - o(x:x, 1:1));

    f=f+1;

end

k= [k; range08];

% 9

a=length(k);

f=1;
x=x+1;

while E(1:1, f+a:f+a) < o(x+1:x+1, 1:1)

    range09(f:f, 1:1)=o(x:x, 3:3)+(E(1:1, f+a:f+a) -
o(x:x, 1:1)) * (o(x+1:x+1, 3:3) ...
        -o(x:x, 3:3)) / (o(x+1:x+1, 1:1) - o(x:x, 1:1));

    f=f+1;

end

k= [k; range09];

% 10

a=length(k);

f=1;
x=x+1;

while E(1:1, f+a:f+a) < o(x+1:x+1, 1:1)

    range10(f:f, 1:1)=o(x:x, 3:3)+(E(1:1, f+a:f+a) -
o(x:x, 1:1)) * (o(x+1:x+1, 3:3) ...
        -o(x:x, 3:3)) / (o(x+1:x+1, 1:1) - o(x:x, 1:1));

    f=f+1;

end

k= [k; range10];

% 11

a=length(k);

```

```

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range11(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range11];

% 12

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range12(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range12];

% 14

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range14(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

```

```

end

k= [k; range14];

% 15

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range15(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range15];

% 16

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range16(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range16];

% 17

a=length(k);

f=1;
x=x+1;

```

```

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range17(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range17];

% 18

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range18(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range18];

% 19

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range19(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

```



```

k= [k; range19];

% 20

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range20(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/o(x+1:x+1,1:1)-o(x:x,1:1));
    f=f+1;

end

k= [k; range20];

% 21

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range21(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range21];

% 22

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range22(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...

```

```

        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range22];

% 23

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range23(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))* (o(x+1:x+1,3:3) ...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range23];

% 24

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range24(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))* (o(x+1:x+1,3:3) ...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range24];

% 25

```

```

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range25(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range25];

% 26

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range26(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range26];

% 27

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range27(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

```

```

end

k= [k; range27];

% 28

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range28(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range28];

% 29

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range29(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range29];

% 30

a=length(k);

```

```

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range30(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range30];

% 31
a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range31(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range31];

% 32
a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range32(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

```

```

k= [k; range32];

% 33

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range33(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range33];

% 34

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range34(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range34];

% 35

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

```

```

        range35(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

        f=f+1;

end

k= [k; range35];

% 36

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

        range36(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

        f=f+1;

end

k= [k; range36];

% 37

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

        range37(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

        f=f+1;

end

k= [k; range37];

% 38

a=length(k);

```

```

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range38(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range38];

% 39

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range39(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range39];

% 40

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range40(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

```



```

end

k= [k; range40];

% 41

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range41(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range41];

% 42

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range42(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range42];

% 43

a=length(k);

```

```

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range43(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range43];

% 44

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range44(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range44];

% 45

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range45(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

```

```

k= [k; range45];

% 46

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range46(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range46];

% 47

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range47(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range47];

% 48

a=length(k);

f=1;
x=x+1;

```

```

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range48(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range48];

% 49

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range49(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range49];

% 50

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range50(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

```

```

k= [k; range50];

% 51

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range51(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range51];

% 52

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

    range52(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
    -o(x:x,3:3))/(o(x+1:x+1,1:1)-o(x:x,1:1));

    f=f+1;

end

k= [k; range52];

% 53

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

```

```

        range53(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/o(x+1:x+1,1:1)-o(x:x,1:1));

        f=f+1;

end

k= [k; range53];

% 54

a=length(k);

f=1;
x=x+1;

while E(1:1,f+a:f+a) < o(x+1:x+1,1:1)

        range54(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/o(x+1:x+1,1:1)-o(x:x,1:1));

        f=f+1;

end

k= [k; range54];

% 55

a=length(k);

f=1;
x=x+1;

while f <174

        range55(f:f,1:1)=o(x:x,3:3)+(E(1:1,f+a:f+a)-
o(x:x,1:1))*o(x+1:x+1,3:3)...
        -o(x:x,3:3))/o(x+1:x+1,1:1)-o(x:x,1:1));

        f=f+1;

end

k= [k; range55];

```

```

%change date

combined=[E' k];

save skinrangeoxygen.ascii combined -ASCII

clear

%determine the remaining range after passing through the skin in order
to
%determine the stopping power at 70 um

% using SRIM the thickness is 64 um at a density of 1.09g/cm3
%skinrangeoxygen is saved in 2 columns energy and penetration depth

load skinrangeoxygen.ascii

v=skinrangeoxygen;
f=1;

while f<3193

    skinrange(f:f,1:1)= v(f:f,2:2)-64;

    f=f+1;

end

%using **skinrange** derived above find the corresponding stopping
power at
%70um. Stopping_pwr_oxygen file is rom SRIM output format is
%Energy_Totalstpwr_range

load stopping_pwr_oxygenskin.ascii

o=stopping_pwr_oxygenskin;

brange=skinrange';
%0

f=1;

while brange(1:1,f:f) <= 0

```

```

    stpwr00(f:f,1:1)=0;

    f=f+1;

end

k= [stpwr00];

%1

a=length(k);

f=1;
x=1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))* (o(2+x:2+x,2:2)-o(x:x,2:2)) ...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

    f=f+1;

end

k=[k; stpwr];

%2

a=length(k);

f=1;
x=x+9;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr1(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))* (o(2+x:2+x,2:2)-o(x:x,2:2)) ...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

    f=f+1;

end

k=[k; stpwr1];

```



```

%3

a=length(k);

f=1;
x=x+6;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr2(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))* (o(2+x:2+x,2:2)-o(x:x,2:2)) ...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

    f=f+1;

end

k=[k; stpwr2];

%4

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr3(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))* (o(2+x:2+x,2:2)-o(x:x,2:2)) ...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

    f=f+1;

end

k=[k; stpwr3];

%5

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

```

```

    stpwr4(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))* (o(2+x:2+x,2:2)-o(x:x,2:2)) ...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

    f=f+1;

end

k=[k; stpwr4];

%6

a=length(k);

f=1;
x=x+2;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr5(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))* (o(2+x:2+x,2:2)-o(x:x,2:2)) ...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

    f=f+1;

end

k=[k; stpwr5];

%6a

a=length(k);

f=1;
x=x+2;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr6(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))* (o(2+x:2+x,2:2)-o(x:x,2:2)) ...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

    f=f+1;

end

```

```

k=[k; stpwr6];

%7

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr7(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))* (o(2+x:2+x,2:2)-o(x:x,2:2)) ...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

    f=f+1;

end

k=[k; stpwr7];

%8

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr8(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))* (o(2+x:2+x,2:2)-o(x:x,2:2)) ...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

    f=f+1;

end

k=[k; stpwr8];

%9

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

```

```

    stpwr9(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))*o(2+x:2+x,2:2)-o(x:x,2:2)...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

    f=f+1;

end

k=[k; stpwr9];

%10

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr10(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))*o(2+x:2+x,2:2)-o(x:x,2:2)...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

    f=f+1;

end

k=[k; stpwr10];

%11

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr11(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))*o(2+x:2+x,2:2)-o(x:x,2:2)...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

    f=f+1;

end

k=[k; stpwr11];

```

```

%12

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr12(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))* (o(2+x:2+x,2:2)-o(x:x,2:2)) ...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

    f=f+1;

end

k=[k; stpwr12];

%13

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr13(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))* (o(2+x:2+x,2:2)-o(x:x,2:2)) ...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

    f=f+1;

end

k=[k; stpwr13];

%14

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr14(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...

```

```

        o(x:x,3:3) * (o(2+x:2+x,2:2) - o(x:x,2:2)) ...
        / (o(2+x:2+x,3:3) - o(x:x,3:3));

    f=f+1;

end

k=[k; stpwr14];

%15

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr15(f:f,1:1) = o(x:x,2:2) + (brange(1:1,f+a:f+a) - ...
        o(x:x,3:3) * (o(2+x:2+x,2:2) - o(x:x,2:2)) ...
        / (o(2+x:2+x,3:3) - o(x:x,3:3)));

    f=f+1;

end

k=[k; stpwr15];

%16

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr16(f:f,1:1) = o(x:x,2:2) + (brange(1:1,f+a:f+a) - ...
        o(x:x,3:3) * (o(2+x:2+x,2:2) - o(x:x,2:2)) ...
        / (o(2+x:2+x,3:3) - o(x:x,3:3)));

    f=f+1;

end

k=[k; stpwr16];

%17

```

```

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr17(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))* (o(2+x:2+x,2:2)-o(x:x,2:2)) ...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

    f=f+1;

end

k=[k; stpwr17];

%18

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr18(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))* (o(2+x:2+x,2:2)-o(x:x,2:2)) ...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

    f=f+1;

end

k=[k; stpwr18];

%19

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr19(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))* (o(2+x:2+x,2:2)-o(x:x,2:2)) ...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

    f=f+1;

```

```

end

k=[k; stpwr19];

%20

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr20(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))* (o(2+x:2+x,2:2)-o(x:x,2:2)) ...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

    f=f+1;

end

k=[k; stpwr20];

%21

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr21(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))* (o(2+x:2+x,2:2)-o(x:x,2:2)) ...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

    f=f+1;

end

k=[k; stpwr21];

%22

```



```

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr22(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))* (o(2+x:2+x,2:2)-o(x:x,2:2)) ...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

    f=f+1;

end

k=[k; stpwr22];

%23

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr23(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))* (o(2+x:2+x,2:2)-o(x:x,2:2)) ...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

    f=f+1;

end

k=[k; stpwr23];

%24

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr24(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))* (o(2+x:2+x,2:2)-o(x:x,2:2)) ...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

```

```

        f=f+1;

end

k=[k; stpwr24];

%25

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr25(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))* (o(2+x:2+x,2:2)-o(x:x,2:2)) ...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

    f=f+1;

end

k=[k; stpwr25];

%26

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr26(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))* (o(2+x:2+x,2:2)-o(x:x,2:2)) ...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

    f=f+1;

end

k=[k; stpwr26];

%27

```

```

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr27(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))* (o(2+x:2+x,2:2)-o(x:x,2:2)) ...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

    f=f+1;

end

k=[k; stpwr27];

%28

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr28(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))* (o(2+x:2+x,2:2)-o(x:x,2:2)) ...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

    f=f+1;

end

k=[k; stpwr28];

%29

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr29(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))* (o(2+x:2+x,2:2)-o(x:x,2:2)) ...

```

```

        / (o(2+x:2+x, 3:3) - o(x:x, 3:3));

    f=f+1;

end

k=[k; stpwr29];

%30

a=length(k);

f=1;
x=x+1;

while brange(1:1, f+a:f+a) < o(x+2:x+2, 3:3)

    stpwr30(f:f, 1:1) = o(x:x, 2:2) + (brange(1:1, f+a:f+a) - ...
        o(x:x, 3:3)) * (o(2+x:2+x, 2:2) - o(x:x, 2:2)) ...
        / (o(2+x:2+x, 3:3) - o(x:x, 3:3));

    f=f+1;

end

k=[k; stpwr30];

%31

a=length(k);

f=1;
x=x+1;

while brange(1:1, f+a:f+a) < o(x+2:x+2, 3:3)

    stpwr31(f:f, 1:1) = o(x:x, 2:2) + (brange(1:1, f+a:f+a) - ...
        o(x:x, 3:3)) * (o(2+x:2+x, 2:2) - o(x:x, 2:2)) ...
        / (o(2+x:2+x, 3:3) - o(x:x, 3:3));

    f=f+1;

end

k=[k; stpwr31];

```

```

%32

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr32(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))* (o(2+x:2+x,2:2)-o(x:x,2:2)) ...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

    f=f+1;

end

k=[k; stpwr32];

```

```

%33

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr33(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))* (o(2+x:2+x,2:2)-o(x:x,2:2)) ...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

    f=f+1;

end

k=[k; stpwr33];

```

```

%34

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

```

```

    stpwr34(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))* (o(2+x:2+x,2:2)-o(x:x,2:2)) ...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

    f=f+1;

end

k=[k; stpwr34];

%35

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr35(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))* (o(2+x:2+x,2:2)-o(x:x,2:2)) ...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

    f=f+1;

end

k=[k; stpwr35];

%36

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr36(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))* (o(2+x:2+x,2:2)-o(x:x,2:2)) ...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

    f=f+1;

end

k=[k; stpwr36];

```

```

%37

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr37(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))*o(2+x:2+x,2:2)-o(x:x,2:2)...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

    f=f+1;

end

k=[k; stpwr37];

%38

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr38(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))*o(2+x:2+x,2:2)-o(x:x,2:2)...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

    f=f+1;

end

k=[k; stpwr38];

%39

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

```

```

    stpwr39(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))*o(2+x:2+x,2:2)-o(x:x,2:2)...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

    f=f+1;

end

k=[k; stpwr39];

%40

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr40(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))*o(2+x:2+x,2:2)-o(x:x,2:2)...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

    f=f+1;

end

k=[k; stpwr40];

%41

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr41(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))*o(2+x:2+x,2:2)-o(x:x,2:2)...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

    f=f+1;

end

k=[k; stpwr41];

```



```

%42

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr42(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))* (o(2+x:2+x,2:2)-o(x:x,2:2)) ...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

    f=f+1;

end

k=[k; stpwr42];

%43

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr43(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))* (o(2+x:2+x,2:2)-o(x:x,2:2)) ...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

    f=f+1;

end

k=[k; stpwr43];

%44

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr44(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...

```

```

        o(x:x,3:3) * (o(2+x:2+x,2:2)-o(x:x,2:2)) ...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

    f=f+1;

end

k=[k; stpwr44];

%45

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr45(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3) * (o(2+x:2+x,2:2)-o(x:x,2:2)) ...
        / (o(2+x:2+x,3:3)-o(x:x,3:3)));

    f=f+1;

end

k=[k; stpwr45];

%46

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr46(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3) * (o(2+x:2+x,2:2)-o(x:x,2:2)) ...
        / (o(2+x:2+x,3:3)-o(x:x,3:3)));

    f=f+1;

end

k=[k; stpwr46];

```

```

%47

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr47(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))* (o(2+x:2+x,2:2)-o(x:x,2:2)) ...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

    f=f+1;

end

k=[k; stpwr47];

%48

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr48(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))* (o(2+x:2+x,2:2)-o(x:x,2:2)) ...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

    f=f+1;

end

k=[k; stpwr48];

%49

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr49(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))* (o(2+x:2+x,2:2)-o(x:x,2:2)) ...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

```

```

        f=f+1;

end

k=[k; stpwr49];

%50

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr50(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))* (o(2+x:2+x,2:2)-o(x:x,2:2)) ...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

    f=f+1;

end

k=[k; stpwr50];

%51

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr51(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))* (o(2+x:2+x,2:2)-o(x:x,2:2)) ...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

    f=f+1;

end

k=[k; stpwr51];

%52

a=length(k);

```

```

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr52(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))* (o(2+x:2+x,2:2)-o(x:x,2:2)) ...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

    f=f+1;

end

k=[k; stpwr52];

%54

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr54(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))* (o(2+x:2+x,2:2)-o(x:x,2:2)) ...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

    f=f+1;

end

k=[k; stpwr54];

%55

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr55(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))* (o(2+x:2+x,2:2)-o(x:x,2:2)) ...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

    f=f+1;

```

```

end

k=[k; stpwr55];

%56

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr56(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))* (o(2+x:2+x,2:2)-o(x:x,2:2)) ...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

    f=f+1;

end

k=[k; stpwr56];

%57

a=length(k);

f=1;
x=x+1;

while brange(1:1,f+a:f+a) < o(x+2:x+2,3:3)

    stpwr57(f:f,1:1)= o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))* (o(2+x:2+x,2:2)-o(x:x,2:2)) ...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

    f=f+1;

end

k=[k; stpwr57];

%58

a=length(k);

```

```
f=1;

x=x+1;

while f<173

    stpwr58(f:f,1:1)=  o(x:x,2:2)+(brange(1:1,f+a:f+a)-...
        o(x:x,3:3))* (o(2+x:2+x,2:2)-o(x:x,2:2)) ...
        / (o(2+x:2+x,3:3)-o(x:x,3:3));

    f=f+1;

end

k=[k; stpwr58];

% corresponding stopping power at 70um

save Oxygen_stoppingpower_at_70um.ascii k -ascii

clear
```

APPENDIX D

RAW OXYGEN AND IRON FLUENCE RATE, CURVE FITS, AND COUNT DATA

FOR EACH EVENT

Event 1	Date	Time	Location	Summing interval*					
	4-Nov-97	555	S14W33	4 Nov to 6 Nov					
Oxygen	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82	
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	5.462E-06	4.776E-06	0.000E+00	8.401E-06	1.909E-06	0.000E+00	3.804E-07	1.488E-06	
2	1.421E-05	2.316E-06	0.000E+00	6.071E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
3	3.584E-06	2.616E-06	0.000E+00	1.861E-04	1.414E-06	3.778E-06	3.262E-06	1.350E-06	
4	3.375E-05	5.715E-05	5.528E-05	2.117E-04	4.179E-05	2.033E-05	8.146E-06	3.166E-06	
5	3.277E-04	3.431E-04	3.155E-04	1.622E-04	9.079E-05	4.955E-05	1.678E-05	4.986E-06	
6	6.939E-04	4.503E-04	2.895E-04	1.473E-04	1.004E-04	3.658E-05	1.615E-05	6.157E-06	
7	5.066E-04	3.056E-04	2.479E-04	2.015E-04	6.507E-05	2.872E-05	1.197E-05	2.265E-06	
8	5.558E-04	4.081E-04	2.457E-04	1.089E-04	7.003E-05	3.083E-05	9.207E-06	1.788E-06	
9	8.815E-04	4.318E-04	2.619E-04	7.574E-05	8.781E-05	2.584E-05	6.219E-06	2.869E-06	
10	5.162E-04	2.952E-04	1.758E-04	8.474E-05	5.261E-05	2.612E-05	7.270E-06	1.159E-06	
11	3.337E-04	2.719E-04	1.245E-04	7.715E-05	4.175E-05	2.484E-05	6.093E-06	1.606E-06	
12	3.002E-04	2.567E-04	1.240E-04	7.552E-05	3.457E-05	2.151E-05	5.630E-06	5.573E-07	
13	4.193E-04	2.032E-04	1.388E-04	7.667E-05	4.779E-05	1.566E-05	8.727E-06	2.160E-06	
14	2.906E-04	1.641E-04	1.370E-04	5.950E-05	2.242E-05	9.584E-06	4.669E-06	2.661E-06	
15	3.195E-04	1.678E-04	9.362E-05	4.150E-05	2.700E-05	1.231E-05	4.268E-06	2.657E-06	
16	3.840E-04	2.122E-04	1.520E-04	7.304E-05	2.932E-05	1.250E-05	1.709E-06	1.615E-06	
17	3.456E-04	1.857E-04	1.217E-04	1.017E-04	2.683E-05	1.421E-05	2.134E-06	5.128E-07	
18	4.030E-04	2.299E-04	1.333E-04	6.179E-05	3.364E-05	8.580E-06	4.266E-06	1.073E-06	
19	5.797E-04	3.184E-04	1.681E-04	6.765E-05	3.291E-05	8.762E-06	3.047E-06	1.122E-06	
20	6.251E-04	2.051E-04	1.433E-04	7.239E-05	3.466E-05	4.822E-06	2.599E-06	5.251E-07	
21	4.889E-04	2.758E-04	1.308E-04	6.974E-05	1.567E-05	8.908E-06	1.614E-06	1.529E-06	
22	5.089E-04	2.528E-04	1.590E-04	6.658E-05	9.399E-06	6.791E-06	1.308E-06	0.000E+00	
23	5.160E-04	2.252E-04	1.344E-04	4.008E-05	1.352E-05	2.889E-06	1.269E-06	5.476E-07	
24	4.209E-04	2.382E-04	1.012E-04	5.110E-05	1.347E-05	3.800E-06	1.676E-06	0.000E+00	
25	4.079E-04	1.879E-04	1.126E-04	3.107E-05	1.429E-05	6.577E-06	8.336E-07	5.476E-07	
26	4.122E-04	1.755E-04	8.934E-05	4.608E-05	1.333E-05	1.890E-06	2.516E-06	5.435E-07	
27	4.152E-04	1.617E-04	9.280E-05	3.801E-05	1.339E-05	4.648E-06	2.159E-06	5.136E-07	
28	3.320E-04	1.368E-04	9.495E-05	3.028E-05	8.055E-06	1.883E-06	2.527E-06	1.050E-06	
29	3.197E-04	1.532E-04	5.636E-05	2.739E-05	5.043E-06	4.696E-06	1.242E-06	1.048E-06	
30	2.615E-04	1.436E-04	5.281E-05	3.019E-05	1.112E-05	2.859E-06	1.234E-06	0.000E+00	
31	2.664E-04	1.414E-04	5.351E-05	2.712E-05	8.004E-06	3.826E-06	8.544E-07	0.000E+00	

32	3.167E-04	1.168E-04	6.531E-05	2.216E-05	9.066E-06	3.664E-06	4.041E-07	0.000E+00
33	2.765E-04	1.308E-04	5.951E-05	1.210E-05	1.112E-05	1.856E-06	8.315E-07	1.008E-06
34	2.400E-04	1.013E-04	4.114E-05	1.190E-05	6.967E-06	9.521E-07	8.150E-07	1.538E-06
35	3.251E-04	7.006E-05	5.043E-05	1.380E-05	9.911E-06	2.797E-06	4.010E-07	1.034E-06
36	2.426E-04	6.354E-05	7.170E-05	1.035E-05	2.060E-06	1.842E-06	8.003E-07	5.306E-07
37	2.384E-04	4.838E-05	3.777E-05	1.796E-05	3.657E-06	8.787E-07	7.418E-07	4.640E-07
38	2.214E-04	6.639E-05	1.269E-05	1.337E-05	8.903E-06	9.400E-07	2.008E-06	1.575E-06
39	1.976E-04	6.215E-05	3.690E-05	1.305E-05	3.952E-06	4.525E-06	7.916E-07	0.000E+00
40	1.330E-04	4.188E-05	3.629E-05	1.042E-05	5.924E-06	9.364E-07	8.144E-07	4.940E-07
41	1.704E-04	4.200E-05	2.444E-05	3.021E-06	2.919E-06	2.635E-06	8.106E-07	4.909E-07
42	1.433E-04	4.892E-05	1.812E-05	8.938E-06	3.031E-06	1.859E-06	8.091E-07	0.000E+00
43	1.309E-04	4.865E-05	2.121E-05	4.330E-06	2.907E-06	0.000E+00	0.000E+00	1.039E-06
44	1.173E-04	3.699E-05	1.512E-05	1.024E-05	1.951E-06	9.257E-07	0.000E+00	1.035E-06
45	1.388E-04	5.366E-05	1.834E-05	9.966E-06	2.893E-06	8.707E-07	8.025E-07	4.871E-07
46	1.125E-04	3.637E-05	1.191E-05	4.394E-06	3.831E-06	0.000E+00	4.129E-07	4.862E-07
47	9.724E-05	3.370E-05	2.104E-05	5.884E-06	2.998E-06	0.000E+00	4.118E-07	0.000E+00
48	8.535E-05	3.658E-05	1.224E-05	5.791E-06	9.414E-07	0.000E+00	3.876E-07	9.991E-07
49	9.304E-05	4.353E-05	2.096E-05	1.153E-05	0.000E+00	1.833E-06	3.873E-07	5.131E-07
50	7.985E-05	1.947E-05	2.095E-05	4.374E-06	1.932E-06	8.636E-07	7.965E-07	1.931E-06
51	6.336E-05	2.171E-05	1.217E-05	3.996E-06	1.928E-06	0.000E+00	0.000E+00	9.938E-07
52	6.928E-05	1.197E-05	8.899E-06	9.966E-06	9.343E-07	9.136E-07	1.180E-06	0.000E+00
53	5.851E-05	3.143E-05	2.712E-06	4.394E-06	1.796E-06	8.013E-07	3.812E-07	0.000E+00

Iron	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed φ	Listed φ	Listed φ	Listed φ	Listed φ	Listed φ	Listed φ	Listed φ
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.131E-07	0.000E+00
3	3.544E-06	1.493E-06	5.915E-06	2.093E-06	1.337E-06	1.088E-06	1.084E-06	0.000E+00
4	3.515E-05	1.559E-05	2.925E-05	6.464E-06	6.548E-06	1.184E-06	1.047E-06	0.000E+00
5	1.653E-04	9.518E-05	4.981E-05	2.586E-05	1.028E-05	4.689E-06	9.675E-07	3.041E-07
6	1.717E-04	8.615E-05	3.908E-05	2.424E-05	7.401E-06	2.894E-06	7.225E-07	0.000E+00
7	1.488E-04	7.758E-05	3.979E-05	1.755E-05	1.007E-05	1.099E-06	4.794E-07	0.000E+00
8	1.725E-04	4.815E-05	2.039E-05	2.663E-05	4.622E-06	1.074E-06	4.745E-07	0.000E+00
9	1.791E-04	9.163E-05	2.678E-05	1.349E-05	5.480E-06	1.678E-06	0.000E+00	0.000E+00
10	1.197E-04	4.575E-05	2.959E-05	1.477E-05	4.509E-06	1.038E-06	2.246E-07	0.000E+00
11	1.034E-04	5.106E-05	1.774E-05	7.506E-06	3.900E-06	2.543E-06	4.559E-07	0.000E+00
12	1.322E-04	4.421E-05	1.738E-05	1.176E-05	3.275E-06	5.226E-07	2.336E-07	0.000E+00
13	1.137E-04	4.646E-05	1.084E-05	1.104E-05	1.725E-06	1.053E-06	0.000E+00	0.000E+00
14	6.584E-05	4.184E-05	1.870E-05	4.086E-06	6.631E-06	0.000E+00	2.159E-07	2.651E-07
15	8.148E-05	4.188E-05	8.611E-06	4.956E-06	2.240E-06	1.490E-06	2.293E-07	2.678E-07
16	7.727E-05	3.497E-05	1.381E-05	3.329E-06	1.098E-06	0.000E+00	4.653E-07	0.000E+00
17	8.408E-05	2.918E-05	1.884E-05	5.688E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00

18	7.978E-05	1.977E-05	5.183E-06	1.685E-06	1.741E-06	1.010E-06	0.000E+00	0.000E+00
19	8.371E-05	2.587E-05	1.393E-05	6.759E-06	1.640E-06	5.004E-07	2.224E-07	0.000E+00
20	9.902E-05	1.836E-05	1.254E-05	4.170E-06	5.404E-07	4.958E-07	0.000E+00	0.000E+00
21	9.477E-05	2.403E-05	8.017E-06	4.743E-06	1.039E-06	0.000E+00	0.000E+00	0.000E+00
22	8.601E-05	3.119E-05	1.220E-05	3.251E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
23	8.950E-05	2.122E-05	8.499E-06	3.264E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
24	6.284E-05	1.382E-05	6.777E-06	2.444E-06	1.127E-06	4.860E-07	0.000E+00	0.000E+00
25	6.355E-05	1.241E-05	3.538E-06	2.493E-06	1.093E-06	0.000E+00	0.000E+00	2.841E-07
26	5.390E-05	1.111E-05	5.086E-06	1.592E-06	0.000E+00	9.724E-07	2.301E-07	0.000E+00
27	6.112E-05	9.843E-06	1.661E-06	1.693E-06	1.622E-06	4.873E-07	0.000E+00	0.000E+00
28	3.663E-05	1.663E-05	1.754E-06	2.373E-06	1.053E-06	0.000E+00	0.000E+00	0.000E+00
29	3.756E-05	9.610E-06	1.739E-06	7.893E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
30	3.317E-05	9.496E-06	1.740E-06	2.400E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
31	4.404E-05	5.373E-06	3.466E-06	0.000E+00	5.204E-07	0.000E+00	2.126E-07	0.000E+00
32	3.164E-05	1.770E-05	3.376E-06	7.829E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
33	2.249E-05	5.450E-06	1.632E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
34	1.796E-05	4.029E-06	3.454E-06	0.000E+00	0.000E+00	0.000E+00	2.107E-07	0.000E+00
35	2.271E-05	5.418E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.106E-07	0.000E+00
36	2.703E-05	8.036E-06	1.621E-06	7.757E-07	5.154E-07	0.000E+00	0.000E+00	0.000E+00
37	1.513E-05	1.213E-06	3.185E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.556E-07
38	1.779E-05	5.358E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
39	1.185E-05	2.679E-06	3.409E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.561E-07
40	4.393E-06	4.039E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
41	1.007E-05	1.370E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
42	1.155E-05	2.731E-06	0.000E+00	8.093E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
43	1.030E-05	1.286E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
44	8.923E-06	2.635E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
45	5.739E-06	3.981E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
46	2.998E-06	0.000E+00	1.574E-06	0.000E+00	0.000E+00	0.000E+00	2.041E-07	0.000E+00
47	2.904E-06	2.625E-06	0.000E+00	7.529E-07	0.000E+00	0.000E+00	0.000E+00	2.518E-07
48	2.987E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.513E-07
49	7.100E-06	2.615E-06	0.000E+00	7.964E-07	0.000E+00	0.000E+00	2.156E-07	0.000E+00
50	4.375E-06	1.267E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.504E-07
51	4.282E-06	6.599E-06	1.561E-06	0.000E+00	0.000E+00	0.000E+00	2.149E-07	2.651E-07
52	1.309E-05	1.340E-06	0.000E+00	0.000E+00	5.272E-07	0.000E+00	0.000E+00	0.000E+00
53	0.000E+00	2.353E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.328E-07

φ = particles/cm²-SR*sec*Mev/nucleon

*obtained from Cane et al. 2005

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
2	2	0	0	2	0	1	3
5	1	0	0	0	0	0	0
1	1	0	4	1	3	6	2
10	19	15	34	34	18	16	5
105	126	94	114	84	50	38	9
211	157	81	122	87	34	34	10
158	109	71	97	58	28	26	4
175	146	71	89	63	30	20	3
272	152	74	118	77	25	13	5
164	107	51	67	48	26	16	2
111	103	38	48	40	26	14	3
100	98	38	54	33	22	13	1
139	76	42	49	45	15	20	4
99	64	43	49	22	10	11	5
109	65	29	50	26	13	10	5
130	82	47	38	28	13	4	3
117	72	38	27	26	15	5	1
135	88	41	47	32	9	10	2
191	120	51	64	31	9	7	2
208	78	44	39	33	5	6	1
174	112	43	46	16	10	4	3
170	96	48	46	9	7	3	0
174	87	42	45	13	3	3	1
143	93	32	43	13	4	4	0
138	73	35	26	14	7	2	1
140	69	28	33	13	2	6	1
142	63	29	20	13	5	5	1
113	54	30	30	8	2	6	2
110	60	18	25	5	5	3	2
91	57	17	20	11	3	3	0
93	56	17	18	8	4	2	0
110	46	21	20	9	4	1	0
96	52	19	18	11	2	2	2
84	40	13	15	7	1	2	3
113	28	16	8	10	3	1	2
85	25	23	8	2	2	2	1
90	21	13	10	4	1	2	1
78	27	4	7	9	1	5	3
70	25	12	12	4	5	2	0
47	17	12	9	6	1	2	1
61	17	8	9	3	3	2	1
51	20	6	7	3	2	2	0
47	20	7	2	3	0	0	2
42	15	5	6	2	1	0	2
50	22	6	3	3	1	2	1

41	15	4	7	4	0	1	1
35	14	7	7	3	0	1	0
31	15	4	3	1	0	1	2
34	18	7	4	0	2	1	1
29	8	7	4	2	1	2	4
23	9	4	8	2	0	0	2
25	5	3	3	1	1	3	0
23	14	1	3	2	1	1	0

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	0	0	0	0	0	0	0
0	0	0	0	0	0	1	0
2	1	3	2	2	2	4	0
20	10	15	7	10	2	4	0
102	65	28	30	18	9	4	1
99	55	20	26	12	5	3	0
89	51	21	20	17	2	2	0
103	32	11	30	8	2	2	0
106	60	14	15	9	3	0	0
73	31	16	17	8	2	1	0
66	36	10	9	7	5	2	0
84	31	10	14	6	1	1	0
72	32	6	13	3	2	0	0
43	30	11	5	12	0	1	1
53	30	5	6	4	3	1	1
50	25	8	4	2	0	2	0
55	21	11	7	0	0	0	0
51	14	3	2	3	2	0	0
53	18	8	8	3	1	1	0
63	13	7	5	1	1	0	0
65	18	5	6	2	0	0	0
55	22	7	4	0	0	0	0
58	15	5	4	0	0	0	0
41	10	4	3	2	1	0	0
41	9	2	3	2	0	0	1
35	8	3	2	0	2	1	0
40	7	1	2	3	1	0	0
24	12	1	3	2	0	0	0
25	7	1	1	0	0	0	0

22	7	1	3	0	0	0	0
29	4	2	0	1	0	1	0
21	13	2	1	0	0	0	0
15	4	1	0	0	0	0	0
12	3	2	0	0	0	1	0
15	4	0	0	0	0	1	0
18	6	1	1	1	0	0	0
11	1	2	0	0	0	0	1
12	4	0	0	0	0	0	0
8	2	2	0	0	0	0	1
3	3	0	0	0	0	0	0
7	1	0	0	0	0	0	0
8	2	0	1	0	0	0	0
7	1	0	0	0	0	0	0
6	2	0	0	0	0	0	0
4	3	0	0	0	0	0	0
2	0	1	0	0	0	1	0
2	2	0	1	0	0	0	1
2	0	0	0	0	0	0	1
5	2	0	1	0	0	1	0
3	1	0	0	0	0	0	1
3	5	1	0	0	0	1	1
9	1	0	0	1	0	0	0
0	2	0	0	0	0	0	1

Curve fit Oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.06981 \quad (0.04838, 0.09125)$$

$$b = -0.1991 \quad (-0.2427, -0.1555)$$

$$c = 0.0007331 \quad (-0.001384, 0.00285)$$

$$d = -0.01515 \text{ } (-0.07991, 0.04961)$$

goftotal =

sse: 2.2660e-007

rsquare: 0.9984

dfe: 4

adjrsquare: 0.9972

rmse: 2.3801e-004

ctotal =

General model Exp1:

$$ctotal(x) = a * \exp(b * x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.02012 \text{ } (0.007234, 0.03302)$$

$$b = -0.1117 \text{ } (-0.1423, -0.08097)$$

goftotal =

sse: 2.4443e-008

rsquare: 9.9384e-001

dfe: 3

adjrsquare: 9.9178e-001

rmse: 9.0265e-005

Event 2

Event 2	Date			Time*	Location*		Summing interval*	
	6-Nov-97			1150	S18W63		6 Nov to 9 Nov 2000	
Oxygen	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed φ	Listed φ	Listed φ	Listed φ	Listed φ	Listed φ	Listed φ	Listed φ
1	5.052E-05	2.201E-05	9.136E-06	6.056E-06	1.069E-06	0.000E+00	4.261E-07	0.000E+00
2	4.694E-05	1.451E-05	1.100E-05	1.226E-05	3.326E-06	5.081E-06	1.989E-05	1.858E-05
3	4.071E-05	1.742E-05	0.000E+00	2.330E-05	3.716E-05	9.212E-05	5.706E-05	8.356E-05
4	4.748E-05	8.060E-05	1.517E-04	1.516E-04	1.740E-04	1.890E-04	1.279E-04	9.520E-05
5	2.473E-04	2.986E-04	3.943E-04	3.657E-04	2.966E-04	3.350E-04	1.947E-04	1.098E-04
6	6.878E-04	7.166E-04	6.787E-04	6.783E-04	5.164E-04	4.836E-04	2.220E-04	1.147E-04
7	1.123E-03	1.140E-03	1.030E-03	9.308E-04	6.476E-04	5.028E-04	2.427E-04	1.018E-04
8	1.749E-03	1.575E-03	1.586E-03	1.183E-03	8.293E-04	5.357E-04	2.940E-04	1.132E-04
9	2.570E-03	2.394E-03	2.039E-03	1.547E-03	8.974E-04	6.239E-04	2.831E-04	8.029E-05
10	2.297E-03	1.736E-03	1.367E-03	1.107E-03	6.405E-04	3.933E-04	2.000E-04	7.004E-05
11	3.917E-03	2.986E-03	1.974E-03	1.528E-03	8.032E-04	5.394E-04	2.318E-04	8.224E-05
12	5.456E-03	3.243E-03	2.408E-03	1.624E-03	9.297E-04	4.529E-04	2.148E-04	6.859E-05
13	8.229E-03	4.827E-03	2.997E-03	1.918E-03	1.046E-03	5.362E-04	2.215E-04	9.216E-05
14	8.515E-03	4.667E-03	3.341E-03	1.870E-03	1.013E-03	5.274E-04	1.770E-04	5.774E-05
15	5.139E-03	2.889E-03	2.134E-03	1.357E-03	6.419E-04	3.619E-04	1.365E-04	4.834E-05
16	5.576E-03	2.992E-03	2.204E-03	1.361E-03	7.503E-04	3.525E-04	1.486E-04	4.111E-05
17	7.221E-03	3.886E-03	2.599E-03	1.500E-03	6.613E-04	4.407E-04	1.364E-04	3.257E-05
18	6.473E-03	3.462E-03	2.088E-03	1.433E-03	6.607E-04	3.795E-04	1.207E-04	5.180E-05
19	6.271E-03	3.390E-03	2.249E-03	1.241E-03	6.564E-04	3.070E-04	1.046E-04	3.105E-05
20	5.574E-03	2.943E-03	1.777E-03	1.185E-03	4.907E-04	2.637E-04	1.044E-04	2.171E-05
21	5.267E-03	2.637E-03	1.646E-03	9.559E-04	4.801E-04	2.368E-04	7.916E-05	3.081E-05
22	4.734E-03	2.427E-03	1.567E-03	8.875E-04	4.611E-04	2.370E-04	6.532E-05	1.622E-05
23	4.224E-03	2.164E-03	1.435E-03	8.101E-04	3.836E-04	1.719E-04	5.312E-05	1.558E-05
24	4.378E-03	2.250E-03	1.223E-03	7.865E-04	3.603E-04	1.735E-04	5.501E-05	1.555E-05
25	3.798E-03	2.056E-03	1.157E-03	7.832E-04	3.054E-04	1.430E-04	5.219E-05	1.508E-05
26	3.573E-03	1.852E-03	1.171E-03	6.854E-04	2.876E-04	1.585E-04	5.287E-05	1.031E-05
27	3.332E-03	1.666E-03	1.035E-03	6.267E-04	2.689E-04	1.320E-04	3.873E-05	1.076E-05
28	3.013E-03	1.727E-03	1.041E-03	5.962E-04	2.907E-04	1.131E-04	3.961E-05	8.434E-06
29	2.829E-03	1.770E-03	9.980E-04	7.033E-04	3.316E-04	1.369E-04	5.964E-05	1.949E-05

30	2.975E-03	1.581E-03	1.026E-03	6.128E-04	3.138E-04	1.342E-04	4.442E-05	7.130E-06
31	2.801E-03	1.468E-03	9.141E-04	4.688E-04	2.125E-04	8.972E-05	2.397E-05	6.832E-06
32	2.711E-03	1.289E-03	7.152E-04	3.969E-04	1.880E-04	6.761E-05	2.648E-05	7.474E-06
33	2.252E-03	1.189E-03	6.602E-04	3.976E-04	1.840E-04	7.626E-05	1.127E-05	7.097E-07
34	2.114E-03	1.014E-03	5.364E-04	3.315E-04	1.504E-04	6.692E-05	1.474E-05	5.347E-06
35	2.146E-03	9.656E-04	6.244E-04	3.390E-04	1.226E-04	4.309E-05	1.560E-05	4.654E-06
36	2.264E-03	1.168E-03	6.801E-04	3.406E-04	1.291E-04	6.729E-05	2.530E-05	3.250E-06
37	2.007E-03	9.462E-04	5.593E-04	3.100E-04	1.363E-04	7.886E-05	1.411E-05	4.621E-06
38	1.795E-03	9.155E-04	4.600E-04	2.639E-04	1.257E-04	5.964E-05	1.209E-05	2.487E-06
39	1.858E-03	8.019E-04	4.808E-04	3.245E-04	1.215E-04	5.455E-05	1.015E-05	4.410E-06
40	1.612E-03	7.352E-04	4.613E-04	2.238E-04	8.728E-05	3.439E-05	8.969E-06	0.000E+00
41	1.573E-03	7.585E-04	3.712E-04	2.392E-04	1.018E-04	3.395E-05	1.025E-05	2.416E-06
42	1.454E-03	7.111E-04	4.542E-04	2.362E-04	1.044E-04	4.033E-05	8.694E-06	2.472E-06
43	1.202E-03	6.438E-04	3.506E-04	2.292E-04	9.709E-05	2.788E-05	9.033E-06	1.800E-06
44	1.339E-03	6.461E-04	3.516E-04	1.503E-04	7.129E-05	2.741E-05	6.695E-06	4.748E-06
45	1.184E-03	5.330E-04	3.387E-04	1.705E-04	7.020E-05	4.429E-05	9.490E-06	2.958E-06
46	9.798E-04	5.785E-04	2.970E-04	1.573E-04	5.877E-05	3.554E-05	6.098E-06	2.170E-06
47	9.650E-04	4.514E-04	2.695E-04	1.526E-04	5.096E-05	2.194E-05	6.471E-06	2.324E-06
48	9.519E-04	4.949E-04	2.641E-04	1.326E-04	5.835E-05	2.336E-05	7.198E-06	1.102E-06
49	8.587E-04	4.047E-04	2.265E-04	1.298E-04	6.828E-05	1.625E-05	3.165E-06	1.683E-06
50	8.463E-04	3.916E-04	2.242E-04	1.194E-04	4.026E-05	1.701E-05	7.177E-06	1.660E-06
51	8.257E-04	3.295E-04	2.122E-04	1.064E-04	4.732E-05	2.170E-05	5.745E-06	1.079E-06
52	7.634E-04	3.417E-04	1.996E-04	9.362E-05	3.790E-05	1.704E-05	5.016E-06	5.360E-07
53	7.878E-04	3.733E-04	1.903E-04	1.001E-04	3.861E-05	1.079E-05	3.061E-06	1.079E-06
54	6.538E-04	3.389E-04	1.720E-04	8.918E-05	3.190E-05	1.392E-05	4.445E-06	1.131E-06
55	6.498E-04	2.666E-04	1.466E-04	7.841E-05	2.333E-05	1.382E-05	3.977E-06	0.000E+00
56	5.121E-04	2.838E-04	1.271E-04	6.438E-05	2.717E-05	1.435E-05	4.172E-07	0.000E+00
57	4.656E-04	2.243E-04	1.465E-04	6.521E-05	2.320E-05	1.058E-05	3.450E-06	5.126E-07
58	4.200E-04	1.849E-04	1.095E-04	6.657E-05	1.662E-05	9.589E-06	3.763E-06	5.255E-07
59	4.646E-04	1.391E-04	8.006E-05	5.224E-05	1.652E-05	5.766E-06	2.505E-06	0.000E+00
60	4.313E-04	1.839E-04	9.004E-05	4.942E-05	2.470E-05	5.588E-06	2.525E-06	1.637E-06
61	4.091E-04	1.678E-04	1.029E-04	5.074E-05	1.834E-05	4.752E-06	8.653E-07	5.464E-07
62	3.734E-04	1.590E-04	6.490E-05	5.954E-05	1.822E-05	6.111E-06	1.137E-06	5.106E-07
63	2.993E-04	1.247E-04	7.576E-05	5.288E-05	1.506E-05	4.564E-06	1.220E-06	5.384E-07
64	2.723E-04	1.189E-04	8.090E-05	5.869E-05	1.398E-05	4.599E-06	1.214E-06	0.000E+00
65	3.214E-04	1.353E-04	8.112E-05	4.144E-05	1.242E-05	4.690E-06	1.659E-06	5.010E-07
66	2.450E-04	1.185E-04	7.768E-05	2.121E-05	1.201E-05	4.599E-06	8.264E-07	5.301E-07
67	1.844E-04	8.862E-05	4.702E-05	3.315E-05	8.110E-06	3.694E-06	4.204E-07	4.974E-07
68	1.953E-04	1.101E-04	3.439E-05	3.268E-05	5.809E-06	6.424E-06	1.213E-06	5.242E-07
69	1.702E-04	6.868E-05	6.148E-05	1.471E-05	6.924E-06	9.321E-07	2.039E-06	0.000E+00

70	1.731E-04	9.371E-05	6.540E-05	1.636E-05	1.085E-05	4.461E-06	4.040E-07	0.000E+00
71	1.465E-04	7.417E-05	2.478E-05	2.353E-05	1.078E-05	3.504E-06	2.016E-06	5.252E-07
72	1.900E-04	9.994E-05	3.652E-05	2.519E-05	7.025E-06	3.631E-06	1.208E-06	0.000E+00
73	1.513E-04	8.455E-05	4.009E-05	1.494E-05	4.974E-06	4.488E-06	3.928E-07	1.006E-06
74	1.185E-04	7.383E-05	2.766E-05	1.319E-05	8.773E-06	1.860E-06	2.063E-06	0.000E+00
75	9.173E-05	4.369E-05	1.489E-05	1.761E-05	6.861E-06	2.723E-06	8.088E-07	2.030E-06
76	1.104E-04	6.369E-05	4.894E-05	1.574E-05	6.025E-06	1.830E-06	1.598E-06	0.000E+00
77	8.892E-05	4.117E-05	4.890E-05	7.138E-06	6.761E-06	1.788E-06	8.280E-07	5.143E-07
78	6.749E-05	4.898E-05	3.083E-05	1.094E-05	3.690E-06	1.714E-06	3.691E-07	9.316E-07
79	9.840E-05	3.640E-05	3.631E-05	1.261E-05	4.172E-06	1.938E-06	1.332E-06	0.000E+00
80	1.102E-04	6.565E-05	2.454E-05	2.165E-05	2.829E-06	0.000E+00	4.109E-07	4.892E-07
81	8.188E-05	3.982E-05	2.539E-05	1.333E-05	5.014E-06	8.829E-07	8.026E-07	4.873E-07

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed φ	Listed φ	Listed φ	Listed φ	Listed φ	Listed φ	Listed φ	Listed φ
1	2.870E-06	2.519E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.139E-07	2.493E-07
2	4.347E-06	0.000E+00	1.554E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
3	6.214E-06	1.444E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.233E-07	2.758E-07
4	7.761E-06	0.000E+00	0.000E+00	5.070E-06	1.718E-05	1.468E-05	1.131E-05	8.231E-06
5	2.221E-05	3.533E-05	6.048E-05	8.389E-05	8.054E-05	6.734E-05	4.940E-05	2.097E-05
6	8.499E-05	1.915E-04	9.823E-05	2.023E-04	1.417E-04	1.231E-04	4.820E-05	2.383E-05
7	3.383E-04	4.047E-04	4.031E-04	4.016E-04	2.747E-04	1.612E-04	6.597E-05	1.421E-05
8	6.231E-04	5.554E-04	6.208E-04	5.231E-04	3.142E-04	1.710E-04	6.070E-05	3.012E-05
9	8.976E-04	7.699E-04	6.012E-04	5.431E-04	2.808E-04	1.624E-04	5.264E-05	1.309E-05
10	1.386E-03	9.189E-04	7.080E-04	5.515E-04	3.229E-04	1.445E-04	4.842E-05	1.419E-05
11	1.614E-03	1.006E-03	7.781E-04	6.094E-04	2.992E-04	1.504E-04	5.696E-05	1.129E-05
12	1.224E-03	9.068E-04	6.113E-04	5.196E-04	2.431E-04	1.187E-04	3.088E-05	4.639E-06
13	1.642E-03	9.348E-04	7.052E-04	5.056E-04	2.130E-04	9.679E-05	3.165E-05	2.669E-06
14	1.922E-03	1.139E-03	8.345E-04	5.074E-04	1.912E-04	9.604E-05	2.506E-05	5.347E-06
15	2.580E-03	1.297E-03	8.117E-04	5.408E-04	2.450E-04	9.325E-05	2.352E-05	7.969E-06
16	2.522E-03	1.301E-03	8.381E-04	5.006E-04	1.968E-04	1.087E-04	1.867E-05	5.099E-06
17	1.620E-03	8.887E-04	5.237E-04	3.834E-04	1.620E-04	6.434E-05	1.626E-05	1.129E-06
18	1.736E-03	9.170E-04	6.650E-04	3.702E-04	1.658E-04	5.953E-05	1.840E-05	1.267E-06
19	1.868E-03	9.133E-04	6.638E-04	4.401E-04	1.500E-04	5.546E-05	1.612E-05	1.211E-06
20	1.709E-03	8.907E-04	5.907E-04	3.377E-04	1.399E-04	4.403E-05	1.093E-05	3.090E-06
21	1.690E-03	9.001E-04	5.064E-04	3.404E-04	1.164E-04	4.882E-05	1.425E-05	2.471E-06
22	1.498E-03	7.704E-04	4.565E-04	2.691E-04	1.115E-04	3.732E-05	9.066E-06	5.741E-07
23	1.374E-03	6.454E-04	4.545E-04	2.180E-04	9.133E-05	2.727E-05	8.664E-06	1.057E-06
24	1.310E-03	5.924E-04	3.041E-04	2.201E-04	5.589E-05	2.055E-05	3.977E-06	5.166E-07

25	1.140E-03	5.156E-04	3.071E-04	1.622E-04	5.958E-05	2.462E-05	6.053E-06	0.000E+00
26	1.021E-03	4.980E-04	2.258E-04	1.682E-04	6.287E-05	2.603E-05	3.986E-06	4.634E-07
27	9.763E-04	4.441E-04	2.953E-04	1.444E-04	5.331E-05	1.986E-05	1.743E-06	4.489E-07
28	8.755E-04	4.214E-04	2.176E-04	1.234E-04	3.768E-05	1.562E-05	2.342E-06	0.000E+00
29	8.249E-04	3.778E-04	2.148E-04	1.042E-04	4.328E-05	1.234E-05	2.321E-06	0.000E+00
30	8.899E-04	3.792E-04	2.030E-04	1.120E-04	3.168E-05	1.372E-05	2.569E-06	0.000E+00
31	8.959E-04	4.190E-04	2.428E-04	1.118E-04	4.947E-05	9.561E-06	1.846E-06	4.043E-07
32	8.945E-04	3.632E-04	2.050E-04	9.544E-05	3.621E-05	6.758E-06	1.903E-06	0.000E+00
33	6.922E-04	3.169E-04	1.649E-04	9.997E-05	2.016E-05	1.031E-05	1.172E-06	0.000E+00
34	5.868E-04	2.598E-04	1.641E-04	9.549E-05	2.359E-05	1.911E-06	1.995E-06	6.681E-07
35	5.527E-04	2.098E-04	1.276E-04	5.096E-05	1.291E-05	4.404E-06	2.666E-07	0.000E+00
36	5.356E-04	2.140E-04	1.430E-04	5.765E-05	2.214E-05	3.761E-06	1.117E-06	0.000E+00
37	4.546E-04	1.904E-04	1.393E-04	4.499E-05	1.755E-05	6.278E-06	8.171E-07	0.000E+00
38	5.342E-04	2.331E-04	1.171E-04	5.117E-05	1.483E-05	3.746E-06	1.376E-06	0.000E+00
39	4.622E-04	1.655E-04	1.051E-04	4.499E-05	1.753E-05	4.803E-06	5.616E-07	0.000E+00
40	3.504E-04	2.033E-04	5.911E-05	5.350E-05	1.311E-05	2.381E-06	5.324E-07	3.344E-07
41	3.704E-04	1.799E-04	8.865E-05	5.095E-05	9.865E-06	1.227E-06	5.320E-07	0.000E+00
42	3.499E-04	1.393E-04	6.412E-05	3.757E-05	9.566E-06	4.618E-06	1.017E-06	3.080E-07
43	3.237E-04	1.138E-04	4.570E-05	2.706E-05	7.623E-06	1.744E-06	0.000E+00	3.258E-07
44	3.328E-04	1.492E-04	9.320E-05	3.093E-05	8.799E-06	1.717E-06	2.481E-07	0.000E+00
45	2.909E-04	9.127E-05	5.735E-05	3.056E-05	5.031E-06	1.664E-06	2.459E-07	0.000E+00
46	2.724E-04	1.011E-04	4.857E-05	2.205E-05	1.033E-05	0.000E+00	2.560E-07	0.000E+00
47	2.696E-04	1.114E-04	4.762E-05	1.741E-05	5.400E-06	5.631E-07	0.000E+00	0.000E+00
48	2.240E-04	8.112E-05	5.094E-05	1.658E-05	5.015E-06	1.019E-06	2.179E-07	0.000E+00
49	2.044E-04	1.031E-04	3.934E-05	2.607E-05	4.805E-06	1.690E-06	0.000E+00	0.000E+00
50	2.157E-04	6.596E-05	3.319E-05	1.942E-05	5.875E-06	1.080E-06	2.447E-07	0.000E+00
51	2.070E-04	8.309E-05	4.054E-05	1.137E-05	3.474E-06	0.000E+00	4.813E-07	0.000E+00
52	1.980E-04	6.165E-05	2.352E-05	1.488E-05	4.577E-06	1.019E-06	0.000E+00	0.000E+00
53	1.787E-04	5.576E-05	3.602E-05	1.465E-05	1.765E-06	1.556E-06	4.651E-07	5.724E-07
54	2.060E-04	4.540E-05	3.832E-05	1.547E-05	4.080E-06	1.044E-06	2.293E-07	0.000E+00
55	1.342E-04	4.352E-05	3.037E-05	1.464E-05	3.380E-06	0.000E+00	2.237E-07	2.816E-07
56	1.524E-04	3.611E-05	2.639E-05	1.016E-05	2.204E-06	4.986E-07	2.226E-07	0.000E+00
57	1.193E-04	4.475E-05	1.584E-05	2.539E-06	2.794E-06	0.000E+00	2.220E-07	2.723E-07
58	1.465E-04	4.354E-05	1.212E-05	7.544E-06	2.219E-06	0.000E+00	0.000E+00	0.000E+00
59	9.375E-05	3.401E-05	2.479E-05	7.424E-06	1.604E-06	0.000E+00	2.354E-07	0.000E+00
60	8.335E-05	4.161E-05	2.550E-05	6.622E-06	3.287E-06	4.972E-07	0.000E+00	0.000E+00
61	7.677E-05	2.640E-05	2.414E-05	4.991E-06	2.138E-06	0.000E+00	4.411E-07	0.000E+00
62	9.483E-05	2.823E-05	1.066E-05	7.527E-06	1.051E-06	5.151E-07	2.137E-07	0.000E+00
63	6.582E-05	2.472E-05	1.346E-05	3.228E-06	1.616E-06	0.000E+00	0.000E+00	2.636E-07
64	6.544E-05	2.697E-05	1.563E-05	2.267E-06	2.525E-06	0.000E+00	0.000E+00	0.000E+00

65	6.384E-05	9.614E-06	1.029E-05	3.221E-06	1.609E-06	0.000E+00	0.000E+00	0.000E+00
66	5.265E-05	1.648E-05	8.274E-06	4.803E-06	1.071E-06	4.762E-07	0.000E+00	2.777E-07
67	6.061E-05	2.707E-05	1.008E-05	3.179E-06	5.306E-07	5.004E-07	0.000E+00	2.603E-07
68	5.585E-05	1.758E-05	1.002E-05	8.271E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
69	2.313E-05	1.077E-05	1.008E-05	3.179E-06	0.000E+00	0.000E+00	2.154E-07	0.000E+00
70	3.129E-05	9.342E-06	3.297E-06	8.457E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
71	2.520E-05	8.066E-06	3.285E-06	2.367E-06	2.103E-06	0.000E+00	2.070E-07	2.546E-07
72	4.431E-05	1.199E-05	6.839E-06	2.390E-06	5.054E-07	0.000E+00	0.000E+00	2.710E-07
73	1.896E-05	9.264E-06	4.992E-06	3.064E-06	5.205E-07	0.000E+00	0.000E+00	0.000E+00
74	2.534E-05	9.174E-06	1.703E-06	3.051E-06	1.581E-06	0.000E+00	0.000E+00	0.000E+00
75	3.091E-05	5.461E-06	6.845E-06	8.021E-07	5.356E-07	0.000E+00	0.000E+00	0.000E+00
76	2.368E-05	1.178E-05	5.055E-06	3.128E-06	5.338E-07	0.000E+00	0.000E+00	0.000E+00
77	2.322E-05	1.278E-06	4.724E-06	7.536E-07	5.029E-07	0.000E+00	2.181E-07	0.000E+00
78	2.777E-05	6.551E-06	3.161E-06	8.036E-07	1.085E-06	0.000E+00	0.000E+00	0.000E+00
79	1.179E-05	7.891E-06	1.676E-06	7.521E-07	0.000E+00	0.000E+00	2.041E-07	0.000E+00
80	1.356E-05	7.307E-06	4.487E-06	0.000E+00	0.000E+00	0.000E+00	1.890E-07	0.000E+00
81	1.275E-05	7.010E-06	1.796E-06	1.615E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
82	1.021E-05	3.986E-06	3.241E-06	7.543E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
83	1.746E-05	3.978E-06	4.794E-06	0.000E+00	4.984E-07	4.591E-07	0.000E+00	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
18	9	3	4	1	0	1	0
10	4	3	4	2	3	24	18
6	3	0	6	14	39	54	62
6	11	17	35	61	70	107	64
29	40	43	83	102	124	161	72
86	102	78	162	184	188	192	79
146	170	123	230	240	203	218	74
225	233	185	294	308	217	266	82
333	358	244	385	334	254	256	58
361	313	198	333	288	191	219	61
543	476	252	410	321	235	226	65
756	513	307	429	368	195	206	52
972	675	337	452	370	205	189	63
1034	670	388	446	365	206	155	41
808	527	314	415	295	180	153	42
898	551	328	420	346	177	166	37
1028	639	338	413	272	197	136	26
959	593	287	406	282	177	124	43
986	612	326	371	295	150	113	27
938	568	275	381	235	138	122	20
953	547	273	330	248	133	100	31
908	534	276	326	253	141	87	17
858	500	268	329	233	113	79	19
916	539	236	315	215	113	80	18
829	513	232	326	191	97	79	18
813	481	244	298	188	112	83	13
780	447	223	280	180	96	63	14
714	467	227	269	196	83	65	11
701	497	227	331	234	106	102	27
831	505	263	327	251	116	86	11
742	444	223	238	161	74	44	10
727	396	176	202	144	56	49	11
612	368	164	206	143	64	21	1
579	319	136	173	118	57	28	8
591	304	158	178	96	37	30	7
619	366	171	178	101	57	48	5
559	303	143	164	108	68	27	7
512	299	121	144	103	53	24	4

527	260	125	175	99	48	20	7
467	243	123	124	73	31	18	0
460	254	100	134	85	31	21	4
429	241	124	134	88	37	18	4
361	221	97	132	83	26	19	3
408	225	98	87	62	26	14	8
361	186	95	99	61	42	20	5
325	220	91	100	56	37	14	4
298	160	77	90	45	21	14	4
298	178	76	80	53	23	16	2
273	147	66	79	62	16	7	3
271	143	66	73	37	17	16	3
268	122	63	66	44	22	13	2
246	125	59	58	35	17	11	1
255	139	57	62	36	11	7	2
214	127	52	56	30	14	10	2
213	100	44	49	22	14	9	0
172	109	39	41	26	15	1	0
156	86	45	42	22	11	8	1
143	72	34	43	16	10	9	1
158	54	25	34	16	6	6	0
146	71	28	32	24	6	6	3
140	66	32	33	18	5	2	1
137	67	22	42	19	7	3	1
103	49	24	35	15	5	3	1
94	47	26	39	14	5	3	0
112	54	26	27	12	5	4	1
85	47	25	14	12	5	2	1
65	35	15	22	8	4	1	1
69	44	11	22	6	7	3	1
60	28	20	10	7	1	5	0
61	38	21	11	11	5	1	0
52	30	8	16	11	4	5	1
67	40	12	17	7	4	3	0
53	34	13	10	5	5	1	2
42	30	9	9	9	2	5	0
33	18	5	12	7	3	2	4
39	26	16	11	6	2	4	0
32	17	16	5	7	2	2	1
26	22	11	8	4	2	1	2

33	14	11	8	4	2	3	0
40	27	8	15	3	0	1	1
29	16	8	9	5	1	2	1

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
4	1	0	0	0	0	1	1
3	0	0	3	16	15	28	18
6	10	13	42	60	54	89	30
20	50	21	88	91	87	77	31
76	101	81	171	176	113	104	18
148	146	133	232	210	126	100	40
223	212	134	252	196	124	91	18
338	248	154	258	229	111	85	20
402	278	174	284	209	116	97	16
368	302	163	292	206	110	64	8
438	279	170	255	159	79	60	4
510	336	199	251	143	79	46	8
603	341	170	239	164	68	39	11
603	346	182	228	133	79	31	7
491	301	144	220	140	60	34	2
533	315	184	215	144	57	39	2
515	279	164	227	117	47	30	2
488	282	152	181	112	39	22	5
510	300	137	190	98	45	30	4
482	275	132	161	101	36	20	1
475	246	141	141	89	29	21	2
483	241	100	151	57	23	10	1
441	221	107	129	71	30	17	0
409	221	81	126	71	32	11	1
408	205	110	113	62	25	5	1
381	202	84	100	46	21	7	0
370	187	86	87	55	17	7	0
402	190	82	95	40	19	8	0
423	218	102	98	66	14	6	1
479	215	98	95	54	11	7	0
352	178	75	95	29	16	4	0
300	147	75	91	34	3	7	2

288	121	59	49	19	7	1	0
280	124	67	57	33	6	4	0
240	111	66	44	26	10	3	0
280	135	55	50	22	6	5	0
247	97	50	44	26	8	2	0
192	123	29	55	20	4	2	1
201	108	43	52	15	2	2	0
194	85	32	39	15	8	4	1
181	70	23	28	12	3	0	1
188	93	47	33	14	3	1	0
167	58	29	33	8	3	1	0
158	65	25	24	17	0	1	0
157	72	25	19	9	1	0	0
143	57	29	20	9	2	1	0
121	67	21	29	8	3	0	0
130	44	18	22	10	2	1	0
126	56	22	13	6	0	2	0
121	42	13	17	8	2	0	0
111	38	20	17	3	3	2	2
127	31	21	18	7	2	1	0
83	30	17	17	6	0	1	1
96	25	15	12	4	1	1	0
75	31	9	3	5	0	1	1
94	31	7	9	4	0	0	0
60	24	14	9	3	0	1	0
54	30	15	8	6	1	0	0
50	19	14	6	4	0	2	0
61	20	6	9	2	1	1	0
43	18	8	4	3	0	0	1
46	21	10	3	5	0	0	0
42	7	6	4	3	0	0	0
35	12	5	6	2	1	0	1
40	20	6	4	1	1	0	1
37	13	6	1	0	0	0	0
15	8	6	4	0	0	1	0
21	7	2	1	0	0	0	0
17	6	2	3	4	0	1	1
30	9	4	3	1	0	0	1
13	7	3	4	1	0	0	0
17	7	1	4	3	0	0	0

21	4	4	1	1	0	0	0
16	9	3	4	1	0	0	0
16	1	3	1	1	0	1	0
19	5	2	1	2	0	0	0
8	6	1	1	0	0	1	0
10	6	3	0	0	0	1	0
8	5	1	2	0	0	0	0
7	3	2	1	0	0	0	0
12	3	3	0	1	1	0	0
0	1	0	0	1	1	0	0
0	0	0	0	1	1	0	0

Curve fit Oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a * \exp(b * x) + c * \exp(d * x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.7239 (0.4805, 0.9672)$$

$$b = -0.2553 (-0.3236, -0.1871)$$

$$c = 0.08681 (0.03065, 0.143)$$

$$d = -0.06349 (-0.08475, -0.04222)$$

goftotal =

sse: 3.0946e-006

rsquare: 0.9998

dfe: 4

adjrsquare: 0.9996

rmse: 8.7958e-004

ctotal =

General model Exp1:

$ctotal(x) = a * \exp(b * x)$

Coefficients (with 95% confidence bounds):

a = 0.1478 (0.06919, 0.2263)

b = -0.08026 (-0.1043, -0.05623)

goftotal =

sse: 5.6168e-006

rsquare: 9.9125e-001

dfe: 3

adjrsquare: 9.8834e-001

rmse: 1.3683e-003

Curve fit Iron:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

a = 0.1576 (0.0525, 0.2627)

b = -0.1424 (-0.2502, -0.03472)

c = 0.02334 (-0.02338, 0.07005)

d = -0.03795 (-0.07642, 0.0005173)

goftotal =

sse: 1.8715e-006

rsquare: 9.9842e-001

dfe: 4

adjrsquare: 9.9724e-001

rmse: 6.8401e-004

ctotal =

General model Exp1:

$$ctotal(x) = a \cdot \exp(b \cdot x)$$

Coefficients (with 95% confidence bounds):

a = 0.05322 (0.02844, 0.07801)

b = -0.05393 (-0.06663, -0.04124)

goftotal =

sse: 2.6904e-007

rsquare: 0.9953

dfe: 3

adjrsquare: 0.9937

rmse: 2.9947e-004

Event 3	Date	Time*	Location*	Summing interval*				
	20-Apr-98	1000	S43W90	Apr 20 to Apr 24 1200				
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	0.000E+00	2.436E-06	0.000E+00	0.000E+00	0.000E+00	8.971E-07	0.000E+00	5.291E-07
2	0.000E+00	2.411E-06	6.621E-06	0.000E+00	1.071E-06	0.000E+00	8.554E-07	6.296E-07
3	1.243E-05	2.398E-05	9.909E-06	3.174E-06	2.135E-06	9.700E-07	1.055E-06	7.693E-07
4	3.352E-05	4.936E-05	4.343E-05	2.249E-05	1.290E-05	4.938E-06	1.783E-06	5.238E-07
5	1.506E-04	1.263E-04	1.081E-04	5.144E-05	2.003E-05	7.786E-06	1.312E-06	1.583E-06
6	3.133E-04	2.574E-04	1.682E-04	7.731E-05	1.916E-05	6.830E-06	1.698E-06	1.104E-06
7	1.024E-03	5.565E-04	4.931E-04	2.102E-04	5.747E-05	1.784E-05	2.944E-06	5.271E-07
8	1.946E-03	1.620E-03	1.036E-03	4.508E-04	1.653E-04	3.834E-05	2.432E-06	1.196E-06
9	3.203E-03	2.180E-03	1.581E-03	6.676E-04	2.325E-04	4.218E-05	1.533E-06	6.529E-07
10	4.846E-03	3.652E-03	2.352E-03	1.247E-03	3.204E-04	6.044E-05	4.411E-06	1.364E-06
11	8.346E-03	5.896E-03	3.673E-03	1.993E-03	5.414E-04	7.643E-05	8.385E-06	7.507E-07
12	1.110E-02	7.917E-03	5.311E-03	2.770E-03	6.971E-04	1.495E-04	7.505E-06	0.000E+00
13	1.721E-02	1.308E-02	9.272E-03	4.619E-03	1.234E-03	2.269E-04	1.286E-05	8.614E-07
14	3.343E-02	2.351E-02	1.493E-02	7.514E-03	1.902E-03	2.994E-04	1.601E-05	1.308E-06
15	4.222E-02	2.903E-02	2.108E-02	8.982E-03	2.323E-03	4.083E-04	2.540E-05	0.000E+00
16	3.828E-02	2.823E-02	1.960E-02	9.160E-03	2.227E-03	4.123E-04	2.961E-05	0.000E+00
17	5.404E-02	3.501E-02	2.442E-02	1.172E-02	3.039E-03	5.325E-04	3.794E-05	1.886E-06
18	6.342E-02	3.882E-02	2.523E-02	1.268E-02	3.299E-03	5.269E-04	5.393E-05	2.219E-06
19	6.391E-02	4.344E-02	2.718E-02	1.437E-02	3.557E-03	6.311E-04	5.928E-05	0.000E+00
20	7.454E-02	4.554E-02	2.678E-02	1.456E-02	4.127E-03	8.116E-04	8.001E-05	7.229E-06
21	6.597E-02	4.032E-02	2.940E-02	1.343E-02	3.777E-03	8.074E-04	4.988E-05	0.000E+00
22	6.835E-02	4.348E-02	2.470E-02	1.211E-02	3.339E-03	6.534E-04	5.128E-05	0.000E+00
23	7.574E-02	5.461E-02	2.721E-02	1.624E-02	4.435E-03	8.764E-04	1.022E-04	2.665E-06
24	1.001E-01	6.346E-02	3.985E-02	2.059E-02	5.884E-03	1.184E-03	1.389E-04	8.339E-06
25	9.871E-02	6.127E-02	4.300E-02	2.062E-02	6.183E-03	1.495E-03	1.645E-04	5.116E-06
26	9.462E-02	5.815E-02	3.540E-02	2.097E-02	6.581E-03	1.405E-03	1.738E-04	0.000E+00

27	9.777E-02	6.120E-02	4.709E-02	2.016E-02	6.170E-03	1.652E-03	1.739E-04	3.224E-06
28	7.424E-02	4.753E-02	3.297E-02	1.895E-02	5.508E-03	1.637E-03	2.101E-04	5.762E-06
29	4.863E-02	3.012E-02	1.908E-02	9.992E-03	3.270E-03	9.006E-04	8.939E-05	1.436E-06
30	3.940E-02	2.434E-02	1.460E-02	6.874E-03	1.950E-03	4.998E-04	4.671E-05	1.021E-06
31	4.935E-02	3.049E-02	1.675E-02	8.552E-03	2.627E-03	7.521E-04	9.441E-05	2.345E-06
32	4.618E-02	3.242E-02	1.673E-02	8.918E-03	2.965E-03	7.484E-04	9.505E-05	3.736E-06
33	5.004E-02	2.932E-02	1.758E-02	9.752E-03	3.059E-03	7.935E-04	1.051E-04	1.159E-06
34	4.879E-02	2.820E-02	1.784E-02	8.877E-03	2.818E-03	7.427E-04	8.740E-05	2.522E-06
35	4.458E-02	2.871E-02	1.858E-02	8.811E-03	2.821E-03	7.349E-04	9.452E-05	1.111E-06
36	4.544E-02	2.545E-02	1.674E-02	7.891E-03	2.581E-03	6.180E-04	5.864E-05	2.280E-06
37	4.515E-02	2.635E-02	1.617E-02	7.612E-03	2.423E-03	5.946E-04	5.892E-05	0.000E+00
38	4.122E-02	2.410E-02	1.559E-02	7.123E-03	2.172E-03	5.763E-04	6.469E-05	0.000E+00
39	3.887E-02	2.205E-02	1.346E-02	6.513E-03	2.020E-03	5.394E-04	6.028E-05	0.000E+00
40	4.204E-02	2.410E-02	1.418E-02	6.898E-03	2.135E-03	4.281E-04	4.465E-05	2.171E-06
41	4.215E-02	2.208E-02	1.497E-02	6.489E-03	2.031E-03	4.812E-04	4.626E-05	0.000E+00
42	3.767E-02	2.282E-02	1.381E-02	6.759E-03	1.814E-03	4.456E-04	4.898E-05	0.000E+00
43	3.741E-02	2.105E-02	1.277E-02	6.062E-03	1.772E-03	4.150E-04	4.477E-05	9.829E-07
44	3.807E-02	2.092E-02	1.206E-02	5.853E-03	1.702E-03	3.609E-04	2.697E-05	9.757E-07
45	3.985E-02	2.242E-02	1.381E-02	6.162E-03	1.735E-03	3.655E-04	2.491E-05	0.000E+00
46	3.906E-02	2.255E-02	1.295E-02	5.886E-03	1.578E-03	3.182E-04	3.408E-05	1.171E-06
47	3.932E-02	2.398E-02	1.277E-02	6.067E-03	1.494E-03	3.107E-04	2.575E-05	0.000E+00
48	4.715E-02	2.496E-02	1.420E-02	6.025E-03	1.611E-03	3.458E-04	2.483E-05	0.000E+00
49	4.348E-02	2.245E-02	1.320E-02	5.842E-03	1.547E-03	2.723E-04	2.155E-05	0.000E+00
50	4.019E-02	2.146E-02	1.220E-02	5.228E-03	1.300E-03	2.943E-04	1.492E-05	0.000E+00
51	3.703E-02	2.040E-02	1.081E-02	4.837E-03	1.273E-03	2.403E-04	1.547E-05	1.077E-06
52	3.479E-02	1.856E-02	1.019E-02	4.296E-03	1.112E-03	1.757E-04	1.125E-05	1.926E-06
53	3.002E-02	1.534E-02	7.938E-03	3.668E-03	8.420E-04	1.444E-04	6.734E-06	0.000E+00
54	2.461E-02	1.341E-02	7.104E-03	3.001E-03	7.310E-04	1.186E-04	8.861E-06	2.483E-06
55	1.698E-02	8.697E-03	4.794E-03	1.912E-03	4.817E-04	6.256E-05	4.785E-06	5.565E-07
56	1.675E-02	8.827E-03	4.281E-03	1.821E-03	3.725E-04	7.978E-05	3.312E-06	5.586E-07
57	1.712E-02	8.132E-03	4.233E-03	1.723E-03	3.530E-04	5.984E-05	1.394E-06	5.646E-07
58	2.000E-02	9.855E-03	4.997E-03	1.881E-03	4.277E-04	6.594E-05	2.919E-06	5.672E-07
59	1.789E-02	8.543E-03	4.313E-03	1.778E-03	3.723E-04	5.912E-05	4.619E-06	0.000E+00
60	1.449E-02	7.086E-03	3.610E-03	1.405E-03	2.672E-04	4.946E-05	1.858E-06	0.000E+00
61	1.362E-02	6.744E-03	3.352E-03	1.247E-03	2.925E-04	4.139E-05	9.349E-07	1.642E-06
62	1.256E-02	5.818E-03	2.813E-03	1.149E-03	2.308E-04	2.759E-05	2.208E-06	0.000E+00
63	8.821E-03	3.980E-03	2.120E-03	7.549E-04	1.613E-04	3.814E-05	3.475E-06	1.125E-06
64	9.012E-03	4.332E-03	2.070E-03	8.559E-04	1.692E-04	2.554E-05	2.186E-06	5.298E-07
65	8.832E-03	4.072E-03	2.005E-03	8.047E-04	1.497E-04	2.544E-05	1.696E-06	0.000E+00
66	8.197E-03	3.727E-03	1.833E-03	7.464E-04	1.522E-04	1.649E-05	8.661E-07	2.186E-06

3	0.000E+00	0.000E+00	1.710E-06	1.775E-06	0.000E+00	5.184E-07	2.603E-07	0.000E+00
4	4.793E-06	5.821E-06	3.962E-06	8.221E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
5	1.700E-05	8.221E-06	3.547E-06	0.000E+00	0.000E+00	4.867E-07	2.384E-07	0.000E+00
6	4.270E-05	1.016E-05	5.346E-06	2.562E-06	5.845E-07	4.994E-07	0.000E+00	0.000E+00
7	5.484E-05	1.697E-05	3.601E-06	1.599E-06	1.087E-06	4.750E-07	0.000E+00	2.629E-07
8	1.005E-04	1.447E-05	4.946E-06	1.904E-06	1.315E-06	0.000E+00	0.000E+00	0.000E+00
9	8.588E-05	3.325E-06	8.332E-06	9.579E-07	1.945E-06	0.000E+00	0.000E+00	0.000E+00
10	6.645E-05	1.034E-05	2.149E-06	1.010E-06	6.713E-07	0.000E+00	0.000E+00	3.561E-07
11	9.497E-05	1.784E-06	2.324E-06	2.186E-06	7.800E-07	6.410E-07	3.024E-07	0.000E+00
12	1.275E-04	1.898E-05	2.477E-06	2.344E-06	0.000E+00	0.000E+00	3.116E-07	0.000E+00
13	2.159E-04	2.910E-05	3.381E-06	1.733E-06	0.000E+00	8.214E-07	0.000E+00	0.000E+00
14	3.134E-04	3.020E-05	9.746E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
15	3.398E-04	4.176E-05	6.206E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.329E-07
16	6.065E-04	5.995E-05	2.157E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
17	6.803E-04	7.381E-05	8.629E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
18	7.820E-04	5.457E-05	2.359E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
19	8.301E-04	7.026E-05	2.222E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
20	9.660E-04	1.716E-04	0.000E+00	3.935E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
21	1.073E-03	8.996E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
22	7.369E-04	4.989E-05	2.303E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
23	1.300E-03	1.016E-04	0.000E+00	4.330E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
24	1.589E-03	2.384E-04	7.408E-05	7.986E-06	0.000E+00	0.000E+00	0.000E+00	4.049E-06
25	1.277E-03	2.990E-04	4.249E-05	1.645E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
26	1.306E-03	2.323E-04	0.000E+00	5.651E-06	0.000E+00	0.000E+00	1.835E-06	0.000E+00
27	1.476E-03	2.457E-04	1.483E-04	2.308E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
28	1.534E-03	2.339E-04	8.293E-05	3.853E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
29	7.931E-04	1.181E-04	5.869E-05	1.143E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
30	5.532E-04	8.586E-05	1.565E-05	1.689E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
31	6.973E-04	1.074E-04	2.841E-05	5.278E-06	1.161E-06	0.000E+00	0.000E+00	6.512E-07
32	7.731E-04	1.136E-04	4.870E-05	3.737E-06	0.000E+00	0.000E+00	5.060E-07	0.000E+00
33	8.456E-04	1.506E-04	5.624E-05	5.859E-06	0.000E+00	1.241E-06	0.000E+00	0.000E+00
34	6.772E-04	1.439E-04	3.131E-05	5.991E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
35	7.745E-04	1.442E-04	4.646E-05	3.379E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
36	6.799E-04	9.611E-05	4.660E-05	5.554E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
37	6.630E-04	1.144E-04	1.364E-05	5.267E-06	1.176E-06	0.000E+00	0.000E+00	5.920E-07
38	6.342E-04	9.880E-05	7.856E-06	3.260E-06	1.134E-06	0.000E+00	0.000E+00	5.829E-07
39	5.744E-04	9.080E-05	1.583E-05	1.500E-06	0.000E+00	0.000E+00	3.802E-07	0.000E+00
40	5.622E-04	6.442E-05	2.535E-05	1.760E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
41	5.492E-04	8.391E-05	2.815E-05	1.752E-06	1.081E-06	0.000E+00	0.000E+00	0.000E+00
42	5.233E-04	6.876E-05	8.618E-06	4.807E-06	1.149E-06	0.000E+00	0.000E+00	0.000E+00

43	5.221E-04	5.639E-05	8.169E-06	7.954E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
44	4.635E-04	8.105E-05	2.427E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
45	3.825E-04	5.015E-05	4.367E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
46	4.346E-04	7.052E-05	7.279E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
47	3.990E-04	6.966E-05	7.955E-06	0.000E+00	0.000E+00	0.000E+00	4.539E-07	0.000E+00
48	5.595E-04	5.466E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
49	4.399E-04	6.553E-05	3.763E-06	1.708E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
50	4.283E-04	4.338E-05	3.786E-06	3.259E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
51	3.201E-04	4.198E-05	3.633E-06	0.000E+00	1.072E-06	0.000E+00	0.000E+00	5.322E-07
52	2.757E-04	3.298E-05	9.766E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
53	2.302E-04	1.963E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.143E-07	0.000E+00
54	2.254E-04	2.049E-05	2.349E-06	8.700E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
55	1.144E-04	2.002E-05	3.515E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
56	1.070E-04	1.231E-05	5.792E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
57	1.033E-04	9.197E-06	1.829E-06	9.307E-07	0.000E+00	0.000E+00	0.000E+00	2.938E-07
58	1.010E-04	1.442E-05	2.109E-06	0.000E+00	6.695E-07	0.000E+00	0.000E+00	0.000E+00
59	8.112E-05	7.574E-06	0.000E+00	8.714E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
60	6.391E-05	4.426E-06	1.786E-06	0.000E+00	0.000E+00	5.179E-07	0.000E+00	0.000E+00
61	7.245E-05	5.928E-06	1.779E-06	1.698E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
62	5.734E-05	1.038E-05	1.715E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
63	3.931E-05	4.259E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
64	4.299E-05	7.366E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.700E-07	0.000E+00
65	3.001E-05	1.489E-06	3.539E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
66	5.515E-05	4.311E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.469E-07	0.000E+00
67	2.974E-05	4.344E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
68	3.205E-05	1.422E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
69	1.673E-05	2.754E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.271E-07	0.000E+00
70	1.408E-05	4.170E-06	0.000E+00	7.900E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
71	1.410E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
72	9.031E-06	1.333E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
73	6.050E-06	2.821E-06	0.000E+00	8.321E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
74	1.859E-05	2.735E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
75	1.530E-05	0.000E+00	1.635E-06	0.000E+00	0.000E+00	4.774E-07	0.000E+00	0.000E+00
76	1.355E-05	1.324E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
77	6.129E-06	1.324E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
78	1.034E-05	1.323E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
79	1.050E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
80	1.218E-05	1.396E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
81	4.349E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
82	5.879E-06	1.307E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.094E-07	0.000E+00

83	1.537E-06	1.390E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.740E-07
84	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
85	6.004E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.205E-07	2.566E-07
86	1.433E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
87	2.675E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.621E-07	0.000E+00	0.000E+00
88	1.432E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
89	2.952E-06	1.294E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.559E-07
90	5.984E-06	1.292E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.558E-07
91	4.379E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
92	4.375E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.555E-07
93	0.000E+00	0.000E+00	0.000E+00	8.100E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
94	1.515E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.554E-07
95	4.366E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
96	1.425E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
97	4.527E-06	1.286E-06	0.000E+00	8.071E-07	5.053E-07	0.000E+00	0.000E+00	0.000E+00
98	1.419E-06	0.000E+00	0.000E+00	0.000E+00	5.351E-07	0.000E+00	0.000E+00	0.000E+00
99	2.831E-06	1.359E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	1	0	0	0	1	0	1
0	1	2	0	1	0	2	1
4	9	3	2	2	1	2	1
11	18	13	14	12	5	4	1
51	48	33	33	19	8	3	3
104	98	51	49	18	7	4	2
337	211	149	132	55	18	7	1
572	546	281	256	138	36	5	2
911	709	413	361	189	37	3	1
1285	1106	572	629	243	50	8	2
2024	1635	819	920	374	58	9	1
2493	2056	1108	1205	455	105	12	0
2496	2401	1367	1564	630	122	16	1
1696	1533	803	1624	616	108	13	1
1549	1321	725	1671	647	129	18	0
1439	1224	645	1799	657	135	22	0
1354	1109	496	1857	725	146	23	1
1192	991	438	1740	673	132	30	1
1034	857	395	1551	571	131	28	0

987	776	336	1405	599	156	34	3
1016	802	343	1415	589	165	23	0
1062	871	364	1356	556	141	25	0
1010	808	290	1297	519	160	41	1
848	659	273	897	366	148	38	2
826	652	275	921	402	186	46	1
884	627	277	965	435	173	48	0
833	672	297	957	444	212	50	1
973	750	333	1440	625	285	83	2
1376	1061	509	1593	790	253	58	1
2405	2110	1031	2024	865	248	52	1
2062	2006	934	2396	1102	351	99	2
1956	1936	954	2454	1227	344	98	3
1871	1760	877	2677	1257	361	107	1
1985	2035	918	2373	1131	332	87	2
1901	2011	990	2435	1166	339	98	1
2210	2110	1073	2287	1121	297	63	2
2321	2271	1093	2249	1074	289	64	0
2673	2350	1218	2242	1025	301	76	0
3072	2766	1361	2232	1038	306	76	0
2793	2491	1192	2170	1010	223	52	2
2761	2481	1182	2053	961	250	54	0
2884	2549	1272	2192	881	239	59	0
3346	2751	1285	2023	884	228	54	1
3224	2565	1270	1974	860	199	33	1
3047	2594	1313	1905	802	171	28	0
3223	2749	1259	1877	753	167	40	1
3036	2611	1223	1966	723	165	31	0
3059	2652	1201	1762	705	167	27	0
2994	2490	1117	1800	712	137	24	0
3342	2721	1283	1649	615	152	17	0
3681	2704	1169	1611	636	131	19	1
3998	2925	1270	1469	568	99	14	2
4344	2925	1230	1404	487	90	10	0
4524	3043	1344	1321	489	85	15	3
5474	3284	1454	1205	454	64	11	1
5064	3097	1208	1070	327	76	7	1
5139	2857	1195	1012	311	57	3	1
5446	3293	1342	1071	365	61	6	1
5396	3002	1221	1046	328	52	10	0

4597	2577	1055	851	243	49	4	0
4342	2457	982	759	266	41	2	3
4042	2143	832	705	212	28	5	0
2903	1497	641	471	151	39	8	2
2957	1622	625	536	159	26	5	1
2911	1537	608	507	141	26	4	0
2711	1409	557	471	144	17	2	4
2371	1274	512	367	115	18	5	2
1591	883	324	274	91	14	3	2
1495	786	318	268	77	20	6	0
1471	791	286	212	64	9	1	0
1532	796	288	217	75	10	1	0
1287	683	247	200	63	9	1	0
1194	669	229	193	65	9	2	1
1134	556	249	177	56	10	2	0
1083	523	194	160	46	10	4	2
996	542	184	160	41	3	1	0
1028	515	177	126	41	8	2	1
1048	522	178	127	43	10	2	1
966	489	182	117	35	7	1	1
884	419	136	118	42	9	2	0
718	372	149	77	35	5	1	1
641	325	122	86	21	2	0	0
607	302	96	80	28	5	2	0
501	275	93	78	17	4	1	1
450	249	70	48	23	5	2	0
411	190	71	54	14	5	0	1
412	164	67	41	15	5	1	0
355	183	55	42	12	6	1	2
386	163	42	54	11	2	2	0
315	146	60	29	11	3	0	1
313	144	57	34	16	0	1	1
301	157	57	38	8	0	2	1
311	147	37	27	4	1	3	1
269	120	42	24	14	3	1	0
259	122	37	37	8	1	0	0
284	131	47	30	6	0	3	1
244	89	32	29	9	5	0	0
225	66	33	24	4	2	1	0
171	92	30	29	10	0	1	1

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	0	0	0	0	0	1	0
0	0	0	0	0	0	0	2
0	0	1	2	0	1	1	0
3	4	2	1	0	0	0	0
11	6	2	0	0	1	1	0
27	7	3	3	1	1	0	0
35	12	2	2	2	1	0	1
57	9	3	2	2	0	0	0
47	2	4	1	3	0	0	0
34	6	1	1	1	0	0	1
44	1	1	2	1	1	1	0
56	9	1	2	0	0	1	0
73	11	1	1	0	1	0	0
65	7	2	0	0	0	0	0
53	8	1	0	0	0	0	1
97	12	3	0	0	0	0	0
64	10	1	0	0	0	0	0
66	6	2	0	0	0	0	0
49	6	2	0	0	0	0	0
55	13	0	1	0	0	0	0
55	8	0	0	0	0	0	0
50	6	2	0	0	0	0	0
61	7	0	1	0	0	0	0
37	10	2	1	0	0	0	2
36	12	1	3	0	0	0	0
40	10	0	1	0	0	1	0
44	10	5	4	0	0	0	0
65	16	3	1	0	0	0	0
92	21	7	4	0	0	0	0
138	23	3	1	0	0	0	0
149	27	6	3	1	0	0	1
160	28	9	2	0	0	1	0
170	34	10	3	0	1	0	0
144	35	6	3	0	0	0	0
169	36	9	2	0	0	0	0

155	23	10	3	0	0	0	0
159	31	3	3	1	0	0	1
164	28	2	2	1	0	0	1
169	29	4	1	0	0	1	0
149	19	6	1	0	0	0	0
148	25	7	1	1	0	0	0
144	21	2	3	1	0	0	0
152	18	2	5	0	0	0	0
135	27	6	0	0	0	0	0
102	15	1	0	0	0	0	0
122	22	2	0	0	0	0	0
112	21	2	0	0	0	1	0
145	16	0	0	0	0	0	0
119	19	1	1	0	0	0	0
124	14	1	2	0	0	0	0
98	14	1	0	1	0	0	1
91	12	3	0	0	0	0	0
87	8	0	0	0	0	1	0
92	9	1	1	0	0	0	0
72	14	2	0	0	0	0	0
63	8	3	0	0	0	0	0
61	6	1	1	0	0	0	1
57	9	1	0	1	0	0	0
48	5	0	1	0	0	0	0
39	3	1	0	0	1	0	0
44	4	1	2	0	0	0	0
35	7	1	0	0	0	0	0
25	3	0	0	0	0	0	0
27	5	0	0	0	0	3	0
19	1	2	0	0	0	0	0
35	3	0	0	0	0	2	0
19	3	0	0	0	0	0	0
21	1	0	0	0	0	0	0
11	2	0	0	0	0	1	0
9	3	0	1	0	0	0	0
10	0	0	0	0	0	0	0
6	1	0	0	0	0	0	0
4	2	0	1	0	0	0	0
12	2	0	0	0	0	0	0
10	0	1	0	0	1	0	0

9	1	0	0	0	0	0	0
4	1	0	0	0	0	0	0
7	1	0	0	0	0	0	0
7	0	0	0	0	0	0	0
8	1	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	1	0	0	0	0	1	0
1	1	0	0	0	0	0	1
0	0	0	0	0	0	0	0
4	0	0	0	0	0	1	1
1	0	0	0	0	0	0	0
2	0	0	0	0	1	0	0
1	0	0	0	0	0	0	0
2	1	0	0	0	0	0	1
4	1	0	0	0	0	0	1
3	0	0	0	0	0	0	0
3	0	0	0	0	0	0	1
0	0	0	1	0	0	0	0
1	0	0	0	0	0	0	1
3	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
3	1	0	1	1	0	0	0
1	0	0	0	1	0	0	0
1	1	0	0	0	0	0	0

Curve fit Oxygen:

$c_{total} =$

General model Exp2:

$$c_{total}(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 3.034e+005 \quad (-5.897e+014, 5.897e+014)$$

$$b = -0.1119 \quad (-595.7, 595.5)$$

$$c = -3.034e+005 \quad (-5.897e+014, 5.897e+014)$$

$$d = -0.1119 \quad (-595.7, 595.5)$$

goftotal =

sse: 0.0014

rsquare: 0.9996

dfe: 4

adjrsquare: 0.9994

rmse: 0.0188

ctotal =

General model Exp1:

$$ctotal(x) = a * \exp(b * x)$$

Coefficients (with 95% confidence bounds):

$$a = 12.86 \quad (11.22, 14.51)$$

$$b = -0.1822 \quad (-0.1887, -0.1757)$$

goftotal =

sse: 8.8348e-006

rsquare: 9.9992e-001

dfc: 3

adjrsquare: 9.9990e-001

rmse: 1.7161e-003

Curve fit Iron:

ctotal =

General model Exp2:

$$ctotal(x) = a * \exp(b * x) + c * \exp(d * x)$$

Coefficients (with 95% confidence bounds):

$$a = 1.702 \quad (1.289, 2.115)$$

$$b = -0.3138 \quad (-0.332, -0.2956)$$

$$c = 2.808e-006 \quad (-0.0001239, 0.0001296)$$

$$d = 0.01818 \quad (-0.3294, 0.3657)$$

goftotal =

sse: 8.9111e-008

rsquare: 9.9985e-001

dfc: 4

adjrsquare: 9.9973e-001

rmse: 1.4926e-004

ctotal =

General model Exp1:

$ctotal(x) = a * \exp(b * x)$

Coefficients (with 95% confidence bounds):

a = 0.000519 (-0.001613, 0.002651)

b = -0.04559 (-0.1539, 0.06275)

goftotal =

sse: 4.6776e-009

rsquare: 7.2129e-001

dfc: 3

adjrsquare: 6.2838e-001

rmse: 3.9487e-005

Event 4 Date Time* Location* Summing interval*
 2-May-98 1335 S15W15 May 2 1400 to May 5 0200

<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	7.137E-05	4.023E-05	6.354E-05	3.304E-05	1.968E-05	1.491E-05	8.421E-06	5.518E-06
2	3.653E-04	2.831E-04	2.490E-04	1.333E-04	8.001E-05	4.784E-05	1.615E-05	5.831E-06
3	1.091E-03	5.787E-04	3.167E-04	1.592E-04	8.405E-05	4.782E-05	1.929E-05	6.757E-06
4	5.151E-04	3.141E-04	2.331E-04	1.247E-04	7.718E-05	2.535E-05	1.533E-05	8.171E-06
5	8.284E-04	4.229E-04	3.488E-04	2.108E-04	8.740E-05	4.410E-05	1.956E-05	5.529E-06
6	7.921E-04	4.464E-04	2.574E-04	1.712E-04	6.108E-05	3.599E-05	1.281E-05	3.914E-06
7	7.074E-04	4.236E-04	2.338E-04	1.359E-04	4.677E-05	3.548E-05	1.556E-05	5.800E-06
8	5.765E-04	2.926E-04	2.066E-04	1.168E-04	5.231E-05	2.197E-05	1.277E-05	3.639E-06
9	5.758E-04	2.847E-04	1.656E-04	1.178E-04	3.628E-05	2.590E-05	8.252E-06	3.612E-06
10	4.898E-04	2.409E-04	1.553E-04	8.848E-05	4.129E-05	1.607E-05	7.073E-06	3.051E-06
11	3.443E-04	2.332E-04	1.158E-04	7.001E-05	3.515E-05	1.778E-05	7.505E-06	2.853E-06
12	3.642E-04	1.364E-04	9.376E-05	7.164E-05	3.073E-05	1.145E-05	7.830E-06	1.180E-06
13	3.601E-04	1.597E-04	7.840E-05	5.392E-05	2.880E-05	1.913E-05	5.878E-06	2.843E-06
14	3.038E-04	1.479E-04	6.888E-05	6.268E-05	2.773E-05	1.415E-05	5.108E-06	3.869E-06
15	2.489E-04	1.420E-04	6.788E-05	4.565E-05	2.728E-05	2.112E-05	4.492E-06	2.266E-06
16	2.550E-04	1.191E-04	9.688E-05	4.510E-05	2.646E-05	1.491E-05	3.996E-06	2.214E-06
17	2.013E-04	1.336E-04	1.031E-04	4.314E-05	2.378E-05	1.094E-05	2.626E-06	5.459E-07
18	2.233E-04	7.406E-05	8.274E-05	4.705E-05	1.710E-05	1.456E-05	2.125E-06	5.326E-07
19	1.886E-04	9.590E-05	4.874E-05	4.137E-05	1.168E-05	1.430E-05	4.391E-06	2.025E-06
20	1.587E-04	4.647E-05	4.186E-05	3.747E-05	1.592E-05	5.722E-06	3.874E-06	2.155E-06
21	1.633E-04	9.330E-05	4.178E-05	2.717E-05	1.663E-05	4.709E-06	4.366E-06	1.106E-06
22	1.186E-04	6.584E-05	4.572E-05	2.651E-05	1.354E-05	5.676E-06	2.963E-06	0.000E+00
23	1.207E-04	4.419E-05	3.261E-05	2.135E-05	1.539E-05	5.572E-06	4.127E-07	1.062E-06
24	9.440E-05	6.369E-05	5.124E-05	1.694E-05	1.742E-05	1.899E-06	2.160E-06	1.573E-06
25	8.773E-05	7.267E-05	3.244E-05	3.269E-05	1.544E-05	5.819E-06	2.085E-06	5.157E-07
26	1.198E-04	5.636E-05	2.865E-05	2.426E-05	9.161E-06	3.839E-06	2.107E-06	2.117E-06
27	1.154E-04	4.572E-05	2.278E-05	2.301E-05	1.225E-05	9.157E-07	1.664E-06	5.126E-07
28	7.257E-05	5.849E-05	4.757E-05	1.678E-05	1.344E-05	2.797E-06	1.276E-06	0.000E+00
29	1.230E-04	4.119E-05	4.124E-05	1.840E-05	5.171E-06	3.746E-06	8.372E-07	0.000E+00
30	3.989E-05	5.069E-05	3.477E-05	2.116E-05	5.038E-06	5.490E-06	1.266E-06	5.066E-07
31	8.099E-05	4.577E-05	2.215E-05	1.675E-05	7.186E-06	7.471E-06	2.102E-06	1.013E-06
32	8.597E-05	4.487E-05	2.512E-05	2.110E-05	6.058E-06	6.419E-06	1.288E-06	5.364E-07
33	6.651E-05	5.067E-05	1.861E-05	1.363E-05	7.941E-06	4.669E-06	2.920E-06	0.000E+00

34	5.532E-05	3.051E-05	9.671E-06	1.216E-05	5.070E-06	2.754E-06	1.257E-06	0.000E+00
35	4.901E-05	4.659E-05	2.941E-05	1.409E-05	3.793E-06	3.518E-06	7.888E-07	0.000E+00
36	7.537E-05	5.085E-05	1.927E-05	7.554E-06	7.125E-06	9.586E-07	0.000E+00	0.000E+00
37	2.012E-04	6.078E-05	2.411E-05	2.372E-05	3.142E-06	3.026E-06	1.771E-06	0.000E+00
38	1.096E-04	5.561E-05	4.091E-05	1.947E-05	3.942E-06	4.603E-06	4.018E-07	0.000E+00
39	8.844E-05	5.507E-05	2.489E-05	1.794E-05	8.999E-06	2.731E-06	8.220E-07	0.000E+00
40	1.274E-04	7.403E-05	4.017E-05	1.459E-05	2.040E-06	8.864E-07	4.200E-07	5.250E-07
41	1.127E-04	5.729E-05	2.450E-05	1.477E-05	2.043E-06	4.481E-06	8.180E-07	5.259E-07
42	1.415E-04	6.178E-05	3.051E-05	1.318E-05	4.905E-06	2.753E-06	4.190E-07	0.000E+00
43	8.963E-05	3.202E-05	2.115E-05	1.312E-05	1.013E-06	9.343E-07	3.939E-07	4.917E-07
44	9.275E-05	4.939E-05	1.500E-05	7.574E-06	5.949E-06	0.000E+00	4.170E-07	1.043E-06
45	8.069E-05	2.687E-05	6.289E-06	1.006E-05	3.926E-06	8.757E-07	3.917E-07	0.000E+00
46	1.034E-04	2.939E-05	8.868E-06	1.032E-05	1.010E-06	4.483E-06	4.163E-07	9.799E-07
47	4.767E-05	2.642E-05	2.121E-05	7.375E-06	4.808E-06	9.271E-07	7.835E-07	9.778E-07
48	5.356E-05	3.144E-05	1.217E-05	1.155E-05	1.956E-06	9.271E-07	3.911E-07	4.889E-07
49	2.814E-05	1.956E-05	1.234E-05	7.195E-06	9.500E-07	0.000E+00	0.000E+00	5.183E-07
50	5.842E-05	2.709E-05	9.029E-06	3.014E-06	9.486E-07	0.000E+00	4.149E-07	0.000E+00
51	4.140E-05	2.307E-05	5.503E-06	1.325E-06	4.588E-06	1.680E-06	3.872E-07	0.000E+00
52	2.826E-05	4.886E-06	9.198E-06	4.431E-06	0.000E+00	8.729E-07	0.000E+00	1.006E-06
53	4.973E-05	2.677E-05	2.944E-06	1.418E-06	9.471E-07	1.798E-06	4.144E-07	5.177E-07
54	1.945E-05	7.245E-06	9.009E-06	5.846E-06	9.464E-07	9.257E-07	0.000E+00	0.000E+00
55	2.967E-05	1.846E-05	6.725E-06	1.526E-06	1.019E-06	9.962E-07	8.660E-07	5.568E-07
56	4.711E-05	1.004E-05	3.121E-06	2.920E-06	0.000E+00	8.700E-07	0.000E+00	1.551E-06
57	2.482E-05	1.195E-05	8.996E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
58	3.069E-05	7.226E-06	8.989E-06	1.501E-06	9.443E-07	0.000E+00	8.026E-07	0.000E+00
59	8.269E-06	7.514E-06	3.119E-06	0.000E+00	3.835E-06	8.693E-07	3.894E-07	1.032E-06
60	1.129E-05	2.361E-06	6.051E-06	2.829E-06	9.443E-07	0.000E+00	0.000E+00	4.865E-07
61	1.080E-05	1.446E-05	0.000E+00	1.501E-06	0.000E+00	0.000E+00	4.126E-07	4.866E-07

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	2.973E-05	2.662E-05	8.029E-06	7.180E-06	1.037E-05	4.206E-06	6.851E-07	1.184E-06
2	2.139E-04	1.200E-04	6.684E-05	2.798E-05	1.405E-05	8.596E-06	2.925E-06	2.050E-06
3	2.933E-04	1.556E-04	7.129E-05	3.855E-05	1.690E-05	1.013E-05	3.357E-06	3.016E-07
4	1.598E-04	9.262E-05	3.830E-05	3.599E-05	1.143E-05	7.954E-06	1.086E-06	1.713E-06
5	2.474E-04	9.754E-05	7.532E-05	3.918E-05	1.348E-05	5.801E-06	1.743E-06	0.000E+00
6	2.433E-04	9.782E-05	3.751E-05	1.910E-05	1.203E-05	5.453E-06	1.393E-06	6.746E-07
7	2.241E-04	6.848E-05	5.018E-05	1.684E-05	1.636E-05	5.367E-06	2.614E-07	3.361E-07

8	1.716E-04	8.771E-05	4.363E-05	2.470E-05	3.732E-06	2.831E-06	5.075E-07	9.794E-07
9	1.496E-04	8.645E-05	2.944E-05	1.037E-05	6.931E-06	4.682E-06	1.020E-06	3.078E-07
10	1.525E-04	7.342E-05	2.891E-05	2.474E-05	6.758E-06	5.097E-06	7.593E-07	2.998E-07
11	7.997E-05	4.963E-05	2.107E-05	1.799E-05	8.472E-06	2.786E-06	9.669E-07	3.117E-07
12	5.955E-05	5.381E-05	2.989E-05	1.421E-05	5.943E-06	2.736E-06	4.836E-07	0.000E+00
13	9.170E-05	2.970E-05	2.762E-05	1.658E-05	4.104E-06	2.667E-06	0.000E+00	0.000E+00
14	8.116E-05	2.950E-05	1.478E-05	1.307E-05	5.234E-06	5.444E-07	2.288E-07	0.000E+00
15	7.420E-05	2.931E-05	2.335E-05	1.129E-05	3.454E-06	3.194E-06	9.506E-07	0.000E+00
16	8.982E-05	3.340E-05	2.148E-05	5.937E-06	4.491E-06	3.106E-06	4.490E-07	0.000E+00
17	6.426E-05	3.017E-05	2.139E-05	1.109E-05	3.999E-06	1.577E-06	2.248E-07	0.000E+00
18	3.812E-05	2.132E-05	1.783E-05	9.297E-06	1.675E-06	2.535E-06	4.448E-07	5.666E-07
19	5.102E-05	1.992E-05	1.467E-05	7.777E-06	1.053E-06	9.934E-07	2.185E-07	0.000E+00
20	4.534E-05	1.988E-05	8.681E-06	2.487E-06	2.193E-06	1.020E-06	0.000E+00	0.000E+00
21	4.387E-05	1.510E-05	1.526E-05	5.699E-06	3.959E-06	0.000E+00	4.632E-07	0.000E+00
22	4.235E-05	1.002E-05	6.811E-06	5.026E-06	6.056E-06	1.963E-06	0.000E+00	0.000E+00
23	3.832E-05	1.402E-05	1.012E-05	7.481E-06	1.067E-06	0.000E+00	2.298E-07	2.686E-07
24	3.358E-05	1.391E-05	3.444E-06	8.231E-06	1.591E-06	1.001E-06	2.299E-07	0.000E+00
25	3.093E-05	2.356E-05	5.116E-06	3.245E-06	1.096E-06	0.000E+00	0.000E+00	0.000E+00
26	2.728E-05	1.094E-05	5.206E-06	2.486E-06	5.296E-07	0.000E+00	0.000E+00	0.000E+00
27	2.881E-05	1.527E-05	8.496E-06	4.824E-06	5.286E-07	0.000E+00	2.279E-07	0.000E+00
28	2.886E-05	1.362E-05	8.367E-06	4.104E-06	2.171E-06	0.000E+00	0.000E+00	0.000E+00
29	3.226E-05	9.612E-06	5.148E-06	4.044E-06	5.250E-07	0.000E+00	2.268E-07	0.000E+00
30	2.562E-05	4.071E-06	6.871E-06	4.023E-06	1.664E-06	4.786E-07	4.383E-07	2.786E-07
31	2.131E-05	8.450E-06	4.926E-06	7.864E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
32	2.588E-05	6.703E-06	1.734E-06	1.612E-06	1.107E-06	9.541E-07	0.000E+00	0.000E+00
33	2.091E-05	1.369E-05	3.364E-06	3.172E-06	1.589E-06	4.756E-07	2.118E-07	2.616E-07
34	2.546E-05	4.125E-06	5.196E-06	4.097E-06	1.071E-06	0.000E+00	0.000E+00	0.000E+00
35	1.841E-05	1.516E-05	0.000E+00	2.187E-06	1.453E-06	0.000E+00	0.000E+00	0.000E+00
36	1.810E-05	5.392E-06	5.026E-06	2.365E-06	1.072E-06	0.000E+00	0.000E+00	2.622E-07
37	2.537E-05	4.194E-06	3.542E-06	8.057E-07	1.124E-06	0.000E+00	0.000E+00	0.000E+00
38	2.739E-05	9.290E-06	3.341E-06	0.000E+00	0.000E+00	9.814E-07	0.000E+00	0.000E+00
39	2.387E-05	9.547E-06	1.718E-06	8.407E-07	1.614E-06	5.049E-07	2.276E-07	0.000E+00
40	1.499E-05	8.030E-06	4.911E-06	1.535E-06	1.054E-06	0.000E+00	0.000E+00	0.000E+00
41	3.261E-05	1.072E-05	3.214E-06	7.700E-07	5.427E-07	4.678E-07	0.000E+00	0.000E+00
42	1.798E-05	3.888E-06	1.697E-06	1.575E-06	2.158E-06	0.000E+00	0.000E+00	0.000E+00
43	1.328E-05	2.661E-06	4.778E-06	0.000E+00	5.064E-07	0.000E+00	2.066E-07	0.000E+00
44	2.029E-05	2.654E-06	3.374E-06	8.086E-07	5.367E-07	4.639E-07	2.186E-07	0.000E+00
45	8.792E-06	4.011E-06	0.000E+00	1.566E-06	0.000E+00	0.000E+00	0.000E+00	2.541E-07
46	1.331E-05	2.569E-06	0.000E+00	8.057E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
47	1.029E-05	1.284E-06	0.000E+00	0.000E+00	0.000E+00	4.904E-07	0.000E+00	2.692E-07

48	1.019E-05	2.721E-06	0.000E+00	8.050E-07	1.039E-06	0.000E+00	0.000E+00	0.000E+00
49	5.762E-06	4.004E-06	1.680E-06	1.564E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
50	1.178E-05	3.919E-06	0.000E+00	0.000E+00	5.041E-07	0.000E+00	0.000E+00	0.000E+00
51	6.613E-06	2.537E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
52	7.346E-06	1.281E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
53	4.249E-06	1.358E-06	1.678E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.684E-07
54	2.831E-06	0.000E+00	0.000E+00	8.029E-07	0.000E+00	0.000E+00	2.175E-07	0.000E+00
55	3.140E-06	2.838E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
56	1.500E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
57	5.823E-06	1.276E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.526E-07
58	1.497E-06	1.276E-06	1.577E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
59	4.321E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
60	2.996E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.524E-07
61	4.436E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
18	11	15	16	13	11	14	7
105	91	64	71	64	41	31	9
306	186	83	86	69	42	38	11
143	100	60	67	61	22	30	13
219	127	85	106	66	36	36	8
221	143	66	91	49	31	25	6
200	136	61	73	38	31	30	9
170	98	56	66	44	20	26	6
171	97	45	67	31	24	17	6
148	83	43	51	36	15	15	5
106	82	33	41	31	17	16	5
115	49	27	43	28	11	17	2
115	58	23	33	26	19	13	5
97	54	20	38	25	14	11	7
80	52	20	28	25	21	10	4
83	44	29	28	25	15	9	4
65	50	31	27	21	11	6	1
74	28	25	30	16	15	5	1
67	39	16	28	12	16	11	4
53	18	13	24	15	6	9	4
55	36	13	17	16	5	10	2
40	25	14	17	13	6	7	0

41	17	10	14	15	6	1	2
32	25	16	10	17	2	5	3
30	28	10	21	15	6	5	1
42	22	9	16	9	4	5	4
39	18	7	15	12	1	4	1
25	23	15	11	13	3	3	0
42	16	13	12	5	4	2	0
14	20	11	14	5	6	3	1
28	18	7	11	7	8	5	2
30	18	8	14	6	7	3	1
23	20	6	9	8	5	7	0
19	12	3	8	5	3	3	0
18	20	10	10	4	4	2	0
26	20	6	5	7	1	0	0
63	22	7	15	3	3	4	0
38	22	13	13	4	5	1	0
31	21	8	12	9	3	2	0
45	30	13	10	2	1	1	1
40	23	8	10	2	5	2	1
50	25	10	9	5	3	1	0
32	13	7	9	1	1	1	1
33	20	5	5	6	0	1	2
29	11	2	7	4	1	1	0
37	12	3	7	1	5	1	2
17	11	7	5	5	1	2	2
19	13	4	8	2	1	1	1
10	8	4	5	1	0	0	1
21	11	3	2	1	0	1	0
16	10	2	1	5	2	1	0
10	2	3	3	0	1	0	2
18	11	1	1	1	2	1	1
7	3	3	4	1	1	0	0
10	7	2	1	1	1	2	1
17	4	1	2	0	1	0	3
9	5	3	0	0	0	0	0
11	3	3	1	1	0	2	0
3	3	1	0	4	1	1	2
4	1	2	2	1	0	0	1
4	6	0	1	0	0	1	1

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
14	14	3	6	13	5	2	3
116	70	32	28	21	14	11	6
160	93	35	39	26	17	13	1
86	55	18	36	17	13	4	5
124	54	34	37	19	9	6	0
130	58	18	19	18	9	5	2
121	41	24	17	25	9	1	1
97	55	22	26	6	5	2	3
85	55	15	11	11	8	4	1
88	47	15	27	11	9	3	1
47	32	11	20	14	5	4	1
36	36	16	16	10	5	2	0
56	20	15	19	7	5	0	0
49	20	8	15	9	1	1	0
46	20	13	13	6	6	4	0
56	23	12	7	8	6	2	0
40	21	12	14	7	3	1	0
24	15	10	11	3	5	2	2
35	15	9	10	2	2	1	0
29	14	5	3	4	2	0	0
28	11	9	7	7	0	2	0
27	7	4	6	11	4	0	0
25	10	6	9	2	0	1	1
22	10	2	10	3	2	1	0
20	17	3	4	2	0	0	0
18	8	4	3	1	0	0	0
19	11	5	6	1	0	1	0
19	10	5	5	4	0	0	0
21	7	3	5	1	0	1	0
17	3	4	5	3	1	2	1
14	6	3	1	0	0	0	0
17	5	1	2	2	2	0	0

14	10	2	4	3	1	1	1
17	3	3	5	2	0	0	0
13	12	0	3	3	0	0	0
12	4	3	3	2	0	0	1
15	3	2	1	2	0	0	0
18	6	2	0	0	2	0	0
16	7	1	1	3	1	1	0
10	6	3	2	2	0	0	0
22	8	2	1	1	1	0	0
12	3	1	2	4	0	0	0
9	2	3	0	1	0	1	0
14	2	2	1	1	1	1	0
6	3	0	2	0	0	0	1
9	2	0	1	0	0	0	0
7	1	0	0	0	1	0	1
7	2	0	1	2	0	0	0
4	3	1	2	0	0	0	0
8	3	0	0	1	0	0	0
5	2	0	0	0	0	0	0
5	1	0	0	0	0	0	0
3	1	1	0	0	0	0	1
2	0	0	1	0	0	1	0
2	2	0	0	0	0	0	0
1	0	0	0	0	0	0	0
4	1	0	0	0	0	0	1
1	1	1	0	0	0	0	0
3	0	0	0	0	0	0	0
2	0	0	0	0	0	0	1
3	0	0	0	0	0	0	0

Curve fit Oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.04568 \text{ (0.03344, 0.05792)}$$

$$b = -0.1883 \text{ (-0.2353, -0.1412)}$$

$$c = 0.001243 \text{ (-0.00158, 0.004066)}$$

$$d = -0.0286 \text{ (-0.08457, 0.02736)}$$

goftotal =

$$\text{sse: } 8.9152\text{e-}008$$

$$\text{rsquare: } 0.9989$$

$$\text{dfe: } 4$$

$$\text{adjrsquare: } 0.9981$$

$$\text{rmse: } 1.4929\text{e-}004$$

ctotal =

General model Exp1:

$$\text{ctotal}(x) = a \cdot \exp(b \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.01134 \text{ (0.003022, 0.01966)}$$

$$b = -0.08859 \text{ (-0.1224, -0.05481)}$$

goftotal =

sse: 3.8278e-008

rsquare: 9.8677e-001

dfc: 3

adjrsquare: 9.8235e-001

rmse: 1.1296e-004

Event 5	Date	Time*	Location*	Summing interval*				
	6-May-98	1335	S11W15	May 8 to May 8 0500				
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	2.873E-06	1.982E-05	5.093E-05	8.971E-05	1.161E-04	6.741E-05	2.433E-05	3.961E-06
2	6.737E-03	4.414E-03	2.707E-03	1.500E-03	5.343E-04	1.812E-04	2.714E-05	3.829E-06
3	5.493E-03	2.251E-03	9.106E-04	4.271E-04	1.180E-04	3.092E-05	6.973E-06	7.714E-07
4	1.376E-03	5.497E-04	2.733E-04	1.228E-04	4.551E-05	1.573E-05	5.151E-06	1.241E-06
5	1.938E-03	7.385E-04	4.560E-04	1.831E-04	5.696E-05	9.164E-06	2.071E-06	6.924E-07
6	1.464E-03	6.267E-04	2.000E-04	1.594E-04	4.168E-05	1.241E-05	4.528E-06	1.241E-06
7	1.163E-03	4.398E-04	2.341E-04	8.198E-05	2.116E-05	9.893E-06	2.913E-06	1.164E-06
8	8.491E-04	3.071E-04	1.167E-04	7.339E-05	1.700E-05	8.369E-06	1.888E-06	1.723E-06
9	4.573E-04	2.122E-04	9.843E-05	3.814E-05	4.035E-06	4.705E-06	8.673E-07	5.365E-07
10	3.633E-04	1.600E-04	7.371E-05	2.763E-05	7.408E-06	6.001E-06	4.617E-07	0.000E+00
11	3.991E-04	1.549E-04	5.950E-05	2.252E-05	8.644E-06	9.550E-07	0.000E+00	0.000E+00
12	5.506E-04	2.098E-04	1.145E-04	2.267E-05	1.416E-05	0.000E+00	4.300E-07	1.146E-06
13	5.942E-04	2.008E-04	5.558E-05	2.863E-05	7.254E-06	1.951E-06	4.282E-07	5.672E-07

14	2.176E-04	1.238E-04	4.228E-05	1.435E-05	5.239E-06	2.995E-06	4.465E-07	5.274E-07
15	2.619E-04	7.075E-05	4.524E-05	2.008E-05	4.249E-06	0.000E+00	1.756E-06	5.552E-07
16	2.633E-04	9.405E-05	2.596E-05	1.565E-05	4.058E-06	1.985E-06	1.256E-06	0.000E+00
17	2.014E-04	7.770E-05	3.266E-05	9.271E-06	8.314E-06	1.971E-06	4.171E-07	5.196E-07
18	2.723E-04	7.230E-05	1.966E-05	1.252E-05	3.026E-06	3.731E-06	4.200E-07	1.106E-06
19	1.746E-04	4.156E-05	2.271E-05	6.068E-06	6.183E-06	9.150E-07	0.000E+00	1.637E-06
20	1.799E-04	5.973E-05	3.193E-05	6.194E-06	3.189E-06	0.000E+00	4.359E-07	0.000E+00
21	1.610E-04	4.866E-05	2.561E-05	4.568E-06	4.042E-06	9.157E-07	0.000E+00	5.115E-07
22	9.341E-05	4.529E-05	1.566E-05	4.606E-06	2.045E-06	0.000E+00	4.359E-07	5.432E-07
23	1.168E-04	2.828E-05	2.216E-05	1.225E-05	2.041E-06	9.614E-07	8.376E-07	0.000E+00
24	6.958E-05	2.526E-05	3.088E-06	3.151E-06	1.053E-06	0.000E+00	4.335E-07	5.421E-07
25	5.153E-05	1.156E-05	8.660E-06	4.075E-06	1.873E-06	8.293E-07	7.831E-07	5.042E-07
26	6.295E-05	1.477E-05	9.566E-06	7.493E-06	1.991E-06	0.000E+00	1.243E-06	0.000E+00
27	4.512E-05	2.510E-05	1.224E-05	1.447E-06	1.029E-06	9.429E-07	3.986E-07	0.000E+00
28	5.614E-05	1.510E-05	3.010E-06	1.450E-06	3.987E-06	9.457E-07	0.000E+00	4.980E-07
29	4.808E-05	2.003E-05	6.187E-06	4.516E-06	1.024E-06	0.000E+00	3.969E-07	0.000E+00
30	4.572E-05	4.961E-06	6.174E-06	4.592E-06	0.000E+00	9.414E-07	1.214E-06	5.259E-07
31	2.286E-05	1.997E-05	0.000E+00	4.413E-06	1.021E-06	8.843E-07	3.962E-07	9.899E-07
32	3.672E-05	1.951E-05	3.169E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
33	5.039E-05	2.486E-05	6.146E-06	1.435E-06	9.600E-07	8.829E-07	7.902E-07	4.952E-07
34	3.395E-05	4.944E-06	6.161E-06	1.525E-06	1.018E-06	9.371E-07	8.396E-07	1.018E-06
35	1.951E-05	1.257E-05	3.171E-06	4.404E-06	0.000E+00	1.819E-06	3.946E-07	0.000E+00
36	3.647E-05	2.544E-06	2.123E-05	1.524E-06	9.593E-07	0.000E+00	0.000E+00	4.929E-07
37	2.560E-05	1.225E-05	0.000E+00	3.044E-06	9.614E-07	1.815E-06	1.252E-06	0.000E+00
38	1.985E-05	7.276E-06	0.000E+00	1.417E-06	0.000E+00	8.757E-07	8.078E-07	1.005E-06
39	1.656E-05	4.878E-06	5.883E-06	0.000E+00	1.004E-06	2.721E-06	1.218E-06	4.876E-07
40	8.604E-06	2.509E-06	2.941E-06	0.000E+00	1.004E-06	9.243E-07	8.032E-07	1.521E-06
41	7.725E-06	0.000E+00	0.000E+00	0.000E+00	9.373E-07	8.120E-07	0.000E+00	4.545E-07
42	5.406E-06	5.010E-06	0.000E+00	2.916E-06	1.001E-06	0.000E+00	7.794E-07	0.000E+00
43	0.000E+00	2.365E-06	6.061E-06	0.000E+00	1.003E-06	0.000E+00	4.134E-07	0.000E+00
44	1.129E-05	4.724E-06	0.000E+00	0.000E+00	0.000E+00	1.740E-06	8.028E-07	5.162E-07
45	5.739E-06	4.869E-06	0.000E+00	0.000E+00	1.948E-06	0.000E+00	4.134E-07	1.004E-06
46	8.441E-06	2.365E-06	0.000E+00	5.838E-06	0.000E+00	0.000E+00	3.896E-07	1.033E-06

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	4.485E-05	7.224E-05	6.594E-05	2.354E-05	1.530E-05	4.111E-06	9.309E-07	2.908E-07
2	2.291E-03	7.743E-04	3.035E-04	1.307E-04	2.161E-05	1.671E-06	8.543E-07	0.000E+00
3	7.211E-04	2.086E-04	4.880E-05	2.926E-05	1.772E-06	6.574E-07	3.686E-07	0.000E+00

4	2.228E-04	6.086E-05	3.609E-05	2.227E-05	4.459E-06	0.000E+00	0.000E+00	0.000E+00
5	2.925E-04	9.176E-05	3.715E-05	1.046E-05	2.037E-06	0.000E+00	2.666E-07	0.000E+00
6	2.029E-04	3.924E-05	1.062E-05	7.694E-06	1.301E-06	6.126E-07	2.767E-07	0.000E+00
7	1.414E-04	4.144E-05	1.366E-05	4.658E-06	5.965E-07	1.110E-06	2.482E-07	0.000E+00
8	1.143E-04	2.747E-05	7.750E-06	4.577E-06	0.000E+00	5.434E-07	0.000E+00	3.091E-07
9	7.262E-05	2.193E-05	1.644E-06	3.215E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
10	4.681E-05	2.836E-06	3.504E-06	8.879E-07	1.113E-06	0.000E+00	0.000E+00	0.000E+00
11	2.394E-05	2.312E-05	7.069E-06	2.646E-06	0.000E+00	0.000E+00	0.000E+00	2.957E-07
12	4.169E-05	2.012E-05	3.715E-06	8.829E-07	0.000E+00	5.077E-07	2.268E-07	0.000E+00
13	3.660E-05	5.774E-06	3.597E-06	1.661E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
14	2.377E-05	5.780E-06	5.432E-06	0.000E+00	5.431E-07	0.000E+00	0.000E+00	0.000E+00
15	2.052E-05	8.248E-06	3.600E-06	8.657E-07	5.401E-07	0.000E+00	0.000E+00	0.000E+00
16	2.972E-05	4.106E-06	5.286E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
17	2.346E-05	5.530E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
18	1.546E-05	2.719E-06	1.796E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.876E-07
19	7.565E-06	0.000E+00	1.776E-06	0.000E+00	0.000E+00	1.003E-06	0.000E+00	0.000E+00
20	1.217E-05	4.142E-06	0.000E+00	8.029E-07	0.000E+00	0.000E+00	0.000E+00	2.678E-07
21	1.077E-05	1.341E-06	5.134E-06	8.407E-07	0.000E+00	0.000E+00	2.261E-07	0.000E+00
22	7.547E-06	2.669E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
23	1.225E-05	2.848E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
24	7.587E-06	1.422E-06	0.000E+00	8.414E-07	5.258E-07	0.000E+00	0.000E+00	5.466E-07
25	6.992E-06	1.289E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
26	2.884E-06	0.000E+00	0.000E+00	8.200E-07	0.000E+00	0.000E+00	2.085E-07	0.000E+00
27	1.030E-05	2.772E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.226E-07	5.329E-07
28	1.048E-05	2.694E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.329E-07
29	1.443E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
30	5.840E-06	0.000E+00	1.706E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.731E-07
31	2.962E-06	1.299E-06	1.704E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
32	2.959E-06	2.676E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.080E-07	0.000E+00
33	7.262E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
34	4.572E-06	6.485E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.082E-07	0.000E+00
35	2.956E-06	0.000E+00	0.000E+00	0.000E+00	5.101E-07	0.000E+00	0.000E+00	0.000E+00
36	4.388E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.719E-07
37	1.517E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
38	1.416E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.056E-07	0.000E+00
39	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.885E-07	0.000E+00	0.000E+00
40	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
41	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.297E-07	1.909E-07	0.000E+00
42	0.000E+00	1.353E-06	0.000E+00	0.000E+00	0.000E+00	9.471E-07	0.000E+00	0.000E+00
43	1.500E-06	1.278E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

44	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
45	1.501E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
46	0.000E+00	1.276E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
1	4	7	26	49	33	29	5
1,276	957	473	543	287	105	35	4
1,122	522	171	168	68	20	10	1
396	181	73	68	38	14	10	2
529	231	115	96	44	8	4	1
419	206	53	87	34	11	9	2
346	150	64	47	18	9	6	2
261	108	33	43	15	8	4	3
156	83	31	25	4	5	2	1
118	59	22	17	7	6	1	0
130	58	18	14	8	1	0	0
177	78	34	14	13	0	1	2
193	75	17	18	7	2	1	1
72	46	13	9	5	3	1	1
87	27	14	13	4	0	4	1
88	36	8	10	4	2	3	0
68	30	10	6	8	2	1	1
91	28	6	8	3	3	1	2
59	16	7	4	6	1	0	3
61	23	10	4	3	0	1	0
55	19	8	3	4	1	0	1
32	18	5	3	2	0	1	1
40	11	7	8	2	1	2	0
24	10	1	2	1	0	1	1
19	5	3	3	2	1	2	1
22	6	3	5	2	0	3	0
17	10	4	1	1	1	1	0
20	6	1	1	4	1	0	1
17	8	2	3	1	0	1	0
16	2	2	3	0	1	3	1
8	8	0	3	1	1	1	2

13	8	1	0	0	0	0	0
18	10	2	1	1	1	2	1
12	2	2	1	1	1	2	2
7	5	1	3	0	2	1	0
13	1	7	1	1	0	0	1
9	5	0	2	1	2	3	0
7	3	0	1	0	1	2	2
6	2	2	0	1	3	3	1
3	1	1	0	1	1	2	3
3	0	0	0	1	1	0	1
2	2	0	2	1	0	2	0
0	2	2	0	1	0	1	0
4	2	0	0	0	2	2	1
2	2	0	0	2	0	1	2
3	1	0	4	0	0	1	2

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
12	21	17	12	14	5	3	1
832	310	98	87	22	2	2	0
282	90	17	22	2	1	1	0
123	37	18	23	7	0	0	0
153	53	17	10	3	0	1	0
111	24	5	8	2	1	1	0
81	26	7	5	1	2	1	0
68	18	4	5	0	1	0	1
48	16	1	4	0	0	0	0
29	2	2	1	2	0	0	0
15	16	4	3	0	0	0	1
26	14	2	1	0	1	1	0
23	4	2	2	0	0	0	0
13	5	4	0	1	0	0	0
13	6	2	1	1	0	0	0
19	3	3	0	0	0	0	0
15	4	0	0	0	0	0	0
10	2	1	0	0	0	0	1
5	0	1	0	0	2	0	0
8	3	0	1	0	0	0	1

7	1	3	1	0	0	1	0
5	2	0	0	0	0	0	0
8	2	0	0	0	0	0	0
5	1	0	1	1	0	0	2
5	1	0	0	0	0	0	0
2	0	0	1	0	0	1	0
7	2	0	0	0	0	1	2
7	2	0	0	0	0	0	2
1	0	0	0	0	0	0	0
4	0	1	0	0	0	0	1
2	1	1	0	0	0	0	0
2	2	0	0	0	0	1	0
5	0	0	0	0	0	0	0
3	1	0	0	0	0	1	0
2	0	0	0	1	0	0	0
3	0	0	0	0	0	0	1
1	0	0	0	0	0	0	0
1	0	0	0	0	0	1	0
0	0	0	0	0	1	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	1	1	0
0	1	0	0	0	2	0	0
1	1	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	1	0	0	0	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.1438 \quad (0.1096, 0.178)$$

$$b = -0.2303 \text{ } (-0.266, -0.1946)$$

$$c = 0.001114 \text{ } (-0.002181, 0.004409)$$

$$d = -0.02832 \text{ } (-0.1081, 0.05145)$$

goftotal =

$$\text{sse: } 2.0142\text{e-}007$$

$$\text{rsquare: } 0.9994$$

$$\text{dfe: } 4$$

$$\text{adjrsquare: } 0.9990$$

$$\text{rmse: } 2.2440\text{e-}004$$

ctotal =

General model Exp1:

$$\text{ctotal}(x) = a * \exp(b * x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.03345 \text{ } (0.01596, 0.05093)$$

$$b = -0.132 \text{ } (-0.1577, -0.1064)$$

goftotal =

$$\text{sse: } 1.4566\text{e-}008$$

$$\text{rsquare: } 9.9718\text{e-}001$$

dfe: 3

adjrsquare: 9.9625e-001

rmse: 6.9679e-005

Event 6	Date	Time*	Location*	Summing interval*				
	24-Aug-98	2205	N30E07	Aug 24 to Aug 27 0000				
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	7.097E-05	1.598E-05	6.494E-06	4.722E-06	0.000E+00	0.000E+00	4.371E-07	1.618E-06
2	7.378E-04	5.777E-04	3.628E-04	2.168E-04	4.042E-05	1.339E-05	6.791E-06	3.111E-06
3	2.307E-03	1.044E-03	4.940E-04	2.706E-04	7.371E-05	1.949E-05	9.152E-06	3.295E-06
4	2.607E-03	1.207E-03	6.512E-04	3.055E-04	8.475E-05	2.101E-05	4.383E-06	2.240E-06
5	2.909E-03	1.229E-03	7.389E-04	3.195E-04	7.385E-05	2.081E-05	4.527E-06	0.000E+00
6	3.499E-03	1.387E-03	5.576E-04	2.612E-04	5.386E-05	1.586E-05	3.890E-06	0.000E+00
7	2.453E-03	1.021E-03	4.987E-04	1.827E-04	3.197E-05	7.116E-06	2.448E-06	2.267E-06
8	2.534E-03	8.890E-04	4.340E-04	1.509E-04	4.302E-05	1.343E-05	3.103E-06	1.464E-06
9	2.554E-03	8.577E-04	3.843E-04	1.504E-04	3.683E-05	1.007E-05	1.682E-06	1.407E-06
10	1.692E-03	6.373E-04	3.086E-04	1.303E-04	3.465E-05	7.537E-06	2.753E-06	1.376E-06
11	1.506E-03	5.590E-04	2.157E-04	1.329E-04	3.392E-05	1.504E-05	1.531E-06	1.338E-06
12	2.031E-03	7.754E-04	3.532E-04	1.243E-04	3.045E-05	1.792E-05	3.397E-06	0.000E+00
13	2.015E-03	7.549E-04	3.324E-04	1.812E-04	3.843E-05	1.836E-05	2.691E-06	2.158E-06
14	2.260E-03	8.278E-04	3.991E-04	2.078E-04	5.085E-05	2.036E-05	5.131E-07	6.440E-07
15	3.374E-03	1.350E-03	6.445E-04	2.542E-04	5.811E-05	1.546E-05	2.295E-06	7.686E-07
16	3.935E-03	1.732E-03	8.226E-04	3.457E-04	1.006E-04	1.566E-05	5.969E-06	7.800E-07
17	4.116E-03	1.728E-03	9.807E-04	4.713E-04	1.380E-04	2.349E-05	5.839E-06	0.000E+00
18	3.911E-03	1.707E-03	1.043E-03	4.292E-04	1.100E-04	3.200E-05	3.847E-06	1.223E-06
19	5.166E-03	2.212E-03	1.253E-03	4.718E-04	1.382E-04	2.045E-05	3.543E-06	0.000E+00
20	5.691E-03	2.496E-03	1.264E-03	5.570E-04	1.420E-04	3.397E-05	2.010E-06	6.479E-07
21	6.686E-03	2.904E-03	1.619E-03	6.347E-04	1.770E-04	5.238E-05	3.653E-06	0.000E+00
22	8.016E-03	3.404E-03	1.584E-03	7.402E-04	2.121E-04	3.902E-05	5.281E-06	6.281E-07
23	7.919E-03	3.430E-03	1.669E-03	6.641E-04	1.708E-04	2.801E-05	1.080E-06	6.922E-07
24	9.308E-03	4.025E-03	1.862E-03	8.031E-04	2.232E-04	3.089E-05	1.625E-06	0.000E+00
25	8.140E-03	3.628E-03	1.887E-03	6.889E-04	1.719E-04	3.440E-05	2.942E-06	0.000E+00
26	1.029E-02	4.161E-03	2.025E-03	8.266E-04	1.763E-04	2.785E-05	2.969E-06	7.026E-07
27	2.832E-02	9.841E-03	4.461E-03	1.601E-03	3.632E-04	6.126E-05	1.247E-06	0.000E+00

28	3.027E-02	1.038E-02	4.336E-03	1.762E-03	4.170E-04	4.133E-05	4.791E-06	4.247E-06
29	2.848E-02	9.550E-03	4.682E-03	1.550E-03	3.677E-04	4.857E-05	7.949E-06	0.000E+00
30	2.710E-02	9.687E-03	4.020E-03	1.646E-03	3.554E-04	4.058E-05	2.124E-06	3.046E-06
31	2.583E-02	8.424E-03	3.889E-03	1.475E-03	3.855E-04	4.845E-05	3.603E-06	3.026E-06
32	2.446E-02	7.437E-03	3.254E-03	1.203E-03	2.868E-04	5.110E-05	2.811E-06	0.000E+00
33	1.599E-02	5.916E-03	2.827E-03	9.018E-04	1.714E-04	3.207E-05	1.047E-06	0.000E+00
34	1.564E-02	5.913E-03	2.573E-03	8.159E-04	1.918E-04	2.297E-05	0.000E+00	1.211E-06
35	1.706E-02	6.809E-03	3.153E-03	1.167E-03	2.474E-04	3.631E-05	1.022E-06	0.000E+00
36	1.911E-02	7.838E-03	3.891E-03	1.294E-03	2.106E-04	3.282E-05	4.186E-06	0.000E+00
37	1.599E-02	6.372E-03	3.090E-03	8.950E-04	1.451E-04	1.691E-05	8.921E-07	0.000E+00
38	1.523E-02	5.771E-03	2.375E-03	7.668E-04	1.194E-04	5.730E-06	1.676E-06	0.000E+00
39	1.335E-02	5.148E-03	2.415E-03	7.184E-04	1.181E-04	1.404E-05	1.566E-06	0.000E+00
40	1.220E-02	4.690E-03	1.891E-03	6.829E-04	9.583E-05	9.814E-06	0.000E+00	9.179E-07
41	6.161E-03	2.309E-03	8.963E-04	2.623E-04	5.126E-05	8.217E-06	0.000E+00	0.000E+00
42	5.587E-03	2.012E-03	7.569E-04	2.293E-04	3.035E-05	2.440E-06	5.694E-07	1.333E-06
43	5.384E-03	1.656E-03	6.588E-04	2.390E-04	2.911E-05	2.319E-06	5.147E-07	6.612E-07
44	5.091E-03	1.760E-03	7.015E-04	1.852E-04	3.715E-05	5.889E-06	0.000E+00	0.000E+00
45	4.918E-03	1.719E-03	7.280E-04	2.144E-04	2.249E-05	1.123E-06	1.067E-06	0.000E+00
46	5.207E-03	1.805E-03	6.742E-04	1.940E-04	2.620E-05	1.122E-06	1.044E-06	6.278E-07
47	3.571E-03	1.096E-03	4.891E-04	1.503E-04	2.333E-05	3.256E-06	9.606E-07	6.376E-07
48	2.686E-03	9.001E-04	2.993E-04	7.914E-05	1.372E-05	5.132E-06	0.000E+00	5.631E-07
49	2.563E-03	9.162E-04	3.093E-04	1.157E-04	1.335E-05	1.009E-06	4.686E-07	1.702E-06
50	2.673E-03	9.188E-04	3.504E-04	1.069E-04	7.774E-06	4.111E-06	4.463E-07	0.000E+00
51	2.468E-03	8.259E-04	3.650E-04	1.255E-04	1.686E-05	1.055E-06	4.393E-07	5.604E-07
52	1.459E-03	5.805E-04	1.345E-04	3.875E-05	5.245E-06	9.536E-07	4.291E-07	0.000E+00
53	1.366E-03	4.695E-04	1.608E-04	4.004E-05	4.353E-06	9.550E-07	4.520E-07	0.000E+00
54	1.100E-03	3.568E-04	1.147E-04	3.516E-05	6.537E-06	0.000E+00	8.749E-07	5.595E-07
55	1.066E-03	3.438E-04	1.670E-04	4.295E-05	4.185E-06	0.000E+00	0.000E+00	0.000E+00
56	8.381E-04	2.608E-04	1.044E-04	2.400E-05	5.158E-06	0.000E+00	0.000E+00	5.250E-07
57	7.884E-04	2.371E-04	6.938E-05	1.609E-05	3.895E-06	0.000E+00	8.274E-07	0.000E+00
58	5.713E-04	1.261E-04	5.430E-05	1.523E-05	4.176E-06	1.947E-06	0.000E+00	0.000E+00
59	4.469E-04	1.787E-04	5.771E-05	1.222E-05	2.062E-06	0.000E+00	0.000E+00	5.471E-07
60	6.546E-04	2.022E-04	4.167E-05	1.396E-05	6.265E-06	0.000E+00	0.000E+00	0.000E+00
61	5.048E-04	1.900E-04	8.257E-05	1.522E-05	2.060E-06	0.000E+00	4.369E-07	0.000E+00
62	5.279E-04	1.515E-04	4.495E-05	1.366E-05	9.943E-07	0.000E+00	4.099E-07	5.421E-07
63	4.323E-04	1.711E-04	4.771E-05	1.843E-05	2.042E-06	0.000E+00	0.000E+00	0.000E+00
64	4.596E-04	1.472E-04	2.810E-05	1.380E-05	1.048E-06	0.000E+00	4.335E-07	5.114E-07
65	4.455E-04	1.804E-04	5.727E-05	1.537E-05	1.051E-06	0.000E+00	4.332E-07	5.418E-07
66	5.599E-04	1.745E-04	6.157E-05	2.146E-05	0.000E+00	0.000E+00	4.079E-07	0.000E+00
67	5.335E-04	1.810E-04	5.316E-05	2.388E-05	3.213E-06	0.000E+00	0.000E+00	0.000E+00

68	5.605E-04	2.055E-04	4.996E-05	1.750E-05	3.161E-06	0.000E+00	0.000E+00	0.000E+00
69	5.793E-04	1.659E-04	4.260E-05	1.273E-05	2.184E-06	0.000E+00	4.259E-07	0.000E+00
70	5.046E-04	1.564E-04	5.286E-05	1.269E-05	4.174E-06	0.000E+00	0.000E+00	0.000E+00
71	4.737E-04	1.641E-04	8.202E-05	1.743E-05	2.176E-06	0.000E+00	4.221E-07	5.595E-07
72	4.602E-04	1.818E-04	7.496E-05	2.214E-05	6.335E-06	9.450E-07	0.000E+00	0.000E+00
73	5.405E-04	1.733E-04	8.904E-05	1.035E-05	0.000E+00	0.000E+00	3.923E-07	0.000E+00

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.702E-07
2	3.254E-06	0.000E+00	0.000E+00	8.864E-07	0.000E+00	5.239E-07	2.294E-07	5.468E-07
3	4.859E-05	1.285E-05	8.036E-06	8.739E-06	3.789E-06	1.145E-06	1.807E-06	6.396E-07
4	9.456E-05	3.722E-05	1.758E-05	9.326E-06	5.547E-06	3.706E-06	5.712E-07	0.000E+00
5	9.632E-05	2.626E-05	2.536E-06	1.576E-05	4.081E-06	2.278E-06	3.157E-07	0.000E+00
6	8.686E-05	3.058E-05	1.209E-05	7.301E-06	3.334E-06	2.982E-06	6.574E-07	0.000E+00
7	6.746E-05	2.992E-05	5.349E-06	7.555E-06	3.310E-06	3.231E-06	3.644E-07	0.000E+00
8	4.209E-05	1.685E-05	5.020E-06	4.952E-06	4.810E-06	1.562E-06	1.323E-06	4.141E-07
9	6.552E-05	2.146E-05	5.175E-06	8.053E-06	4.669E-06	6.976E-07	0.000E+00	0.000E+00
10	4.328E-05	5.715E-06	0.000E+00	6.497E-06	4.413E-06	1.328E-06	0.000E+00	0.000E+00
11	3.427E-05	3.540E-06	2.206E-06	4.216E-06	1.385E-06	0.000E+00	0.000E+00	0.000E+00
12	3.011E-05	8.663E-06	2.134E-06	4.074E-06	6.888E-07	1.263E-06	2.801E-07	0.000E+00
13	2.507E-05	9.219E-06	7.021E-06	1.140E-06	6.660E-07	0.000E+00	0.000E+00	0.000E+00
14	1.797E-05	1.063E-05	2.073E-06	1.075E-06	4.187E-06	0.000E+00	2.688E-07	0.000E+00
15	2.120E-05	1.223E-05	6.606E-06	2.021E-06	1.347E-06	6.419E-07	0.000E+00	0.000E+00
16	2.129E-05	3.682E-06	2.409E-06	2.255E-06	0.000E+00	7.229E-07	3.317E-07	0.000E+00
17	1.499E-05	3.701E-06	0.000E+00	2.258E-06	2.301E-06	0.000E+00	3.147E-07	0.000E+00
18	3.189E-05	5.827E-06	2.354E-06	2.259E-06	7.221E-07	7.110E-07	9.163E-07	0.000E+00
19	3.001E-05	5.435E-06	2.519E-06	0.000E+00	0.000E+00	6.905E-07	0.000E+00	0.000E+00
20	3.315E-05	0.000E+00	0.000E+00	2.966E-06	6.712E-07	0.000E+00	0.000E+00	0.000E+00
21	2.940E-05	4.959E-06	4.081E-06	2.916E-06	1.298E-06	1.229E-06	0.000E+00	0.000E+00
22	2.094E-05	6.984E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
23	5.214E-05	1.425E-05	2.233E-06	3.152E-06	0.000E+00	0.000E+00	2.904E-07	0.000E+00
24	5.055E-05	5.140E-06	2.243E-06	1.074E-06	6.773E-07	0.000E+00	2.912E-07	0.000E+00
25	5.398E-05	1.268E-05	0.000E+00	1.027E-06	0.000E+00	1.942E-06	0.000E+00	0.000E+00
26	3.815E-05	3.421E-06	3.979E-06	0.000E+00	1.893E-06	0.000E+00	0.000E+00	0.000E+00
27	4.141E-05	3.477E-06	0.000E+00	1.963E-06	9.657E-07	0.000E+00	0.000E+00	0.000E+00
28	8.398E-05	7.897E-06	5.240E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.486E-07
29	1.135E-04	1.004E-05	1.068E-05	2.022E-06	0.000E+00	2.919E-06	6.346E-07	0.000E+00

70	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
71	1.565E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
72	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
73	0.000E+00	1.387E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
24	6	2	3	0	0	1	3
213	192	97	120	34	12	14	5
613	317	121	137	56	16	17	5
614	324	142	136	57	15	7	3
669	322	156	140	48	15	7	0
763	347	112	110	34	11	6	0
566	270	106	80	21	5	4	3
603	241	95	68	29	10	5	2
650	250	90	73	27	8	3	2
441	191	74	65	26	6	5	2
418	178	55	70	27	13	3	2
515	225	83	60	22	14	6	0
526	226	80	91	29	15	5	3
602	254	100	106	39	17	1	1
823	377	145	118	41	12	4	1
960	484	185	161	70	12	10	1
1015	487	223	222	97	18	10	0
1011	503	247	213	81	26	7	2
1456	715	326	254	111	18	7	0
1616	810	331	300	115	30	4	1
1855	922	413	336	140	45	7	0
2156	1048	393	380	164	33	10	1
2110	1046	411	338	130	23	2	1
2421	1200	446	401	166	25	3	0
2346	1196	500	379	142	31	6	0
2177	1117	440	381	121	22	5	1
1805	1130	424	416	146	27	1	0
1399	1004	343	417	146	17	4	3
1383	1019	404	379	135	19	7	0
1193	987	334	345	111	15	2	2

1075	928	341	325	124	16	3	2
662	657	232	232	84	17	2	0
1181	847	328	228	64	14	1	0
1303	886	311	217	76	10	0	1
1345	993	374	312	100	16	1	0
1246	1061	422	334	82	14	4	0
1527	1037	402	259	63	8	1	0
1972	1105	365	250	59	3	2	0
2013	1061	400	253	62	8	2	0
2099	1032	336	253	54	6	0	1
1669	715	224	137	40	7	0	0
1468	605	183	115	23	2	1	2
1438	507	162	121	22	2	1	1
1401	554	177	97	29	5	0	0
1370	546	186	114	18	1	2	0
1437	569	171	102	21	1	2	1
1058	371	133	85	20	3	2	1
835	320	86	47	12	5	0	1
802	329	89	69	12	1	1	3
827	325	100	63	7	4	1	0
770	294	104	74	15	1	1	1
469	216	40	23	5	1	1	0
446	176	48	25	4	1	1	0
363	135	35	22	6	0	2	1
352	130	51	27	4	0	0	0
280	99	32	15	5	0	0	1
284	98	23	11	4	0	2	0
194	49	17	10	4	2	0	0
152	69	18	8	2	0	0	1
221	78	13	9	6	0	0	0
172	74	26	10	2	0	1	0
181	59	14	9	1	0	1	1
148	67	15	12	2	0	0	0
158	58	9	9	1	0	1	1
153	71	18	10	1	0	1	1
190	68	19	14	0	0	1	0
176	68	16	15	3	0	0	0
184	77	15	11	3	0	0	0
191	62	13	8	2	0	1	0
167	59	16	8	4	0	0	0

156	62	25	11	2	0	1	1
152	69	23	14	6	1	1	0
192	70	29	7	0	0	1	0

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
2	0	0	1	0	1	1	2
27	8	4	9	6	2	7	2
48	21	8	9	8	6	2	0
43	13	1	13	5	3	1	0
38	15	5	6	4	4	2	0
28	14	2	6	4	4	1	0
19	8	2	4	6	2	4	1
30	11	2	7	6	1	0	0
21	3	0	6	6	2	0	0
17	2	1	4	2	0	0	0
16	5	1	4	1	2	1	0
12	5	3	1	1	0	0	0
9	6	1	1	6	0	1	0
11	7	3	2	2	1	0	0
10	2	1	2	0	1	1	0
7	2	0	2	3	0	1	0
15	3	1	2	1	1	3	0
15	3	1	0	0	1	0	0
18	0	0	3	1	0	0	0
16	3	2	3	2	2	0	0
11	4	0	0	0	0	0	0
27	8	1	3	0	0	1	0
26	3	1	1	1	0	1	0
27	7	0	1	0	3	0	0
21	2	2	0	3	0	0	0
21	2	0	2	1	0	0	0
22	2	1	0	0	0	0	1
27	3	2	1	0	2	1	0
26	3	0	1	0	1	0	0
20	6	1	0	0	0	0	0
19	0	0	2	0	0	1	0
15	1	0	1	0	0	0	1

10	0	0	1	0	0	0	0
9	0	0	0	0	1	0	0
13	0	0	1	0	0	0	0
12	0	0	0	1	0	0	0
11	0	0	0	0	0	0	0
13	4	0	0	0	0	0	0
4	2	0	0	0	0	1	0
8	0	0	1	0	0	0	0
7	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
8	0	0	0	2	1	0	0
2	0	0	0	0	0	0	1
4	1	0	1	0	0	0	0
7	0	0	1	0	0	0	0
5	1	0	0	0	1	0	0
2	0	2	1	0	0	0	0
2	1	0	0	1	0	0	0
4	0	0	0	0	1	0	0
0	3	0	0	0	0	0	0
4	1	0	0	0	0	0	1
3	1	0	0	0	0	0	1
1	0	0	0	0	1	0	0
2	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
2	0	0	0	0	1	2	0
1	0	0	0	0	0	0	0
0	0	1	0	0	0	0	0
2	0	0	0	0	0	2	0
2	0	0	1	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	1	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	1	0	0	0	0	0	0

1	0	0	0	0	0	0	0
---	---	---	---	---	---	---	---

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a * \exp(b * x) + c * \exp(d * x)$$

Coefficients (with 95% confidence bounds):

$$a = 7.164 \quad (6.541, 7.786)$$

$$b = -0.4219 \quad (-0.4481, -0.3957)$$

$$c = 1.226 \quad (0.9702, 1.482)$$

$$d = -0.2066 \quad (-0.2156, -0.1976)$$

goftotal =

sse: 4.7258e-008

rsquare: 1.0000

dfe: 4

adjrsquare: 1.0000

rmse: 1.0870e-004

ctotal =

General model Exp1:

$$ctotal(x) = a * \exp(b * x)$$

Coefficients (with 95% confidence bounds):

a = 1.705 (1.422, 1.989)

b = -0.2189 (-0.2274, -0.2103)

goftotal =

sse: 3.8564e-008

rsquare: 9.9993e-001

dfe: 3

adjrsquare: 9.9990e-001

rmse: 1.1338e-004

curve fit iron:

ctotal =

General model Exp2:

$$ctotal(x) = a * \exp(b * x) + c * \exp(d * x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.03458 \quad (-0.003485, 0.07264)$$

$$b = -0.2264 \quad (-0.3086, -0.1442)$$

$$c = 3.541e-006 \quad (-8.443e-005, 9.151e-005)$$

$$d = 0.01366 \quad (-0.1878, 0.2151)$$

goftotal =

sse: 2.2110e-008

rsquare: 9.9092e-001

dfe: 4

adjrsquare: 9.8410e-001

rmse: 7.4347e-005

ctotal =

General model Exp1:

$$ctotal(x) = a * \exp(b * x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.0003693 \quad (6.094e-006, 0.0007324)$$

$$b = -0.0383 \quad (-0.06327, -0.01334)$$

goftotal =

sse: 2.9647e-010

rsquare: 9.6365e-001

dfe: 3

adjrsquare: 9.5153e-001

rmse: 9.9409e-006

Event 8	Date	Time*	Location*	Summing interval*
	30-Sep-98	1320	N23W81	Sep 30 1300 to Oct 2 0600

<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	5.621E-06	0.000E+00	0.000E+00	1.513E-06	0.000E+00	8.807E-07	4.148E-07	0.000E+00
2	2.957E-06	3.011E-06	0.000E+00	0.000E+00	0.000E+00	8.986E-07	0.000E+00	0.000E+00
3	3.319E-06	0.000E+00	0.000E+00	7.159E-06	5.880E-06	8.706E-06	3.449E-06	3.718E-06

4	1.247E-04	1.616E-04	1.069E-04	9.408E-05	7.713E-05	6.787E-05	3.851E-05	1.526E-05
5	1.632E-03	1.292E-03	1.019E-03	8.317E-04	4.712E-04	2.476E-04	8.561E-05	2.650E-05
6	7.816E-03	5.512E-03	4.487E-03	2.749E-03	1.401E-03	6.190E-04	1.531E-04	4.035E-05
7	1.723E-02	1.171E-02	9.085E-03	5.376E-03	2.345E-03	9.623E-04	2.120E-04	4.250E-05
8	2.638E-02	1.804E-02	1.168E-02	5.977E-03	2.301E-03	8.458E-04	1.751E-04	2.197E-05
9	2.828E-02	1.835E-02	9.977E-03	5.495E-03	1.877E-03	6.152E-04	1.263E-04	1.257E-05
10	3.105E-02	1.709E-02	9.928E-03	4.699E-03	1.552E-03	5.426E-04	8.132E-05	1.002E-05
11	2.570E-02	1.372E-02	7.262E-03	3.490E-03	1.118E-03	3.294E-04	6.699E-05	7.454E-06
12	2.503E-02	1.313E-02	5.660E-03	2.995E-03	8.377E-04	2.045E-04	4.282E-05	6.474E-06
13	2.503E-02	1.198E-02	5.360E-03	2.542E-03	6.552E-04	1.518E-04	2.863E-05	6.537E-06
14	2.231E-02	9.998E-03	4.572E-03	2.133E-03	5.275E-04	1.150E-04	2.912E-05	3.914E-06
15	2.229E-02	8.942E-03	4.036E-03	1.556E-03	3.733E-04	7.656E-05	1.236E-05	1.177E-05
16	2.328E-02	9.142E-03	3.420E-03	1.172E-03	2.764E-04	9.976E-05	1.010E-05	0.000E+00
17	1.467E-02	6.017E-03	2.538E-03	9.637E-04	2.355E-04	6.937E-05	7.059E-06	0.000E+00
18	1.367E-02	5.146E-03	1.876E-03	8.096E-04	1.425E-04	3.412E-05	9.773E-06	0.000E+00
19	8.152E-03	3.033E-03	1.238E-03	4.652E-04	1.176E-04	2.296E-05	4.671E-06	1.169E-06
20	5.963E-03	2.289E-03	9.138E-04	4.072E-04	1.014E-04	2.196E-05	6.011E-06	0.000E+00
21	4.990E-03	1.730E-03	8.125E-04	3.189E-04	7.181E-05	1.760E-05	2.302E-06	0.000E+00
22	5.748E-03	2.078E-03	1.006E-03	2.934E-04	8.097E-05	1.023E-05	3.781E-06	0.000E+00
23	5.156E-03	1.973E-03	7.373E-04	3.443E-04	5.622E-05	1.229E-05	3.783E-06	9.650E-07
24	4.499E-03	1.768E-03	7.045E-04	2.461E-04	6.000E-05	6.891E-06	1.453E-06	1.001E-06
25	4.786E-03	1.876E-03	7.622E-04	2.800E-04	4.684E-05	3.577E-06	5.508E-06	1.027E-06
26	4.463E-03	1.469E-03	6.341E-04	1.863E-04	3.943E-05	1.608E-05	7.453E-07	0.000E+00
27	3.645E-03	1.371E-03	4.840E-04	1.775E-04	5.144E-05	1.180E-05	3.006E-06	0.000E+00
28	2.993E-03	1.121E-03	4.725E-04	1.762E-04	3.448E-05	1.060E-05	6.534E-07	0.000E+00
29	2.242E-03	8.254E-04	2.795E-04	1.085E-04	2.526E-05	5.588E-06	3.804E-06	1.509E-06
30	1.545E-03	5.146E-04	2.321E-04	7.248E-05	2.095E-05	1.241E-06	1.636E-06	0.000E+00
31	9.684E-04	3.836E-04	1.486E-04	5.277E-05	1.945E-05	1.169E-06	1.547E-06	0.000E+00
32	9.039E-04	3.780E-04	1.479E-04	4.246E-05	7.536E-06	2.239E-06	4.917E-07	6.161E-07
33	8.583E-04	3.199E-04	1.576E-04	3.968E-05	8.790E-06	5.849E-06	9.959E-07	0.000E+00
34	8.308E-04	2.733E-04	9.997E-05	3.209E-05	7.006E-06	2.249E-06	1.519E-06	0.000E+00
35	6.888E-04	2.778E-04	9.708E-05	2.841E-05	6.134E-06	3.330E-06	4.618E-07	5.890E-07
36	7.057E-04	2.784E-04	1.232E-04	3.141E-05	1.281E-05	1.101E-06	4.894E-07	6.167E-07
37	6.899E-04	1.972E-04	1.218E-04	2.768E-05	9.208E-06	1.081E-06	0.000E+00	0.000E+00
38	6.183E-04	1.783E-04	4.612E-05	3.438E-05	7.451E-06	0.000E+00	5.222E-07	1.402E-06
39	5.631E-04	2.091E-04	6.784E-05	1.715E-05	5.647E-06	0.000E+00	5.054E-07	0.000E+00
40	5.542E-04	2.050E-04	6.604E-05	1.961E-05	4.351E-06	1.968E-06	4.391E-07	1.724E-06
41	4.831E-04	1.724E-04	7.187E-05	1.715E-05	2.182E-06	1.964E-06	1.368E-06	0.000E+00
42	4.819E-04	1.632E-04	5.025E-05	2.246E-05	2.973E-06	8.820E-07	4.307E-07	9.925E-07

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.149E-07	0.000E+00
4	0.000E+00	6.189E-06	3.739E-06	6.764E-06	2.648E-06	1.136E-06	1.033E-06	3.303E-07
5	1.096E-04	8.430E-05	5.305E-05	4.222E-05	1.495E-05	1.196E-05	4.280E-06	1.229E-06
6	6.346E-04	3.499E-04	2.022E-04	1.321E-04	4.766E-05	1.516E-05	5.009E-06	3.105E-07
7	2.087E-03	9.261E-04	5.441E-04	2.320E-04	7.124E-05	3.746E-05	3.439E-06	1.064E-06
8	4.028E-03	1.815E-03	7.828E-04	3.350E-04	1.124E-04	3.176E-05	4.126E-06	0.000E+00
9	3.699E-03	1.249E-03	6.747E-04	2.216E-04	7.298E-05	1.178E-05	1.054E-06	9.464E-07
10	3.341E-03	1.086E-03	4.908E-04	2.423E-04	5.577E-05	1.386E-05	6.021E-06	1.018E-06
11	2.689E-03	8.292E-04	3.280E-04	1.240E-04	2.496E-05	5.372E-06	0.000E+00	0.000E+00
12	2.006E-03	6.405E-04	1.885E-04	9.220E-05	2.212E-05	3.769E-06	0.000E+00	0.000E+00
13	1.524E-03	4.891E-04	1.435E-04	7.565E-05	2.721E-05	5.183E-06	8.314E-07	0.000E+00
14	1.213E-03	4.170E-04	1.052E-04	6.984E-05	2.014E-05	2.019E-06	1.011E-06	0.000E+00
15	9.388E-04	2.851E-04	1.372E-04	2.413E-05	2.085E-06	0.000E+00	0.000E+00	0.000E+00
16	8.091E-04	1.871E-04	7.160E-05	3.229E-05	6.258E-06	1.714E-06	0.000E+00	0.000E+00
17	6.997E-04	1.816E-04	3.393E-05	2.532E-05	9.666E-06	2.031E-06	0.000E+00	0.000E+00
18	4.863E-04	1.276E-04	4.358E-05	2.135E-05	0.000E+00	1.356E-06	0.000E+00	0.000E+00
19	3.987E-04	7.069E-05	1.949E-05	2.099E-05	1.584E-06	0.000E+00	0.000E+00	0.000E+00
20	2.491E-04	6.696E-05	2.928E-05	1.299E-05	2.399E-06	0.000E+00	0.000E+00	0.000E+00
21	1.563E-04	6.861E-05	2.447E-05	1.453E-05	1.129E-06	0.000E+00	0.000E+00	0.000E+00
22	1.682E-04	5.864E-05	1.257E-05	2.796E-06	4.881E-06	0.000E+00	0.000E+00	0.000E+00
23	1.740E-04	4.242E-05	1.831E-05	8.836E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
24	1.433E-04	4.188E-05	9.036E-06	4.534E-06	9.586E-07	0.000E+00	0.000E+00	0.000E+00
25	1.051E-04	3.523E-05	9.389E-06	1.398E-06	0.000E+00	0.000E+00	4.076E-07	0.000E+00
26	1.071E-04	1.996E-05	1.896E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
27	1.201E-04	4.323E-05	8.618E-06	4.297E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
28	6.342E-05	1.752E-05	5.824E-06	1.521E-06	2.026E-06	0.000E+00	0.000E+00	0.000E+00
29	9.046E-05	8.880E-06	2.791E-06	2.668E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
30	6.122E-05	9.804E-06	2.528E-06	1.195E-06	8.421E-07	0.000E+00	0.000E+00	0.000E+00
31	3.815E-05	1.071E-05	4.376E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
32	2.548E-05	6.606E-06	8.295E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
33	3.300E-05	4.811E-06	6.166E-06	2.016E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
34	2.385E-05	4.935E-06	6.385E-06	2.048E-06	0.000E+00	0.000E+00	2.595E-07	0.000E+00
35	8.846E-06	3.233E-06	0.000E+00	2.890E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
36	2.614E-05	4.966E-06	3.909E-06	0.000E+00	6.198E-07	0.000E+00	0.000E+00	0.000E+00

37	1.577E-05	4.721E-06	1.859E-06	2.678E-06	0.000E+00	0.000E+00	2.569E-07	0.000E+00
38	1.541E-05	4.699E-06	1.971E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
39	2.192E-05	3.392E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
40	2.085E-05	1.563E-06	2.013E-06	8.800E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
41	1.159E-05	3.066E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
42	1.485E-05	5.995E-06	1.779E-06	0.000E+00	6.049E-07	5.141E-07	0.000E+00	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
2	0	0	1	0	1	1	0
1	1	0	0	0	1	0	0
1	0	0	4	5	8	7	6
37	55	29	53	65	63	79	25
388	346	224	373	321	187	149	37
1018	914	587	782	593	282	168	33
762	736	458	925	605	278	137	22
712	720	353	890	522	215	99	10
778	743	310	852	433	162	74	6
1102	999	435	826	407	161	53	5
1151	1037	446	640	309	102	46	4
1021	1034	357	482	199	55	25	3
1063	973	346	407	157	41	17	3
1215	951	347	372	138	32	18	2
946	707	257	233	83	20	7	5
1086	782	238	185	65	26	6	0
1627	827	278	221	82	26	6	0
1577	717	212	191	51	13	9	0
1333	571	189	148	56	12	5	1
1023	451	144	133	50	12	7	0
930	368	139	114	38	10	3	0
1088	450	175	106	44	6	5	0
971	424	128	124	30	7	5	1
854	385	123	89	33	4	2	1
889	398	130	100	25	2	7	1
888	335	116	71	22	10	1	0
697	301	85	65	28	7	4	0
640	275	93	72	21	7	1	0

520	219	60	48	17	4	6	2
414	158	58	37	16	1	3	0
280	126	39	29	16	1	3	0
257	123	39	23	6	2	1	1
241	103	41	21	7	5	2	0
238	91	26	18	6	2	3	0
201	93	26	16	5	3	1	1
213	96	34	18	11	1	1	1
211	69	34	16	8	1	0	0
177	58	12	19	6	0	1	2
172	73	19	10	5	0	1	0
176	74	19	12	4	2	1	3
154	63	21	11	2	2	3	0
163	65	16	15	3	1	1	2

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	0	0	0	0	0	0	0
0	0	0	0	0	0	2	0
0	4	2	7	4	2	4	1
62	53	27	45	24	21	17	4
290	180	85	115	64	21	17	1
600	297	138	128	59	32	6	2
618	348	121	113	58	18	5	0
454	209	92	66	33	6	1	1
442	188	70	76	26	7	7	1
419	166	53	43	13	3	0	0
362	135	32	33	12	2	0	0
243	88	21	23	12	3	1	0
199	76	16	22	9	1	1	0
164	57	21	8	1	0	0	0
122	32	10	9	3	1	0	0
111	32	5	7	4	1	0	0
113	33	9	9	0	1	0	0
95	19	4	9	1	0	0	0
78	23	8	8	2	0	0	0
51	25	7	9	1	0	0	0

60	23	4	2	5	0	0	0
63	17	6	6	0	0	0	0
52	17	3	3	1	0	0	0
38	14	3	1	0	0	1	0
38	8	6	0	0	0	0	0
46	18	3	3	0	0	0	0
23	7	2	1	2	0	0	0
37	4	1	2	0	0	0	0
27	5	1	1	1	0	0	0
20	6	2	0	0	0	0	0
14	4	4	0	0	0	0	0
18	3	3	2	0	0	0	0
13	3	3	2	0	0	1	0
5	2	0	3	0	0	0	0
15	3	2	0	1	0	0	0
9	3	1	3	0	0	1	0
9	3	1	0	0	0	0	0
12	2	0	0	0	0	0	0
12	1	1	1	0	0	0	0
7	2	0	0	0	0	0	0
9	4	1	0	1	1	0	0
5	0	0	0	0	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 1.805 \quad (1.455, 2.156)$$

b = -0.2174 (-0.2728, -0.1621)

c = 0.03719 (-0.1771, 0.2515)

d = -0.06365 (-0.2356, 0.1083)

goftotal =

sse: 2.4474e-005

rsquare: 0.9997

dfe: 4

adjrsquare: 0.9994

rmse: 0.0025

ctotal =

General model Exp1:

$ctotal(x) = a \cdot \exp(b \cdot x)$

Coefficients (with 95% confidence bounds):

a = 0.7108 (0.3972, 1.024)

b = -0.1495 (-0.1715, -0.1275)

goftotal =

sse: 1.8210e-006

rsquare: 9.9848e-001

dfe: 3

adjrsquare: 9.9797e-001

rmse: 7.7910e-004

Curve fit iron:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.2176 \quad (0.16, 0.2753)$$

$$b = -0.1734 \quad (-0.197, -0.1498)$$

$$c = 0.0009402 \quad (-0.001521, 0.003401)$$

$$d = -0.01626 \quad (-0.06226, 0.02974)$$

goftotal =

sse: 2.1601e-007

rsquare: 9.9949e-001

dfe: 4

adjrsquare: 9.9910e-001

rmse: 2.3239e-004

ctotal =

General model Exp1:

$$ctotal(x) = a * \exp(b * x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.02846 \text{ (0.01338, 0.04353)}$$

$$b = -0.0879 \text{ (-0.1034, -0.07238)}$$

Date	Time*	Location*		Summing interval*				
24-Apr-99	1300	NW150		April 24 to April 26 2100				
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.247E-07	5.387E-07
2	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.068E-06
3	5.591E-06	1.232E-05	0.000E+00	6.037E-06	1.023E-06	0.000E+00	0.000E+00	0.000E+00
4	4.244E-05	2.235E-05	1.558E-05	1.321E-05	3.938E-06	8.786E-07	7.891E-07	0.000E+00
5	5.639E-05	3.979E-05	9.014E-06	8.931E-06	2.881E-06	8.843E-07	0.000E+00	0.000E+00
6	8.267E-05	4.344E-05	3.083E-05	1.345E-05	2.999E-06	0.000E+00	4.035E-07	1.037E-06
7	1.525E-04	6.294E-05	2.536E-05	1.983E-05	5.087E-06	1.876E-06	8.332E-07	5.430E-07
8	1.263E-04	3.616E-05	3.536E-05	1.829E-05	2.100E-06	2.809E-06	8.518E-07	5.412E-07
9	1.963E-04	6.586E-05	3.920E-05	1.887E-05	5.843E-06	9.227E-07	3.875E-07	5.089E-07
10	1.225E-04	4.801E-05	3.421E-05	7.504E-06	4.033E-06	9.014E-07	0.000E+00	0.000E+00

11	1.427E-04	4.131E-05	3.205E-05	6.237E-06	3.134E-06	1.897E-06	0.000E+00	0.000E+00
12	2.114E-04	1.011E-04	5.181E-05	1.731E-05	3.029E-06	1.919E-06	4.406E-07	5.192E-07
13	5.409E-04	1.891E-04	9.846E-05	4.514E-05	1.301E-05	9.964E-07	0.000E+00	0.000E+00
14	3.652E-04	1.458E-04	6.000E-05	2.886E-05	6.354E-06	1.991E-06	0.000E+00	5.419E-07
15	4.121E-04	1.228E-04	7.258E-05	2.084E-05	9.503E-06	1.004E-06	8.550E-07	5.344E-07
16	3.531E-04	1.413E-04	5.234E-05	2.952E-05	8.250E-06	0.000E+00	4.176E-07	5.192E-07
17	2.963E-04	1.296E-04	4.560E-05	1.710E-05	6.299E-06	1.919E-06	0.000E+00	0.000E+00
18	2.230E-04	7.557E-05	4.550E-05	1.395E-05	2.079E-06	2.829E-06	1.276E-06	0.000E+00
19	2.330E-04	9.645E-05	7.153E-05	2.515E-05	2.087E-06	9.950E-07	4.152E-07	0.000E+00
20	1.911E-04	8.210E-05	5.386E-05	9.146E-06	4.160E-06	0.000E+00	0.000E+00	5.467E-07
21	3.306E-04	1.322E-04	5.135E-05	1.597E-05	2.040E-06	9.007E-07	0.000E+00	5.210E-07
22	1.562E-04	6.487E-05	1.557E-05	1.801E-05	3.911E-06	9.000E-07	4.031E-07	5.335E-07
23	1.904E-04	7.803E-05	3.149E-05	5.956E-06	1.032E-06	9.643E-07	0.000E+00	0.000E+00
24	1.820E-04	5.553E-05	2.505E-05	9.059E-06	9.211E-06	9.000E-07	4.279E-07	0.000E+00
25	1.155E-04	6.104E-05	2.575E-05	1.148E-05	4.772E-06	2.607E-06	7.495E-07	0.000E+00
26	1.145E-04	6.605E-05	1.561E-05	8.971E-06	4.959E-06	1.893E-06	3.991E-07	1.058E-06
27	1.374E-04	4.246E-05	2.764E-05	2.994E-06	2.900E-06	1.888E-06	3.998E-07	4.971E-07
28	8.539E-05	5.762E-05	2.789E-05	1.190E-05	5.959E-06	9.400E-07	3.975E-07	0.000E+00
29	1.016E-04	4.947E-05	2.806E-05	1.333E-05	0.000E+00	0.000E+00	0.000E+00	5.259E-07
30	1.104E-04	4.462E-05	1.232E-05	5.935E-06	3.004E-06	0.000E+00	4.200E-07	0.000E+00
31	1.130E-04	3.478E-05	2.464E-05	1.043E-05	2.941E-06	9.357E-07	0.000E+00	9.864E-07
32	8.998E-05	5.419E-05	1.513E-05	1.026E-05	2.938E-06	0.000E+00	0.000E+00	0.000E+00
33	1.134E-04	5.691E-05	3.391E-05	7.487E-06	3.014E-06	9.436E-07	3.984E-07	0.000E+00
34	6.837E-05	3.215E-05	2.184E-05	1.171E-05	1.984E-06	0.000E+00	0.000E+00	1.485E-06
35	1.076E-04	5.159E-05	1.528E-05	8.899E-06	1.018E-06	8.829E-07	4.194E-07	0.000E+00
36	9.879E-05	2.715E-05	2.146E-05	6.016E-06	2.036E-06	0.000E+00	1.212E-06	5.254E-07
37	1.073E-04	3.962E-05	3.101E-05	7.202E-06	9.621E-07	0.000E+00	1.634E-06	0.000E+00
38	5.582E-05	5.178E-05	6.163E-06	2.882E-06	9.614E-07	9.379E-07	3.968E-07	5.246E-07
39	8.724E-05	3.954E-05	1.493E-05	4.491E-06	1.923E-06	8.850E-07	3.963E-07	5.252E-07
40	5.596E-05	2.983E-05	6.124E-06	4.554E-06	2.924E-06	0.000E+00	0.000E+00	0.000E+00
41	8.713E-05	2.991E-05	1.142E-05	8.437E-06	2.727E-06	0.000E+00	0.000E+00	4.869E-07
42	3.662E-05	2.921E-05	0.000E+00	1.516E-06	3.875E-06	0.000E+00	1.251E-06	4.919E-07
43	4.752E-05	3.649E-05	1.240E-05	2.946E-06	9.521E-07	0.000E+00	0.000E+00	4.914E-07
44	5.334E-05	1.470E-05	6.099E-06	8.642E-06	1.009E-06	0.000E+00	0.000E+00	1.530E-06
45	4.177E-05	3.472E-05	1.846E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.195E-07
46	1.385E-05	1.194E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.117E-07	5.171E-07
47	2.833E-05	1.475E-05	6.235E-06	0.000E+00	1.003E-06	0.000E+00	0.000E+00	0.000E+00
48	2.563E-05	9.879E-06	6.056E-06	1.501E-06	0.000E+00	0.000E+00	8.031E-07	0.000E+00
49	2.861E-06	7.079E-06	6.227E-06	2.823E-06	0.000E+00	1.790E-06	4.118E-07	0.000E+00
50	2.694E-06	4.857E-06	3.114E-06	0.000E+00	0.000E+00	0.000E+00	4.124E-07	5.149E-07

27	1.534E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
28	2.974E-06	0.000E+00	0.000E+00	8.157E-07	0.000E+00	0.000E+00	2.089E-07	2.574E-07
29	1.438E-06	0.000E+00	0.000E+00	8.143E-07	0.000E+00	0.000E+00	0.000E+00	2.733E-07
30	4.495E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.082E-07	0.000E+00
31	2.871E-06	1.381E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.076E-07	0.000E+00
32	6.104E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
33	4.414E-06	1.384E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.577E-07
34	1.528E-06	1.379E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
35	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.959E-07	0.000E+00	0.000E+00
36	2.961E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.205E-07	0.000E+00
37	1.521E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
38	1.436E-06	1.297E-06	1.604E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
39	1.524E-06	1.371E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.071E-07	0.000E+00
40	0.000E+00	0.000E+00	1.595E-06	0.000E+00	0.000E+00	0.000E+00	2.194E-07	0.000E+00
41	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
42	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
43	2.941E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.061E-07	0.000E+00
44	1.509E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
45	1.509E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
46	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.683E-07
47	1.412E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
48	2.996E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
49	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
50	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
51	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
52	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
53	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
54	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.014E-07	0.000E+00	0.000E+00	2.676E-07
55	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
56	1.494E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
57	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	0	0	0	0	0	1	1
0	0	0	0	0	0	0	2
2	5	0	4	1	0	0	0

15	9	5	9	4	1	2	0
20	16	3	6	3	1	0	0
29	17	10	9	3	0	1	2
52	25	8	13	5	2	2	1
43	14	11	12	2	3	2	1
74	27	13	13	6	1	1	1
42	19	11	5	4	1	0	0
48	16	10	4	3	2	0	0
71	39	16	11	3	2	1	1
175	70	29	28	12	1	0	0
119	55	18	18	6	2	0	1
134	46	22	13	9	1	2	1
118	54	16	19	8	0	1	1
99	50	14	11	6	2	0	0
75	29	14	9	2	3	3	0
79	37	22	16	2	1	1	0
65	32	17	6	4	0	0	1
112	51	16	10	2	1	0	1
54	26	5	12	4	1	1	1
66	31	10	4	1	1	0	0
63	22	8	6	9	1	1	0
43	26	9	8	5	3	2	0
40	26	5	6	5	2	1	2
48	17	9	2	3	2	1	1
30	23	9	8	6	1	1	0
36	20	9	9	0	0	0	1
39	18	4	4	3	0	1	0
40	14	8	7	3	1	0	2
32	22	5	7	3	0	0	0
40	23	11	5	3	1	1	0
24	13	7	8	2	0	0	3
38	21	5	6	1	1	1	0
35	11	7	4	2	0	3	1
38	16	10	5	1	0	4	0
20	21	2	2	1	1	1	1
31	16	5	3	2	1	1	1
20	12	2	3	3	0	0	0
32	13	4	6	3	0	0	1
13	12	0	1	4	0	3	1
17	15	4	2	1	0	0	1

19	6	2	6	1	0	0	3
15	14	6	0	0	0	0	1
5	5	0	0	0	0	1	1
10	6	2	0	1	0	0	0
9	4	2	1	0	0	2	0
1	3	2	2	0	2	1	0
1	2	1	0	0	0	1	1
2	2	3	1	1	1	0	0
7	2	0	0	0	0	1	1
2	2	1	3	1	0	0	0
3	1	1	3	1	1	1	0
0	1	0	1	1	0	0	0
1	5	0	0	1	0	0	0
8	1	2	1	0	1	2	1

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1
3	0	0	0	0	0	0	0
4	2	2	0	0	0	0	1
7	3	0	1	1	1	0	0
2	0	2	2	0	1	0	0
3	3	1	1	0	0	0	0
5	2	0	0	0	0	0	0
3	3	1	1	0	0	0	0
2	3	0	0	0	0	0	0
1	0	0	0	0	1	0	0
6	2	0	0	0	0	1	0
6	1	0	0	0	0	0	0
6	2	0	1	0	0	1	0
6	0	0	1	0	0	0	0
0	1	0	0	0	0	1	0
7	1	0	0	0	0	0	0
4	0	1	0	0	0	0	0
2	0	1	0	0	0	0	1

1	1	0	1	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
4	1	0	0	0	0	0	0
4	0	0	0	0	0	0	1
1	0	1	0	0	0	0	0
1	1	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	1	0	0	1	1
1	0	0	1	0	0	0	1
3	0	0	0	0	0	1	0
2	1	0	0	0	0	1	0
4	0	0	0	0	0	0	0
3	1	0	0	0	0	0	1
1	1	0	0	0	0	0	0
0	0	0	0	0	1	0	0
2	0	0	0	0	0	1	0
1	0	0	0	0	0	0	0
1	1	1	0	0	0	0	0
1	1	0	0	0	0	1	0
0	0	1	0	0	0	1	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
2	0	0	0	0	0	1	0
1	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	1	0	0	1
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.04826 \quad (0.04159, 0.05493)$$

$$b = -0.2492 \quad (-0.2654, -0.2331)$$

$$c = 2.203e-005 \quad (-8.995e-005, 0.000134)$$

$$d = 0.009368 \quad (-0.07833, 0.09707)$$

goftotal =

sse: 7.7465e-009

rsquare: 0.9997

dfe: 4

adjrsquare: 0.9995

rmse: 4.4007e-005

ctotal =

General model Exp1:

$$ctotal(x) = a * \exp(b * x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.002565 \quad (-0.003302, 0.008432)$$

$$b = -0.09242 \quad (-0.1986, 0.01374)$$

goftotal =

sse: 1.5209e-008

rsquare: 9.1156e-001

dfe: 3

adjrsquare: 8.8207e-001

rmse: 7.1203e-005

Event 14	Date	Time*	Location*	Summing interval*				
	1-Jun-99	1930	NW120	01 Jun to 4 Jun 0400				
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	2.880E-06	2.545E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.844E-07	0.000E+00
2	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.829E-07	0.000E+00	1.016E-06
3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
4	0.000E+00	2.400E-06	3.189E-06	1.439E-06	0.000E+00	0.000E+00	8.441E-07	5.290E-07
5	5.720E-06	5.002E-06	0.000E+00	1.542E-06	1.999E-06	2.739E-06	2.494E-06	5.333E-07
6	5.579E-06	7.313E-06	0.000E+00	1.549E-06	8.964E-06	2.811E-06	1.258E-06	3.589E-06
7	8.382E-06	1.971E-05	9.314E-06	1.225E-05	4.059E-06	9.185E-06	3.678E-06	2.091E-06

8	4.059E-05	1.988E-05	2.225E-05	1.204E-05	1.320E-05	1.034E-05	4.992E-06	2.079E-06
9	7.867E-05	3.571E-05	3.176E-05	1.356E-05	1.525E-05	1.026E-05	7.026E-06	2.091E-06
10	6.089E-05	4.017E-05	3.459E-05	3.463E-05	2.246E-05	1.309E-05	7.118E-06	2.531E-06
11	2.750E-04	1.118E-04	6.702E-05	3.927E-05	2.834E-05	8.682E-06	8.625E-06	4.275E-06
12	3.118E-04	1.485E-04	7.148E-05	5.121E-05	3.035E-05	2.402E-05	7.802E-06	4.859E-06
13	4.230E-04	1.927E-04	1.029E-04	4.948E-05	3.589E-05	2.302E-05	1.082E-05	1.611E-06
14	5.262E-04	2.677E-04	1.858E-04	8.775E-05	4.497E-05	1.976E-05	1.060E-05	2.819E-06
15	4.456E-04	1.956E-04	1.953E-04	6.428E-05	4.990E-05	2.105E-05	8.599E-06	4.358E-06
16	5.539E-04	2.818E-04	1.689E-04	7.343E-05	3.699E-05	1.185E-05	7.018E-06	1.669E-06
17	4.528E-04	2.603E-04	1.563E-04	9.145E-05	4.095E-05	1.937E-05	4.726E-06	2.203E-06
18	4.716E-04	2.246E-04	1.411E-04	7.046E-05	3.446E-05	2.028E-05	5.194E-06	1.597E-06
19	5.615E-04	2.645E-04	1.466E-04	6.190E-05	2.672E-05	1.009E-05	4.034E-06	1.528E-06
20	5.089E-04	2.081E-04	1.944E-04	6.816E-05	2.549E-05	8.804E-06	3.012E-06	5.316E-07
21	5.730E-04	2.831E-04	2.165E-04	5.989E-05	2.860E-05	1.364E-05	4.809E-06	1.091E-06
22	6.534E-04	3.323E-04	1.745E-04	9.380E-05	4.848E-05	1.379E-05	5.729E-06	2.796E-06
23	7.794E-04	2.760E-04	1.739E-04	7.143E-05	2.822E-05	1.281E-05	6.182E-06	5.705E-07
24	6.382E-04	2.913E-04	1.443E-04	5.792E-05	1.627E-05	1.390E-05	3.553E-06	1.681E-06
25	6.460E-04	2.877E-04	1.363E-04	7.191E-05	2.238E-05	1.076E-05	4.769E-06	5.625E-07
26	4.882E-04	2.246E-04	1.008E-04	5.373E-05	2.006E-05	1.071E-05	3.046E-06	5.280E-07
27	4.796E-04	2.260E-04	5.511E-05	5.698E-05	1.042E-05	7.679E-06	3.433E-06	1.033E-06
28	4.962E-04	1.848E-04	9.791E-05	5.488E-05	1.819E-05	3.901E-06	1.721E-06	0.000E+00
29	3.239E-04	1.207E-04	6.883E-05	3.923E-05	1.328E-05	4.531E-06	1.681E-06	5.146E-07
30	1.644E-04	1.006E-04	6.274E-05	3.878E-05	1.012E-05	2.814E-06	8.336E-07	0.000E+00
31	1.711E-04	8.360E-05	5.341E-05	2.704E-05	5.024E-06	2.874E-06	2.045E-06	1.044E-06
32	2.552E-04	8.894E-05	6.016E-05	3.203E-05	6.177E-06	6.437E-06	2.086E-06	0.000E+00
33	3.575E-04	1.380E-04	5.122E-05	3.434E-05	1.255E-05	5.701E-06	1.677E-06	0.000E+00
34	3.850E-04	1.542E-04	9.901E-05	4.015E-05	1.440E-05	3.791E-06	1.719E-06	0.000E+00
35	4.127E-04	1.576E-04	8.851E-05	3.462E-05	1.048E-05	5.413E-06	3.532E-06	5.079E-07
36	4.038E-04	2.070E-04	5.434E-05	3.238E-05	9.374E-06	4.832E-06	8.496E-07	0.000E+00
37	3.749E-04	1.399E-04	8.012E-05	3.822E-05	1.130E-05	5.708E-06	1.699E-06	5.161E-07
38	4.232E-04	1.204E-04	6.448E-05	4.507E-05	9.218E-06	3.839E-06	1.692E-06	1.601E-06
39	3.590E-04	1.714E-04	3.567E-05	3.112E-05	1.550E-05	8.441E-06	2.129E-06	5.480E-07
40	4.468E-04	1.669E-04	7.161E-05	2.572E-05	1.166E-05	3.956E-06	8.767E-07	1.033E-06
41	3.500E-04	1.645E-04	5.783E-05	4.065E-05	1.032E-05	2.933E-06	1.291E-06	1.577E-06
42	2.781E-04	1.273E-04	4.107E-05	2.446E-05	1.411E-05	1.882E-06	2.138E-06	0.000E+00
43	2.558E-04	9.247E-05	4.395E-05	1.816E-05	6.094E-06	1.852E-06	8.042E-07	2.103E-06
44	2.034E-04	8.538E-05	3.096E-05	1.838E-05	7.151E-06	1.800E-06	1.237E-06	0.000E+00
45	2.410E-04	8.505E-05	2.829E-05	1.829E-05	7.084E-06	5.563E-06	0.000E+00	5.339E-07
46	2.437E-04	8.123E-05	4.109E-05	2.678E-05	6.056E-06	4.674E-06	2.069E-06	5.045E-07
47	2.349E-04	7.341E-05	2.852E-05	2.428E-05	4.957E-06	1.857E-06	8.067E-07	0.000E+00

48	2.268E-04	9.306E-05	6.516E-05	1.521E-05	7.084E-06	1.863E-06	4.306E-07	5.047E-07
49	1.837E-04	8.317E-05	2.523E-05	1.645E-05	3.051E-06	1.796E-06	1.610E-06	0.000E+00
50	2.856E-04	9.050E-05	4.426E-05	2.444E-05	7.175E-06	1.810E-06	2.478E-06	5.058E-07
51	2.537E-04	5.914E-05	2.922E-05	1.692E-05	6.579E-06	2.630E-06	7.474E-07	2.381E-06
52	1.256E-04	4.235E-05	1.539E-05	1.644E-05	3.010E-06	9.393E-07	3.989E-07	4.983E-07
53	9.293E-05	3.463E-05	2.180E-05	4.579E-06	2.995E-06	2.758E-06	0.000E+00	4.941E-07
54	6.714E-05	1.962E-05	1.862E-05	4.397E-06	5.990E-06	9.364E-07	3.952E-07	0.000E+00
55	9.146E-05	3.795E-05	1.508E-05	8.701E-06	9.586E-07	2.701E-06	1.209E-06	0.000E+00
56	7.921E-05	3.950E-05	1.545E-05	7.441E-06	2.935E-06	0.000E+00	3.950E-07	0.000E+00
57	7.025E-05	2.182E-05	1.226E-05	7.516E-06	6.994E-06	0.000E+00	0.000E+00	1.016E-06
58	5.392E-05	1.507E-05	9.095E-06	1.037E-05	1.969E-06	9.329E-07	0.000E+00	0.000E+00

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.551E-07
4	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.289E-07	0.000E+00
5	0.000E+00	1.391E-06	0.000E+00	3.200E-06	0.000E+00	5.018E-07	0.000E+00	2.755E-07
6	4.376E-06	1.318E-06	3.451E-06	1.604E-06	1.614E-06	9.758E-07	1.312E-06	0.000E+00
7	1.058E-05	5.444E-06	4.996E-06	3.268E-06	4.216E-06	1.992E-06	6.539E-07	0.000E+00
8	1.078E-05	8.099E-06	1.183E-05	7.135E-06	3.785E-06	1.977E-06	1.529E-06	0.000E+00
9	1.222E-05	1.245E-05	1.868E-05	8.062E-06	3.265E-06	3.500E-06	6.517E-07	2.630E-07
10	1.521E-05	2.047E-05	8.316E-06	1.067E-05	2.784E-06	4.963E-06	6.649E-07	2.631E-07
11	2.473E-05	2.931E-05	1.215E-05	1.500E-05	1.147E-05	2.027E-06	4.502E-07	2.907E-07
12	2.820E-05	2.962E-05	8.755E-06	1.013E-05	4.435E-06	5.578E-06	4.559E-07	0.000E+00
13	5.048E-05	4.252E-05	1.940E-05	1.504E-05	6.653E-06	3.099E-06	8.993E-07	0.000E+00
14	4.133E-05	4.008E-05	1.940E-05	1.701E-05	7.931E-06	2.553E-06	6.564E-07	0.000E+00
15	4.726E-05	3.542E-05	3.646E-05	1.684E-05	2.219E-06	1.050E-06	4.544E-07	0.000E+00
16	5.891E-05	1.739E-05	2.500E-05	1.274E-05	8.948E-06	3.149E-06	6.834E-07	0.000E+00
17	6.142E-05	3.348E-05	2.091E-05	6.635E-06	5.012E-06	5.351E-07	4.524E-07	0.000E+00
18	4.816E-05	2.712E-05	1.572E-05	1.182E-05	3.354E-06	3.033E-06	4.386E-07	0.000E+00
19	4.865E-05	2.792E-05	1.001E-05	7.933E-06	5.254E-06	1.884E-06	0.000E+00	0.000E+00
20	3.961E-05	2.278E-05	2.137E-05	7.799E-06	1.132E-06	2.548E-06	0.000E+00	0.000E+00
21	5.702E-05	2.733E-05	1.081E-05	1.175E-05	3.941E-06	1.569E-06	0.000E+00	0.000E+00
22	5.859E-05	1.884E-05	1.427E-05	7.879E-06	4.580E-06	5.073E-07	0.000E+00	0.000E+00
23	7.100E-05	2.622E-05	9.068E-06	1.122E-05	1.771E-06	0.000E+00	4.674E-07	0.000E+00
24	6.951E-05	3.186E-05	1.453E-05	1.122E-05	2.808E-06	0.000E+00	0.000E+00	0.000E+00

25	3.668E-05	2.174E-05	1.616E-05	7.616E-06	3.439E-06	0.000E+00	0.000E+00	0.000E+00
26	3.441E-05	2.277E-05	1.761E-05	4.071E-06	3.317E-06	4.989E-07	0.000E+00	0.000E+00
27	3.405E-05	6.991E-06	8.507E-06	6.625E-06	2.191E-06	5.074E-07	0.000E+00	0.000E+00
28	4.084E-05	1.684E-05	3.516E-06	6.714E-06	5.736E-07	1.551E-06	0.000E+00	0.000E+00
29	3.216E-05	8.044E-06	6.866E-06	7.289E-06	1.070E-06	9.466E-07	0.000E+00	2.670E-07
30	1.466E-05	6.813E-06	1.007E-05	2.446E-06	5.228E-07	4.729E-07	0.000E+00	0.000E+00
31	1.659E-05	1.099E-05	3.262E-06	2.440E-06	0.000E+00	9.586E-07	0.000E+00	0.000E+00
32	2.571E-05	1.496E-05	4.919E-06	3.989E-06	1.636E-06	5.093E-07	2.116E-07	0.000E+00
33	2.322E-05	1.523E-05	0.000E+00	6.719E-06	2.693E-06	4.881E-07	0.000E+00	0.000E+00
34	3.070E-05	1.118E-05	1.039E-05	3.238E-06	2.187E-06	1.516E-06	0.000E+00	0.000E+00
35	2.984E-05	7.858E-06	3.297E-06	3.861E-06	4.939E-07	4.799E-07	2.139E-07	2.636E-07
36	2.622E-05	1.401E-05	3.330E-06	2.439E-06	0.000E+00	4.873E-07	4.590E-07	0.000E+00
37	2.468E-05	9.795E-06	1.714E-05	3.301E-06	2.209E-06	4.894E-07	2.306E-07	2.840E-07
38	1.974E-05	9.666E-06	6.859E-06	4.920E-06	2.117E-06	0.000E+00	0.000E+00	0.000E+00
39	3.546E-05	9.812E-06	1.776E-06	6.647E-06	0.000E+00	1.006E-06	0.000E+00	0.000E+00
40	2.381E-05	1.099E-05	3.449E-06	4.951E-06	2.760E-06	0.000E+00	2.167E-07	0.000E+00
41	2.960E-05	1.277E-05	6.885E-06	4.144E-06	1.129E-06	1.004E-06	0.000E+00	0.000E+00
42	2.151E-05	5.517E-06	6.790E-06	4.048E-06	5.589E-07	0.000E+00	2.139E-07	0.000E+00
43	1.968E-05	6.594E-06	1.726E-06	2.386E-06	5.492E-07	0.000E+00	0.000E+00	0.000E+00
44	8.867E-06	2.805E-06	5.101E-06	0.000E+00	5.516E-07	0.000E+00	0.000E+00	2.775E-07
45	9.129E-06	5.522E-06	1.630E-06	1.612E-06	1.070E-06	9.802E-07	4.498E-07	0.000E+00
46	1.510E-05	5.375E-06	0.000E+00	1.616E-06	1.072E-06	0.000E+00	0.000E+00	0.000E+00
47	1.354E-05	5.453E-06	1.736E-06	0.000E+00	5.205E-07	5.075E-07	0.000E+00	2.619E-07
48	8.962E-06	4.124E-06	5.207E-06	1.614E-06	1.071E-06	0.000E+00	0.000E+00	0.000E+00
49	8.862E-06	0.000E+00	4.889E-06	4.048E-06	2.139E-06	0.000E+00	0.000E+00	0.000E+00
50	8.906E-06	6.801E-06	1.739E-06	2.448E-06	0.000E+00	0.000E+00	0.000E+00	2.781E-07
51	1.272E-05	2.609E-06	0.000E+00	2.186E-06	1.004E-06	0.000E+00	0.000E+00	0.000E+00
52	9.006E-06	2.683E-06	0.000E+00	8.193E-07	1.056E-06	0.000E+00	0.000E+00	0.000E+00
53	1.023E-05	2.593E-06	3.303E-06	3.256E-06	5.099E-07	0.000E+00	2.079E-07	2.721E-07
54	5.821E-06	4.044E-06	1.698E-06	2.392E-06	0.000E+00	4.666E-07	0.000E+00	2.562E-07
55	6.084E-06	1.295E-06	4.897E-06	8.129E-07	5.091E-07	4.949E-07	2.199E-07	0.000E+00
56	7.339E-06	2.669E-06	3.394E-06	3.247E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
57	8.756E-06	3.959E-06	0.000E+00	0.000E+00	5.389E-07	0.000E+00	2.198E-07	0.000E+00
58	1.338E-05	2.664E-06	3.186E-06	1.574E-06	1.584E-06	0.000E+00	0.000E+00	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
1	1	0	0	0	0	2	0

0	0	0	0	0	1	0	2
0	0	0	0	0	0	0	0
0	1	1	1	0	0	2	1
2	2	0	1	2	3	6	1
2	3	0	1	9	3	3	7
3	8	3	8	4	10	9	4
14	8	7	8	13	11	12	4
27	14	10	9	15	11	17	4
21	16	11	23	22	14	17	5
92	43	21	25	27	9	20	8
104	57	22	33	29	25	18	9
140	73	31	31	34	24	25	3
171	100	56	55	42	20	24	5
149	75	60	41	48	22	20	8
182	106	51	46	35	12	16	3
151	99	48	58	39	20	11	4
158	86	43	45	33	21	12	3
200	107	48	42	27	11	10	3
168	79	59	43	24	9	7	1
190	107	66	38	27	14	11	2
212	124	52	58	45	14	13	5
253	102	52	44	26	13	14	1
207	108	43	36	15	14	8	3
211	108	41	45	21	11	11	1
162	86	31	34	19	11	7	1
161	87	17	37	10	8	8	2
165	70	30	35	17	4	4	0
112	48	22	26	13	5	4	1
57	40	20	26	10	3	2	0
59	33	17	18	5	3	5	2
88	35	19	21	6	7	5	0
121	53	16	22	12	6	4	0
131	60	31	26	14	4	4	0
151	66	30	24	11	6	9	1
137	80	17	21	9	5	2	0
127	54	25	25	11	6	4	1
144	47	20	29	9	4	4	3
121	66	11	20	15	9	5	1
149	62	22	16	11	4	2	2
119	64	18	26	10	3	3	3

95	50	13	16	14	2	5	0
89	37	14	12	6	2	2	4
71	34	10	12	7	2	3	0
84	34	9	12	7	6	0	1
84	32	13	18	6	5	5	1
82	29	9	16	5	2	2	0
79	36	21	10	7	2	1	1
63	32	8	11	3	2	4	0
99	36	14	16	7	2	6	1
93	25	10	12	7	3	2	5
44	17	5	11	3	1	1	1
33	14	7	3	3	3	0	1
24	8	6	3	6	1	1	0
32	15	5	6	1	3	3	0
28	16	5	5	3	0	1	0
25	9	4	5	7	0	0	2
19	6	3	7	2	1	0	0

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1
0	0	0	0	0	0	2	0
0	1	0	4	0	1	0	1
3	1	2	2	3	2	6	0
7	4	3	4	8	4	3	0
7	6	7	9	7	4	7	0
8	9	11	10	6	7	3	1
10	15	5	13	5	10	3	1
16	21	7	18	21	4	2	1
18	21	5	12	8	11	2	0
32	30	11	18	12	6	4	0
26	28	11	20	14	5	3	0
30	25	21	20	4	2	2	0
37	12	14	15	16	6	3	0
39	24	12	8	9	1	2	0
31	19	9	14	6	6	2	0

33	21	6	10	10	4	0	0
25	16	12	9	2	5	0	0
36	19	6	14	7	3	0	0
36	13	8	9	8	1	0	0
44	18	5	13	3	0	2	0
43	22	8	13	5	0	0	0
23	15	9	9	6	0	0	0
22	16	10	5	6	1	0	0
22	5	5	8	4	1	0	0
26	12	2	8	1	3	0	0
21	6	4	9	2	2	0	1
10	5	6	3	1	1	0	0
11	8	2	3	0	2	0	0
17	11	3	5	3	1	1	0
15	11	0	8	5	1	0	0
20	8	6	4	4	3	0	0
21	6	2	5	1	1	1	1
17	10	2	3	0	1	2	0
16	7	10	4	4	1	1	1
13	7	4	6	4	0	0	0
23	7	1	8	0	2	0	0
15	8	2	6	5	0	1	0
19	9	4	5	2	2	0	0
14	4	4	5	1	0	1	0
13	5	1	3	1	0	0	0
6	2	3	0	1	0	0	1
6	4	1	2	2	2	2	0
10	4	0	2	2	0	0	0
9	4	1	0	1	1	0	1
6	3	3	2	2	0	0	0
6	0	3	5	4	0	0	0
6	5	1	3	0	0	0	1
9	2	0	3	2	0	0	0
6	2	0	1	2	0	0	0
7	2	2	4	1	0	1	1
4	3	1	3	0	1	0	1
4	1	3	1	1	1	1	0
5	2	2	4	0	0	0	0
6	3	0	0	1	0	1	0
9	2	2	2	3	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a * \exp(b * x) + c * \exp(d * x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.1234 \quad (0.08828, 0.1586)$$

$$b = -0.2569 \quad (-0.2981, -0.2157)$$

$$c = 0.001334 \quad (-0.0009942, 0.003663)$$

$$d = -0.03084 \quad (-0.08111, 0.01942)$$

goftotal =

sse: 9.9405e-008

rsquare: 0.9994

dfe: 4

adjrsquare: 0.9990

rmse: 1.5764e-004

ctotal =

General model Exp1:

$$ctotal(x) = a * \exp(b * x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.01143 \text{ (0.002642, 0.02023)}$$

$$b = -0.09735 \text{ (-0.1334, -0.06133)}$$

goftotal =

sse: 2.5654e-008

rsquare: 9.8811e-001

dfe: 3

adjrsquare: 9.8415e-001

rmse: 9.2474e-005

Event 15	Date	Time*	Location*	Summing interval*
	4-Jun-99	703	N17W69	4 Jun to 6 Jun 0400

<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	5.185E-05	2.191E-05	5.938E-06	5.890E-06	1.011E-06	0.000E+00	3.936E-07	1.042E-06
2	4.511E-05	2.499E-05	6.160E-06	4.479E-06	3.894E-06	9.307E-07	1.235E-06	4.950E-07
3	1.934E-04	9.258E-05	3.637E-05	2.083E-05	6.496E-06	5.658E-06	2.555E-06	5.529E-07
4	7.022E-04	1.955E-04	1.055E-04	4.707E-05	1.522E-05	7.056E-06	2.284E-06	5.816E-07
5	1.645E-03	5.662E-04	2.284E-04	1.180E-04	2.955E-05	7.507E-06	2.401E-06	1.162E-06

6	2.382E-03	7.586E-04	3.797E-04	1.020E-04	3.167E-05	3.291E-06	3.064E-06	1.924E-06
7	2.254E-03	7.068E-04	2.433E-04	1.124E-04	1.913E-05	7.164E-06	1.389E-06	0.000E+00
8	2.698E-03	7.709E-04	3.261E-04	1.205E-04	4.257E-05	1.299E-05	2.661E-06	0.000E+00
9	3.191E-03	1.035E-03	3.817E-04	1.305E-04	3.604E-05	1.592E-05	5.677E-07	6.794E-07
10	3.055E-03	9.757E-04	2.786E-04	1.538E-04	2.720E-05	7.360E-06	1.594E-06	0.000E+00
11	2.819E-03	8.255E-04	3.801E-04	9.992E-05	2.719E-05	6.016E-06	3.214E-06	1.311E-06
12	3.114E-03	8.921E-04	3.850E-04	1.257E-04	3.842E-05	9.767E-06	1.089E-06	0.000E+00
13	2.378E-03	8.305E-04	3.582E-04	1.472E-04	3.299E-05	6.921E-06	5.038E-07	1.975E-06
14	2.384E-03	7.634E-04	3.289E-04	1.194E-04	3.298E-05	1.296E-05	1.503E-06	6.754E-07
15	1.984E-03	6.857E-04	3.219E-04	1.047E-04	3.345E-05	5.651E-06	9.913E-07	6.525E-07
16	1.789E-03	6.719E-04	2.614E-04	1.082E-04	2.048E-05	6.684E-06	4.759E-07	0.000E+00
17	1.654E-03	5.287E-04	2.244E-04	8.131E-05	2.222E-05	2.130E-06	4.640E-07	5.799E-07
18	1.469E-03	4.270E-04	2.562E-04	6.709E-05	2.100E-05	4.329E-06	0.000E+00	0.000E+00
19	1.371E-03	4.463E-04	2.189E-04	7.535E-05	1.399E-05	3.249E-06	9.050E-07	6.181E-07
20	1.219E-03	4.053E-04	1.612E-04	8.743E-05	1.697E-05	1.064E-06	8.984E-07	5.890E-07
21	7.575E-04	3.068E-04	1.354E-04	6.589E-05	1.074E-05	0.000E+00	4.299E-07	1.119E-06
22	8.438E-04	3.002E-04	1.307E-04	4.904E-05	1.189E-05	3.902E-06	4.345E-07	0.000E+00
23	9.144E-04	3.436E-04	1.954E-04	6.517E-05	1.743E-05	1.858E-06	1.238E-06	5.352E-07
24	8.236E-04	3.020E-04	1.508E-04	5.204E-05	8.534E-06	1.018E-06	4.561E-07	0.000E+00
25	8.058E-04	3.024E-04	1.467E-04	6.264E-05	1.352E-05	1.979E-06	1.365E-06	0.000E+00
26	8.236E-04	2.664E-04	1.235E-04	3.976E-05	1.277E-05	2.917E-06	4.269E-07	0.000E+00
27	7.440E-04	2.065E-04	1.504E-04	5.273E-05	1.377E-05	3.021E-06	4.512E-07	5.625E-07
28	6.982E-04	2.049E-04	1.171E-04	3.464E-05	3.128E-06	1.000E-06	8.677E-07	5.276E-07
29	6.305E-04	2.399E-04	8.164E-05	2.816E-05	9.611E-06	2.818E-06	4.457E-07	1.081E-06
30	6.494E-04	2.029E-04	1.105E-04	2.659E-05	4.120E-06	0.000E+00	0.000E+00	5.215E-07
31	6.703E-04	1.563E-04	7.477E-05	2.778E-05	1.259E-05	9.886E-07	8.344E-07	0.000E+00
32	5.263E-04	1.952E-04	9.389E-05	2.497E-05	4.284E-06	1.918E-06	4.155E-07	0.000E+00
33	5.089E-04	2.020E-04	6.085E-05	3.429E-05	3.207E-06	1.911E-06	4.156E-07	5.512E-07
34	4.604E-04	1.663E-04	5.494E-05	2.543E-05	9.291E-06	9.264E-07	0.000E+00	0.000E+00
35	4.351E-04	1.343E-04	6.812E-05	2.608E-05	6.200E-06	9.221E-07	0.000E+00	5.475E-07
36	3.566E-04	1.493E-04	4.233E-05	2.834E-05	4.182E-06	9.779E-07	1.288E-06	0.000E+00
37	3.431E-04	1.181E-04	4.749E-05	2.465E-05	1.058E-06	0.000E+00	1.259E-06	0.000E+00
38	3.361E-04	1.071E-04	5.015E-05	1.208E-05	3.039E-06	1.832E-06	8.427E-07	5.409E-07
39	3.138E-04	9.978E-05	6.474E-05	1.279E-05	4.785E-06	1.803E-06	0.000E+00	4.774E-07
40	3.081E-04	1.074E-04	5.703E-05	2.433E-05	2.096E-06	9.114E-07	4.328E-07	0.000E+00
41	2.989E-04	8.122E-05	4.698E-05	1.385E-05	9.864E-07	9.079E-07	0.000E+00	0.000E+00
42	2.558E-04	7.882E-05	6.041E-05	1.363E-05	3.015E-06	0.000E+00	4.299E-07	0.000E+00
43	2.193E-04	1.038E-04	2.821E-05	1.662E-05	1.044E-06	1.917E-06	4.051E-07	5.359E-07
44	2.019E-04	7.816E-05	3.371E-05	9.163E-06	1.039E-06	0.000E+00	4.042E-07	5.350E-07
45	2.550E-04	6.786E-05	2.168E-05	6.043E-06	4.094E-06	9.007E-07	4.036E-07	0.000E+00

46 2.303E-04 6.567E-05 2.204E-05 1.786E-05 9.786E-07 0.000E+00 8.307E-07 5.035E-07

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	1.512E-06	2.659E-06	0.000E+00	8.093E-07	0.000E+00	9.571E-07	2.189E-07	0.000E+00
2	7.517E-06	2.668E-06	1.598E-06	2.349E-06	5.084E-07	0.000E+00	2.199E-07	2.549E-07
3	4.883E-06	5.534E-06	8.858E-06	4.030E-06	2.159E-06	1.591E-06	0.000E+00	5.574E-07
4	2.140E-05	1.632E-05	9.150E-06	4.309E-06	1.682E-06	5.259E-07	2.445E-07	0.000E+00
5	6.143E-05	1.894E-05	9.936E-06	7.310E-06	6.600E-07	5.545E-07	0.000E+00	0.000E+00
6	4.425E-05	2.333E-05	8.309E-06	5.666E-06	2.642E-06	0.000E+00	2.549E-07	0.000E+00
7	4.585E-05	1.551E-05	5.834E-06	3.681E-06	6.135E-07	1.081E-06	2.409E-07	0.000E+00
8	6.394E-05	1.786E-05	1.071E-05	5.172E-06	7.055E-07	1.231E-06	0.000E+00	0.000E+00
9	7.139E-05	1.790E-05	4.616E-06	3.336E-06	2.822E-06	0.000E+00	3.048E-07	0.000E+00
10	6.806E-05	1.407E-05	2.309E-06	3.146E-06	6.687E-07	0.000E+00	2.761E-07	0.000E+00
11	5.193E-05	1.607E-05	6.342E-06	1.999E-06	6.649E-07	0.000E+00	0.000E+00	3.419E-07
12	6.745E-05	1.257E-05	6.680E-06	1.084E-06	6.830E-07	0.000E+00	2.971E-07	0.000E+00
13	8.725E-05	1.890E-05	4.354E-06	1.041E-06	6.567E-07	5.894E-07	5.446E-07	0.000E+00
14	6.607E-05	2.072E-05	6.349E-06	3.019E-06	0.000E+00	6.095E-07	0.000E+00	3.332E-07
15	6.117E-05	1.493E-05	8.155E-06	9.529E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
16	5.898E-05	8.105E-06	6.211E-06	9.314E-07	6.189E-07	0.000E+00	0.000E+00	0.000E+00
17	6.189E-05	1.122E-05	0.000E+00	3.779E-06	6.201E-07	0.000E+00	0.000E+00	0.000E+00
18	2.780E-05	1.091E-05	3.854E-06	1.929E-06	6.003E-07	0.000E+00	2.572E-07	0.000E+00
19	3.418E-05	7.531E-06	5.549E-06	1.807E-06	1.254E-06	0.000E+00	0.000E+00	3.001E-07
20	4.577E-05	1.215E-05	3.772E-06	1.799E-06	0.000E+00	0.000E+00	0.000E+00	2.937E-07
21	2.571E-05	2.859E-06	1.846E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
22	2.892E-05	1.318E-05	1.736E-06	0.000E+00	5.852E-07	0.000E+00	2.251E-07	0.000E+00
23	3.038E-05	6.809E-06	1.739E-06	0.000E+00	5.214E-07	0.000E+00	2.123E-07	0.000E+00
24	3.056E-05	4.307E-06	5.329E-06	1.669E-06	0.000E+00	5.071E-07	2.391E-07	0.000E+00
25	2.875E-05	1.028E-05	3.681E-06	1.716E-06	5.534E-07	0.000E+00	2.252E-07	0.000E+00
26	1.587E-05	4.364E-06	1.729E-06	0.000E+00	5.500E-07	0.000E+00	0.000E+00	0.000E+00
27	2.393E-05	1.398E-06	0.000E+00	8.229E-07	5.794E-07	0.000E+00	0.000E+00	0.000E+00
28	3.453E-05	4.236E-06	1.804E-06	1.637E-06	0.000E+00	0.000E+00	2.218E-07	0.000E+00
29	2.650E-05	4.139E-06	5.314E-06	8.614E-07	5.744E-07	0.000E+00	0.000E+00	0.000E+00
30	2.348E-05	4.276E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.525E-07	0.000E+00
31	2.044E-05	7.091E-06	3.484E-06	0.000E+00	0.000E+00	4.926E-07	0.000E+00	0.000E+00
32	2.033E-05	4.181E-06	3.573E-06	0.000E+00	0.000E+00	0.000E+00	2.317E-07	0.000E+00
33	1.054E-05	5.529E-06	1.785E-06	0.000E+00	1.070E-06	0.000E+00	0.000E+00	0.000E+00
34	1.106E-05	1.356E-06	0.000E+00	0.000E+00	1.068E-06	0.000E+00	2.171E-07	0.000E+00

35	7.768E-06	5.579E-06	0.000E+00	8.493E-07	5.320E-07	0.000E+00	0.000E+00	0.000E+00
36	2.139E-05	6.922E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.295E-07	0.000E+00
37	6.148E-06	2.819E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
38	1.696E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
39	7.071E-06	1.246E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
40	1.079E-05	2.673E-06	3.402E-06	7.907E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
41	6.080E-06	2.827E-06	5.039E-06	0.000E+00	0.000E+00	5.099E-07	0.000E+00	0.000E+00
42	1.047E-05	1.329E-06	1.741E-06	0.000E+00	5.233E-07	0.000E+00	0.000E+00	0.000E+00
43	7.517E-06	0.000E+00	0.000E+00	7.836E-07	5.532E-07	4.782E-07	0.000E+00	0.000E+00
44	3.019E-06	2.729E-06	1.635E-06	8.300E-07	0.000E+00	0.000E+00	2.120E-07	0.000E+00
45	9.136E-06	4.127E-06	0.000E+00	7.821E-07	0.000E+00	0.000E+00	0.000E+00	2.616E-07
46	9.132E-06	4.130E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
18	9	2	4	1	0	1	2
16	10	2	3	4	1	3	1
64	35	11	13	6	6	6	1
226	72	31	29	14	7	5	1
483	189	62	67	25	7	5	2
678	247	100	55	26	3	6	3
695	250	69	66	17	7	3	0
731	238	81	62	33	11	5	0
839	310	92	66	27	13	1	1
822	301	69	79	21	6	3	0
760	254	94	51	21	5	6	2
819	269	93	63	29	8	2	0
650	260	90	78	26	6	1	3
655	240	83	63	26	11	3	1
563	222	84	57	27	5	2	1
522	224	70	60	17	6	1	0
490	179	61	46	19	2	1	1
443	147	71	39	18	4	0	0
419	155	62	44	12	3	2	1
379	144	46	51	15	1	2	1
245	113	40	41	10	0	1	2

273	111	39	30	11	4	1	0
316	136	62	43	17	2	3	1
268	112	45	32	8	1	1	0
262	112	44	41	13	2	3	0
271	100	37	25	12	3	1	0
245	78	46	33	13	3	1	1
232	78	36	22	3	1	2	1
210	91	25	18	9	3	1	2
217	78	34	17	4	0	0	1
224	60	23	18	12	1	2	0
177	75	29	16	4	2	1	0
172	78	19	22	3	2	1	1
155	64	17	16	9	1	0	0
147	52	21	17	6	1	0	1
121	58	13	18	4	1	3	0
116	46	15	16	1	0	3	0
115	42	16	8	3	2	2	1
116	42	22	9	5	2	0	1
106	42	18	16	2	1	1	0
103	32	15	9	1	1	0	0
88	31	19	9	3	0	1	0
76	41	9	11	1	2	1	1
70	31	11	6	1	0	1	1
88	27	7	4	4	1	1	0
80	26	7	12	1	0	2	1

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
1	2	0	1	0	2	1	0
5	2	1	3	1	0	1	1
3	4	5	5	4	3	0	2
13	11	5	5	3	1	1	0
35	12	5	8	1	1	0	0
24	14	4	6	4	0	1	0
27	10	3	4	1	2	1	0
33	10	5	5	1	2	0	0
36	10	2	3	4	0	1	0
35	8	1	3	1	0	1	0
27	9	3	2	1	0	0	1

34	7	3	1	1	0	1	0
46	11	2	1	1	1	2	0
35	12	3	3	0	1	0	1
33	9	4	1	0	0	0	0
33	5	3	1	1	0	0	0
35	7	0	4	1	0	0	0
16	7	2	2	1	0	1	0
20	5	3	2	2	0	0	1
27	8	2	2	0	0	0	1
16	2	1	0	0	0	0	0
18	9	1	0	1	0	1	0
20	5	1	0	1	0	1	0
19	3	3	2	0	1	1	0
18	7	2	2	1	0	1	0
10	3	1	0	1	0	0	0
15	1	0	1	1	0	0	0
22	3	1	2	0	0	1	0
17	3	3	1	1	0	0	0
15	3	0	0	0	0	2	0
13	5	2	0	0	1	0	0
13	3	2	0	0	0	1	0
7	4	1	0	2	0	0	0
7	1	0	0	2	0	1	0
5	4	0	1	1	0	0	0
14	5	0	0	0	0	1	0
4	2	0	0	0	0	0	0
11	0	0	0	0	0	0	0
5	1	0	0	0	0	0	0
7	2	2	1	0	0	0	0
4	2	3	0	0	1	0	0
7	1	1	0	1	0	0	0
5	0	0	1	1	1	0	0
2	2	1	1	0	0	1	0
6	3	0	1	0	0	0	1
6	3	0	0	0	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a * \exp(b * x) + c * \exp(d * x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.7343 \quad (0.4891, 0.9796)$$

$$b = -0.3316 \quad (-0.3759, -0.2874)$$

$$c = 0.001317 \quad (-0.00398, 0.006613)$$

$$d = -0.03281 \quad (-0.1625, 0.0969)$$

goftotal =

sse: 6.9629e-007

rsquare: 0.9995

dfe: 4

adjrsquare: 0.9992

rmse: 4.1722e-004

ctotal =

General model Exp1:

$$ctotal(x) = a * \exp(b * x)$$

Coefficients (with 95% confidence bounds):

a = 0.06955 (0.005293, 0.1338)

b = -0.1765 (-0.2233, -0.1297)

goftotal =

sse: 1.8178e-008

rsquare: 9.9580e-001

dfc: 3

adjrsquare: 9.9440e-001

rmse: 7.7842e-005

Event 16	event	Date	Time*	Location*	Summing interval*			
	16	6-Nov-97	925	NW 120	18 Feb to 20 Feb 0200			
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	5.612E-06	7.346E-06	3.122E-06	2.956E-06	0.000E+00	8.657E-07	0.000E+00	0.000E+00
2	1.435E-05	0.000E+00	0.000E+00	2.911E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
3	1.204E-05	1.073E-05	3.427E-06	0.000E+00	0.000E+00	1.016E-06	4.528E-07	0.000E+00
4	1.484E-05	2.529E-06	0.000E+00	0.000E+00	0.000E+00	9.950E-07	8.680E-07	5.209E-07
5	3.065E-06	5.348E-06	0.000E+00	5.130E-06	0.000E+00	9.854E-07	4.695E-07	0.000E+00
6	6.907E-06	0.000E+00	7.518E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
7	1.144E-05	7.447E-06	9.263E-06	2.907E-06	9.729E-07	0.000E+00	0.000E+00	0.000E+00
8	2.934E-06	2.562E-06	0.000E+00	0.000E+00	9.679E-07	0.000E+00	0.000E+00	9.926E-07
9	2.907E-06	5.096E-06	3.169E-06	0.000E+00	1.020E-06	8.850E-07	3.949E-07	0.000E+00
10	2.904E-06	2.539E-06	0.000E+00	0.000E+00	2.932E-06	0.000E+00	0.000E+00	0.000E+00
11	5.107E-06	6.961E-06	2.775E-06	1.337E-06	8.927E-07	0.000E+00	0.000E+00	4.870E-07

12	8.349E-06	2.382E-06	0.000E+00	0.000E+00	0.000E+00	9.321E-07	0.000E+00	0.000E+00
13	1.120E-05	0.000E+00	0.000E+00	1.514E-06	1.009E-06	0.000E+00	3.925E-07	5.195E-07
14	5.434E-06	2.376E-06	0.000E+00	0.000E+00	0.000E+00	9.286E-07	0.000E+00	0.000E+00
15	8.314E-06	4.749E-06	0.000E+00	0.000E+00	1.956E-06	9.271E-07	3.915E-07	4.890E-07
16	2.878E-06	4.744E-06	2.952E-06	3.016E-06	0.000E+00	9.271E-07	0.000E+00	5.184E-07
17	1.388E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.721E-07	0.000E+00	0.000E+00
18	8.287E-06	4.735E-06	6.066E-06	1.505E-06	2.009E-06	9.257E-07	0.000E+00	0.000E+00
19	5.411E-06	2.511E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
20	8.437E-06	7.529E-06	0.000E+00	1.504E-06	0.000E+00	0.000E+00	8.038E-07	0.000E+00
21	0.000E+00	9.734E-06	2.937E-06	1.416E-06	0.000E+00	0.000E+00	4.132E-07	0.000E+00
22	8.266E-06	7.374E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.163E-07
23	0.000E+00	4.863E-06	0.000E+00	1.499E-06	0.000E+00	0.000E+00	0.000E+00	5.160E-07
24	1.112E-05	0.000E+00	0.000E+00	1.413E-06	0.000E+00	0.000E+00	1.213E-06	0.000E+00
25	0.000E+00	2.356E-06	0.000E+00	2.998E-06	0.000E+00	9.214E-07	0.000E+00	0.000E+00
26	1.094E-05	2.501E-06	0.000E+00	0.000E+00	1.943E-06	0.000E+00	0.000E+00	0.000E+00
27	2.513E-06	2.197E-06	5.467E-06	1.317E-06	8.793E-07	0.000E+00	0.000E+00	9.331E-07
28	5.384E-06	7.349E-06	2.929E-06	0.000E+00	0.000E+00	0.000E+00	4.117E-07	0.000E+00
29	0.000E+00	2.498E-06	0.000E+00	1.496E-06	0.000E+00	0.000E+00	0.000E+00	9.698E-07
30	8.236E-06	0.000E+00	6.212E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
31	0.000E+00	2.351E-06	0.000E+00	1.409E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
32	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.400E-07	8.657E-07	0.000E+00	0.000E+00
33	2.686E-06	4.846E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.874E-07	0.000E+00
34	8.549E-06	0.000E+00	0.000E+00	1.493E-06	9.400E-07	8.657E-07	0.000E+00	5.134E-07
35	2.684E-06	2.494E-06	2.922E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
36	2.848E-06	2.491E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.836E-07
37	2.847E-06	4.695E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.840E-07
38	2.847E-06	0.000E+00	0.000E+00	1.492E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
39	2.683E-06	7.328E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.869E-07	0.000E+00
40	0.000E+00	0.000E+00	3.097E-06	1.492E-06	0.000E+00	0.000E+00	0.000E+00	9.960E-07
41	8.213E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.971E-07	0.000E+00
42	2.847E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

iron

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	1.407E-06	1.349E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2	1.474E-06	4.075E-06	0.000E+00	1.588E-06	5.505E-07	0.000E+00	0.000E+00	0.000E+00
3	6.236E-06	2.847E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
4	1.600E-06	0.000E+00	1.748E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
2	3	1	2	0	1	0	0
5	0	0	2	0	0	0	0
4	4	1	0	0	1	1	0
5	1	0	0	0	1	2	1
1	2	0	3	0	1	1	0
1	0	1	0	0	0	0	0
4	3	3	2	1	0	0	0
1	1	0	0	1	0	0	2
1	2	1	0	1	1	1	0
1	1	0	0	3	0	0	0
2	3	1	1	1	0	0	1
3	1	0	0	0	1	0	0
4	0	0	1	1	0	1	1
2	1	0	0	0	1	0	0
3	2	0	0	2	1	1	1
1	2	1	2	0	1	0	1
5	0	0	0	0	1	0	0
3	2	2	1	2	1	0	0
2	1	0	0	0	0	0	0
3	3	0	1	0	0	2	0
0	4	1	1	0	0	1	0
3	3	0	0	0	0	0	1
0	2	0	1	0	0	0	1
4	0	0	1	0	0	3	0
0	1	0	2	0	1	0	0
4	1	0	0	2	0	0	0
1	1	2	1	1	0	0	2
2	3	1	0	0	0	1	0
0	1	0	1	0	0	0	2
3	0	2	0	0	0	0	0
0	1	0	1	0	0	0	0
0	0	0	0	1	1	0	0
1	2	0	0	0	0	1	0
3	0	0	1	1	1	0	1
1	1	1	0	0	0	0	0
1	1	0	0	0	0	0	1
1	2	0	0	0	0	0	1
1	0	0	1	0	0	0	0

0	0	2	0	0	0	0	0
2	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	1	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	1	0	0	0	0	0	0
0	0	1	0	0	0	0	0
0	0	0	0	0	0	1	0
0	0	0	0	0	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.0006773 \quad (0.0001462, 0.001208)$$

$$b = -0.1455 \quad (-0.2435, -0.04747)$$

$$c = 1.609e-006 \quad (-5.199e-005, 5.52e-005)$$

$$d = 0.008396 \quad (-0.5269, 0.5437)$$

goftotal =

$$sse: 8.0658e-010$$

$$rsquare: 0.9766$$

dfc: 4

adjrsquare: 0.9590

rmse: 1.4200e-005

ctotal =

General model Exp1:

$$ctotal(x) = a * \exp(b * x)$$

Coefficients (with 95% confidence bounds):

$$a = 6.517e-005 \quad (-4.042e-005, 0.0001708)$$

$$b = -0.04118 \quad (-0.1033, 0.02098)$$

goftotal =

sse: 1.3660e-010

rsquare: 7.6211e-001

dfc: 3

adjrsquare: 6.8281e-001

rmse: 6.7479e-006

Event 17	Date	Time*	Location*	Summing interval*				
	4-Apr-00	1541	N16W66	4 Apr to 6 Apr 2300				
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	0.000E+00	2.341E-06	0.000E+00	0.000E+00	0.000E+00	8.621E-07	3.861E-07	1.024E-06
2	2.667E-06	2.474E-06	0.000E+00	1.482E-06	0.000E+00	0.000E+00	7.686E-07	0.000E+00
3	4.418E-05	2.657E-05	9.076E-06	5.692E-06	1.926E-06	0.000E+00	4.091E-07	4.814E-07
4	5.947E-05	2.033E-05	2.242E-05	9.483E-06	2.743E-06	1.667E-06	0.000E+00	0.000E+00
5	3.657E-04	1.869E-04	1.037E-04	4.719E-05	1.819E-05	2.846E-06	8.024E-07	0.000E+00
6	8.081E-04	3.942E-04	2.345E-04	1.255E-04	3.419E-05	1.153E-05	1.703E-06	0.000E+00
7	1.087E-03	5.784E-04	2.916E-04	1.576E-04	4.394E-05	1.366E-05	8.689E-07	0.000E+00
8	1.152E-03	5.315E-04	2.796E-04	1.019E-04	3.582E-05	1.164E-05	1.320E-06	5.580E-07
9	1.485E-03	5.959E-04	2.437E-04	1.129E-04	3.109E-05	5.145E-06	8.790E-07	0.000E+00
10	1.681E-03	5.942E-04	2.527E-04	9.724E-05	2.112E-05	6.436E-06	3.863E-06	1.194E-06
11	1.616E-03	5.696E-04	2.407E-04	7.740E-05	2.437E-05	0.000E+00	0.000E+00	0.000E+00
12	1.450E-03	4.886E-04	2.266E-04	6.974E-05	1.816E-05	3.163E-06	4.946E-07	5.748E-07
13	1.676E-03	4.645E-04	1.565E-04	4.807E-05	1.405E-05	0.000E+00	5.167E-07	0.000E+00
14	2.252E-03	6.747E-04	2.555E-04	8.097E-05	1.287E-05	1.324E-06	0.000E+00	0.000E+00
15	2.467E-03	7.022E-04	2.125E-04	5.995E-05	6.351E-06	0.000E+00	1.896E-06	0.000E+00
16	2.535E-03	7.318E-04	1.989E-04	3.694E-05	4.989E-06	3.094E-06	6.849E-07	0.000E+00
17	2.583E-03	6.842E-04	1.766E-04	4.583E-05	9.444E-06	4.496E-06	0.000E+00	0.000E+00
18	2.184E-03	6.051E-04	1.339E-04	4.784E-05	1.132E-05	0.000E+00	0.000E+00	0.000E+00
19	1.938E-03	4.223E-04	1.560E-04	3.578E-05	0.000E+00	1.356E-06	0.000E+00	0.000E+00
20	2.154E-03	4.009E-04	1.283E-04	3.183E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
21	1.640E-03	3.419E-04	1.253E-04	1.844E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
22	1.397E-03	3.991E-04	1.264E-04	2.033E-05	0.000E+00	0.000E+00	6.066E-07	0.000E+00
23	1.358E-03	2.892E-04	1.384E-04	2.266E-05	1.524E-06	0.000E+00	0.000E+00	0.000E+00
24	1.459E-03	2.805E-04	8.882E-05	1.796E-05	2.956E-06	0.000E+00	0.000E+00	0.000E+00
25	1.048E-03	2.617E-04	5.350E-05	2.597E-05	0.000E+00	0.000E+00	0.000E+00	7.893E-07
26	9.806E-04	2.810E-04	5.406E-05	1.181E-05	2.691E-06	0.000E+00	0.000E+00	0.000E+00
27	9.992E-04	2.259E-04	8.365E-05	2.328E-05	1.412E-06	0.000E+00	6.270E-07	7.557E-07
28	1.293E-03	2.967E-04	8.255E-05	2.031E-05	4.499E-06	0.000E+00	0.000E+00	0.000E+00
29	1.076E-03	2.071E-04	3.083E-05	1.214E-05	0.000E+00	0.000E+00	0.000E+00	1.458E-06
30	8.443E-04	2.414E-04	4.998E-05	8.066E-06	1.444E-06	0.000E+00	0.000E+00	0.000E+00
31	8.014E-04	1.872E-04	3.890E-05	3.774E-06	1.272E-06	0.000E+00	5.024E-07	6.331E-07
32	6.742E-04	1.602E-04	2.725E-05	9.364E-06	0.000E+00	1.188E-06	0.000E+00	0.000E+00
33	6.071E-04	1.337E-04	3.795E-05	9.158E-06	1.269E-06	0.000E+00	0.000E+00	0.000E+00
34	4.997E-04	1.303E-04	3.851E-05	8.491E-06	0.000E+00	9.843E-07	4.844E-07	0.000E+00

35	3.397E-04	8.567E-05	9.971E-06	3.126E-06	1.078E-06	0.000E+00	0.000E+00	5.668E-07
36	3.277E-04	8.079E-05	2.482E-05	3.035E-06	1.977E-06	9.253E-07	3.913E-07	5.223E-07
37	3.648E-04	8.357E-05	2.997E-05	1.556E-06	2.201E-06	0.000E+00	0.000E+00	5.282E-07
38	2.743E-04	7.929E-05	2.678E-05	4.716E-06	1.090E-06	0.000E+00	0.000E+00	0.000E+00
39	3.486E-04	7.121E-05	2.955E-05	7.896E-06	1.073E-06	0.000E+00	0.000E+00	0.000E+00
40	2.495E-04	8.604E-05	1.928E-05	0.000E+00	0.000E+00	0.000E+00	8.525E-07	5.466E-07
41	3.790E-04	1.029E-04	2.928E-05	3.096E-06	0.000E+00	0.000E+00	0.000E+00	1.096E-06
42	3.638E-04	9.909E-05	1.664E-05	1.548E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
43	4.762E-04	9.453E-05	1.999E-05	4.681E-06	1.099E-06	1.011E-06	0.000E+00	5.631E-07
44	3.423E-04	6.598E-05	1.933E-05	4.816E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
45	3.196E-04	5.156E-05	3.171E-06	3.121E-06	0.000E+00	0.000E+00	4.197E-07	0.000E+00
46	2.433E-04	5.218E-05	1.632E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
47	1.962E-04	3.911E-05	3.150E-06	0.000E+00	1.021E-06	0.000E+00	4.207E-07	5.217E-07
48	1.936E-04	5.953E-05	6.633E-06	4.631E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
49	2.270E-04	6.966E-05	1.039E-05	3.311E-06	0.000E+00	0.000E+00	0.000E+00	6.173E-07
50	1.647E-04	3.907E-05	3.089E-06	6.221E-06	1.001E-06	0.000E+00	4.413E-07	5.437E-07
51	9.608E-05	2.040E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
52	7.536E-05	1.181E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.721E-07	0.000E+00
53	4.835E-05	1.753E-05	0.000E+00	0.000E+00	1.994E-06	0.000E+00	3.956E-07	0.000E+00
54	5.059E-05	1.226E-05	3.165E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.927E-07
55	4.186E-05	2.529E-06	6.089E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.901E-07
56	4.420E-05	7.431E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
57	4.498E-05	2.389E-06	1.218E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
58	4.199E-05	9.978E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
59	5.057E-05	1.495E-05	3.157E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
60	3.632E-05	4.744E-06	2.943E-06	1.421E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
61	6.360E-05	1.214E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.286E-07	0.000E+00
62	1.921E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.154E-07
63	2.479E-05	7.229E-06	3.112E-06	0.000E+00	0.000E+00	9.221E-07	3.906E-07	5.156E-07
64	5.031E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.149E-07	0.000E+00
65	3.939E-05	4.896E-06	0.000E+00	1.514E-06	0.000E+00	8.757E-07	0.000E+00	0.000E+00
66	3.327E-05	1.483E-05	3.003E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.186E-07
67	1.686E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
68	2.090E-05	6.734E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.811E-07
69	1.405E-05	1.007E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.917E-07	0.000E+00
70	3.033E-05	7.233E-06	2.934E-06	1.498E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
71	1.963E-05	2.374E-06	2.951E-06	0.000E+00	0.000E+00	0.000E+00	3.914E-07	4.884E-07
72	1.936E-05	4.716E-06	0.000E+00	0.000E+00	1.943E-06	0.000E+00	0.000E+00	5.154E-07
73	5.390E-06	7.362E-06	3.116E-06	1.501E-06	0.000E+00	9.207E-07	3.886E-07	4.851E-07
74	1.392E-05	4.702E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

69	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
70	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
71	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
72	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
73	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
74	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
75	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
76	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
77	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
78	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
79	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
80	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
81	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	1	0	0	0	1	1	2
1	1	0	1	0	0	2	0
16	11	3	4	2	0	1	1
23	9	8	7	3	2	0	0
127	74	33	31	18	3	2	0
274	152	73	81	33	12	4	0
362	220	90	100	42	14	2	0
380	200	85	64	34	12	3	1
469	216	71	68	28	5	2	0
509	206	70	56	18	6	8	2
469	189	64	43	20	0	0	0
423	163	61	39	15	3	1	1
455	144	39	25	11	0	1	0
538	184	56	37	9	1	0	0
558	181	44	26	4	0	3	0
540	179	39	15	3	2	1	0
560	169	35	19	6	3	0	0
480	152	27	20	7	0	0	0
448	112	33	16	0	1	0	0
500	105	27	14	0	0	0	0
370	88	26	8	0	0	0	0
321	105	27	9	0	0	1	0
318	78	30	10	1	0	0	0

336	74	19	8	2	0	0	0
258	74	12	12	0	0	0	1
258	84	13	6	2	0	0	0
245	63	19	11	1	0	1	1
307	81	18	9	3	0	0	0
270	60	7	6	0	0	0	2
223	72	12	4	1	0	0	0
224	60	10	2	1	0	1	1
188	51	7	5	0	1	0	0
174	44	10	5	1	0	0	0
153	46	11	5	0	1	1	0
112	32	3	2	1	0	0	1
117	33	8	2	2	1	1	1
119	31	9	1	2	0	0	1
90	30	8	3	1	0	0	0
116	27	9	5	1	0	0	0
84	33	6	0	0	0	2	1
125	39	9	2	0	0	0	2
120	37	5	1	0	0	0	0
156	35	6	3	1	1	0	1
113	25	6	3	0	0	0	0
106	20	1	2	0	0	1	0
82	20	5	0	0	0	0	0
66	15	1	0	1	0	1	1
65	23	2	3	0	0	0	0
72	25	3	2	0	0	0	1
56	15	1	4	1	0	1	1
33	8	0	0	0	0	0	0
28	5	0	0	0	0	1	0
17	7	0	0	2	0	1	0
18	5	1	0	0	0	0	1
15	1	2	0	0	0	0	1
16	3	0	0	0	0	0	0
16	1	4	0	0	0	0	0
15	4	0	0	0	0	0	0
18	6	1	0	0	0	0	0
13	2	1	1	0	0	0	0
23	5	0	0	0	0	2	0
7	0	0	0	0	0	0	1
9	3	1	0	0	1	1	1

18	0	0	0	0	0	1	0
14	2	0	1	0	1	0	0
12	6	1	0	0	0	0	1
6	0	0	0	0	0	0	0
8	3	0	0	0	0	0	1
5	4	0	0	0	0	1	0
11	3	1	1	0	0	0	0
7	1	1	0	0	0	1	1
7	2	0	0	2	0	0	1
2	3	1	1	0	1	1	1
5	2	0	0	0	0	0	0
3	1	1	0	0	0	0	1
3	1	0	0	0	0	1	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
0	1	0	0	0	0	0	0
2	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	1
6	0	2	0	0	0	0	0
7	3	1	0	0	0	0	0
23	12	4	2	0	0	0	0
86	25	4	2	1	0	0	1
80	25	12	3	1	0	0	0
67	11	3	2	0	0	0	0
47	7	2	1	0	0	0	0
28	16	1	0	0	1	0	0
30	8	1	0	0	1	0	0
24	10	1	0	0	0	0	0
12	3	0	0	0	0	0	0
19	3	1	0	0	0	0	0
10	2	0	0	0	0	0	0
9	0	1	0	0	0	0	1
14	4	0	0	0	0	2	0
6	0	0	1	0	1	0	0

8	3	0	0	0	0	0	0
3	1	0	0	0	0	0	0
6	1	0	0	0	0	0	0
2	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
8	2	0	0	0	0	0	0
2	0	0	0	0	1	0	0
2	0	0	0	0	0	0	1
3	1	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	1	0
1	0	0	0	0	0	0	0
2	0	1	0	0	0	0	0
2	0	0	0	0	0	0	0
1	1	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	1	0	0	0	0	0	1
1	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	1	1
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
0	1	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	1	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	1	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	1	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

$$c = 0.003068 \text{ } (-0.03962, 0.04575)$$

$$d = -0.1189 \text{ } (-0.7138, 0.476)$$

goftotal =

$$\text{sse: } 1.5730\text{e-}007$$

$$\text{rsquare: } 0.9999$$

$$\text{dfe: } 4$$

$$\text{adjrsquare: } 0.9998$$

$$\text{rmse: } 1.9830\text{e-}004$$

ctotal =

General model Exp1:

$$\text{ctotal}(x) = a \cdot \exp(b \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.04294 \text{ } (-0.008487, 0.09436)$$

$$b = -0.1821 \text{ } (-0.243, -0.1213)$$

goftotal =

sse: 8.6705e-009

rsquare: 9.9357e-001

dfc: 3

adjrsquare: 9.9143e-001

rmse: 5.3760e-005

Event 18	Date	Time*	Location*	Summing interval*				
	6-Jun-00	1525	N20E18	Jun 6 100 to Jun 10 0700				
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed φ	Listed φ	Listed φ	Listed φ	Listed φ	Listed φ	Listed φ	Listed φ
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.075E-07	0.000E+00
2	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
4	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.314E-07	0.000E+00	3.841E-07	0.000E+00
5	0.000E+00	0.000E+00	0.000E+00	1.396E-06	0.000E+00	0.000E+00	0.000E+00	5.096E-07
6	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
7	0.000E+00	0.000E+00	3.081E-06	1.399E-06	0.000E+00	0.000E+00	4.083E-07	0.000E+00
8	0.000E+00	2.479E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
9	2.679E-06	0.000E+00	0.000E+00	0.000E+00	9.929E-07	0.000E+00	0.000E+00	5.114E-07
10	5.684E-06	2.339E-06	0.000E+00	0.000E+00	0.000E+00	8.621E-07	0.000E+00	0.000E+00
11	7.521E-06	0.000E+00	0.000E+00	0.000E+00	8.780E-07	0.000E+00	3.841E-07	0.000E+00
12	8.271E-06	4.869E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
13	8.463E-06	5.048E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.037E-06
14	8.554E-06	2.537E-06	0.000E+00	2.874E-06	0.000E+00	0.000E+00	8.384E-07	0.000E+00
15	8.242E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.200E-07	4.948E-07
16	1.712E-05	0.000E+00	9.309E-06	0.000E+00	1.954E-06	0.000E+00	0.000E+00	0.000E+00
17	2.888E-05	4.923E-06	0.000E+00	0.000E+00	0.000E+00	9.643E-07	0.000E+00	5.074E-07
18	4.400E-05	5.141E-06	9.729E-06	0.000E+00	9.886E-07	0.000E+00	0.000E+00	5.094E-07
19	6.529E-05	2.579E-05	3.124E-06	1.601E-06	1.006E-06	0.000E+00	0.000E+00	5.487E-07
20	9.889E-05	2.326E-05	0.000E+00	1.517E-06	0.000E+00	2.908E-06	0.000E+00	0.000E+00
21	1.746E-04	2.639E-05	6.577E-06	3.165E-06	1.074E-06	1.935E-06	4.172E-07	5.220E-07
22	1.988E-04	4.028E-05	3.305E-05	4.846E-06	0.000E+00	1.006E-06	4.519E-07	0.000E+00
23	4.138E-04	7.454E-05	2.020E-05	7.873E-06	0.000E+00	1.911E-06	4.300E-07	0.000E+00
24	5.075E-04	1.161E-04	3.052E-05	1.657E-06	0.000E+00	0.000E+00	4.299E-07	0.000E+00
25	5.743E-04	1.063E-04	2.671E-05	6.416E-06	2.109E-06	0.000E+00	0.000E+00	0.000E+00

26	6.509E-04	1.487E-04	2.730E-05	3.293E-06	1.131E-06	2.986E-06	0.000E+00	0.000E+00
27	6.666E-04	1.572E-04	5.384E-05	4.770E-06	1.059E-06	0.000E+00	4.137E-07	0.000E+00
28	8.781E-04	1.714E-04	4.544E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
29	1.094E-03	2.404E-04	3.985E-05	6.776E-06	2.343E-06	1.080E-06	4.656E-07	0.000E+00
30	1.019E-03	2.384E-04	7.631E-05	1.401E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
31	1.185E-03	2.918E-04	6.341E-05	1.231E-05	2.301E-06	0.000E+00	0.000E+00	0.000E+00
32	1.300E-03	2.972E-04	6.169E-05	2.619E-05	2.397E-06	0.000E+00	0.000E+00	0.000E+00
33	1.553E-03	3.511E-04	9.935E-05	2.850E-05	0.000E+00	1.133E-06	0.000E+00	6.742E-07
34	1.521E-03	3.203E-04	5.522E-05	1.150E-05	4.978E-06	1.119E-06	5.232E-07	0.000E+00
35	1.637E-03	3.784E-04	7.573E-05	2.442E-05	1.216E-06	0.000E+00	0.000E+00	0.000E+00
36	1.594E-03	3.582E-04	5.623E-05	1.936E-05	1.246E-06	2.335E-06	0.000E+00	0.000E+00
37	1.664E-03	2.894E-04	1.080E-04	6.136E-06	2.746E-06	0.000E+00	0.000E+00	0.000E+00
38	1.847E-03	4.265E-04	6.692E-05	1.485E-05	0.000E+00	1.271E-06	0.000E+00	0.000E+00
39	2.186E-03	3.780E-04	1.033E-04	1.351E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
40	2.011E-03	3.915E-04	6.247E-05	1.215E-05	0.000E+00	1.441E-06	0.000E+00	0.000E+00
41	2.382E-03	4.071E-04	1.006E-04	1.713E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
42	1.992E-03	5.095E-04	7.707E-05	9.557E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
43	1.483E-03	1.969E-04	5.357E-05	2.723E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
44	1.126E-03	2.036E-04	1.995E-05	6.294E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
45	6.035E-04	9.531E-05	1.848E-05	3.019E-06	1.852E-06	0.000E+00	8.707E-07	0.000E+00
46	3.182E-04	3.741E-05	1.037E-05	7.429E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
47	2.077E-04	3.395E-05	4.969E-06	0.000E+00	1.395E-06	1.256E-06	0.000E+00	0.000E+00
48	2.213E-04	2.933E-05	3.924E-06	1.886E-06	1.331E-06	0.000E+00	0.000E+00	0.000E+00
49	2.451E-04	1.765E-05	0.000E+00	2.084E-06	0.000E+00	0.000E+00	0.000E+00	7.364E-07
50	2.373E-04	2.073E-05	4.233E-06	4.334E-06	0.000E+00	0.000E+00	5.984E-07	0.000E+00
51	1.365E-04	2.744E-05	8.657E-06	3.924E-06	1.321E-06	1.216E-06	0.000E+00	0.000E+00
52	1.601E-04	2.263E-05	0.000E+00	2.014E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
53	1.034E-04	1.939E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
54	1.419E-04	2.220E-05	3.807E-06	1.830E-06	0.000E+00	1.127E-06	0.000E+00	6.299E-07
55	1.320E-04	9.362E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
56	1.202E-04	9.079E-06	0.000E+00	0.000E+00	1.179E-06	0.000E+00	0.000E+00	0.000E+00
57	9.629E-05	1.507E-05	1.526E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
58	8.745E-05	8.831E-06	0.000E+00	1.795E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
59	9.756E-05	5.362E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.551E-07	0.000E+00
60	4.582E-05	8.486E-06	6.891E-06	1.772E-06	0.000E+00	0.000E+00	0.000E+00	5.696E-07
61	1.031E-04	5.824E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.788E-07	0.000E+00
62	6.950E-05	1.372E-05	3.337E-06	0.000E+00	1.075E-06	0.000E+00	4.716E-07	0.000E+00
63	1.570E-05	2.806E-06	0.000E+00	0.000E+00	0.000E+00	9.929E-07	0.000E+00	5.787E-07
64	6.163E-05	8.244E-06	0.000E+00	1.584E-06	0.000E+00	0.000E+00	4.677E-07	0.000E+00
65	3.395E-05	5.401E-06	3.271E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

66	6.764E-05	2.609E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
67	3.974E-05	1.055E-05	3.231E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
68	3.968E-05	2.751E-06	0.000E+00	3.295E-06	0.000E+00	0.000E+00	0.000E+00	5.689E-07
69	3.641E-05	0.000E+00	0.000E+00	0.000E+00	1.028E-06	0.000E+00	0.000E+00	0.000E+00
70	2.993E-05	7.939E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
71	5.823E-06	5.029E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
72	1.150E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
73	1.134E-05	2.548E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
74	8.563E-06	4.798E-06	0.000E+00	0.000E+00	9.593E-07	8.836E-07	0.000E+00	0.000E+00
75	2.561E-06	2.239E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.687E-07	4.889E-07
76	1.418E-05	0.000E+00	3.159E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
77	5.459E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
78	5.622E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.793E-07	8.105E-07	0.000E+00
79	1.125E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
80	0.000E+00	2.519E-06	2.949E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
81	2.708E-06	2.361E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
82	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.686E-07	0.000E+00	0.000E+00
83	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
84	0.000E+00	2.499E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
85	2.859E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.853E-07
86	0.000E+00	0.000E+00	2.929E-06	1.411E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
87	2.691E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.695E-07
88	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
4	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
5	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
6	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.141E-07	0.000E+00
7	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
8	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
9	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
10	1.401E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.658E-07
11	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.002E-06	4.873E-07	0.000E+00	2.679E-07

13	0.000E+00	1.281E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
14	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.671E-07	0.000E+00	0.000E+00
16	1.464E-06	0.000E+00	1.730E-06	0.000E+00	5.494E-07	0.000E+00	0.000E+00	0.000E+00
17	0.000E+00	0.000E+00	0.000E+00	7.864E-07	5.236E-07	0.000E+00	0.000E+00	0.000E+00
18	1.564E-06	1.414E-06	0.000E+00	8.357E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
19	0.000E+00	1.358E-06	0.000E+00	0.000E+00	5.346E-07	0.000E+00	0.000E+00	0.000E+00
20	0.000E+00	0.000E+00	1.687E-06	0.000E+00	0.000E+00	0.000E+00	2.187E-07	0.000E+00
21	1.626E-06	0.000E+00	0.000E+00	8.686E-07	0.000E+00	5.294E-07	0.000E+00	0.000E+00
22	4.904E-06	2.870E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.373E-07	0.000E+00
23	1.656E-06	2.804E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.261E-07	0.000E+00
24	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.876E-07	0.000E+00	0.000E+00	0.000E+00
25	1.594E-06	0.000E+00	1.768E-06	9.036E-07	1.153E-06	0.000E+00	0.000E+00	0.000E+00
26	6.431E-06	0.000E+00	0.000E+00	8.521E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
27	4.605E-06	1.355E-06	1.685E-06	8.513E-07	5.306E-07	0.000E+00	0.000E+00	0.000E+00
28	1.628E-06	0.000E+00	1.946E-06	0.000E+00	0.000E+00	5.586E-07	0.000E+00	0.000E+00
29	1.670E-06	0.000E+00	0.000E+00	8.807E-07	0.000E+00	0.000E+00	2.459E-07	0.000E+00
30	5.195E-06	0.000E+00	0.000E+00	9.729E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
31	7.037E-06	0.000E+00	1.929E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
32	3.641E-06	0.000E+00	0.000E+00	9.600E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
33	5.641E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.834E-07	0.000E+00
34	3.841E-06	0.000E+00	0.000E+00	9.779E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
35	1.960E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
36	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.376E-07
37	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.829E-07	0.000E+00	0.000E+00	0.000E+00
38	2.065E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
39	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
40	0.000E+00	0.000E+00	2.605E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
41	2.546E-06	2.913E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
42	0.000E+00	2.479E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
43	2.951E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
44	0.000E+00	2.769E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
45	0.000E+00	0.000E+00	0.000E+00	1.268E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
46	2.568E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
47	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
48	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
49	0.000E+00	1.895E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
50	2.071E-06	1.871E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
51	2.004E-06	1.880E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
52	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.894E-07	0.000E+00

53	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
54	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
55	1.936E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
56	1.768E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
57	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
58	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
59	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
60	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.393E-07	0.000E+00
61	1.736E-06	1.463E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
62	0.000E+00	1.539E-06	0.000E+00	0.000E+00	0.000E+00	5.530E-07	0.000E+00	0.000E+00
63	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
64	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
65	1.566E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
66	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
67	0.000E+00	1.490E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
68	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.524E-07	0.000E+00	0.000E+00	0.000E+00
69	1.623E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.351E-07	0.000E+00
70	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
71	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
72	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
73	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.416E-07	0.000E+00
74	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
75	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
76	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.074E-07	0.000E+00
77	0.000E+00	0.000E+00	1.691E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
78	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
79	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
80	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
81	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
82	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.321E-07	0.000E+00	0.000E+00	0.000E+00
83	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
84	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
85	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
86	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.518E-07
87	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
88	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.036E-07	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8

0	0	0	0	0	0	1	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	1	0	1	0
0	0	0	1	0	0	0	1
0	0	0	0	0	0	0	0
0	0	1	1	0	0	1	0
0	1	0	0	0	0	0	0
1	0	0	0	1	0	0	1
2	1	0	0	0	1	0	0
3	0	0	0	1	0	1	0
3	2	0	0	0	0	0	0
3	2	0	0	0	0	0	2
3	1	0	2	0	0	2	0
3	0	0	0	0	0	1	1
6	0	3	0	2	0	0	0
10	2	0	0	0	1	0	1
15	2	3	0	1	0	0	1
22	10	1	1	1	0	0	1
33	9	0	1	0	3	0	0
58	10	2	2	1	2	1	1
66	15	10	3	0	1	1	0
135	28	6	5	0	2	1	0
164	43	9	1	0	0	1	0
185	39	8	4	2	0	0	0
208	54	8	2	1	3	0	0
226	61	17	3	1	0	1	0
274	61	13	0	0	0	0	0
330	83	11	4	2	1	1	0
306	82	21	8	0	0	0	0
348	98	17	7	2	0	0	0
369	96	16	14	2	0	0	0
428	111	25	15	0	1	0	1
422	102	14	6	4	1	1	0
447	118	19	13	1	0	0	0
431	111	14	10	1	2	0	0
437	87	26	3	2	0	0	0
454	120	15	7	0	1	0	0
506	100	22	6	0	0	0	0
450	100	13	5	0	1	0	0

459	89	18	6	0	0	0	0
341	101	12	3	0	0	0	0
265	40	9	1	0	0	0	0
188	39	3	2	0	0	0	0
111	20	3	1	1	0	1	0
68	9	2	3	0	0	0	0
47	9	1	0	1	1	0	0
59	9	1	1	1	0	0	0
61	5	0	1	0	0	0	1
59	6	1	2	0	0	1	0
35	8	2	2	1	1	0	0
43	7	0	1	0	0	0	0
28	6	0	0	0	0	0	0
39	7	1	1	0	1	0	1
37	3	0	0	0	0	0	0
34	3	0	0	1	0	0	0
28	5	4	0	0	0	0	0
26	3	0	1	0	0	0	0
32	2	0	0	0	0	1	0
14	3	2	1	0	0	0	1
32	2	0	0	0	0	1	0
22	5	1	0	1	0	1	0
5	1	0	0	0	1	0	1
20	3	0	1	0	0	1	0
11	2	1	0	0	0	0	0
22	1	0	0	0	0	0	0
13	4	1	0	0	0	0	0
13	1	0	2	0	0	0	1
12	0	0	0	1	0	0	0
10	3	0	0	0	0	0	0
2	2	0	0	0	0	0	0
4	0	0	0	0	0	0	0
4	1	0	0	0	0	0	0
3	2	0	0	1	1	0	0
1	1	0	0	0	0	1	1
5	0	1	0	0	0	0	0
2	0	0	0	0	0	0	0
2	0	0	0	0	1	2	0
4	0	0	0	0	0	0	0
0	1	1	0	0	0	0	0

1	1	0	0	0	0	0	0
0	0	0	0	0	1	0	0
0	0	0	0	0	0	0	0
0	1	0	0	0	0	0	0
1	0	0	0	0	0	0	1
0	0	1	1	0	0	0	0
1	0	0	0	0	0	0	2
0	0	0	0	0	0	0	0

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	1	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0
0	0	0	0	2	1	0	1
0	1	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	1	0	0
1	0	1	0	1	0	0	0
0	0	0	1	1	0	0	0
1	1	0	1	0	0	0	0
0	1	0	0	1	0	0	0
0	0	1	0	0	0	1	0
1	0	0	1	0	1	0	0
3	2	0	0	0	0	1	0
1	2	0	0	0	0	1	0
0	0	0	0	1	0	0	0
1	0	1	1	2	0	0	0
4	0	0	1	0	0	0	0
3	1	1	1	1	0	0	0

1	0	1	0	0	1	0	0
1	0	0	1	0	0	1	0
3	0	0	1	0	0	0	0
4	0	1	0	0	0	0	0
2	0	0	1	0	0	0	0
3	0	0	0	0	0	1	0
2	0	0	1	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1
0	0	0	0	1	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	0
1	1	0	0	0	0	0	0
0	1	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	1	0	0	0	0	0	0
0	0	0	1	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	1	0	0	0	0	0	0
1	1	0	0	0	0	0	0
1	1	0	0	0	0	0	0
0	0	0	0	0	0	1	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	1	0
1	1	0	0	0	0	0	0
0	1	0	0	0	1	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	1	0	0	0	0	0	0

0	0	0	0	1	0	0	0
1	0	0	0	0	0	1	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	2	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	1	0
0	0	1	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	1	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0
0	0	0	0	0	0	1	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 1.962 \quad (1.836, 2.087)$$

$$b = -0.487 \quad (-0.4944, -0.4795)$$

$$c = 1.865e-005 \quad (-7.432e-005, 0.0001116)$$

$$d = 0.007157 \text{ } (-0.08826, 0.1026)$$

goftotal =

$$\text{sse: } 7.5491\text{e-}009$$

$$\text{rsquare: } 1.0000$$

$$\text{dfe: } 4$$

$$\text{adjrsquare: } 1.0000$$

$$\text{rmse: } 4.3443\text{e-}005$$

ctotal =

General model Exp1:

$$\text{ctotal}(x) = a \cdot \exp(b \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.001373 \text{ } (-0.003751, 0.006498)$$

$$b = -0.09351 \text{ } (-0.267, 0.08003)$$

goftotal =

$$\text{sse: } 1.0888\text{e-}008$$

rsquare: 8.0585e-001

dfe: 3

adjrsquare: 7.4113e-001

rmse: 6.0243e-005

Event19	Date		Time*		Location*			
	10-Jun-00		1702		N22W38			
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed φ	Listed φ	Listed φ	Listed φ	Listed φ	Listed φ	Listed φ	Listed φ
1	2.891E-06	0.000E+00	0.000E+00	0.000E+00	2.064E-06	2.904E-06	2.550E-06	5.485E-07
2	1.918E-04	2.197E-04	2.292E-04	1.784E-04	6.209E-05	2.757E-05	6.368E-06	2.881E-06
3	6.298E-04	3.226E-04	1.554E-04	1.136E-04	3.507E-05	2.139E-05	3.802E-06	0.000E+00
4	4.697E-04	2.357E-04	1.244E-04	7.048E-05	3.416E-05	1.281E-05	3.827E-06	0.000E+00
5	3.067E-04	1.674E-04	1.044E-04	5.754E-05	1.262E-05	9.182E-06	4.145E-06	1.184E-06
6	2.841E-04	1.388E-04	9.376E-05	3.796E-05	1.106E-05	7.220E-06	1.407E-06	5.532E-07
7	3.119E-04	1.174E-04	6.240E-05	3.375E-05	2.216E-05	3.079E-06	1.871E-06	0.000E+00
8	2.258E-04	1.056E-04	5.057E-05	2.931E-05	1.741E-05	3.968E-06	4.356E-07	0.000E+00
9	1.587E-04	1.012E-04	2.644E-05	2.224E-05	1.183E-05	1.990E-06	0.000E+00	1.115E-06
10	1.438E-04	8.636E-05	4.281E-05	2.073E-05	8.957E-06	1.765E-06	1.212E-06	0.000E+00
11	1.368E-04	5.721E-05	2.887E-05	1.567E-05	3.091E-06	2.911E-06	4.408E-07	0.000E+00
12	8.866E-05	4.137E-05	9.556E-06	1.583E-05	8.138E-06	3.741E-06	0.000E+00	0.000E+00

13	6.825E-05	5.139E-05	9.701E-06	1.227E-05	2.063E-06	0.000E+00	4.132E-07	0.000E+00
14	5.614E-05	2.833E-05	6.594E-06	4.574E-06	2.985E-06	2.762E-06	1.259E-06	0.000E+00
15	8.190E-05	2.528E-05	2.838E-05	4.542E-06	4.154E-06	1.946E-06	4.321E-07	0.000E+00
16	1.076E-04	1.793E-05	2.591E-05	1.528E-05	2.967E-06	9.107E-07	4.079E-07	0.000E+00
17	7.663E-05	2.306E-05	2.212E-05	4.632E-06	9.950E-07	9.136E-07	0.000E+00	0.000E+00
18	7.891E-05	3.853E-05	2.193E-05	7.608E-06	1.985E-06	9.693E-07	4.084E-07	0.000E+00
19	1.025E-04	2.308E-05	2.853E-05	9.380E-06	4.087E-06	0.000E+00	0.000E+00	0.000E+00
20	6.733E-05	3.821E-05	1.912E-05	4.572E-06	3.171E-06	0.000E+00	0.000E+00	5.457E-07
21	4.360E-05	3.044E-05	9.760E-06	3.039E-06	9.864E-07	9.614E-07	0.000E+00	0.000E+00
22	6.093E-05	1.822E-05	9.620E-06	2.973E-06	9.964E-07	1.809E-06	0.000E+00	0.000E+00
23	3.731E-05	1.474E-05	9.432E-06	5.925E-06	1.029E-06	9.000E-07	8.536E-07	0.000E+00
24	3.198E-05	7.379E-06	3.007E-06	4.419E-06	1.019E-06	1.876E-06	0.000E+00	0.000E+00
25	3.429E-05	2.546E-06	9.139E-06	0.000E+00	9.600E-07	1.876E-06	0.000E+00	0.000E+00
26	2.382E-05	2.239E-06	8.351E-06	4.104E-06	2.743E-06	0.000E+00	0.000E+00	9.777E-07
27	3.352E-05	1.480E-05	5.957E-06	1.434E-06	1.916E-06	0.000E+00	4.191E-07	5.228E-07
28	1.382E-05	9.990E-06	9.281E-06	0.000E+00	1.015E-06	9.336E-07	0.000E+00	0.000E+00
29	2.232E-05	1.251E-05	5.933E-06	5.804E-06	9.529E-07	0.000E+00	0.000E+00	4.909E-07
30	1.139E-05	1.487E-05	0.000E+00	0.000E+00	0.000E+00	8.771E-07	0.000E+00	5.207E-07
31	8.331E-06	1.233E-05	2.959E-06	1.426E-06	9.521E-07	9.300E-07	0.000E+00	0.000E+00
32	1.393E-05	4.901E-06	0.000E+00	1.425E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
33	2.225E-05	2.379E-06	3.138E-06	1.511E-06	9.500E-07	0.000E+00	0.000E+00	0.000E+00
34	1.136E-05	7.273E-06	0.000E+00	4.357E-06	9.500E-07	0.000E+00	0.000E+00	5.191E-07
35	1.965E-05	4.747E-06	2.951E-06	0.000E+00	1.007E-06	0.000E+00	0.000E+00	1.497E-06

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	0.000E+00	0.000E+00	1.688E-06	2.477E-06	3.286E-06	1.500E-06	8.947E-07	0.000E+00
2	2.663E-04	1.375E-04	5.823E-05	3.264E-05	1.171E-05	3.331E-06	4.841E-07	0.000E+00
3	1.774E-04	7.387E-05	4.869E-05	1.877E-05	4.280E-06	1.769E-06	5.245E-07	3.001E-07
4	1.425E-04	4.425E-05	2.921E-05	7.519E-06	3.131E-06	1.162E-06	2.524E-07	0.000E+00
5	8.919E-05	1.952E-05	1.121E-05	6.205E-06	1.199E-06	1.108E-06	0.000E+00	0.000E+00
6	6.466E-05	1.641E-05	7.491E-06	5.271E-06	2.964E-06	5.530E-07	4.663E-07	0.000E+00
7	7.079E-05	1.652E-05	1.311E-05	2.782E-06	5.830E-07	0.000E+00	0.000E+00	0.000E+00
8	3.728E-05	1.765E-05	9.094E-06	3.446E-06	1.182E-06	0.000E+00	0.000E+00	0.000E+00
9	5.306E-05	1.609E-05	3.592E-06	2.541E-06	5.513E-07	5.398E-07	0.000E+00	0.000E+00
10	2.962E-05	1.065E-05	1.691E-06	1.574E-06	1.550E-06	4.703E-07	2.065E-07	0.000E+00
11	2.942E-05	1.129E-05	3.584E-06	8.036E-07	5.373E-07	0.000E+00	0.000E+00	0.000E+00

12	1.984E-05	1.101E-05	5.226E-06	7.986E-07	0.000E+00	0.000E+00	2.172E-07	0.000E+00
13	2.037E-05	2.867E-06	1.670E-06	8.479E-07	5.318E-07	5.162E-07	0.000E+00	2.667E-07
14	1.396E-05	1.426E-06	1.660E-06	2.489E-06	0.000E+00	4.857E-07	0.000E+00	0.000E+00
15	1.983E-05	8.218E-06	5.279E-06	0.000E+00	5.266E-07	0.000E+00	0.000E+00	0.000E+00
16	2.276E-05	1.333E-06	3.517E-06	0.000E+00	5.256E-07	5.114E-07	0.000E+00	0.000E+00
17	1.074E-05	1.344E-06	0.000E+00	7.950E-07	0.000E+00	0.000E+00	2.279E-07	0.000E+00
18	1.378E-05	6.945E-06	8.471E-06	8.421E-07	5.275E-07	0.000E+00	0.000E+00	0.000E+00
19	1.853E-05	4.185E-06	0.000E+00	1.636E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
20	2.403E-05	5.545E-06	3.445E-06	8.464E-07	0.000E+00	4.873E-07	0.000E+00	0.000E+00
21	1.057E-05	2.737E-06	1.742E-06	8.314E-07	5.239E-07	0.000E+00	0.000E+00	0.000E+00
22	6.096E-06	2.773E-06	1.729E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
23	8.925E-06	0.000E+00	1.733E-06	0.000E+00	5.206E-07	0.000E+00	0.000E+00	0.000E+00
24	5.763E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
25	7.265E-06	1.297E-06	3.401E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
26	4.180E-06	1.209E-06	0.000E+00	0.000E+00	4.751E-07	0.000E+00	1.941E-07	0.000E+00
27	0.000E+00	2.747E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
28	4.372E-06	0.000E+00	0.000E+00	0.000E+00	5.381E-07	0.000E+00	0.000E+00	0.000E+00
29	0.000E+00	0.000E+00	0.000E+00	1.571E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
30	1.511E-06	0.000E+00	1.589E-06	8.079E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
31	2.934E-06	0.000E+00	0.000E+00	7.607E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
32	2.931E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.629E-07	0.000E+00	0.000E+00
33	1.509E-06	2.648E-06	1.586E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
34	1.508E-06	1.284E-06	3.270E-06	7.593E-07	0.000E+00	0.000E+00	0.000E+00	2.541E-07
35	4.344E-06	0.000E+00	0.000E+00	7.579E-07	0.000E+00	0.000E+00	0.000E+00	2.690E-07

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
1	0	0	0	2	3	6	1
57	74	62	101	53	26	14	5
189	110	43	65	30	20	8	0
140	80	34	40	29	12	8	0
96	60	30	34	11	9	9	2
90	50	27	23	10	7	3	1
97	42	18	20	20	3	4	0
73	39	15	18	16	4	1	0
52	38	8	14	11	2	0	2
51	35	14	14	9	2	3	0
46	22	9	10	3	3	1	0
30	16	3	10	8	4	0	0

23	20	3	8	2	0	1	0
19	11	2	3	3	3	3	0
28	10	9	3	4	2	1	0
37	7	8	10	3	1	1	0
26	9	7	3	1	1	0	0
27	15	7	5	2	1	1	0
35	9	9	6	4	0	0	0
23	15	6	3	3	0	0	1
15	12	3	2	1	1	0	0
21	7	3	2	1	2	0	0
13	6	3	4	1	1	2	0
11	3	1	3	1	2	0	0
12	1	3	0	1	2	0	0
9	1	3	3	3	0	0	2
12	6	2	1	2	0	1	1
5	4	3	0	1	1	0	0
8	5	2	4	1	0	0	1
4	6	0	0	0	1	0	1
3	5	1	1	1	1	0	0
5	2	0	1	0	0	0	0
8	1	1	1	1	0	0	0
4	3	0	3	1	0	0	1
7	2	1	0	1	0	0	3

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	0	1	3	6	3	4	0
151	87	30	36	19	6	2	0
102	47	25	20	7	3	2	1
81	28	15	8	5	2	1	0
53	13	6	7	2	2	0	0
39	11	4	6	5	1	2	0
42	11	7	3	1	0	0	0
23	12	5	4	2	0	0	0
33	11	2	3	1	1	0	0
20	8	1	2	3	1	1	0
19	8	2	1	1	0	0	0

13	8	3	1	0	0	1	0
13	2	1	1	1	1	0	1
9	1	1	3	0	1	0	0
13	6	3	0	1	0	0	0
15	1	2	0	1	1	0	0
7	1	0	1	0	0	1	0
9	5	5	1	1	0	0	0
12	3	0	2	0	0	0	0
16	4	2	1	0	1	0	0
7	2	1	1	1	0	0	0
4	2	1	0	0	0	0	0
6	0	1	0	1	0	0	0
4	0	0	0	0	0	0	0
5	1	2	0	0	0	0	0
3	1	0	0	1	0	1	0
0	2	0	0	0	0	0	0
3	0	0	0	1	0	0	0
0	0	0	2	0	0	0	0
1	0	1	1	0	0	0	0
2	0	0	1	0	0	0	0
2	0	0	0	0	1	0	0
1	2	1	0	0	0	0	0
1	1	2	1	0	0	0	1
3	0	0	1	0	0	0	1

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.01873 \quad (0.0108, 0.02666)$$

$$b = -0.2007 \text{ } (-0.254, -0.1475)$$

$$c = 0.0001027 \text{ } (-0.000315, 0.0005204)$$

$$d = -0.0007068 \text{ } (-0.0775, 0.07609)$$

goftotal =

$$\text{sse: } 3.5087\text{e-}008$$

$$\text{rsquare: } 0.9963$$

$$\text{dfe: } 4$$

$$\text{adjrsquare: } 0.9935$$

$$\text{rmse: } 9.3658\text{e-}005$$

ctotal =

General model Exp1:

$$\text{ctotal}(x) = a * \exp(b * x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.003543 \text{ } (-0.000692, 0.007777)$$

$$b = -0.09271 \text{ } (-0.1482, -0.0372)$$

goftotal =

$$\text{sse: } 7.7918\text{e-}009$$

rsquare: 9.7235e-001

df: 3

adjrsquare: 9.6313e-001

rmse: 5.0963e-005

Event 20	Date	Time*	Location*	Summing interval*				
	14-Jul-00	1024	N22W07	Jul 14 to Jul 18 1900				
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	5.589E-05	1.047E-04	1.391E-04	1.580E-04	1.665E-04	1.761E-04	3.184E-04	3.662E-04
2	1.171E-02	9.811E-03	5.783E-03	3.845E-03	2.719E-03	2.266E-03	2.043E-03	9.355E-04
3	4.219E-02	3.081E-02	1.857E-02	1.469E-02	8.684E-03	6.646E-03	2.694E-03	1.288E-03
4	5.448E-02	5.153E-02	3.459E-02	2.233E-02	1.580E-02	1.135E-02	5.196E-03	9.121E-04
5	1.320E-01	1.001E-01	6.179E-02	4.919E-02	2.690E-02	2.098E-02	5.594E-03	7.053E-04
6	1.045E-01	1.446E-01	9.932E-02	8.198E-02	4.600E-02	2.091E-02	6.454E-03	1.164E-03
7	1.667E-01	1.525E-01	1.467E-01	9.323E-02	4.631E-02	1.869E-02	3.741E-03	2.033E-04
8	2.947E-01	1.665E-01	8.664E-02	1.031E-01	5.317E-02	2.097E-02	5.446E-03	4.892E-04
9	2.379E-01	1.741E-01	1.811E-01	1.184E-01	5.702E-02	2.012E-02	4.123E-03	4.887E-04
10	4.262E-01	2.021E-01	2.342E-01	1.341E-01	5.297E-02	1.638E-02	3.161E-03	2.319E-04
11	4.557E-01	3.632E-01	1.541E-01	1.341E-01	5.699E-02	1.700E-02	2.100E-03	1.680E-04
12	3.520E-01	2.316E-01	2.182E-01	1.563E-01	5.097E-02	1.468E-02	2.003E-03	5.417E-05
13	2.968E-01	2.319E-01	1.793E-01	1.257E-01	4.892E-02	1.420E-02	1.434E-03	1.542E-04
14	3.068E-01	2.463E-01	2.193E-01	1.227E-01	4.796E-02	1.215E-02	1.623E-03	2.909E-04

15	5.320E-01	3.522E-01	2.410E-01	1.394E-01	4.666E-02	1.239E-02	1.820E-03	1.250E-04
16	4.638E-01	3.146E-01	2.389E-01	1.399E-01	4.922E-02	1.471E-02	1.684E-03	0.000E+00
17	5.717E-01	3.375E-01	2.799E-01	1.422E-01	4.428E-02	1.279E-02	2.155E-03	0.000E+00
18	5.815E-01	3.464E-01	2.955E-01	1.369E-01	4.328E-02	1.164E-02	9.751E-04	1.895E-04
19	5.205E-01	4.249E-01	3.017E-01	1.497E-01	4.578E-02	1.211E-02	7.109E-04	1.146E-04
20	5.033E-01	4.567E-01	2.567E-01	1.342E-01	4.306E-02	1.224E-02	1.951E-03	1.430E-04
21	6.108E-01	3.079E-01	1.759E-01	1.437E-01	4.794E-02	1.353E-02	3.798E-04	1.759E-04
22	7.300E-01	3.758E-01	1.854E-01	1.602E-01	4.893E-02	1.479E-02	2.643E-03	0.000E+00
23	4.415E-01	3.008E-01	4.153E-01	1.616E-01	6.169E-02	1.947E-02	2.280E-03	7.407E-04
24	6.274E-01	5.756E-01	4.217E-01	1.839E-01	5.897E-02	2.155E-02	1.624E-03	0.000E+00
25	7.151E-01	5.565E-01	3.210E-01	1.613E-01	6.249E-02	2.279E-02	3.886E-03	4.341E-04
26	7.065E-01	6.184E-01	1.729E-01	1.799E-01	6.851E-02	2.111E-02	2.697E-03	0.000E+00
27	7.704E-01	3.875E-01	5.404E-01	1.608E-01	6.078E-02	2.125E-02	1.315E-03	0.000E+00
28	4.449E-01	4.684E-01	3.006E-01	1.412E-01	4.659E-02	9.775E-03	1.294E-03	0.000E+00
29	4.079E-01	3.041E-01	3.070E-01	6.684E-02	1.253E-02	4.479E-03	3.628E-04	0.000E+00
30	1.657E-01	2.315E-01	1.728E-01	6.603E-02	1.695E-02	3.917E-03	6.097E-04	0.000E+00
31	4.776E-01	1.730E-01	1.166E-01	4.748E-02	1.463E-02	4.311E-03	4.485E-04	0.000E+00
32	1.917E-01	1.650E-01	1.060E-01	3.102E-02	8.380E-03	1.774E-03	2.428E-04	2.596E-05
33	1.241E-01	3.491E-02	2.757E-02	8.421E-03	2.316E-03	5.693E-04	1.061E-04	3.206E-06
34	4.369E-02	2.047E-02	1.102E-02	5.088E-03	1.564E-03	3.646E-04	6.539E-05	8.457E-06
35	3.454E-02	1.764E-02	1.140E-02	4.475E-03	1.323E-03	3.253E-04	5.658E-05	7.226E-06
36	2.809E-02	1.332E-02	6.996E-03	3.592E-03	9.885E-04	2.542E-04	3.724E-05	5.256E-06
37	1.345E-02	5.828E-03	3.313E-03	1.339E-03	4.182E-04	1.068E-04	2.741E-05	1.694E-06
38	1.224E-02	5.488E-03	2.635E-03	1.174E-03	3.613E-04	1.012E-04	1.978E-05	2.444E-06
39	1.129E-02	5.018E-03	2.645E-03	1.169E-03	3.226E-04	1.098E-04	1.892E-05	2.459E-06
40	1.151E-02	4.968E-03	2.568E-03	1.166E-03	3.485E-04	9.391E-05	2.199E-05	3.256E-06
41	9.946E-03	4.590E-03	2.437E-03	9.228E-04	2.949E-04	1.191E-04	1.851E-05	3.810E-06
42	9.903E-03	4.809E-03	2.479E-03	1.082E-03	2.881E-04	8.251E-05	6.984E-06	2.255E-06
43	8.733E-03	3.988E-03	2.082E-03	9.463E-04	2.738E-04	7.953E-05	1.126E-05	2.236E-06
44	6.288E-03	3.160E-03	1.602E-03	6.585E-04	2.127E-04	4.336E-05	8.617E-06	7.039E-07
45	5.902E-03	2.891E-03	1.348E-03	6.291E-04	1.795E-04	4.374E-05	8.947E-06	6.890E-07
46	5.841E-03	2.937E-03	1.519E-03	6.029E-04	1.832E-04	4.275E-05	8.931E-06	0.000E+00
47	7.728E-03	3.550E-03	1.863E-03	7.861E-04	2.399E-04	4.774E-05	9.660E-06	1.167E-06
48	9.681E-03	4.425E-03	2.598E-03	1.084E-03	2.933E-04	9.102E-05	1.338E-05	0.000E+00
49	1.310E-02	6.031E-03	3.316E-03	1.377E-03	3.640E-04	9.908E-05	1.333E-05	0.000E+00
50	1.315E-02	6.547E-03	3.352E-03	1.535E-03	4.038E-04	9.691E-05	1.710E-05	1.491E-06
51	1.490E-02	7.110E-03	3.859E-03	1.500E-03	4.161E-04	9.104E-05	1.276E-05	0.000E+00
52	1.494E-02	6.617E-03	3.482E-03	1.460E-03	3.778E-04	8.874E-05	1.609E-05	3.111E-06
53	1.439E-02	6.844E-03	3.617E-03	1.579E-03	3.939E-04	6.819E-05	1.117E-05	7.507E-07
54	1.429E-02	6.893E-03	3.651E-03	1.433E-03	3.971E-04	8.686E-05	9.766E-06	0.000E+00

55	1.276E-02	5.924E-03	3.143E-03	1.306E-03	2.846E-04	5.555E-05	7.490E-06	7.393E-07
56	1.122E-02	4.969E-03	2.681E-03	1.109E-03	3.171E-04	8.147E-05	1.001E-05	0.000E+00
57	9.791E-03	4.505E-03	2.493E-03	9.428E-04	2.293E-04	3.847E-05	9.013E-06	6.804E-07
58	9.545E-03	4.579E-03	2.404E-03	9.520E-04	2.524E-04	4.548E-05	8.548E-06	6.326E-07
59	8.002E-03	3.739E-03	1.870E-03	7.420E-04	2.027E-04	4.678E-05	5.660E-06	0.000E+00
60	7.089E-03	3.175E-03	1.663E-03	6.579E-04	1.606E-04	2.573E-05	2.483E-06	6.620E-07
61	7.038E-03	3.094E-03	1.722E-03	6.826E-04	1.742E-04	2.917E-05	2.499E-06	6.000E-07
62	7.465E-03	3.327E-03	1.729E-03	6.474E-04	1.730E-04	3.106E-05	5.967E-06	1.233E-06
63	7.132E-03	3.200E-03	1.602E-03	5.617E-04	1.440E-04	2.346E-05	3.244E-06	0.000E+00
64	6.407E-03	2.956E-03	1.498E-03	6.122E-04	1.546E-04	2.298E-05	3.436E-06	0.000E+00
65	6.402E-03	2.798E-03	1.410E-03	5.402E-04	1.392E-04	2.571E-05	2.938E-06	0.000E+00
66	6.354E-03	2.694E-03	1.189E-03	5.249E-04	1.264E-04	3.145E-05	5.756E-06	6.066E-07
67	5.692E-03	2.538E-03	1.254E-03	4.849E-04	1.225E-04	2.420E-05	1.484E-06	0.000E+00
68	5.280E-03	2.384E-03	1.106E-03	4.622E-04	8.936E-05	1.961E-05	4.169E-06	1.180E-06
69	4.793E-03	2.241E-03	1.066E-03	4.423E-04	1.081E-04	2.265E-05	2.296E-06	0.000E+00
70	3.912E-03	1.710E-03	8.339E-04	3.699E-04	8.383E-05	1.100E-05	3.586E-06	0.000E+00
71	3.671E-03	1.402E-03	7.245E-04	3.328E-04	7.987E-05	4.993E-06	1.770E-06	0.000E+00
72	3.410E-03	1.514E-03	7.067E-04	2.269E-04	6.172E-05	1.460E-05	8.831E-07	1.136E-06
73	3.787E-03	1.672E-03	7.699E-04	2.760E-04	5.777E-05	1.181E-05	8.771E-07	5.359E-07
74	3.251E-03	1.469E-03	7.460E-04	2.777E-04	6.722E-05	1.575E-05	1.293E-06	0.000E+00
75	3.148E-03	1.458E-03	6.895E-04	3.019E-04	4.970E-05	1.083E-05	2.590E-06	0.000E+00
76	2.970E-03	1.247E-03	6.281E-04	2.212E-04	4.569E-05	1.163E-05	4.194E-07	0.000E+00
77	2.754E-03	1.192E-03	5.650E-04	2.019E-04	4.446E-05	1.064E-05	1.297E-06	0.000E+00
78	2.585E-03	1.127E-03	5.273E-04	1.905E-04	4.530E-05	8.723E-06	1.707E-06	0.000E+00
79	2.346E-03	1.071E-03	5.202E-04	1.780E-04	5.000E-05	6.337E-06	0.000E+00	5.144E-07
80	2.475E-03	1.039E-03	4.835E-04	2.017E-04	3.030E-05	4.831E-06	4.190E-07	0.000E+00
81	2.283E-03	9.986E-04	3.848E-04	1.586E-04	4.059E-05	5.826E-06	4.414E-07	0.000E+00
82	2.295E-03	9.838E-04	4.596E-04	1.722E-04	3.634E-05	7.831E-06	1.322E-06	0.000E+00
83	1.980E-03	8.563E-04	3.888E-04	1.545E-04	3.435E-05	8.561E-06	4.423E-07	0.000E+00
84	1.993E-03	8.035E-04	3.327E-04	1.314E-04	3.756E-05	4.779E-06	8.297E-07	0.000E+00
85	1.754E-03	6.945E-04	3.033E-04	1.249E-04	2.359E-05	4.609E-06	1.269E-06	0.000E+00
86	1.610E-03	7.079E-04	3.268E-04	1.114E-04	1.713E-05	3.767E-06	4.339E-07	5.450E-07
87	1.566E-03	6.871E-04	3.194E-04	1.034E-04	2.343E-05	6.573E-06	1.649E-06	5.074E-07
88	1.588E-03	6.566E-04	2.862E-04	1.270E-04	2.039E-05	3.733E-06	8.355E-07	0.000E+00
89	1.476E-03	5.439E-04	2.932E-04	1.013E-04	2.029E-05	3.726E-06	1.264E-06	0.000E+00
90	1.353E-03	5.549E-04	2.321E-04	1.092E-04	1.011E-05	1.804E-06	8.329E-07	0.000E+00
91	1.360E-03	5.480E-04	2.345E-04	8.931E-05	2.701E-05	5.675E-06	8.070E-07	0.000E+00
92	1.178E-03	5.651E-04	2.180E-04	7.360E-05	1.414E-05	5.611E-06	1.232E-06	5.336E-07
93	1.193E-03	4.943E-04	1.935E-04	9.039E-05	1.824E-05	3.751E-06	1.278E-06	0.000E+00
94	1.178E-03	4.546E-04	2.015E-04	7.639E-05	1.884E-05	3.640E-06	1.654E-06	0.000E+00

95	1.139E-03	3.906E-04	2.182E-04	7.461E-05	1.696E-05	4.285E-06	7.723E-07	0.000E+00
96	1.115E-03	4.844E-04	2.734E-04	8.288E-05	1.283E-05	1.853E-06	4.011E-07	0.000E+00
97	1.134E-03	4.477E-04	2.060E-04	8.977E-05	1.791E-05	3.689E-06	4.011E-07	0.000E+00
98	1.177E-03	4.622E-04	1.929E-04	6.112E-05	1.099E-05	3.635E-06	4.004E-07	5.311E-07
99	1.225E-03	4.305E-04	1.764E-04	7.916E-05	1.490E-05	2.731E-06	0.000E+00	5.294E-07
100	1.041E-03	4.295E-04	1.829E-04	5.836E-05	1.873E-05	0.000E+00	0.000E+00	5.285E-07
101	1.044E-03	3.649E-04	2.069E-04	6.378E-05	1.780E-05	3.611E-06	0.000E+00	0.000E+00
102	8.485E-04	3.057E-04	1.577E-04	6.100E-05	1.277E-05	4.604E-06	0.000E+00	0.000E+00
103	8.233E-04	3.205E-04	1.568E-04	5.022E-05	1.793E-05	1.829E-06	0.000E+00	0.000E+00
104	8.020E-04	3.043E-04	1.759E-04	4.764E-05	1.389E-05	0.000E+00	0.000E+00	0.000E+00
105	8.587E-04	3.692E-04	1.434E-04	5.240E-05	7.266E-06	2.822E-06	0.000E+00	0.000E+00

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	1.526E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.370E-06	2.792E-06
2	6.338E-05	9.976E-05	4.885E-04	5.484E-04	5.469E-04	3.616E-04	1.186E-04	4.048E-05
3	2.288E-03	2.050E-03	2.518E-03	2.841E-03	1.639E-03	6.023E-04	1.006E-04	2.893E-06
4	8.562E-03	7.770E-03	5.056E-03	3.987E-03	1.423E-03	4.382E-04	2.855E-05	4.341E-06
5	2.039E-02	1.603E-02	9.529E-03	5.577E-03	1.487E-03	4.909E-04	5.703E-05	1.361E-05
6	3.376E-02	1.815E-02	7.910E-03	4.291E-03	9.334E-04	9.619E-05	4.691E-05	0.000E+00
7	4.488E-02	2.238E-02	9.317E-03	3.927E-03	8.501E-04	2.343E-04	1.105E-05	0.000E+00
8	3.396E-02	1.292E-02	2.888E-03	2.421E-03	3.908E-04	7.927E-05	1.893E-05	1.364E-05
9	2.910E-02	1.624E-02	6.709E-03	2.690E-03	4.797E-04	8.848E-05	1.156E-05	9.071E-06
10	2.349E-02	1.196E-02	1.043E-02	1.908E-03	4.343E-04	7.605E-05	6.817E-06	0.000E+00
11	2.957E-02	1.228E-02	2.226E-03	1.815E-03	3.300E-04	4.777E-05	7.964E-06	0.000E+00
12	5.590E-02	1.442E-02	4.242E-03	1.336E-03	2.095E-04	8.791E-05	8.957E-06	0.000E+00
13	4.474E-02	2.913E-03	4.554E-03	1.312E-03	1.225E-04	4.516E-05	1.052E-05	0.000E+00
14	3.622E-02	2.876E-03	2.082E-03	8.490E-04	2.986E-04	4.536E-05	8.879E-06	0.000E+00
15	4.263E-02	8.492E-03	4.888E-03	9.988E-04	2.836E-04	0.000E+00	0.000E+00	0.000E+00
16	6.015E-02	9.808E-03	1.523E-03	6.229E-04	6.414E-05	2.493E-05	0.000E+00	0.000E+00
17	2.392E-02	2.758E-03	5.492E-03	5.514E-04	3.261E-05	5.548E-05	0.000E+00	0.000E+00
18	3.488E-02	1.238E-02	1.006E-03	8.805E-04	1.095E-04	0.000E+00	0.000E+00	0.000E+00
19	2.565E-02	1.006E-02	3.206E-04	3.889E-04	1.455E-04	3.243E-05	0.000E+00	0.000E+00
20	4.293E-02	7.632E-03	4.373E-03	5.101E-04	1.073E-04	3.463E-05	0.000E+00	0.000E+00
21	4.938E-02	8.709E-03	3.221E-03	5.655E-04	1.402E-04	2.872E-05	0.000E+00	0.000E+00
22	4.877E-02	4.181E-03	2.696E-03	1.208E-03	0.000E+00	3.071E-05	1.656E-05	0.000E+00
23	1.535E-02	3.697E-03	2.661E-03	7.323E-04	8.519E-05	8.166E-05	0.000E+00	0.000E+00
24	5.758E-02	1.357E-02	9.806E-03	2.031E-03	3.244E-04	6.202E-05	2.901E-05	0.000E+00

25	4.103E-02	8.783E-03	1.050E-02	1.325E-03	6.696E-04	6.234E-05	0.000E+00	0.000E+00
26	7.760E-02	1.930E-02	3.890E-03	2.109E-03	1.533E-04	6.580E-05	0.000E+00	0.000E+00
27	6.191E-02	1.171E-02	3.426E-03	9.914E-04	1.924E-04	0.000E+00	0.000E+00	0.000E+00
28	7.798E-02	1.185E-02	1.419E-03	1.420E-03	5.887E-04	0.000E+00	0.000E+00	0.000E+00
29	2.448E-02	9.230E-03	6.508E-03	7.730E-04	1.572E-04	3.629E-05	0.000E+00	0.000E+00
30	1.522E-02	1.154E-03	3.619E-04	1.362E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00
31	1.244E-02	3.949E-03	2.820E-03	2.987E-04	5.850E-05	0.000E+00	0.000E+00	0.000E+00
32	4.896E-03	2.355E-03	8.793E-04	3.309E-04	1.163E-05	0.000E+00	6.201E-06	0.000E+00
33	6.199E-03	1.323E-03	6.204E-04	1.787E-04	2.004E-05	0.000E+00	0.000E+00	0.000E+00
34	1.497E-03	2.419E-04	2.152E-04	5.355E-05	5.379E-06	8.292E-06	0.000E+00	0.000E+00
35	7.226E-04	3.189E-04	9.939E-05	2.534E-05	8.136E-06	1.221E-06	0.000E+00	0.000E+00
36	9.152E-04	1.752E-04	8.808E-05	1.137E-05	4.213E-06	4.733E-06	0.000E+00	0.000E+00
37	5.999E-04	1.501E-04	7.586E-05	7.232E-06	2.492E-06	2.285E-06	0.000E+00	0.000E+00
38	2.923E-04	6.962E-05	2.753E-05	9.356E-06	8.886E-07	7.986E-07	0.000E+00	0.000E+00
39	1.816E-04	4.795E-05	2.927E-05	2.195E-05	8.479E-07	8.279E-07	0.000E+00	0.000E+00
40	2.021E-04	6.280E-05	2.168E-05	8.828E-06	8.693E-07	0.000E+00	0.000E+00	0.000E+00
41	1.894E-04	7.233E-05	1.981E-05	1.245E-05	1.626E-06	0.000E+00	0.000E+00	0.000E+00
42	1.910E-04	5.949E-05	2.440E-05	5.796E-06	7.636E-07	0.000E+00	0.000E+00	0.000E+00
43	1.942E-04	8.626E-05	6.990E-06	7.770E-06	1.494E-06	6.762E-07	0.000E+00	0.000E+00
44	1.792E-04	7.484E-05	2.359E-05	7.401E-06	7.329E-07	0.000E+00	0.000E+00	0.000E+00
45	1.023E-04	2.852E-05	1.742E-05	3.040E-06	0.000E+00	0.000E+00	2.869E-07	0.000E+00
46	1.145E-04	3.986E-05	2.110E-05	6.082E-06	1.364E-06	0.000E+00	0.000E+00	0.000E+00
47	1.366E-04	2.266E-05	1.488E-05	4.084E-06	6.924E-07	0.000E+00	0.000E+00	0.000E+00
48	1.925E-04	4.286E-05	1.136E-05	8.877E-06	0.000E+00	5.295E-07	0.000E+00	0.000E+00
49	2.264E-04	6.115E-05	1.411E-05	3.494E-06	1.545E-06	6.912E-07	0.000E+00	0.000E+00
50	3.464E-04	8.493E-05	2.708E-05	9.431E-06	1.665E-06	7.657E-07	0.000E+00	0.000E+00
51	3.035E-04	9.075E-05	2.999E-05	5.969E-06	2.398E-06	7.479E-07	0.000E+00	0.000E+00
52	2.813E-04	9.114E-05	1.318E-05	4.921E-06	1.734E-06	0.000E+00	0.000E+00	0.000E+00
53	2.810E-04	6.002E-05	2.049E-05	4.829E-06	3.369E-06	0.000E+00	0.000E+00	0.000E+00
54	2.833E-04	9.008E-05	1.991E-05	1.068E-05	2.330E-06	7.607E-07	0.000E+00	0.000E+00
55	2.656E-04	7.815E-05	2.186E-05	8.372E-06	7.986E-07	0.000E+00	3.235E-07	0.000E+00
56	2.810E-04	8.965E-05	1.927E-05	3.406E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
57	2.345E-04	7.448E-05	4.401E-06	2.215E-06	1.456E-06	6.383E-07	0.000E+00	0.000E+00
58	2.021E-04	3.363E-05	8.672E-06	7.445E-06	6.606E-07	0.000E+00	0.000E+00	0.000E+00
59	1.949E-04	4.031E-05	1.751E-05	6.231E-06	2.051E-06	0.000E+00	0.000E+00	0.000E+00
60	1.700E-04	4.383E-05	8.454E-06	3.979E-06	6.788E-07	0.000E+00	0.000E+00	0.000E+00
61	1.218E-04	4.285E-05	4.104E-06	6.962E-06	6.594E-07	0.000E+00	0.000E+00	0.000E+00
62	1.289E-04	4.010E-05	1.605E-05	4.891E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
63	1.246E-04	3.893E-05	1.010E-05	2.801E-06	6.298E-07	0.000E+00	0.000E+00	0.000E+00
64	1.118E-04	1.660E-05	9.364E-06	2.715E-06	1.200E-06	0.000E+00	0.000E+00	0.000E+00

65	9.949E-05	3.044E-05	1.193E-05	3.820E-06	1.251E-06	0.000E+00	0.000E+00	0.000E+00
66	1.213E-04	2.856E-05	4.054E-06	6.476E-06	1.201E-06	0.000E+00	0.000E+00	0.000E+00
67	9.183E-05	2.036E-05	1.357E-05	2.769E-06	1.816E-06	0.000E+00	0.000E+00	0.000E+00
68	1.111E-04	2.186E-05	9.484E-06	3.646E-06	6.456E-07	0.000E+00	0.000E+00	0.000E+00
69	1.046E-04	1.688E-05	3.617E-06	9.386E-07	0.000E+00	0.000E+00	2.326E-07	0.000E+00
70	8.346E-05	2.117E-05	5.635E-06	2.616E-06	5.611E-07	0.000E+00	2.469E-07	0.000E+00
71	6.810E-05	1.618E-05	5.437E-06	1.746E-06	0.000E+00	5.154E-07	0.000E+00	0.000E+00
72	5.180E-05	1.460E-05	1.744E-06	0.000E+00	0.000E+00	0.000E+00	2.403E-07	0.000E+00
73	5.397E-05	1.305E-05	7.136E-06	2.669E-06	5.771E-07	0.000E+00	0.000E+00	2.824E-07
74	7.346E-05	1.320E-05	8.993E-06	1.704E-06	5.774E-07	0.000E+00	0.000E+00	0.000E+00
75	6.376E-05	1.434E-05	1.834E-06	8.279E-07	5.520E-07	0.000E+00	0.000E+00	0.000E+00
76	5.531E-05	1.567E-05	1.724E-06	1.756E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
77	4.759E-05	1.145E-05	5.259E-06	8.614E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
78	4.737E-05	1.013E-05	5.223E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
79	3.480E-05	9.955E-06	5.308E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
80	4.249E-05	6.623E-06	4.965E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
81	3.323E-05	1.276E-05	0.000E+00	1.735E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
82	4.396E-05	8.603E-06	5.179E-06	8.557E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
83	2.007E-05	1.122E-05	1.770E-06	8.000E-07	0.000E+00	0.000E+00	2.294E-07	0.000E+00
84	3.889E-05	4.253E-06	3.374E-06	1.707E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
85	3.976E-05	5.506E-06	0.000E+00	1.707E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
86	2.304E-05	9.669E-06	1.647E-06	7.879E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
87	2.172E-05	8.119E-06	0.000E+00	7.964E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
88	1.372E-05	4.074E-06	3.402E-06	7.879E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
89	3.013E-05	5.558E-06	1.642E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.626E-07
90	2.274E-05	5.306E-06	1.741E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
91	1.960E-05	4.136E-06	6.646E-06	7.843E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
92	1.205E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
93	1.795E-05	6.914E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
94	6.091E-06	2.711E-06	1.625E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
95	2.407E-05	5.496E-06	1.624E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.759E-07
96	1.527E-05	3.832E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
97	9.001E-06	2.629E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
98	1.652E-05	1.315E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.234E-07	0.000E+00
99	1.053E-05	1.314E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
100	2.254E-05	2.622E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
101	1.644E-05	3.998E-06	1.614E-06	7.736E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
102	1.190E-05	2.689E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
103	2.260E-05	0.000E+00	1.707E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
104	1.332E-05	4.064E-06	0.000E+00	7.707E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00

105 1.348E-05 1.379E-06 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
3	4	4	10	16	18	74	73
92	128	63	91	111	81	173	71
145	172	74	159	144	116	108	43
148	179	82	164	164	134	138	23
150	165	84	172	151	118	71	8
141	196	112	265	237	131	85	13
189	204	121	365	264	174	85	2
186	186	127	522	412	320	179	12
196	234	126	596	407	301	140	13
194	196	129	503	292	188	80	5
196	218	125	438	276	171	47	3
219	219	154	492	237	144	44	1
224	230	115	436	244	157	35	3
224	228	116	371	207	119	35	5
257	196	104	352	166	95	32	2
209	167	74	256	120	81	21	0
223	191	92	208	92	56	22	0
225	189	92	233	104	62	12	2
197	188	86	208	90	55	7	1
182	152	65	156	74	48	17	1
177	147	53	167	73	49	3	1
166	133	56	153	66	41	16	0
145	115	43	118	64	32	8	2
136	111	51	132	63	36	6	0
135	96	43	118	67	31	12	1
120	89	38	106	60	21	6	0
151	97	47	111	63	28	4	0
145	117	55	135	64	27	8	0
227	124	43	124	37	32	6	0
219	119	43	166	59	40	14	0
276	141	58	179	76	70	16	0
271	142	52	249	91	72	21	2
810	655	250	709	296	119	43	3
457	553	222	988	449	133	53	6
651	726	324	1050	456	129	53	5

1243	1035	420	942	395	115	37	4
2620	1401	639	541	253	70	40	2
2546	1350	521	486	224	68	30	3
2437	1261	536	491	203	75	29	3
2516	1296	536	512	230	67	35	4
2373	1255	536	423	203	89	31	5
2438	1354	562	510	203	63	12	3
2216	1156	486	457	198	62	20	3
1677	965	393	334	162	36	16	1
1609	900	337	327	140	37	17	1
1611	928	386	318	145	37	17	0
2120	1111	470	412	188	41	19	2
2384	1249	590	511	208	70	23	0
2952	1624	719	621	246	73	22	0
2916	1750	721	691	271	71	28	2
2926	1803	785	646	268	64	20	0
3102	1724	727	643	248	63	26	4
2974	1779	754	700	261	49	18	1
3155	1855	788	651	269	64	16	0
3107	1684	717	618	202	43	13	1
2912	1479	639	549	235	66	18	0
2614	1374	613	482	176	32	17	1
2574	1412	597	490	195	38	16	1
2248	1201	483	398	162	41	11	0
2033	1043	439	360	131	23	5	1
2039	1026	458	377	145	26	5	1
2168	1107	463	359	144	28	12	2
2231	1145	459	336	129	23	7	0
1889	996	406	346	130	21	7	0
1903	951	385	307	118	24	6	0
1907	923	329	301	108	29	12	1
1728	881	350	280	106	23	3	0
1632	843	314	273	79	19	9	2
1500	803	307	264	97	22	5	0
1254	628	246	226	77	11	8	0
1194	522	217	206	74	5	4	0
1110	565	212	141	58	15	2	2
1234	623	231	172	54	12	2	1
1069	552	226	174	63	16	3	0
1041	551	209	191	47	11	6	0

982	471	191	140	43	12	1	0
917	453	172	128	42	11	3	0
860	430	162	121	43	9	4	0
840	438	171	122	51	7	0	1
827	396	148	129	29	5	1	0
766	383	119	102	39	6	1	0
775	379	142	111	35	8	3	0
668	331	120	99	33	9	1	0
675	312	103	85	36	5	2	0
601	272	96	82	23	5	3	0
551	277	103	73	17	4	1	1
539	271	101	68	23	7	4	1
548	258	91	84	20	4	2	0
510	215	93	67	20	4	3	0
468	219	74	72	10	2	2	0
473	218	75	59	27	6	2	0
410	225	70	49	14	6	3	1
416	197	62	60	18	4	3	0
411	181	65	51	19	4	4	0
425	167	75	53	18	5	2	0
389	193	88	55	13	2	1	0
396	179	66	60	18	4	1	0
412	184	62	41	11	4	1	1
428	173	57	53	15	3	0	1
366	173	59	39	19	0	0	1
367	147	67	43	18	4	0	0
299	123	51	41	13	5	0	0
290	129	51	34	18	2	0	0
283	123	57	32	14	0	0	0
291	144	45	34	7	3	0	0

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
4	7	28	67	106	82	66	21
46	75	81	198	195	85	34	1
71	110	63	163	98	35	6	1
119	135	68	196	85	34	10	2
100	77	28	53	24	2	3	0

103	65	21	57	29	6	1	0
66	33	9	58	18	4	2	1
74	42	11	102	28	5	2	1
73	32	12	72	23	5	1	0
54	32	7	55	14	2	1	0
62	27	8	37	7	4	1	0
64	13	8	32	5	2	1	0
61	12	5	23	12	2	1	0
54	20	3	23	11	0	0	0
45	14	3	12	2	1	0	0
25	8	7	10	1	2	0	0
28	21	3	13	3	0	0	0
28	15	1	7	4	1	0	0
32	12	6	5	3	1	0	0
26	15	5	11	4	1	0	0
39	7	4	14	0	1	1	0
14	6	3	11	2	2	0	0
19	14	9	16	5	1	1	0
26	11	10	13	6	1	0	0
23	22	4	19	2	1	0	0
22	16	3	7	2	0	0	0
22	13	1	12	3	0	0	0
16	16	7	11	4	1	0	0
12	4	1	4	0	0	0	0
18	19	7	10	3	0	0	0
16	17	4	16	1	0	1	0
20	17	6	17	3	0	0	0
61	27	17	15	2	2	0	0
99	57	15	11	5	1	0	0
179	46	19	6	3	4	0	0
143	45	16	4	2	2	0	0
119	31	10	7	1	1	0	0
75	22	11	17	1	1	0	0
85	29	8	7	1	0	0	0
84	35	8	10	2	0	0	0
88	30	10	5	1	0	0	0
91	45	3	7	2	1	0	0
87	40	10	7	1	0	0	0
52	16	8	3	0	0	1	0
60	23	10	6	2	0	0	0

72	13	7	4	1	0	0	0
101	25	5	9	0	1	0	0
107	32	6	3	2	1	0	0
157	42	11	8	2	1	0	0
137	45	12	5	3	1	0	0
121	43	5	4	2	0	0	0
124	29	8	4	4	0	0	0
126	44	8	9	3	1	0	0
120	39	9	7	1	0	1	0
133	47	8	3	0	0	0	0
117	41	2	2	2	1	0	0
103	19	4	7	1	0	0	0
101	23	8	6	3	0	0	0
91	26	4	4	1	0	0	0
67	26	2	7	1	0	0	0
71	25	8	5	0	0	0	0
69	24	5	3	1	0	0	0
67	11	5	3	2	0	0	0
56	19	6	4	2	0	0	0
69	18	2	7	2	0	0	0
53	13	7	3	3	0	0	0
64	14	5	4	1	0	0	0
62	11	2	1	0	0	1	0
50	14	3	3	1	0	1	0
42	11	3	2	0	1	0	0
32	10	1	0	0	0	1	0
34	9	4	3	1	0	0	1
46	9	5	2	1	0	0	0
40	10	1	1	1	0	0	0
35	11	1	2	0	0	0	0
30	8	3	1	0	0	0	0
30	7	3	0	0	0	0	0
22	7	3	0	0	0	0	0
29	5	3	0	0	0	0	0
21	9	0	2	0	0	0	0
28	6	3	1	0	0	0	0
13	8	1	1	0	0	1	0
25	3	2	2	0	0	0	0
26	4	0	2	0	0	0	0
15	7	1	1	0	0	0	0

14	6	0	1	0	0	0	0
9	3	2	1	0	0	0	0
20	4	1	0	0	0	0	1
15	4	1	0	0	0	0	0
13	3	4	1	0	0	0	0
8	0	0	0	0	0	0	0
12	5	0	0	0	0	0	0
4	2	1	0	0	0	0	0
16	4	1	0	0	0	0	1
11	3	0	0	0	0	0	0
6	2	0	0	0	0	0	0
11	1	0	0	0	0	1	0
7	1	0	0	0	0	0	0
15	2	0	0	0	0	0	0
11	3	1	1	0	0	0	0
8	2	0	0	0	0	0	0
15	0	1	0	0	0	0	0
9	3	0	1	0	0	0	0
9	1	0	0	0	0	0	0
7	0	1	0	0	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = -4.703e+005 \quad (-4.999e+015, 4.999e+015)$$

$$b = -0.07548 \quad (-7224, 7224)$$

$$c = 4.704e+005 \ (-4.999e+015, 4.999e+015)$$

$$d = -0.07548 \ (-7224, 7224)$$

goftotal =

$$\text{sse: } 0.2912$$

$$\text{rsquare: } 0.9976$$

$$\text{dfe: } 4$$

$$\text{adjrsquare: } 0.9958$$

$$\text{rmse: } 0.2698$$

ctotal =

General model Exp1:

$$\text{ctotal}(x) = a * \exp(b * x)$$

Coefficients (with 95% confidence bounds):

$$a = 48.25 \ (36.96, 59.55)$$

$$b = -0.1405 \ (-0.1521, -0.1289)$$

goftotal =

$$\text{sse: } 3.8349e-003$$

rsquare: 9.9951e-001

dfe: 3

adjrsquare: 9.9934e-001

rmse: 3.5753e-002

curve fit iron:

ctotal =

General model Exp2:

$$ctotal(x) = a * \exp(b * x) + c * \exp(d * x)$$

Coefficients (with 95% confidence bounds):

$$a = 180.3 \quad (-50.82, 411.4)$$

$$b = -0.4481 \quad (-0.5576, -0.3387)$$

$$c = 2.294 \quad (1.545, 3.042)$$

$$d = -0.1191 \quad (-0.1304, -0.1078)$$

gofttotal =

sse: 5.9307e-006

rsquare: 9.9999e-001

dfe: 4

adjrsquare: 9.9999e-001

Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	8.687E-05	3.650E-05	1.526E-05	2.921E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2	7.227E-05	2.176E-05	2.981E-06	7.419E-06	1.010E-06	0.000E+00	0.000E+00	0.000E+00
3	8.193E-05	3.203E-05	1.531E-05	2.971E-06	9.600E-07	9.379E-07	7.916E-07	0.000E+00
4	4.563E-05	2.272E-05	9.457E-06	3.080E-06	0.000E+00	0.000E+00	4.014E-07	0.000E+00
5	1.017E-04	4.326E-05	1.892E-05	4.426E-06	9.764E-07	1.886E-06	4.316E-07	0.000E+00
6	8.400E-05	4.263E-05	3.470E-05	1.649E-05	4.037E-06	2.844E-06	0.000E+00	0.000E+00
7	1.021E-04	5.499E-05	1.552E-05	1.341E-05	6.014E-06	8.864E-07	0.000E+00	1.021E-06
8	2.083E-04	1.066E-04	7.221E-05	2.431E-05	2.008E-06	1.854E-06	0.000E+00	5.371E-07
9	3.177E-04	1.186E-04	6.440E-05	2.481E-05	8.303E-06	9.221E-07	1.695E-06	0.000E+00
10	4.470E-04	1.732E-04	6.906E-05	3.955E-05	5.299E-06	2.831E-06	0.000E+00	0.000E+00
11	3.623E-04	1.159E-04	5.593E-05	2.046E-05	2.101E-06	3.892E-06	2.154E-06	0.000E+00
12	3.403E-04	1.229E-04	5.187E-05	3.394E-05	3.079E-06	3.878E-06	0.000E+00	0.000E+00
13	2.779E-04	6.924E-05	5.108E-05	6.159E-06	2.118E-06	0.000E+00	0.000E+00	0.000E+00
14	1.559E-04	6.868E-05	1.869E-05	2.934E-06	1.050E-06	1.871E-06	4.050E-07	0.000E+00
15	1.522E-04	5.621E-05	1.709E-05	1.364E-06	1.815E-06	1.721E-06	0.000E+00	0.000E+00
16	1.257E-04	3.774E-05	2.479E-05	5.880E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
17	9.127E-05	2.725E-05	6.179E-06	4.509E-06	1.024E-06	0.000E+00	0.000E+00	0.000E+00
18	8.446E-05	2.490E-05	1.531E-05	3.057E-06	2.038E-06	9.379E-07	0.000E+00	0.000E+00
19	6.211E-05	2.200E-05	1.228E-05	7.442E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
20	5.286E-05	1.705E-05	9.211E-06	4.351E-06	0.000E+00	0.000E+00	0.000E+00	5.184E-07
21	6.133E-05	1.690E-05	6.244E-06	3.021E-06	0.000E+00	0.000E+00	0.000E+00	5.187E-07
22	5.538E-05	2.644E-05	5.879E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
23	4.718E-05	9.878E-06	3.116E-06	2.999E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
24	4.732E-05	1.487E-05	2.934E-06	0.000E+00	0.000E+00	0.000E+00	3.886E-07	9.715E-07
25	3.032E-05	1.722E-05	3.111E-06	2.824E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
26	3.851E-05	4.706E-06	0.000E+00	2.991E-06	0.000E+00	0.000E+00	0.000E+00	5.137E-07
27	2.500E-05	9.539E-06	5.843E-06	0.000E+00	9.400E-07	0.000E+00	0.000E+00	0.000E+00
28	2.200E-05	9.691E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
29	5.232E-05	2.491E-06	3.098E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.126E-07
30	1.923E-05	7.314E-06	5.829E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
31	1.291E-05	6.803E-06	8.298E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
32	1.099E-05	4.948E-06	3.078E-06	0.000E+00	9.900E-07	0.000E+00	0.000E+00	0.000E+00
33	1.632E-05	2.474E-06	0.000E+00	0.000E+00	9.321E-07	0.000E+00	0.000E+00	0.000E+00
34	2.481E-05	7.280E-06	0.000E+00	1.484E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
35	1.084E-05	1.415E-05	3.079E-06	0.000E+00	0.000E+00	8.600E-07	0.000E+00	0.000E+00
36	8.332E-06	4.811E-06	0.000E+00	0.000E+00	9.336E-07	0.000E+00	0.000E+00	0.000E+00
37	8.170E-06	2.335E-06	2.902E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.101E-07
38	1.382E-05	0.000E+00	5.796E-06	1.482E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00

52	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
53	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
54	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.016E-07	0.000E+00
55	1.392E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
56	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
57	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
58	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
59	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
60	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
61	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
62	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hourly Oxygen Counts								
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8	
31	15	5	2	0	0	0	0	0
26	9	1	5	1	0	0	0	0
29	13	5	2	1	1	2	0	0
16	9	3	2	0	0	1	0	0
35	17	6	3	1	2	1	0	0
29	17	11	11	4	3	0	0	0
36	22	5	9	6	1	0	2	0
72	42	23	16	2	2	0	1	0
107	46	20	16	8	1	4	0	0
149	66	21	25	5	3	0	0	0
120	44	17	13	2	4	5	0	0
115	47	16	22	3	4	0	0	0
95	27	16	4	2	0	0	0	0
54	27	6	2	1	2	1	0	0
57	24	6	1	2	2	0	0	0
44	15	8	4	0	0	0	0	0
32	11	2	3	1	0	0	0	0
30	10	5	2	2	1	0	0	0
22	9	4	5	0	0	0	0	0
19	7	3	3	0	0	0	1	0
22	7	2	2	0	0	0	1	0
20	11	2	0	0	0	0	0	0
17	4	1	2	0	0	0	0	0
17	6	1	0	0	0	1	2	0
11	7	1	2	0	0	0	0	0

14	2	0	2	0	0	0	1
9	4	2	0	1	0	0	0
8	4	0	0	0	0	0	0
19	1	1	0	0	0	0	1
7	3	2	0	0	0	0	0
5	3	3	0	0	0	0	0
4	2	1	0	1	0	0	0
6	1	0	0	1	0	0	0
9	3	0	1	0	0	0	0
4	6	1	0	0	1	0	0
3	2	0	0	1	0	0	0
3	1	1	0	0	0	0	1
5	0	2	1	0	0	0	0
1	0	1	0	0	0	0	0
2	0	0	0	0	0	1	0
0	1	0	1	0	0	0	0
5	0	0	0	0	0	0	1
4	1	1	1	0	0	0	0
1	0	1	1	1	0	0	0
4	2	0	0	0	0	0	0
2	3	2	0	1	0	1	0
5	1	0	0	1	0	0	0
3	0	1	3	0	0	0	0
3	2	0	0	1	0	1	0
2	0	0	1	0	0	0	0
0	0	0	0	0	0	0	1
3	2	0	0	0	0	0	0
2	1	0	0	0	0	0	0
3	3	0	0	1	0	0	0
6	0	0	0	0	0	0	1
6	0	0	0	0	0	0	0
0	2	1	1	0	0	0	0
1	1	0	0	0	0	0	0
2	1	0	0	1	0	1	0
1	0	0	0	0	0	0	0
0	1	0	0	0	0	0	0

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8

0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
3	1	0	0	0	0	1	0
2	0	1	1	0	0	0	0
4	1	0	0	0	0	0	0
2	1	0	0	0	0	0	0
6	0	1	0	0	0	1	0
7	2	0	0	0	0	0	0
5	1	0	0	0	0	0	0
6	0	0	0	0	0	0	0
5	1	0	1	0	0	0	0
3	2	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	1	0	0	0	0
2	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
3	0	1	0	0	0	1	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	1	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0

0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	1	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.03944 \quad (0.02984, 0.04904)$$

$$b = -0.2861 \quad (-0.3149, -0.2572)$$

$$c = 1.851e-005 \quad (-9.458e-005, 0.0001316)$$

$$d = 0.003962 \quad (-0.1117, 0.1197)$$

goftotal =

sse: 5.8870e-009

rsquare: 0.9994

dfe: 4

adjrsquare: 0.9989

rmse: 3.8363e-005

ctotal =

General model Exp1:

$ctotal(x) = a * \exp(b * x)$

Coefficients (with 95% confidence bounds):

a = 0.001349 (-0.002612, 0.00531)

b = -0.0987 (-0.2365, 0.03915)

goftotal =

sse: 4.8178e-009

rsquare: 8.7814e-001

dfe: 3

adjrsquare: 8.3752e-001

rmse: 4.0074e-005

Event 22	Date	Time*	Location*	Summing interval*				
	7/27/200	1130	NW120	27 July 0000 to 28 July 2300				
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	2.824E-06	0.000E+00	0.000E+00	1.395E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2	2.828E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
3	8.543E-06	1.219E-05	2.904E-06	2.814E-06	1.000E-06	9.207E-07	0.000E+00	0.000E+00
4	2.696E-06	2.358E-06	2.931E-06	4.410E-06	1.943E-06	9.186E-07	0.000E+00	0.000E+00
5	1.394E-05	0.000E+00	5.844E-06	0.000E+00	1.889E-06	0.000E+00	0.000E+00	0.000E+00
6	5.502E-05	1.497E-05	1.542E-05	1.489E-06	1.026E-06	0.000E+00	0.000E+00	0.000E+00
7	1.918E-05	1.487E-05	3.124E-06	2.822E-06	1.001E-06	8.664E-07	0.000E+00	0.000E+00
8	7.554E-05	3.153E-05	6.156E-06	8.696E-06	4.004E-06	0.000E+00	0.000E+00	0.000E+00
9	2.181E-04	7.518E-05	2.228E-05	6.145E-06	1.986E-06	9.743E-07	3.964E-07	5.228E-07
10	1.047E-04	5.803E-05	2.881E-05	1.273E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
11	2.378E-04	9.624E-05	1.585E-05	1.376E-05	0.000E+00	9.664E-07	4.060E-07	0.000E+00
12	2.656E-04	1.048E-04	3.114E-05	1.237E-05	7.177E-06	0.000E+00	8.394E-07	0.000E+00
13	8.809E-05	2.728E-05	2.504E-05	5.942E-06	9.471E-07	0.000E+00	0.000E+00	5.172E-07

41	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
42	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
43	1.496E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
44	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
45	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
46	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
47	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
48	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
1	0	0	1	0	0	0	0
1	0	0	0	0	0	0	0
3	5	1	2	1	1	0	0
1	1	1	3	2	1	0	0
5	0	2	0	2	0	0	0
19	6	5	1	1	0	0	0
7	6	1	2	1	1	0	0
27	13	2	6	4	0	0	0
75	29	7	4	2	1	1	1
40	25	10	9	0	0	0	0
82	38	5	9	0	1	1	0
91	41	10	8	7	0	2	0
31	11	8	4	1	0	0	1
44	8	7	7	0	0	0	0
15	4	1	2	1	0	1	0
10	2	2	2	1	0	0	0
8	0	3	1	0	0	0	0
3	5	2	1	0	0	1	0
3	1	1	2	0	2	1	1
6	2	0	0	0	0	0	0
9	2	1	1	0	0	0	0
14	1	0	0	0	0	0	1
5	2	2	1	0	0	0	0
8	2	1	0	0	0	0	0
13	3	1	1	0	0	0	0
10	2	1	1	1	0	1	0
5	4	1	0	0	0	0	0
6	3	1	0	0	0	1	0

1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0
0	0	0	0	0	1	0	0
0	0	0	0	0	0	1	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	1	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	1	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$\text{ctotal}(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.01524 \quad (-0.0001625, 0.03065)$$

$$b = -0.2599 \quad (-0.3906, -0.1292)$$

$$c = -4.322e-005 \quad (-0.0005585, 0.0004721)$$

$$d = -0.01432 \quad (-0.304, 0.2754)$$

goftotal =

sse: 2.3076e-008

rsquare: 0.9892

dfe: 4

adjrsquare: 0.9811

rmse: 7.5955e-005

ctotal =

General model Exp1:

$$ctotal(x) = a * \exp(b * x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.0004183 \quad (-0.0007432, 0.00158)$$

$$b = -0.08457 \quad (-0.2113, 0.04221)$$

goftotal =

$$sse: 9.4777e-010$$

$$rsquare: 8.6003e-001$$

$$dfe: 3$$

$$adjrsquare: 8.1338e-001$$

$$rmse: 1.7774e-005$$

<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.096E-07
2	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
3	0.000E+00	2.350E-06	0.000E+00	1.491E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
4	3.906E-05	4.738E-06	5.909E-06	3.014E-06	9.486E-07	0.000E+00	8.102E-07	4.894E-07
5	1.568E-04	7.395E-05	2.785E-05	1.684E-05	2.921E-06	2.751E-06	0.000E+00	0.000E+00
6	6.571E-04	3.285E-04	1.429E-04	6.221E-05	1.961E-05	1.971E-06	8.586E-07	0.000E+00
7	2.253E-03	9.100E-04	3.385E-04	1.013E-04	2.001E-05	4.004E-06	9.158E-07	0.000E+00
8	3.980E-03	1.453E-03	5.108E-04	1.473E-04	3.101E-05	2.102E-06	4.646E-07	6.434E-07
9	6.395E-03	1.909E-03	7.428E-04	2.040E-04	1.623E-05	1.043E-05	1.991E-06	7.046E-07
10	6.404E-03	1.722E-03	5.302E-04	1.856E-04	2.543E-05	1.112E-05	1.472E-06	0.000E+00
11	5.824E-03	1.525E-03	5.539E-04	1.600E-04	2.748E-05	3.289E-06	0.000E+00	0.000E+00
12	5.220E-03	1.641E-03	5.151E-04	1.488E-04	2.818E-05	4.879E-06	0.000E+00	0.000E+00
13	4.464E-03	1.421E-03	5.216E-04	1.358E-04	2.501E-05	0.000E+00	1.381E-06	9.207E-07
14	6.930E-03	1.990E-03	6.743E-04	1.806E-04	2.405E-05	4.001E-06	0.000E+00	0.000E+00
15	7.432E-03	2.291E-03	7.101E-04	1.709E-04	2.828E-05	2.179E-06	9.757E-07	0.000E+00

16	6.616E-03	1.918E-03	5.383E-04	1.362E-04	2.101E-05	1.049E-05	1.751E-06	0.000E+00
17	5.954E-03	1.734E-03	5.381E-04	1.336E-04	1.968E-05	2.117E-06	0.000E+00	0.000E+00
18	5.414E-03	1.544E-03	3.857E-04	9.847E-05	1.675E-05	9.715E-06	0.000E+00	0.000E+00
19	4.716E-03	1.297E-03	3.435E-04	1.033E-04	4.194E-06	5.792E-06	2.539E-06	0.000E+00
20	5.095E-03	1.266E-03	4.713E-04	7.632E-05	1.691E-05	2.021E-06	8.529E-07	0.000E+00
21	5.753E-03	1.432E-03	3.678E-04	1.024E-04	2.282E-05	4.201E-06	2.842E-06	0.000E+00
22	6.309E-03	1.793E-03	4.821E-04	9.951E-05	3.110E-05	4.439E-06	1.212E-06	0.000E+00
23	6.199E-03	1.820E-03	4.346E-04	1.531E-04	3.130E-05	6.183E-06	9.929E-07	0.000E+00
24	5.455E-03	1.383E-03	4.918E-04	1.750E-04	3.591E-05	4.359E-06	1.884E-06	0.000E+00
25	4.786E-03	1.306E-03	5.146E-04	1.483E-04	2.274E-05	5.683E-06	0.000E+00	0.000E+00
26	5.403E-03	1.385E-03	3.728E-04	1.444E-04	2.113E-05	8.843E-06	0.000E+00	0.000E+00
27	5.526E-03	1.413E-03	4.047E-04	1.302E-04	3.604E-05	6.269E-06	1.817E-06	1.227E-06
28	4.626E-03	1.267E-03	3.476E-04	1.178E-04	1.320E-05	3.919E-06	8.771E-07	0.000E+00
29	4.305E-03	1.145E-03	2.576E-04	1.387E-04	1.447E-05	1.865E-06	0.000E+00	0.000E+00
30	3.598E-03	1.049E-03	2.862E-04	7.499E-05	2.616E-05	4.703E-06	2.119E-06	9.327E-07
31	3.231E-03	8.897E-04	3.095E-04	9.190E-05	1.298E-05	4.643E-06	6.866E-07	0.000E+00
32	2.656E-03	6.957E-04	1.391E-04	5.085E-05	1.120E-05	1.448E-06	1.334E-06	0.000E+00
33	2.473E-03	6.125E-04	1.720E-04	6.555E-05	9.221E-06	4.286E-06	0.000E+00	0.000E+00
34	1.999E-03	4.785E-04	1.762E-04	5.193E-05	9.561E-06	7.044E-06	6.344E-07	0.000E+00
35	1.814E-03	4.566E-04	1.213E-04	5.206E-05	8.889E-06	1.445E-06	6.092E-07	0.000E+00
36	1.438E-03	3.589E-04	1.419E-04	3.863E-05	4.181E-06	0.000E+00	6.097E-07	0.000E+00
37	1.438E-03	3.644E-04	1.215E-04	4.609E-05	4.244E-06	1.246E-06	1.714E-06	6.974E-07
38	1.386E-03	3.393E-04	7.747E-05	3.354E-05	4.080E-06	2.551E-06	5.614E-07	0.000E+00
39	1.185E-03	3.139E-04	7.545E-05	2.854E-05	9.446E-06	1.253E-06	1.662E-06	0.000E+00
40	1.096E-03	2.461E-04	7.782E-05	1.978E-05	1.331E-05	0.000E+00	5.221E-07	7.084E-07
41	1.091E-03	2.469E-04	9.536E-05	9.906E-06	5.043E-06	1.238E-06	0.000E+00	0.000E+00
42	7.658E-04	2.121E-04	6.234E-05	2.055E-05	6.262E-06	1.188E-06	5.318E-07	0.000E+00
43	7.917E-04	1.729E-04	7.799E-05	2.612E-05	2.581E-06	0.000E+00	0.000E+00	0.000E+00
44	7.284E-04	1.530E-04	4.262E-05	1.119E-05	4.924E-06	1.084E-06	0.000E+00	0.000E+00
45	7.484E-04	1.876E-04	5.217E-05	1.726E-05	3.976E-06	2.378E-06	1.067E-06	6.235E-07
46	7.541E-04	2.058E-04	5.208E-05	2.652E-05	4.773E-06	3.255E-06	0.000E+00	0.000E+00
47	6.964E-04	1.610E-04	8.305E-05	1.876E-05	2.421E-06	0.000E+00	5.332E-07	0.000E+00
48	5.856E-04	1.612E-04	4.935E-05	2.009E-05	6.321E-06	1.098E-06	4.968E-07	0.000E+00
49	6.020E-04	1.628E-04	4.499E-05	1.261E-05	2.423E-06	2.303E-06	0.000E+00	0.000E+00
50	4.454E-04	1.088E-04	4.677E-05	8.991E-06	4.623E-06	2.049E-06	0.000E+00	0.000E+00
51	4.517E-04	1.115E-04	3.559E-05	1.702E-05	3.534E-06	1.019E-06	0.000E+00	5.724E-07
52	3.670E-04	9.341E-05	2.798E-05	1.871E-05	1.103E-06	0.000E+00	0.000E+00	0.000E+00
53	4.017E-04	1.075E-04	4.496E-05	1.363E-05	1.094E-06	1.077E-06	0.000E+00	0.000E+00
54	4.006E-04	9.461E-05	3.529E-05	1.336E-05	1.152E-06	1.061E-06	0.000E+00	0.000E+00
55	3.086E-04	7.242E-05	1.693E-05	6.644E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00

56	3.091E-04	7.667E-05	2.774E-05	8.338E-06	2.237E-06	0.000E+00	0.000E+00	0.000E+00
57	3.029E-04	6.899E-05	3.399E-05	6.471E-06	1.066E-06	0.000E+00	4.646E-07	0.000E+00
58	2.594E-04	6.304E-05	2.057E-05	3.259E-06	2.180E-06	0.000E+00	4.660E-07	5.429E-07
59	2.914E-04	1.003E-04	3.069E-05	6.410E-06	1.125E-06	9.657E-07	0.000E+00	0.000E+00
60	2.992E-04	6.367E-05	2.039E-05	8.106E-06	1.132E-06	1.036E-06	0.000E+00	0.000E+00
61	3.780E-04	9.153E-05	3.078E-05	8.389E-06	2.211E-06	0.000E+00	0.000E+00	0.000E+00
62	2.630E-04	8.465E-05	2.847E-05	7.835E-06	2.002E-06	0.000E+00	0.000E+00	0.000E+00
63	3.409E-04	8.505E-05	1.762E-05	1.606E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
64	3.756E-04	8.311E-05	2.396E-05	1.495E-05	1.073E-06	0.000E+00	4.684E-07	5.854E-07
65	3.399E-04	6.257E-05	3.982E-05	6.482E-06	3.307E-06	0.000E+00	0.000E+00	0.000E+00
66	2.203E-04	5.477E-05	2.034E-05	1.135E-05	2.231E-06	9.686E-07	0.000E+00	0.000E+00
67	3.573E-04	8.513E-05	1.312E-05	1.305E-05	1.127E-06	0.000E+00	0.000E+00	0.000E+00
68	1.775E-04	6.147E-05	1.331E-05	6.420E-06	1.036E-06	0.000E+00	0.000E+00	0.000E+00
69	2.484E-04	9.461E-05	2.965E-05	4.981E-06	0.000E+00	0.000E+00	0.000E+00	5.711E-07
70	2.565E-04	5.144E-05	4.047E-05	1.576E-06	2.227E-06	0.000E+00	0.000E+00	0.000E+00
71	2.984E-04	8.004E-05	1.364E-05	8.266E-06	1.052E-06	0.000E+00	0.000E+00	0.000E+00
72	3.266E-04	6.887E-05	3.357E-05	8.131E-06	0.000E+00	0.000E+00	4.590E-07	0.000E+00
73	2.549E-04	3.558E-05	1.676E-05	4.809E-06	3.297E-06	0.000E+00	0.000E+00	0.000E+00
74	3.131E-04	4.110E-05	3.313E-06	3.152E-06	0.000E+00	0.000E+00	0.000E+00	5.449E-07
75	2.215E-04	5.359E-05	1.308E-05	4.876E-06	2.154E-06	0.000E+00	0.000E+00	0.000E+00
76	2.147E-04	3.397E-05	1.654E-05	1.654E-06	1.089E-06	1.002E-06	0.000E+00	0.000E+00
77	1.438E-04	3.434E-05	1.629E-05	3.167E-06	1.078E-06	9.886E-07	4.193E-07	0.000E+00
78	1.769E-04	3.415E-05	1.545E-05	8.756E-06	0.000E+00	0.000E+00	3.953E-07	0.000E+00
79	1.952E-04	2.628E-05	6.441E-06	6.121E-06	0.000E+00	0.000E+00	4.526E-07	0.000E+00
80	2.241E-04	5.053E-05	6.446E-06	6.389E-06	2.193E-06	9.500E-07	0.000E+00	0.000E+00
81	9.165E-05	4.351E-05	6.179E-06	3.159E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
82	1.148E-04	4.066E-05	1.315E-05	4.638E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
83	1.177E-04	1.795E-05	9.344E-06	3.166E-06	0.000E+00	9.193E-07	0.000E+00	5.439E-07
84	1.648E-04	1.802E-05	9.559E-06	3.199E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
85	1.331E-04	2.836E-05	1.328E-05	6.388E-06	0.000E+00	9.164E-07	0.000E+00	0.000E+00

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
3	0.000E+00	0.000E+00	1.569E-06	0.000E+00	1.561E-06	0.000E+00	0.000E+00	0.000E+00
4	1.418E-06	3.932E-06	1.696E-06	7.636E-07	5.395E-07	0.000E+00	2.052E-07	0.000E+00
5	5.938E-06	4.016E-06	4.836E-06	1.549E-06	0.000E+00	5.073E-07	0.000E+00	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0
0	1	0	1	0	0	0	0
14	2	2	2	1	0	2	1
55	29	9	11	3	3	0	0
221	126	44	40	19	2	2	0
707	327	98	61	18	4	2	0
1077	450	127	75	24	2	1	1
1399	479	150	87	10	7	3	1
1294	398	100	73	15	7	2	0
1114	333	98	59	15	2	0	0
1048	377	95	57	16	3	0	0
874	318	94	51	14	0	2	1
1128	372	101	56	11	2	0	0
1098	388	97	48	12	1	1	0
1028	340	77	40	9	5	2	0
950	315	79	41	9	1	0	0
908	296	60	31	8	5	0	0
792	250	53	33	2	3	3	0
836	238	71	24	8	1	1	0
816	234	50	28	9	2	3	0
861	281	61	27	13	2	1	0
905	304	59	43	13	3	1	0
855	248	71	52	17	2	2	0
785	245	78	47	11	3	0	0
807	237	51	41	9	4	0	0
862	253	58	39	16	3	2	1
740	231	51	36	6	2	1	0
725	220	40	45	7	1	0	0
726	242	53	29	15	3	3	1
685	216	61	37	8	3	1	0
579	173	28	21	7	1	2	0
550	156	35	28	6	3	0	0
448	123	36	22	6	5	1	0
425	122	26	23	6	1	1	0
351	101	32	18	3	0	1	0

359	104	28	22	3	1	3	1
351	98	18	16	3	2	1	0
306	94	18	14	7	1	3	0
293	75	19	10	10	0	1	1
295	76	24	5	4	1	0	0
215	68	16	11	5	1	1	0
220	55	20	14	2	0	0	0
205	49	11	6	4	1	0	0
203	58	13	9	3	2	2	1
221	69	14	15	4	3	0	0
194	51	21	10	2	0	1	0
167	52	13	11	5	1	1	0
174	54	12	7	2	2	0	0
135	38	13	5	4	2	0	0
138	39	10	10	3	1	0	1
114	33	8	11	1	0	0	0
124	38	13	8	1	1	0	0
125	34	10	8	1	1	0	0
97	26	5	4	0	0	0	0
98	28	8	5	2	0	0	0
97	25	10	4	1	0	1	0
83	23	6	2	2	0	1	1
94	37	9	4	1	1	0	0
95	23	6	5	1	1	0	0
119	33	9	5	2	0	0	0
89	33	9	5	2	0	0	0
108	31	5	1	0	0	0	0
118	30	7	9	1	0	1	1
109	23	12	4	3	0	0	0
71	20	6	7	2	1	0	0
115	31	4	8	1	0	0	0
58	23	4	4	1	0	0	0
81	35	9	3	0	0	0	1
83	19	12	1	2	0	0	0
96	30	4	5	1	0	0	0
106	26	10	5	0	0	1	0
83	13	5	3	3	0	0	0
101	15	1	2	0	0	0	1
72	20	4	3	2	0	0	0
71	13	5	1	1	1	0	0

48	13	5	2	1	1	1	0
63	14	5	6	0	0	1	0
65	10	2	4	0	0	1	0
74	19	2	4	2	1	0	0
31	17	2	2	0	0	0	0
39	16	4	3	0	0	0	0
40	7	3	2	0	1	0	1
56	7	3	2	0	0	0	0
45	11	4	4	0	1	0	0

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	1	0	3	0	0	0
1	3	1	1	1	0	1	0
4	3	3	2	0	1	0	0
5	4	1	2	0	0	0	0
21	10	3	5	3	1	1	0
14	8	2	7	1	1	0	0
15	6	6	4	4	0	2	0
14	3	4	1	1	0	1	0
18	5	3	4	2	1	0	0
12	5	3	2	1	0	0	0
19	8	2	1	1	0	0	0
15	8	5	3	1	0	0	0
8	4	5	3	0	0	0	0
14	5	1	1	2	0	0	0
12	2	5	2	1	0	0	0
16	4	3	4	2	0	0	0
12	6	2	0	0	0	1	0
15	3	3	0	1	0	0	0
13	3	1	2	0	1	0	0
12	4	0	1	0	0	0	0
14	4	3	1	0	0	0	0
11	2	3	5	1	0	0	0
11	3	3	1	0	0	0	0
7	2	2	1	1	0	0	0
8	1	1	1	1	0	1	0

9	5	1	1	1	0	0	0
8	3	2	0	1	0	0	0
12	3	0	3	0	0	0	0
17	3	1	0	0	0	0	0
14	3	0	1	1	0	0	0
6	4	2	0	0	0	0	0
13	4	2	0	0	0	0	0
7	1	2	0	0	0	0	0
11	6	2	0	0	0	0	0
9	5	1	0	0	0	0	0
7	3	0	2	0	0	0	0
10	7	1	2	0	0	0	0
9	5	0	0	0	0	0	0
12	4	1	1	0	0	0	1
9	5	1	1	0	0	0	0
10	1	3	1	0	0	0	0
6	4	0	0	0	0	0	0
7	0	0	0	0	0	0	0
6	2	0	2	0	0	0	0
2	2	2	0	0	0	1	0
1	1	1	1	0	0	0	0
3	3	0	0	0	0	0	0
7	3	0	0	1	0	0	0
3	1	1	1	0	0	0	1
10	2	1	1	0	0	0	0
4	0	0	0	0	0	0	0
1	1	1	0	0	0	0	0
9	2	0	0	0	0	1	0
9	2	0	0	0	0	0	0
1	0	0	1	0	0	0	0
7	4	2	1	0	0	0	0
7	1	1	1	0	0	0	0
5	2	1	0	0	0	2	0
1	1	0	1	0	0	0	0
2	2	0	0	0	0	0	0
7	4	2	0	1	0	0	0
3	1	1	1	0	0	0	0
3	2	1	0	0	0	0	0
3	0	0	1	0	0	0	0
3	0	1	0	0	0	0	0

6	3	0	0	0	0	0	0
6	1	0	1	0	0	0	0
5	2	0	2	0	0	0	0
4	0	0	0	0	0	0	0
2	2	1	0	0	0	1	0
6	0	0	0	0	0	0	0
1	0	0	0	0	1	0	0
2	1	0	0	0	0	0	0
5	0	0	0	0	0	0	0
0	2	0	0	0	0	0	0
4	1	0	0	0	0	0	0
0	0	1	0	0	0	0	0
2	0	0	0	0	0	0	0
3	1	0	0	0	0	0	1
2	1	0	0	0	0	1	1
2	1	0	0	0	0	0	0
1	0	0	0	0	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 4.081 \quad (3.384, 4.778)$$

$$b = -0.3899 \quad (-0.4152, -0.3646)$$

$$c = 0.00431 \quad (-0.01943, 0.02805)$$

$$d = -0.07987 \quad (-0.3094, 0.1496)$$

goftotal =

sse: 5.9981e-007

rsquare: 1.0000

dfc: 4

adjrsquare: 0.9999

rmse: 3.8724e-004

ctotal =

General model Exp1:

$$ctotal(x) = a * \exp(b * x)$$

Coefficients (with 95% confidence bounds):

a = 0.1963 (-0.08322, 0.4757)

b = -0.2058 (-0.2788, -0.1327)

goftotal =

sse: 7.4320e-008

rsquare: 0.9936

dfe: 3

adjrsquare: 0.9915

rmse: 1.5740e-004

Event 25	Date	Time*	Location*	Summing interval*				
	16-Oct-00	728	N04W95	16 Oct to 19 Oct				
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2	0.000E+00	0.000E+00	2.951E-06	1.512E-06	0.000E+00	0.000E+00	4.160E-07	0.000E+00
3	2.681E-05	9.281E-06	1.175E-05	1.121E-05	1.570E-05	4.355E-06	2.242E-06	4.909E-07
4	8.912E-05	8.006E-05	6.910E-05	3.732E-05	3.592E-05	1.931E-05	4.887E-06	1.030E-06
5	7.596E-05	7.165E-05	2.796E-05	3.734E-05	2.262E-05	9.006E-06	3.632E-06	4.947E-07
6	9.031E-05	8.140E-05	5.857E-05	4.325E-05	2.190E-05	9.096E-06	3.647E-06	4.974E-07
7	1.449E-04	1.303E-04	1.121E-04	5.517E-05	3.778E-05	8.929E-07	1.643E-06	1.525E-06
8	2.975E-04	1.827E-04	1.024E-04	5.564E-05	2.301E-05	1.098E-05	3.758E-06	5.312E-07
9	3.458E-04	1.571E-04	8.705E-05	7.261E-05	1.696E-05	8.307E-06	1.232E-06	0.000E+00
10	3.283E-04	1.590E-04	1.079E-04	6.057E-05	2.149E-05	1.199E-05	2.897E-06	0.000E+00
11	3.252E-04	2.020E-04	1.352E-04	4.681E-05	1.623E-05	2.873E-06	1.643E-06	1.072E-06
12	3.515E-04	1.979E-04	9.783E-05	5.307E-05	2.028E-05	1.022E-05	4.195E-06	5.368E-07
13	3.470E-04	1.712E-04	7.488E-05	4.706E-05	9.184E-06	1.861E-06	1.262E-06	0.000E+00
14	3.293E-04	1.660E-04	9.466E-05	4.680E-05	2.114E-05	2.817E-06	1.692E-06	0.000E+00
15	2.875E-04	1.661E-04	1.162E-04	3.929E-05	1.195E-05	6.419E-06	2.069E-06	0.000E+00
16	3.272E-04	1.468E-04	8.192E-05	3.749E-05	1.309E-05	3.766E-06	2.524E-06	0.000E+00
17	2.961E-04	1.431E-04	8.837E-05	3.342E-05	1.494E-05	9.368E-06	8.295E-07	5.326E-07
18	2.533E-04	1.631E-04	8.445E-05	4.707E-05	1.711E-05	4.599E-06	8.286E-07	5.327E-07
19	2.645E-04	1.154E-04	7.958E-05	4.063E-05	1.414E-05	4.237E-06	2.340E-06	4.965E-07
20	2.975E-04	1.469E-04	4.677E-05	3.125E-05	1.395E-05	4.633E-06	0.000E+00	5.306E-07
21	2.580E-04	9.778E-05	6.241E-05	3.598E-05	1.189E-05	3.683E-06	8.246E-07	0.000E+00
22	2.008E-04	9.256E-05	6.199E-05	2.824E-05	6.974E-06	2.733E-06	2.048E-06	5.001E-07
23	2.885E-04	1.127E-04	4.023E-05	3.007E-05	1.198E-05	2.730E-06	4.231E-07	0.000E+00
24	2.194E-04	1.151E-04	5.585E-05	2.690E-05	1.089E-05	1.784E-06	2.044E-06	0.000E+00

25	2.372E-04	1.044E-04	4.682E-05	2.531E-05	1.627E-05	1.893E-06	0.000E+00	0.000E+00
26	2.625E-04	1.272E-04	6.532E-05	1.804E-05	5.931E-06	3.623E-06	1.222E-06	5.294E-07
27	3.245E-04	9.687E-05	6.229E-05	3.419E-05	1.386E-05	1.892E-06	3.991E-07	5.300E-07
28	2.207E-04	1.046E-04	6.878E-05	2.817E-05	8.943E-06	9.450E-07	4.229E-07	0.000E+00
29	2.012E-04	1.018E-04	6.151E-05	2.959E-05	7.945E-06	1.771E-06	1.235E-06	0.000E+00
30	1.976E-04	8.694E-05	2.499E-05	2.643E-05	7.013E-06	2.705E-06	0.000E+00	5.259E-07
31	1.301E-04	6.177E-05	4.261E-05	1.935E-05	9.874E-06	4.626E-06	3.948E-07	0.000E+00
32	1.516E-04	8.159E-05	3.104E-05	2.391E-05	4.904E-06	1.817E-06	8.131E-07	0.000E+00
33	1.384E-04	4.407E-05	5.237E-05	1.190E-05	6.869E-06	4.618E-06	0.000E+00	0.000E+00
34	1.644E-04	5.464E-05	3.082E-05	2.514E-05	3.942E-06	0.000E+00	4.182E-07	0.000E+00
35	1.591E-04	6.114E-05	1.681E-05	1.534E-05	6.351E-06	8.213E-07	3.896E-07	0.000E+00
36	1.613E-04	5.883E-05	3.353E-05	2.356E-05	1.908E-06	0.000E+00	0.000E+00	0.000E+00
37	1.844E-04	6.701E-05	2.149E-05	1.303E-05	3.819E-06	0.000E+00	4.169E-07	0.000E+00
38	1.653E-04	5.156E-05	3.337E-05	1.903E-05	7.870E-06	1.865E-06	4.174E-07	0.000E+00
39	1.706E-04	6.704E-05	3.427E-05	8.753E-06	3.039E-06	1.866E-06	0.000E+00	0.000E+00
40	1.293E-04	4.623E-05	2.772E-05	4.363E-06	2.971E-06	1.806E-06	0.000E+00	4.902E-07
41	1.369E-04	4.654E-05	2.736E-05	1.184E-05	0.000E+00	1.752E-06	8.088E-07	0.000E+00
42	1.476E-04	4.619E-05	2.142E-05	1.174E-05	5.820E-06	0.000E+00	0.000E+00	0.000E+00
43	1.293E-04	4.681E-05	2.693E-05	1.172E-05	1.956E-06	0.000E+00	0.000E+00	0.000E+00
44	9.466E-05	2.665E-05	2.082E-05	4.521E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
45	9.235E-05	3.833E-05	2.429E-05	3.011E-06	9.479E-07	9.250E-07	0.000E+00	0.000E+00
46	9.436E-05	2.396E-05	1.178E-05	2.922E-06	3.848E-06	0.000E+00	0.000E+00	0.000E+00
47	8.078E-05	2.911E-05	2.942E-06	4.423E-06	1.003E-06	0.000E+00	0.000E+00	5.170E-07
48	9.323E-05	2.969E-05	6.065E-06	5.839E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
49	7.225E-05	4.149E-05	1.836E-05	4.334E-06	1.891E-06	9.229E-07	0.000E+00	0.000E+00
50	8.367E-05	4.173E-05	2.092E-05	5.746E-06	1.001E-06	0.000E+00	3.894E-07	0.000E+00
51	6.041E-05	2.958E-05	5.648E-06	2.721E-06	9.347E-07	8.607E-07	0.000E+00	0.000E+00
52	4.769E-05	2.961E-05	6.049E-06	8.748E-06	1.946E-06	8.700E-07	0.000E+00	0.000E+00
53	6.960E-05	1.931E-05	1.503E-05	1.015E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
54	7.577E-05	1.958E-05	3.111E-06	1.032E-05	9.429E-07	0.000E+00	0.000E+00	0.000E+00
55	5.604E-05	2.400E-05	8.973E-06	5.905E-06	1.000E-06	1.788E-06	0.000E+00	0.000E+00
56	5.288E-05	2.151E-05	1.502E-05	2.911E-06	9.429E-07	0.000E+00	3.886E-07	0.000E+00
57	5.818E-05	1.691E-05	2.929E-06	2.907E-06	0.000E+00	0.000E+00	3.883E-07	0.000E+00
58	4.708E-05	3.146E-05	3.328E-05	1.409E-06	0.000E+00	0.000E+00	4.116E-07	0.000E+00
59	4.734E-05	3.863E-05	1.223E-05	2.902E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
60	4.452E-05	1.718E-05	3.100E-06	4.317E-06	9.986E-07	0.000E+00	0.000E+00	4.851E-07
61	4.941E-05	2.454E-05	1.188E-05	2.906E-06	2.938E-06	0.000E+00	0.000E+00	4.848E-07
62	5.528E-05	1.191E-05	1.223E-05	5.637E-06	1.939E-06	0.000E+00	0.000E+00	0.000E+00
63	1.981E-05	1.910E-05	5.851E-06	2.818E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
64	2.233E-05	2.451E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

65	4.467E-05	9.977E-06	1.498E-05	2.904E-06	9.407E-07	0.000E+00	4.112E-07	4.844E-07
66	4.384E-05	1.468E-05	2.924E-06	7.301E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
67	3.086E-05	9.041E-06	2.727E-06	2.708E-06	9.307E-07	0.000E+00	3.838E-07	0.000E+00
68	3.069E-05	1.231E-05	9.119E-06	5.801E-06	9.393E-07	8.650E-07	4.106E-07	4.837E-07
69	4.172E-05	1.436E-05	1.221E-05	4.216E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
70	2.747E-05	1.699E-05	5.835E-06	2.897E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
71	2.195E-05	4.976E-06	0.000E+00	1.405E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
72	3.898E-05	9.514E-06	1.493E-05	1.489E-06	9.943E-07	0.000E+00	0.000E+00	0.000E+00
73	2.208E-05	7.309E-06	2.913E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
74	1.371E-05	4.969E-06	8.910E-06	1.404E-06	0.000E+00	9.143E-07	3.857E-07	0.000E+00
75	1.671E-05	9.647E-06	3.086E-06	2.891E-06	2.923E-06	0.000E+00	0.000E+00	0.000E+00
76	3.877E-05	9.930E-06	9.266E-06	1.401E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
77	1.653E-05	0.000E+00	0.000E+00	1.486E-06	9.921E-07	0.000E+00	0.000E+00	4.814E-07
78	2.203E-05	1.197E-05	2.906E-06	1.401E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
79	1.935E-05	1.183E-05	5.988E-06	1.485E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
80	1.652E-05	7.009E-06	2.905E-06	1.399E-06	1.869E-06	0.000E+00	0.000E+00	0.000E+00
81	1.068E-05	4.814E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
82	1.084E-05	4.812E-06	0.000E+00	1.399E-06	9.343E-07	0.000E+00	0.000E+00	0.000E+00

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.012E-07	0.000E+00
2	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.059E-07	0.000E+00	0.000E+00	0.000E+00
3	2.632E-05	2.663E-05	1.231E-05	6.642E-06	2.476E-06	4.350E-07	0.000E+00	0.000E+00
4	5.974E-05	5.235E-05	3.186E-05	1.273E-05	5.257E-06	1.943E-06	0.000E+00	0.000E+00
5	4.466E-05	3.481E-05	8.308E-06	6.990E-06	1.592E-06	9.350E-07	0.000E+00	2.569E-07
6	7.887E-05	2.813E-05	1.859E-05	5.626E-06	2.652E-06	0.000E+00	0.000E+00	0.000E+00
7	9.215E-05	3.337E-05	1.501E-05	6.364E-06	3.241E-06	9.676E-07	0.000E+00	0.000E+00
8	1.063E-04	2.143E-05	1.013E-05	1.286E-05	3.621E-06	4.745E-07	0.000E+00	0.000E+00
9	6.773E-05	3.221E-05	1.841E-05	5.513E-06	1.649E-06	0.000E+00	0.000E+00	0.000E+00
10	7.973E-05	3.278E-05	1.161E-05	7.229E-06	3.699E-06	4.761E-07	0.000E+00	0.000E+00
11	8.893E-05	3.103E-05	1.830E-05	5.674E-06	5.226E-07	9.540E-07	0.000E+00	0.000E+00
12	6.928E-05	2.708E-05	8.284E-06	4.754E-06	5.529E-07	5.072E-07	0.000E+00	0.000E+00
13	7.673E-05	3.393E-05	8.584E-06	4.893E-06	1.657E-06	5.060E-07	0.000E+00	0.000E+00
14	7.411E-05	1.795E-05	1.196E-05	9.832E-06	2.148E-06	0.000E+00	0.000E+00	0.000E+00
15	7.538E-05	2.034E-05	1.154E-05	6.407E-06	1.563E-06	5.052E-07	0.000E+00	0.000E+00
16	5.830E-05	2.024E-05	8.372E-06	3.129E-06	1.594E-06	4.755E-07	0.000E+00	0.000E+00
17	6.446E-05	2.602E-05	6.619E-06	3.958E-06	5.171E-07	0.000E+00	0.000E+00	0.000E+00

18	6.327E-05	1.497E-05	6.709E-06	4.864E-06	5.493E-07	4.752E-07	0.000E+00	0.000E+00
19	5.152E-05	2.285E-05	3.225E-06	4.541E-06	4.829E-07	4.431E-07	0.000E+00	2.573E-07
20	3.282E-05	1.746E-05	8.203E-06	1.552E-06	5.469E-07	4.722E-07	0.000E+00	0.000E+00
21	3.598E-05	9.429E-06	1.621E-06	2.379E-06	0.000E+00	4.722E-07	0.000E+00	2.747E-07
22	4.484E-05	1.220E-05	6.772E-06	3.196E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
23	4.479E-05	1.217E-05	6.667E-06	2.371E-06	5.453E-07	0.000E+00	0.000E+00	0.000E+00
24	3.562E-05	1.903E-05	0.000E+00	3.190E-06	1.060E-06	0.000E+00	0.000E+00	0.000E+00
25	2.833E-05	1.071E-05	6.556E-06	8.207E-07	5.458E-07	0.000E+00	0.000E+00	0.000E+00
26	2.932E-05	7.937E-06	8.286E-06	4.739E-06	0.000E+00	0.000E+00	2.223E-07	0.000E+00
27	4.234E-05	5.477E-06	3.236E-06	8.207E-07	5.165E-07	0.000E+00	0.000E+00	0.000E+00
28	3.452E-05	6.855E-06	6.659E-06	3.189E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
29	2.962E-05	9.204E-06	1.704E-06	1.542E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
30	2.216E-05	1.190E-05	0.000E+00	2.352E-06	5.420E-07	0.000E+00	0.000E+00	0.000E+00
31	2.665E-05	8.077E-06	3.197E-06	8.121E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
32	2.377E-05	6.858E-06	3.195E-06	0.000E+00	5.396E-07	0.000E+00	0.000E+00	0.000E+00
33	2.215E-05	1.058E-05	0.000E+00	7.643E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
34	2.375E-05	6.539E-06	4.789E-06	3.057E-06	0.000E+00	4.938E-07	0.000E+00	0.000E+00
35	2.073E-05	8.727E-06	4.555E-06	2.181E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
36	2.066E-05	5.393E-06	0.000E+00	0.000E+00	5.374E-07	0.000E+00	0.000E+00	0.000E+00
37	1.033E-05	2.583E-06	3.283E-06	8.079E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
38	1.587E-05	6.605E-06	0.000E+00	2.379E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
39	1.319E-05	5.392E-06	8.254E-06	8.093E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
40	1.165E-05	8.029E-06	0.000E+00	8.064E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
41	1.332E-05	6.584E-06	1.588E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
42	1.004E-05	0.000E+00	0.000E+00	0.000E+00	5.051E-07	0.000E+00	0.000E+00	0.000E+00
43	1.153E-05	8.005E-06	1.585E-06	0.000E+00	5.044E-07	0.000E+00	0.000E+00	0.000E+00
44	8.765E-06	2.640E-06	3.262E-06	7.579E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
45	7.254E-06	0.000E+00	1.582E-06	7.571E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
46	8.749E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
47	5.829E-06	3.991E-06	1.675E-06	8.014E-07	0.000E+00	0.000E+00	2.048E-07	0.000E+00
48	1.175E-05	2.636E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
49	7.154E-06	3.831E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
50	7.317E-06	5.180E-06	1.674E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
51	8.146E-06	1.263E-06	1.471E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
52	4.233E-06	3.826E-06	0.000E+00	0.000E+00	5.017E-07	0.000E+00	0.000E+00	0.000E+00
53	4.233E-06	4.057E-06	1.670E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
54	0.000E+00	2.704E-06	1.574E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
55	1.496E-06	5.249E-06	1.574E-06	7.993E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
56	0.000E+00	2.703E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
57	2.988E-06	0.000E+00	0.000E+00	1.597E-06	4.998E-07	0.000E+00	0.000E+00	0.000E+00

58	2.987E-06	3.894E-06	1.666E-06	7.521E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
59	1.406E-06	2.540E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
60	2.814E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
61	7.292E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
62	1.406E-06	0.000E+00	0.000E+00	0.000E+00	4.994E-07	0.000E+00	0.000E+00	0.000E+00
63	1.492E-06	2.543E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
64	1.406E-06	1.271E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
65	2.899E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
66	0.000E+00	0.000E+00	0.000E+00	7.964E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
67	3.935E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
68	2.893E-06	0.000E+00	1.663E-06	7.507E-07	4.991E-07	0.000E+00	0.000E+00	0.000E+00
69	1.488E-06	1.269E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.031E-07	0.000E+00
70	1.489E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
71	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
72	4.374E-06	0.000E+00	1.564E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
73	2.886E-06	1.343E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
74	0.000E+00	0.000E+00	1.564E-06	0.000E+00	0.000E+00	4.557E-07	0.000E+00	0.000E+00
75	1.485E-06	0.000E+00	0.000E+00	0.000E+00	4.972E-07	0.000E+00	0.000E+00	0.000E+00
76	2.884E-06	1.341E-06	0.000E+00	7.936E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
77	1.397E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
78	2.878E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
79	4.447E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
80	1.482E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
81	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
82	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	0	0	0	0	0	0	0
0	0	1	1	0	0	1	0
10	4	4	8	17	5	6	1
31	32	22	25	36	21	12	2
27	29	9	25	23	10	9	1
32	33	19	29	22	10	9	1
51	52	36	37	38	1	4	3
104	73	33	37	23	12	9	1
120	62	28	48	17	9	3	0
114	63	34	40	21	13	7	0
113	80	43	31	16	3	4	2

122	78	31	35	20	11	10	1
120	68	24	31	9	2	3	0
114	66	30	31	21	3	4	0
100	66	37	26	12	7	5	0
113	58	26	25	13	4	6	0
103	57	28	22	15	10	2	1
88	65	27	31	17	5	2	1
98	49	27	29	15	5	6	1
104	59	15	21	14	5	0	1
90	39	20	24	12	4	2	0
70	37	20	19	7	3	5	1
101	45	13	20	12	3	1	0
77	46	18	18	11	2	5	0
83	42	15	17	16	2	0	0
92	51	21	12	6	4	3	1
114	39	20	23	14	2	1	1
78	42	22	19	9	1	1	0
71	41	20	20	8	2	3	0
70	35	8	18	7	3	0	1
46	25	14	13	10	5	1	0
54	33	10	16	5	2	2	0
49	18	17	8	7	5	0	0
58	22	10	17	4	0	1	0
61	27	6	11	7	1	1	0
57	24	11	16	2	0	0	0
66	27	7	9	4	0	1	0
59	21	11	13	8	2	1	0
61	27	11	6	3	2	0	0
46	19	9	3	3	2	0	1
49	19	9	8	0	2	2	0
53	19	7	8	6	0	0	0
46	19	9	8	2	0	0	0
34	11	7	3	0	0	0	0
33	16	8	2	1	1	0	0
34	10	4	2	4	0	0	0
29	12	1	3	1	0	0	1
33	12	2	4	0	0	0	0
26	17	6	3	2	1	0	0
30	17	7	4	1	0	1	0
23	13	2	2	1	1	0	0

17	12	2	6	2	1	0	0
25	8	5	7	0	0	0	0
27	8	1	7	1	0	0	0
20	10	3	4	1	2	0	0
19	9	5	2	1	0	1	0
21	7	1	2	0	0	1	0
17	13	11	1	0	0	1	0
17	16	4	2	0	0	0	0
16	7	1	3	1	0	0	1
18	10	4	2	3	0	0	1
20	5	4	4	2	0	0	0
7	8	2	2	0	0	0	0
8	10	0	0	0	0	0	0
16	4	5	2	1	0	1	1
16	6	1	5	0	0	0	0
12	4	1	2	1	0	1	0
11	5	3	4	1	1	1	1
15	6	4	3	0	0	0	0
10	7	2	2	0	0	0	0
8	2	0	1	0	0	0	0
14	4	4	1	1	0	0	0
8	3	1	0	0	0	0	0
5	2	3	1	0	1	1	0
6	4	1	2	3	0	0	0
14	4	3	1	0	0	0	0
6	0	0	1	1	0	0	1
8	5	1	1	0	0	0	0
7	5	2	1	0	0	0	0
6	3	1	1	2	0	0	0
4	2	0	0	0	0	0	0
4	2	0	1	1	0	0	0

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	0	0	0	0	0	1	0
0	0	0	0	1	0	0	0
19	21	8	9	5	1	0	0
40	39	19	16	10	4	0	0

30	26	5	9	3	2	0	1
53	21	11	7	5	0	0	0
62	25	9	8	6	2	0	0
71	16	6	16	7	1	0	0
45	24	11	7	3	0	0	0
53	24	7	9	7	1	0	0
59	23	11	7	1	2	0	0
46	20	5	6	1	1	0	0
51	25	5	6	3	1	0	0
49	13	7	12	4	0	0	0
50	15	7	8	3	1	0	0
39	15	5	4	3	1	0	0
43	19	4	5	1	0	0	0
42	11	4	6	1	1	0	0
37	18	2	6	1	1	0	1
22	13	5	2	1	1	0	0
24	7	1	3	0	1	0	1
30	9	4	4	0	0	0	0
30	9	4	3	1	0	0	0
24	14	0	4	2	0	0	0
19	8	4	1	1	0	0	0
20	6	5	6	0	0	1	0
28	4	2	1	1	0	0	0
23	5	4	4	0	0	0	0
20	7	1	2	0	0	0	0
15	9	0	3	1	0	0	0
18	6	2	1	0	0	0	0
16	5	2	0	1	0	0	0
15	8	0	1	0	0	0	0
16	5	3	4	0	1	0	0
15	7	3	3	0	0	0	0
14	4	0	0	1	0	0	0
7	2	2	1	0	0	0	0
11	5	0	3	0	0	0	0
9	4	5	1	0	0	0	0
8	6	0	1	0	0	0	0
9	5	1	0	0	0	0	0
7	0	0	0	1	0	0	0
8	6	1	0	1	0	0	0
6	2	2	1	0	0	0	0

5	0	1	1	0	0	0	0
6	0	0	0	0	0	0	0
4	3	1	1	0	0	1	0
8	2	0	0	0	0	0	0
5	3	0	0	0	0	0	0
5	4	1	0	0	0	0	0
6	1	1	0	0	0	0	0
3	3	0	0	1	0	0	0
3	3	1	0	0	0	0	0
0	2	1	0	0	0	0	0
1	4	1	1	0	0	0	0
0	2	0	0	0	0	0	0
2	0	0	2	1	0	0	0
2	3	1	1	0	0	0	0
1	2	0	0	0	0	0	0
2	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
1	0	0	0	1	0	0	0
1	2	0	0	0	0	0	0
1	1	0	0	0	0	0	0
2	0	0	0	0	0	0	0
0	0	0	1	0	0	0	0
3	0	0	0	0	0	0	0
2	0	1	1	1	0	0	0
1	1	0	0	0	0	1	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
3	0	1	0	0	0	0	0
2	1	0	0	0	0	0	0
0	0	1	0	0	1	0	0
1	0	0	0	1	0	0	0
2	1	0	1	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.06332 \quad (0.04515, 0.08148)$$

$$b = -0.2317 \quad (-0.2747, -0.1886)$$

$$c = 0.0007068 \quad (-0.001021, 0.002434)$$

$$d = -0.0286 \quad (-0.09482, 0.03763)$$

goftotal =

sse: 5.4560e-008

rsquare: 0.9992

dfe: 4

adjrsquare: 0.9986

rmse: 1.1679e-004

ctotal =

General model Exp1:

$$c_{total}(x) = a \cdot \exp(b \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.007901 \quad (-0.00224, 0.01804)$$

$$b = -0.09731 \quad (-0.1574, -0.0372)$$

gof_{total} =

sse: 3.4198e-008

rsquare: 9.7168e-001

dfe: 3

adjrsquare: 9.6224e-001

rmse: 1.0677e-004

Event 26	Date	Time*	Location*	Summing interval*
	25-Oct-00	1125	N00W120	25 Oct to 27 Oct 2100

<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed φ	Listed φ	Listed φ	Listed φ	Listed φ	Listed φ	Listed φ	Listed φ
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2	0.000E+00	2.476E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.846E-07	0.000E+00
3	0.000E+00	2.488E-06	0.000E+00	0.000E+00	9.950E-07	0.000E+00	0.000E+00	0.000E+00
4	1.107E-05	0.000E+00	0.000E+00	7.288E-06	1.935E-06	2.696E-06	4.105E-07	0.000E+00
5	1.021E-05	1.138E-05	2.012E-05	1.316E-06	3.511E-06	0.000E+00	3.612E-07	0.000E+00
6	3.937E-05	1.728E-05	9.381E-06	5.859E-06	1.952E-06	9.279E-07	4.124E-07	4.864E-07
7	7.561E-05	4.666E-05	5.919E-06	7.211E-06	6.949E-06	8.757E-07	3.917E-07	0.000E+00
8	9.622E-05	4.206E-05	3.349E-05	1.336E-05	4.916E-06	9.321E-07	3.938E-07	0.000E+00
9	1.071E-04	6.946E-05	4.300E-05	1.039E-05	2.924E-06	0.000E+00	3.938E-07	5.257E-07
10	1.187E-04	8.133E-05	3.677E-05	1.466E-05	3.895E-06	9.414E-07	0.000E+00	0.000E+00
11	1.630E-04	6.446E-05	2.438E-05	1.516E-05	3.011E-06	9.464E-07	0.000E+00	0.000E+00
12	1.758E-04	7.799E-05	2.825E-05	1.334E-05	3.991E-06	1.799E-06	4.246E-07	0.000E+00
13	2.352E-04	9.850E-05	2.844E-05	1.337E-05	2.020E-06	9.079E-07	0.000E+00	0.000E+00

14	2.235E-04	1.060E-04	5.027E-05	1.368E-05	3.061E-06	9.593E-07	4.056E-07	0.000E+00
15	2.725E-04	8.970E-05	5.152E-05	1.987E-05	6.226E-06	1.847E-06	0.000E+00	0.000E+00
16	2.141E-04	8.414E-05	3.233E-05	1.094E-05	7.198E-06	0.000E+00	0.000E+00	0.000E+00
17	1.417E-04	6.909E-05	1.589E-05	9.140E-06	9.836E-07	0.000E+00	0.000E+00	0.000E+00
18	1.907E-04	8.241E-05	2.852E-05	6.136E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
19	2.121E-04	9.081E-05	2.946E-05	1.504E-05	1.072E-06	9.236E-07	8.464E-07	5.442E-07
20	2.317E-04	5.707E-05	3.191E-05	7.816E-06	6.162E-06	0.000E+00	4.166E-07	0.000E+00
21	1.792E-04	6.538E-05	2.982E-05	9.887E-06	3.853E-06	9.140E-07	0.000E+00	0.000E+00
22	1.585E-04	5.839E-05	1.589E-05	1.078E-05	1.996E-06	0.000E+00	0.000E+00	0.000E+00
23	1.116E-04	2.270E-05	6.374E-06	9.221E-06	0.000E+00	0.000E+00	0.000E+00	5.133E-07
24	1.436E-04	4.798E-05	9.444E-06	1.251E-05	3.032E-06	9.671E-07	4.335E-07	0.000E+00
25	1.139E-04	2.779E-05	2.227E-05	2.961E-06	1.048E-06	0.000E+00	0.000E+00	0.000E+00
26	1.138E-04	4.849E-05	2.513E-05	7.746E-06	1.049E-06	9.129E-07	0.000E+00	0.000E+00
27	7.563E-05	4.035E-05	9.540E-06	7.442E-06	0.000E+00	9.029E-07	0.000E+00	0.000E+00
28	1.072E-04	2.527E-05	1.266E-05	5.985E-06	3.132E-06	0.000E+00	0.000E+00	0.000E+00
29	1.026E-04	4.554E-05	1.911E-05	4.558E-06	2.042E-06	9.129E-07	0.000E+00	0.000E+00
30	1.131E-04	2.520E-05	1.902E-05	6.019E-06	9.943E-07	0.000E+00	0.000E+00	0.000E+00
31	8.867E-05	3.316E-05	6.509E-06	3.044E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
32	8.014E-05	3.275E-05	9.338E-06	4.678E-06	1.041E-06	0.000E+00	0.000E+00	0.000E+00
33	8.883E-05	1.266E-05	1.254E-05	1.554E-06	1.953E-06	0.000E+00	0.000E+00	0.000E+00
34	6.291E-05	3.746E-05	9.669E-06	4.488E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
35	5.693E-05	1.522E-05	2.195E-05	7.556E-06	9.757E-07	0.000E+00	0.000E+00	0.000E+00
36	4.254E-05	1.747E-05	1.267E-05	3.086E-06	3.111E-06	0.000E+00	0.000E+00	0.000E+00
37	6.359E-05	2.772E-05	5.631E-06	1.357E-06	0.000E+00	0.000E+00	0.000E+00	4.946E-07
38	6.860E-05	1.257E-05	6.031E-06	1.451E-06	0.000E+00	0.000E+00	3.995E-07	0.000E+00
39	4.582E-05	2.025E-05	1.562E-05	1.541E-06	2.053E-06	0.000E+00	0.000E+00	4.994E-07
40	5.089E-05	1.749E-05	0.000E+00	3.069E-06	0.000E+00	0.000E+00	4.224E-07	0.000E+00
41	3.704E-05	2.501E-05	0.000E+00	0.000E+00	9.643E-07	0.000E+00	3.974E-07	0.000E+00
42	5.090E-05	1.758E-05	6.352E-06	1.441E-06	9.629E-07	0.000E+00	0.000E+00	4.961E-07
43	4.561E-05	9.748E-06	3.170E-06	3.054E-06	1.018E-06	0.000E+00	0.000E+00	0.000E+00
44	3.150E-05	9.588E-06	3.164E-06	1.435E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
45	2.530E-05	1.001E-05	6.134E-06	0.000E+00	1.016E-06	0.000E+00	4.181E-07	5.225E-07
46	5.100E-05	1.759E-05	8.911E-06	0.000E+00	2.925E-06	8.800E-07	0.000E+00	0.000E+00
47	4.788E-05	7.450E-06	6.296E-06	0.000E+00	9.543E-07	0.000E+00	0.000E+00	0.000E+00
48	2.813E-05	9.839E-06	2.969E-06	1.517E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
49	1.396E-05	9.818E-06	1.221E-05	1.514E-06	1.904E-06	0.000E+00	0.000E+00	0.000E+00
50	1.682E-05	9.659E-06	6.099E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
51	1.664E-05	9.796E-06	3.137E-06	1.424E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
52	1.678E-05	2.372E-06	2.953E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
53	2.593E-05	4.563E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

31	2.940E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
32	6.039E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.249E-07	0.000E+00
33	4.377E-06	1.321E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
34	5.861E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
35	1.454E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
36	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
37	1.439E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
38	5.795E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
39	4.517E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
40	4.511E-06	0.000E+00	1.712E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
41	4.416E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
42	5.933E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
43	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
44	6.000E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.720E-07
45	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
46	2.950E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.709E-07
47	2.939E-06	0.000E+00	1.690E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
48	1.514E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
49	1.510E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
50	0.000E+00	1.364E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
51	1.420E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
52	1.506E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.694E-07
53	1.324E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.915E-07	0.000E+00
54	1.419E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
55	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.049E-07	2.531E-07
56	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
57	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
58	1.413E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	0	0	0	0	0	0	0
0	1	0	0	0	0	1	0
0	1	0	0	1	0	0	0
4	0	0	5	2	3	1	0
4	5	7	1	4	0	1	0
14	7	3	4	2	1	1	1
27	19	2	5	7	1	1	0
34	17	11	9	5	1	1	0

38	28	14	7	3	0	1	1
42	33	12	10	4	1	0	0
57	26	8	10	3	1	0	0
62	31	9	9	4	2	1	0
81	39	9	9	2	1	0	0
78	42	16	9	3	1	1	0
93	35	16	13	6	2	0	0
73	33	10	7	7	0	0	0
49	27	5	6	1	0	0	0
65	32	9	4	0	0	0	0
72	35	9	10	1	1	2	1
78	22	10	5	6	0	1	0
65	27	10	7	4	1	0	0
54	23	5	7	2	0	0	0
38	9	2	6	0	0	0	1
49	19	3	8	3	1	1	0
39	11	7	2	1	0	0	0
39	19	8	5	1	1	0	0
26	16	3	5	0	1	0	0
37	10	4	4	3	0	0	0
35	18	6	3	2	1	0	0
39	10	6	4	1	0	0	0
31	13	2	2	0	0	0	0
28	13	3	3	1	0	0	0
31	5	4	1	2	0	0	0
22	15	3	3	0	0	0	0
20	6	7	5	1	0	0	0
15	7	4	2	3	0	0	0
24	12	2	1	0	0	0	1
24	5	2	1	0	0	1	0
16	8	5	1	2	0	0	1
18	7	0	2	0	0	1	0
13	10	0	0	1	0	1	0
18	7	2	1	1	0	0	1
16	4	1	2	1	0	0	0
11	4	1	1	0	0	0	0
9	4	2	0	1	0	1	1
18	7	3	0	3	1	0	0
17	3	2	0	1	0	0	0
10	4	1	1	0	0	0	0

5	4	4	1	2	0	0	0
6	4	2	0	0	0	0	0
6	4	1	1	0	0	0	0
6	1	1	0	0	0	0	0
10	2	0	0	0	0	0	0
7	0	1	1	0	0	1	0
11	6	1	0	1	0	0	0
6	2	0	0	0	0	0	0
12	4	0	0	0	0	0	0
3	1	1	3	0	0	0	0

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
1	0	0	0	0	0	1	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	0
3	1	0	0	0	0	1	0
6	4	0	1	0	0	0	1
4	1	1	0	0	0	0	0
7	2	0	0	0	0	0	0
12	1	0	0	0	0	0	0
10	3	0	0	0	0	0	0
10	1	1	0	0	0	0	0
6	2	0	1	0	0	0	0
9	3	0	1	0	0	1	0
11	7	0	0	0	0	0	1
8	4	0	0	0	0	0	0
11	2	1	0	0	0	0	0
6	1	0	0	0	0	0	0
8	0	0	0	0	0	0	0
8	2	0	0	0	0	0	0
5	3	0	1	0	0	0	0
7	0	0	0	0	0	0	0
1	1	1	1	0	0	0	0
1	2	0	0	0	0	0	0
3	0	0	0	0	0	0	0
6	1	0	0	0	0	0	0

4	0	1	0	0	0	0	0
4	0	0	0	1	0	0	0
4	2	0	0	0	0	0	0
4	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
4	0	0	0	0	0	1	0
3	1	0	0	0	0	0	0
4	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
3	0	1	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	1
2	0	1	0	0	0	0	0
1	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	1	0	0	0	0	0	0
1	0	0	0	0	0	0	0
1	0	0	0	0	0	0	1
1	0	0	0	0	0	1	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	1	1
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a * \exp(b * x) + c * \exp(d * x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.06332 \quad (0.04515, 0.08148)$$

$$b = -0.2317 \quad (-0.2747, -0.1886)$$

$$c = 0.0007068 \quad (-0.001021, 0.002434)$$

$$d = -0.0286 \quad (-0.09482, 0.03763)$$

goftotal =

sse: 5.4560e-008

rsquare: 0.9992

dfc: 4

adjrsquare: 0.9986

rmse: 1.1679e-004

ctotal =

General model Exp1:

$$ctotal(x) = a * \exp(b * x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.007901 \text{ } (-0.00224, 0.01804)$$

$$b = -0.09731 \text{ } (-0.1574, -0.0372)$$

goftotal =

$$\text{sse: } 3.4198\text{e-}008$$

$$\text{rsquare: } 9.7168\text{e-}001$$

$$\text{dfe: } 3$$

$$\text{adjrsquare: } 9.6224\text{e-}001$$

$$\text{rmse: } 1.0677\text{e-}004$$

Event 27	Date	Time*	Location*	Summing interval*				
	8-Nov-00	2328	N10W75	Nov 8 2300 to nov 13 1700				
Oxygen	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2	1.104E-03	4.390E-03	6.452E-03	5.426E-03	4.968E-03	3.216E-03	9.906E-04	1.002E-04
3	5.358E-02	4.992E-02	3.688E-02	4.020E-02	2.076E-02	1.195E-02	2.734E-03	2.156E-04
4	6.699E-02	8.477E-02	6.327E-02	4.753E-02	3.142E-02	1.722E-02	3.970E-03	1.817E-04
5	9.360E-02	1.435E-01	1.088E-01	8.538E-02	4.391E-02	2.375E-02	6.379E-03	5.681E-04
6	1.608E-01	1.659E-01	1.106E-01	1.025E-01	4.984E-02	2.423E-02	5.808E-03	5.656E-04
7	1.681E-01	2.205E-01	1.291E-01	1.149E-01	6.090E-02	2.950E-02	6.417E-03	8.266E-04
8	1.686E-01	2.059E-01	1.735E-01	1.154E-01	5.581E-02	2.514E-02	5.240E-03	5.605E-04
9	2.223E-01	2.426E-01	1.261E-01	1.088E-01	4.922E-02	2.578E-02	4.653E-03	7.294E-04
10	2.445E-01	2.151E-01	1.421E-01	1.153E-01	5.113E-02	2.058E-02	4.945E-03	7.175E-05
11	2.801E-01	2.631E-01	1.535E-01	1.227E-01	4.734E-02	2.084E-02	4.860E-03	3.214E-04
12	2.870E-01	2.437E-01	1.642E-01	1.039E-01	4.865E-02	2.168E-02	3.653E-03	2.165E-04
13	3.096E-01	2.936E-01	1.448E-01	1.090E-01	4.697E-02	1.931E-02	3.850E-03	2.194E-04
14	3.477E-01	2.585E-01	1.999E-01	1.134E-01	4.010E-02	1.877E-02	3.406E-03	7.776E-05

15	2.722E-01	2.967E-01	1.654E-01	9.856E-02	3.814E-02	1.430E-02	3.085E-03	1.107E-04
16	3.294E-01	2.795E-01	2.071E-01	7.851E-02	2.826E-02	1.174E-02	1.890E-03	3.525E-04
17	4.072E-01	2.195E-01	8.801E-02	4.891E-02	1.946E-02	7.560E-03	1.545E-03	9.201E-05
18	3.960E-01	2.037E-01	1.023E-01	4.074E-02	1.294E-02	5.730E-03	1.265E-03	5.346E-05
19	2.987E-01	1.693E-01	8.865E-02	3.782E-02	1.580E-02	4.196E-03	8.816E-04	0.000E+00
20	3.201E-01	1.603E-01	8.431E-02	3.634E-02	1.379E-02	5.000E-03	1.089E-03	0.000E+00
21	2.790E-01	1.604E-01	7.806E-02	3.345E-02	1.355E-02	4.383E-03	7.778E-04	3.599E-05
22	2.420E-01	1.265E-01	7.042E-02	2.804E-02	1.062E-02	4.141E-03	5.356E-04	4.005E-05
23	2.188E-01	9.560E-02	4.510E-02	2.405E-02	8.257E-03	3.517E-03	5.733E-04	2.240E-05
24	1.743E-01	9.597E-02	3.921E-02	2.318E-02	7.098E-03	3.466E-03	5.862E-04	3.039E-05
25	1.478E-01	7.423E-02	3.377E-02	1.876E-02	7.509E-03	2.901E-03	5.301E-04	2.233E-05
26	1.322E-01	5.806E-02	2.901E-02	1.666E-02	6.209E-03	2.257E-03	3.462E-04	4.749E-06
27	8.009E-02	4.520E-02	3.710E-02	1.470E-02	5.503E-03	1.713E-03	2.915E-04	1.981E-05
28	7.562E-02	4.019E-02	2.263E-02	1.293E-02	4.956E-03	2.023E-03	3.675E-04	4.901E-06
29	1.122E-01	3.577E-02	3.618E-02	1.255E-02	4.944E-03	1.822E-03	2.963E-04	1.890E-05
30	6.291E-02	4.196E-02	1.308E-02	1.145E-02	4.220E-03	1.348E-03	2.811E-04	2.437E-05
31	7.475E-02	4.180E-02	1.144E-02	1.096E-02	4.199E-03	1.277E-03	2.984E-04	1.371E-05
32	4.452E-02	1.691E-02	7.830E-03	6.634E-03	2.513E-03	8.835E-04	1.485E-04	4.659E-06
33	3.088E-02	1.663E-02	7.440E-03	4.931E-03	1.619E-03	6.364E-04	8.438E-05	0.000E+00
34	2.152E-02	1.234E-02	6.937E-03	3.517E-03	1.253E-03	4.507E-04	5.461E-05	0.000E+00
35	2.958E-02	1.614E-02	8.637E-03	3.993E-03	1.412E-03	4.453E-04	8.960E-05	0.000E+00
36	2.874E-02	1.415E-02	7.402E-03	4.185E-03	1.742E-03	5.230E-04	9.339E-05	4.184E-06
37	2.574E-02	1.378E-02	7.396E-03	4.074E-03	1.458E-03	4.726E-04	4.438E-05	4.170E-06
38	2.586E-02	1.295E-02	7.892E-03	3.828E-03	1.309E-03	4.122E-04	5.148E-05	0.000E+00
39	2.192E-02	1.152E-02	5.771E-03	3.590E-03	1.173E-03	4.144E-04	6.847E-05	0.000E+00
40	2.023E-02	1.072E-02	6.085E-03	3.150E-03	1.130E-03	3.504E-04	5.421E-05	4.389E-06
41	1.967E-02	1.061E-02	5.652E-03	3.332E-03	1.233E-03	3.073E-04	5.796E-05	0.000E+00
42	1.996E-02	1.046E-02	5.953E-03	2.872E-03	1.179E-03	2.754E-04	5.718E-05	0.000E+00
43	1.647E-02	1.002E-02	4.806E-03	3.258E-03	1.040E-03	4.047E-04	5.046E-05	0.000E+00
44	1.618E-02	9.336E-03	4.774E-03	3.304E-03	1.225E-03	3.713E-04	7.758E-05	4.116E-06
45	1.419E-02	9.382E-03	5.528E-03	3.287E-03	1.081E-03	3.636E-04	3.720E-05	0.000E+00
46	1.383E-02	8.707E-03	5.471E-03	2.922E-03	1.035E-03	2.541E-04	9.865E-06	0.000E+00
47	1.202E-02	7.197E-03	4.079E-03	2.326E-03	9.282E-04	2.267E-04	3.356E-05	8.440E-06
48	1.111E-02	7.325E-03	4.116E-03	2.482E-03	8.787E-04	1.953E-04	1.021E-05	0.000E+00
49	1.170E-02	6.860E-03	4.372E-03	2.009E-03	7.577E-04	2.919E-04	3.001E-05	0.000E+00
50	1.116E-02	6.579E-03	3.871E-03	2.416E-03	7.210E-04	4.045E-04	3.652E-05	0.000E+00
51	9.869E-03	5.463E-03	3.699E-03	1.923E-03	7.154E-04	2.397E-04	2.689E-05	0.000E+00
52	9.226E-03	5.590E-03	3.586E-03	2.099E-03	7.103E-04	1.741E-04	1.689E-05	0.000E+00
53	9.035E-03	5.420E-03	3.575E-03	2.134E-03	5.920E-04	1.880E-04	3.355E-05	0.000E+00
54	6.612E-03	3.540E-03	2.561E-03	1.248E-03	4.299E-04	1.730E-04	9.934E-06	0.000E+00

55	4.968E-03	3.091E-03	2.326E-03	1.073E-03	4.516E-04	1.347E-04	1.031E-05	0.000E+00
56	3.249E-03	2.141E-03	1.173E-03	7.841E-04	3.472E-04	9.604E-05	2.302E-05	0.000E+00
57	1.945E-03	1.132E-03	7.470E-04	4.605E-04	1.369E-04	3.646E-05	0.000E+00	0.000E+00
58	8.129E-04	6.595E-04	5.370E-04	2.266E-04	6.743E-05	2.769E-05	0.000E+00	0.000E+00
59	3.907E-04	2.771E-04	2.732E-04	1.089E-04	8.052E-05	1.482E-05	3.223E-06	0.000E+00
60	5.091E-04	2.427E-04	1.274E-04	1.564E-04	3.125E-05	7.629E-06	3.220E-06	0.000E+00
61	3.628E-04	2.403E-04	2.002E-04	1.834E-04	4.877E-05	1.482E-05	0.000E+00	0.000E+00
62	4.868E-04	2.794E-04	1.546E-04	8.335E-05	6.441E-05	7.629E-06	0.000E+00	0.000E+00
63	5.010E-04	2.830E-04	2.246E-04	1.536E-04	7.270E-05	0.000E+00	6.638E-06	0.000E+00
64	7.842E-04	3.808E-04	3.293E-04	2.523E-04	4.051E-05	7.193E-06	6.443E-06	0.000E+00
65	8.330E-04	5.591E-04	4.007E-04	2.661E-04	8.932E-05	1.483E-05	0.000E+00	0.000E+00
66	7.368E-04	5.016E-04	4.022E-04	1.966E-04	1.059E-04	2.246E-05	0.000E+00	0.000E+00
67	4.591E-04	5.661E-04	4.007E-04	1.785E-04	1.049E-04	0.000E+00	0.000E+00	0.000E+00
68	9.670E-04	5.051E-04	4.022E-04	2.267E-04	4.051E-05	7.636E-06	3.418E-06	0.000E+00
69	7.144E-04	5.602E-04	3.293E-04	2.413E-04	6.491E-05	2.202E-05	0.000E+00	0.000E+00
70	8.025E-04	8.262E-04	3.551E-04	2.662E-04	1.045E-04	5.169E-05	6.639E-06	0.000E+00
71	7.158E-04	6.029E-04	3.705E-04	3.130E-04	9.665E-05	0.000E+00	3.418E-06	0.000E+00
72	7.565E-04	4.247E-04	3.720E-04	2.392E-04	1.284E-04	3.686E-05	0.000E+00	0.000E+00
73	8.512E-04	5.590E-04	4.766E-04	1.586E-04	6.347E-05	1.439E-05	3.419E-06	0.000E+00
74	6.800E-04	4.145E-04	1.629E-04	2.908E-04	5.239E-05	4.152E-05	3.007E-06	0.000E+00
75	6.406E-04	4.856E-04	1.989E-04	2.047E-04	7.368E-05	2.202E-05	0.000E+00	0.000E+00
76	7.842E-04	5.406E-04	2.748E-04	1.565E-04	6.443E-05	1.483E-05	0.000E+00	0.000E+00
77	6.656E-04	3.221E-04	2.033E-04	1.206E-04	8.977E-05	7.193E-06	6.639E-06	0.000E+00
78	6.907E-04	4.637E-04	1.517E-04	1.309E-04	7.177E-05	1.483E-05	0.000E+00	0.000E+00
79	6.852E-04	3.819E-04	2.961E-04	1.192E-04	5.566E-05	2.921E-05	3.221E-06	0.000E+00
80	7.774E-04	3.186E-04	4.537E-04	2.654E-04	6.491E-05	7.193E-06	0.000E+00	0.000E+00
81	5.471E-04	3.795E-04	2.762E-04	1.440E-04	6.443E-05	2.291E-05	3.221E-06	0.000E+00
82	7.313E-04	4.198E-04	2.518E-04	2.799E-04	6.489E-05	7.193E-06	3.418E-06	0.000E+00
83	6.196E-04	4.636E-04	1.988E-04	1.813E-04	8.005E-05	1.526E-05	0.000E+00	0.000E+00
84	6.405E-04	5.406E-04	4.794E-04	2.047E-04	5.518E-05	1.482E-05	0.000E+00	0.000E+00
85	7.408E-04	6.223E-04	2.777E-04	2.398E-04	4.784E-05	3.729E-05	0.000E+00	0.000E+00
86	6.601E-04	5.880E-04	2.777E-04	1.806E-04	6.347E-05	0.000E+00	3.221E-06	0.000E+00
87	6.947E-04	3.659E-04	2.018E-04	9.792E-05	4.145E-05	1.483E-05	3.418E-06	0.000E+00
88	8.106E-04	3.429E-04	4.493E-04	1.199E-04	2.440E-05	2.202E-05	3.418E-06	0.000E+00
89	7.089E-04	5.370E-04	2.761E-04	1.461E-04	7.223E-05	2.203E-05	3.418E-06	0.000E+00
90	5.207E-04	3.609E-04	2.110E-04	2.026E-04	5.923E-05	7.127E-06	3.190E-06	0.000E+00
91	6.418E-04	3.428E-04	1.487E-04	1.309E-04	2.392E-05	2.201E-05	3.417E-06	0.000E+00
92	5.775E-04	2.830E-04	2.989E-04	8.405E-05	1.657E-05	1.482E-05	0.000E+00	0.000E+00
93	4.144E-04	3.049E-04	2.732E-04	1.213E-04	5.756E-05	1.526E-05	0.000E+00	0.000E+00
94	2.985E-04	3.001E-04	1.244E-04	6.064E-05	8.004E-05	2.921E-05	0.000E+00	0.000E+00

95	4.143E-04	2.013E-04	1.502E-04	8.546E-05	1.610E-05	0.000E+00	0.000E+00	0.000E+00
96	2.971E-04	2.622E-04	1.760E-04	7.164E-05	1.563E-05	0.000E+00	3.220E-06	0.000E+00
97	3.459E-04	3.196E-04	1.531E-04	1.089E-04	3.268E-05	7.629E-06	0.000E+00	0.000E+00
98	2.274E-04	2.415E-04	5.006E-05	7.234E-05	4.049E-05	0.000E+00	3.416E-06	0.000E+00
99	3.737E-04	1.793E-04	1.988E-04	7.306E-05	1.610E-05	0.000E+00	0.000E+00	0.000E+00
100	3.655E-04	1.207E-04	1.988E-04	4.752E-05	4.001E-05	7.629E-06	0.000E+00	4.269E-06
101	3.418E-04	2.770E-04	5.006E-05	5.993E-05	0.000E+00	7.193E-06	3.416E-06	0.000E+00
102	4.142E-04	2.196E-04	1.001E-04	7.448E-05	4.001E-05	7.629E-06	3.416E-06	0.000E+00
103	2.315E-04	3.013E-04	1.016E-04	8.404E-05	2.391E-05	0.000E+00	0.000E+00	0.000E+00
104	2.762E-04	1.586E-04	7.584E-05	6.064E-05	7.814E-06	0.000E+00	3.220E-06	0.000E+00
105	2.985E-04	3.244E-04	1.487E-04	8.263E-05	1.610E-05	0.000E+00	0.000E+00	0.000E+00
106	2.811E-04	2.425E-04	7.216E-05	7.777E-05	7.733E-06	7.120E-06	0.000E+00	0.000E+00
107	2.301E-04	2.208E-04	7.584E-05	8.547E-05	2.390E-05	1.439E-05	0.000E+00	0.000E+00
108	3.918E-04	1.562E-04	2.577E-05	5.992E-05	1.657E-05	7.193E-06	0.000E+00	0.000E+00
109	2.078E-04	1.598E-04	9.863E-05	7.163E-05	1.609E-05	7.193E-06	0.000E+00	0.000E+00
110	2.930E-04	1.402E-04	7.583E-05	2.483E-05	2.391E-05	7.193E-06	0.000E+00	0.000E+00
111	2.233E-04	1.012E-04	7.435E-05	2.411E-05	7.807E-06	1.526E-05	0.000E+00	0.000E+00
112	3.431E-04	1.622E-04	4.857E-05	4.894E-05	1.609E-05	7.629E-06	0.000E+00	0.000E+00
113	1.868E-04	2.622E-04	1.502E-04	3.651E-05	3.999E-05	0.000E+00	0.000E+00	0.000E+00
114	1.888E-04	2.584E-04	4.046E-05	5.057E-05	8.286E-06	0.000E+00	0.000E+00	0.000E+00
115	2.778E-04	1.401E-04	1.032E-04	4.988E-05	1.102E-05	1.849E-06	8.277E-07	0.000E+00

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2	2.944E-03	8.561E-04	4.796E-04	8.136E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
3	1.204E-02	4.506E-03	1.729E-03	1.457E-04	1.484E-05	0.000E+00	0.000E+00	0.000E+00
4	1.481E-02	4.345E-03	6.306E-04	1.889E-04	2.429E-05	0.000E+00	0.000E+00	0.000E+00
5	2.149E-02	5.260E-03	2.596E-03	2.682E-04	0.000E+00	3.206E-05	0.000E+00	0.000E+00
6	2.029E-02	2.947E-03	1.904E-03	1.315E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00
7	2.252E-02	6.495E-03	0.000E+00	8.482E-04	4.210E-05	0.000E+00	0.000E+00	0.000E+00
8	2.277E-02	8.855E-03	0.000E+00	3.751E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00
9	9.545E-03	5.863E-03	0.000E+00	1.977E-04	3.944E-05	0.000E+00	0.000E+00	0.000E+00
10	2.375E-02	7.872E-03	0.000E+00	1.396E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00
11	2.437E-02	3.642E-03	2.831E-03	6.076E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
12	2.408E-02	4.741E-03	0.000E+00	7.350E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
13	1.016E-02	2.674E-03	0.000E+00	0.000E+00	4.176E-05	0.000E+00	0.000E+00	0.000E+00

14	3.997E-03	6.989E-03	3.312E-03	1.848E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00
15	6.154E-03	2.556E-03	0.000E+00	1.785E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00
16	1.309E-02	0.000E+00	0.000E+00	5.351E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
17	5.139E-03	2.426E-03	0.000E+00	4.366E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
18	1.154E-02	7.471E-04	0.000E+00	1.852E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00
19	8.243E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
20	3.057E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
21	5.925E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.578E-05	0.000E+00	0.000E+00
22	1.792E-03	0.000E+00	0.000E+00	5.391E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
23	2.117E-03	0.000E+00	3.261E-04	1.786E-05	1.129E-05	0.000E+00	0.000E+00	0.000E+00
24	1.063E-03	8.791E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
25	1.209E-03	7.684E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
26	3.838E-04	1.118E-03	0.000E+00	5.089E-05	5.483E-06	0.000E+00	0.000E+00	0.000E+00
27	5.908E-03	1.760E-04	0.000E+00	0.000E+00	1.171E-05	0.000E+00	0.000E+00	0.000E+00
28	3.015E-04	7.111E-04	0.000E+00	4.312E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
29	3.436E-04	7.983E-05	0.000E+00	8.021E-06	5.338E-06	0.000E+00	0.000E+00	0.000E+00
30	2.975E-03	5.461E-04	0.000E+00	1.556E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
31	2.230E-03	3.365E-04	0.000E+00	7.629E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
32	1.922E-04	1.331E-05	2.142E-04	2.017E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
33	2.448E-04	1.121E-05	3.681E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
34	2.608E-04	0.000E+00	1.355E-05	0.000E+00	4.553E-06	0.000E+00	0.000E+00	0.000E+00
35	6.405E-04	1.374E-04	1.514E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
36	1.840E-04	3.528E-05	6.981E-05	6.628E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
37	2.941E-04	1.167E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
38	3.356E-04	6.034E-05	1.428E-05	6.524E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
39	2.911E-04	4.621E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
40	2.006E-04	3.324E-05	1.422E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
41	1.790E-04	5.548E-05	1.366E-05	6.414E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
42	1.781E-04	5.197E-05	0.000E+00	5.971E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
43	2.927E-04	5.674E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
44	1.906E-04	2.289E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
45	2.822E-04	4.386E-05	1.412E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
46	1.782E-04	6.595E-05	1.413E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
47	1.986E-04	2.281E-05	0.000E+00	6.733E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
48	1.363E-04	2.209E-05	1.404E-05	6.339E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
49	9.831E-05	2.207E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
50	1.214E-04	1.071E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
51	1.215E-04	4.539E-05	1.401E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
52	1.217E-04	3.203E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
53	1.348E-04	6.726E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

94	1.239E-05	1.056E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
95	1.168E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
96	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
97	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
98	1.239E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
99	2.407E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
100	1.239E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.691E-06	0.000E+00
101	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
102	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
103	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
104	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
105	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
106	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
107	1.168E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
108	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
109	1.239E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
110	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
111	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
112	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
113	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
114	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
115	2.915E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	0	0	0	0	0	0	0
8	51	58	227	325	263	213	18
102	162	89	549	538	404	219	15
87	160	93	442	523	371	210	8
78	143	83	571	539	347	244	17
90	140	78	577	508	326	193	15
82	158	61	536	481	354	186	19
98	143	86	600	491	313	159	14
112	156	61	582	481	315	152	19
117	133	68	574	481	269	156	2
117	154	63	635	483	276	156	8
132	144	68	597	471	279	123	6
120	146	57	576	446	241	127	6
126	128	64	571	405	224	107	2

106	150	57	536	382	196	103	3
125	138	58	460	297	159	65	10
164	113	35	412	277	136	67	3
145	108	37	354	220	107	58	2
135	98	38	354	241	88	41	0
167	96	36	366	227	113	55	0
148	110	39	402	266	122	50	2
148	95	42	487	306	147	45	3
146	93	34	535	343	166	63	2
146	92	29	585	333	186	74	3
143	80	33	632	391	202	79	3
163	99	29	928	529	258	89	1
146	96	55	851	483	193	74	4
195	90	36	793	463	229	93	1
189	127	42	780	474	212	78	4
209	154	39	742	429	159	74	5
231	142	31	725	424	152	80	3
448	481	171	488	279	110	42	1
634	662	238	387	190	82	24	0
727	582	263	282	151	59	16	0
643	704	302	316	167	58	26	0
773	638	268	331	206	68	27	1
663	626	269	324	173	61	13	1
685	584	285	304	156	54	15	0
768	548	220	288	141	54	20	0
729	515	234	254	136	46	16	1
743	507	217	268	149	40	17	0
817	542	248	250	154	39	18	0
665	486	187	265	126	53	15	0
654	454	187	269	149	49	23	1
582	456	216	266	132	48	11	0
574	424	215	237	126	34	3	0
509	351	160	190	113	30	10	2
472	359	162	203	108	26	3	0
498	336	172	164	92	39	9	0
475	323	153	198	89	54	11	0
422	268	146	157	88	32	8	0
396	274	142	172	87	23	5	0
387	266	141	175	73	25	10	0
285	174	101	103	53	23	3	0

215	152	93	89	56	18	3	0
141	106	47	65	43	13	7	0
84	56	30	38	17	5	0	0
38	35	23	20	9	4	0	0
17	14	11	9	10	2	1	0
22	12	5	13	4	1	1	0
16	12	8	15	6	2	0	0
21	14	6	7	8	1	0	0
22	14	9	13	9	0	2	0
34	19	13	21	5	1	2	0
36	28	16	22	11	2	0	0
32	25	16	16	13	3	0	0
20	28	16	15	13	0	0	0
42	25	16	19	5	1	1	0
31	28	13	20	8	3	0	0
35	41	14	22	13	7	2	0
31	30	15	26	12	0	1	0
33	21	15	20	16	5	0	0
37	28	19	13	8	2	1	0
32	22	7	26	7	6	1	0
28	24	8	17	9	3	0	0
34	27	11	13	8	2	0	0
29	16	8	10	11	1	2	0
30	23	6	11	9	2	0	0
30	19	12	10	7	4	1	0
34	16	18	22	8	1	0	0
24	19	11	12	8	3	1	0
32	21	10	23	8	1	1	0
27	23	8	15	10	2	0	0
28	27	19	17	7	2	0	0
32	31	11	20	6	5	0	0
29	29	11	15	8	0	1	0
30	18	8	8	5	2	1	0
35	17	18	10	3	3	1	0
31	27	11	12	9	3	1	0
24	19	9	18	8	1	1	0
28	17	6	11	3	3	1	0
25	14	12	7	2	2	0	0
18	15	11	10	7	2	0	0
13	15	5	5	10	4	0	0

18	10	6	7	2	0	0	0
13	13	7	6	2	0	1	0
15	16	6	9	4	1	0	0
10	12	2	6	5	0	1	0
16	9	8	6	2	0	0	0
16	6	8	4	5	1	0	1
15	14	2	5	0	1	1	0
18	11	4	6	5	1	1	0
10	15	4	7	3	0	0	0
12	8	3	5	1	0	1	0
13	16	6	7	2	0	0	0
13	13	3	7	1	1	0	0
10	11	3	7	3	2	0	0
17	8	1	5	2	1	0	0
9	8	4	6	2	1	0	0
13	7	3	2	3	1	0	0
10	5	3	2	1	2	0	0
15	8	2	4	2	1	0	0
8	13	6	3	5	0	0	0
13	16	4	5	1	0	0	0
97	56	33	33	11	2	2	0

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	0	0	0	0	0	0	0
36	22	11	7	0	0	0	0
55	25	8	6	1	0	0	0
40	16	3	5	1	0	0	0
31	10	3	5	0	1	0	0
36	4	2	2	0	0	0	0
26	9	0	7	1	0	0	0
27	11	0	6	0	0	0	0
12	7	0	3	1	0	0	0
19	6	0	2	0	0	0	0
20	5	1	1	0	0	0	0
28	6	0	1	0	0	0	0
11	2	0	0	1	0	0	0
4	6	1	3	0	0	0	0
6	3	0	3	0	0	0	0

6	0	0	1	0	0	0	0
6	3	0	1	0	0	0	0
3	1	0	4	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
1	0	0	0	0	1	0	0
4	0	0	2	0	0	0	0
5	0	1	1	1	0	0	0
2	2	0	0	0	0	0	0
3	2	0	0	0	0	0	0
4	2	0	6	1	0	0	0
7	3	0	0	2	0	0	0
3	3	0	3	0	0	0	0
5	2	0	1	1	0	0	0
6	3	0	2	0	0	0	0
9	5	0	1	0	0	0	0
6	1	1	3	0	0	0	0
12	1	2	0	0	0	0	0
16	0	1	0	1	0	0	0
25	11	1	0	0	0	0	0
9	3	5	1	0	0	0	0
14	10	0	0	0	0	0	0
16	5	1	1	0	0	0	0
19	4	0	0	0	0	0	0
14	3	1	0	0	0	0	0
13	5	1	1	0	0	0	0
14	5	0	1	0	0	0	0
23	5	0	0	0	0	0	0
15	2	0	0	0	0	0	0
22	4	1	0	0	0	0	0
14	6	1	0	0	0	0	0
16	2	0	1	0	0	0	0
11	2	1	1	0	0	0	0
8	2	0	0	0	0	0	0
10	1	0	0	0	0	0	0
10	4	1	0	0	0	0	0
10	3	0	0	0	0	0	0
11	6	0	0	0	0	0	0
12	2	1	0	0	0	0	0
5	3	0	0	0	0	0	0

8	2	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
1	1	0	0	0	0	0	0
0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
0	1	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	1	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	1	0	0	0	0	0	0
0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
0	2	0	0	0	0	0	0
1	1	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	2	0	0	0	0	0	0
2	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	1	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	1	0	0	0	0	0	0
1	0	0	0	0	0	0	0

0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
1	0	0	0	0	0	1	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a * \exp(b * x) + c * \exp(d * x)$$

Coefficients (with 95% confidence bounds):

$$a = 2.277e+005 \quad (-1.121e+016, 1.121e+016)$$

$$b = -0.09306 \quad (-2.523e+004, 2.523e+004)$$

$$c = -2.277e+005 \quad (-1.121e+016, 1.121e+016)$$

$$d = -0.09306 \quad (-2.523e+004, 2.523e+004)$$

goftotal =

sse: 2.3581e-001

rsquare: 9.9206e-001

dfe: 4

adjrsquare: 9.8610e-001

rmse: 2.4280e-001

ctotal =

General model Exp1:

$$ctotal(x) = a * \exp(b * x)$$

Coefficients (with 95% confidence bounds):

a = 14.3 (9.533, 19.07)

b = -0.1122 (-0.1282, -0.09622)

goftotal =

sse: 0.0032

rsquare: 0.9983

dfe: 3

adjrsquare: 0.9978

rmse: 0.0329

Event28/29	Date	Time*	Location*	Summing interval*				
	25-Nov-00	0131	N07 E50	Nov 24to Nov 29 0800				
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed φ	Listed φ	Listed φ	Listed φ	Listed φ	Listed φ	Listed φ	Listed φ
1	6.765E-05	4.000E-05	1.956E-05	1.445E-05	2.133E-06	3.873E-06	0.000E+00	5.669E-07
2	1.050E-04	7.588E-05	2.700E-05	1.456E-05	6.553E-06	3.970E-06	4.300E-07	5.442E-07
3	1.323E-04	6.217E-05	4.886E-05	2.038E-05	5.105E-06	4.844E-06	8.836E-07	0.000E+00
4	1.394E-04	5.487E-05	6.057E-05	2.023E-05	6.826E-06	5.203E-06	1.870E-06	0.000E+00
5	2.813E-04	1.526E-04	9.897E-05	6.030E-05	1.698E-05	9.636E-06	4.430E-06	0.000E+00
6	4.074E-04	1.709E-04	9.717E-05	5.535E-05	1.376E-05	1.014E-05	3.955E-06	0.000E+00
7	5.925E-04	2.349E-04	1.365E-04	6.761E-05	2.431E-05	1.359E-05	1.161E-06	0.000E+00
8	4.394E-04	2.567E-04	1.231E-04	5.291E-05	1.668E-05	4.750E-06	1.056E-06	0.000E+00
9	4.012E-04	1.752E-04	1.053E-04	3.247E-05	1.351E-05	6.687E-06	2.041E-06	1.248E-06
10	2.914E-04	1.686E-04	8.937E-05	4.161E-05	1.926E-05	7.839E-06	2.501E-06	6.272E-07
11	3.348E-04	1.224E-04	4.323E-05	3.452E-05	1.386E-05	1.104E-06	9.676E-07	0.000E+00
12	2.384E-04	9.875E-05	1.786E-05	3.103E-05	4.660E-06	2.146E-06	9.342E-07	0.000E+00
13	2.841E-04	9.710E-05	6.288E-05	1.680E-05	7.890E-06	1.092E-06	9.507E-07	5.969E-07
14	2.301E-04	1.061E-04	5.233E-05	3.914E-05	6.860E-06	2.066E-06	9.514E-07	1.156E-06

15	2.658E-04	7.814E-05	4.187E-05	2.663E-05	3.306E-06	3.042E-06	8.904E-07	0.000E+00
16	2.065E-04	1.029E-04	4.878E-05	1.977E-05	4.522E-06	3.095E-06	4.682E-07	5.549E-07
17	2.446E-04	9.694E-05	3.394E-05	1.350E-05	7.720E-06	2.012E-06	1.317E-06	5.831E-07
18	1.998E-04	8.491E-05	5.488E-05	1.460E-05	4.381E-06	1.039E-06	0.000E+00	1.127E-06
19	2.118E-04	1.035E-04	3.427E-05	1.208E-05	4.997E-06	8.428E-06	8.625E-07	0.000E+00
20	2.138E-04	8.439E-05	4.372E-05	2.093E-05	4.349E-06	2.002E-06	4.604E-07	1.152E-06
21	2.213E-04	1.251E-04	5.422E-05	2.910E-05	6.519E-06	4.006E-06	0.000E+00	0.000E+00
22	2.612E-04	1.056E-04	6.137E-05	1.323E-05	5.459E-06	1.024E-06	0.000E+00	0.000E+00
23	2.795E-04	1.216E-04	5.699E-05	3.709E-05	1.408E-05	1.024E-06	4.590E-07	0.000E+00
24	2.594E-04	1.172E-04	6.053E-05	2.427E-05	5.419E-06	2.042E-06	0.000E+00	0.000E+00
25	2.496E-04	1.514E-04	6.393E-05	5.185E-05	7.543E-06	2.955E-06	8.624E-07	0.000E+00
26	3.778E-04	1.694E-04	7.701E-05	3.387E-05	1.290E-05	1.923E-06	0.000E+00	0.000E+00
27	3.407E-04	1.720E-04	8.939E-05	3.350E-05	1.485E-05	4.840E-06	4.541E-07	5.338E-07
28	3.784E-04	1.783E-04	9.144E-05	3.739E-05	7.676E-06	5.931E-06	1.320E-06	0.000E+00
29	4.490E-04	2.292E-04	1.183E-04	5.377E-05	1.217E-05	6.016E-06	4.336E-07	5.418E-07
30	5.560E-04	2.140E-04	1.258E-04	5.424E-05	1.736E-05	3.976E-06	8.752E-07	0.000E+00
31	6.373E-04	2.455E-04	1.371E-04	5.560E-05	1.183E-05	5.980E-06	8.700E-07	0.000E+00
32	5.391E-04	2.633E-04	1.248E-04	6.837E-05	2.145E-05	4.907E-06	4.346E-07	0.000E+00
33	5.720E-04	2.554E-04	1.295E-04	4.270E-05	1.851E-05	8.074E-06	4.611E-07	5.777E-07
34	6.854E-04	2.552E-04	1.191E-04	4.071E-05	1.435E-05	9.090E-06	0.000E+00	1.121E-06
35	6.190E-04	2.790E-04	1.168E-04	8.744E-05	2.112E-05	6.783E-06	1.696E-06	0.000E+00
36	8.364E-04	3.330E-04	1.680E-04	1.016E-04	3.204E-05	1.549E-05	1.355E-06	0.000E+00
37	8.735E-04	3.882E-04	2.202E-04	1.015E-04	4.960E-05	1.466E-05	4.835E-06	5.831E-07
38	9.287E-04	4.486E-04	2.950E-04	1.477E-04	4.417E-05	1.645E-05	2.921E-06	5.954E-07
39	8.931E-04	4.490E-04	2.679E-04	1.173E-04	4.905E-05	9.897E-06	3.401E-06	0.000E+00
40	1.064E-03	4.927E-04	3.317E-04	1.710E-04	6.933E-05	3.228E-05	5.418E-06	1.244E-06
41	1.379E-03	9.169E-04	5.926E-04	2.847E-04	1.248E-04	3.433E-05	4.910E-06	1.248E-06
42	2.601E-03	1.407E-03	1.001E-03	4.586E-04	1.650E-04	5.596E-05	5.452E-06	0.000E+00
43	2.728E-03	1.594E-03	8.501E-04	4.924E-04	1.629E-04	4.919E-05	8.487E-06	6.418E-07
44	2.856E-03	1.671E-03	8.747E-04	4.977E-04	1.586E-04	4.518E-05	7.524E-06	1.960E-06
45	1.977E-03	9.620E-04	5.693E-04	2.856E-04	1.018E-04	3.334E-05	3.509E-06	1.246E-06
46	2.077E-03	1.036E-03	5.662E-04	2.831E-04	1.012E-04	3.733E-05	2.971E-06	6.256E-07
47	3.443E-03	2.048E-03	1.148E-03	5.555E-04	1.725E-04	6.238E-05	1.190E-05	1.516E-06
48	6.135E-03	3.076E-03	1.524E-03	7.941E-04	2.533E-04	9.206E-05	1.923E-05	0.000E+00
49	5.450E-03	2.797E-03	1.429E-03	6.964E-04	2.705E-04	8.165E-05	2.073E-05	4.377E-06
50	6.095E-03	3.185E-03	1.695E-03	7.912E-04	2.878E-04	1.154E-04	2.606E-05	1.880E-06
51	8.253E-03	4.258E-03	2.408E-03	1.181E-03	5.313E-04	1.452E-04	3.718E-05	2.872E-06
52	8.153E-03	4.527E-03	2.668E-03	1.323E-03	4.883E-04	1.507E-04	3.935E-05	3.041E-06
53	6.183E-03	3.437E-03	1.898E-03	1.027E-03	3.610E-04	1.425E-04	2.306E-05	0.000E+00
54	8.085E-03	4.511E-03	2.537E-03	1.313E-03	4.930E-04	1.542E-04	2.857E-05	3.516E-06

55	1.489E-02	8.289E-03	4.665E-03	2.103E-03	6.034E-04	2.091E-04	3.204E-05	4.429E-06
56	1.076E-02	5.069E-03	2.704E-03	1.273E-03	3.382E-04	8.979E-05	1.384E-05	1.136E-06
57	7.618E-03	4.107E-03	1.917E-03	8.990E-04	2.970E-04	8.588E-05	8.541E-06	3.079E-06
58	5.207E-03	2.655E-03	1.411E-03	6.569E-04	2.107E-04	5.940E-05	1.299E-05	1.731E-06
59	6.121E-03	3.033E-03	1.809E-03	6.998E-04	2.167E-04	7.379E-05	1.157E-05	1.945E-06
60	7.062E-03	3.199E-03	1.480E-03	7.147E-04	2.029E-04	4.310E-05	1.202E-05	0.000E+00
61	6.112E-03	2.755E-03	1.507E-03	6.963E-04	1.626E-04	4.810E-05	6.459E-06	0.000E+00
62	5.692E-03	2.597E-03	1.079E-03	5.705E-04	1.514E-04	3.514E-05	4.606E-06	0.000E+00
63	5.119E-03	2.331E-03	1.029E-03	4.177E-04	1.405E-04	3.388E-05	4.648E-06	0.000E+00
64	4.736E-03	2.065E-03	9.387E-04	4.143E-04	1.197E-04	2.123E-05	5.019E-06	0.000E+00
65	4.573E-03	1.922E-03	8.632E-04	4.064E-04	9.159E-05	4.387E-05	2.046E-06	0.000E+00
66	3.683E-03	1.518E-03	8.190E-04	3.255E-04	9.631E-05	3.000E-05	4.542E-06	0.000E+00
67	3.732E-03	1.719E-03	7.660E-04	3.501E-04	9.457E-05	2.552E-05	2.985E-06	7.253E-07
68	3.789E-03	1.595E-03	7.460E-04	3.687E-04	1.238E-04	2.958E-05	3.813E-06	0.000E+00
69	3.797E-03	1.756E-03	8.017E-04	3.393E-04	7.984E-05	2.147E-05	1.916E-06	0.000E+00
70	3.786E-03	1.799E-03	8.214E-04	3.517E-04	1.029E-04	1.636E-05	6.111E-07	0.000E+00
71	4.321E-03	2.110E-03	9.668E-04	4.677E-04	9.567E-05	2.879E-05	1.959E-06	0.000E+00
72	2.579E-03	1.269E-03	6.461E-04	2.697E-04	7.445E-05	1.173E-05	2.874E-06	7.100E-07
73	2.009E-03	9.611E-04	3.773E-04	1.806E-04	6.590E-05	1.500E-05	1.672E-06	0.000E+00
74	2.247E-03	9.133E-04	4.230E-04	1.802E-04	5.333E-05	1.725E-05	2.829E-06	0.000E+00
75	1.884E-03	7.049E-04	4.408E-04	1.785E-04	2.517E-05	1.466E-05	5.357E-07	0.000E+00
76	2.100E-03	9.921E-04	4.789E-04	1.533E-04	7.955E-05	1.003E-05	1.632E-06	0.000E+00
77	1.939E-03	9.421E-04	4.009E-04	1.935E-04	4.288E-05	8.684E-06	5.591E-07	7.021E-07
78	2.016E-03	7.809E-04	4.075E-04	2.085E-04	4.232E-05	1.469E-05	1.053E-06	0.000E+00
79	1.990E-03	8.329E-04	4.098E-04	1.546E-04	4.073E-05	4.959E-06	5.407E-07	7.193E-07
80	2.021E-03	8.829E-04	4.027E-04	1.530E-04	2.855E-05	8.829E-06	1.172E-06	0.000E+00
81	1.954E-03	7.988E-04	3.591E-04	1.441E-04	2.175E-05	6.224E-06	1.697E-06	0.000E+00
82	1.799E-03	8.931E-04	3.095E-04	1.170E-04	2.838E-05	4.961E-06	0.000E+00	0.000E+00
83	1.740E-03	7.548E-04	2.926E-04	1.017E-04	2.905E-05	6.671E-06	5.081E-07	0.000E+00
84	1.703E-03	6.353E-04	2.758E-04	1.220E-04	2.696E-05	4.700E-06	5.412E-07	0.000E+00
85	1.586E-03	7.144E-04	2.260E-04	9.138E-05	2.443E-05	8.084E-06	2.090E-06	0.000E+00
86	1.637E-03	6.575E-04	3.775E-04	1.113E-04	2.305E-05	4.678E-06	5.140E-07	0.000E+00
87	1.486E-03	5.400E-04	2.608E-04	1.037E-04	2.640E-05	0.000E+00	5.289E-07	0.000E+00
88	1.206E-03	4.871E-04	2.067E-04	7.910E-05	1.825E-05	3.459E-06	0.000E+00	0.000E+00
89	1.190E-03	5.069E-04	1.981E-04	8.105E-05	2.046E-05	2.288E-06	9.606E-07	6.397E-07
90	1.015E-03	4.345E-04	1.524E-04	5.670E-05	2.101E-05	1.085E-06	0.000E+00	0.000E+00
91	9.688E-04	3.698E-04	1.588E-04	6.363E-05	1.563E-05	7.701E-06	5.016E-07	0.000E+00
92	8.997E-04	3.672E-04	1.719E-04	6.102E-05	1.294E-05	1.116E-06	1.000E-06	0.000E+00
93	8.411E-04	3.967E-04	1.730E-04	4.105E-05	1.181E-05	3.301E-06	0.000E+00	0.000E+00
94	8.170E-04	3.340E-04	1.252E-04	3.985E-05	8.165E-06	2.062E-06	0.000E+00	0.000E+00

95	7.067E-04	2.684E-04	1.279E-04	3.576E-05	1.144E-05	2.027E-06	9.381E-07	0.000E+00
96	7.029E-04	1.935E-04	9.847E-05	3.417E-05	5.581E-06	1.076E-06	0.000E+00	0.000E+00
97	5.432E-04	2.508E-04	1.104E-04	3.194E-05	5.498E-06	1.001E-06	0.000E+00	0.000E+00
98	5.686E-04	2.651E-04	7.970E-05	3.394E-05	5.534E-06	0.000E+00	0.000E+00	0.000E+00
99	6.458E-04	2.218E-04	1.042E-04	3.113E-05	8.352E-06	0.000E+00	0.000E+00	0.000E+00
100	6.281E-04	2.914E-04	1.368E-04	3.885E-05	9.099E-06	0.000E+00	9.057E-07	5.661E-07
101	6.260E-04	2.860E-04	1.136E-04	4.065E-05	4.571E-06	0.000E+00	0.000E+00	5.621E-07
102	5.132E-04	2.134E-04	9.312E-05	2.479E-05	4.431E-06	2.034E-06	1.358E-06	0.000E+00
103	4.677E-04	1.920E-04	6.781E-05	1.987E-05	7.608E-06	0.000E+00	1.349E-06	0.000E+00
104	3.996E-04	1.272E-04	8.057E-05	1.643E-05	2.243E-06	1.036E-06	4.339E-07	0.000E+00
105	3.429E-04	1.275E-04	4.973E-05	1.937E-05	6.528E-06	0.000E+00	4.540E-07	0.000E+00
106	2.936E-04	1.046E-04	5.597E-05	2.421E-05	4.355E-06	0.000E+00	0.000E+00	0.000E+00
107	3.345E-04	1.459E-04	5.056E-05	2.091E-05	4.257E-06	0.000E+00	0.000E+00	0.000E+00
108	2.606E-04	9.613E-05	5.340E-05	1.282E-05	4.229E-06	2.025E-06	0.000E+00	0.000E+00
109	2.576E-04	9.520E-05	3.035E-05	1.281E-05	3.171E-06	0.000E+00	4.545E-07	0.000E+00
110	1.883E-04	6.062E-05	2.959E-05	4.608E-06	2.119E-06	0.000E+00	0.000E+00	0.000E+00
111	1.923E-04	4.415E-05	9.906E-06	6.211E-06	2.106E-06	0.000E+00	0.000E+00	0.000E+00
112	1.412E-04	8.159E-05	2.972E-05	3.160E-06	2.112E-06	0.000E+00	0.000E+00	0.000E+00
113	1.229E-04	4.388E-05	3.627E-05	7.883E-06	0.000E+00	1.986E-06	0.000E+00	0.000E+00
114	1.436E-04	3.417E-05	1.612E-05	3.036E-06	1.012E-06	0.000E+00	4.428E-07	0.000E+00
115	9.710E-05	4.609E-05	6.051E-06	0.000E+00	2.882E-06	8.660E-07	0.000E+00	0.000E+00

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	6.367E-06	4.265E-06	0.000E+00	8.293E-07	5.499E-07	5.344E-07	2.245E-07	0.000E+00
2	1.305E-05	7.229E-06	7.326E-06	8.900E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
3	1.858E-05	4.255E-06	0.000E+00	1.647E-06	1.100E-06	4.860E-07	2.153E-07	0.000E+00
4	1.895E-05	7.600E-06	6.018E-06	3.656E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
5	4.430E-05	1.296E-05	1.168E-05	3.811E-06	0.000E+00	5.572E-07	0.000E+00	0.000E+00
6	3.204E-05	1.006E-05	3.979E-06	2.953E-06	6.749E-07	1.170E-06	2.671E-07	0.000E+00
7	5.673E-05	2.507E-05	6.584E-06	3.311E-06	2.838E-06	0.000E+00	0.000E+00	0.000E+00
8	4.071E-05	1.675E-05	2.208E-05	2.114E-06	2.015E-06	1.815E-06	0.000E+00	0.000E+00
9	3.241E-05	1.805E-05	2.081E-06	3.824E-06	6.611E-07	1.214E-06	0.000E+00	0.000E+00
10	3.931E-05	1.427E-05	8.079E-06	0.000E+00	6.109E-07	0.000E+00	0.000E+00	0.000E+00
11	2.283E-05	9.407E-06	3.742E-06	1.914E-06	6.026E-07	0.000E+00	0.000E+00	0.000E+00
12	2.549E-05	1.366E-05	1.872E-06	2.700E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
13	2.729E-05	9.363E-06	1.803E-06	8.679E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
14	2.043E-05	1.469E-06	1.814E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
15	1.850E-05	4.561E-06	1.912E-06	0.000E+00	1.183E-06	0.000E+00	0.000E+00	0.000E+00

16	1.533E-05	7.414E-06	0.000E+00	9.143E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
17	2.466E-05	8.818E-06	1.881E-06	1.757E-06	5.685E-07	0.000E+00	0.000E+00	0.000E+00
18	1.149E-05	5.919E-06	1.776E-06	8.493E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
19	1.816E-05	1.406E-06	1.652E-06	1.615E-06	0.000E+00	5.065E-07	0.000E+00	0.000E+00
20	1.821E-05	2.843E-06	0.000E+00	8.936E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
21	1.605E-05	4.445E-06	3.630E-06	1.787E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
22	6.513E-06	5.964E-06	0.000E+00	8.979E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
23	1.312E-05	4.423E-06	0.000E+00	8.893E-07	5.932E-07	5.091E-07	0.000E+00	0.000E+00
24	1.271E-05	8.484E-06	3.594E-06	8.407E-07	0.000E+00	5.386E-07	0.000E+00	2.978E-07
25	6.463E-06	8.572E-06	1.759E-06	0.000E+00	5.911E-07	0.000E+00	0.000E+00	0.000E+00
26	1.934E-05	8.899E-06	3.606E-06	1.675E-06	5.569E-07	0.000E+00	0.000E+00	0.000E+00
27	6.309E-06	4.297E-06	1.734E-06	8.314E-07	1.688E-06	0.000E+00	0.000E+00	0.000E+00
28	2.103E-05	4.504E-06	3.518E-06	8.871E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
29	1.966E-05	1.426E-06	0.000E+00	8.943E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
30	2.643E-05	4.379E-06	1.872E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.810E-07
31	1.778E-05	4.348E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
32	1.446E-05	2.849E-06	3.519E-06	2.579E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
33	2.470E-05	3.057E-06	1.758E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
34	1.981E-05	2.955E-06	1.878E-06	1.789E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
35	2.052E-05	2.798E-06	0.000E+00	1.668E-06	5.655E-07	0.000E+00	0.000E+00	0.000E+00
36	2.672E-05	6.086E-06	7.666E-06	2.732E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
37	3.977E-05	9.193E-06	1.941E-06	1.816E-06	0.000E+00	0.000E+00	2.519E-07	0.000E+00
38	5.005E-05	1.919E-05	1.201E-05	2.799E-06	1.311E-06	0.000E+00	0.000E+00	0.000E+00
39	7.248E-05	1.578E-05	1.390E-05	1.807E-06	1.212E-06	0.000E+00	0.000E+00	0.000E+00
40	6.661E-05	1.970E-05	6.069E-06	2.809E-06	1.247E-06	0.000E+00	0.000E+00	0.000E+00
41	8.067E-05	3.880E-05	9.735E-06	2.875E-06	6.568E-07	0.000E+00	0.000E+00	3.360E-07
42	1.320E-04	5.215E-05	6.123E-06	1.984E-06	6.209E-07	5.824E-07	0.000E+00	3.298E-07
43	1.554E-04	2.293E-05	1.026E-05	4.796E-06	6.618E-07	5.695E-07	0.000E+00	0.000E+00
44	1.437E-04	3.935E-05	1.214E-05	4.956E-06	0.000E+00	1.189E-06	0.000E+00	0.000E+00
45	1.174E-04	2.949E-05	1.602E-05	9.993E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
46	9.941E-05	2.643E-05	1.013E-05	7.859E-06	4.584E-06	0.000E+00	0.000E+00	0.000E+00
47	1.672E-04	4.845E-05	2.429E-05	1.190E-05	1.451E-06	0.000E+00	0.000E+00	0.000E+00
48	2.112E-04	1.005E-04	3.036E-05	4.490E-06	4.527E-06	1.606E-06	0.000E+00	0.000E+00
49	2.349E-04	6.956E-05	1.750E-05	1.200E-05	2.821E-06	8.029E-07	0.000E+00	0.000E+00
50	2.600E-04	8.421E-05	4.645E-05	1.642E-05	3.710E-06	8.507E-07	0.000E+00	0.000E+00
51	4.278E-04	1.541E-04	6.795E-05	2.604E-05	9.545E-06	0.000E+00	0.000E+00	0.000E+00
52	5.830E-04	1.568E-04	9.006E-05	2.407E-05	8.119E-06	0.000E+00	0.000E+00	0.000E+00
53	4.486E-04	1.212E-04	6.250E-05	2.268E-05	8.379E-07	1.599E-06	0.000E+00	0.000E+00
54	5.871E-04	1.576E-04	6.522E-05	2.764E-05	5.176E-06	0.000E+00	4.585E-07	0.000E+00
55	6.190E-04	2.012E-04	5.957E-05	8.369E-06	8.566E-06	0.000E+00	0.000E+00	0.000E+00

96	1.349E-05	1.488E-06	0.000E+00	9.343E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
97	8.314E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
98	1.344E-05	5.992E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
99	1.563E-05	1.466E-06	0.000E+00	0.000E+00	5.417E-07	0.000E+00	0.000E+00	0.000E+00
100	8.599E-06	1.477E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
101	1.010E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
102	4.821E-06	1.453E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
103	6.474E-06	3.066E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
104	1.293E-05	3.031E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
105	1.652E-06	0.000E+00	1.844E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
106	4.744E-06	1.396E-06	1.843E-06	8.821E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
107	3.230E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
108	4.757E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
109	3.102E-06	0.000E+00	0.000E+00	8.771E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
110	0.000E+00	1.474E-06	1.711E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
111	3.049E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
112	1.625E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.209E-07	0.000E+00
113	3.127E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
114	1.606E-06	1.366E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
115	1.414E-06	1.344E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
22	15	6	9	2	4	0	1
34	28	8	9	6	4	1	1
45	24	15	13	5	5	2	0
43	19	17	12	6	5	4	0
82	51	27	34	14	9	9	0
115	55	25	30	11	9	8	0
151	69	32	33	18	11	2	0
120	80	31	28	13	4	2	0
116	58	28	18	11	6	4	2
84	56	24	23	16	7	5	1
101	42	12	20	12	1	2	0
73	35	5	18	4	2	2	0
88	34	18	10	7	1	2	1
72	38	15	23	6	2	2	2
83	28	12	16	3	3	2	0
65	37	14	12	4	3	1	1
78	35	10	8	7	2	3	1
64	31	16	9	4	1	0	2

73	41	11	8	5	9	2	0
69	31	13	13	4	2	1	2
71	46	16	18	6	4	0	0
84	39	18	8	5	1	0	0
90	45	17	23	13	1	1	0
84	44	18	15	5	2	0	0
81	56	19	32	7	3	2	0
123	63	23	21	12	2	0	0
112	64	27	21	14	5	1	1
123	66	27	23	7	6	3	0
145	84	35	33	11	6	1	1
178	78	37	33	16	4	2	0
206	91	41	34	11	6	2	0
174	97	37	42	20	5	1	0
182	93	38	26	17	8	1	1
220	94	35	25	13	9	0	2
207	107	36	56	20	7	4	0
260	118	48	60	28	15	3	0
268	136	62	59	43	14	10	1
273	151	80	83	37	15	6	1
265	153	73	67	41	9	7	0
308	162	88	95	57	29	11	2
401	305	158	158	103	31	10	2
751	465	266	252	137	50	11	0
790	528	227	272	135	44	17	1
814	545	228	271	129	40	15	3
571	318	152	158	84	30	7	2
589	337	148	154	82	33	6	1
837	567	255	259	120	47	20	2
1244	717	285	308	150	58	27	0
1137	669	273	278	162	53	30	5
1157	691	295	289	158	68	35	2
1327	806	363	371	247	74	43	3
1375	878	417	428	239	80	46	3
1225	783	351	394	208	89	32	0
1468	944	431	461	260	89	37	4
1017	839	383	364	159	58	21	2
1334	763	325	319	131	36	13	1
1266	784	293	285	143	44	10	3
1049	612	261	252	121	37	18	2

1117	632	304	243	113	42	15	2
1263	656	244	245	104	24	15	0
1103	570	251	240	84	27	8	0
1060	553	185	203	81	20	6	0
973	507	180	152	76	20	6	0
948	473	173	158	69	13	7	0
946	454	164	160	54	28	3	0
793	375	162	134	59	20	7	0
900	474	170	161	65	19	5	1
859	413	156	160	80	21	6	0
860	454	167	147	52	15	3	0
885	482	177	157	69	12	1	0
965	537	198	199	61	20	3	0
640	360	148	128	52	9	5	1
517	282	89	88	48	12	3	0
580	270	100	89	39	14	5	0
498	214	107	90	19	12	1	0
537	289	112	75	58	8	3	0
511	283	97	97	32	7	1	1
531	235	99	105	32	12	2	0
511	245	97	76	30	4	1	1
522	261	96	75	21	7	2	0
503	235	85	71	16	5	3	0
468	266	74	58	21	4	0	0
498	247	77	56	24	6	1	0
467	199	69	64	21	4	1	0
436	225	57	48	19	7	4	0
450	206	95	58	18	4	1	0
416	173	67	56	21	0	1	0
345	160	55	43	15	3	0	0
347	169	53	45	17	2	2	1
297	145	41	32	19	1	0	0
285	124	43	36	13	7	1	0
267	125	47	34	11	1	2	0
249	135	47	23	10	3	0	0
248	116	35	23	7	2	0	0
217	94	36	21	10	2	2	0
218	69	28	20	5	1	0	0
170	90	32	19	5	1	0	0
177	95	23	20	5	0	0	0

215	84	32	20	8	0	0	0
194	103	39	23	8	0	2	1
193	101	32	24	4	0	0	1
162	77	27	15	4	2	3	0
149	70	20	12	7	0	3	0
128	47	24	10	2	1	1	0
112	47	15	12	6	0	1	0
96	39	17	15	4	0	0	0
108	54	15	13	4	0	0	0
85	36	16	8	4	2	0	0
84	36	9	8	3	0	1	0
62	23	9	3	2	0	0	0
64	17	3	4	2	0	0	0
47	31	9	2	2	0	0	0
41	17	11	5	0	2	0	0
48	13	5	2	1	0	1	0
35	19	2	0	3	1	0	0

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
4	3	0	1	1	1	1	0
8	5	4	1	0	0	0	0
12	3	0	2	2	1	1	0
11	5	3	4	0	0	0	0
25	8	6	4	0	1	0	0
17	6	2	3	1	2	1	0
28	14	3	3	4	0	0	0

21	10	10	2	3	3	0	0
18	11	1	4	1	2	0	0
22	9	4	0	1	0	0	0
13	6	2	2	1	0	0	0
15	9	1	3	0	0	0	0
16	6	1	1	0	0	0	0
12	1	1	0	0	0	0	0
11	3	1	0	2	0	0	0
9	5	0	1	0	0	0	0
15	6	1	2	1	0	0	0
7	4	1	1	0	0	0	0
12	1	1	2	0	1	0	0
11	2	0	1	0	0	0	0
10	3	2	2	0	0	0	0
4	4	0	1	0	0	0	0
8	3	0	1	1	1	0	1
8	6	2	1	0	1	0	0
4	6	1	0	1	0	0	0
12	6	2	2	1	0	0	0
4	3	1	1	3	0	0	0
13	3	2	1	0	0	0	0
12	1	0	1	0	0	0	1
16	3	1	0	0	0	0	0
11	3	0	0	0	0	0	0
9	2	2	3	0	0	0	0
15	2	1	0	0	0	0	0
12	2	1	2	0	0	0	0
13	2	0	2	1	0	0	0
16	4	4	3	0	0	0	0
23	6	1	2	0	0	1	0
28	12	6	3	2	0	0	0
41	10	7	2	2	0	0	0
37	12	3	3	2	0	0	1
45	24	5	3	1	0	0	1
73	32	3	2	1	1	0	0
86	14	5	5	1	1	0	0
78	24	6	5	0	2	0	0
65	18	8	1	0	0	0	0
54	16	5	8	7	0	0	0
78	25	10	11	2	0	0	0

83	44	11	3	5	2	0	0
94	31	6	9	3	1	0	0
95	34	16	11	4	1	0	0
132	54	19	15	8	0	0	0
189	57	27	14	7	0	0	0
177	52	22	16	1	2	0	0
210	61	21	19	5	0	1	0
83	38	10	3	4	0	0	0
124	41	3	5	1	1	0	0
100	35	16	7	3	1	0	0
88	27	10	5	5	0	0	0
96	13	5	8	0	0	0	0
81	40	6	8	6	1	1	0
76	20	5	4	1	0	0	0
78	16	3	5	3	0	0	0
58	20	4	2	0	0	0	0
64	24	1	5	0	0	0	0
57	15	2	2	0	0	0	0
57	15	4	3	1	0	0	0
55	13	7	5	0	0	0	0
60	15	0	3	0	0	0	0
75	14	3	2	0	0	0	0
53	12	4	4	0	0	0	0
49	20	4	3	2	0	0	0
61	17	2	4	2	0	0	0
29	7	3	0	0	0	0	0
38	11	1	1	0	0	0	0
26	4	2	1	0	0	0	0
25	5	1	1	1	0	0	0
26	7	1	2	0	0	0	0
27	6	0	0	1	0	0	0
30	9	1	0	0	0	0	0
20	9	3	0	0	0	0	0
25	6	0	1	0	0	0	0
20	1	1	2	1	0	0	0
21	5	2	0	0	0	0	0
24	2	0	0	0	0	0	0
19	2	0	1	0	0	0	0
17	1	0	0	0	0	0	0
24	2	0	0	0	0	0	0

19	2	0	0	0	0	0	0
11	4	0	0	0	0	0	0
5	3	0	0	0	0	0	0
9	2	0	0	0	0	0	0
11	6	0	0	0	0	0	0
9	0	0	0	0	0	0	0
4	1	0	0	0	0	0	1
7	0	0	0	0	0	0	0
8	1	0	1	0	0	0	0
5	0	0	0	0	0	0	0
8	4	0	0	0	0	0	0
10	1	0	0	1	0	0	0
5	1	0	0	0	0	0	0
6	0	0	0	0	0	0	0
3	1	0	0	0	0	0	0
4	2	0	0	0	0	0	0
8	2	0	0	0	0	0	0
1	0	1	0	0	0	0	0
3	1	1	1	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
2	0	0	1	0	0	0	0
0	1	1	0	0	0	0	0
2	0	0	0	0	0	0	0
1	0	0	0	0	0	1	0
2	0	0	0	0	0	0	0
1	1	0	0	0	0	0	0
1	1	0	0	0	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

a = 1.269 (1.066, 1.472)
b = -0.2227 (-0.2669, -0.1786)
c = 0.0186 (-0.09464, 0.1318)
d = -0.06494 (-0.2497, 0.1198)

goftotal =

sse: 6.6855e-006

rsquare: 0.9998

dfe: 4

adjrsquare: 0.9996

rmse: 0.0013

ctotal =

General model Exp1:

$ctotal(x) = a * \exp(b * x)$

Coefficients (with 95% confidence bounds):

a = 0.5361 (0.3377, 0.7345)

b = -0.1621 (-0.1807, -0.1435)

goftotal =

sse: 3.7096e-007

rsquare: 9.9913e-001

dfe: 3

adjrsquare: 9.9884e-001

rmse: 3.5164e-004

Event 30	Date	Time*	Location*	Summing interval*				
	28-Jan-01	1600	S04W59	Jan 28 to Jan 31 0000				
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed φ	Listed φ	Listed φ	Listed φ	Listed φ	Listed φ	Listed φ	Listed φ
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.493E-07	4.015E-07	5.316E-07
3	0.000E+00	2.486E-06	3.091E-06	4.636E-06	4.153E-06	4.683E-06	2.466E-06	1.531E-06
4	3.607E-05	3.642E-05	4.567E-05	2.814E-05	2.822E-05	1.041E-05	6.057E-06	2.084E-06
5	3.527E-05	4.669E-05	3.827E-05	2.491E-05	1.359E-05	7.666E-06	3.022E-06	1.057E-06
6	5.070E-05	7.512E-05	4.482E-05	3.101E-05	2.278E-05	4.825E-06	2.137E-06	0.000E+00
7	6.815E-05	6.950E-05	4.106E-05	3.112E-05	1.546E-05	7.551E-06	2.143E-06	1.029E-06
8	1.651E-04	8.918E-05	7.437E-05	5.010E-05	2.002E-05	4.787E-06	1.284E-06	0.000E+00
9	2.164E-04	1.552E-04	8.407E-05	4.004E-05	2.463E-05	1.293E-05	3.983E-07	4.942E-07
10	4.617E-04	2.850E-04	1.778E-04	7.550E-05	2.066E-05	1.312E-05	1.340E-06	0.000E+00
11	3.158E-04	2.304E-04	1.613E-04	8.515E-05	2.805E-05	6.861E-06	2.176E-06	0.000E+00
12	3.018E-04	1.774E-04	1.237E-04	6.515E-05	1.946E-05	1.374E-05	4.561E-07	5.721E-07
13	3.963E-04	2.016E-04	1.238E-04	4.998E-05	1.542E-05	8.111E-06	2.252E-06	0.000E+00
14	1.095E-03	3.838E-04	1.736E-04	9.429E-05	1.976E-05	1.357E-06	4.647E-07	6.805E-07

15	9.606E-04	4.031E-04	1.823E-04	7.929E-05	2.832E-05	1.201E-06	1.746E-06	0.000E+00
16	7.546E-04	2.703E-04	1.735E-04	7.533E-05	1.929E-05	3.513E-06	3.229E-06	0.000E+00
17	7.187E-04	2.960E-04	7.688E-05	5.131E-05	2.142E-05	3.678E-06	1.547E-06	0.000E+00
18	7.086E-04	1.972E-04	9.562E-05	5.618E-05	1.250E-05	3.581E-06	1.093E-06	1.351E-06
19	5.783E-04	2.165E-04	8.878E-05	6.552E-05	8.210E-06	1.236E-06	0.000E+00	7.286E-07
20	4.809E-04	2.256E-04	7.131E-05	1.802E-05	1.483E-05	2.440E-06	1.657E-06	0.000E+00
21	4.470E-04	1.807E-04	7.136E-05	2.613E-05	7.069E-06	1.260E-06	1.148E-06	0.000E+00
22	3.475E-04	1.386E-04	4.590E-05	1.414E-05	1.092E-05	2.589E-06	0.000E+00	7.059E-07
23	3.494E-04	1.408E-04	6.236E-05	2.554E-05	3.976E-06	1.273E-06	5.693E-07	0.000E+00
24	2.987E-04	1.200E-04	5.045E-05	1.801E-05	7.981E-06	3.651E-06	0.000E+00	0.000E+00
25	2.107E-04	5.735E-05	4.477E-05	1.644E-05	4.672E-06	2.211E-06	4.893E-07	1.290E-06
26	1.932E-04	1.047E-04	3.855E-05	1.791E-05	6.054E-06	2.187E-06	0.000E+00	0.000E+00
27	2.098E-04	5.431E-05	2.998E-05	1.796E-05	4.796E-06	0.000E+00	0.000E+00	0.000E+00
28	1.748E-04	6.868E-05	2.194E-05	7.334E-06	2.380E-06	1.059E-06	4.743E-07	0.000E+00
29	1.593E-04	4.723E-05	2.518E-05	1.622E-05	7.161E-06	1.114E-06	0.000E+00	0.000E+00
30	1.506E-04	4.928E-05	3.229E-05	1.400E-05	5.696E-06	1.048E-06	0.000E+00	0.000E+00
31	1.383E-04	6.047E-05	2.498E-05	5.282E-06	3.363E-06	3.227E-06	0.000E+00	0.000E+00
32	8.794E-05	2.257E-05	2.118E-05	5.065E-06	6.813E-06	1.016E-06	0.000E+00	0.000E+00
33	1.020E-04	2.756E-05	2.721E-05	1.152E-05	3.299E-06	0.000E+00	4.700E-07	0.000E+00
34	9.121E-05	2.480E-05	6.812E-06	6.561E-06	0.000E+00	1.036E-06	0.000E+00	0.000E+00
35	7.815E-05	3.557E-05	3.279E-06	1.283E-05	1.061E-06	0.000E+00	0.000E+00	0.000E+00
36	6.469E-05	3.221E-05	6.747E-06	9.854E-06	0.000E+00	9.693E-07	4.606E-07	5.758E-07
37	4.608E-05	2.170E-05	2.351E-05	0.000E+00	3.193E-06	0.000E+00	4.604E-07	0.000E+00
38	3.728E-05	1.622E-05	1.962E-05	0.000E+00	3.176E-06	9.536E-07	0.000E+00	0.000E+00
39	6.085E-05	2.130E-05	1.302E-05	4.917E-06	2.186E-06	0.000E+00	0.000E+00	0.000E+00
40	5.191E-05	3.175E-05	6.571E-06	4.703E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
41	3.068E-05	4.173E-05	5.927E-06	2.859E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
42	4.459E-05	7.788E-06	6.524E-06	0.000E+00	1.019E-06	9.386E-07	0.000E+00	5.555E-07
43	4.200E-05	1.839E-05	6.690E-06	4.745E-06	2.089E-06	0.000E+00	0.000E+00	0.000E+00
44	2.983E-05	2.326E-05	1.001E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
45	3.532E-05	2.362E-05	3.326E-06	1.605E-06	1.007E-06	9.850E-07	0.000E+00	0.000E+00
46	2.562E-05	1.556E-05	0.000E+00	4.619E-06	0.000E+00	0.000E+00	0.000E+00	5.499E-07
47	2.703E-05	1.833E-05	9.735E-06	3.186E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
48	1.449E-05	1.578E-05	3.115E-06	3.179E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
49	1.497E-05	7.642E-06	0.000E+00	1.495E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
50	2.921E-05	1.013E-05	9.499E-06	2.991E-06	9.979E-07	0.000E+00	0.000E+00	5.449E-07
51	2.684E-05	7.469E-06	3.287E-06	3.076E-06	1.058E-06	0.000E+00	0.000E+00	0.000E+00
52	3.248E-05	1.273E-05	3.279E-06	0.000E+00	1.989E-06	0.000E+00	0.000E+00	0.000E+00
53	4.363E-05	1.799E-05	3.087E-06	0.000E+00	1.054E-06	0.000E+00	0.000E+00	0.000E+00
54	1.453E-05	1.504E-05	0.000E+00	1.578E-06	0.000E+00	0.000E+00	4.089E-07	5.113E-07

55	2.035E-05	7.734E-06	6.350E-06	2.970E-06	9.914E-07	0.000E+00	0.000E+00	0.000E+00
56	1.468E-05	5.102E-06	0.000E+00	1.574E-06	1.982E-06	0.000E+00	0.000E+00	0.000E+00
57	2.176E-05	9.651E-06	0.000E+00	1.384E-06	9.233E-07	0.000E+00	0.000E+00	0.000E+00
58	1.147E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
59	1.728E-05	1.003E-05	6.327E-06	0.000E+00	1.048E-06	0.000E+00	0.000E+00	0.000E+00
60	1.197E-05	7.549E-06	3.067E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
61	8.624E-06	2.614E-06	3.249E-06	0.000E+00	0.000E+00	9.629E-07	0.000E+00	0.000E+00
62	2.987E-06	0.000E+00	3.064E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
63	8.620E-06	7.686E-06	0.000E+00	1.564E-06	0.000E+00	9.621E-07	0.000E+00	0.000E+00
64	2.805E-06	4.902E-06	0.000E+00	1.565E-06	1.044E-06	0.000E+00	0.000E+00	5.059E-07
65	5.601E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.287E-07	0.000E+00
66	5.764E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
67	0.000E+00	0.000E+00	6.277E-06	1.554E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
68	2.794E-06	5.041E-06	0.000E+00	0.000E+00	1.037E-06	0.000E+00	0.000E+00	0.000E+00
69	2.791E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
70	8.877E-06	2.438E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.263E-07	0.000E+00
71	0.000E+00	2.437E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
72	0.000E+00	2.584E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
73	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.679E-07
74	0.000E+00	2.431E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
75	0.000E+00	2.433E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.013E-07	0.000E+00
76	0.000E+00	2.431E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
77	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.006E-07
78	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
79	2.949E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
80	2.945E-06	2.577E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.004E-07

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2	0.000E+00	0.000E+00	0.000E+00	7.821E-07	0.000E+00	4.766E-07	0.000E+00	0.000E+00
3	4.546E-06	8.205E-06	1.659E-06	4.981E-06	2.165E-06	1.503E-06	1.104E-06	0.000E+00
4	3.697E-05	4.493E-05	2.775E-05	9.955E-06	7.824E-06	3.031E-06	2.299E-07	0.000E+00
5	3.870E-05	3.192E-05	1.538E-05	1.078E-05	3.831E-06	2.037E-06	4.325E-07	5.514E-07
6	4.621E-05	3.377E-05	1.546E-05	7.401E-06	1.070E-06	5.229E-07	2.319E-07	0.000E+00
7	3.673E-05	1.676E-05	1.356E-05	8.137E-06	5.639E-07	0.000E+00	0.000E+00	0.000E+00
8	7.225E-05	3.699E-05	1.199E-05	9.063E-06	2.220E-06	4.986E-07	2.176E-07	0.000E+00
9	6.524E-05	1.487E-05	8.156E-06	4.001E-06	2.128E-06	0.000E+00	0.000E+00	0.000E+00

50	6.236E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
51	4.559E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
52	1.577E-06	2.685E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
53	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
54	0.000E+00	0.000E+00	0.000E+00	7.936E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
55	1.571E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
56	1.480E-06	1.419E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
57	1.383E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
58	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.251E-07	0.000E+00	0.000E+00	0.000E+00
59	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
60	1.564E-06	0.000E+00	0.000E+00	0.000E+00	5.236E-07	0.000E+00	0.000E+00	0.000E+00
61	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
62	1.563E-06	2.663E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
63	1.471E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
64	1.469E-06	1.331E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
65	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
66	1.463E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
67	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
68	1.550E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
69	0.000E+00	1.399E-06	0.000E+00	8.279E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
70	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
71	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
72	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
73	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
74	1.544E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
75	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
76	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
77	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
78	0.000E+00	0.000E+00	0.000E+00	7.764E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
79	2.992E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	0	0	0	0	0	0	0
0	0	0	0	0	1	1	1
0	1	1	3	4	5	6	3
12	14	14	18	27	11	14	4
12	18	12	16	13	8	7	2
17	29	14	20	22	5	5	0

23	27	13	20	15	8	5	2
55	34	23	32	19	5	3	0
76	62	27	27	25	14	1	1
146	104	52	46	19	13	3	0
102	85	48	53	26	7	5	0
98	66	37	40	18	14	1	1
124	73	36	30	14	8	5	0
286	116	42	49	15	1	1	1
249	119	44	39	21	1	3	0
204	84	43	39	15	3	6	0
192	90	19	26	16	3	3	0
186	59	23	28	9	3	2	2
147	64	21	32	6	1	0	1
125	67	17	9	11	2	3	0
109	50	16	12	5	1	2	0
90	41	11	7	8	2	0	1
91	42	15	13	3	1	1	0
78	36	12	9	6	3	0	0
61	19	12	9	4	2	1	2
55	34	10	10	5	2	0	0
61	18	8	10	4	0	0	0
51	23	6	4	2	1	1	0
47	16	7	9	6	1	0	0
45	17	9	8	5	1	0	0
42	21	7	3	3	3	0	0
27	8	6	3	6	1	0	0
32	10	8	7	3	0	1	0
29	9	2	4	0	1	0	0
25	13	1	8	1	0	0	0
21	12	2	6	0	1	1	1
15	8	7	0	3	0	1	0
12	6	6	0	3	1	0	0
20	8	4	3	2	0	0	0
17	12	2	3	0	0	0	0
11	17	2	2	0	0	0	0
15	3	2	0	1	1	0	1
14	7	2	3	2	0	0	0
10	9	3	0	0	0	0	0
12	9	1	1	1	1	0	0
7	6	0	3	0	0	0	1

0	0	0	1	0	1	0	0
3	6	1	6	4	3	5	0
24	32	16	12	14	6	1	0
25	23	9	13	7	4	2	2
30	24	9	9	2	1	1	0
24	12	8	10	1	0	0	0
46	26	7	11	4	1	1	0
44	11	5	5	4	0	0	0
51	23	4	11	6	1	1	0
56	9	6	3	4	0	1	0
33	16	2	5	1	1	0	0
31	15	6	2	0	0	0	0
45	17	6	6	1	0	0	0
41	15	9	2	3	0	0	0
38	6	3	4	1	1	0	0
32	4	3	2	0	0	1	0
24	7	4	0	1	0	0	0
28	6	3	1	1	0	0	1
20	2	6	1	0	0	0	0
19	2	2	2	0	0	0	0
20	3	0	1	1	1	0	0
12	0	1	2	0	0	0	0
10	3	1	1	0	0	0	0
13	2	1	2	0	0	0	0
11	2	2	1	0	0	0	0
7	4	2	1	0	0	0	0
7	0	0	0	0	0	0	0
5	1	0	2	1	0	0	0
8	4	0	0	0	0	0	1
8	4	0	1	0	0	0	0
4	2	1	1	0	0	1	0
3	3	0	0	0	0	0	0
10	4	2	0	0	0	1	0
8	2	0	1	0	0	0	0
6	2	0	0	0	0	0	0
4	0	0	0	1	0	0	0
9	0	1	1	0	0	0	0
3	2	1	0	0	0	0	0
5	1	0	0	0	0	0	0
2	1	0	1	0	0	0	0

3	2	0	0	0	0	0	0
1	2	1	0	0	0	0	0
3	1	0	0	0	0	0	0
3	1	1	0	0	0	0	0
2	0	0	1	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
1	2	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	1	0	0	0	0
1	0	0	0	0	0	0	0
1	1	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	1	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	1	0	0	0
0	0	0	0	0	0	0	0
1	2	0	0	0	0	0	0
1	0	0	0	0	0	0	0
1	1	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	1	0	1	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	1	0	0	0	0
2	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a * \exp(b * x) + c * \exp(d * x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.07933 \quad (0.05504, 0.1036)$$

$$b = -0.2463 \quad (-0.284, -0.2086)$$

$$c = 0.0001913 \quad (-0.0004593, 0.0008419)$$

$$d = -0.002552 \quad (-0.07154, 0.06644)$$

goftotal =

$$sse: 9.6231e-008$$

$$rsquare: 0.9987$$

$$dfe: 4$$

$$adjrsquare: 0.9978$$

$$rmse: 1.5511e-004$$

ctotal =

General model Exp1:

$$ctotal(x) = a * \exp(b * x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.007123 \text{ } (-0.002536, 0.01678)$$

$$b = -0.1006 \text{ } (-0.1645, -0.03674)$$

gof_{total} =

$$\text{sse: } 2.5664\text{e-}008$$

$$\text{rsquare: } 9.7045\text{e-}001$$

$$\text{dfe: } 3$$

$$\text{adjrsquare: } 9.6061\text{e-}001$$

$$\text{rmse: } 9.2491\text{e-}005$$

Event 31	Date	Time*	Location*	Summing interval*				
	29-Mar-01	1015	N14W12	Mar 29 1000 to Apr 1 0400				
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed φ	Listed φ	Listed φ	Listed φ	Listed φ	Listed φ	Listed φ	Listed φ
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.936E-07	0.000E+00	5.303E-07
2	0.000E+00	0.000E+00	3.203E-06	2.998E-06	0.000E+00	0.000E+00	4.001E-07	5.306E-07
3	5.734E-06	0.000E+00	0.000E+00	2.918E-06	5.959E-06	0.000E+00	0.000E+00	5.311E-07
4	1.730E-05	1.976E-05	6.256E-06	2.109E-05	6.110E-06	2.824E-06	4.276E-07	0.000E+00
5	5.245E-05	3.790E-05	4.757E-05	2.581E-05	1.029E-05	1.477E-05	2.109E-06	0.000E+00
6	9.658E-05	6.418E-05	7.460E-05	2.609E-05	1.958E-05	9.331E-06	3.385E-06	0.000E+00
7	1.589E-04	7.210E-05	4.833E-05	5.549E-05	1.235E-05	9.476E-06	3.844E-06	5.154E-07
8	2.588E-04	1.606E-04	1.064E-04	7.908E-05	3.661E-05	1.538E-05	5.231E-06	1.628E-06
9	2.902E-04	2.154E-04	1.299E-04	7.226E-05	4.087E-05	1.357E-05	4.689E-06	5.248E-07
10	2.887E-04	2.015E-04	1.179E-04	8.478E-05	3.679E-05	1.357E-05	1.256E-06	1.604E-06
11	4.441E-04	2.138E-04	1.182E-04	7.923E-05	2.634E-05	1.260E-05	2.157E-06	5.609E-07
12	4.035E-04	2.256E-04	1.527E-04	8.085E-05	3.099E-05	7.891E-06	3.476E-06	0.000E+00

13	4.416E-04	2.535E-04	1.489E-04	7.501E-05	3.621E-05	9.969E-06	1.332E-06	1.672E-06
14	4.595E-04	2.422E-04	1.094E-04	8.791E-05	2.484E-05	8.225E-06	4.952E-06	0.000E+00
15	7.475E-04	3.319E-04	2.067E-04	1.015E-04	3.045E-05	1.722E-05	1.823E-06	5.764E-07
16	7.463E-04	3.610E-04	2.093E-04	1.065E-04	3.389E-05	1.280E-05	2.703E-06	1.091E-06
17	5.784E-04	3.696E-04	1.416E-04	6.496E-05	3.125E-05	6.030E-06	2.683E-06	1.113E-06
18	6.704E-04	3.525E-04	1.964E-04	9.338E-05	2.198E-05	7.963E-06	1.360E-06	5.423E-07
19	7.406E-04	3.247E-04	2.187E-04	1.057E-04	2.385E-05	1.083E-05	1.342E-06	0.000E+00
20	9.791E-04	5.062E-04	2.623E-04	1.048E-04	2.746E-05	1.458E-05	1.891E-06	0.000E+00
21	9.138E-04	5.126E-04	2.767E-04	1.055E-04	2.365E-05	1.554E-05	2.339E-06	0.000E+00
22	9.015E-04	3.705E-04	1.908E-04	9.093E-05	3.114E-05	1.044E-05	1.369E-06	0.000E+00
23	7.859E-04	3.765E-04	1.860E-04	7.323E-05	2.004E-05	6.215E-06	1.810E-06	5.912E-07
24	8.060E-04	3.799E-04	1.847E-04	8.876E-05	3.576E-05	7.155E-06	1.834E-06	0.000E+00
25	5.886E-04	2.821E-04	1.864E-04	6.617E-05	1.411E-05	2.967E-06	1.357E-06	0.000E+00
26	6.557E-04	3.186E-04	1.215E-04	7.209E-05	2.381E-05	5.894E-06	1.359E-06	0.000E+00
27	7.538E-04	3.736E-04	1.503E-04	4.974E-05	1.339E-05	9.247E-06	9.089E-07	0.000E+00
28	7.001E-04	3.393E-04	1.571E-04	6.785E-05	1.428E-05	6.054E-06	1.328E-06	5.871E-07
29	7.084E-04	2.741E-04	1.843E-04	4.900E-05	2.206E-05	1.006E-06	1.787E-06	0.000E+00
30	6.648E-04	2.910E-04	1.047E-04	5.673E-05	1.782E-05	2.007E-06	8.956E-07	5.618E-07
31	6.666E-04	3.139E-04	1.527E-04	6.780E-05	2.251E-05	7.156E-06	1.359E-06	0.000E+00
32	7.612E-04	2.503E-04	1.317E-04	6.596E-05	1.228E-05	6.157E-06	1.368E-06	0.000E+00
33	7.767E-04	2.586E-04	1.092E-04	5.530E-05	1.250E-05	1.003E-06	9.537E-07	0.000E+00
34	8.667E-04	2.089E-04	9.890E-05	6.005E-05	1.023E-05	5.337E-06	1.425E-06	6.045E-07
35	6.907E-04	3.157E-04	9.288E-05	5.994E-05	1.708E-05	1.026E-06	4.836E-07	5.682E-07
36	8.425E-04	3.439E-04	1.536E-04	5.985E-05	1.159E-05	2.126E-06	0.000E+00	0.000E+00
37	1.073E-03	3.203E-04	1.605E-04	3.703E-05	1.719E-05	5.663E-06	5.048E-07	0.000E+00
38	1.214E-03	3.458E-04	1.580E-04	5.391E-05	1.464E-05	3.643E-06	1.065E-06	0.000E+00
39	9.038E-04	3.185E-04	1.815E-04	2.760E-05	1.144E-05	2.210E-06	5.314E-07	0.000E+00
40	5.889E-04	2.087E-04	9.691E-05	3.994E-05	6.861E-06	2.164E-06	0.000E+00	0.000E+00
41	9.923E-04	2.795E-04	9.777E-05	5.064E-05	6.177E-06	4.483E-06	0.000E+00	0.000E+00
42	9.412E-04	3.079E-04	1.418E-04	4.666E-05	9.642E-06	2.290E-06	0.000E+00	0.000E+00
43	1.283E-03	3.786E-04	1.862E-04	7.993E-05	9.176E-06	0.000E+00	5.482E-07	6.397E-07
44	5.634E-04	1.503E-04	6.509E-05	1.864E-05	2.416E-06	2.054E-06	0.000E+00	0.000E+00
45	3.563E-04	6.550E-05	3.095E-05	1.962E-05	0.000E+00	0.000E+00	4.673E-07	5.839E-07
46	2.123E-04	9.092E-05	3.090E-05	9.017E-06	0.000E+00	8.947E-07	0.000E+00	0.000E+00
47	1.649E-04	3.931E-05	2.250E-05	3.142E-06	0.000E+00	0.000E+00	0.000E+00	5.222E-07
48	1.388E-04	4.198E-05	1.326E-05	3.154E-06	1.089E-06	0.000E+00	0.000E+00	0.000E+00
49	1.617E-04	4.743E-05	9.947E-06	1.275E-05	3.137E-06	1.005E-06	4.475E-07	0.000E+00
50	1.253E-04	3.658E-05	0.000E+00	3.229E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
51	5.079E-05	2.316E-05	1.293E-05	9.318E-06	0.000E+00	9.286E-07	0.000E+00	0.000E+00
52	7.949E-05	3.334E-05	1.596E-05	3.093E-06	0.000E+00	9.229E-07	0.000E+00	0.000E+00

53	2.078E-05	2.066E-05	0.000E+00	1.491E-06	2.051E-06	0.000E+00	0.000E+00	0.000E+00
54	3.534E-05	7.606E-06	1.273E-05	0.000E+00	9.943E-07	0.000E+00	0.000E+00	0.000E+00
55	4.134E-05	7.918E-06	0.000E+00	1.587E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
56	4.108E-05	1.026E-05	9.486E-06	1.490E-06	0.000E+00	0.000E+00	0.000E+00	5.449E-07
57	4.125E-05	7.769E-06	6.379E-06	4.564E-06	9.957E-07	0.000E+00	0.000E+00	0.000E+00
58	9.496E-05	2.586E-05	3.118E-06	1.503E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
59	6.741E-05	2.339E-05	6.198E-06	1.581E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
60	4.684E-05	3.257E-05	6.372E-06	1.491E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
61	5.063E-05	7.929E-06	1.296E-05	1.504E-06	1.071E-06	0.000E+00	0.000E+00	5.131E-07
62	8.301E-05	1.472E-05	1.530E-05	1.426E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
63	6.149E-05	1.802E-05	0.000E+00	1.504E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
64	5.822E-05	1.037E-05	6.348E-06	4.554E-06	0.000E+00	0.000E+00	4.350E-07	5.436E-07
65	3.787E-05	7.746E-06	9.426E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
66	3.773E-05	1.489E-05	0.000E+00	1.469E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
67	2.889E-05	1.025E-05	6.276E-06	3.116E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.228E-07	0.000E+00
2	1.539E-06	0.000E+00	0.000E+00	0.000E+00	5.470E-07	0.000E+00	0.000E+00	0.000E+00
3	9.004E-06	2.631E-06	3.349E-06	8.236E-07	2.100E-06	5.018E-07	0.000E+00	0.000E+00
4	7.436E-06	5.464E-06	1.729E-06	7.850E-07	1.041E-06	0.000E+00	4.505E-07	2.604E-07
5	9.131E-06	1.525E-05	1.650E-06	4.092E-06	5.569E-07	9.621E-07	0.000E+00	0.000E+00
6	3.384E-05	1.512E-05	6.759E-06	4.077E-06	2.211E-06	0.000E+00	0.000E+00	0.000E+00
7	4.176E-05	2.634E-05	1.044E-05	5.056E-06	2.196E-06	1.037E-06	0.000E+00	0.000E+00
8	6.737E-05	4.102E-05	1.552E-05	6.723E-06	1.109E-06	0.000E+00	0.000E+00	0.000E+00
9	8.478E-05	2.404E-05	2.598E-05	5.838E-06	2.702E-06	4.961E-07	0.000E+00	0.000E+00
10	6.744E-05	3.248E-05	1.400E-05	7.421E-06	3.882E-06	5.248E-07	0.000E+00	0.000E+00
11	6.648E-05	3.702E-05	1.760E-05	7.562E-06	0.000E+00	4.981E-07	0.000E+00	0.000E+00
12	5.895E-05	4.006E-05	1.954E-05	6.077E-06	5.804E-07	1.541E-06	0.000E+00	0.000E+00
13	9.081E-05	3.438E-05	2.127E-05	7.660E-06	2.306E-06	5.021E-07	2.384E-07	0.000E+00
14	1.143E-04	3.388E-05	1.349E-05	8.831E-06	1.630E-06	4.694E-07	2.087E-07	0.000E+00
15	1.022E-04	3.840E-05	1.301E-05	5.171E-06	5.163E-06	0.000E+00	0.000E+00	0.000E+00
16	1.288E-04	1.907E-05	7.133E-06	6.906E-06	1.153E-06	0.000E+00	0.000E+00	0.000E+00
17	1.098E-04	3.200E-05	1.273E-05	5.963E-06	1.152E-06	0.000E+00	0.000E+00	0.000E+00
18	8.982E-05	3.094E-05	8.944E-06	5.176E-06	5.965E-07	0.000E+00	0.000E+00	0.000E+00
19	1.157E-04	2.513E-05	1.094E-05	3.391E-06	5.609E-07	5.438E-07	0.000E+00	0.000E+00
20	9.605E-05	4.568E-05	3.772E-06	6.227E-06	1.165E-06	0.000E+00	0.000E+00	0.000E+00
21	1.241E-04	3.371E-05	1.325E-05	7.163E-06	5.816E-07	5.638E-07	0.000E+00	0.000E+00

62	4.402E-06	1.355E-06	0.000E+00	0.000E+00	5.035E-07	0.000E+00	0.000E+00	0.000E+00
63	3.076E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
64	1.494E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
65	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
66	1.476E-06	0.000E+00	0.000E+00	7.886E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
67	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.116E-07	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	0	0	0	0	1	0	1
0	0	1	2	0	0	1	1
2	0	0	2	6	0	0	1
6	8	2	14	6	3	1	0
18	15	15	17	10	16	5	0
33	25	23	17	19	10	8	0
54	28	15	36	12	10	9	1
87	62	33	51	35	16	12	3
97	82	40	46	39	14	11	1
96	77	36	54	35	14	3	3
147	81	36	50	25	13	5	1
133	85	46	51	29	8	8	0
145	95	45	47	34	10	3	3
161	97	35	59	25	9	12	0
240	122	61	62	28	17	4	1
240	133	62	65	31	13	6	2
187	136	42	40	29	6	6	2
215	130	58	57	20	8	3	1
237	119	64	64	22	11	3	0
304	179	75	62	24	14	4	0
282	182	79	62	21	15	5	0
282	132	55	54	28	10	3	0
247	135	54	44	18	6	4	1
254	137	53	53	32	7	4	0
190	104	55	41	13	3	3	0
211	117	36	44	22	6	3	0
239	136	44	30	12	9	2	0
222	123	46	41	13	6	3	1
222	98	53	29	20	1	4	0
222	111	32	36	17	2	2	1

210	112	44	41	20	7	3	0
239	90	38	40	11	6	3	0
241	92	31	33	11	1	2	0
265	73	28	34	9	5	3	1
211	110	26	35	15	1	1	1
256	120	43	35	10	2	0	0
306	104	42	20	14	5	1	0
327	108	40	27	11	3	2	0
249	99	46	15	9	2	1	0
179	73	27	23	6	2	0	0
276	90	25	27	5	4	0	0
273	103	38	26	8	2	0	0
354	120	47	42	7	0	1	1
172	52	18	11	2	2	0	0
114	24	9	12	0	0	1	1
74	36	10	6	0	1	0	0
55	15	7	2	0	0	0	1
46	16	4	2	1	0	0	0
54	18	3	8	3	1	1	0
42	14	0	2	0	0	0	0
17	9	4	6	0	1	0	0
27	13	5	2	0	1	0	0
7	8	0	1	2	0	0	0
12	3	4	0	1	0	0	0
14	3	0	1	0	0	0	0
14	4	3	1	0	0	0	1
14	3	2	3	1	0	0	0
32	10	1	1	0	0	0	0
23	9	2	1	0	0	0	0
16	13	2	1	0	0	0	0
17	3	4	1	1	0	0	1
30	6	5	1	0	0	0	0
21	7	0	1	0	0	0	0
20	4	2	3	0	0	1	1
13	3	3	0	0	0	0	0
13	6	0	1	0	0	0	0
10	4	2	2	0	0	0	0

Hourly Iron Counts

Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	0	0	0	0	0	1	0
1	0	0	0	1	0	0	0
6	2	2	1	4	1	0	1
5	4	1	1	2	0	2	0
6	11	1	5	1	2	0	0
22	11	4	5	4	0	0	0
27	19	6	6	4	2	0	0
43	29	9	8	2	0	0	0
54	17	15	7	5	1	0	0
43	23	8	9	7	1	0	0
42	26	10	9	0	1	0	0
37	28	11	7	1	3	0	0
57	24	12	9	4	1	1	0
77	25	8	11	3	1	1	0
63	26	7	6	9	0	0	0
79	13	4	8	2	0	0	0
68	22	7	7	2	0	0	0
55	21	5	6	1	0	0	0
71	17	6	4	1	1	0	0
57	30	2	7	2	0	0	0
74	22	7	8	1	1	0	0
68	17	6	5	3	0	0	0
79	18	4	1	1	1	0	0
65	15	4	10	1	0	0	0
45	14	6	3	1	0	0	0
44	20	2	3	0	0	0	0
47	17	5	6	0	0	0	0
49	10	2	2	0	0	0	0
42	17	4	4	0	0	0	0
53	11	5	1	0	0	0	0
41	12	3	3	0	1	0	0
36	5	6	0	0	0	0	0
36	11	2	2	0	0	0	0
39	7	2	1	0	0	0	0
43	16	2	2	0	0	0	0
26	16	1	2	0	0	0	0
25	6	2	5	1	0	1	0
35	6	3	1	0	0	0	0
28	8	3	1	1	0	0	0

15	8	2	0	0	1	0	0
29	11	3	1	0	0	0	0
32	8	1	0	0	0	0	1
51	7	2	0	0	0	0	0
10	5	0	1	0	0	0	0
6	5	0	0	0	0	0	0
9	1	0	0	0	0	0	0
3	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0
3	1	0	0	0	0	0	0
1	1	1	0	0	0	0	0
3	0	0	0	0	0	0	0
2	0	0	0	1	0	0	0
0	1	0	0	0	0	0	0
1	1	0	0	0	0	0	0
3	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
1	0	0	1	0	0	0	0
2	0	1	0	0	0	0	0
1	0	0	0	0	0	0	0
3	1	0	0	1	0	0	0
2	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	1	0	0	0	0
0	0	0	0	0	0	1	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.2312 \text{ (0.1714, 0.291)}$$

$$b = -0.2631 \text{ (-0.301, -0.2251)}$$

$$c = 0.001425 \text{ (-0.002617, 0.005467)}$$

$$d = -0.03416 \text{ (-0.1187, 0.05037)}$$

goftotal =

$$\text{sse: } 2.3107\text{e-}007$$

$$\text{rsquare: } 9.9954\text{e-}001$$

$$\text{dfe: } 4$$

$$\text{adjrsquare: } 9.9920\text{e-}001$$

$$\text{rmse: } 2.4035\text{e-}004$$

ctotal =

General model Exp1:

$$\text{ctotal}(x) = a \cdot \exp(b \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.04514 \text{ (0.00998, 0.0803)}$$

$$b = -0.1504 \text{ (-0.1892, -0.1115)}$$

goftotal =

sse: 2.1869e-008

rsquare: 9.9543e-001

dfe: 3

adjrsquare: 9.9391e-001

rmse: 8.5380e-005

Event 32	Date	Time*	Location*	Summing interval*				
	2-Apr-01	2151	N18W82	Apr 2 2200 to Apr 8 2100				
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	1.575E-04	5.120E-05	4.846E-05	1.697E-05	1.031E-05	3.755E-06	2.115E-06	1.058E-06
2	1.036E-03	7.616E-04	4.975E-04	2.646E-04	1.509E-04	4.940E-05	1.064E-05	2.274E-06
3	6.704E-03	3.506E-03	2.148E-03	1.231E-03	4.493E-04	1.752E-04	3.331E-05	5.077E-06
4	6.922E-03	3.676E-03	2.179E-03	1.040E-03	4.269E-04	1.946E-04	4.316E-05	7.871E-06
5	5.255E-03	2.754E-03	1.965E-03	1.106E-03	4.379E-04	2.275E-04	6.653E-05	2.067E-05
6	1.499E-02	8.526E-03	5.141E-03	3.006E-03	1.045E-03	3.966E-04	1.162E-04	1.851E-05
7	1.940E-02	1.105E-02	7.251E-03	3.671E-03	1.541E-03	7.124E-04	2.131E-04	4.373E-05
8	3.396E-02	2.210E-02	1.416E-02	8.750E-03	3.823E-03	1.441E-03	3.834E-04	6.429E-05
9	4.291E-02	2.502E-02	1.478E-02	8.469E-03	3.758E-03	1.427E-03	3.610E-04	9.448E-05
10	3.225E-02	1.944E-02	1.240E-02	5.861E-03	2.341E-03	8.943E-04	2.076E-04	4.542E-05
11	2.282E-02	1.179E-02	6.168E-03	3.717E-03	1.542E-03	5.541E-04	1.560E-04	2.742E-05
12	2.307E-02	1.202E-02	6.393E-03	3.613E-03	1.168E-03	4.182E-04	1.394E-04	1.476E-05
13	3.490E-02	1.802E-02	9.392E-03	4.239E-03	1.491E-03	5.171E-04	1.485E-04	2.446E-05
14	2.882E-02	1.468E-02	8.707E-03	3.973E-03	1.255E-03	4.417E-04	1.053E-04	1.226E-05

15	2.600E-02	1.289E-02	7.233E-03	3.396E-03	1.057E-03	3.995E-04	1.154E-04	2.031E-05
16	1.445E-02	8.220E-03	4.893E-03	2.418E-03	8.236E-04	3.098E-04	5.377E-05	1.417E-05
17	1.177E-02	6.645E-03	4.072E-03	2.168E-03	6.873E-04	2.292E-04	5.061E-05	1.141E-05
18	1.330E-02	7.836E-03	4.201E-03	2.094E-03	7.071E-04	2.660E-04	4.983E-05	6.206E-06
19	1.464E-02	7.448E-03	4.151E-03	1.870E-03	6.041E-04	2.753E-04	4.382E-05	3.351E-06
20	1.565E-02	7.924E-03	4.176E-03	1.920E-03	5.697E-04	2.012E-04	4.710E-05	5.396E-06
21	1.386E-02	7.592E-03	3.690E-03	1.906E-03	6.490E-04	1.693E-04	4.205E-05	6.591E-06
22	1.357E-02	6.844E-03	3.685E-03	1.681E-03	5.203E-04	1.876E-04	4.332E-05	1.144E-05
23	1.282E-02	6.217E-03	3.470E-03	1.631E-03	5.357E-04	1.735E-04	3.835E-05	3.861E-06
24	1.291E-02	6.088E-03	3.398E-03	1.659E-03	5.294E-04	1.439E-04	3.620E-05	3.881E-06
25	9.091E-03	4.502E-03	2.427E-03	1.205E-03	3.859E-04	1.287E-04	3.155E-05	4.344E-06
26	8.857E-03	3.909E-03	2.287E-03	1.037E-03	3.787E-04	1.239E-04	3.284E-05	5.114E-06
27	6.883E-03	3.358E-03	1.820E-03	8.784E-04	3.073E-04	1.040E-04	2.430E-05	2.859E-06
28	6.684E-03	3.369E-03	1.750E-03	7.987E-04	2.845E-04	8.260E-05	1.924E-05	2.901E-06
29	6.003E-03	3.003E-03	1.588E-03	7.889E-04	2.542E-04	7.899E-05	2.057E-05	2.834E-06
30	5.867E-03	2.834E-03	1.518E-03	8.037E-04	2.529E-04	6.474E-05	1.349E-05	3.551E-06
31	5.318E-03	2.567E-03	1.346E-03	7.497E-04	2.017E-04	7.898E-05	1.467E-05	3.426E-06
32	5.008E-03	2.722E-03	1.418E-03	6.422E-04	2.141E-04	6.275E-05	9.493E-06	8.671E-07
33	4.551E-03	2.221E-03	1.337E-03	5.345E-04	1.802E-04	6.222E-05	1.392E-05	8.657E-07
34	4.461E-03	2.243E-03	1.234E-03	5.069E-04	1.624E-04	5.936E-05	1.664E-05	3.114E-06
35	4.412E-03	2.134E-03	1.115E-03	5.078E-04	1.663E-04	5.737E-05	1.334E-05	2.437E-06
36	4.017E-03	1.971E-03	1.095E-03	5.540E-04	1.339E-04	4.593E-05	7.663E-06	2.388E-06
37	3.782E-03	1.799E-03	9.319E-04	4.265E-04	1.316E-04	3.630E-05	1.137E-05	1.518E-06
38	3.736E-03	1.617E-03	8.708E-04	3.759E-04	1.377E-04	4.318E-05	9.497E-06	1.564E-06
39	3.860E-03	1.734E-03	9.249E-04	4.031E-04	1.369E-04	3.869E-05	1.002E-05	1.511E-06
40	3.708E-03	1.588E-03	8.308E-04	3.272E-04	1.397E-04	2.502E-05	6.819E-06	7.436E-07
41	3.254E-03	1.600E-03	8.001E-04	3.493E-04	9.630E-05	2.305E-05	4.885E-06	1.507E-06
42	2.823E-03	1.297E-03	6.644E-04	3.260E-04	9.214E-05	2.360E-05	6.586E-06	1.422E-06
43	2.989E-03	1.282E-03	7.806E-04	2.491E-04	8.768E-05	2.687E-05	2.864E-06	6.896E-07
44	3.257E-03	1.296E-03	7.301E-04	2.934E-04	8.327E-05	2.252E-05	3.188E-06	0.000E+00
45	2.590E-03	1.150E-03	6.714E-04	2.270E-04	8.669E-05	1.566E-05	8.229E-06	7.414E-07
46	2.607E-03	1.078E-03	6.110E-04	2.430E-04	8.351E-05	1.923E-05	2.300E-06	1.381E-06
47	2.437E-03	1.316E-03	5.390E-04	2.226E-04	5.644E-05	2.172E-05	0.000E+00	1.398E-06
48	2.170E-03	1.021E-03	4.565E-04	2.470E-04	6.251E-05	1.841E-05	3.838E-06	6.659E-07
49	2.192E-03	1.053E-03	4.698E-04	2.032E-04	7.995E-05	1.549E-05	3.225E-06	0.000E+00
50	2.143E-03	8.535E-04	4.091E-04	2.111E-04	5.534E-05	1.655E-05	2.003E-06	6.064E-07
51	2.063E-03	9.364E-04	3.949E-04	2.139E-04	4.721E-05	2.015E-05	2.602E-06	0.000E+00
52	1.997E-03	9.014E-04	4.636E-04	1.981E-04	5.000E-05	9.498E-06	5.113E-07	0.000E+00
53	1.898E-03	9.613E-04	4.104E-04	1.873E-04	4.946E-05	1.499E-05	1.611E-06	0.000E+00
54	1.946E-03	9.441E-04	3.596E-04	1.666E-04	5.480E-05	1.599E-05	1.535E-06	0.000E+00

55	1.865E-03	8.159E-04	4.591E-04	1.978E-04	4.100E-05	1.149E-05	3.562E-06	6.646E-07
56	1.780E-03	8.547E-04	4.356E-04	1.815E-04	5.834E-05	1.490E-05	2.574E-06	6.179E-07
57	1.857E-03	8.082E-04	4.299E-04	1.630E-04	4.931E-05	1.039E-05	5.251E-07	0.000E+00
58	1.909E-03	8.330E-04	3.907E-04	2.203E-04	5.065E-05	1.364E-05	1.532E-06	0.000E+00
59	1.840E-03	8.407E-04	4.329E-04	1.667E-04	5.278E-05	1.455E-05	1.528E-06	0.000E+00
60	1.838E-03	7.595E-04	3.288E-04	1.701E-04	5.833E-05	7.814E-06	1.975E-06	0.000E+00
61	1.570E-03	7.456E-04	3.073E-04	1.933E-04	5.895E-05	1.009E-05	2.982E-06	0.000E+00
62	1.669E-03	7.730E-04	4.072E-04	1.605E-04	4.213E-05	2.009E-05	2.471E-06	0.000E+00
63	1.634E-03	6.847E-04	3.599E-04	1.411E-04	4.101E-05	6.602E-06	3.411E-06	1.185E-06
64	1.742E-03	7.577E-04	4.108E-04	1.980E-04	5.392E-05	1.433E-05	3.931E-06	1.236E-06
65	1.606E-03	7.437E-04	3.907E-04	1.515E-04	5.831E-05	8.742E-06	3.013E-06	0.000E+00
66	1.658E-03	7.417E-04	3.354E-04	1.901E-04	5.660E-05	1.019E-05	4.563E-06	1.695E-06
67	1.552E-03	6.600E-04	3.294E-04	1.515E-04	5.165E-05	1.287E-05	2.438E-06	1.768E-06
68	1.152E-03	5.311E-04	2.702E-04	1.293E-04	3.817E-05	1.164E-05	2.333E-06	5.819E-07
69	9.119E-04	3.623E-04	2.188E-04	8.924E-05	3.627E-05	6.235E-06	1.444E-06	1.742E-06
70	8.250E-04	4.275E-04	2.045E-04	8.776E-05	2.022E-05	8.358E-06	1.404E-06	5.629E-07
71	8.036E-04	3.011E-04	2.027E-04	6.694E-05	2.680E-05	1.145E-05	1.851E-06	0.000E+00
72	8.037E-04	3.305E-04	1.280E-04	9.677E-05	2.799E-05	6.258E-06	9.206E-07	0.000E+00
73	7.532E-04	3.297E-04	1.462E-04	3.689E-05	2.024E-05	3.120E-06	1.348E-06	0.000E+00
74	7.220E-04	2.735E-04	1.388E-04	5.859E-05	2.346E-05	3.984E-06	1.391E-06	0.000E+00
75	6.994E-04	2.721E-04	1.329E-04	7.354E-05	1.657E-05	4.194E-06	2.336E-06	5.919E-07
76	5.924E-04	2.873E-04	1.078E-04	4.485E-05	1.644E-05	4.085E-06	0.000E+00	0.000E+00
77	6.967E-04	2.574E-04	1.239E-04	5.513E-05	4.460E-06	6.085E-06	4.716E-07	0.000E+00
78	5.882E-04	2.280E-04	6.529E-05	4.800E-05	1.446E-05	1.988E-06	9.189E-07	0.000E+00
79	6.666E-04	2.569E-04	1.385E-04	3.981E-05	1.003E-05	9.893E-07	9.315E-07	0.000E+00
80	4.172E-04	1.664E-04	1.030E-04	5.268E-05	5.428E-06	4.056E-06	1.380E-06	0.000E+00
81	3.854E-04	1.531E-04	7.470E-05	2.802E-05	7.775E-06	3.969E-06	0.000E+00	0.000E+00
82	4.044E-04	1.671E-04	7.762E-05	3.447E-05	7.011E-06	3.789E-06	4.299E-07	0.000E+00
83	3.424E-04	1.188E-04	5.383E-05	1.926E-05	1.074E-05	1.991E-06	0.000E+00	0.000E+00
84	3.564E-04	1.897E-04	5.735E-05	3.395E-05	6.419E-06	4.886E-06	0.000E+00	0.000E+00
85	4.185E-04	1.831E-04	8.092E-05	4.557E-05	1.417E-05	2.070E-06	8.999E-07	0.000E+00
86	4.167E-04	1.509E-04	6.773E-05	2.561E-05	1.400E-05	1.031E-06	0.000E+00	5.396E-07
87	3.320E-04	1.449E-04	6.025E-05	2.700E-05	4.294E-06	5.866E-06	0.000E+00	0.000E+00
88	2.936E-04	1.344E-04	5.260E-05	3.508E-05	1.076E-05	2.029E-06	4.279E-07	0.000E+00
89	3.197E-04	1.204E-04	6.686E-05	2.206E-05	1.085E-05	1.960E-06	9.036E-07	5.318E-07
90	2.574E-04	1.380E-04	5.308E-05	3.183E-05	6.373E-06	0.000E+00	8.769E-07	5.634E-07
91	2.364E-04	8.500E-05	5.624E-05	2.992E-05	6.377E-06	2.911E-06	0.000E+00	0.000E+00
92	2.736E-04	1.146E-04	8.247E-05	3.164E-05	5.281E-06	0.000E+00	8.769E-07	0.000E+00
93	2.552E-04	1.249E-04	5.639E-05	2.662E-05	9.342E-06	1.897E-06	0.000E+00	5.621E-07
94	2.270E-04	1.272E-04	6.222E-05	2.534E-05	7.584E-06	1.004E-06	0.000E+00	0.000E+00

95	2.476E-04	8.215E-05	4.310E-05	3.152E-05	4.304E-06	1.007E-06	0.000E+00	0.000E+00
96	2.726E-04	1.084E-04	6.872E-05	1.899E-05	1.028E-06	1.946E-06	0.000E+00	0.000E+00
97	1.953E-04	1.083E-04	3.298E-05	1.915E-05	7.279E-06	1.939E-06	8.692E-07	1.087E-06
98	1.835E-04	8.930E-05	4.277E-05	1.008E-05	1.964E-06	2.742E-06	4.174E-07	0.000E+00
99	1.723E-04	7.650E-05	3.589E-05	1.903E-05	3.126E-06	9.407E-07	0.000E+00	0.000E+00
100	1.832E-04	9.712E-05	1.604E-05	2.013E-05	7.450E-06	9.986E-07	4.470E-07	0.000E+00
101	1.887E-04	1.076E-04	6.189E-05	2.677E-05	2.036E-06	0.000E+00	0.000E+00	0.000E+00
102	2.272E-04	9.485E-05	4.482E-05	6.100E-06	6.291E-06	1.869E-06	0.000E+00	0.000E+00
103	1.582E-04	7.097E-05	3.881E-05	1.093E-05	4.243E-06	9.343E-07	4.441E-07	0.000E+00
104	1.583E-04	6.249E-05	4.173E-05	9.484E-06	2.089E-06	9.907E-07	0.000E+00	0.000E+00
105	1.519E-04	7.813E-05	4.506E-05	1.867E-05	3.101E-06	9.886E-07	0.000E+00	0.000E+00
106	1.405E-04	6.022E-05	1.633E-05	1.572E-05	1.014E-06	0.000E+00	0.000E+00	1.107E-06
107	1.450E-04	5.754E-05	4.208E-05	1.563E-05	4.053E-06	0.000E+00	4.183E-07	0.000E+00
108	1.575E-04	5.704E-05	2.222E-05	9.372E-06	4.109E-06	0.000E+00	4.426E-07	0.000E+00
109	9.258E-05	4.692E-05	2.248E-05	1.719E-05	5.201E-06	2.971E-06	4.436E-07	0.000E+00
110	1.626E-04	5.195E-05	1.960E-05	4.771E-06	8.533E-06	9.400E-07	0.000E+00	0.000E+00
111	1.250E-04	6.175E-05	3.644E-05	1.291E-05	2.184E-06	9.529E-07	4.507E-07	0.000E+00
112	1.662E-04	8.375E-05	2.704E-05	1.291E-05	4.392E-06	3.068E-06	0.000E+00	0.000E+00
113	2.639E-04	6.034E-05	2.654E-05	1.141E-05	3.229E-06	2.045E-06	1.326E-06	0.000E+00
114	3.491E-04	9.749E-05	4.164E-05	1.235E-05	5.156E-06	0.000E+00	8.193E-07	0.000E+00
115	3.075E-04	8.309E-05	5.096E-05	1.189E-05	2.227E-06	2.973E-06	4.446E-07	5.901E-07
116	2.732E-04	5.803E-05	2.403E-05	2.211E-05	3.365E-06	1.990E-06	9.442E-07	5.906E-07
117	2.114E-04	6.932E-05	2.060E-05	1.169E-05	3.209E-06	1.046E-06	4.666E-07	0.000E+00
118	1.893E-04	5.196E-05	3.389E-05	9.919E-06	3.279E-06	0.000E+00	4.676E-07	0.000E+00
119	1.658E-04	7.314E-05	1.699E-05	9.688E-06	2.259E-06	9.886E-07	4.356E-07	0.000E+00
120	1.362E-04	5.956E-05	2.000E-05	1.144E-05	2.236E-06	0.000E+00	0.000E+00	0.000E+00
121	1.212E-04	3.254E-05	2.378E-05	6.377E-06	3.141E-06	9.629E-07	4.321E-07	0.000E+00
122	1.201E-04	4.351E-05	2.385E-05	1.138E-05	6.458E-06	1.988E-06	1.326E-06	0.000E+00
123	1.294E-04	4.362E-05	3.339E-05	4.916E-06	3.273E-06	0.000E+00	0.000E+00	0.000E+00
124	9.518E-05	2.403E-05	2.279E-05	6.394E-06	2.093E-06	9.650E-07	0.000E+00	0.000E+00
125	1.366E-04	4.522E-05	1.662E-05	6.449E-06	3.213E-06	0.000E+00	4.241E-07	0.000E+00
126	1.052E-04	2.668E-05	1.640E-05	6.459E-06	3.214E-06	9.471E-07	0.000E+00	0.000E+00
127	1.113E-04	3.189E-05	2.285E-05	9.557E-06	2.125E-06	1.008E-06	0.000E+00	0.000E+00
128	1.415E-04	3.470E-05	3.963E-05	9.713E-06	1.128E-06	0.000E+00	1.332E-06	0.000E+00
129	1.207E-04	3.854E-05	2.356E-05	1.312E-05	3.361E-06	1.992E-06	8.936E-07	0.000E+00
130	1.312E-04	4.217E-05	1.622E-05	1.539E-05	2.098E-06	0.000E+00	0.000E+00	0.000E+00
131	1.228E-04	5.211E-05	1.718E-05	8.002E-06	6.590E-06	0.000E+00	0.000E+00	0.000E+00
132	1.795E-04	5.834E-05	2.123E-05	8.398E-06	0.000E+00	1.009E-06	0.000E+00	0.000E+00
133	2.154E-04	5.659E-05	1.745E-05	5.129E-06	2.331E-06	2.019E-06	0.000E+00	0.000E+00
134	7.841E-05	2.191E-05	1.392E-05	1.313E-05	2.226E-06	0.000E+00	4.391E-07	0.000E+00

135	5.939E-05	1.839E-05	0.000E+00	3.116E-06	1.006E-06	0.000E+00	0.000E+00	0.000E+00
136	5.056E-05	2.049E-05	6.429E-06	4.678E-06	0.000E+00	9.193E-07	0.000E+00	0.000E+00
137	3.762E-05	2.636E-06	6.364E-06	1.579E-06	0.000E+00	9.150E-07	4.091E-07	0.000E+00
138	2.336E-05	1.269E-05	1.288E-05	1.486E-06	9.921E-07	0.000E+00	4.089E-07	5.420E-07
139	4.067E-05	7.728E-06	6.157E-06	6.024E-06	1.051E-06	0.000E+00	0.000E+00	0.000E+00
140	1.766E-05	1.297E-05	6.341E-06	1.573E-06	1.979E-06	0.000E+00	0.000E+00	0.000E+00
141	2.644E-05	5.241E-06	6.142E-06	1.481E-06	9.893E-07	0.000E+00	4.318E-07	0.000E+00
142	3.254E-05	7.402E-06	9.382E-06	0.000E+00	9.850E-07	0.000E+00	4.062E-07	0.000E+00
143	2.006E-05	1.769E-05	6.501E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
144	1.441E-05	7.827E-06	9.736E-06	1.564E-06	1.044E-06	9.057E-07	4.054E-07	0.000E+00

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	2.036E-05	4.136E-06	6.784E-06	1.649E-06	0.000E+00	5.129E-07	2.149E-07	0.000E+00
2	2.226E-04	8.810E-05	3.531E-05	2.019E-05	8.997E-06	5.850E-07	2.167E-07	0.000E+00
3	9.613E-04	2.852E-04	1.495E-04	6.478E-05	1.492E-05	2.624E-06	2.944E-07	0.000E+00
4	8.787E-04	2.230E-04	9.852E-05	6.955E-05	1.325E-05	4.149E-06	0.000E+00	0.000E+00
5	7.421E-04	2.334E-04	2.027E-04	9.051E-05	3.707E-05	8.169E-06	4.681E-06	0.000E+00
6	1.155E-03	4.166E-04	2.214E-04	1.012E-04	4.106E-05	2.452E-05	4.263E-06	1.228E-06
7	2.276E-03	8.402E-04	4.883E-04	2.647E-04	8.153E-05	2.520E-05	8.328E-06	4.503E-07
8	6.796E-03	2.496E-03	1.057E-03	5.546E-04	1.882E-04	4.258E-05	1.144E-05	8.621E-07
9	7.664E-03	2.761E-03	1.349E-03	6.404E-04	2.285E-04	5.373E-05	9.686E-06	4.039E-06
10	4.816E-03	1.580E-03	8.200E-04	3.783E-04	1.072E-04	2.584E-05	6.140E-06	1.664E-06
11	3.220E-03	1.294E-03	6.566E-04	2.868E-04	1.128E-04	1.800E-05	4.883E-06	0.000E+00
12	2.685E-03	1.025E-03	4.983E-04	2.816E-04	6.371E-05	2.218E-05	2.001E-06	0.000E+00
13	3.270E-03	1.160E-03	5.429E-04	1.624E-04	5.407E-05	5.746E-06	6.638E-06	0.000E+00
14	3.080E-03	9.032E-04	4.480E-04	1.533E-04	5.184E-05	2.097E-05	3.379E-06	0.000E+00
15	2.474E-03	8.640E-04	3.646E-04	1.491E-04	4.315E-05	4.856E-06	3.026E-06	1.038E-06
16	1.643E-03	6.649E-04	2.694E-04	9.580E-05	3.391E-05	1.170E-05	5.010E-07	0.000E+00
17	1.275E-03	4.831E-04	2.296E-04	6.863E-05	2.325E-05	7.056E-06	1.577E-06	0.000E+00
18	1.485E-03	4.273E-04	2.014E-04	7.087E-05	2.498E-05	6.665E-06	1.094E-06	4.938E-07
19	1.459E-03	3.897E-04	2.141E-04	8.752E-05	1.871E-05	2.156E-06	1.679E-06	0.000E+00
20	1.472E-03	4.304E-04	1.772E-04	7.574E-05	2.062E-05	4.937E-06	0.000E+00	0.000E+00
21	1.346E-03	3.682E-04	1.873E-04	6.486E-05	9.235E-06	8.521E-06	1.590E-06	0.000E+00
22	1.168E-03	3.644E-04	1.299E-04	5.504E-05	9.099E-06	3.599E-06	1.584E-06	0.000E+00
23	9.325E-04	2.955E-04	1.175E-04	4.427E-05	1.950E-05	2.476E-06	9.827E-07	0.000E+00
24	9.953E-04	3.378E-04	1.252E-04	5.938E-05	1.278E-05	2.211E-06	1.106E-06	0.000E+00
25	8.295E-04	2.371E-04	8.808E-05	5.056E-05	1.635E-05	3.003E-06	4.262E-07	0.000E+00

26	6.448E-04	2.031E-04	9.744E-05	3.673E-05	7.523E-06	5.747E-06	0.000E+00	0.000E+00
27	5.835E-04	1.796E-04	7.756E-05	3.124E-05	5.768E-06	9.243E-07	4.109E-07	0.000E+00
28	6.849E-04	1.702E-04	8.935E-05	3.433E-05	9.151E-06	3.561E-06	3.899E-07	0.000E+00
29	5.441E-04	1.553E-04	6.865E-05	3.828E-05	1.892E-06	0.000E+00	0.000E+00	0.000E+00
30	4.669E-04	1.486E-04	7.819E-05	3.466E-05	6.545E-06	3.384E-06	7.401E-07	0.000E+00
31	4.155E-04	1.289E-04	8.071E-05	3.079E-05	7.231E-06	2.514E-06	0.000E+00	0.000E+00
32	4.040E-04	1.317E-04	4.332E-05	1.302E-05	9.671E-06	0.000E+00	0.000E+00	0.000E+00
33	3.810E-04	1.327E-04	5.874E-05	1.162E-05	2.571E-06	1.550E-06	3.357E-07	0.000E+00
34	3.195E-04	1.217E-04	5.016E-05	1.769E-05	2.341E-06	7.533E-07	0.000E+00	0.000E+00
35	3.368E-04	1.033E-04	3.118E-05	1.280E-05	3.381E-06	1.569E-06	0.000E+00	0.000E+00
36	2.943E-04	1.059E-04	4.110E-05	1.360E-05	4.883E-06	0.000E+00	0.000E+00	0.000E+00
37	2.822E-04	6.211E-05	4.087E-05	1.453E-05	4.049E-06	7.293E-07	0.000E+00	0.000E+00
38	3.151E-04	7.990E-05	1.806E-05	9.764E-06	1.666E-06	7.664E-07	0.000E+00	0.000E+00
39	2.571E-04	7.353E-05	2.783E-05	7.291E-06	7.864E-07	0.000E+00	0.000E+00	4.171E-07
40	2.770E-04	7.286E-05	3.202E-05	1.572E-05	3.269E-06	7.069E-07	0.000E+00	0.000E+00
41	2.110E-04	5.363E-05	3.690E-05	5.915E-06	7.800E-07	0.000E+00	3.260E-07	0.000E+00
42	1.758E-04	5.428E-05	1.888E-05	1.241E-05	1.509E-06	0.000E+00	2.969E-07	0.000E+00
43	1.754E-04	3.905E-05	3.158E-05	7.011E-06	0.000E+00	7.071E-07	0.000E+00	0.000E+00
44	1.523E-04	3.941E-05	1.044E-05	4.889E-06	0.000E+00	7.821E-07	0.000E+00	0.000E+00
45	9.934E-05	2.492E-05	1.657E-05	2.239E-06	1.434E-06	0.000E+00	0.000E+00	0.000E+00
46	9.628E-05	2.645E-05	6.979E-06	1.141E-06	1.526E-06	0.000E+00	0.000E+00	0.000E+00
47	9.447E-05	2.804E-05	1.386E-05	4.424E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
48	8.228E-05	2.718E-05	8.957E-06	4.211E-06	0.000E+00	0.000E+00	0.000E+00	3.631E-07
49	7.090E-05	2.473E-05	6.613E-06	1.022E-06	7.139E-07	6.541E-07	0.000E+00	0.000E+00
50	8.101E-05	2.107E-05	9.954E-06	3.873E-06	6.660E-07	0.000E+00	2.547E-07	0.000E+00
51	8.047E-05	1.893E-05	8.845E-06	2.116E-06	6.604E-07	0.000E+00	2.701E-07	0.000E+00
52	6.481E-05	1.892E-05	6.520E-06	1.053E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
53	6.859E-05	2.392E-05	6.496E-06	1.046E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
54	5.233E-05	2.888E-05	8.474E-06	9.679E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
55	8.420E-05	2.518E-05	2.155E-06	9.721E-07	0.000E+00	5.910E-07	0.000E+00	0.000E+00
56	5.964E-05	2.005E-05	8.175E-06	2.937E-06	1.317E-06	0.000E+00	0.000E+00	0.000E+00
57	6.424E-05	1.648E-05	4.121E-06	1.016E-06	0.000E+00	5.847E-07	0.000E+00	0.000E+00
58	8.146E-05	2.117E-05	2.149E-06	0.000E+00	6.321E-07	6.154E-07	0.000E+00	0.000E+00
59	7.954E-05	1.173E-05	7.945E-06	2.015E-06	6.686E-07	0.000E+00	0.000E+00	0.000E+00
60	7.112E-05	1.163E-05	1.009E-05	2.950E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
61	7.752E-05	6.511E-06	2.068E-06	2.859E-06	6.609E-07	0.000E+00	2.688E-07	0.000E+00
62	7.523E-05	1.134E-05	9.994E-06	9.886E-07	0.000E+00	6.024E-07	0.000E+00	0.000E+00
63	4.810E-05	1.126E-05	7.983E-06	5.786E-06	0.000E+00	0.000E+00	2.671E-07	0.000E+00
64	7.905E-05	1.440E-05	8.035E-06	1.864E-06	6.569E-07	6.016E-07	0.000E+00	0.000E+00
65	6.741E-05	1.760E-05	3.997E-06	3.810E-06	3.233E-06	5.641E-07	0.000E+00	0.000E+00

66	5.789E-05	1.025E-05	1.911E-06	1.769E-06	0.000E+00	1.047E-06	2.327E-07	3.094E-07
67	4.955E-05	2.334E-05	3.938E-06	9.721E-07	1.215E-06	0.000E+00	0.000E+00	3.048E-07
68	4.452E-05	1.448E-05	1.364E-05	1.907E-06	0.000E+00	0.000E+00	0.000E+00	3.251E-07
69	3.915E-05	9.127E-06	7.465E-06	8.800E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
70	3.530E-05	6.250E-06	1.926E-06	1.847E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
71	3.019E-05	4.494E-06	0.000E+00	2.658E-06	5.767E-07	5.650E-07	0.000E+00	0.000E+00
72	2.349E-05	7.609E-06	5.541E-06	1.791E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
73	3.001E-05	8.961E-06	1.798E-06	8.700E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
74	1.832E-05	3.021E-06	3.596E-06	8.671E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
75	1.351E-05	4.464E-06	0.000E+00	1.746E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
76	2.169E-05	9.066E-06	1.791E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
77	1.320E-05	4.548E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
78	8.376E-06	0.000E+00	1.900E-06	1.776E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
79	1.506E-05	1.539E-06	1.906E-06	1.716E-06	5.761E-07	0.000E+00	0.000E+00	0.000E+00
80	1.827E-05	2.893E-06	0.000E+00	8.536E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
81	1.131E-05	1.443E-06	5.534E-06	8.971E-07	5.631E-07	0.000E+00	0.000E+00	0.000E+00
82	1.654E-05	0.000E+00	1.749E-06	0.000E+00	5.537E-07	0.000E+00	0.000E+00	0.000E+00
83	3.233E-06	0.000E+00	1.756E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
84	1.479E-05	2.924E-06	3.541E-06	1.726E-06	5.944E-07	0.000E+00	0.000E+00	0.000E+00
85	1.135E-05	1.432E-06	1.784E-06	0.000E+00	0.000E+00	5.202E-07	0.000E+00	0.000E+00
86	1.594E-05	2.831E-06	1.749E-06	8.857E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
87	1.448E-05	2.818E-06	1.741E-06	1.666E-06	5.540E-07	0.000E+00	0.000E+00	0.000E+00
88	8.231E-06	2.886E-06	0.000E+00	1.711E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
89	1.574E-05	2.871E-06	1.727E-06	8.286E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
90	8.087E-06	5.741E-06	1.724E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
91	1.415E-05	4.259E-06	1.729E-06	8.229E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
92	4.718E-06	2.868E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
93	7.787E-06	1.389E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
94	4.721E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
95	8.051E-06	2.939E-06	1.819E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
96	6.325E-06	0.000E+00	1.816E-06	8.214E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
97	9.355E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
98	5.961E-06	2.657E-06	0.000E+00	0.000E+00	0.000E+00	4.928E-07	0.000E+00	0.000E+00
99	4.766E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
100	6.380E-06	2.756E-06	3.511E-06	8.179E-07	5.409E-07	0.000E+00	0.000E+00	0.000E+00
101	3.043E-06	1.459E-06	1.699E-06	0.000E+00	5.404E-07	0.000E+00	0.000E+00	0.000E+00
102	7.871E-06	1.379E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
103	1.609E-06	0.000E+00	0.000E+00	1.719E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
104	4.546E-06	0.000E+00	0.000E+00	0.000E+00	1.109E-06	0.000E+00	0.000E+00	0.000E+00
105	3.026E-06	1.451E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
54	20	15	11	10	4	5	2
332	284	151	168	145	52	25	4
1664	997	491	584	320	134	57	7
1502	908	435	430	266	132	65	9
1181	711	408	476	284	160	105	26
2192	1460	714	866	455	192	120	17
2267	1469	776	835	529	264	171	29
1551	1270	672	1002	665	269	162	22
1713	1290	617	868	579	245	140	28
2039	1592	841	924	554	225	124	24
2324	1438	610	770	479	189	121	16
2485	1510	640	772	371	144	111	10
2510	1579	663	682	356	133	86	12
2433	1487	705	687	326	124	67	6
2690	1555	703	700	326	133	87	12
2315	1516	732	746	382	155	60	13
2241	1451	713	789	376	136	68	12
2667	1796	775	802	405	165	69	7
2108	1227	553	517	252	127	44	3
2121	1229	521	497	221	85	44	4
1902	1195	467	502	257	72	40	5
1933	1116	483	458	212	83	43	9
1849	1025	459	449	221	77	38	3
1861	1005	453	456	219	65	36	3
1545	874	377	391	188	68	37	4
1551	785	372	347	191	68	40	5
1297	725	316	316	165	61	31	3
1259	725	302	286	152	48	25	3
1179	674	287	295	142	48	28	3
1189	658	283	310	145	41	19	4
1107	611	258	298	120	51	21	4
1074	667	280	262	131	42	14	1
990	553	268	222	112	42	21	1
1044	601	266	227	109	43	27	4
991	548	230	218	107	40	21	3
913	512	228	240	87	33	12	3
868	472	197	187	86	26	18	2
860	427	184	166	91	31	15	2

896	461	197	179	91	28	16	2
862	422	178	146	93	18	11	1
770	432	173	158	65	17	8	2
687	362	149	152	65	18	11	2
719	353	173	114	61	20	5	1
743	337	153	127	54	16	5	0
640	326	152	108	60	12	14	1
652	309	141	116	60	15	4	2
617	381	126	108	41	17	0	2
568	305	110	124	47	15	7	1
585	320	115	103	61	13	6	0
618	282	109	117	46	15	4	1
563	292	98	111	37	17	5	0
545	281	116	103	39	8	1	0
524	305	105	99	39	13	3	0
545	302	92	89	44	14	3	0
523	261	118	106	33	10	7	1
502	276	113	98	47	13	5	1
526	262	112	88	40	9	1	0
543	272	102	119	41	12	3	0
527	275	114	91	43	13	3	0
530	250	87	94	48	7	4	0
456	248	82	107	49	9	6	0
484	257	109	89	35	18	5	0
480	230	97	79	34	6	7	2
507	252	110	110	45	13	8	2
470	249	105	85	49	8	6	0
523	268	97	114	51	10	10	3
461	224	90	86	44	12	5	3
350	185	76	75	33	11	5	1
281	128	62	52	32	6	3	3
256	152	58	52	18	8	3	1
251	108	58	40	24	11	4	0
251	118	37	58	25	6	2	0
236	118	42	22	18	3	3	0
226	98	40	35	21	4	3	0
219	98	38	44	15	4	5	1
187	103	31	27	15	4	0	0
219	93	36	33	4	6	1	0
185	82	19	29	13	2	2	0

210	93	40	24	9	1	2	0
133	60	30	32	5	4	3	0
123	56	22	17	7	4	0	0
140	66	25	23	7	4	1	0
111	44	16	12	10	2	0	0
115	70	17	21	6	5	0	0
135	67	24	28	13	2	2	0
135	56	20	16	13	1	0	1
108	54	18	17	4	6	0	0
96	50	16	22	10	2	1	0
105	45	20	14	10	2	2	1
85	52	16	20	6	0	2	1
78	32	17	19	6	3	0	0
90	43	25	20	5	0	2	0
84	47	17	17	9	2	0	1
75	48	19	16	7	1	0	0
82	31	13	20	4	1	0	0
90	41	21	12	1	2	0	0
65	41	10	12	7	2	2	2
65	36	14	7	2	3	1	0
57	29	11	12	3	1	0	0
61	37	5	13	7	1	1	0
63	41	19	17	2	0	0	0
76	36	14	4	6	2	0	0
53	27	12	7	4	1	1	0
53	24	13	6	2	1	0	0
51	30	14	12	3	1	0	0
47	23	5	10	1	0	0	2
49	22	13	10	4	0	1	0
53	22	7	6	4	0	1	0
31	18	7	11	5	3	1	0
54	20	6	3	8	1	0	0
41	23	11	8	2	1	1	0
54	31	8	8	4	3	0	0
85	22	8	7	3	2	3	0
120	38	13	8	5	0	2	0
97	30	15	7	2	3	1	1
86	21	7	13	3	2	2	1
67	25	6	7	3	1	1	0
60	19	10	6	3	0	1	0

53	27	5	6	2	1	1	0
44	22	6	7	2	0	0	0
39	12	7	4	3	1	1	0
39	16	7	7	6	2	3	0
42	16	10	3	3	0	0	0
31	9	7	4	2	1	0	0
45	17	5	4	3	0	1	0
35	10	5	4	3	1	0	0
37	12	7	6	2	1	0	0
46	13	12	6	1	0	3	0
38	14	7	8	3	2	2	0
44	16	5	10	2	0	0	0
39	19	5	5	6	0	0	0
56	21	6	5	0	1	0	0
67	20	5	3	2	2	0	0
25	8	4	8	2	0	1	0
20	7	0	2	1	0	0	0
17	8	2	3	0	1	0	0
13	1	2	1	0	1	1	0
8	5	4	1	1	0	1	1
14	3	2	4	1	0	0	0
6	5	2	1	2	0	0	0
9	2	2	1	1	0	1	0
11	3	3	0	1	0	1	0
7	7	2	0	0	0	0	0
5	3	3	1	1	1	1	0

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
13	3	4	2	0	1	1	0
138	62	20	24	16	1	1	0
456	150	64	58	20	4	1	0
367	102	37	54	15	5	0	0
321	112	79	73	45	11	14	3
343	133	58	56	35	21	8	1
508	217	99	115	52	18	13	1
583	263	93	121	60	16	11	3
585	260	108	127	66	17	7	1

651	272	114	117	48	14	8	0
646	296	122	112	66	11	7	0
566	245	95	114	39	13	3	0
458	190	73	50	25	3	8	0
494	170	67	51	25	11	4	1
490	191	66	57	25	3	4	0
507	226	75	56	29	11	1	0
466	195	75	47	24	8	4	1
570	181	69	51	27	8	3	0
405	121	53	46	14	2	3	0
382	123	41	37	15	4	0	0
353	108	44	32	7	7	3	0
318	110	32	28	7	3	3	0
257	91	29	23	15	2	2	0
273	103	31	31	10	2	2	0
270	85	26	31	15	3	1	0
216	76	30	23	7	6	0	0
211	71	25	21	6	1	1	0
247	68	29	23	9	4	1	0
204	65	23	27	2	0	0	0
181	64	27	25	7	4	2	0
165	57	29	23	8	3	0	0
165	60	16	10	11	0	0	0
159	61	22	9	3	2	1	0
143	60	20	15	3	1	0	0
144	49	12	10	4	2	0	0
128	51	16	11	6	0	0	0
124	30	16	12	5	1	0	0
139	39	7	8	2	1	0	1
114	36	11	6	1	0	0	0
123	36	13	13	4	1	0	0
96	27	15	5	1	0	1	0
82	28	8	11	2	0	1	0
81	20	13	6	0	1	0	0
66	19	4	4	0	1	0	0
47	13	7	2	2	0	0	0
46	14	3	1	2	0	0	0
46	15	6	4	0	0	0	1
41	15	4	4	0	0	0	0
36	14	3	1	1	1	0	0

45	13	5	4	1	0	1	0
42	11	4	2	1	0	1	0
34	11	3	1	0	0	0	0
36	14	3	1	0	0	0	0
28	17	4	1	0	0	0	0
45	15	1	1	0	1	0	0
32	12	4	3	2	0	0	0
35	10	2	1	0	1	0	0
44	13	1	0	1	1	0	0
43	7	4	2	1	0	0	0
39	7	5	3	0	0	0	0
43	4	1	3	1	0	1	0
42	7	5	1	0	1	0	0
27	7	4	6	0	0	1	0
44	9	4	2	1	1	0	0
38	11	2	4	5	1	0	1
35	7	1	2	0	2	1	1
28	15	2	1	2	0	0	1
26	9	7	2	0	0	0	0
23	6	4	1	0	0	0	0
21	4	1	2	0	0	0	0
18	3	0	3	1	1	0	0
14	5	3	2	0	0	0	0
18	6	1	1	0	0	0	0
11	2	2	1	0	0	0	0
8	3	0	2	0	0	0	0
13	6	1	0	0	0	0	0
8	3	0	0	0	0	0	0
5	0	1	2	0	0	0	0
9	1	1	2	1	0	0	0
11	2	0	1	0	0	0	0
7	1	3	1	1	0	0	0
11	0	1	0	1	0	0	0
2	0	1	0	0	0	0	0
9	2	2	2	1	0	0	0
7	1	1	0	0	1	0	0
10	2	1	1	0	0	0	0
9	2	1	2	1	0	0	0
5	2	0	2	0	0	0	0
10	2	1	1	0	0	0	0

5	4	1	0	0	0	0	0
9	3	1	1	0	0	0	0
3	2	0	0	0	0	0	0
5	1	0	0	0	0	0	0
3	0	0	0	0	0	0	0
5	2	1	0	0	0	0	0
4	0	1	1	0	0	0	0
6	0	0	0	0	0	0	0
4	2	0	0	0	1	0	0
3	0	0	0	0	0	0	0
4	2	2	1	1	0	0	0
2	1	1	0	1	0	0	0
5	1	0	0	0	0	0	0
1	0	0	2	0	0	0	0
3	0	0	0	2	0	0	0
2	1	0	0	0	0	0	1
2	0	0	0	0	0	0	0
3	1	0	0	0	0	0	0
2	4	0	1	0	0	0	0
5	0	0	0	0	0	0	0
4	0	1	0	0	0	0	0
1	0	0	0	0	0	0	0
5	0	2	0	1	0	0	0
6	0	0	0	2	0	1	0
2	0	3	1	0	0	0	0
5	1	0	0	1	0	0	0
1	0	1	0	1	0	0	0
2	0	0	1	0	0	0	0
6	3	0	1	0	0	0	0
0	0	0	0	0	1	1	0
5	3	0	4	1	0	0	0
3	2	0	0	1	1	0	0
2	2	4	0	0	0	0	0
1	3	0	1	0	1	0	0
0	1	0	1	1	1	0	0
4	2	0	0	1	0	0	0
1	0	0	0	0	0	0	1
0	2	1	0	0	0	0	0
5	0	1	0	1	0	0	0
4	0	1	0	1	0	0	0

0	2	1	0	1	0	0	0
3	1	0	1	0	0	0	0
3	1	0	0	0	0	0	0
2	1	0	0	0	0	0	0
3	0	1	0	0	0	0	0
3	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
4	2	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	1	1	0	0	0	0	0
1	1	1	0	0	0	0	0
1	0	0	0	0	0	1	0
1	0	0	1	0	0	0	0
0	2	2	0	0	0	0	0
0	0	0	0	0	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 2.609 \quad (2.337, 2.881)$$

$$b = -0.2047 \quad (-0.2492, -0.1602)$$

$$c = 0.1046 \quad (-0.271, 0.4802)$$

$$d = -0.07104 \quad (-0.1738, 0.03175)$$

goftotal =

sse: 2.8767e-005

rsquare: 9.9987e-001

dfc: 4

adjrsquare: 9.9976e-001

rmse: 2.6818e-003

ctotal =

General model Exp1:

$ctotal(x) = a * \exp(b * x)$

Coefficients (with 95% confidence bounds):

a = 1.168 (0.6685, 1.668)

b = -0.1398 (-0.1609, -0.1186)

goftotal =

sse: 7.8193e-006

rsquare: 9.9831e-001

dfc: 3

adjrsquare: 9.9775e-001

rmse: 1.6144e-003

curve fit iron:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.895 \quad (0.07742, 1.713)$$

$$b = -0.2474 \quad (-0.3708, -0.124)$$

$$c = 0.06598 \quad (-0.06728, 0.1992)$$

$$d = -0.09124 \quad (-0.1463, -0.0362)$$

goftotal =

sse: 3.2017e-007

rsquare: 9.9986e-001

dfe: 4

adjrsquare: 9.9976e-001

rmse: 2.8292e-004

ctotal =

General model Exp1:

$ctotal(x) = a * \exp(b * x)$

Coefficients (with 95% confidence bounds):

a = 0.06327 (0.03855, 0.088)

b = -0.08476 (-0.09616, -0.07336)

goftotal =

sse: 1.3760e-008

rsquare: 9.9882e-001

dfe: 3

adjrsquare: 9.9842e-001

rmse: 6.7724e-005

Event 33	Date	Time*	Location*	Summing interval*				
	10-Apr-01	1600	S23W09	April 10 to Apr 12 1200				
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	2.062E-05	2.643E-06	1.238E-05	1.492E-06	0.000E+00	0.000E+00	4.100E-07	0.000E+00
2	1.741E-05	0.000E+00	9.658E-06	2.981E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
3	3.891E-05	7.276E-06	5.812E-06	4.276E-06	1.919E-06	0.000E+00	0.000E+00	0.000E+00
4	4.752E-05	4.215E-05	3.254E-05	3.288E-05	9.264E-06	5.909E-06	4.409E-07	0.000E+00
5	1.856E-04	1.393E-04	1.087E-04	9.077E-05	2.946E-05	8.560E-06	3.929E-06	1.608E-06
6	5.527E-04	4.068E-04	2.202E-04	1.491E-04	7.285E-05	2.315E-05	4.040E-06	0.000E+00
7	1.020E-03	7.710E-04	4.780E-04	2.297E-04	1.162E-04	3.338E-05	5.188E-06	1.156E-06
8	1.451E-03	1.009E-03	7.203E-04	2.970E-04	8.843E-05	4.566E-05	4.801E-06	6.177E-07
9	2.194E-03	1.347E-03	7.957E-04	4.718E-04	1.386E-04	5.269E-05	1.117E-05	1.253E-06
10	2.586E-03	1.449E-03	9.823E-04	4.689E-04	1.708E-04	6.242E-05	1.144E-05	3.223E-06
11	2.881E-03	1.818E-03	1.088E-03	5.963E-04	1.699E-04	7.413E-05	1.102E-05	6.472E-07
12	3.427E-03	2.177E-03	1.272E-03	5.500E-04	1.780E-04	5.895E-05	1.293E-05	6.805E-07
13	4.120E-03	2.607E-03	1.466E-03	7.549E-04	2.269E-04	7.871E-05	1.366E-05	3.571E-06
14	4.408E-03	2.410E-03	1.632E-03	8.412E-04	2.672E-04	8.111E-05	1.455E-05	2.158E-06
15	4.913E-03	2.740E-03	1.592E-03	7.819E-04	2.383E-04	8.385E-05	1.633E-05	1.469E-06
16	5.124E-03	2.866E-03	1.590E-03	8.226E-04	2.804E-04	8.199E-05	1.599E-05	3.851E-06
17	5.704E-03	3.104E-03	1.836E-03	9.867E-04	2.857E-04	9.912E-05	2.734E-05	8.093E-07
18	5.943E-03	3.277E-03	1.894E-03	9.572E-04	2.930E-04	1.019E-04	1.403E-05	5.609E-06
19	6.611E-03	3.657E-03	2.197E-03	1.068E-03	3.490E-04	1.234E-04	2.531E-05	3.840E-06
20	7.704E-03	4.377E-03	2.302E-03	1.193E-03	3.983E-04	1.283E-04	2.548E-05	3.394E-06
21	7.773E-03	3.906E-03	2.172E-03	1.153E-03	3.698E-04	1.033E-04	2.650E-05	8.943E-07
22	6.921E-03	3.704E-03	2.050E-03	1.004E-03	3.182E-04	9.679E-05	1.900E-05	5.159E-06
23	7.188E-03	3.686E-03	2.015E-03	9.020E-04	3.082E-04	7.879E-05	2.355E-05	2.516E-06
24	8.735E-03	4.328E-03	2.513E-03	1.140E-03	3.101E-04	1.073E-04	2.134E-05	1.788E-06
25	6.712E-03	3.681E-03	1.997E-03	8.910E-04	2.803E-04	1.003E-04	2.038E-05	8.614E-07
26	9.185E-03	4.830E-03	2.544E-03	1.091E-03	3.683E-04	1.088E-04	1.849E-05	1.799E-06
27	9.656E-03	4.702E-03	2.354E-03	1.084E-03	3.471E-04	1.177E-04	1.826E-05	2.454E-06

28	8.976E-03	4.254E-03	2.217E-03	1.017E-03	3.094E-04	8.013E-05	1.536E-05	1.686E-06
29	1.077E-02	5.393E-03	2.846E-03	1.211E-03	3.632E-04	1.125E-04	2.075E-05	4.419E-06
30	1.098E-02	5.306E-03	2.692E-03	1.212E-03	3.746E-04	1.083E-04	1.513E-05	8.707E-07
31	1.013E-02	4.501E-03	2.312E-03	1.030E-03	2.844E-04	7.012E-05	1.671E-05	3.496E-06
32	1.062E-02	4.958E-03	2.388E-03	1.057E-03	3.044E-04	9.574E-05	9.278E-06	9.386E-07
33	1.179E-02	5.646E-03	2.513E-03	1.163E-03	2.977E-04	8.166E-05	1.484E-05	0.000E+00
34	1.327E-02	6.342E-03	2.618E-03	1.202E-03	2.876E-04	8.953E-05	1.339E-05	0.000E+00
35	1.375E-02	5.810E-03	2.975E-03	1.056E-03	3.220E-04	8.878E-05	1.370E-05	9.247E-07
36	1.401E-02	5.946E-03	2.745E-03	1.112E-03	2.888E-04	8.994E-05	5.988E-06	1.059E-06
37	1.356E-02	5.603E-03	2.517E-03	1.028E-03	2.245E-04	7.063E-05	5.936E-06	1.089E-06
38	1.470E-02	5.989E-03	2.609E-03	1.024E-03	2.526E-04	5.926E-05	1.092E-05	3.517E-06
39	2.083E-02	7.828E-03	3.511E-03	1.333E-03	3.053E-04	9.865E-05	9.937E-06	0.000E+00
40	2.315E-02	8.171E-03	3.385E-03	1.178E-03	2.836E-04	6.435E-05	8.259E-06	0.000E+00
41	1.866E-02	7.013E-03	3.005E-03	9.495E-04	2.111E-04	3.862E-05	1.141E-05	1.222E-06
42	1.504E-02	5.339E-03	2.384E-03	8.115E-04	1.926E-04	6.249E-05	5.398E-06	0.000E+00
43	1.466E-02	5.504E-03	2.063E-03	7.485E-04	1.281E-04	3.939E-05	5.272E-06	0.000E+00
44	1.219E-02	4.461E-03	1.722E-03	5.600E-04	1.378E-04	3.230E-05	0.000E+00	0.000E+00
45	1.088E-02	3.630E-03	1.533E-03	4.751E-04	9.368E-05	2.453E-05	1.531E-06	0.000E+00
46	1.042E-02	3.506E-03	1.301E-03	4.520E-04	1.007E-04	1.692E-05	1.478E-06	0.000E+00
47	8.725E-03	2.700E-03	1.047E-03	3.365E-04	6.110E-05	1.018E-05	1.360E-06	0.000E+00
48	6.837E-03	2.348E-03	8.311E-04	2.667E-04	4.765E-05	2.266E-05	1.288E-06	0.000E+00
49	5.418E-03	1.924E-03	7.042E-04	2.430E-04	4.003E-05	1.179E-05	1.186E-06	7.128E-07
50	4.424E-03	1.408E-03	4.676E-04	1.699E-04	4.480E-05	5.047E-06	1.089E-06	0.000E+00
51	3.943E-03	1.218E-03	4.651E-04	1.435E-04	3.340E-05	3.537E-06	5.087E-07	6.593E-07
52	2.565E-03	8.606E-04	3.444E-04	1.437E-04	2.056E-05	4.491E-06	1.600E-06	0.000E+00
53	2.475E-03	7.847E-04	3.166E-04	1.123E-04	2.368E-05	2.094E-06	9.338E-07	0.000E+00
54	2.028E-03	7.385E-04	3.268E-04	1.031E-04	1.661E-05	7.711E-06	9.897E-07	0.000E+00
55	1.294E-03	4.133E-04	1.714E-04	5.574E-05	9.957E-06	0.000E+00	9.204E-07	5.679E-07
56	1.245E-03	4.169E-04	1.673E-04	5.231E-05	8.059E-06	3.187E-06	0.000E+00	6.019E-07
57	1.006E-03	3.465E-04	1.630E-04	5.810E-05	1.258E-05	4.299E-06	4.614E-07	5.806E-07
58	9.089E-04	2.981E-04	1.539E-04	4.752E-05	1.373E-05	2.146E-06	1.413E-06	0.000E+00
59	8.469E-04	2.922E-04	1.115E-04	4.817E-05	1.606E-05	4.247E-06	1.852E-06	5.751E-07
60	9.853E-04	3.013E-04	1.089E-04	4.738E-05	1.368E-05	6.384E-06	2.445E-06	6.144E-07
61	7.241E-04	2.281E-04	9.087E-05	4.912E-05	9.265E-06	5.356E-06	3.351E-06	2.455E-06
62	6.905E-04	2.390E-04	1.055E-04	5.231E-05	6.896E-06	6.409E-06	4.952E-07	6.217E-07
63	8.438E-04	2.287E-04	1.111E-04	6.218E-05	7.239E-06	8.776E-06	2.975E-06	0.000E+00
64	7.387E-04	2.365E-04	9.451E-05	5.612E-05	1.398E-05	2.164E-06	5.022E-07	0.000E+00
65	5.866E-04	2.457E-04	1.076E-04	4.662E-05	7.936E-06	4.262E-06	9.565E-07	6.141E-07
66	5.184E-04	2.214E-04	6.389E-05	4.096E-05	1.250E-05	2.109E-06	4.595E-07	1.180E-06
67	5.421E-04	1.352E-04	6.967E-05	4.263E-05	6.382E-06	4.869E-06	4.508E-07	5.308E-07

68	4.863E-04	2.055E-04	5.643E-05	2.079E-05	1.017E-05	6.146E-06	4.765E-07	0.000E+00
69	4.428E-04	1.703E-04	6.546E-05	1.816E-05	3.319E-06	9.950E-07	0.000E+00	5.906E-07
70	4.076E-04	1.390E-04	6.207E-05	3.203E-05	4.389E-06	0.000E+00	4.456E-07	0.000E+00
71	3.923E-04	1.183E-04	2.792E-05	9.646E-06	2.142E-06	3.084E-06	4.704E-07	0.000E+00
72	2.996E-04	9.053E-05	4.796E-05	1.495E-05	3.320E-06	1.037E-06	0.000E+00	5.793E-07
73	3.527E-04	8.457E-05	4.406E-05	1.628E-05	4.306E-06	0.000E+00	4.364E-07	0.000E+00
74	3.337E-04	8.634E-05	3.377E-05	1.625E-05	3.218E-06	0.000E+00	1.351E-06	0.000E+00
75	2.322E-04	8.606E-05	2.650E-05	9.661E-06	4.300E-06	0.000E+00	0.000E+00	5.703E-07
76	2.179E-04	6.419E-05	1.312E-05	1.127E-05	2.137E-06	1.016E-06	0.000E+00	0.000E+00
77	1.584E-04	4.725E-05	2.276E-05	7.987E-06	2.124E-06	1.001E-06	0.000E+00	0.000E+00
78	1.475E-04	5.297E-05	1.650E-05	8.056E-06	2.115E-06	0.000E+00	0.000E+00	5.611E-07
79	1.112E-04	2.658E-05	2.237E-05	3.235E-06	0.000E+00	9.957E-07	4.199E-07	0.000E+00
80	1.018E-04	4.994E-05	1.997E-05	4.761E-06	2.101E-06	9.921E-07	0.000E+00	5.580E-07
81	1.692E-04	5.782E-05	9.933E-06	1.626E-06	1.024E-06	0.000E+00	0.000E+00	0.000E+00
82	1.957E-04	8.943E-05	1.932E-05	1.525E-06	2.107E-06	9.429E-07	4.486E-07	0.000E+00
83	2.149E-04	4.900E-05	1.495E-05	7.283E-06	2.911E-06	0.000E+00	0.000E+00	0.000E+00
84	1.564E-04	6.364E-05	6.294E-06	4.868E-06	0.000E+00	0.000E+00	4.468E-07	0.000E+00
85	1.611E-04	4.444E-05	1.638E-05	4.756E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
86	9.167E-05	3.361E-05	6.230E-06	3.089E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
87	6.795E-05	2.060E-05	3.101E-06	3.078E-06	1.060E-06	0.000E+00	0.000E+00	0.000E+00
88	7.999E-05	1.542E-05	9.478E-06	1.496E-06	9.986E-07	0.000E+00	0.000E+00	5.136E-07
89	5.040E-05	1.029E-05	0.000E+00	6.257E-06	9.986E-07	0.000E+00	0.000E+00	0.000E+00
90	7.532E-05	1.557E-05	1.279E-05	3.091E-06	9.986E-07	0.000E+00	0.000E+00	0.000E+00
91	2.328E-05	1.757E-05	3.095E-06	3.162E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
92	7.052E-05	5.119E-06	3.279E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
93	8.501E-05	2.060E-05	1.575E-05	1.501E-06	1.002E-06	0.000E+00	0.000E+00	0.000E+00
94	6.141E-05	2.053E-05	6.389E-06	3.079E-06	0.000E+00	0.000E+00	0.000E+00	5.124E-07
95	6.461E-05	1.770E-05	9.476E-06	3.069E-06	0.000E+00	0.000E+00	4.344E-07	0.000E+00
96	4.379E-05	1.053E-05	3.086E-06	0.000E+00	1.051E-06	0.000E+00	0.000E+00	0.000E+00
97	4.330E-05	1.004E-05	0.000E+00	2.966E-06	0.000E+00	0.000E+00	0.000E+00	5.423E-07
98	4.642E-05	7.571E-06	6.367E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
99	8.216E-05	2.384E-05	5.934E-06	2.858E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
100	7.000E-05	1.267E-05	9.423E-06	2.964E-06	2.039E-06	0.000E+00	0.000E+00	0.000E+00
101	7.586E-05	1.790E-05	3.259E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
102	3.734E-05	1.278E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
103	3.500E-05	2.030E-05	3.249E-06	1.474E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
104	3.195E-05	2.244E-05	0.000E+00	1.474E-06	2.028E-06	0.000E+00	4.303E-07	0.000E+00
105	4.629E-05	1.012E-05	0.000E+00	1.469E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
106	3.435E-05	9.965E-06	6.286E-06	1.471E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
107	4.331E-05	7.513E-06	0.000E+00	0.000E+00	1.042E-06	0.000E+00	0.000E+00	0.000E+00

108	3.183E-05	7.347E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
109	4.033E-05	2.444E-06	9.307E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
110	1.360E-04	9.076E-05	4.432E-05	2.263E-05	1.037E-06	1.911E-06	0.000E+00	0.000E+00
111	5.872E-04	1.373E-04	1.891E-05	1.380E-05	0.000E+00	9.093E-07	0.000E+00	0.000E+00
112	2.157E-04	7.534E-05	1.594E-05	1.484E-06	9.900E-07	0.000E+00	0.000E+00	0.000E+00
113	1.430E-04	4.296E-05	6.502E-06	4.609E-06	9.857E-07	0.000E+00	0.000E+00	0.000E+00
114	1.218E-04	4.270E-05	3.244E-06	3.036E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
115	8.718E-05	2.332E-05	1.174E-05	1.457E-06	9.727E-07	0.000E+00	0.000E+00	0.000E+00

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	4.556E-06	0.000E+00	1.661E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2	6.041E-06	1.344E-06	3.521E-06	8.429E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
3	5.654E-06	1.337E-06	0.000E+00	0.000E+00	5.231E-07	0.000E+00	0.000E+00	0.000E+00
4	1.511E-06	1.365E-06	5.354E-06	8.071E-07	5.368E-07	0.000E+00	0.000E+00	0.000E+00
5	2.349E-05	8.440E-06	3.406E-06	8.079E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
6	4.764E-05	7.344E-06	5.426E-06	3.478E-06	1.175E-06	0.000E+00	0.000E+00	0.000E+00
7	7.494E-05	2.271E-05	7.772E-06	4.532E-06	1.253E-06	5.264E-07	0.000E+00	0.000E+00
8	8.910E-05	1.892E-05	7.949E-06	1.887E-06	6.641E-07	0.000E+00	0.000E+00	0.000E+00
9	1.332E-04	2.612E-05	2.219E-05	9.720E-06	1.293E-06	1.140E-06	0.000E+00	0.000E+00
10	1.464E-04	5.248E-05	2.933E-05	4.009E-06	6.492E-07	5.894E-07	0.000E+00	0.000E+00
11	1.744E-04	5.714E-05	2.577E-05	6.284E-06	2.072E-06	0.000E+00	0.000E+00	0.000E+00
12	1.764E-04	5.538E-05	2.703E-05	8.578E-06	7.393E-07	0.000E+00	0.000E+00	0.000E+00
13	2.323E-04	7.159E-05	3.714E-05	2.231E-05	3.761E-06	0.000E+00	0.000E+00	0.000E+00
14	2.871E-04	1.188E-04	3.847E-05	8.077E-06	5.437E-06	6.866E-07	0.000E+00	0.000E+00
15	2.526E-04	1.183E-04	4.342E-05	2.013E-05	3.798E-06	0.000E+00	0.000E+00	0.000E+00
16	2.938E-04	1.053E-04	4.005E-05	1.448E-05	3.247E-06	7.571E-07	0.000E+00	0.000E+00
17	3.530E-04	1.285E-04	4.894E-05	1.969E-05	4.122E-06	7.721E-07	0.000E+00	0.000E+00
18	4.194E-04	1.864E-04	6.411E-05	2.002E-05	5.773E-06	0.000E+00	0.000E+00	0.000E+00
19	6.185E-04	1.823E-04	8.805E-05	2.391E-05	5.534E-06	0.000E+00	0.000E+00	0.000E+00
20	6.462E-04	1.944E-04	9.536E-05	3.205E-05	6.281E-06	1.634E-06	0.000E+00	0.000E+00
21	6.174E-04	2.038E-04	9.468E-05	2.915E-05	3.579E-06	2.446E-06	0.000E+00	0.000E+00
22	5.011E-04	1.966E-04	6.870E-05	2.088E-05	5.136E-06	0.000E+00	0.000E+00	0.000E+00
23	4.680E-04	1.334E-04	3.647E-05	2.393E-05	3.613E-06	1.614E-06	0.000E+00	0.000E+00
24	4.845E-04	1.310E-04	4.880E-05	2.362E-05	9.464E-07	0.000E+00	0.000E+00	0.000E+00
25	4.746E-04	1.472E-04	3.880E-05	2.122E-05	4.862E-06	7.529E-07	0.000E+00	0.000E+00
26	6.297E-04	1.956E-04	7.105E-05	2.067E-05	2.698E-06	0.000E+00	0.000E+00	0.000E+00
27	5.192E-04	1.180E-04	6.359E-05	1.453E-05	2.609E-06	0.000E+00	0.000E+00	0.000E+00
28	5.182E-04	1.796E-04	4.362E-05	1.562E-05	5.279E-06	7.829E-07	0.000E+00	0.000E+00

29	6.653E-04	1.606E-04	4.878E-05	2.182E-05	8.144E-06	0.000E+00	0.000E+00	0.000E+00
30	6.628E-04	1.641E-04	6.679E-05	2.347E-05	5.605E-06	0.000E+00	0.000E+00	4.771E-07
31	5.634E-04	1.649E-04	4.198E-05	1.627E-05	3.609E-06	8.350E-07	0.000E+00	0.000E+00
32	4.535E-04	1.613E-04	4.882E-05	1.366E-05	9.007E-07	0.000E+00	0.000E+00	0.000E+00
33	5.544E-04	1.413E-04	4.708E-05	1.681E-05	1.047E-06	0.000E+00	0.000E+00	0.000E+00
34	6.094E-04	1.767E-04	5.861E-05	3.172E-06	1.099E-06	0.000E+00	0.000E+00	0.000E+00
35	5.638E-04	1.153E-04	5.625E-05	1.424E-05	1.061E-06	0.000E+00	0.000E+00	0.000E+00
36	5.913E-04	9.658E-05	2.356E-05	3.121E-06	1.147E-06	0.000E+00	0.000E+00	0.000E+00
37	5.283E-04	1.095E-04	4.374E-05	1.636E-05	1.165E-06	0.000E+00	0.000E+00	0.000E+00
38	5.145E-04	1.201E-04	4.875E-05	9.074E-06	1.149E-06	0.000E+00	5.199E-07	0.000E+00
39	4.832E-04	1.370E-04	4.420E-05	7.271E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
40	6.054E-04	1.409E-04	4.811E-05	4.621E-06	7.819E-06	0.000E+00	0.000E+00	0.000E+00
41	4.488E-04	1.101E-04	1.870E-05	1.998E-06	1.569E-06	0.000E+00	0.000E+00	0.000E+00
42	3.438E-04	7.776E-05	1.368E-05	1.706E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
43	3.700E-04	5.735E-05	2.865E-05	6.844E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
44	2.722E-04	6.028E-05	9.389E-06	3.214E-06	1.084E-06	0.000E+00	0.000E+00	0.000E+00
45	2.215E-04	3.265E-05	1.300E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
46	1.981E-04	3.241E-05	9.024E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
47	1.629E-04	2.999E-05	5.811E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
48	1.141E-04	1.638E-05	2.592E-06	4.971E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
49	1.216E-04	1.561E-05	4.717E-06	2.274E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
50	7.878E-05	5.491E-06	7.040E-06	1.131E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
51	7.184E-05	2.179E-05	2.001E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
52	7.002E-05	6.404E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
53	4.819E-05	9.459E-06	1.876E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
54	3.471E-05	8.007E-06	1.959E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
55	3.024E-05	8.967E-06	0.000E+00	8.693E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
56	4.077E-05	1.495E-06	5.899E-06	0.000E+00	5.846E-07	0.000E+00	5.050E-07	0.000E+00
57	2.580E-05	6.189E-06	3.834E-06	9.007E-07	0.000E+00	0.000E+00	2.561E-07	0.000E+00
58	3.517E-05	6.112E-06	1.937E-06	1.804E-06	5.823E-07	5.662E-07	0.000E+00	0.000E+00
59	2.066E-05	1.499E-06	5.643E-06	9.529E-07	5.894E-07	1.616E-06	2.399E-07	0.000E+00
60	2.264E-05	6.324E-06	5.785E-06	1.916E-06	1.271E-06	0.000E+00	7.515E-07	3.022E-07
61	1.385E-05	9.687E-06	5.774E-06	2.815E-06	1.240E-06	5.868E-07	0.000E+00	0.000E+00
62	1.896E-05	4.572E-06	1.854E-06	2.864E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
63	4.116E-05	6.447E-06	3.865E-06	0.000E+00	6.155E-07	0.000E+00	2.651E-07	3.091E-07
64	3.496E-05	3.081E-06	3.933E-06	9.150E-07	6.031E-07	0.000E+00	0.000E+00	0.000E+00
65	1.909E-05	7.766E-06	3.741E-06	2.804E-06	0.000E+00	5.808E-07	2.429E-07	0.000E+00
66	8.599E-06	9.367E-06	3.821E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
67	2.208E-05	5.820E-06	1.828E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
68	1.833E-05	4.520E-06	1.927E-06	9.271E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00

109	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
110	1.235E-04	1.885E-05	1.154E-05	1.658E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
111	1.378E-04	1.670E-05	0.000E+00	0.000E+00	5.566E-07	0.000E+00	0.000E+00	0.000E+00
112	6.427E-05	6.769E-06	3.406E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
113	4.236E-05	2.829E-06	0.000E+00	7.879E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
114	3.833E-05	1.329E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
115	1.719E-05	1.312E-06	3.057E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
7	1	4	1	0	0	1	0
6	0	3	2	0	0	0	0
14	3	2	3	2	0	0	0
16	16	10	21	9	6	1	0
62	53	33	58	28	9	9	3
178	149	65	91	67	23	9	0
313	271	136	135	102	32	11	2
429	341	197	168	75	42	10	1
631	442	210	259	114	47	22	2
724	464	253	250	137	54	22	5
786	568	273	311	132	63	21	1
892	649	305	274	132	48	23	1
1042	755	341	365	164	62	24	5
1079	677	367	393	187	62	25	3
1172	747	350	356	163	62	27	2
1192	763	341	365	187	59	26	5
1296	807	383	429	186	70	43	1
1343	847	393	414	189	71	22	7
1541	974	471	475	232	89	41	5
1601	1041	441	473	237	83	37	4
1619	930	416	458	220	67	38	1
1480	906	403	410	194	64	28	6
1498	880	387	361	185	51	34	3
1782	1009	471	444	181	68	30	2
1521	953	417	386	182	70	32	1
1947	1170	496	444	223	72	27	2
2046	1139	459	439	211	78	27	3
1916	1039	435	415	189	53	23	2
2192	1257	533	470	212	71	29	5

2217	1225	499	468	216	68	21	1
2083	1059	438	406	167	45	24	4
2147	1147	444	407	176	60	13	1
2195	1203	431	415	159	47	19	0
2252	1233	410	391	140	47	16	0
2421	1177	485	359	163	49	17	1
2391	1160	432	362	141	48	7	1
2350	1113	401	340	111	38	7	1
2279	1064	375	304	112	29	12	3
2263	1044	375	300	104	36	8	0
2613	1121	372	272	98	24	7	0
2309	1017	347	232	76	15	10	1
2467	1004	361	253	90	32	6	0
2440	1051	316	238	61	20	6	0
2197	919	285	193	71	18	0	0
2024	771	262	168	50	14	2	0
1979	762	227	164	55	10	2	0
1806	636	199	133	36	7	2	0
1560	610	174	116	31	16	2	0
1314	533	157	112	28	9	2	1
1137	413	111	83	33	4	2	0
1112	393	121	77	27	3	1	1
741	284	92	79	17	4	3	0
734	266	86	63	20	2	2	0
605	252	89	59	14	7	2	0
403	147	49	33	9	0	2	1
384	147	47	31	7	3	0	1
307	121	46	34	11	4	1	1
281	106	44	28	12	2	3	0
259	102	31	28	14	4	4	1
296	103	30	27	12	6	5	1
216	78	25	28	8	5	7	4
208	82	29	30	6	6	1	1
247	77	30	35	6	8	6	0
219	80	26	32	12	2	1	0
177	85	30	27	7	4	2	1
159	77	18	24	11	2	1	2
179	51	21	27	6	5	1	1
151	73	16	12	9	6	1	0
139	61	19	11	3	1	0	1

128	50	18	19	4	0	1	0
124	43	8	6	2	3	1	0
96	33	14	9	3	1	0	1
113	31	13	10	4	0	1	0
107	32	10	10	3	0	3	0
76	32	8	6	4	0	0	1
71	24	4	7	2	1	0	0
52	18	7	5	2	1	0	0
49	20	5	5	2	0	0	1
37	10	7	2	0	1	1	0
34	19	6	3	2	1	0	1
56	22	3	1	1	0	0	0
65	34	6	1	2	1	1	0
77	20	5	5	3	0	0	0
52	24	2	3	0	0	1	0
54	17	5	3	0	0	0	0
31	13	2	2	0	0	0	0
23	8	1	2	1	0	0	0
27	6	3	1	1	0	0	1
17	4	0	4	1	0	0	0
26	6	4	2	1	0	0	0
8	7	1	2	0	0	0	0
24	2	1	0	0	0	0	0
29	8	5	1	1	0	0	0
21	8	2	2	0	0	0	1
22	7	3	2	0	0	1	0
15	4	1	0	1	0	0	0
15	4	0	2	0	0	0	1
16	3	2	0	0	0	0	0
30	10	2	2	0	0	0	0
24	5	3	2	2	0	0	0
26	7	1	0	0	0	0	0
13	5	0	0	0	0	0	0
12	8	1	1	0	0	0	0
11	9	0	1	2	0	1	0
16	4	0	1	0	0	0	0
12	4	2	1	0	0	0	0
15	3	0	0	1	0	0	0
11	3	0	0	0	0	0	0
14	1	3	0	0	0	0	0

47	36	14	15	1	2	0	0
203	54	6	9	0	1	0	0
73	29	5	1	1	0	0	0
49	17	2	3	1	0	0	0
42	17	1	2	0	0	0	0
32	10	4	1	1	0	0	0

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
3	0	1	0	0	0	0	0
4	1	2	1	0	0	0	0
4	1	0	0	1	0	0	0
1	1	3	1	1	0	0	0
15	6	2	1	0	0	0	0
29	5	3	4	2	0	0	0
44	15	4	5	2	1	0	0
50	12	4	2	1	0	0	0
73	16	11	10	2	2	0	0
78	31	14	4	1	1	0	0
91	33	12	6	3	0	0	0
88	30	12	8	1	0	0	0
113	38	16	20	5	0	0	0
135	62	16	7	7	1	0	0
115	60	18	17	5	0	0	0
131	52	16	12	4	1	0	0
153	62	19	16	5	1	0	0
182	89	25	16	7	0	0	0
275	90	35	20	7	0	0	0
256	86	34	24	7	2	0	0
246	90	34	22	4	3	0	0
205	89	25	16	6	0	0	0
187	59	13	18	4	2	0	0
190	57	17	17	1	0	0	0
205	71	15	17	6	1	0	0
256	87	26	16	3	0	0	0
211	53	23	11	3	0	0	0
212	81	16	12	6	1	0	0
259	69	17	16	9	0	0	1
256	70	23	17	6	0	0	0

222	72	15	12	4	1	0	0
175	69	17	10	1	0	0	0
198	55	15	11	1	0	0	0
198	63	17	2	1	0	0	0
190	43	17	9	1	0	0	0
194	35	7	2	1	0	0	0
176	40	13	10	1	0	0	0
153	40	13	5	1	0	1	0
99	34	9	3	0	0	0	0
130	36	10	2	5	0	0	0
108	30	4	1	1	0	0	0
107	27	4	1	0	0	0	0
118	20	8	4	0	0	0	0
94	23	3	2	1	0	0	0
79	13	4	0	0	0	0	0
72	13	3	0	0	0	0	0
65	13	2	0	0	0	0	0
50	8	1	4	0	0	0	0
56	8	2	2	0	0	0	0
39	3	3	1	0	0	0	0
39	13	1	0	0	0	0	0
39	4	0	0	0	0	0	0
27	6	1	0	0	0	0	0
20	5	1	0	0	0	0	0
18	6	0	1	0	0	0	0
24	1	3	0	1	0	2	0
15	4	2	1	0	0	1	0
21	4	1	2	1	1	0	0
12	1	3	1	1	3	1	0
13	4	3	2	2	0	3	1
8	6	3	3	2	1	0	0
11	3	1	3	0	0	0	0
23	4	2	0	1	0	1	1
20	2	2	1	1	0	0	0
11	5	2	3	0	1	1	0
5	6	2	0	0	0	0	0
14	4	1	0	0	0	0	0
11	3	1	1	0	0	0	0
11	3	3	0	1	1	0	0
11	3	0	1	0	0	1	0

10	4	1	1	1	0	0	0
10	2	1	0	1	0	0	0
4	4	0	0	0	0	0	0
8	3	0	1	1	0	0	0
4	2	0	0	0	0	0	0
5	0	0	1	0	0	0	0
5	1	0	0	0	0	1	0
2	1	0	0	0	0	0	0
3	0	1	0	0	0	0	0
2	1	0	0	0	0	1	0
0	0	0	1	0	0	0	0
4	0	0	0	0	0	0	0
1	0	0	0	1	0	0	0
2	0	1	0	0	0	0	0
0	1	0	0	0	0	0	0
0	0	1	0	0	0	0	0
1	1	0	0	0	0	0	0
3	0	0	0	0	0	0	0
3	1	0	0	0	0	1	0
0	0	0	0	0	0	1	0
1	0	0	0	0	0	0	0
0	0	1	0	0	0	0	0
1	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	1	0	0	0	0	0	0
0	0	0	0	0	0	1	0
1	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
0	0	0	0	0	0	1	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
82	14	7	2	0	0	0	0

91	12	0	0	1	0	0	0
42	5	2	0	0	0	0	0
28	2	0	1	0	0	0	0
25	1	0	0	0	0	0	0
12	1	2	0	0	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a * \exp(b * x) + c * \exp(d * x)$$

Coefficients (with 95% confidence bounds):

$$a = 3.246 \quad (2.794, 3.699)$$

$$b = -0.2643 \quad (-0.3103, -0.2184)$$

$$c = 0.0842 \quad (-0.2228, 0.3912)$$

$$d = -0.09669 \quad (-0.2206, 0.02725)$$

goftotal =

sse: 7.4702e-006

rsquare: 0.9999

dfe: 4

adjrsquare: 0.9999

rmse: 0.0014

ctotal =

General model Exp1:

$$ctotal(x) = a * \exp(b * x)$$

Coefficients (with 95% confidence bounds):

$$a = 1.046 \quad (0.5085, 1.584)$$

$$b = -0.177 \quad (-0.2031, -0.151)$$

goftotal =

sse: 1.2402e-006

rsquare: 9.9867e-001

dfe: 3

adjrsquare: 9.9822e-001

rmse: 6.4295e-004

Event 35	Date	Time*	Location*	Summing interval*
	15-Apr-01	214	S20W120	April 15 1400 to April 18 0000
<u>Oxygen</u>	<E>	<E>	<E>	<E>

Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	1.566E-05	1.121E-05	0.000E+00	0.000E+00	4.598E-06	8.044E-06	2.759E-05	2.847E-05
2	4.626E-05	1.240E-04	1.550E-04	2.068E-04	2.865E-04	2.000E-04	1.534E-04	6.174E-05
3	1.308E-03	8.263E-04	6.637E-04	7.656E-04	4.697E-04	4.702E-04	1.817E-04	7.884E-05
4	1.885E-03	1.827E-03	1.170E-03	8.745E-04	5.239E-04	3.469E-04	1.629E-04	7.139E-05
5	5.887E-03	3.966E-03	2.664E-03	1.805E-03	7.946E-04	3.882E-04	1.296E-04	4.036E-05
6	6.724E-03	4.204E-03	2.564E-03	1.665E-03	7.279E-04	4.179E-04	1.310E-04	4.808E-05
7	9.442E-03	5.569E-03	3.033E-03	1.515E-03	6.152E-04	3.002E-04	7.922E-05	2.855E-05
8	1.053E-02	5.593E-03	2.598E-03	1.433E-03	4.974E-04	2.112E-04	5.432E-05	1.834E-05
9	1.036E-02	4.903E-03	2.147E-03	1.121E-03	4.158E-04	1.628E-04	4.938E-05	1.281E-05
10	1.050E-02	4.500E-03	2.193E-03	1.049E-03	3.951E-04	1.139E-04	3.260E-05	1.035E-05
11	9.748E-03	4.270E-03	1.791E-03	8.637E-04	3.089E-04	1.098E-04	2.558E-05	1.152E-05
12	9.499E-03	4.114E-03	1.665E-03	6.837E-04	2.592E-04	4.820E-05	2.386E-05	6.652E-06
13	8.303E-03	3.103E-03	1.447E-03	6.114E-04	1.988E-04	6.938E-05	1.996E-05	1.541E-06
14	7.205E-03	2.722E-03	1.218E-03	5.528E-04	2.049E-04	8.030E-05	1.836E-05	2.771E-06
15	5.938E-03	2.304E-03	1.009E-03	4.742E-04	1.420E-04	3.843E-05	2.125E-05	2.391E-06
16	5.504E-03	2.276E-03	1.130E-03	5.284E-04	1.784E-04	7.174E-05	1.544E-05	3.553E-06
17	4.767E-03	2.083E-03	9.039E-04	4.385E-04	1.526E-04	6.739E-05	1.411E-05	2.273E-06
18	4.853E-03	2.153E-03	1.029E-03	3.984E-04	1.420E-04	4.296E-05	1.037E-05	5.868E-06
19	4.417E-03	1.889E-03	1.035E-03	3.877E-04	1.734E-04	4.845E-05	1.792E-05	2.061E-06
20	4.039E-03	1.898E-03	9.699E-04	4.146E-04	1.621E-04	4.361E-05	1.363E-05	1.934E-06
21	4.307E-03	1.898E-03	1.039E-03	4.144E-04	1.626E-04	5.166E-05	1.338E-05	3.600E-06
22	3.768E-03	1.781E-03	9.672E-04	4.251E-04	1.784E-04	4.789E-05	1.425E-05	2.558E-06
23	3.532E-03	1.666E-03	8.156E-04	4.252E-04	1.176E-04	4.554E-05	9.484E-06	4.315E-06
24	3.350E-03	1.459E-03	7.821E-04	3.772E-04	9.892E-05	2.583E-05	1.195E-05	2.496E-06
25	3.396E-03	1.759E-03	8.474E-04	3.923E-04	1.309E-04	4.716E-05	1.026E-05	1.649E-06
26	3.247E-03	1.479E-03	8.165E-04	3.101E-04	8.498E-05	3.523E-05	4.336E-06	3.076E-06
27	3.102E-03	1.258E-03	7.189E-04	2.616E-04	7.505E-05	1.311E-05	5.857E-06	1.427E-06
28	2.798E-03	1.258E-03	5.492E-04	2.215E-04	6.694E-05	1.450E-05	5.798E-06	1.460E-06
29	2.711E-03	1.198E-03	5.615E-04	2.074E-04	4.002E-05	2.159E-05	5.951E-07	1.483E-06
30	2.357E-03	9.835E-04	4.636E-04	1.923E-04	5.008E-05	2.346E-05	3.920E-06	1.394E-06
31	2.151E-03	9.334E-04	3.654E-04	1.726E-04	3.036E-05	9.889E-06	4.413E-06	1.382E-06
32	1.759E-03	6.029E-04	2.953E-04	1.144E-04	3.165E-05	1.390E-05	4.313E-06	1.360E-06
33	1.724E-03	7.042E-04	2.720E-04	1.194E-04	3.054E-05	7.026E-06	3.153E-06	2.644E-06
34	1.293E-03	4.478E-04	2.505E-04	7.208E-05	1.696E-05	9.417E-06	3.301E-06	1.148E-06
35	1.324E-03	3.901E-04	2.013E-04	9.494E-05	1.803E-05	4.505E-06	1.037E-06	0.000E+00
36	1.092E-03	4.456E-04	1.916E-04	7.452E-05	2.290E-05	6.615E-06	1.968E-06	0.000E+00
37	9.518E-04	3.620E-04	1.421E-04	6.989E-05	1.684E-05	5.497E-06	1.979E-06	0.000E+00
38	8.764E-04	3.096E-04	1.209E-04	4.458E-05	1.421E-05	7.675E-06	4.764E-07	0.000E+00

39	9.107E-04	2.725E-04	1.050E-04	3.871E-05	1.640E-05	3.269E-06	1.460E-06	0.000E+00
40	7.766E-04	2.003E-04	1.040E-04	4.474E-05	9.409E-06	2.071E-06	9.562E-07	6.149E-07
41	6.159E-04	2.177E-04	9.599E-05	2.416E-05	1.036E-05	6.281E-06	1.866E-06	0.000E+00
42	6.921E-04	1.695E-04	7.801E-05	4.089E-05	1.236E-05	4.189E-06	1.934E-06	1.168E-06
43	5.912E-04	1.892E-04	7.015E-05	2.531E-05	1.483E-05	4.164E-06	9.262E-07	1.120E-06
44	4.190E-04	1.262E-04	7.980E-05	3.337E-05	1.007E-05	3.984E-06	0.000E+00	0.000E+00
45	3.633E-04	1.431E-04	5.813E-05	2.471E-05	1.219E-05	4.076E-06	4.416E-07	5.529E-07
46	3.254E-04	1.159E-04	5.173E-05	1.956E-05	1.014E-05	3.067E-06	9.086E-07	5.529E-07
47	3.060E-04	8.451E-05	4.098E-05	1.796E-05	1.201E-05	1.962E-06	1.396E-06	5.494E-07
48	3.049E-04	8.925E-05	5.418E-05	1.786E-05	1.299E-05	0.000E+00	4.615E-07	1.090E-06
49	2.610E-04	7.345E-05	3.698E-05	2.607E-05	1.079E-05	1.994E-06	4.594E-07	5.406E-07
50	1.716E-04	1.075E-04	3.132E-05	1.361E-05	9.032E-06	3.705E-06	0.000E+00	0.000E+00
51	1.512E-04	8.596E-05	5.003E-05	1.759E-05	6.362E-06	2.929E-06	4.280E-07	0.000E+00
52	2.107E-04	6.955E-05	2.316E-05	1.116E-05	2.134E-06	2.979E-06	8.794E-07	1.100E-06
53	1.886E-04	7.953E-05	4.312E-05	1.601E-05	3.221E-06	9.521E-07	9.034E-07	5.629E-07
54	1.597E-04	5.545E-05	1.639E-05	1.398E-05	5.334E-06	1.006E-06	0.000E+00	5.299E-07
55	1.484E-04	5.294E-05	3.968E-05	1.614E-05	2.114E-06	9.450E-07	1.746E-06	0.000E+00
56	1.088E-04	5.309E-05	2.937E-05	1.413E-05	0.000E+00	1.004E-06	4.485E-07	0.000E+00
57	1.325E-04	4.483E-05	2.985E-05	1.103E-05	5.312E-06	1.001E-06	1.269E-06	0.000E+00
58	1.514E-04	3.741E-05	2.625E-05	1.130E-05	2.110E-06	2.001E-06	4.476E-07	0.000E+00

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	0.000E+00	0.000E+00	2.406E-05	1.352E-05	1.159E-05	3.205E-05	2.619E-05	1.574E-05
2	2.296E-04	2.410E-04	2.155E-04	2.493E-04	1.726E-04	1.068E-04	4.339E-05	1.186E-05
3	8.313E-04	6.366E-04	4.769E-04	3.827E-04	2.124E-04	1.204E-04	4.504E-05	1.964E-05
4	1.068E-03	6.837E-04	4.875E-04	3.953E-04	1.443E-04	7.544E-05	3.900E-05	6.805E-06
5	1.851E-03	9.572E-04	4.432E-04	3.703E-04	1.581E-04	7.562E-05	2.301E-05	4.172E-06
6	2.062E-03	8.553E-04	4.964E-04	3.423E-04	1.184E-04	5.293E-05	1.609E-05	4.644E-06
7	1.919E-03	8.655E-04	4.003E-04	2.081E-04	9.763E-05	5.136E-05	1.116E-05	3.046E-06
8	1.494E-03	5.418E-04	2.832E-04	2.313E-04	7.234E-05	3.652E-05	5.371E-06	1.956E-06
9	1.326E-03	5.347E-04	2.920E-04	1.454E-04	3.879E-05	2.632E-05	8.611E-06	8.071E-07
10	1.154E-03	4.291E-04	2.656E-04	1.340E-04	3.026E-05	1.877E-05	4.663E-06	0.000E+00
11	1.078E-03	3.373E-04	1.546E-04	7.772E-05	4.746E-05	5.814E-06	4.060E-06	0.000E+00
12	7.208E-04	2.395E-04	1.233E-04	7.960E-05	2.235E-05	1.490E-06	2.715E-06	1.724E-06
13	7.123E-04	2.721E-04	1.229E-04	3.862E-05	2.036E-05	1.162E-05	3.496E-06	8.379E-07
14	5.705E-04	1.877E-04	8.542E-05	5.727E-05	1.376E-05	1.357E-05	1.658E-06	2.078E-06
15	5.244E-04	1.404E-04	9.178E-05	2.076E-05	8.896E-06	6.893E-06	9.795E-07	0.000E+00
16	4.777E-04	1.682E-04	6.994E-05	2.594E-05	1.120E-05	5.889E-06	5.424E-07	6.038E-07

17	4.850E-04	1.138E-04	7.183E-05	2.712E-05	1.261E-05	6.296E-06	9.607E-07	1.144E-06
18	4.177E-04	1.372E-04	5.936E-05	2.747E-05	9.376E-06	9.960E-07	1.632E-06	0.000E+00
19	3.631E-04	1.109E-04	4.543E-05	2.512E-05	5.166E-06	3.769E-06	8.606E-07	5.093E-07
20	3.534E-04	1.144E-04	7.039E-05	2.817E-05	5.889E-06	4.547E-06	3.755E-07	0.000E+00
21	3.842E-04	1.246E-04	3.610E-05	2.312E-05	8.645E-06	2.734E-06	1.531E-06	0.000E+00
22	3.806E-04	8.617E-05	5.736E-05	3.431E-05	7.353E-06	1.704E-06	1.523E-06	0.000E+00
23	3.166E-04	1.079E-04	4.357E-05	1.435E-05	7.721E-06	3.184E-06	1.041E-06	4.453E-07
24	2.879E-04	9.363E-05	3.856E-05	2.124E-05	4.942E-06	7.807E-07	3.449E-07	0.000E+00
25	3.062E-04	8.391E-05	2.843E-05	1.741E-05	1.623E-06	2.231E-06	6.524E-07	0.000E+00
26	2.898E-04	7.632E-05	4.456E-05	1.061E-05	6.384E-06	2.902E-06	0.000E+00	3.869E-07
27	2.337E-04	6.036E-05	3.355E-05	2.095E-05	6.261E-06	1.421E-06	3.167E-07	3.986E-07
28	2.229E-04	5.003E-05	1.636E-05	1.022E-05	3.009E-06	2.768E-06	1.232E-06	3.689E-07
29	1.911E-04	4.718E-05	1.642E-05	1.428E-05	3.669E-06	1.399E-06	3.075E-07	0.000E+00
30	1.455E-04	4.747E-05	1.359E-05	7.603E-06	4.279E-06	6.821E-07	5.671E-07	0.000E+00
31	1.560E-04	2.695E-05	1.782E-05	5.288E-06	6.674E-07	6.557E-07	2.991E-07	6.921E-07
32	1.213E-04	2.738E-05	1.247E-05	4.999E-06	3.330E-06	1.245E-06	0.000E+00	3.304E-07
33	9.177E-05	2.251E-05	1.047E-05	7.145E-06	6.434E-07	0.000E+00	0.000E+00	0.000E+00
34	8.263E-05	2.672E-05	1.725E-05	2.779E-06	1.845E-06	1.147E-06	0.000E+00	2.988E-07
35	6.217E-05	1.662E-05	1.421E-05	6.823E-06	1.972E-06	1.144E-06	2.718E-07	0.000E+00
36	5.744E-05	1.624E-05	6.036E-06	1.000E-06	1.906E-06	1.180E-06	2.696E-07	3.339E-07
37	7.520E-05	6.682E-06	7.894E-06	1.914E-06	2.504E-06	6.020E-07	2.534E-07	0.000E+00
38	3.536E-05	2.537E-05	9.963E-06	3.846E-06	1.221E-06	1.777E-06	0.000E+00	0.000E+00
39	4.720E-05	7.775E-06	2.016E-06	6.526E-06	3.088E-06	0.000E+00	5.066E-07	0.000E+00
40	3.808E-05	1.850E-05	9.694E-06	6.492E-06	3.140E-06	0.000E+00	4.996E-07	2.999E-07
41	4.247E-05	1.243E-05	5.581E-06	7.339E-06	1.219E-06	1.117E-06	1.008E-06	0.000E+00
42	1.843E-05	1.692E-05	5.613E-06	0.000E+00	1.828E-06	1.107E-06	2.516E-07	0.000E+00
43	2.855E-05	1.665E-05	7.506E-06	4.517E-06	1.195E-06	0.000E+00	2.377E-07	0.000E+00
44	2.188E-05	2.107E-05	5.646E-06	3.549E-06	5.746E-07	0.000E+00	0.000E+00	0.000E+00
45	2.305E-05	3.071E-06	5.691E-06	9.086E-07	1.782E-06	0.000E+00	0.000E+00	0.000E+00
46	3.071E-05	4.414E-06	1.897E-06	1.699E-06	5.641E-07	0.000E+00	2.444E-07	0.000E+00
47	3.562E-05	8.870E-06	3.556E-06	6.202E-06	1.733E-06	5.484E-07	9.748E-07	0.000E+00
48	1.782E-05	7.308E-06	1.754E-06	1.740E-06	5.629E-07	0.000E+00	0.000E+00	0.000E+00
49	1.601E-05	1.423E-06	1.753E-06	1.782E-06	1.714E-06	1.022E-06	0.000E+00	0.000E+00
50	1.941E-05	3.967E-06	6.810E-06	3.167E-06	5.211E-07	0.000E+00	0.000E+00	0.000E+00
51	1.892E-05	7.014E-06	5.413E-06	2.542E-06	1.689E-06	0.000E+00	9.404E-07	0.000E+00
52	1.906E-05	2.888E-06	3.664E-06	2.634E-06	1.651E-06	5.357E-07	4.624E-07	0.000E+00
53	2.363E-05	1.478E-06	8.609E-06	3.397E-06	1.747E-06	1.035E-06	4.743E-07	2.755E-07
54	9.416E-06	9.913E-06	5.256E-06	1.695E-06	1.127E-06	5.002E-07	2.229E-07	0.000E+00
55	1.420E-05	5.635E-06	1.711E-06	0.000E+00	0.000E+00	5.307E-07	0.000E+00	0.000E+00
56	1.756E-05	1.471E-06	0.000E+00	8.707E-07	5.789E-07	0.000E+00	2.361E-07	0.000E+00

57	9.380E-06	5.711E-06	5.338E-06	1.689E-06	1.634E-06	0.000E+00	0.000E+00	0.000E+00
58	1.721E-05	7.083E-06	1.814E-06	0.000E+00	5.440E-07	0.000E+00	2.216E-07	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
2	1	0	0	1	2	15	13
3	9	9	25	52	40	69	22
78	57	36	88	80	86	75	26
134	150	77	120	107	77	81	28
408	315	169	239	157	84	62	16
569	404	198	267	174	109	75	22
850	569	250	260	157	84	49	14
1031	626	234	268	139	64	37	10
1151	620	218	239	133	55	37	8
1162	569	223	222	124	39	25	6
1096	547	185	185	99	38	20	7
1026	509	166	141	80	16	18	4
967	412	155	135	66	25	16	1
961	415	149	141	78	33	17	2
881	392	138	135	60	18	22	2
820	388	155	151	76	33	16	3
769	385	134	135	71	34	16	2
872	442	171	136	73	24	13	6
790	387	170	132	88	27	22	2
767	412	169	150	88	26	18	2
835	421	185	153	90	31	18	4
765	414	180	165	104	30	20	3
753	407	160	174	72	30	14	5
753	375	162	162	64	18	19	3
762	453	175	168	85	33	16	2
759	397	176	139	57	26	7	4
756	351	161	122	52	10	10	2
693	356	125	105	47	11	10	2
683	346	130	100	29	17	1	2
609	290	110	95	37	19	7	2
569	282	89	87	23	8	8	2
481	189	74	60	25	12	8	2
474	221	69	63	24	6	6	4
395	156	70	42	15	9	7	2

379	128	53	52	15	4	2	0
315	148	51	41	19	6	4	0
277	121	38	39	14	5	4	0
260	105	33	25	12	7	1	0
272	93	29	22	14	3	3	0
235	69	29	26	8	2	2	1
188	76	27	14	9	6	4	0
213	59	22	24	11	4	4	2
184	67	20	15	13	4	2	2
132	45	23	20	9	4	0	0
115	52	17	15	11	4	1	1
103	42	15	12	9	3	2	1
98	31	12	11	11	2	3	1
98	33	16	11	12	0	1	2
84	27	11	16	10	2	1	1
60	43	10	9	9	4	0	0
49	32	15	11	6	3	1	0
69	26	7	7	2	3	2	2
62	30	13	10	3	1	2	1
53	21	5	9	5	1	0	1
49	20	12	10	2	1	4	0
36	20	9	9	0	1	1	0
44	17	9	7	5	1	3	0
50	14	8	7	2	2	1	0

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	0	3	4	5	16	35	16
28	32	24	57	59	41	38	8
96	81	49	81	67	42	35	12
146	104	60	101	56	32	37	5
248	141	53	92	59	31	21	3
331	152	71	102	53	26	18	4
328	164	62	66	47	27	13	3
279	112	47	81	38	21	7	2
280	125	56	58	23	17	11	1
244	100	50	53	18	12	7	0
231	80	30	31	29	4	6	0
149	55	23	31	13	1	4	2

158	67	25	16	13	8	5	1
146	53	19	27	10	11	3	3
150	44	23	11	7	6	2	0
135	53	18	14	9	5	1	1
149	39	20	16	11	6	2	2
144	52	18	18	9	1	4	0
124	42	14	16	5	4	2	1
128	46	23	19	6	5	1	0
142	51	12	16	9	3	4	0
148	37	20	25	8	2	4	0
130	49	16	11	9	4	3	1
124	45	15	17	6	1	1	0
132	40	11	14	2	3	2	0
130	38	18	9	8	4	0	1
109	31	14	18	8	2	1	1
106	26	7	9	4	4	4	1
92	25	7	13	5	2	1	0
72	26	6	7	6	1	2	0
79	15	8	5	1	1	1	2
63	16	6	5	5	2	0	1
48	13	5	7	1	0	0	0
48	17	9	3	3	2	0	1
34	10	7	7	3	2	1	0
32	10	3	1	3	2	1	1
42	4	4	2	4	1	1	0
20	16	5	4	2	3	0	0
27	5	1	7	5	0	2	0
22	12	5	7	5	0	2	1
25	8	3	8	2	2	4	0
11	11	3	0	3	2	1	0
17	11	4	5	2	0	1	0
13	14	3	4	1	0	0	0
14	2	3	1	3	0	0	0
19	3	1	2	1	0	1	0
22	6	2	7	3	1	4	0
11	5	1	2	1	0	0	0
10	1	1	2	3	2	0	0
13	3	4	4	1	0	0	0
12	5	3	3	3	0	4	0
12	2	2	3	3	1	2	0

15	1	5	4	3	2	2	1
6	7	3	2	2	1	1	0
9	4	1	0	0	1	0	0
11	1	0	1	1	0	1	0
6	4	3	2	3	0	0	0
11	5	1	0	1	0	1	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a * \exp(b * x) + c * \exp(d * x)$$

Coefficients (with 95% confidence bounds):

$$a = 1.187 \quad (0.8706, 1.504)$$

$$b = -0.2547 \quad (-0.3054, -0.2039)$$

$$c = 0.02605 \quad (-0.0347, 0.0868)$$

$$d = -0.05808 \quad (-0.1339, 0.0177)$$

goftotal =

sse: 5.6774e-006

rsquare: 0.9997

dfe: 4

adjrsquare: 0.9994

rmse: 0.0012

ctotal =

General model Exp1:

$$ctotal(x) = a * \exp(b * x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.1764 \text{ (0.05032, 0.3025)}$$

$$b = -0.1179 \text{ (-0.1525, -0.08342)}$$

goftotal =

sse: 1.6459e-006

rsquare: 9.9290e-001

dfe: 3

adjrsquare: 9.9054e-001

rmse: 7.4070e-004

curve fit iron:

ctotal =

General model Exp2:

$$ctotal(x) = a * \exp(b * x) + c * \exp(d * x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.1325 (0.04647, 0.2186)$$

$$b = -0.1602 (-0.2256, -0.09486)$$

$$c = 0.003378 (-0.004596, 0.01135)$$

$$d = -0.02304 (-0.06723, 0.02115)$$

goftotal =

sse: 6.8408e-007

rsquare: 9.9745e-001

dfc: 4

adjrsquare: 9.9554e-001

rmse: 4.1354e-004

ctotal =

General model Exp1:

$$ctotal(x) = a * \exp(b * x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.01543 \text{ (0.003504, 0.02735)}$$

$$b = -0.052 \text{ (-0.07293, -0.03108)}$$

gof_{total} =

$$\text{sse: } 7.5632\text{e-}008$$

$$\text{rsquare: } 9.8605\text{e-}001$$

$$\text{dfe: } 3$$

$$\text{adjrsquare: } 9.8140\text{e-}001$$

$$\text{rmse: } 1.5878\text{e-}004$$

Event 38	Date	Time*	Location*	Summing interval*				
	28-Jan-01	1600	S04W59	Jan 28 to Jan 31 0000				
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
4	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.936E-07	0.000E+00	0.000E+00
5	0.000E+00	2.573E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.999E-07	0.000E+00
6	0.000E+00	2.576E-06	0.000E+00	1.544E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
7	5.789E-06	1.241E-05	1.241E-05	0.000E+00	2.022E-06	1.798E-06	4.046E-07	0.000E+00
8	6.559E-05	7.396E-05	4.152E-05	3.428E-05	1.532E-05	3.409E-06	1.954E-06	0.000E+00
9	1.173E-04	8.153E-05	5.426E-05	3.250E-05	1.010E-05	5.674E-06	2.093E-06	0.000E+00
10	2.107E-04	1.090E-04	7.759E-05	2.145E-05	1.759E-05	4.679E-06	1.288E-06	5.166E-07
11	4.614E-04	2.567E-04	9.522E-05	6.873E-05	2.220E-05	2.956E-06	8.498E-07	0.000E+00
12	5.452E-04	2.671E-04	1.352E-04	6.014E-05	1.570E-05	8.846E-06	0.000E+00	0.000E+00
13	6.711E-04	3.164E-04	1.362E-04	7.404E-05	2.694E-05	4.878E-06	0.000E+00	0.000E+00
14	8.422E-04	3.172E-04	1.735E-04	6.854E-05	1.424E-05	5.136E-06	0.000E+00	0.000E+00

15	1.014E-03	4.232E-04	1.503E-04	7.041E-05	1.794E-05	9.836E-07	9.396E-07	0.000E+00
16	1.069E-03	4.590E-04	2.022E-04	6.234E-05	1.220E-05	2.108E-06	0.000E+00	0.000E+00
17	1.190E-03	4.127E-04	2.482E-04	5.538E-05	9.931E-06	2.069E-06	4.757E-07	0.000E+00
18	1.100E-03	3.858E-04	2.041E-04	6.380E-05	6.713E-06	9.979E-07	8.949E-07	0.000E+00
19	1.162E-03	3.720E-04	1.642E-04	5.423E-05	1.113E-05	3.002E-06	4.865E-07	5.603E-07
20	1.208E-03	3.980E-04	2.090E-04	4.430E-05	7.991E-06	2.037E-06	9.631E-07	0.000E+00
21	9.604E-04	3.616E-04	1.529E-04	3.833E-05	2.183E-06	1.063E-06	0.000E+00	0.000E+00
22	8.905E-04	3.297E-04	1.567E-04	3.631E-05	6.914E-06	4.191E-06	0.000E+00	5.649E-07
23	8.636E-04	3.847E-04	1.093E-04	4.125E-05	1.118E-06	0.000E+00	0.000E+00	0.000E+00
24	9.907E-04	2.894E-04	1.047E-04	3.641E-05	3.211E-06	0.000E+00	8.737E-07	5.274E-07
25	7.527E-04	2.325E-04	5.488E-05	1.820E-05	4.467E-06	0.000E+00	4.429E-07	0.000E+00
26	6.658E-04	1.655E-04	5.492E-05	1.310E-05	2.271E-06	0.000E+00	0.000E+00	0.000E+00
27	6.547E-04	1.911E-04	9.763E-05	1.693E-05	2.249E-06	9.850E-07	0.000E+00	0.000E+00
28	7.064E-04	2.387E-04	5.605E-05	2.540E-05	2.254E-06	0.000E+00	0.000E+00	5.620E-07
29	5.359E-04	1.507E-04	4.868E-05	1.018E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
30	3.602E-04	1.058E-04	3.399E-05	1.125E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
31	4.203E-04	8.261E-05	5.777E-05	6.433E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
32	3.588E-04	1.009E-04	2.678E-05	9.733E-06	1.056E-06	0.000E+00	0.000E+00	0.000E+00
33	2.600E-04	6.429E-05	2.995E-05	1.670E-06	1.056E-06	0.000E+00	0.000E+00	0.000E+00
34	2.963E-04	7.362E-05	3.742E-05	6.439E-06	2.141E-06	0.000E+00	0.000E+00	0.000E+00
35	2.241E-04	7.626E-05	2.375E-05	1.130E-05	1.054E-06	0.000E+00	0.000E+00	0.000E+00
36	2.956E-04	1.034E-04	4.391E-05	4.838E-06	4.390E-06	1.032E-06	0.000E+00	0.000E+00
37	2.083E-04	4.562E-05	2.999E-05	7.846E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
38	2.172E-04	8.510E-05	5.926E-05	7.848E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
39	2.225E-04	8.406E-05	1.672E-05	6.546E-06	1.111E-06	0.000E+00	0.000E+00	0.000E+00
40	1.209E-04	5.134E-05	3.059E-05	7.233E-06	0.000E+00	0.000E+00	0.000E+00	4.938E-07
41	7.386E-05	1.049E-05	6.436E-06	1.505E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
42	8.534E-05	2.063E-05	3.314E-06	6.231E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
43	3.832E-05	1.020E-05	6.155E-06	1.574E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
44	2.892E-05	2.620E-06	0.000E+00	1.479E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
45	2.638E-05	1.780E-05	6.348E-06	1.572E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
46	4.414E-05	5.096E-06	3.077E-06	0.000E+00	9.886E-07	0.000E+00	0.000E+00	0.000E+00
47	5.233E-05	7.728E-06	6.318E-06	1.576E-06	1.052E-06	0.000E+00	0.000E+00	0.000E+00
48	1.459E-05	7.390E-06	6.309E-06	3.041E-06	0.000E+00	0.000E+00	0.000E+00	5.386E-07
49	1.176E-05	5.216E-06	3.061E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
50	1.193E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.061E-07
51	2.597E-05	2.456E-06	3.055E-06	2.946E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
52	0.000E+00	4.911E-06	0.000E+00	1.561E-06	0.000E+00	0.000E+00	0.000E+00	1.042E-06
53	1.737E-05	1.259E-05	3.055E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

38	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
39	6.518E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
40	1.515E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.193E-07	0.000E+00
41	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
42	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
43	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
44	1.567E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
45	1.569E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
46	3.133E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
47	1.484E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
48	3.034E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
49	1.559E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
50	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
51	1.471E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.629E-07
52	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
53	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	1	0	0
0	1	0	0	0	0	1	0
0	1	0	1	0	0	0	0
2	5	4	0	2	2	1	0
24	31	14	24	16	4	5	0
40	32	17	21	10	6	5	0
71	42	24	14	17	5	3	1
153	97	29	43	21	3	2	0
179	101	41	38	15	9	0	0
218	118	41	46	25	5	0	0
269	116	51	41	13	5	0	0
321	153	44	42	16	1	2	0
335	164	58	37	11	2	0	0
371	147	71	33	9	2	1	0

343	138	59	38	6	1	2	0
362	133	47	32	10	3	1	1
372	139	59	26	7	2	2	0
299	129	44	23	2	1	0	0
278	118	45	22	6	4	0	1
265	136	31	24	1	0	0	0
329	110	32	23	3	0	2	1
237	84	16	11	4	0	1	0
211	60	16	8	2	0	0	0
205	68	28	10	2	1	0	0
220	85	16	15	2	0	0	1
169	54	14	6	0	0	0	0
115	39	10	7	0	0	0	0
135	30	17	4	0	0	0	0
115	37	8	6	1	0	0	0
84	24	9	1	1	0	0	0
94	27	11	4	2	0	0	0
72	28	7	7	1	0	0	0
95	38	13	3	4	1	0	0
68	17	9	5	0	0	0	0
71	32	18	5	0	0	0	0
72	31	5	4	1	0	0	0
43	21	10	5	0	0	0	1
25	4	2	1	0	0	0	0
29	8	1	4	0	0	0	0
13	4	2	1	0	0	0	0
10	1	0	1	0	0	0	0
9	7	2	1	0	0	0	0
15	2	1	0	1	0	0	0
18	3	2	1	1	0	0	0
5	3	2	2	0	0	0	1
4	2	1	0	0	0	0	0
4	0	0	0	0	0	0	1
9	1	1	2	0	0	0	0
0	2	0	1	0	0	0	2
6	5	1	0	0	0	0	0

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8

0	0	0	0	0	1	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	1	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	1	0
0	2	0	0	0	0	0	0
4	0	0	0	1	0	0	0
31	10	6	6	1	0	1	0
24	10	5	5	2	0	0	0
25	11	4	5	3	0	0	0
48	27	7	7	1	0	0	0
46	16	10	3	1	0	0	0
48	15	3	2	2	0	0	0
50	11	2	0	0	0	0	0
30	10	1	2	0	1	0	0
39	9	2	0	0	0	0	0
28	5	3	1	1	0	0	0
26	9	0	0	1	0	0	0
22	7	1	0	0	0	0	0
29	6	1	0	0	0	0	0
20	3	1	0	0	0	0	0
18	3	0	0	0	0	0	0
20	0	0	1	0	0	0	0
15	6	1	0	0	0	0	0
9	1	0	0	0	0	0	0
9	2	0	0	0	0	0	0
9	1	0	0	0	0	0	0
8	1	0	0	0	0	0	0
6	0	0	1	0	0	1	0
9	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0
3	3	0	0	0	0	0	0
4	0	0	0	0	0	0	0
3	2	1	1	0	0	0	0
4	1	0	0	0	0	0	0
7	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
1	0	0	0	0	0	1	0

0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.2307 \quad (0.1943, 0.267)$$

$$b = -0.301 \quad (-0.3209, -0.2811)$$

$$c = 0.0001917 \quad (-0.0004799, 0.0008633)$$

$$d = -0.01532 \quad (-0.1055, 0.07484)$$

goftotal =

sse: 4.4422e-008

rsquare: 0.9998

dfe: 4

adjrsquare: 0.9997

rmse: 1.0538e-004

ctotal =

General model Exp1:

$$ctotal(x) = a * \exp(b * x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.01164 \text{ } (-0.01547, 0.03874)$$

$$b = -0.1337 \text{ } (-0.2481, -0.01927)$$

goftotal =

sse: 3.1958e-008

rsquare: 9.5437e-001

dfe: 3

adjrsquare: 9.3916e-001

rmse: 1.0321e-004

Event 40	Date	Time*	Location*	Summing interval*				
	9-Aug-01	1122	S17E19	Aug 9 1900 to Aug 11 1200				
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	1.139E-05	1.008E-05	0.000E+00	1.553E-06	9.807E-07	0.000E+00	0.000E+00	0.000E+00
2	3.826E-05	1.017E-05	3.257E-06	1.576E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
3	3.495E-05	9.966E-06	6.120E-06	3.040E-06	0.000E+00	0.000E+00	0.000E+00	5.393E-07
4	4.082E-05	1.494E-05	0.000E+00	1.485E-06	0.000E+00	0.000E+00	4.334E-07	0.000E+00
5	1.342E-04	4.452E-05	9.494E-06	1.611E-06	0.000E+00	0.000E+00	8.361E-07	0.000E+00
6	1.995E-04	4.162E-05	6.509E-06	1.601E-06	0.000E+00	0.000E+00	4.189E-07	0.000E+00
7	1.310E-04	5.243E-05	0.000E+00	1.531E-06	0.000E+00	0.000E+00	0.000E+00	5.262E-07
8	1.553E-04	3.146E-05	1.322E-05	4.669E-06	1.076E-06	0.000E+00	0.000E+00	0.000E+00
9	2.378E-04	6.061E-05	3.374E-06	3.043E-06	1.074E-06	0.000E+00	0.000E+00	0.000E+00
10	2.914E-04	7.024E-05	1.666E-05	6.455E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
11	2.491E-04	5.673E-05	0.000E+00	3.329E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
12	2.201E-04	4.050E-05	9.420E-06	2.990E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
13	2.613E-04	7.256E-05	3.367E-05	2.279E-05	9.728E-06	9.671E-07	8.901E-07	0.000E+00
14	8.795E-04	4.002E-04	1.345E-04	5.228E-05	1.099E-05	0.000E+00	0.000E+00	0.000E+00
15	2.347E-03	9.726E-04	3.810E-04	1.439E-04	3.385E-05	5.040E-06	0.000E+00	0.000E+00
16	5.015E-03	1.816E-03	6.333E-04	3.072E-04	7.573E-05	2.906E-05	2.352E-06	0.000E+00
17	4.707E-03	1.864E-03	8.157E-04	2.980E-04	5.719E-05	7.798E-06	1.029E-06	6.321E-07
18	6.726E-03	2.362E-03	7.300E-04	2.604E-04	2.237E-05	6.986E-06	0.000E+00	0.000E+00
19	5.008E-03	1.442E-03	4.275E-04	1.343E-04	1.804E-05	0.000E+00	0.000E+00	0.000E+00
20	3.411E-03	1.015E-03	3.709E-04	9.168E-05	1.614E-05	2.091E-06	4.628E-07	0.000E+00
21	2.775E-03	7.927E-04	2.244E-04	7.020E-05	6.961E-06	1.099E-06	4.918E-07	0.000E+00
22	1.936E-03	5.833E-04	1.739E-04	4.480E-05	9.220E-06	1.034E-06	0.000E+00	0.000E+00
23	1.495E-03	3.845E-04	1.362E-04	3.375E-05	6.548E-06	0.000E+00	0.000E+00	0.000E+00
24	1.164E-03	3.430E-04	8.188E-05	2.291E-05	3.349E-06	0.000E+00	0.000E+00	0.000E+00
25	9.742E-04	3.444E-04	6.452E-05	1.285E-05	5.439E-06	0.000E+00	0.000E+00	0.000E+00
26	6.813E-04	2.192E-04	4.726E-05	1.619E-05	3.215E-06	1.024E-06	0.000E+00	0.000E+00
27	6.562E-04	1.639E-04	5.357E-05	1.608E-05	1.039E-06	0.000E+00	4.306E-07	0.000E+00
28	5.097E-04	1.220E-04	3.420E-05	1.475E-05	1.023E-06	0.000E+00	0.000E+00	1.021E-06
29	4.517E-04	7.708E-05	2.488E-05	1.199E-05	3.323E-06	0.000E+00	0.000E+00	0.000E+00
30	3.870E-04	8.477E-05	2.934E-05	0.000E+00	1.019E-06	0.000E+00	0.000E+00	0.000E+00

31	2.504E-04	4.190E-05	1.619E-05	9.412E-06	0.000E+00	9.364E-07	0.000E+00	0.000E+00
32	2.020E-04	4.684E-05	6.290E-06	4.636E-06	3.090E-06	0.000E+00	0.000E+00	0.000E+00
33	1.708E-04	4.357E-05	9.594E-06	1.093E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
34	1.390E-04	4.947E-05	1.289E-05	1.509E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
35	1.258E-04	3.126E-05	1.265E-05	3.091E-06	0.000E+00	0.000E+00	0.000E+00	5.162E-07
36	1.413E-04	3.619E-05	3.295E-06	1.497E-06	3.997E-06	0.000E+00	0.000E+00	0.000E+00
37	9.147E-05	2.069E-05	9.865E-06	1.493E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
38	9.431E-05	1.790E-05	6.576E-06	2.986E-06	2.115E-06	0.000E+00	0.000E+00	0.000E+00
39	6.415E-05	1.773E-05	6.189E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.436E-07
40	6.727E-05	2.267E-05	6.181E-06	1.489E-06	1.054E-06	0.000E+00	0.000E+00	0.000E+00
41	5.511E-05	7.596E-06	6.169E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.423E-07
42	3.502E-05	0.000E+00	6.346E-06	1.574E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
4	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
5	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
6	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
7	1.528E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
8	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.699E-07
9	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
10	1.636E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
11	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
13	1.648E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
14	4.928E-06	0.000E+00	0.000E+00	8.886E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
15	1.149E-05	1.458E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
16	4.638E-05	1.113E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
17	2.862E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
18	1.623E-05	1.784E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
19	8.845E-06	1.588E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
20	6.809E-06	1.619E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
21	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
22	0.000E+00	1.599E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
23	5.049E-06	0.000E+00	1.821E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

24	0.000E+00	3.079E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
25	1.686E-06	1.437E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
26	3.226E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
27	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
28	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
29	1.750E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
30	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
31	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
32	1.600E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
33	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
34	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
35	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.317E-07	0.000E+00	0.000E+00	0.000E+00
36	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.835E-07
37	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
38	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
39	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
40	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.477E-07
41	1.574E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
42	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
4	4	0	1	1	0	0	0
13	4	1	1	0	0	0	0
12	4	2	2	0	0	0	1
14	6	0	1	0	0	1	0
44	17	3	1	0	0	2	0
67	16	2	1	0	0	1	0
44	20	0	1	0	0	0	1
52	12	4	3	1	0	0	0
79	23	1	2	1	0	0	0
94	26	5	4	0	0	0	0
81	21	0	2	0	0	0	0
77	16	3	2	0	0	0	0
85	27	10	14	9	1	2	0
280	146	40	32	10	0	0	0
734	347	110	86	30	5	0	0

0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
3	0	0	1	0	0	0	0
7	1	0	0	0	0	0	0
26	7	0	0	0	0	0	0
16	0	0	0	0	0	0	0
9	1	0	0	0	0	0	0
5	1	0	0	0	0	0	0
4	1	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	1	0	0	0	0	0	0
3	0	1	0	0	0	0	0
0	2	0	0	0	0	0	0
1	1	0	0	0	0	0	0
2	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	1	0	0	0
0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	2
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a * \exp(b * x) + c * \exp(d * x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.6935 \quad (0.4657, 0.9213)$$

$$b = -0.3413 \quad (-0.3918, -0.2908)$$

$$c = 0.0007396 \quad (-0.01136, 0.01284)$$

$$d = -0.06753 \quad (-0.6948, 0.5598)$$

goftotal =

sse: 2.5404e-007

rsquare: 9.9977e-001

dfe: 4

adjrsquare: 9.9959e-001

rmse: 2.5201e-004

rmse: 2.6818e-003

ctotal =

General model Exp1:

$$ctotal(x) = a * \exp(b * x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.0315 \quad (-0.04074, 0.1037)$$

$$b = -0.1618 \quad (-0.2771, -0.04662)$$

goftotal =

sse: 4.9980e-008

rsquare: 9.7084e-001

dfc: 3

adjrsquare: 9.6112e-001

rmse: 1.2907e-004

Event 41	Date	Time*	Location*	Summing interval*				
	15-Aug-01	2355	W140	Aug 16 0000 to Aug 20 1100				
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	0.000E+00	5.039E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.020E-07
2	0.000E+00	3.448E-06	0.000E+00	0.000E+00	1.368E-06	6.539E-06	1.055E-05	6.449E-06
3	3.766E-05	7.154E-05	1.579E-04	1.588E-04	1.724E-04	1.237E-04	9.129E-05	1.677E-05
4	3.053E-04	3.711E-04	6.053E-04	5.126E-04	4.374E-04	2.736E-04	9.529E-05	1.702E-05
5	4.305E-04	5.327E-04	6.249E-04	6.084E-04	4.820E-04	2.814E-04	8.385E-05	2.027E-05
6	7.259E-04	7.321E-04	7.648E-04	5.672E-04	3.991E-04	1.965E-04	5.724E-05	1.397E-05
7	1.341E-03	1.308E-03	1.001E-03	7.622E-04	4.623E-04	2.014E-04	5.615E-05	1.266E-05
8	2.363E-03	1.922E-03	1.634E-03	1.138E-03	5.157E-04	2.570E-04	5.720E-05	5.898E-06
9	2.995E-03	2.169E-03	1.871E-03	1.111E-03	5.205E-04	2.032E-04	4.419E-05	7.675E-06
10	3.980E-03	2.681E-03	2.006E-03	1.256E-03	5.073E-04	1.852E-04	4.414E-05	6.919E-06
11	3.501E-03	2.679E-03	1.937E-03	1.108E-03	4.792E-04	2.300E-04	4.648E-05	9.279E-06
12	4.079E-03	2.889E-03	1.922E-03	1.064E-03	4.266E-04	1.707E-04	3.460E-05	1.325E-05

13	3.415E-03	2.238E-03	1.738E-03	8.596E-04	4.487E-04	1.385E-04	4.223E-05	1.004E-05
14	3.773E-03	2.406E-03	1.716E-03	9.905E-04	3.705E-04	1.332E-04	3.434E-05	6.381E-06
15	5.266E-03	3.514E-03	2.147E-03	1.265E-03	4.506E-04	1.707E-04	3.963E-05	8.526E-06
16	4.208E-03	2.765E-03	1.777E-03	1.007E-03	4.138E-04	1.447E-04	3.360E-05	5.889E-06
17	4.764E-03	3.182E-03	2.003E-03	1.069E-03	3.994E-04	1.610E-04	3.386E-05	9.010E-06
18	4.165E-03	3.065E-03	1.947E-03	1.175E-03	4.123E-04	1.452E-04	3.986E-05	4.268E-06
19	4.437E-03	2.948E-03	1.828E-03	9.897E-04	3.831E-04	1.380E-04	3.437E-05	4.918E-06
20	4.405E-03	2.607E-03	1.873E-03	1.012E-03	3.554E-04	1.121E-04	3.218E-05	5.661E-06
21	3.717E-03	2.440E-03	1.601E-03	7.551E-04	3.023E-04	9.154E-05	2.372E-05	4.064E-06
22	3.815E-03	2.298E-03	1.458E-03	7.839E-04	3.003E-04	9.796E-05	2.829E-05	4.138E-06
23	3.689E-03	2.318E-03	1.390E-03	7.101E-04	3.085E-04	9.665E-05	2.832E-05	6.214E-06
24	3.495E-03	2.103E-03	1.481E-03	7.062E-04	2.934E-04	1.091E-04	2.379E-05	6.083E-06
25	3.614E-03	2.227E-03	1.347E-03	8.000E-04	2.702E-04	7.069E-05	2.044E-05	5.956E-06
26	3.042E-03	1.916E-03	1.385E-03	6.953E-04	2.413E-04	9.146E-05	1.977E-05	3.254E-06
27	2.851E-03	1.858E-03	1.278E-03	6.258E-04	2.222E-04	7.668E-05	1.645E-05	3.223E-06
28	3.068E-03	1.853E-03	1.131E-03	6.257E-04	2.190E-04	7.498E-05	2.139E-05	4.575E-06
29	2.695E-03	1.723E-03	1.160E-03	6.236E-04	1.924E-04	6.393E-05	1.678E-05	4.455E-06
30	2.992E-03	1.862E-03	1.196E-03	6.345E-04	2.219E-04	7.400E-05	1.744E-05	3.224E-06
31	3.060E-03	1.843E-03	1.126E-03	5.904E-04	1.743E-04	7.656E-05	1.855E-05	3.217E-06
32	2.893E-03	1.771E-03	1.091E-03	6.065E-04	2.285E-04	8.470E-05	1.725E-05	1.309E-06
33	2.766E-03	1.555E-03	1.074E-03	5.352E-04	1.991E-04	6.382E-05	1.610E-05	1.861E-06
34	2.638E-03	1.542E-03	1.008E-03	4.437E-04	1.628E-04	6.764E-05	1.642E-05	1.246E-06
35	2.741E-03	1.631E-03	1.031E-03	5.103E-04	1.757E-04	6.231E-05	1.451E-05	3.778E-06
36	3.023E-03	1.912E-03	9.850E-04	5.168E-04	1.838E-04	7.099E-05	1.742E-05	2.616E-06
37	2.441E-03	1.370E-03	9.101E-04	3.720E-04	1.297E-04	5.161E-05	1.659E-05	2.451E-06
38	1.801E-03	1.042E-03	6.272E-04	3.561E-04	1.190E-04	3.631E-05	9.446E-06	3.008E-06
39	1.411E-03	7.976E-04	4.642E-04	2.757E-04	8.256E-05	4.775E-05	8.762E-06	1.102E-06
40	9.889E-04	6.053E-04	4.217E-04	2.086E-04	7.160E-05	2.748E-05	1.193E-05	2.315E-06
41	7.231E-04	3.775E-04	3.135E-04	1.513E-04	4.669E-05	2.278E-05	5.363E-06	1.072E-06
42	5.327E-04	3.707E-04	1.989E-04	1.185E-04	5.072E-05	1.103E-05	4.900E-06	2.163E-06
43	9.819E-04	6.328E-04	3.230E-04	2.322E-04	6.385E-05	2.129E-05	6.328E-06	5.758E-07
44	1.027E-03	6.991E-04	3.992E-04	2.273E-04	7.379E-05	2.673E-05	6.829E-06	1.718E-06
45	2.448E-04	2.060E-04	1.414E-04	8.914E-05	2.768E-05	1.159E-05	3.850E-06	1.082E-06
46	2.656E-04	1.577E-04	9.732E-05	7.381E-05	2.945E-05	8.687E-06	3.889E-06	5.248E-07
47	2.572E-04	1.421E-04	9.266E-05	5.828E-05	1.661E-05	1.893E-06	1.692E-06	5.616E-07
48	2.453E-04	1.380E-04	8.229E-05	5.058E-05	6.392E-06	9.776E-06	2.186E-06	0.000E+00
49	2.411E-04	1.526E-04	1.172E-04	5.717E-05	1.157E-05	6.768E-06	3.480E-06	5.267E-07
50	2.676E-04	1.659E-04	8.533E-05	6.319E-05	2.398E-05	8.755E-06	1.316E-06	5.264E-07
51	2.166E-04	1.363E-04	9.752E-05	5.164E-05	1.461E-05	1.356E-05	1.283E-06	5.239E-07
52	2.399E-04	1.510E-04	6.599E-05	3.248E-05	1.553E-05	3.966E-06	1.723E-06	5.225E-07

53	2.471E-04	1.490E-04	9.299E-05	5.144E-05	1.761E-05	4.899E-06	1.751E-06	1.600E-06
54	2.789E-04	1.254E-04	9.819E-05	5.179E-05	2.494E-05	7.586E-06	1.677E-06	5.220E-07
55	2.239E-04	1.104E-04	8.196E-05	4.109E-05	1.647E-05	9.978E-06	4.145E-07	0.000E+00
56	2.653E-04	1.042E-04	8.834E-05	5.161E-05	1.046E-05	7.595E-06	2.117E-06	1.111E-06
57	2.449E-04	1.516E-04	8.763E-05	2.655E-05	1.791E-05	6.591E-06	1.723E-06	5.544E-07
58	2.291E-04	8.839E-05	9.461E-05	4.566E-05	1.765E-05	1.921E-06	2.189E-06	1.044E-06
59	2.058E-04	1.045E-04	7.787E-05	3.145E-05	1.562E-05	4.829E-06	2.163E-06	1.106E-06
60	2.327E-04	1.377E-04	6.849E-05	4.416E-05	1.677E-05	3.788E-06	1.723E-06	5.544E-07
61	1.958E-04	1.279E-04	1.076E-04	5.304E-05	1.454E-05	5.820E-06	2.920E-06	0.000E+00
62	2.420E-04	1.653E-04	6.771E-05	3.590E-05	6.302E-06	3.832E-06	8.595E-07	0.000E+00
63	2.151E-04	1.298E-04	7.296E-05	4.653E-05	1.755E-05	6.601E-06	2.539E-06	1.037E-06
64	2.181E-04	1.329E-04	6.761E-05	4.482E-05	1.540E-05	1.227E-05	3.810E-06	5.502E-07
65	2.315E-04	1.423E-04	7.053E-05	5.900E-05	1.338E-05	1.232E-05	2.097E-06	5.496E-07
66	2.479E-04	1.393E-04	7.961E-05	3.927E-05	2.163E-05	7.695E-06	2.642E-06	5.186E-07
67	2.375E-04	1.112E-04	8.100E-05	3.537E-05	2.267E-05	7.630E-06	1.269E-06	1.067E-06
68	2.124E-04	1.060E-04	1.065E-04	4.972E-05	1.455E-05	5.774E-06	1.706E-06	0.000E+00
69	1.509E-04	1.323E-04	7.720E-05	5.569E-05	1.122E-05	8.599E-06	3.386E-06	1.646E-06
70	1.534E-04	1.186E-04	7.366E-05	3.708E-05	2.269E-05	4.675E-06	2.972E-06	0.000E+00
71	2.070E-04	1.320E-04	7.805E-05	4.279E-05	1.363E-05	4.416E-06	1.591E-06	5.123E-07
72	2.189E-04	1.054E-04	9.665E-05	2.788E-05	1.134E-05	3.751E-06	8.271E-07	0.000E+00
73	1.864E-04	1.283E-04	7.695E-05	4.457E-05	1.140E-05	3.861E-06	2.558E-06	5.481E-07
74	2.042E-04	1.186E-04	9.018E-05	3.098E-05	1.967E-05	4.732E-06	8.274E-07	5.169E-07
75	1.737E-04	1.187E-04	3.597E-05	3.232E-05	7.134E-06	5.703E-06	1.289E-06	0.000E+00
76	1.846E-04	8.513E-05	7.345E-05	2.462E-05	1.456E-05	4.831E-06	4.374E-07	5.469E-07
77	1.949E-04	1.074E-04	7.045E-05	2.646E-05	8.242E-06	4.769E-06	0.000E+00	0.000E+00
78	2.142E-04	7.939E-05	5.798E-05	3.233E-05	1.241E-05	3.791E-06	4.116E-07	0.000E+00
79	1.694E-04	9.247E-05	7.621E-05	4.185E-05	1.117E-05	1.839E-06	4.116E-07	0.000E+00
80	1.729E-04	1.128E-04	9.883E-05	4.322E-05	1.322E-05	8.435E-06	4.114E-07	0.000E+00
81	1.944E-04	9.719E-05	8.264E-05	2.802E-05	1.329E-05	4.822E-06	4.114E-07	0.000E+00
82	1.735E-04	9.535E-05	6.095E-05	1.833E-05	2.036E-05	4.824E-06	2.546E-06	0.000E+00
83	1.881E-04	8.015E-05	4.792E-05	3.532E-05	1.541E-05	4.765E-06	0.000E+00	5.140E-07
84	1.357E-04	7.203E-05	5.449E-05	2.457E-05	8.230E-06	3.734E-06	2.545E-06	1.060E-06
85	1.697E-04	1.362E-04	7.316E-05	2.945E-05	1.241E-05	3.904E-06	8.241E-07	0.000E+00
86	1.552E-04	8.982E-05	4.782E-05	3.096E-05	1.034E-05	4.756E-06	0.000E+00	0.000E+00
87	1.530E-04	1.007E-04	5.640E-05	3.187E-05	1.151E-05	9.093E-07	7.669E-07	0.000E+00
88	1.236E-04	6.921E-05	3.559E-05	2.766E-05	1.038E-05	2.804E-06	8.476E-07	0.000E+00
89	1.525E-04	1.079E-04	6.033E-05	2.450E-05	1.026E-05	6.529E-06	2.076E-06	0.000E+00
90	1.578E-04	7.166E-05	5.452E-05	3.407E-05	8.208E-06	9.171E-07	1.280E-06	0.000E+00
91	1.310E-04	1.105E-04	4.775E-05	3.063E-05	1.031E-05	2.804E-06	1.255E-06	0.000E+00
92	1.386E-04	8.971E-05	6.633E-05	2.609E-05	1.337E-05	5.673E-06	1.668E-06	5.128E-07

93	1.868E-04	9.584E-05	2.570E-05	3.379E-05	1.349E-05	5.665E-06	4.100E-07	0.000E+00
94	1.281E-04	6.943E-05	6.028E-05	3.081E-05	8.263E-06	5.496E-06	1.230E-06	0.000E+00
95	1.792E-04	1.027E-04	7.302E-05	3.518E-05	1.112E-05	7.493E-06	1.280E-06	1.056E-06
96	1.493E-04	6.366E-05	5.735E-05	2.456E-05	1.025E-05	2.803E-06	1.280E-06	5.437E-07
97	1.757E-04	9.981E-05	6.605E-05	2.884E-05	1.112E-05	2.857E-06	8.700E-07	1.086E-06
98	1.696E-04	5.853E-05	4.132E-05	2.623E-05	1.534E-05	3.827E-06	8.701E-07	1.055E-06
99	1.632E-04	7.462E-05	6.619E-05	2.016E-05	6.203E-06	2.855E-06	4.343E-07	5.119E-07
100	1.293E-04	8.452E-05	4.147E-05	1.087E-05	1.433E-05	1.885E-06	4.343E-07	5.426E-07
101	1.545E-04	1.204E-04	3.782E-05	2.137E-05	9.179E-06	2.801E-06	4.341E-07	0.000E+00
102	1.349E-04	8.524E-05	4.819E-05	1.515E-05	1.017E-05	2.798E-06	1.277E-06	0.000E+00
103	1.603E-04	5.740E-05	2.951E-05	2.582E-05	8.448E-06	1.758E-06	3.819E-07	0.000E+00
104	1.024E-04	7.684E-05	6.376E-05	2.887E-05	1.023E-05	4.569E-06	0.000E+00	0.000E+00
105	1.174E-04	6.938E-05	4.123E-05	3.054E-05	1.116E-05	4.791E-06	8.178E-07	5.111E-07
106	1.283E-04	8.691E-05	4.450E-05	2.135E-05	7.126E-06	9.136E-07	1.276E-06	0.000E+00
107	1.132E-04	7.650E-05	2.814E-05	1.680E-05	1.010E-05	3.709E-06	4.089E-07	5.106E-07
108	1.586E-04	6.174E-05	4.429E-05	1.521E-05	1.517E-05	9.679E-07	0.000E+00	0.000E+00

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2	0.000E+00	0.000E+00	0.000E+00	1.388E-06	2.326E-06	2.340E-06	1.671E-06	0.000E+00
3	5.556E-05	7.029E-05	7.105E-05	3.374E-05	5.526E-06	3.686E-06	0.000E+00	0.000E+00
4	3.381E-04	1.999E-04	1.542E-04	6.000E-05	2.058E-05	3.942E-06	6.606E-07	0.000E+00
5	3.652E-04	1.972E-04	9.622E-05	4.826E-05	1.309E-05	3.441E-06	9.492E-07	0.000E+00
6	2.969E-04	1.367E-04	1.077E-04	3.264E-05	8.661E-06	1.308E-06	1.751E-06	3.473E-07
7	3.107E-04	1.214E-04	6.777E-05	4.558E-05	1.651E-05	5.639E-06	0.000E+00	0.000E+00
8	3.263E-04	1.538E-04	7.100E-05	3.935E-05	6.963E-06	2.805E-06	6.470E-07	0.000E+00
9	2.948E-04	1.662E-04	5.872E-05	2.285E-05	5.341E-06	2.765E-06	3.041E-07	0.000E+00
10	3.247E-04	1.118E-04	6.490E-05	4.038E-05	1.052E-05	7.125E-07	6.488E-07	0.000E+00
11	2.882E-04	9.622E-05	3.713E-05	2.380E-05	4.633E-06	6.632E-07	3.136E-07	0.000E+00
12	2.399E-04	9.448E-05	4.988E-05	1.898E-05	4.001E-06	1.390E-06	0.000E+00	3.995E-07
13	2.724E-04	9.409E-05	3.453E-05	2.454E-05	5.763E-06	4.882E-06	3.121E-07	0.000E+00
14	2.227E-04	8.664E-05	3.276E-05	1.224E-05	2.998E-06	1.310E-06	6.156E-07	0.000E+00
15	2.604E-04	8.610E-05	5.027E-05	1.564E-05	5.349E-06	2.214E-06	6.304E-07	0.000E+00
16	2.613E-04	6.779E-05	4.565E-05	2.293E-05	6.069E-06	0.000E+00	0.000E+00	0.000E+00
17	2.310E-04	1.151E-04	2.865E-05	2.169E-05	5.211E-06	3.395E-06	9.097E-07	0.000E+00
18	2.147E-04	7.341E-05	5.232E-05	1.659E-05	7.821E-07	6.841E-07	3.039E-07	0.000E+00

19	2.315E-04	7.925E-05	2.971E-05	2.067E-05	5.875E-06	2.010E-06	0.000E+00	0.000E+00
20	2.368E-04	8.567E-05	2.723E-05	2.746E-05	7.304E-06	1.336E-06	2.897E-07	0.000E+00
21	1.882E-04	5.773E-05	2.949E-05	1.725E-05	1.444E-06	1.323E-06	2.851E-07	0.000E+00
22	1.705E-04	5.714E-05	2.017E-05	1.257E-05	3.542E-06	0.000E+00	0.000E+00	3.650E-07
23	1.694E-04	4.992E-05	4.703E-05	1.493E-05	3.214E-06	1.164E-06	5.339E-07	3.374E-07
24	1.684E-04	5.448E-05	2.846E-05	1.052E-05	2.733E-06	0.000E+00	2.894E-07	3.636E-07
25	1.614E-04	7.934E-05	1.734E-05	8.172E-06	4.051E-06	6.033E-07	1.098E-06	0.000E+00
26	1.228E-04	5.132E-05	2.499E-05	1.106E-05	3.351E-06	1.858E-06	5.595E-07	0.000E+00
27	1.413E-04	4.884E-05	3.117E-05	1.487E-05	4.002E-06	1.243E-06	0.000E+00	3.437E-07
28	1.428E-04	3.552E-05	1.913E-05	1.514E-05	3.328E-06	0.000E+00	2.799E-07	0.000E+00
29	1.224E-04	4.002E-05	2.244E-05	5.893E-06	2.708E-06	5.836E-07	2.771E-07	0.000E+00
30	1.232E-04	4.862E-05	1.232E-05	7.042E-06	2.594E-06	6.206E-07	0.000E+00	0.000E+00
31	1.025E-04	3.711E-05	1.679E-05	1.285E-05	2.651E-06	1.831E-06	0.000E+00	0.000E+00
32	8.899E-05	4.299E-05	2.858E-05	3.939E-06	1.905E-06	2.471E-06	5.347E-07	0.000E+00
33	1.317E-04	3.477E-05	1.616E-05	6.747E-06	4.590E-06	6.081E-07	0.000E+00	0.000E+00
34	1.024E-04	4.246E-05	2.603E-05	8.663E-06	3.222E-06	1.743E-06	0.000E+00	0.000E+00
35	9.856E-05	3.800E-05	1.223E-05	5.854E-06	3.262E-06	5.796E-07	2.576E-07	0.000E+00
36	1.202E-04	1.698E-05	1.902E-05	3.924E-06	2.696E-06	0.000E+00	0.000E+00	0.000E+00
37	8.332E-05	4.360E-05	4.104E-06	7.749E-06	2.546E-06	5.593E-07	5.193E-07	3.239E-07
38	3.456E-05	2.191E-05	1.546E-05	1.813E-06	1.256E-06	1.716E-06	0.000E+00	0.000E+00
39	2.997E-05	2.160E-05	1.227E-05	5.998E-06	1.101E-06	1.039E-06	0.000E+00	0.000E+00
40	3.492E-05	1.520E-05	1.106E-05	3.457E-06	1.823E-06	0.000E+00	0.000E+00	3.040E-07
41	3.149E-05	8.801E-06	1.082E-05	2.736E-06	5.830E-07	0.000E+00	0.000E+00	0.000E+00
42	2.896E-05	1.599E-05	5.248E-06	2.662E-06	1.118E-06	0.000E+00	2.250E-07	0.000E+00
43	4.645E-05	1.319E-05	1.866E-06	9.214E-07	6.123E-07	5.315E-07	0.000E+00	0.000E+00
44	3.675E-05	5.969E-06	7.679E-06	0.000E+00	5.760E-07	0.000E+00	2.484E-07	2.884E-07
45	1.735E-05	2.941E-06	7.035E-06	3.424E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
46	1.086E-05	7.144E-06	1.701E-06	8.650E-07	1.118E-06	0.000E+00	0.000E+00	0.000E+00
47	1.264E-05	1.471E-06	5.249E-06	1.692E-06	1.125E-06	0.000E+00	2.223E-07	0.000E+00
48	1.271E-05	4.315E-06	1.710E-06	3.323E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
49	6.214E-06	7.084E-06	3.620E-06	0.000E+00	1.120E-06	0.000E+00	0.000E+00	0.000E+00
50	1.411E-05	4.219E-06	3.517E-06	1.630E-06	5.734E-07	0.000E+00	2.200E-07	2.899E-07
51	1.414E-05	1.456E-06	3.499E-06	8.629E-07	5.727E-07	0.000E+00	0.000E+00	0.000E+00
52	7.864E-06	5.730E-06	1.797E-06	8.593E-07	1.078E-06	4.957E-07	2.328E-07	0.000E+00
53	1.080E-05	7.018E-06	3.490E-06	2.581E-06	5.389E-07	5.234E-07	0.000E+00	0.000E+00
54	1.261E-05	8.401E-06	1.799E-06	3.346E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
55	4.250E-06	9.279E-06	1.583E-06	1.605E-06	1.038E-06	0.000E+00	0.000E+00	0.000E+00
56	9.567E-06	5.654E-06	0.000E+00	8.107E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
57	4.821E-06	4.274E-06	0.000E+00	8.586E-07	5.712E-07	5.234E-07	0.000E+00	0.000E+00
58	7.849E-06	1.451E-06	1.688E-06	1.619E-06	5.704E-07	4.927E-07	0.000E+00	0.000E+00

59	1.516E-06	5.639E-06	3.485E-06	2.478E-06	0.000E+00	0.000E+00	0.000E+00	2.871E-07
60	1.855E-05	1.452E-06	0.000E+00	1.669E-06	0.000E+00	4.939E-07	2.327E-07	0.000E+00
61	6.143E-06	1.368E-06	0.000E+00	1.669E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
62	1.255E-05	1.451E-06	1.686E-06	8.071E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
63	1.240E-05	4.244E-06	5.244E-06	1.659E-06	1.069E-06	4.899E-07	0.000E+00	0.000E+00
64	1.231E-05	8.321E-06	1.784E-06	2.511E-06	5.346E-07	0.000E+00	0.000E+00	0.000E+00
65	6.013E-06	8.405E-06	3.356E-06	0.000E+00	1.068E-06	0.000E+00	2.314E-07	0.000E+00
66	7.711E-06	4.163E-06	0.000E+00	8.521E-07	5.682E-07	0.000E+00	0.000E+00	0.000E+00
67	9.379E-06	0.000E+00	3.460E-06	1.656E-06	1.068E-06	0.000E+00	0.000E+00	0.000E+00
68	6.190E-06	1.359E-06	3.352E-06	0.000E+00	0.000E+00	0.000E+00	4.481E-07	0.000E+00
69	4.684E-06	1.439E-06	1.776E-06	2.456E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
70	3.001E-06	8.300E-06	3.551E-06	1.605E-06	1.066E-06	0.000E+00	4.475E-07	0.000E+00
71	5.855E-06	3.951E-06	0.000E+00	1.542E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
72	7.682E-06	0.000E+00	1.777E-06	8.021E-07	5.327E-07	1.006E-06	0.000E+00	0.000E+00
73	4.772E-06	1.355E-06	0.000E+00	1.603E-06	5.329E-07	0.000E+00	2.303E-07	0.000E+00
74	9.182E-06	1.436E-06	1.671E-06	1.701E-06	0.000E+00	4.875E-07	0.000E+00	0.000E+00
75	6.174E-06	1.435E-06	1.772E-06	0.000E+00	5.645E-07	0.000E+00	0.000E+00	0.000E+00
76	1.074E-05	4.054E-06	0.000E+00	7.986E-07	0.000E+00	0.000E+00	0.000E+00	2.671E-07
77	9.147E-06	2.782E-06	0.000E+00	2.494E-06	5.639E-07	0.000E+00	0.000E+00	0.000E+00
78	1.530E-05	2.779E-06	3.436E-06	0.000E+00	1.093E-06	0.000E+00	0.000E+00	0.000E+00
79	1.584E-06	1.431E-06	1.666E-06	0.000E+00	0.000E+00	4.858E-07	0.000E+00	0.000E+00
80	9.132E-06	2.779E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
81	3.077E-06	4.212E-06	6.868E-06	8.471E-07	5.621E-07	0.000E+00	0.000E+00	0.000E+00
82	9.059E-06	5.565E-06	1.769E-06	0.000E+00	0.000E+00	0.000E+00	2.294E-07	0.000E+00
83	7.554E-06	1.431E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
84	1.584E-06	0.000E+00	0.000E+00	1.693E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
85	6.157E-06	2.865E-06	0.000E+00	8.464E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
86	1.089E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.852E-07	0.000E+00	0.000E+00
87	7.046E-06	0.000E+00	3.292E-06	7.893E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
88	6.044E-06	0.000E+00	1.661E-06	0.000E+00	0.000E+00	5.140E-07	0.000E+00	2.822E-07
89	6.317E-06	1.345E-06	3.424E-06	1.641E-06	5.290E-07	0.000E+00	2.155E-07	0.000E+00
90	4.649E-06	5.461E-06	0.000E+00	0.000E+00	5.609E-07	0.000E+00	0.000E+00	0.000E+00
91	7.714E-06	1.344E-06	1.762E-06	7.957E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
92	6.044E-06	0.000E+00	1.662E-06	8.436E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
93	7.531E-06	0.000E+00	1.661E-06	0.000E+00	5.608E-07	0.000E+00	0.000E+00	0.000E+00
94	7.616E-06	1.344E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
95	1.486E-06	1.426E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
96	7.704E-06	0.000E+00	3.318E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
97	7.521E-06	1.425E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
98	4.639E-06	2.688E-06	0.000E+00	8.421E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00

99	7.606E-06	6.956E-06	0.000E+00	1.684E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
100	6.031E-06	1.341E-06	0.000E+00	7.936E-07	5.275E-07	0.000E+00	0.000E+00	0.000E+00
101	1.576E-06	1.341E-06	1.658E-06	8.421E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
102	2.968E-06	1.423E-06	1.758E-06	0.000E+00	5.596E-07	0.000E+00	0.000E+00	0.000E+00
103	8.645E-06	1.251E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
104	1.483E-06	0.000E+00	1.656E-06	0.000E+00	0.000E+00	0.000E+00	2.146E-07	0.000E+00
105	3.056E-06	1.340E-06	0.000E+00	0.000E+00	5.590E-07	0.000E+00	0.000E+00	0.000E+00
106	0.000E+00	0.000E+00	3.412E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
107	6.111E-06	1.340E-06	3.411E-06	1.634E-06	5.591E-07	0.000E+00	0.000E+00	2.651E-07
108	0.000E+00	1.340E-06	1.756E-06	8.407E-07	5.590E-07	0.000E+00	0.000E+00	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	2	0	0	0	0	0	1
0	1	0	0	1	5	16	8
7	14	25	54	90	71	119	18
61	85	112	199	255	174	137	19
105	148	141	282	335	212	142	27
184	212	178	275	291	156	101	20
362	403	248	392	357	169	105	19
568	529	363	524	357	193	96	8
705	585	406	498	352	148	72	10
916	708	429	554	336	134	71	9
824	722	419	497	322	168	76	12
939	772	413	472	283	123	55	17
852	641	402	412	323	108	73	14
939	686	394	471	264	103	59	9
1217	931	457	560	299	123	64	11
1032	778	402	471	290	111	57	8
1172	895	453	502	281	123	58	12
1052	888	454	565	298	114	70	6
1134	861	430	483	279	109	61	7
1123	759	439	491	259	89	57	8
966	727	382	374	225	74	43	6
1005	694	355	396	227	80	52	6
1047	751	363	384	250	85	56	10
935	644	364	360	225	91	44	9
975	687	334	411	209	59	38	9
842	607	353	368	191	79	38	5

800	598	329	335	178	67	32	5
853	588	288	331	174	65	41	7
761	557	301	336	155	56	33	7
841	600	310	341	179	65	34	5
861	592	291	317	140	67	36	5
822	575	285	329	185	74	34	2
794	510	283	293	163	57	32	3
766	512	269	246	135	61	33	2
785	534	271	278	144	55	29	6
851	614	255	277	148	62	34	4
718	461	247	209	109	47	34	4
543	359	174	205	103	34	20	5
466	301	141	173	78	49	20	2
311	218	122	126	65	27	26	4
231	138	92	92	43	23	12	2
172	137	59	73	47	11	11	4
311	229	94	140	58	21	14	1
324	251	115	137	66	26	15	3
81	78	43	56	26	12	9	2
88	60	30	47	28	9	9	1
85	54	28	37	16	2	4	1
81	52	25	32	6	10	5	0
80	58	36	36	11	7	8	1
89	63	26	40	23	9	3	1
72	52	30	33	14	14	3	1
80	58	20	21	15	4	4	1
83	57	29	33	17	5	4	3
93	48	30	33	24	8	4	1
80	45	27	28	17	11	1	0
89	40	27	33	10	8	5	2
82	58	27	17	17	7	4	1
77	34	29	29	17	2	5	2
69	40	24	20	15	5	5	2
78	53	21	28	16	4	4	1
66	49	33	34	14	6	7	0
81	64	21	23	6	4	2	0
72	50	23	30	17	7	6	2
73	51	21	29	15	13	9	1
78	55	22	38	13	13	5	1
84	54	25	25	21	8	6	1

80	43	25	23	22	8	3	2
72	41	33	32	14	6	4	0
51	51	24	36	11	9	8	3
52	46	23	24	22	5	7	0
75	55	26	30	14	5	4	1
74	41	30	18	11	4	2	0
63	50	24	29	11	4	6	1
69	46	28	20	19	5	2	1
59	46	11	21	7	6	3	0
63	33	23	16	14	5	1	1
66	42	22	17	8	5	0	0
73	31	18	21	12	4	1	0
58	36	24	27	11	2	1	0
59	44	31	28	13	9	1	0
66	38	26	18	13	5	1	0
59	37	19	12	20	5	6	0
64	31	15	23	15	5	0	1
46	28	17	16	8	4	6	2
58	53	23	19	12	4	2	0
53	35	15	20	10	5	0	0
56	42	19	22	12	1	2	0
42	27	11	18	10	3	2	0
52	42	19	16	10	7	5	0
54	28	17	22	8	1	3	0
45	43	15	20	10	3	3	0
47	35	21	17	13	6	4	1
64	37	8	22	13	6	1	0
44	27	19	20	8	6	3	0
61	40	23	23	11	8	3	2
51	25	18	16	10	3	3	1
60	39	21	19	11	3	2	2
58	23	13	17	15	4	2	2
56	29	21	13	6	3	1	1
44	33	13	7	14	2	1	1
53	47	12	14	9	3	1	0
46	33	15	10	10	3	3	0
59	24	10	18	9	2	1	0
35	30	20	19	10	5	0	0
40	27	13	20	11	5	2	1
44	34	14	14	7	1	3	0

39	30	9	11	10	4	1	1
54	24	14	10	15	1	0	0

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	0	0	0	0	0	0	0
0	0	0	1	3	3	6	0
20	26	23	22	6	4	0	0
136	89	55	44	23	5	2	0
171	101	40	42	17	5	3	0
144	73	47	30	12	2	6	1
160	70	31	44	24	9	0	0
151	79	29	34	9	4	2	0
133	83	24	19	7	4	1	0
144	55	26	33	13	1	2	0
130	48	15	20	6	1	1	0
107	47	20	16	5	2	0	1
130	50	15	22	8	7	1	0
106	46	14	11	4	2	2	0
117	43	20	13	7	3	2	0
123	35	19	20	8	0	0	0
109	60	12	19	7	5	3	0
104	39	23	15	1	1	1	0
113	43	13	19	8	3	0	0
115	46	12	25	10	2	1	0
93	32	13	16	2	2	1	0
86	32	9	12	5	0	0	1
91	30	23	15	5	2	2	1
86	31	13	10	4	0	1	1
83	45	8	8	6	1	4	0
65	30	12	11	5	3	2	0
76	29	15	15	6	2	0	1
76	21	9	15	5	0	1	0
66	24	11	6	4	1	1	0
66	29	6	7	4	1	0	0
55	22	8	13	4	3	0	0
48	26	14	4	3	4	2	0

72	21	8	7	7	1	0	0
57	26	13	9	5	3	0	0
54	23	6	6	5	1	1	0
64	10	9	4	4	0	0	0
47	27	2	8	4	1	2	1
20	14	8	2	2	3	0	0
19	15	7	7	2	2	0	0
21	10	6	4	3	0	0	1
19	6	6	3	1	0	0	0
18	11	3	3	2	0	1	0
28	9	1	1	1	1	0	0
22	4	4	0	1	0	1	1
11	2	4	4	0	0	0	0
7	5	1	1	2	0	0	0
8	1	3	2	2	0	1	0
8	3	1	4	0	0	0	0
4	5	2	0	2	0	0	0
9	3	2	2	1	0	1	1
9	1	2	1	1	0	0	0
5	4	1	1	2	1	1	0
7	5	2	3	1	1	0	0
8	6	1	4	0	0	0	0
3	7	1	2	2	0	0	0
6	4	0	1	0	0	0	0
3	3	0	1	1	1	0	0
5	1	1	2	1	1	0	0
1	4	2	3	0	0	0	1
12	1	0	2	0	1	1	0
4	1	0	2	0	0	0	0
8	1	1	1	0	0	0	0
8	3	3	2	2	1	0	0
8	6	1	3	1	0	0	0
4	6	2	0	2	0	1	0
5	3	0	1	1	0	0	0
6	0	2	2	2	0	0	0
4	1	2	0	0	0	2	0
3	1	1	3	0	0	0	0
2	6	2	2	2	0	2	0
4	3	0	2	0	0	0	0
5	0	1	1	1	2	0	0

3	1	0	2	1	0	1	0
6	1	1	2	0	1	0	0
4	1	1	0	1	0	0	0
7	3	0	1	0	0	0	1
6	2	0	3	1	0	0	0
10	2	2	0	2	0	0	0
1	1	1	0	0	1	0	0
6	2	0	0	0	0	0	0
2	3	4	1	1	0	0	0
6	4	1	0	0	0	1	0
5	1	0	0	0	0	0	0
1	0	0	2	0	0	0	0
4	2	0	1	0	0	0	0
7	0	0	0	0	1	0	0
5	0	2	1	0	0	0	0
4	0	1	0	0	1	0	1
4	1	2	2	1	0	1	0
3	4	0	0	1	0	0	0
5	1	1	1	0	0	0	0
4	0	1	1	0	0	0	0
5	0	1	0	1	0	0	0
5	1	0	0	0	0	0	0
1	1	0	0	0	0	0	0
5	0	2	0	0	0	0	0
5	1	0	0	0	0	0	0
3	2	0	1	0	0	0	0
5	5	0	2	0	0	0	0
4	1	0	1	1	0	0	0
1	1	1	1	0	0	0	0
2	1	1	0	1	0	0	0
6	1	0	0	0	0	0	0
1	0	1	0	0	0	1	0
2	1	0	0	1	0	0	0
0	0	2	0	0	0	0	0
4	1	2	2	1	0	0	1
0	1	1	1	1	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a * \exp(b * x) + c * \exp(d * x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.3163 \quad (0.2896, 0.3429)$$

$$b = -0.1248 \quad (-0.1494, -0.1003)$$

$$c = 0.0006953 \quad (-0.03482, 0.03622)$$

$$d = -0.02813 \quad (-1.023, 0.9672)$$

goftotal =

sse: 4.0651e-006

rsquare: 9.9962e-001

dfe: 4

adjrsquare: 9.9933e-001

rmse: 1.0081e-003

ctotal =

General model Exp1:

$$ctotal(x) = a * \exp(b * x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.2854 (0.1831, 0.3878)$$

$$b = -0.1202 (-0.1376, -0.1028)$$

goftotal =

$$sse: 9.5662e-007$$

$$rsquare: 9.9833e-001$$

$$dfe: 3$$

$$adjrsquare: 9.9778e-001$$

$$rmse: 5.6469e-004$$

Event 43	Date	Time*	Location*	Summing interval*				
	24-Sep-01	1038	S16E23	Sep 24 to Oct 1 0100				
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2	0.000E+00	2.524E-06	6.269E-06	3.108E-06	3.076E-06	0.000E+00	1.705E-06	0.000E+00
3	1.052E-04	1.107E-04	1.277E-04	7.272E-05	5.809E-05	1.559E-05	4.017E-06	5.268E-07
4	4.160E-04	4.311E-04	4.448E-04	2.758E-04	1.232E-04	5.637E-05	1.016E-05	1.102E-06
5	1.353E-03	1.230E-03	1.107E-03	7.193E-04	3.182E-04	9.260E-05	2.131E-05	6.438E-07
6	4.493E-03	3.838E-03	2.729E-03	1.716E-03	7.400E-04	2.167E-04	5.014E-05	4.277E-06
7	9.962E-03	7.952E-03	5.487E-03	3.572E-03	1.392E-03	4.874E-04	7.605E-05	6.915E-06
8	1.687E-02	1.245E-02	9.202E-03	5.173E-03	1.916E-03	6.773E-04	1.042E-04	1.742E-05
9	2.859E-02	2.131E-02	1.389E-02	7.386E-03	2.946E-03	9.212E-04	1.539E-04	9.625E-06
10	4.721E-02	3.230E-02	1.875E-02	1.104E-02	3.954E-03	1.320E-03	2.357E-04	2.783E-05
11	6.101E-02	3.886E-02	2.411E-02	1.342E-02	4.685E-03	1.876E-03	3.609E-04	2.434E-05

12	4.855E-02	3.348E-02	2.126E-02	1.166E-02	4.579E-03	1.412E-03	2.977E-04	5.159E-05
13	5.220E-02	3.388E-02	2.186E-02	1.306E-02	4.827E-03	1.872E-03	3.928E-04	2.268E-05
14	4.498E-02	3.335E-02	2.263E-02	1.285E-02	5.155E-03	2.325E-03	4.582E-04	5.315E-05
15	4.521E-02	3.200E-02	2.245E-02	1.265E-02	5.845E-03	2.635E-03	5.129E-04	4.055E-05
16	4.675E-02	3.335E-02	2.216E-02	1.358E-02	6.100E-03	2.406E-03	6.198E-04	4.672E-05
17	5.374E-02	3.664E-02	2.698E-02	1.760E-02	7.007E-03	3.047E-03	6.588E-04	5.477E-05
18	6.384E-02	4.839E-02	2.962E-02	1.683E-02	7.844E-03	3.735E-03	8.281E-04	4.593E-05
19	6.363E-02	4.684E-02	2.974E-02	1.719E-02	7.850E-03	3.940E-03	8.599E-04	9.053E-05
20	6.697E-02	4.790E-02	2.884E-02	1.832E-02	8.140E-03	3.805E-03	7.777E-04	1.022E-04
21	6.356E-02	4.926E-02	2.972E-02	1.904E-02	8.269E-03	3.686E-03	8.062E-04	5.951E-05
22	6.172E-02	4.524E-02	3.237E-02	1.951E-02	9.245E-03	3.919E-03	9.121E-04	8.244E-05
23	5.994E-02	4.370E-02	2.730E-02	1.938E-02	8.636E-03	3.839E-03	9.347E-04	1.192E-04
24	5.791E-02	4.261E-02	3.049E-02	1.879E-02	8.849E-03	3.426E-03	9.248E-04	1.355E-04
25	6.341E-02	4.867E-02	3.330E-02	2.117E-02	8.978E-03	3.629E-03	8.994E-04	7.298E-05
26	7.043E-02	4.893E-02	3.048E-02	1.955E-02	9.061E-03	3.995E-03	7.557E-04	4.531E-05
27	6.688E-02	4.874E-02	3.219E-02	1.973E-02	9.058E-03	3.464E-03	6.628E-04	7.982E-05
28	7.148E-02	5.391E-02	3.682E-02	2.093E-02	9.940E-03	4.079E-03	8.269E-04	9.097E-05
29	7.553E-02	5.693E-02	3.437E-02	2.109E-02	9.883E-03	4.210E-03	8.016E-04	6.296E-05
30	7.810E-02	5.673E-02	3.743E-02	2.100E-02	9.533E-03	3.882E-03	7.712E-04	3.720E-05
31	7.957E-02	6.198E-02	3.987E-02	2.449E-02	1.136E-02	3.585E-03	7.402E-04	3.356E-05
32	9.044E-02	5.802E-02	4.094E-02	2.531E-02	1.139E-02	4.279E-03	8.024E-04	4.851E-05
33	6.862E-02	4.545E-02	4.437E-02	2.198E-02	8.451E-03	3.798E-03	6.402E-04	5.796E-05
34	1.138E-01	4.658E-02	2.553E-02	2.715E-02	7.426E-03	2.682E-03	4.576E-04	1.538E-05
35	1.779E-01	1.025E-01	7.205E-02	2.180E-02	8.311E-03	3.764E-03	5.227E-04	1.344E-05
36	2.019E-01	1.039E-01	6.966E-02	3.576E-02	8.128E-03	2.663E-03	4.324E-04	7.600E-06
37	1.195E-01	9.226E-02	3.679E-02	1.559E-02	5.643E-03	1.925E-03	3.280E-04	7.857E-06
38	1.331E-01	7.764E-02	3.446E-02	2.075E-02	5.734E-03	2.076E-03	3.120E-04	0.000E+00
39	8.066E-02	9.350E-02	3.284E-02	2.114E-02	6.135E-03	1.593E-03	2.679E-04	5.611E-06
40	7.991E-02	3.245E-02	2.694E-02	1.858E-02	4.800E-03	1.487E-03	1.774E-04	1.049E-05
41	1.034E-01	7.937E-02	2.333E-02	1.667E-02	4.487E-03	1.409E-03	1.814E-04	0.000E+00
42	1.107E-01	5.213E-02	3.337E-02	1.250E-02	4.060E-03	1.078E-03	1.403E-04	1.019E-05
43	9.660E-02	4.346E-02	2.381E-02	1.364E-02	3.657E-03	1.270E-03	1.263E-04	4.693E-06
44	8.009E-02	3.810E-02	2.647E-02	1.358E-02	4.017E-03	1.008E-03	1.346E-04	0.000E+00
45	9.750E-02	4.377E-02	2.071E-02	1.027E-02	3.748E-03	8.636E-04	1.015E-04	0.000E+00
46	7.634E-02	3.954E-02	1.957E-02	9.757E-03	2.868E-03	6.035E-04	8.692E-05	4.679E-06
47	6.597E-02	4.142E-02	1.767E-02	8.593E-03	2.679E-03	5.901E-04	1.054E-04	4.445E-06
48	6.140E-02	4.269E-02	2.090E-02	8.023E-03	2.267E-03	5.117E-04	7.707E-05	0.000E+00
49	6.699E-02	3.382E-02	1.505E-02	8.072E-03	1.975E-03	4.319E-04	4.577E-05	4.224E-06
50	5.173E-02	3.059E-02	1.741E-02	7.027E-03	1.800E-03	6.332E-04	7.583E-05	0.000E+00
51	4.817E-02	2.723E-02	1.450E-02	5.840E-03	1.938E-03	3.967E-04	4.872E-05	0.000E+00

52	4.619E-02	2.556E-02	1.532E-02	5.700E-03	1.619E-03	4.216E-04	3.493E-05	0.000E+00
53	5.076E-02	2.459E-02	1.195E-02	4.906E-03	1.374E-03	3.436E-04	3.788E-05	0.000E+00
54	4.329E-02	2.333E-02	1.112E-02	4.772E-03	1.364E-03	3.314E-04	5.465E-05	3.383E-06
55	4.194E-02	1.999E-02	1.006E-02	4.297E-03	1.176E-03	3.230E-04	4.067E-05	0.000E+00
56	3.707E-02	1.869E-02	9.516E-03	4.025E-03	1.231E-03	3.571E-04	3.067E-05	6.087E-06
57	3.540E-02	1.902E-02	8.486E-03	3.579E-03	1.158E-03	2.615E-04	4.823E-05	2.754E-06
58	3.435E-02	1.620E-02	8.279E-03	3.932E-03	8.919E-04	2.220E-04	2.904E-05	0.000E+00
59	3.144E-02	1.479E-02	7.536E-03	3.235E-03	8.419E-04	2.788E-04	2.857E-05	2.708E-06
60	3.075E-02	1.353E-02	6.960E-03	2.918E-03	8.886E-04	1.816E-04	2.343E-05	0.000E+00
61	2.774E-02	1.351E-02	6.158E-03	2.997E-03	6.993E-04	1.549E-04	2.968E-05	0.000E+00
62	2.619E-02	1.311E-02	5.651E-03	2.540E-03	7.144E-04	1.605E-04	1.591E-05	0.000E+00
63	2.595E-02	1.305E-02	6.286E-03	2.476E-03	7.857E-04	1.645E-04	2.008E-05	2.226E-06
64	2.377E-02	1.079E-02	5.074E-03	2.352E-03	6.398E-04	1.730E-04	2.463E-05	0.000E+00
65	2.272E-02	1.016E-02	5.466E-03	2.347E-03	6.164E-04	1.462E-04	2.207E-05	0.000E+00
66	2.126E-02	1.002E-02	4.608E-03	1.965E-03	5.700E-04	1.551E-04	2.112E-05	1.905E-06
67	2.027E-02	9.458E-03	4.267E-03	2.033E-03	5.460E-04	1.461E-04	1.436E-05	0.000E+00
68	1.863E-02	9.119E-03	4.460E-03	2.069E-03	5.180E-04	1.205E-04	1.531E-05	0.000E+00
69	1.813E-02	8.216E-03	3.642E-03	1.908E-03	4.956E-04	1.092E-04	2.380E-05	1.651E-06
70	1.677E-02	7.585E-03	3.576E-03	1.629E-03	4.663E-04	1.188E-04	2.212E-05	1.640E-06
71	1.545E-02	7.662E-03	3.585E-03	1.556E-03	4.217E-04	1.002E-04	1.931E-05	1.407E-06
72	1.368E-02	6.200E-03	3.048E-03	1.227E-03	3.963E-04	8.062E-05	1.229E-05	0.000E+00
73	1.237E-02	5.626E-03	2.962E-03	1.230E-03	3.895E-04	5.935E-05	8.832E-06	3.716E-06
74	1.163E-02	5.355E-03	2.604E-03	1.314E-03	2.943E-04	7.354E-05	1.494E-05	0.000E+00
75	1.113E-02	5.076E-03	2.581E-03	1.081E-03	3.193E-04	6.739E-05	7.346E-06	0.000E+00
76	1.077E-02	4.904E-03	2.250E-03	1.048E-03	3.059E-04	9.496E-05	1.442E-05	0.000E+00
77	1.028E-02	4.610E-03	2.382E-03	9.894E-04	2.774E-04	8.831E-05	1.046E-05	0.000E+00
78	9.502E-03	4.645E-03	2.295E-03	9.828E-04	3.448E-04	7.015E-05	1.035E-05	0.000E+00
79	9.422E-03	4.137E-03	2.285E-03	9.457E-04	2.677E-04	6.551E-05	4.232E-06	1.020E-06
80	9.120E-03	4.589E-03	2.159E-03	9.710E-04	2.760E-04	6.923E-05	8.365E-06	0.000E+00
81	8.652E-03	3.967E-03	2.143E-03	9.773E-04	2.972E-04	6.554E-05	6.540E-06	0.000E+00
82	8.615E-03	3.975E-03	2.085E-03	8.880E-04	3.084E-04	7.095E-05	2.356E-06	0.000E+00
83	7.784E-03	3.651E-03	2.171E-03	8.745E-04	2.735E-04	6.748E-05	7.649E-06	0.000E+00
84	8.217E-03	3.709E-03	1.856E-03	8.746E-04	2.546E-04	4.744E-05	4.275E-06	0.000E+00
85	7.554E-03	3.726E-03	1.667E-03	8.117E-04	2.501E-04	7.452E-05	6.677E-06	0.000E+00
86	7.097E-03	3.011E-03	1.818E-03	8.052E-04	2.188E-04	6.595E-05	8.862E-06	0.000E+00
87	6.743E-03	3.246E-03	1.688E-03	7.347E-04	1.855E-04	3.040E-05	9.330E-06	0.000E+00
88	6.466E-03	2.884E-03	1.771E-03	6.199E-04	1.934E-04	5.344E-05	5.582E-06	0.000E+00
89	6.208E-03	2.972E-03	1.674E-03	6.393E-04	1.846E-04	7.409E-05	6.928E-06	0.000E+00
90	6.437E-03	3.187E-03	1.587E-03	6.216E-04	2.134E-04	3.855E-05	6.282E-06	0.000E+00
91	5.949E-03	2.776E-03	1.468E-03	6.580E-04	1.966E-04	3.947E-05	4.764E-06	0.000E+00

92	5.395E-03	2.625E-03	1.375E-03	6.269E-04	1.576E-04	4.049E-05	4.753E-06	8.150E-07
93	5.439E-03	2.663E-03	1.361E-03	5.714E-04	1.104E-04	4.422E-05	3.331E-06	0.000E+00
94	5.130E-03	2.546E-03	1.293E-03	5.753E-04	1.704E-04	3.367E-05	3.387E-06	0.000E+00
95	5.069E-03	2.291E-03	1.092E-03	5.610E-04	1.174E-04	3.020E-05	0.000E+00	0.000E+00
96	4.849E-03	2.310E-03	1.096E-03	5.196E-04	1.491E-04	3.265E-05	7.677E-06	0.000E+00
97	4.874E-03	2.132E-03	1.146E-03	4.962E-04	1.403E-04	2.787E-05	2.562E-06	0.000E+00
98	4.553E-03	2.167E-03	1.080E-03	4.756E-04	1.348E-04	3.918E-05	6.869E-06	0.000E+00
99	4.255E-03	2.041E-03	1.031E-03	3.874E-04	1.194E-04	1.805E-05	4.227E-06	0.000E+00
100	4.020E-03	1.918E-03	1.010E-03	4.434E-04	1.094E-04	1.772E-05	3.421E-06	0.000E+00
101	3.929E-03	1.820E-03	9.535E-04	4.612E-04	1.101E-04	3.606E-05	3.606E-06	0.000E+00
102	3.980E-03	1.686E-03	8.351E-04	4.183E-04	1.218E-04	1.318E-05	1.822E-06	0.000E+00
103	3.659E-03	1.918E-03	9.732E-04	3.909E-04	1.232E-04	3.422E-05	5.701E-07	0.000E+00
104	3.604E-03	1.644E-03	9.708E-04	3.330E-04	9.155E-05	2.416E-05	1.747E-06	0.000E+00
105	3.381E-03	1.647E-03	7.992E-04	3.439E-04	9.468E-05	2.157E-05	2.883E-06	6.915E-07
106	3.312E-03	1.514E-03	7.331E-04	3.383E-04	9.931E-05	1.866E-05	2.210E-06	6.749E-07
107	3.065E-03	1.451E-03	7.688E-04	3.002E-04	7.786E-05	2.221E-05	2.212E-06	0.000E+00
108	3.026E-03	1.372E-03	8.199E-04	3.513E-04	6.651E-05	1.221E-05	1.099E-06	0.000E+00
109	3.114E-03	1.423E-03	8.006E-04	3.365E-04	1.154E-04	2.062E-05	1.054E-06	6.564E-07
110	2.799E-03	1.432E-03	7.872E-04	2.877E-04	7.322E-05	1.466E-05	3.240E-06	0.000E+00
111	2.904E-03	1.330E-03	6.620E-04	2.731E-04	7.520E-05	1.566E-05	1.591E-06	0.000E+00
112	2.778E-03	1.339E-03	6.501E-04	2.638E-04	5.380E-05	2.135E-05	2.578E-06	1.323E-06
113	2.618E-03	1.248E-03	6.863E-04	2.336E-04	5.481E-05	1.409E-05	2.068E-06	0.000E+00
114	2.661E-03	1.223E-03	6.899E-04	2.518E-04	7.827E-05	1.639E-05	2.115E-06	6.688E-07
115	2.626E-03	1.102E-03	5.769E-04	2.447E-04	6.648E-05	1.416E-05	1.568E-06	0.000E+00
116	2.528E-03	1.169E-03	5.819E-04	2.996E-04	7.015E-05	8.611E-06	4.990E-07	0.000E+00
117	2.328E-03	1.144E-03	5.805E-04	2.379E-04	6.265E-05	1.241E-05	2.570E-06	6.568E-07
118	2.411E-03	1.120E-03	5.722E-04	2.629E-04	7.208E-05	8.008E-06	5.256E-07	0.000E+00
119	2.190E-03	1.080E-03	5.310E-04	2.180E-04	6.104E-05	1.343E-05	5.161E-07	0.000E+00
120	1.964E-03	8.665E-04	3.940E-04	2.117E-04	5.294E-05	1.200E-05	4.989E-07	6.277E-07
121	1.653E-03	7.321E-04	4.667E-04	1.548E-04	3.991E-05	8.703E-06	9.563E-07	0.000E+00
122	1.257E-03	5.913E-04	2.921E-04	1.479E-04	3.664E-05	5.194E-06	4.652E-07	5.956E-07
123	1.119E-03	5.176E-04	2.842E-04	1.080E-04	3.471E-05	6.192E-06	4.766E-07	0.000E+00
124	1.130E-03	5.546E-04	2.644E-04	1.129E-04	3.686E-05	4.224E-06	0.000E+00	5.948E-07
125	1.064E-03	5.097E-04	2.448E-04	9.252E-05	2.927E-05	7.316E-06	0.000E+00	0.000E+00
126	8.795E-04	4.356E-04	2.280E-04	9.615E-05	1.967E-05	9.179E-06	9.464E-07	0.000E+00
127	9.900E-04	4.806E-04	2.440E-04	7.708E-05	3.984E-05	4.997E-06	9.381E-07	0.000E+00
128	8.277E-04	4.463E-04	1.983E-04	1.006E-04	2.302E-05	4.179E-06	8.819E-07	0.000E+00
129	9.215E-04	3.432E-04	1.699E-04	7.768E-05	1.731E-05	1.041E-06	0.000E+00	0.000E+00
130	7.597E-04	4.233E-04	1.537E-04	8.316E-05	2.413E-05	5.009E-06	4.377E-07	0.000E+00
131	7.308E-04	3.309E-04	1.946E-04	7.286E-05	1.764E-05	6.005E-06	4.370E-07	5.479E-07

132	6.249E-04	3.140E-04	1.410E-04	5.890E-05	1.008E-05	3.712E-06	0.000E+00	5.033E-07
133	6.267E-04	3.523E-04	1.675E-04	6.585E-05	2.042E-05	4.989E-06	4.353E-07	0.000E+00
134	6.318E-04	3.111E-04	1.500E-04	6.249E-05	2.029E-05	5.906E-06	0.000E+00	0.000E+00
135	5.765E-04	2.743E-04	1.300E-04	4.859E-05	1.204E-05	1.921E-06	4.544E-07	0.000E+00
136	6.885E-04	3.132E-04	1.196E-04	4.661E-05	1.188E-05	1.976E-06	0.000E+00	5.359E-07
137	5.941E-04	2.386E-04	1.215E-04	4.295E-05	1.266E-05	3.985E-06	8.787E-07	0.000E+00
138	4.462E-04	2.134E-04	1.289E-04	3.933E-05	1.069E-05	3.910E-06	8.759E-07	0.000E+00
139	4.141E-04	2.092E-04	1.075E-04	5.402E-05	1.392E-05	1.949E-06	4.239E-07	5.266E-07
140	3.437E-04	1.799E-04	9.928E-05	3.808E-05	7.391E-06	4.971E-06	0.000E+00	0.000E+00
141	3.148E-04	1.750E-04	1.145E-04	4.403E-05	5.221E-06	0.000E+00	0.000E+00	0.000E+00
142	2.816E-04	1.188E-04	8.409E-05	4.402E-05	1.048E-05	2.920E-06	4.441E-07	0.000E+00
143	3.390E-04	1.683E-04	7.476E-05	4.097E-05	8.313E-06	3.966E-06	0.000E+00	0.000E+00
144	2.989E-04	1.351E-04	8.422E-05	4.255E-05	8.244E-06	3.852E-06	4.436E-07	0.000E+00
145	3.706E-04	1.744E-04	7.485E-05	3.711E-05	7.409E-06	9.321E-07	4.431E-07	0.000E+00
146	3.285E-04	1.307E-04	8.493E-05	3.041E-05	6.736E-06	1.868E-06	8.868E-07	0.000E+00
147	3.134E-04	1.460E-04	8.097E-05	2.969E-05	2.156E-06	9.900E-07	8.879E-07	0.000E+00
148	2.773E-04	1.608E-04	5.439E-05	3.630E-05	8.749E-06	0.000E+00	1.631E-06	4.873E-07
149	3.440E-04	1.526E-04	8.073E-05	2.978E-05	4.115E-06	0.000E+00	4.175E-07	0.000E+00
150	3.133E-04	1.374E-04	5.494E-05	2.826E-05	8.354E-06	9.907E-07	0.000E+00	0.000E+00
151	3.495E-04	1.775E-04	7.125E-05	2.966E-05	8.474E-06	0.000E+00	0.000E+00	5.215E-07
152	3.380E-04	1.550E-04	7.153E-05	3.929E-05	5.386E-06	2.915E-06	8.620E-07	0.000E+00
153	3.071E-04	1.790E-04	5.885E-05	3.651E-05	8.351E-06	1.983E-06	4.180E-07	0.000E+00
154	2.981E-04	1.535E-04	6.161E-05	3.582E-05	1.048E-05	0.000E+00	0.000E+00	0.000E+00
155	3.120E-04	9.118E-05	4.842E-05	2.039E-05	6.227E-06	9.293E-07	4.421E-07	0.000E+00
156	2.817E-04	1.499E-04	7.141E-05	1.390E-05	4.235E-06	1.917E-06	0.000E+00	0.000E+00
157	3.291E-04	1.170E-04	3.946E-05	3.097E-05	6.432E-06	1.915E-06	0.000E+00	0.000E+00
158	3.467E-04	1.569E-04	9.745E-05	5.817E-05	7.354E-06	9.929E-07	0.000E+00	0.000E+00
159	3.577E-04	1.752E-04	7.810E-05	3.343E-05	3.233E-06	9.357E-07	0.000E+00	0.000E+00
160	3.228E-04	1.494E-04	7.554E-05	2.052E-05	3.051E-06	0.000E+00	4.441E-07	5.549E-07
161	3.892E-04	2.009E-04	9.428E-05	2.195E-05	9.384E-06	1.929E-06	4.436E-07	0.000E+00

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
3	9.644E-06	1.168E-05	1.866E-06	2.544E-06	5.689E-07	0.000E+00	2.276E-07	0.000E+00
4	3.958E-05	1.987E-05	6.877E-06	2.457E-06	0.000E+00	4.903E-07	0.000E+00	0.000E+00
5	1.049E-04	1.833E-05	4.158E-06	4.814E-06	0.000E+00	0.000E+00	0.000E+00	3.387E-07

6	1.587E-04	5.063E-05	1.730E-05	2.177E-06	1.660E-06	7.557E-07	0.000E+00	0.000E+00
7	2.856E-04	7.311E-05	3.483E-05	7.754E-06	1.079E-06	0.000E+00	0.000E+00	0.000E+00
8	3.647E-04	1.039E-04	4.910E-05	1.072E-05	1.626E-06	0.000E+00	0.000E+00	0.000E+00
9	6.653E-04	1.609E-04	4.998E-05	1.089E-05	1.863E-06	0.000E+00	0.000E+00	0.000E+00
10	8.433E-04	1.974E-04	5.826E-05	5.878E-06	2.526E-06	0.000E+00	0.000E+00	0.000E+00
11	1.335E-03	2.213E-04	4.174E-05	3.367E-05	4.001E-06	0.000E+00	0.000E+00	0.000E+00
12	1.075E-03	3.021E-04	4.840E-05	4.188E-05	4.435E-06	0.000E+00	0.000E+00	0.000E+00
13	1.066E-03	2.960E-04	6.749E-05	4.195E-05	4.959E-06	0.000E+00	0.000E+00	0.000E+00
14	1.436E-03	4.323E-04	1.660E-04	3.205E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
15	1.646E-03	3.656E-04	1.694E-04	7.571E-05	4.579E-06	0.000E+00	0.000E+00	0.000E+00
16	1.172E-03	5.068E-04	2.911E-04	5.978E-05	9.279E-06	0.000E+00	0.000E+00	0.000E+00
17	2.470E-03	1.031E-03	2.598E-04	5.710E-05	1.375E-05	0.000E+00	0.000E+00	0.000E+00
18	1.817E-03	1.024E-03	3.273E-04	1.285E-04	7.936E-06	0.000E+00	0.000E+00	0.000E+00
19	2.823E-03	7.685E-04	3.762E-04	1.469E-04	1.397E-05	5.616E-06	0.000E+00	0.000E+00
20	2.273E-03	6.950E-04	3.603E-04	1.289E-04	7.460E-06	0.000E+00	0.000E+00	0.000E+00
21	2.318E-03	1.062E-03	3.241E-04	1.058E-04	7.886E-06	0.000E+00	0.000E+00	0.000E+00
22	3.272E-03	1.054E-03	5.113E-04	1.290E-04	2.297E-05	0.000E+00	0.000E+00	0.000E+00
23	3.354E-03	1.271E-03	4.965E-04	9.657E-05	2.839E-05	0.000E+00	0.000E+00	0.000E+00
24	3.006E-03	1.080E-03	5.760E-04	1.116E-04	5.631E-06	0.000E+00	0.000E+00	0.000E+00
25	3.911E-03	1.053E-03	2.141E-04	1.231E-04	1.478E-05	0.000E+00	3.246E-06	0.000E+00
26	3.361E-03	1.039E-03	4.060E-04	9.940E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
27	2.773E-03	1.496E-03	3.277E-04	1.190E-04	2.041E-05	0.000E+00	2.587E-06	0.000E+00
28	4.620E-03	1.215E-03	5.694E-04	3.474E-05	1.759E-05	0.000E+00	0.000E+00	0.000E+00
29	3.911E-03	1.077E-03	3.551E-04	2.032E-04	1.690E-05	0.000E+00	0.000E+00	0.000E+00
30	4.310E-03	1.366E-03	4.024E-04	1.490E-04	3.555E-05	0.000E+00	0.000E+00	0.000E+00
31	6.054E-03	1.428E-03	3.343E-04	1.231E-04	1.916E-05	0.000E+00	0.000E+00	0.000E+00
32	4.369E-03	1.291E-03	1.718E-04	9.986E-05	0.000E+00	7.321E-06	0.000E+00	0.000E+00
33	3.356E-03	1.559E-03	1.185E-04	1.295E-04	7.104E-06	0.000E+00	0.000E+00	0.000E+00
34	1.556E-03	6.696E-04	2.183E-04	4.765E-05	6.519E-06	0.000E+00	0.000E+00	0.000E+00
35	5.916E-04	2.532E-04	4.644E-05	5.965E-05	2.444E-05	0.000E+00	0.000E+00	0.000E+00
36	1.013E-03	3.907E-04	2.162E-04	4.764E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
37	2.037E-04	5.088E-03	1.608E-04	2.826E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
38	6.298E-03	1.193E-04	7.119E-05	3.040E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
39	6.590E-03	1.341E-04	3.089E-05	9.107E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
40	1.685E-04	1.515E-04	6.087E-05	3.624E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
41	4.881E-04	1.586E-04	8.097E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
42	6.367E-04	1.008E-04	2.663E-05	8.450E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
43	8.399E-04	1.492E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
44	4.078E-04	1.391E-04	4.057E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
45	4.066E-04	9.349E-05	0.000E+00	1.670E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00

46	4.142E-03	1.379E-04	5.531E-05	1.090E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
47	2.209E-04	3.949E-05	1.647E-05	6.969E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
48	7.225E-04	1.404E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
49	3.813E-04	6.321E-05	4.245E-05	6.196E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
50	3.904E-04	7.929E-05	1.385E-05	1.229E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
51	3.975E-04	9.624E-05	5.072E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
52	8.874E-04	1.867E-05	0.000E+00	5.159E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
53	3.186E-04	3.682E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
54	2.205E-04	1.285E-04	1.139E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
55	3.084E-04	4.306E-05	4.236E-05	0.000E+00	3.383E-06	0.000E+00	0.000E+00	0.000E+00
56	2.930E-04	1.579E-05	0.000E+00	9.330E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
57	2.614E-04	6.716E-05	9.671E-06	1.320E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
58	3.114E-04	2.944E-05	9.371E-06	4.041E-06	2.779E-06	0.000E+00	0.000E+00	0.000E+00
59	2.448E-04	6.277E-05	8.493E-06	8.524E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
60	2.665E-04	4.047E-05	8.164E-06	3.705E-06	2.456E-06	0.000E+00	0.000E+00	0.000E+00
61	1.968E-04	2.485E-05	1.529E-05	3.426E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
62	1.870E-04	3.612E-05	7.214E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
63	2.157E-04	1.094E-05	7.091E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
64	1.692E-04	1.659E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
65	1.824E-04	3.072E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
66	1.235E-04	2.892E-05	1.228E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
67	1.269E-04	3.296E-05	5.754E-06	0.000E+00	1.914E-06	0.000E+00	0.000E+00	0.000E+00
68	1.422E-04	2.519E-05	5.372E-06	4.929E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
69	1.149E-04	2.159E-05	1.591E-05	2.668E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
70	1.562E-04	2.441E-05	4.906E-06	2.349E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
71	1.803E-04	2.541E-05	4.624E-06	4.566E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
72	1.090E-04	2.049E-05	1.278E-05	4.066E-06	1.368E-06	0.000E+00	0.000E+00	7.049E-07
73	1.221E-04	1.002E-05	4.071E-06	3.823E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
74	7.947E-05	2.772E-05	0.000E+00	1.776E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
75	8.595E-05	1.546E-05	7.436E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
76	8.541E-05	2.915E-05	1.113E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
77	1.022E-04	2.310E-05	1.076E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
78	1.146E-04	1.690E-05	6.689E-06	1.707E-06	0.000E+00	9.736E-07	0.000E+00	0.000E+00
79	7.107E-05	1.937E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
80	7.336E-05	1.070E-05	3.501E-06	1.684E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
81	1.572E-04	3.491E-05	3.370E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
82	1.237E-04	2.872E-05	1.296E-05	4.663E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
83	9.614E-05	3.036E-05	9.327E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
84	8.732E-05	3.688E-05	5.890E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
85	1.003E-04	2.177E-05	3.100E-06	1.409E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00

86	8.498E-05	1.687E-05	5.770E-06	2.938E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
87	9.941E-05	1.621E-05	8.880E-06	2.735E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
88	8.696E-05	3.461E-05	5.864E-06	1.327E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
89	6.474E-05	2.053E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
90	9.536E-05	1.576E-05	5.391E-06	1.301E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
91	6.667E-05	1.976E-05	2.816E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
92	6.043E-05	3.048E-05	5.290E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
93	4.776E-05	1.526E-05	1.057E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
94	4.564E-05	6.531E-06	2.584E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
95	7.611E-05	1.058E-05	0.000E+00	0.000E+00	0.000E+00	7.429E-07	0.000E+00	0.000E+00
96	7.722E-05	1.049E-05	2.683E-06	0.000E+00	8.057E-07	0.000E+00	0.000E+00	0.000E+00
97	3.635E-05	6.266E-06	2.469E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
98	4.539E-05	1.650E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
99	3.380E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.324E-07	0.000E+00
100	3.254E-05	8.976E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
101	3.853E-05	1.892E-06	2.470E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
102	2.998E-05	5.730E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
103	4.038E-05	1.846E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
104	3.513E-05	1.842E-06	0.000E+00	1.146E-06	0.000E+00	0.000E+00	0.000E+00	3.814E-07
105	5.336E-05	3.718E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
106	3.836E-05	1.899E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
107	2.209E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
108	2.381E-05	7.209E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
109	1.590E-05	5.199E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
110	1.367E-05	1.714E-06	2.245E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
111	1.767E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
112	1.777E-05	1.784E-06	2.096E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
113	1.150E-05	1.791E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
114	2.814E-05	5.173E-06	2.176E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
115	2.619E-05	1.742E-06	0.000E+00	0.000E+00	6.461E-07	0.000E+00	0.000E+00	0.000E+00
116	1.934E-05	1.527E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
117	1.690E-05	1.798E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.424E-07
118	9.328E-06	1.624E-06	0.000E+00	1.027E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
119	2.548E-05	1.690E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
120	2.357E-05	3.079E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
121	1.045E-05	3.179E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
122	1.720E-05	1.564E-06	1.995E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
123	5.084E-06	2.937E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
124	8.371E-06	0.000E+00	1.926E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
125	3.354E-06	3.041E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

126	1.006E-05	1.550E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
127	9.961E-06	2.996E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.487E-07	0.000E+00
128	5.083E-06	1.450E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
129	8.368E-06	1.439E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
130	6.540E-06	0.000E+00	0.000E+00	0.000E+00	5.646E-07	0.000E+00	0.000E+00	0.000E+00
131	4.741E-06	1.429E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.001E-07
132	4.655E-06	0.000E+00	1.631E-06	7.807E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
133	3.127E-06	0.000E+00	0.000E+00	8.371E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
134	3.209E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
135	1.660E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
136	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
137	1.641E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.758E-07
138	1.539E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
139	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
140	1.534E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
141	6.397E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
142	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
143	4.781E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
144	3.131E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
145	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
146	0.000E+00	1.455E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
147	3.127E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
148	3.001E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
149	3.120E-06	1.451E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
150	3.216E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
151	4.543E-06	0.000E+00	1.692E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
152	3.216E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.938E-07	0.000E+00	0.000E+00
153	3.032E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
154	3.112E-06	0.000E+00	1.686E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
155	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
156	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
157	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
158	3.224E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.334E-07	0.000E+00
159	1.517E-06	0.000E+00	0.000E+00	8.614E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
160	0.000E+00	1.374E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
161	0.000E+00	1.454E-06	0.000E+00	0.000E+00	5.721E-07	0.000E+00	0.000E+00	0.000E+00

Hourly Oxygen Counts

Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	0	0	0	0	0	0	0
0	1	2	2	3	0	4	0
34	41	38	45	54	16	9	1
137	163	134	174	117	58	23	2
379	394	286	385	256	81	41	1
1014	1003	572	754	485	155	82	5
1795	1645	910	1228	718	275	95	7
2333	1984	1180	1376	766	293	101	13
2566	2207	1171	1329	800	270	100	5
2107	1699	817	1088	583	213	86	7
1926	1479	753	1008	536	231	101	5
1812	1514	792	984	582	202	95	13
1621	1282	685	922	515	222	104	5
1434	1309	732	972	594	296	131	12
1389	1224	718	930	649	324	141	9
1202	1111	617	839	564	251	144	9
1103	995	617	908	561	272	132	9
1088	1107	583	758	539	291	144	6
1139	1095	583	796	556	313	155	13
1173	1093	570	830	569	298	137	14
1068	1072	552	813	548	273	135	8
1044	998	612	860	625	300	156	11
1050	1016	546	900	610	305	168	17
1064	1049	621	908	647	283	176	20
898	1052	614	930	601	279	156	10
963	1013	545	827	598	297	127	6
908	1011	572	882	618	274	118	11
859	1009	622	861	628	293	134	12
844	1017	545	802	577	290	125	8
786	1007	596	804	588	272	122	5
700	974	605	953	691	257	119	4
637	915	555	915	637	290	124	6
308	618	413	812	542	313	117	8
122	459	298	761	509	241	93	2
128	527	337	600	341	197	58	1
177	685	397	651	396	160	57	1
113	583	330	603	325	136	52	1
117	670	391	872	452	203	68	0
132	745	420	840	514	167	63	1

132	709	380	802	416	159	42	2
201	827	448	802	402	153	44	0
238	890	423	781	379	120	35	2
307	923	491	708	357	145	32	1
389	946	506	710	331	115	34	0
462	976	493	655	316	99	26	0
537	1011	528	639	290	72	23	1
668	1101	480	611	302	75	30	1
732	1124	513	571	261	66	22	0
766	1117	515	608	239	58	14	1
906	1153	531	566	219	90	24	0
993	1146	523	489	250	58	16	0
1231	1201	560	557	246	70	13	0
1327	1182	491	474	200	56	14	0
1355	1191	527	487	206	56	21	1
1504	1150	489	459	191	57	16	0
1537	1094	487	451	207	66	13	2
1685	1226	461	425	206	51	21	1
1739	1141	479	486	165	45	13	0
1854	1122	469	430	169	61	14	1
1949	1081	457	406	185	41	12	0
1928	1166	429	440	154	37	16	0
1978	1200	417	397	167	41	9	0
1953	1167	463	404	192	43	12	1
1986	1073	404	394	160	47	15	0
2024	1066	461	413	162	42	14	0
1975	1092	404	358	155	46	14	1
2018	1086	394	389	157	45	10	0
2079	1171	461	445	166	42	12	0
1992	1033	368	401	156	37	18	1
1946	1009	383	362	155	43	18	1
1930	1096	412	373	151	39	17	1
1887	981	388	324	157	35	12	0
1811	942	399	344	163	27	9	3
1776	935	366	383	129	35	16	0
1750	913	374	324	143	33	8	0
1723	897	332	319	140	47	16	0
1686	866	359	310	131	45	12	0
1609	898	358	317	167	37	12	0
1617	812	360	310	131	35	5	1

1560	898	340	317	135	37	10	0
1525	800	347	329	150	36	8	0
1565	825	349	308	160	40	3	0
1455	782	373	311	146	39	10	0
1683	868	349	341	149	30	6	0
1466	826	297	300	139	45	9	0
1395	677	328	302	123	40	12	0
1355	746	311	282	107	19	13	0
1327	678	335	243	113	34	8	0
1293	709	320	254	110	48	10	0
1346	763	305	248	127	25	9	0
1267	675	287	267	120	26	7	0
1159	644	272	257	97	27	7	1
1182	665	273	237	69	30	5	0
1123	638	260	240	107	23	5	0
1126	581	223	238	75	21	0	0
1095	598	227	224	96	23	12	0
1114	556	240	216	91	20	4	0
1050	571	228	210	89	28	11	0
1001	548	223	174	80	13	7	0
1029	562	238	216	80	14	6	0
950	504	212	213	76	27	6	0
975	472	189	195	85	10	3	0
906	542	222	184	87	26	1	0
907	473	225	160	66	19	3	0
860	479	187	167	69	17	5	1
857	447	175	167	73	15	4	1
802	433	185	150	58	18	4	0
795	412	197	176	50	10	2	0
824	432	195	170	88	17	2	1
749	438	194	147	56	12	6	0
781	410	164	141	58	13	3	0
754	417	163	136	42	18	5	2
716	391	173	122	43	12	4	0
736	387	176	133	62	14	4	1
729	352	148	130	53	12	3	0
757	401	160	171	60	8	1	0
649	366	149	127	50	11	5	1
679	362	148	141	58	7	1	0
628	354	140	119	50	12	1	0

579	294	107	120	45	11	1	1
493	249	128	88	34	8	2	0
384	206	82	86	32	5	1	1
349	185	81	64	31	6	1	0
351	198	76	67	33	4	0	1
332	181	70	55	26	7	0	0
276	157	66	58	18	9	2	0
313	173	71	46	36	5	2	0
263	162	58	61	21	4	2	0
294	125	50	47	16	1	0	0
243	155	45	51	22	5	1	0
235	122	57	45	16	6	1	1
216	124	45	39	10	4	0	1
203	131	50	41	19	5	1	0
206	116	45	39	19	6	0	0
188	102	39	31	11	2	1	0
225	117	36	29	11	2	0	1
195	90	37	27	12	4	2	0
147	81	39	25	10	4	2	0
137	79	33	34	13	2	1	1
114	68	30	24	7	5	0	0
104	67	35	28	5	0	0	0
94	45	26	28	10	3	1	0
113	64	23	27	8	4	0	0
100	52	26	27	8	4	1	0
124	67	23	24	7	1	1	0
110	50	26	19	6	2	2	0
105	56	25	19	2	1	2	0
100	66	18	25	9	0	4	1
115	58	25	19	4	0	1	0
105	53	17	18	8	1	0	0
117	68	22	19	8	0	0	1
113	59	22	25	5	3	2	0
103	68	18	23	8	2	1	0
101	59	19	23	10	0	0	0
105	35	15	13	6	1	1	0
95	58	22	9	4	2	0	0
111	45	12	20	6	2	0	0
116	60	30	37	7	1	0	0
120	67	24	21	3	1	0	0

108	57	23	13	3	0	1	1
130	77	29	14	9	2	1	0

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
6	8	1	3	1	0	1	0
25	14	4	3	0	1	0	0
56	11	2	5	0	0	0	1
71	25	7	2	2	1	0	0
98	27	11	5	1	0	0	0
100	31	12	5	1	0	0	0
118	33	8	4	1	0	0	0
70	19	5	1	1	0	0	0
82	16	2	5	1	0	0	0
76	25	3	6	1	0	0	0
63	20	4	5	1	0	0	0
87	32	10	5	0	0	0	0
99	24	10	10	1	0	0	0
56	31	15	7	1	0	0	0
95	50	11	6	2	0	0	0
60	40	13	11	1	0	0	0
92	34	15	13	2	1	0	0
71	28	11	11	1	0	0	0
75	42	10	8	1	0	0	0
104	40	18	11	3	0	0	0
106	55	19	8	4	0	0	0
105	46	20	11	1	0	0	0
110	44	8	11	2	0	1	0
89	34	12	7	0	0	0	0
72	55	11	8	3	0	1	0
105	42	17	3	2	0	0	0
82	41	11	14	2	0	0	0
91	50	14	12	4	0	0	0
103	37	11	10	2	0	0	0
64	25	5	8	0	1	0	0
28	19	3	11	1	0	0	0

5	20	5	4	1	0	0	0
3	6	1	3	3	0	0	0
5	11	5	3	0	0	0	0
1	10	4	2	0	0	0	0
8	4	2	3	0	0	0	0
4	5	1	1	0	0	0	0
1	6	2	4	0	0	0	0
4	7	3	0	0	0	0	0
6	5	1	1	0	0	0	0
10	8	0	0	0	0	0	0
6	8	2	0	0	0	0	0
8	6	0	2	0	0	0	0
14	9	3	1	0	0	0	0
6	3	1	1	0	0	0	0
11	11	0	0	0	0	0	0
10	5	3	1	0	0	0	0
14	7	1	2	0	0	0	0
20	9	4	0	0	0	0	0
15	2	0	1	0	0	0	0
19	4	0	0	0	0	0	0
16	12	1	0	0	0	0	0
13	5	4	0	1	0	0	0
26	2	0	2	0	0	0	0
22	8	1	3	0	0	0	0
33	4	1	1	1	0	0	0
27	9	1	2	0	0	0	0
33	6	1	1	1	0	0	0
26	4	2	1	0	0	0	0
27	6	1	0	0	0	0	0
32	2	1	0	0	0	0	0
27	3	0	0	0	0	0	0
31	6	0	0	0	0	0	0
22	6	2	0	0	0	0	0
24	7	1	0	1	0	0	0
30	6	1	2	0	0	0	0
24	5	3	1	0	0	0	0
35	6	1	1	0	0	0	0
43	7	1	2	0	0	0	0
29	6	3	2	1	0	0	1
34	3	1	2	0	0	0	0

23	9	0	1	0	0	0	0
26	5	2	0	0	0	0	0
26	10	3	0	0	0	0	0
32	8	3	0	0	0	0	0
37	6	2	1	0	1	0	0
23	7	0	0	0	0	0	0
24	4	1	1	0	0	0	0
53	13	1	0	0	0	0	0
43	11	4	3	0	0	0	0
34	12	3	0	0	0	0	0
34	16	2	0	0	0	0	0
37	9	1	1	0	0	0	0
32	7	2	2	0	0	0	0
38	7	3	2	0	0	0	0
34	15	2	1	0	0	0	0
26	9	0	0	0	0	0	0
38	7	2	1	0	0	0	0
27	9	1	0	0	0	0	0
25	14	2	0	0	0	0	0
20	7	4	0	0	0	0	0
19	3	1	0	0	0	0	0
32	5	0	0	0	1	0	0
33	5	1	0	1	0	0	0
16	3	1	0	0	0	0	0
20	8	0	0	0	0	0	0
15	0	0	0	0	0	1	0
16	5	0	0	0	0	0	0
18	1	1	0	0	0	0	0
14	3	0	0	0	0	0	0
19	1	0	0	0	0	0	0
17	1	0	1	0	0	0	1
26	2	0	0	0	0	0	0
19	1	0	0	0	0	0	0
11	0	0	0	0	0	0	0
12	4	0	0	0	0	0	0
8	3	0	0	0	0	0	0
7	1	1	0	0	0	0	0
9	0	0	0	0	0	0	0
9	1	1	0	0	0	0	0
6	1	0	0	0	0	0	0

15	3	1	0	0	0	0	0
14	1	0	0	1	0	0	0
11	1	0	0	0	0	0	0
9	1	0	0	0	0	0	1
5	1	0	1	0	0	0	0
14	1	0	0	0	0	0	0
13	2	0	0	0	0	0	0
6	2	0	0	0	0	0	0
10	1	1	0	0	0	0	0
3	2	0	0	0	0	0	0
5	0	1	0	0	0	0	0
2	2	0	0	0	0	0	0
6	1	0	0	0	0	0	0
6	2	0	0	0	0	1	0
3	1	0	0	0	0	0	0
5	1	0	0	0	0	0	0
4	0	0	0	1	0	0	0
3	1	0	0	0	0	0	1
3	0	1	1	0	0	0	0
2	0	0	1	0	0	0	0
2	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	1
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	1	0	0	0	0	0	0
2	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
2	1	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	1	0	0	0	0	0
2	0	0	0	0	1	0	0
2	0	0	0	0	0	0	0

2	0	1	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
2	0	0	0	0	0	1	0
1	0	0	1	0	0	0	0
0	1	0	0	0	0	0	0
0	1	0	0	1	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 13.31 \quad (10.54, 16.07)$$

$$b = -0.1513 \quad (-0.1863, -0.1164)$$

$$c = 0.02732 \quad (-0.7329, 0.7875)$$

$$d = -0.01492 \quad (-0.5724, 0.5426)$$

goftotal =

sse: 0.0162

rsquare: 0.9986

dfe: 4

adjrsquare: 0.9976

rmse: 0.0637

self 20 to 40:

ctotal =

General model Exp1:

$$ctotal(x) = a * \exp(b * x)$$

Coefficients (with 95% confidence bounds):

$$a = 10.3 \quad (6.447, 14.16)$$

$$b = -0.1369 \quad (-0.1554, -0.1185)$$

goftotal =

sse: 5.4362e-004

rsquare: 9.9866e-001

dfe: 3

adjrsquare: 9.9821e-001

rmse: 1.3461e-002

curve fit iron:

ctotal =

General model Exp2:

$$ctotal(x) = a * \exp(b * x) + c * \exp(d * x)$$

Coefficients (with 95% confidence bounds):

$$a = 1.087 \quad (0.6736, 1.501)$$

$$b = -0.1881 \quad (-0.3107, -0.06537)$$

$$c = -0.00732 \quad (-0.5395, 0.5249)$$

$$d = -0.0841 \quad (-1.733, 1.565)$$

goftotal =

sse: 2.7563e-006

rsquare: 0.9996

dfc: 4

adjrsquare: 0.9992

rmse: 8.3010e-004

ctotal =

General model Exp1:

$$ctotal(x) = a * \exp(b * x)$$

Coefficients (with 95% confidence bounds):

a = 0.2723 (-0.06952, 0.614)

b = -0.1438 (-0.182, -0.1056)

goftotal =

sse: 1.1961e-008

rsquare: 9.9760e-001

dfc: 3

adjrsquare: 9.9679e-001

rmse: 6.3143e-005

Event 44	Date	Time*	Location*	Summing interval*
	1-Oct-01	515	S22W91	Oct 1 0700 to Oct 3 0000

<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	3.305E-04	1.479E-04	9.708E-05	1.561E-05	6.134E-06	9.871E-07	4.171E-07	0.000E+00
2	2.348E-04	1.536E-04	6.838E-05	2.973E-05	9.296E-06	9.886E-07	0.000E+00	0.000E+00
3	3.630E-04	1.564E-04	9.390E-05	2.017E-05	4.233E-06	1.920E-06	0.000E+00	5.531E-07
4	3.556E-04	1.437E-04	8.322E-05	3.436E-05	1.544E-05	0.000E+00	4.169E-07	5.209E-07
5	2.561E-04	1.838E-04	7.896E-05	2.791E-05	1.452E-05	3.854E-06	0.000E+00	5.235E-07
6	3.494E-04	2.010E-04	1.012E-04	4.250E-05	1.251E-05	1.931E-06	8.398E-07	0.000E+00
7	1.104E-03	6.050E-04	2.899E-04	1.193E-04	3.535E-05	8.225E-06	1.351E-06	0.000E+00
8	3.011E-03	1.456E-03	6.998E-04	2.296E-04	4.137E-05	2.152E-05	2.030E-06	0.000E+00
9	4.436E-03	2.171E-03	1.074E-03	3.831E-04	8.990E-05	1.395E-05	2.150E-06	0.000E+00
10	6.509E-03	3.078E-03	1.454E-03	4.964E-04	9.961E-05	1.770E-05	4.474E-06	0.000E+00
11	8.155E-03	4.097E-03	1.842E-03	7.168E-04	1.305E-04	1.468E-05	1.193E-06	0.000E+00
12	1.037E-02	4.917E-03	2.573E-03	9.303E-04	1.610E-04	1.927E-05	4.289E-06	0.000E+00
13	1.618E-02	7.847E-03	3.377E-03	1.324E-03	2.724E-04	4.374E-05	8.754E-06	9.800E-07
14	1.685E-02	7.921E-03	3.590E-03	1.544E-03	2.315E-04	4.508E-05	7.068E-07	8.943E-07
15	1.729E-02	8.339E-03	4.269E-03	1.605E-03	3.499E-04	5.360E-05	5.220E-06	9.300E-07
16	1.731E-02	8.338E-03	4.291E-03	1.619E-03	3.254E-04	3.503E-05	2.024E-06	0.000E+00
17	1.855E-02	9.303E-03	4.702E-03	1.753E-03	2.937E-04	5.238E-05	5.258E-06	0.000E+00
18	1.503E-02	7.610E-03	3.945E-03	1.426E-03	2.550E-04	1.889E-05	7.086E-07	0.000E+00
19	1.809E-02	8.838E-03	4.559E-03	1.627E-03	2.573E-04	3.938E-05	5.766E-06	1.081E-06
20	2.349E-02	1.194E-02	5.613E-03	2.055E-03	3.728E-04	4.622E-05	7.153E-06	0.000E+00
21	2.998E-02	1.465E-02	6.800E-03	2.735E-03	4.067E-04	3.662E-05	5.110E-06	0.000E+00
22	5.424E-02	2.845E-02	1.352E-02	4.832E-03	7.237E-04	8.685E-05	3.197E-06	0.000E+00
23	5.063E-02	2.801E-02	1.225E-02	4.288E-03	7.768E-04	7.625E-05	3.173E-06	0.000E+00
24	7.444E-02	4.034E-02	1.825E-02	6.405E-03	9.987E-04	1.337E-04	6.895E-06	4.829E-06
25	7.846E-02	3.882E-02	1.532E-02	5.029E-03	8.249E-04	8.320E-05	5.806E-06	0.000E+00
26	6.264E-02	3.039E-02	1.289E-02	4.177E-03	6.332E-04	7.962E-05	2.256E-06	4.249E-06
27	4.316E-02	2.045E-02	8.670E-03	2.973E-03	5.764E-04	7.039E-05	1.076E-06	1.338E-06
28	3.780E-02	1.776E-02	7.291E-03	2.330E-03	3.284E-04	2.652E-05	4.023E-06	0.000E+00
29	3.685E-02	1.629E-02	7.242E-03	2.145E-03	2.630E-04	2.341E-05	1.261E-06	0.000E+00
30	3.031E-02	1.363E-02	5.751E-03	1.702E-03	2.948E-04	2.103E-05	4.825E-06	0.000E+00
31	1.683E-02	7.275E-03	3.025E-03	9.333E-04	1.362E-04	1.343E-05	0.000E+00	0.000E+00
32	1.832E-02	7.950E-03	3.112E-03	8.956E-04	1.366E-04	9.045E-06	1.361E-06	7.427E-07
33	1.411E-02	6.136E-03	2.529E-03	6.715E-04	9.404E-05	1.363E-05	6.182E-07	0.000E+00
34	1.466E-02	5.872E-03	2.558E-03	6.543E-04	1.059E-04	4.704E-06	0.000E+00	0.000E+00
35	1.140E-02	4.608E-03	1.735E-03	5.014E-04	7.939E-05	1.272E-05	5.752E-07	0.000E+00
36	7.668E-03	3.066E-03	1.162E-03	3.490E-04	4.762E-05	3.810E-06	1.153E-06	0.000E+00

37	7.178E-03	2.870E-03	1.094E-03	3.068E-04	5.182E-05	6.462E-06	0.000E+00	7.127E-07
38	7.686E-03	2.855E-03	9.873E-04	3.455E-04	4.255E-05	2.627E-06	6.148E-07	0.000E+00
39	7.670E-03	3.022E-03	1.116E-03	3.253E-04	3.261E-05	1.267E-06	0.000E+00	0.000E+00
40	6.894E-03	2.559E-03	8.630E-04	2.756E-04	3.482E-05	5.244E-06	0.000E+00	0.000E+00
41	5.743E-03	2.218E-03	8.702E-04	2.416E-04	2.777E-05	0.000E+00	0.000E+00	7.371E-07
42	5.623E-03	1.975E-03	6.866E-04	1.626E-04	2.430E-05	1.229E-06	0.000E+00	0.000E+00
43	4.237E-03	1.552E-03	6.002E-04	1.452E-04	2.354E-05	2.505E-06	0.000E+00	0.000E+00
44	4.529E-03	1.685E-03	4.981E-04	1.941E-04	2.251E-05	1.147E-06	0.000E+00	0.000E+00
45	4.954E-03	1.631E-03	5.243E-04	1.408E-04	1.609E-05	1.254E-06	0.000E+00	0.000E+00
46	5.320E-03	1.837E-03	7.630E-04	1.763E-04	1.600E-05	3.666E-06	0.000E+00	0.000E+00
47	4.613E-03	1.726E-03	6.560E-04	1.278E-04	1.533E-05	1.172E-06	0.000E+00	0.000E+00
48	4.914E-03	1.793E-03	5.473E-04	1.284E-04	1.230E-05	2.243E-06	0.000E+00	0.000E+00
49	5.119E-03	1.894E-03	5.957E-04	1.861E-04	1.203E-05	2.450E-06	0.000E+00	0.000E+00
50	6.301E-03	2.101E-03	7.271E-04	1.569E-04	1.529E-05	1.190E-06	0.000E+00	6.550E-07
51	3.681E-03	1.149E-03	4.276E-04	1.266E-04	1.346E-05	0.000E+00	0.000E+00	0.000E+00
52	3.563E-03	1.202E-03	4.268E-04	8.219E-05	1.096E-05	2.391E-06	0.000E+00	0.000E+00
53	1.824E-03	6.125E-04	2.121E-04	6.122E-05	5.776E-06	0.000E+00	5.229E-07	0.000E+00
54	2.093E-03	6.312E-04	2.311E-04	5.098E-05	4.625E-06	0.000E+00	0.000E+00	0.000E+00
55	2.214E-03	7.503E-04	2.250E-04	6.007E-05	5.734E-06	1.127E-06	0.000E+00	0.000E+00
56	1.724E-03	4.697E-04	1.498E-04	3.274E-05	6.988E-06	0.000E+00	0.000E+00	0.000E+00
57	1.728E-03	5.276E-04	2.039E-04	5.193E-05	4.539E-06	0.000E+00	0.000E+00	0.000E+00
58	1.544E-03	4.842E-04	1.534E-04	3.978E-05	3.466E-06	0.000E+00	0.000E+00	0.000E+00
59	1.369E-03	4.521E-04	1.382E-04	2.360E-05	1.111E-06	0.000E+00	0.000E+00	0.000E+00
60	1.271E-03	3.372E-04	1.010E-04	2.899E-05	3.497E-06	0.000E+00	0.000E+00	0.000E+00
61	1.252E-03	3.678E-04	1.565E-04	3.696E-05	3.519E-06	0.000E+00	0.000E+00	6.034E-07
62	1.013E-03	3.492E-04	8.060E-05	2.164E-05	2.289E-06	2.045E-06	0.000E+00	0.000E+00
63	9.769E-04	3.146E-04	7.365E-05	1.830E-05	1.155E-06	0.000E+00	0.000E+00	0.000E+00
64	8.748E-04	2.423E-04	6.105E-05	2.929E-05	3.129E-06	0.000E+00	4.119E-07	0.000E+00
65	6.422E-04	1.984E-04	6.569E-05	1.974E-05	2.270E-06	0.000E+00	0.000E+00	0.000E+00

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	4.724E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2	1.606E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
3	1.604E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
4	1.604E-06	1.366E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
5	1.518E-06	0.000E+00	1.694E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
6	4.570E-06	0.000E+00	0.000E+00	1.676E-06	5.394E-07	0.000E+00	0.000E+00	0.000E+00

7	2.184E-05	1.048E-05	9.468E-06	3.414E-06	1.228E-06	5.291E-07	5.016E-07	0.000E+00
8	5.123E-05	1.950E-05	1.159E-05	7.848E-06	6.091E-07	1.171E-06	0.000E+00	0.000E+00
9	5.141E-05	1.545E-05	2.132E-05	8.043E-06	1.358E-06	0.000E+00	0.000E+00	0.000E+00
10	6.216E-05	2.190E-05	9.047E-06	4.266E-06	7.614E-07	0.000E+00	0.000E+00	0.000E+00
11	6.227E-05	1.920E-05	7.190E-06	5.725E-06	1.561E-06	0.000E+00	0.000E+00	0.000E+00
12	6.722E-05	2.308E-05	2.704E-05	1.081E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
13	6.116E-05	1.653E-05	5.499E-06	8.597E-06	1.884E-06	0.000E+00	0.000E+00	0.000E+00
14	1.035E-04	1.425E-05	5.942E-06	8.879E-06	9.664E-07	0.000E+00	0.000E+00	0.000E+00
15	9.403E-05	2.805E-05	9.352E-06	4.622E-06	9.021E-07	9.014E-07	0.000E+00	0.000E+00
16	9.814E-05	2.124E-05	3.031E-06	1.293E-06	9.300E-07	0.000E+00	0.000E+00	4.679E-07
17	9.243E-05	1.763E-05	9.491E-06	7.114E-06	9.993E-07	0.000E+00	0.000E+00	4.636E-07
18	1.001E-04	1.120E-05	5.388E-06	1.457E-06	8.471E-07	0.000E+00	0.000E+00	0.000E+00
19	7.513E-05	2.558E-05	1.517E-05	2.726E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
20	9.415E-05	2.696E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
21	1.711E-04	1.400E-05	4.240E-06	1.968E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
22	2.199E-04	2.531E-05	9.421E-06	6.061E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
23	3.347E-04	4.723E-05	0.000E+00	4.281E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
24	3.577E-04	3.633E-05	0.000E+00	0.000E+00	3.566E-06	0.000E+00	0.000E+00	0.000E+00
25	3.692E-04	7.556E-05	0.000E+00	5.050E-06	0.000E+00	3.471E-06	0.000E+00	0.000E+00
26	2.314E-04	3.521E-05	9.857E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
27	1.387E-04	2.764E-05	7.004E-06	6.068E-06	4.693E-06	2.497E-06	0.000E+00	0.000E+00
28	1.321E-04	2.185E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
29	1.088E-04	2.446E-05	0.000E+00	2.764E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
30	6.754E-05	2.485E-05	1.239E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
31	5.938E-05	1.506E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
32	4.696E-05	2.450E-05	0.000E+00	1.371E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
33	5.677E-05	1.349E-05	4.947E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
34	3.288E-05	7.009E-06	2.936E-06	1.315E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
35	2.201E-05	4.618E-06	0.000E+00	1.359E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
36	2.089E-05	1.943E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
37	2.077E-05	3.646E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.090E-07	0.000E+00
38	2.123E-05	3.639E-06	2.656E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
39	2.115E-05	1.839E-06	2.439E-06	0.000E+00	0.000E+00	7.214E-07	0.000E+00	0.000E+00
40	1.860E-05	1.837E-06	0.000E+00	1.131E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
41	8.030E-06	1.817E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
42	5.994E-06	1.680E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
43	5.844E-06	3.479E-06	0.000E+00	0.000E+00	0.000E+00	6.166E-07	0.000E+00	0.000E+00
44	5.598E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.856E-07
45	1.814E-05	3.744E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
46	7.713E-06	1.729E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

47	5.959E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
48	1.111E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
49	1.194E-05	1.866E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
50	1.234E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
51	3.761E-06	3.697E-06	0.000E+00	0.000E+00	7.329E-07	0.000E+00	0.000E+00	0.000E+00
52	1.376E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
53	1.783E-06	1.576E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
54	1.774E-06	3.159E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
55	5.199E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
56	1.772E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
57	1.695E-06	1.514E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
58	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
59	3.289E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
60	3.298E-06	1.484E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
61	1.658E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
62	1.640E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.349E-07	0.000E+00
63	5.153E-06	1.458E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
64	0.000E+00	1.360E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
65	3.196E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
111	57	30	10	6	1	1	0
79	59	21	19	9	1	0	0
122	60	29	13	4	2	0	1
119	55	26	22	15	0	1	1
86	70	24	18	14	4	0	1
117	77	31	27	12	2	2	0
343	214	82	71	31	8	3	0
859	474	183	125	34	19	4	0
1211	677	269	199	70	12	4	0
1687	913	346	246	74	14	8	0
1988	1141	412	333	91	11	2	0
2385	1293	543	409	107	14	7	0
3196	1774	613	500	154	27	12	1
3287	1765	642	573	129	27	1	1
3279	1812	746	583	190	32	7	1

3601	1978	819	644	194	23	3	0
3548	2033	829	641	161	31	7	0
3049	1765	733	554	149	12	1	0
3282	1836	763	570	132	23	7	1
3762	2186	829	630	171	23	8	0
4146	2347	874	734	163	16	5	0
3199	2008	800	631	145	20	2	0
3400	2236	807	620	171	18	2	0
2336	1699	653	530	128	18	2	1
2304	1578	554	430	107	12	2	0
2932	1817	672	492	115	14	1	1
3671	2125	720	537	154	19	1	1
3878	2144	702	473	101	9	3	0
4083	2100	750	466	85	8	1	0
3893	2027	684	424	109	8	4	0
3231	1599	533	344	75	8	0	0
4007	1990	632	370	86	6	2	1
2981	1491	491	275	56	9	1	0
2950	1353	474	251	61	3	0	0
2474	1147	347	206	48	9	1	0
1923	879	267	167	34	3	2	0
1785	817	250	145	37	5	0	1
1863	792	221	160	29	2	1	0
1880	847	252	152	23	1	0	0
1734	736	200	132	25	4	0	0
1445	638	202	116	20	0	0	1
1468	589	164	81	18	1	0	0
1128	474	147	74	18	2	0	0
1173	502	119	97	17	1	0	0
1298	488	126	70	12	1	0	0
1398	553	185	88	12	3	0	0
1248	534	162	66	12	1	0	0
1385	577	141	69	10	2	0	0
1329	561	142	92	9	2	0	0
1445	549	152	67	10	1	0	1
970	347	104	63	10	0	0	0
937	361	103	41	8	2	0	0
547	210	59	35	5	0	1	0
628	217	64	29	4	0	0	0
657	255	62	34	5	1	0	0

523	163	42	19	6	0	0	0
525	184	57	30	4	0	0	0
472	170	43	23	3	0	0	0
422	159	39	14	1	0	0	0
392	119	29	17	3	0	0	0
387	130	44	22	3	0	0	1
317	125	23	13	2	2	0	0
306	113	21	11	1	0	0	0
296	94	19	19	3	0	1	0
204	72	19	12	2	0	0	0

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
3	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
1	1	0	0	0	0	0	0
1	0	1	0	0	0	0	0
3	0	0	2	1	0	0	0
13	7	5	4	2	1	2	0
28	12	6	8	1	2	0	0
27	9	10	8	2	0	0	0
31	12	4	4	1	0	0	0
29	10	3	5	2	0	0	0
30	11	11	9	0	0	0	0
23	7	2	6	2	0	0	0
39	6	2	6	1	0	0	0
34	11	3	3	1	1	0	0
39	9	1	1	1	0	0	1
34	7	3	5	1	0	0	1
38	5	2	1	1	0	0	0
26	10	5	2	0	0	0	0
29	9	0	0	0	0	0	0
46	4	1	1	0	0	0	0
27	4	1	2	0	0	0	0
42	7	0	1	0	0	0	0
22	3	0	0	1	0	0	0
20	5	0	1	0	1	0	0

21	4	1	0	0	0	0	0
24	5	1	2	2	1	0	0
25	5	0	0	0	0	0	0
23	6	0	1	0	0	0	0
16	7	3	0	0	0	0	0
22	6	0	0	0	0	0	0
20	11	0	1	0	0	0	0
23	6	2	0	0	0	0	0
13	3	1	1	0	0	0	0
9	2	0	1	0	0	0	0
10	1	0	0	0	0	0	0
10	2	0	0	0	0	1	0
10	2	1	0	0	0	0	0
10	1	1	0	0	1	0	0
9	1	0	1	0	0	0	0
4	1	0	0	0	0	0	0
3	1	0	0	0	0	0	0
3	2	0	0	0	1	0	0
3	0	0	0	0	0	0	1
9	2	0	0	0	0	0	0
4	1	0	0	0	0	0	0
3	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0
6	1	0	0	0	0	0	0
6	0	0	0	0	0	0	0
2	2	0	0	1	0	0	0
7	0	0	0	0	0	0	0
1	1	0	0	0	0	0	0
1	2	0	0	0	0	0	0
3	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
1	1	0	0	0	0	0	0
0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
2	1	0	0	0	0	0	0
1	0	0	0	0	0	0	0
1	0	0	0	0	0	1	0
3	1	0	0	0	0	0	0
0	1	0	0	0	0	0	0
2	0	0	0	0	0	0	0

Curve fit oxygen:

ctotal =

General model Exp1:

$$ctotal(x) = a * \exp(b * x)$$

Coefficients (with 95% confidence bounds):

$$a = 8.606 \quad (7.403, 9.809)$$

$$b = -0.2644 \quad (-0.2717, -0.2572)$$

goftotal =

sse: 6.6103e-008

rsquare: 9.9997e-001

dfe: 3

adjrsquare: 9.9996e-001

rmse: 1.4844e-004

custom:

3	2.864E-06	2.511E-06	0.000E+00	1.511E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
4	2.882E-06	2.669E-06	0.000E+00	1.509E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
5	5.762E-06	1.024E-05	3.145E-06	1.508E-06	3.088E-06	9.271E-07	0.000E+00	5.482E-07	
6	3.045E-06	5.162E-06	3.294E-06	1.499E-06	1.062E-06	9.214E-07	4.378E-07	0.000E+00	
7	1.112E-05	7.119E-06	3.069E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.081E-07	
8	2.676E-05	2.660E-06	3.298E-06	0.000E+00	1.001E-06	0.000E+00	0.000E+00	0.000E+00	
9	3.267E-05	1.016E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.461E-07	
10	3.831E-05	1.798E-05	9.366E-06	0.000E+00	1.001E-06	0.000E+00	0.000E+00	0.000E+00	
11	5.591E-05	2.313E-05	3.326E-06	7.627E-06	1.005E-06	0.000E+00	0.000E+00	0.000E+00	
12	7.684E-05	1.562E-05	3.143E-06	3.029E-06	0.000E+00	9.300E-07	0.000E+00	5.202E-07	
13	4.486E-05	7.721E-06	1.628E-05	7.568E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
14	5.306E-05	3.113E-05	6.272E-06	1.601E-06	0.000E+00	9.814E-07	0.000E+00	0.000E+00	
15	8.022E-05	2.611E-05	3.325E-06	7.638E-06	5.283E-06	0.000E+00	4.408E-07	0.000E+00	
16	8.309E-05	2.353E-05	3.242E-05	1.384E-05	5.151E-06	9.829E-07	8.291E-07	0.000E+00	
17	9.454E-05	6.737E-05	3.173E-05	1.734E-05	6.170E-06	1.857E-06	0.000E+00	0.000E+00	
18	1.406E-04	4.182E-05	4.312E-05	1.092E-05	3.175E-06	1.866E-06	0.000E+00	0.000E+00	
19	1.774E-04	5.516E-05	5.216E-05	1.566E-05	7.273E-06	7.584E-06	0.000E+00	5.221E-07	
20	2.357E-04	9.254E-05	6.867E-05	1.896E-05	6.366E-06	9.507E-07	0.000E+00	0.000E+00	
21	2.698E-04	9.891E-05	3.609E-05	2.553E-05	5.409E-06	1.896E-06	1.280E-06	5.331E-07	
22	2.462E-04	1.069E-04	4.621E-05	1.296E-05	1.096E-06	3.033E-06	0.000E+00	5.663E-07	
23	2.020E-04	5.957E-05	5.614E-05	1.768E-05	1.031E-06	9.493E-07	7.947E-07	0.000E+00	
24	1.396E-04	6.456E-05	3.487E-05	1.076E-05	2.087E-06	2.901E-06	8.582E-07	0.000E+00	
25	1.387E-04	5.170E-05	3.490E-05	1.089E-05	7.273E-06	9.793E-07	4.131E-07	5.478E-07	
26	6.737E-05	4.876E-05	1.612E-05	7.591E-06	3.064E-06	0.000E+00	0.000E+00	0.000E+00	
27	1.147E-04	3.032E-05	1.594E-05	7.764E-06	4.244E-06	0.000E+00	0.000E+00	0.000E+00	
28	8.177E-05	4.346E-05	1.627E-05	9.148E-06	2.116E-06	0.000E+00	0.000E+00	0.000E+00	
29	7.548E-05	3.112E-05	1.240E-05	6.063E-06	2.056E-06	0.000E+00	0.000E+00	0.000E+00	
30	6.796E-05	4.605E-05	1.643E-05	2.986E-06	9.964E-07	0.000E+00	4.108E-07	5.446E-07	
31	1.026E-04	3.070E-05	1.260E-05	3.171E-06	1.059E-06	9.771E-07	0.000E+00	5.137E-07	
32	8.865E-05	2.039E-05	1.917E-05	6.156E-06	1.058E-06	0.000E+00	4.106E-07	0.000E+00	
33	4.707E-05	1.793E-05	1.899E-05	6.074E-06	0.000E+00	0.000E+00	4.354E-07	0.000E+00	
34	7.073E-05	1.808E-05	9.507E-06	7.746E-06	0.000E+00	9.743E-07	0.000E+00	0.000E+00	
35	5.577E-05	2.601E-05	6.212E-06	4.491E-06	0.000E+00	9.186E-07	0.000E+00	0.000E+00	
36	6.175E-05	3.593E-05	9.483E-06	3.163E-06	3.111E-06	0.000E+00	0.000E+00	5.123E-07	
37	6.951E-05	4.981E-06	3.100E-06	6.146E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
38	3.233E-05	2.285E-05	6.371E-06	1.581E-06	1.054E-06	0.000E+00	0.000E+00	0.000E+00	
39	4.079E-05	1.435E-05	3.060E-06	5.733E-06	0.000E+00	0.000E+00	0.000E+00	4.793E-07	
40	5.594E-05	7.764E-06	9.479E-06	1.580E-06	1.057E-06	0.000E+00	0.000E+00	0.000E+00	
41	6.387E-05	1.008E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.341E-07	0.000E+00	
42	4.964E-05	1.783E-05	3.277E-06	1.487E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	

26	1.401E-05	2.786E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
27	1.364E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
28	2.982E-06	1.347E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
29	7.718E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
30	3.164E-06	0.000E+00	1.765E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
31	0.000E+00	2.781E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
32	1.582E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
33	1.491E-06	0.000E+00	1.769E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.508E-07
34	6.148E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
35	7.638E-06	2.784E-06	1.670E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
36	4.468E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
37	4.649E-06	1.345E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
38	1.489E-06	1.428E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
39	1.473E-06	1.257E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
40	4.642E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
41	1.575E-06	0.000E+00	1.660E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
42	1.575E-06	1.342E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.147E-07	0.000E+00
43	4.549E-06	2.849E-06	0.000E+00	8.429E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
44	1.489E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
45	1.487E-06	1.343E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.286E-07	0.000E+00
46	3.152E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
47	1.486E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
48	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
49	2.980E-06	1.429E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
50	1.569E-06	0.000E+00	0.000E+00	8.379E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
51	3.035E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
52	0.000E+00	0.000E+00	1.636E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
53	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	2	0	0	0	1	1	1
0	0	0	0	0	0	0	0
1	1	0	1	0	0	0	0
1	1	0	1	0	0	0	0
2	4	1	1	3	1	0	1
1	2	1	1	1	1	1	0
4	3	1	0	0	0	0	1
9	1	1	0	1	0	0	0

11	4	0	0	0	0	0	1
13	7	3	0	1	0	0	0
19	9	1	5	1	0	0	0
26	6	1	2	0	1	0	1
15	3	5	5	0	0	0	0
18	12	2	1	0	1	0	0
27	10	1	5	5	0	1	0
28	9	10	9	5	1	2	0
32	26	10	11	6	2	0	0
47	16	13	7	3	2	0	0
59	21	16	10	7	8	0	1
78	35	21	12	6	1	0	0
89	37	11	16	5	2	3	1
81	40	14	8	1	3	0	1
71	24	18	12	1	1	2	0
47	25	11	7	2	3	2	0
47	20	11	7	7	1	1	1
23	19	5	5	3	0	0	0
39	12	5	5	4	0	0	0
28	17	5	6	2	0	0	0
26	12	4	4	2	0	0	0
23	18	5	2	1	0	1	1
35	12	4	2	1	1	0	1
30	8	6	4	1	0	1	0
16	7	6	4	0	0	1	0
24	7	3	5	0	1	0	0
19	10	2	3	0	1	0	0
21	14	3	2	3	0	0	1
24	2	1	4	0	0	0	0
11	9	2	1	1	0	0	0
15	6	1	4	0	0	0	1
19	3	3	1	1	0	0	0
22	4	0	0	0	0	1	0
17	7	1	1	0	0	0	0
13	4	1	1	3	0	0	0
23	12	4	2	0	0	1	0
15	3	1	2	0	0	1	0
24	3	3	2	0	1	0	1
20	4	4	3	2	1	0	0
13	2	4	1	0	1	1	0

15	4	1	1	1	0	0	0
11	1	0	1	0	1	0	0
13	3	2	1	1	0	0	0
5	5	1	1	0	0	0	1
5	1	1	1	0	0	0	0

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	1	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	2	0	0	0	0	0	0
0	0	2	0	2	0	0	0
1	1	1	0	0	0	0	0
0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
0	1	0	0	0	0	0	0
0	0	0	0	1	0	1	0
1	1	0	1	0	0	0	1
2	0	0	1	0	0	0	0
1	0	0	1	0	0	0	0
2	1	0	1	0	0	0	0
0	0	0	0	0	1	0	0
1	2	0	0	0	0	0	0
5	2	3	1	0	0	0	0
16	3	2	3	0	0	0	0
4	0	1	0	1	0	0	0
12	3	0	0	2	0	0	0
10	2	2	0	0	0	0	0
9	3	0	0	0	0	0	0
6	2	0	1	0	0	0	0
11	2	2	0	0	0	0	0
6	1	0	0	1	0	0	0
7	2	0	0	0	0	0	0
9	2	0	0	0	0	0	0
9	0	0	0	0	0	0	0
2	1	0	0	0	0	0	0
5	0	0	0	0	0	0	0
2	0	1	0	0	0	0	0
0	2	0	0	0	0	0	0

1	0	0	0	0	0	0	0
1	0	1	0	0	0	0	2
4	0	0	0	0	0	0	0
5	2	1	0	0	0	0	0
3	0	0	0	0	0	0	0
3	1	0	0	0	0	0	0
1	1	0	0	0	0	0	0
1	1	0	0	0	0	0	0
3	0	0	0	0	0	0	0
1	0	1	0	0	0	0	0
1	1	0	0	0	0	1	0
3	2	0	1	0	0	0	0
1	0	0	0	0	0	0	0
1	1	0	0	0	0	1	0
2	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
2	1	0	0	0	0	0	0
1	0	0	1	0	0	0	0
2	0	0	0	0	0	0	0
0	0	1	0	0	0	0	0
0	0	0	0	0	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.02247$$

$$b = -0.2295$$

$$c = 0$$

$$d = -9.679$$

goftotal =

$$\text{sse: } 7.9516\text{e-}008$$

$$\text{rsquare: } 0.9905$$

$$\text{dfe: } 4$$

$$\text{adjrsquare: } 0.9835$$

$$\text{rmse: } 1.4099\text{e-}004$$

ctotal =

General model Exp1:

$$\text{ctotal}(x) = a * \exp(b * x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.00278 \text{ } (-0.003258, 0.008819)$$

$$b = -0.1251 \text{ } (-0.2309, -0.01933)$$

goftotal =

sse: 2.5414e-009

rsquare: 9.5386e-001

dfe: 3

adjrsquare: 9.3849e-001

rmse: 2.9105e-005

Event 46	Date	Time*	Location*	Summing interval*				
	22-Oct-01	1759	S18E16	Oct 22 to Oct 26 0100				
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	1.173E-05	7.409E-06	6.143E-06	1.479E-06	4.159E-06	0.000E+00	0.000E+00	0.000E+00
2	1.022E-04	3.436E-05	1.592E-05	6.435E-06	1.024E-06	1.869E-06	8.635E-07	5.229E-07
3	1.689E-04	4.887E-05	2.360E-05	1.298E-05	3.264E-06	2.011E-06	8.743E-07	0.000E+00
4	2.784E-04	7.573E-05	2.850E-05	1.364E-05	5.617E-06	5.199E-06	2.323E-06	6.017E-07
5	1.956E-04	1.003E-04	2.744E-05	1.849E-05	3.427E-06	2.153E-06	1.371E-06	5.621E-07
6	2.310E-04	4.783E-05	3.790E-05	1.849E-05	1.116E-05	5.289E-06	1.392E-06	0.000E+00
7	1.832E-04	5.063E-05	3.488E-05	1.989E-05	9.905E-06	4.190E-06	1.422E-06	1.164E-06
8	6.372E-05	1.881E-05	1.283E-05	1.271E-05	3.061E-06	1.981E-06	0.000E+00	5.252E-07
9	5.439E-05	2.641E-05	3.361E-06	7.631E-06	2.164E-06	1.932E-06	0.000E+00	1.608E-06
10	3.841E-05	1.044E-05	3.336E-06	4.552E-06	6.282E-06	2.910E-06	1.306E-06	0.000E+00

11	3.884E-05	7.888E-06	9.799E-06	6.244E-06	6.265E-06	3.961E-06	4.172E-07	0.000E+00
12	3.875E-05	1.575E-05	1.607E-05	7.925E-06	2.019E-06	9.300E-07	1.739E-06	0.000E+00
13	2.074E-05	1.323E-05	6.657E-06	4.628E-06	1.073E-06	0.000E+00	8.319E-07	5.524E-07
14	1.903E-05	1.207E-05	1.484E-05	5.988E-06	0.000E+00	1.841E-06	1.165E-06	4.851E-07
15	3.568E-05	4.191E-05	1.274E-05	3.207E-06	5.170E-06	2.787E-06	4.411E-07	5.195E-07
16	2.394E-05	1.291E-05	3.135E-06	6.227E-06	7.245E-06	2.956E-06	2.103E-06	0.000E+00
17	3.816E-05	1.277E-05	2.271E-05	9.430E-06	4.094E-06	3.824E-06	2.180E-06	1.039E-06
18	2.370E-05	5.184E-06	9.764E-06	4.703E-06	6.157E-06	9.821E-07	8.544E-07	0.000E+00
19	2.064E-05	7.693E-06	2.520E-05	7.806E-06	0.000E+00	3.871E-06	4.144E-07	5.179E-07
20	1.150E-05	1.554E-05	9.948E-06	1.504E-06	4.147E-06	2.833E-06	4.140E-07	5.493E-07
21	1.471E-05	2.352E-05	1.269E-05	4.606E-06	2.070E-06	1.905E-06	8.534E-07	0.000E+00
22	1.469E-05	1.301E-05	6.624E-06	7.609E-06	3.014E-06	3.812E-06	8.778E-07	5.487E-07
23	2.974E-05	1.817E-05	1.267E-05	7.606E-06	1.046E-05	3.865E-06	4.401E-07	0.000E+00
24	1.773E-05	1.550E-05	1.890E-05	6.010E-06	5.076E-06	1.903E-06	8.771E-07	0.000E+00
25	4.439E-05	2.081E-05	1.284E-05	7.781E-06	3.069E-06	0.000E+00	4.130E-07	1.095E-06
26	2.093E-05	1.282E-05	2.237E-05	7.961E-06	6.194E-06	1.899E-06	1.289E-06	5.474E-07
27	2.377E-05	1.517E-05	1.595E-05	9.180E-06	3.186E-06	0.000E+00	0.000E+00	1.063E-06
28	3.249E-05	1.515E-05	1.630E-05	6.356E-06	2.000E-06	9.200E-07	1.262E-06	5.150E-07
29	1.748E-05	1.279E-05	6.590E-06	1.261E-05	1.997E-06	0.000E+00	0.000E+00	5.142E-07
30	2.711E-05	1.730E-05	8.689E-06	8.628E-06	1.864E-06	1.767E-06	3.837E-07	0.000E+00
31	3.239E-05	2.598E-05	1.570E-05	3.169E-06	0.000E+00	0.000E+00	4.360E-07	0.000E+00
32	3.827E-05	1.307E-05	6.212E-06	1.082E-05	3.113E-06	9.736E-07	0.000E+00	0.000E+00
33	4.397E-05	2.054E-05	1.297E-05	1.063E-05	6.042E-06	1.946E-06	0.000E+00	5.444E-07
34	3.219E-05	1.011E-05	2.591E-05	3.164E-06	3.110E-06	0.000E+00	4.105E-07	5.445E-07
35	2.363E-05	2.067E-05	3.094E-06	4.744E-06	4.164E-06	9.179E-07	4.104E-07	0.000E+00
36	2.095E-05	1.304E-05	9.849E-06	6.232E-06	1.991E-06	2.859E-06	0.000E+00	0.000E+00
37	2.377E-05	1.287E-05	6.179E-06	4.739E-06	4.158E-06	0.000E+00	4.345E-07	0.000E+00
38	4.368E-05	1.009E-05	1.237E-05	6.046E-06	9.936E-07	9.150E-07	8.449E-07	5.428E-07
39	3.509E-05	1.286E-05	6.181E-06	2.976E-06	9.936E-07	0.000E+00	4.341E-07	0.000E+00
40	4.092E-05	1.797E-05	6.364E-06	1.576E-06	2.049E-06	9.686E-07	0.000E+00	0.000E+00
41	2.675E-05	1.797E-05	1.272E-05	3.061E-06	2.044E-06	9.150E-07	0.000E+00	0.000E+00
42	2.336E-05	1.840E-05	9.436E-06	7.696E-06	1.981E-06	9.136E-07	4.085E-07	0.000E+00
43	2.353E-05	1.501E-05	1.270E-05	2.969E-06	2.972E-06	9.121E-07	4.085E-07	0.000E+00
44	2.619E-05	1.268E-05	1.578E-05	3.056E-06	0.000E+00	9.671E-07	4.086E-07	0.000E+00
45	1.433E-05	0.000E+00	0.000E+00	0.000E+00	2.103E-06	9.686E-07	0.000E+00	0.000E+00
46	1.369E-05	4.761E-06	0.000E+00	4.320E-06	2.885E-06	8.507E-07	3.811E-07	0.000E+00
47	2.065E-05	1.266E-05	9.409E-06	4.444E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
48	2.296E-05	1.266E-05	9.596E-06	1.481E-06	9.886E-07	0.000E+00	0.000E+00	0.000E+00
49	3.161E-05	5.244E-06	1.267E-05	7.584E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
50	2.080E-05	1.250E-05	1.592E-05	6.279E-06	0.000E+00	0.000E+00	8.393E-07	5.086E-07

51	1.164E-05	7.710E-06	6.144E-06	7.398E-06	1.048E-06	0.000E+00	0.000E+00	0.000E+00
52	1.711E-05	1.526E-05	0.000E+00	4.527E-06	9.871E-07	0.000E+00	0.000E+00	0.000E+00
53	1.745E-05	1.249E-05	3.257E-06	3.047E-06	1.047E-06	0.000E+00	0.000E+00	0.000E+00
54	2.625E-05	1.525E-05	1.265E-05	3.046E-06	2.034E-06	0.000E+00	0.000E+00	0.000E+00
55	1.145E-05	7.696E-06	6.316E-06	3.134E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
56	1.725E-05	1.292E-05	6.129E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
57	1.197E-05	5.235E-06	0.000E+00	3.134E-06	1.972E-06	1.816E-06	0.000E+00	0.000E+00
58	1.742E-05	1.000E-05	3.251E-06	6.085E-06	3.137E-06	0.000E+00	4.306E-07	5.384E-07
59	8.960E-06	1.230E-05	3.063E-06	3.039E-06	9.850E-07	0.000E+00	4.303E-07	0.000E+00
60	2.022E-05	1.044E-05	6.124E-06	1.476E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
61	8.610E-06	2.611E-06	9.555E-06	4.602E-06	9.836E-07	9.614E-07	0.000E+00	5.072E-07
62	8.040E-06	1.406E-05	5.888E-06	1.460E-06	9.193E-07	8.460E-07	0.000E+00	0.000E+00
63	1.144E-05	1.015E-05	3.061E-06	1.565E-06	1.969E-06	0.000E+00	0.000E+00	0.000E+00
64	2.022E-05	1.261E-05	6.313E-06	1.565E-06	9.843E-07	0.000E+00	4.058E-07	0.000E+00
65	2.323E-05	7.691E-06	0.000E+00	4.609E-06	1.046E-06	0.000E+00	0.000E+00	0.000E+00
66	2.606E-05	1.232E-05	6.131E-06	1.567E-06	9.857E-07	0.000E+00	0.000E+00	5.081E-07
67	8.635E-06	1.770E-05	1.245E-05	0.000E+00	9.857E-07	0.000E+00	0.000E+00	0.000E+00
68	1.479E-05	0.000E+00	0.000E+00	1.568E-06	0.000E+00	0.000E+00	4.069E-07	0.000E+00
69	2.360E-05	1.278E-05	9.575E-06	0.000E+00	0.000E+00	0.000E+00	4.064E-07	0.000E+00
70	1.725E-05	4.930E-06	0.000E+00	1.566E-06	0.000E+00	0.000E+00	8.625E-07	5.390E-07
71	1.144E-05	1.015E-05	3.068E-06	3.134E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
72	2.290E-05	5.089E-06	3.248E-06	0.000E+00	0.000E+00	9.079E-07	0.000E+00	0.000E+00
73	1.462E-05	5.235E-06	6.139E-06	1.570E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
74	1.759E-05	5.075E-06	6.312E-06	0.000E+00	1.971E-06	0.000E+00	0.000E+00	5.387E-07
75	1.144E-05	5.079E-06	3.250E-06	2.954E-06	9.864E-07	0.000E+00	4.062E-07	0.000E+00
76	2.305E-05	1.015E-05	0.000E+00	0.000E+00	9.850E-07	0.000E+00	0.000E+00	0.000E+00
77	2.036E-05	7.521E-06	0.000E+00	0.000E+00	9.829E-07	0.000E+00	0.000E+00	0.000E+00
78	1.589E-05	2.433E-06	5.879E-06	0.000E+00	0.000E+00	8.967E-07	0.000E+00	4.723E-07
79	2.035E-05	2.607E-06	0.000E+00	1.561E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
80	5.617E-06	5.064E-06	6.300E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
81	2.050E-05	7.808E-06	0.000E+00	4.499E-06	0.000E+00	0.000E+00	4.046E-07	0.000E+00

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	3.158E-06	1.334E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.236E-07	0.000E+00
2	1.508E-06	0.000E+00	5.154E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
3	1.154E-05	1.515E-06	1.773E-06	8.964E-07	0.000E+00	2.116E-06	4.891E-07	0.000E+00
4	2.009E-05	7.780E-06	3.659E-06	4.550E-06	1.736E-06	0.000E+00	0.000E+00	2.879E-07

5	2.019E-05	1.464E-06	3.846E-06	5.400E-06	0.000E+00	5.260E-07	2.534E-07	0.000E+00
6	1.522E-05	9.272E-06	3.663E-06	2.741E-06	6.198E-07	5.374E-07	0.000E+00	0.000E+00
7	3.014E-05	7.681E-06	7.401E-06	5.416E-06	2.396E-06	0.000E+00	2.383E-07	0.000E+00
8	7.941E-06	5.561E-06	3.557E-06	4.347E-06	1.178E-06	1.065E-06	0.000E+00	0.000E+00
9	4.856E-06	4.294E-06	5.209E-06	8.150E-07	5.413E-07	4.971E-07	0.000E+00	0.000E+00
10	1.107E-05	8.471E-06	3.486E-06	3.289E-06	5.711E-07	2.038E-06	0.000E+00	2.884E-07
11	1.237E-05	2.899E-06	0.000E+00	3.232E-06	1.105E-06	5.225E-07	2.190E-07	0.000E+00
12	4.711E-06	2.894E-06	3.369E-06	3.324E-06	1.105E-06	0.000E+00	0.000E+00	0.000E+00
13	6.403E-06	7.147E-06	5.258E-06	1.663E-06	1.105E-06	0.000E+00	2.184E-07	0.000E+00
14	1.311E-05	6.519E-06	3.337E-06	3.103E-06	1.000E-06	0.000E+00	2.039E-07	0.000E+00
15	1.093E-05	4.254E-06	5.155E-06	0.000E+00	5.685E-07	1.012E-06	4.501E-07	0.000E+00
16	3.015E-06	1.363E-06	1.784E-06	3.272E-06	5.356E-07	4.906E-07	0.000E+00	0.000E+00
17	1.384E-05	2.806E-06	1.785E-06	1.609E-06	1.103E-06	0.000E+00	2.179E-07	0.000E+00
18	1.089E-05	0.000E+00	0.000E+00	8.043E-07	1.101E-06	1.009E-06	0.000E+00	0.000E+00
19	4.599E-06	5.596E-06	5.337E-06	3.262E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
20	7.793E-06	4.319E-06	0.000E+00	1.655E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
21	4.596E-06	9.747E-06	5.234E-06	0.000E+00	0.000E+00	5.186E-07	0.000E+00	0.000E+00
22	1.088E-05	5.591E-06	1.778E-06	2.504E-06	5.351E-07	0.000E+00	0.000E+00	0.000E+00
23	7.682E-06	4.148E-06	1.675E-06	1.655E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
24	7.590E-06	2.792E-06	3.451E-06	1.652E-06	0.000E+00	0.000E+00	2.170E-07	0.000E+00
25	9.357E-06	1.354E-06	1.672E-06	0.000E+00	5.646E-07	5.174E-07	0.000E+00	0.000E+00
26	6.078E-06	1.352E-06	3.444E-06	3.346E-06	0.000E+00	1.004E-06	0.000E+00	0.000E+00
27	7.666E-06	2.704E-06	1.772E-06	1.649E-06	0.000E+00	0.000E+00	0.000E+00	2.838E-07
28	6.251E-06	2.867E-06	0.000E+00	1.598E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
29	9.413E-06	2.700E-06	1.667E-06	1.645E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
30	2.870E-06	1.334E-06	4.663E-06	7.900E-07	0.000E+00	4.812E-07	2.015E-07	0.000E+00
31	3.074E-06	4.204E-06	0.000E+00	0.000E+00	0.000E+00	4.854E-07	0.000E+00	0.000E+00
32	7.904E-06	1.346E-06	1.670E-06	2.389E-06	0.000E+00	5.146E-07	0.000E+00	0.000E+00
33	6.234E-06	4.121E-06	1.664E-06	1.594E-06	0.000E+00	5.148E-07	0.000E+00	2.661E-07
34	4.650E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
35	9.201E-06	4.196E-06	0.000E+00	8.436E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
36	7.707E-06	1.108E-05	3.321E-06	2.434E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
37	1.486E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
38	4.729E-06	1.341E-06	5.076E-06	7.943E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
39	4.453E-06	0.000E+00	1.756E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
40	1.381E-05	1.423E-06	0.000E+00	8.414E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
41	1.483E-06	1.340E-06	0.000E+00	8.407E-07	0.000E+00	5.120E-07	0.000E+00	0.000E+00
42	2.966E-06	0.000E+00	3.307E-06	0.000E+00	5.269E-07	0.000E+00	0.000E+00	0.000E+00
43	4.534E-06	2.676E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
44	1.073E-05	0.000E+00	0.000E+00	0.000E+00	5.582E-07	0.000E+00	0.000E+00	0.000E+00

45	1.045E-05	5.596E-06	0.000E+00	7.921E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
46	4.227E-06	3.817E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
47	6.276E-06	1.336E-06	0.000E+00	8.386E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
48	7.481E-06	0.000E+00	1.750E-06	8.379E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
49	6.272E-06	2.670E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
50	9.129E-06	1.334E-06	1.749E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
51	5.996E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
52	4.608E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.639E-07
53	1.565E-06	1.415E-06	1.749E-06	7.886E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
54	0.000E+00	1.414E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.636E-07
55	1.068E-05	0.000E+00	0.000E+00	7.886E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
56	4.598E-06	0.000E+00	0.000E+00	8.350E-07	0.000E+00	0.000E+00	2.263E-07	0.000E+00	0.000E+00
57	3.039E-06	2.746E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
58	1.471E-06	1.330E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
59	3.035E-06	1.329E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
60	4.596E-06	0.000E+00	0.000E+00	7.864E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
61	1.561E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
62	1.457E-06	1.318E-06	0.000E+00	0.000E+00	4.882E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
63	2.945E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
64	1.563E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
65	4.419E-06	1.411E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
66	1.564E-06	1.331E-06	1.645E-06	8.364E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
67	1.474E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
68	4.516E-06	1.414E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
69	4.517E-06	1.333E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
70	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
71	3.037E-06	4.156E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
72	4.695E-06	1.329E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
73	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.094E-07	0.000E+00	0.000E+00	0.000E+00
74	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
75	1.473E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
76	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
77	1.559E-06	1.409E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
78	1.455E-06	1.239E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
79	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.219E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
80	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.222E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
81	1.556E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.069E-07	0.000E+00	0.000E+00	0.000E+00

Hourly Oxygen Counts

Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
4	3	2	1	4	0	0	0
34	13	5	4	1	2	2	1
54	18	7	8	3	2	2	0
87	27	8	8	5	5	5	1
61	36	8	11	3	2	3	1
71	17	11	11	10	5	3	0
57	18	10	12	9	4	3	2
21	7	4	8	3	2	0	1
18	10	1	5	2	2	0	3
13	4	1	3	6	3	3	0
13	3	3	4	6	4	1	0
13	6	5	5	2	1	4	0
7	5	2	3	1	0	2	1
7	5	5	4	0	2	3	1
12	16	4	2	5	3	1	1
8	5	1	4	7	3	5	0
13	5	7	6	4	4	5	2
8	2	3	3	6	1	2	0
7	3	8	5	0	4	1	1
4	6	3	1	4	3	1	1
5	9	4	3	2	2	2	0
5	5	2	5	3	4	2	1
10	7	4	5	10	4	1	0
6	6	6	4	5	2	2	0
15	8	4	5	3	0	1	2
7	5	7	5	6	2	3	1
8	6	5	6	3	0	0	2
11	6	5	4	2	1	3	1
6	5	2	8	2	0	0	1
10	7	3	6	2	2	1	0
11	10	5	2	0	0	1	0
13	5	2	7	3	1	0	0
15	8	4	7	6	2	0	1
11	4	8	2	3	0	1	1
8	8	1	3	4	1	1	0
7	5	3	4	2	3	0	0
8	5	2	3	4	0	1	0
15	4	4	4	1	1	2	1
12	5	2	2	1	0	1	0

14	7	2	1	2	1	0	0
9	7	4	2	2	1	0	0
8	7	3	5	2	1	1	0
8	6	4	2	3	1	1	0
9	5	5	2	0	1	1	0
5	0	0	0	2	1	0	0
5	2	0	3	3	1	1	0
7	5	3	3	0	0	0	0
8	5	3	1	1	0	0	0
11	2	4	5	0	0	0	0
7	5	5	4	0	0	2	1
4	3	2	5	1	0	0	0
6	6	0	3	1	0	0	0
6	5	1	2	1	0	0	0
9	6	4	2	2	0	0	0
4	3	2	2	0	0	0	0
6	5	2	0	0	0	0	0
4	2	0	2	2	2	0	0
6	4	1	4	3	0	1	1
3	5	1	2	1	0	1	0
7	4	2	1	0	0	0	0
3	1	3	3	1	1	0	1
3	6	2	1	1	1	0	0
4	4	1	1	2	0	0	0
7	5	2	1	1	0	1	0
8	3	0	3	1	0	0	0
9	5	2	1	1	0	0	1
3	7	4	0	1	0	0	0
5	0	0	1	0	0	1	0
8	5	3	0	0	0	1	0
6	2	0	1	0	0	2	1
4	4	1	2	0	0	0	0
8	2	1	0	0	1	0	0
5	2	2	1	0	0	0	0
6	2	2	0	2	0	0	1
4	2	1	2	1	0	1	0
8	4	0	0	1	0	0	0
7	3	0	0	1	0	0	0
6	1	2	0	0	1	0	1
7	1	0	1	0	0	0	0

2	2	2	0	0	0	0	0
7	3	0	3	0	0	1	0

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
2	1	0	0	0	0	1	0
1	0	3	0	0	0	0	0
7	1	1	1	0	4	2	0
12	5	2	5	3	0	0	1
12	1	2	6	0	1	1	0
9	6	2	3	1	1	0	0
18	5	4	6	4	0	1	0
5	4	2	5	2	2	0	0
3	3	3	1	1	1	0	0
7	6	2	4	1	4	0	1
8	2	0	4	2	1	1	0
3	2	2	4	2	0	0	0
4	5	3	2	2	0	1	0
9	5	2	4	2	0	1	0
7	3	3	0	1	2	2	0
2	1	1	4	1	1	0	0
9	2	1	2	2	0	1	0
7	0	0	1	2	2	0	0
3	4	3	4	0	0	0	0
5	3	0	2	0	0	0	0
3	7	3	0	0	1	0	0
7	4	1	3	1	0	0	0
5	3	1	2	0	0	0	0
5	2	2	2	0	0	1	0
6	1	1	0	1	1	0	0
4	1	2	4	0	2	0	0
5	2	1	2	0	0	0	1
4	2	0	2	0	0	0	0
6	2	1	2	0	0	0	0
2	1	3	1	0	1	1	0
2	3	0	0	0	1	0	0
5	1	1	3	0	1	0	0
4	3	1	2	0	1	0	1

3	0	0	0	0	0	0	0
6	3	0	1	0	0	0	0
5	8	2	3	0	0	0	0
1	0	0	0	0	0	0	0
3	1	3	1	0	0	0	0
3	0	1	0	0	0	0	0
9	1	0	1	0	0	0	0
1	1	0	1	0	1	0	0
2	0	2	0	1	0	0	0
3	2	0	0	0	0	0	0
7	0	0	0	1	0	0	0
7	4	0	1	0	0	0	0
3	3	0	0	0	0	0	0
4	1	0	1	0	0	0	0
5	0	1	1	0	0	0	0
4	2	0	0	0	0	0	0
6	1	1	0	0	0	0	0
4	0	0	0	0	0	0	0
3	0	0	0	0	0	0	1
1	1	1	1	0	0	0	0
0	1	0	0	0	0	0	1
7	0	0	1	0	0	0	0
3	0	0	1	0	0	1	0
2	2	0	0	0	0	0	0
1	1	0	0	0	0	0	0
2	1	0	0	0	0	0	0
3	0	0	1	0	0	0	0
1	0	0	0	0	0	0	0
1	1	0	0	1	0	0	0
2	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
3	1	0	0	0	0	0	0
1	1	1	1	0	0	0	0
1	0	0	0	0	0	0	0
3	1	0	0	0	0	0	0
3	1	0	0	0	0	0	0
0	0	0	0	0	0	0	0
2	3	0	0	0	0	0	0
3	1	0	0	0	0	0	0
0	0	0	0	0	1	0	0

0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	1	0	0	0	0	0	0
1	1	0	0	0	0	0	0
0	0	0	0	1	0	0	0
0	0	0	0	1	0	0	0
1	0	0	0	0	1	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.01696 \quad (0.007047, 0.02687)$$

$$b = -0.2255 \quad (-0.2951, -0.156)$$

$$c = 5.588e-005 \quad (-0.0002079, 0.0003196)$$

$$d = 0.006571 \quad (-0.07659, 0.08973)$$

goftotal =

$$sse: 3.0711e-008$$

$$rsquare: 0.9937$$

dfc: 4

adjrsquare: 0.9890

rmse: 8.7623e-005

ctotal =

General model Exp1:

$$ctotal(x) = a * \exp(b * x)$$

Coefficients (with 95% confidence bounds):

a = 0.001354 (-0.0002075, 0.002915)

b = -0.07055 (-0.1213, -0.01981)

goftotal =

sse: 4.0380e-009

rsquare: 9.5707e-001

dfc: 3

adjrsquare: 9.4277e-001

rmse: 3.6688e-005

Event 47	Date	Time*	Location*	Summing interval*
	4-Nov-01	1620	N06W18	Nov 4 to Nov 9 1300

<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2	0.000E+00	0.000E+00	0.000E+00	2.321E-06	1.038E-05	9.073E-06	1.586E-05	5.529E-06
3	8.268E-05	6.452E-05	2.094E-04	2.962E-04	2.883E-04	2.523E-04	9.346E-05	4.403E-05
4	4.633E-04	6.402E-04	5.038E-04	5.888E-04	4.417E-04	2.670E-04	1.011E-04	3.886E-05
5	1.024E-03	1.037E-03	1.025E-03	8.416E-04	5.506E-04	3.178E-04	1.352E-04	2.815E-05
6	3.150E-03	2.733E-03	2.511E-03	1.842E-03	9.517E-04	5.159E-04	1.766E-04	3.840E-05
7	6.810E-03	5.776E-03	4.534E-03	3.510E-03	1.861E-03	8.760E-04	1.996E-04	2.530E-05
8	1.730E-02	1.353E-02	1.123E-02	7.887E-03	3.776E-03	1.777E-03	3.132E-04	4.100E-05
9	2.170E-02	1.701E-02	1.385E-02	9.300E-03	4.967E-03	1.915E-03	3.493E-04	3.696E-05
10	2.783E-02	2.168E-02	1.749E-02	1.292E-02	6.263E-03	2.064E-03	3.354E-04	3.778E-05
11	4.114E-02	3.207E-02	2.484E-02	1.762E-02	7.733E-03	2.538E-03	3.418E-04	3.960E-05
12	3.947E-02	3.465E-02	2.643E-02	1.707E-02	7.923E-03	2.558E-03	4.012E-04	2.265E-05
13	4.568E-02	3.924E-02	3.053E-02	2.173E-02	8.961E-03	2.968E-03	3.835E-04	3.298E-05
14	6.036E-02	4.982E-02	3.975E-02	2.421E-02	1.058E-02	3.095E-03	4.039E-04	2.126E-05
15	8.015E-02	7.534E-02	5.131E-02	3.379E-02	1.272E-02	4.234E-03	5.354E-04	1.023E-05
16	9.580E-02	8.279E-02	6.095E-02	3.774E-02	1.447E-02	4.763E-03	4.988E-04	1.703E-05
17	1.082E-01	9.048E-02	6.592E-02	3.927E-02	1.487E-02	4.565E-03	4.487E-04	2.827E-05
18	1.172E-01	1.081E-01	7.078E-02	4.368E-02	1.553E-02	4.456E-03	4.934E-04	9.193E-06
19	1.294E-01	1.012E-01	7.442E-02	4.181E-02	1.594E-02	3.863E-03	4.745E-04	1.124E-05
20	1.207E-01	9.385E-02	6.349E-02	3.604E-02	1.287E-02	3.459E-03	3.931E-04	3.389E-05
21	1.192E-01	8.841E-02	5.392E-02	3.125E-02	1.156E-02	3.484E-03	3.481E-04	7.779E-06
22	1.612E-01	1.225E-01	7.101E-02	3.710E-02	1.228E-02	3.073E-03	4.497E-04	3.891E-05
23	1.891E-01	1.059E-01	7.069E-02	4.312E-02	1.359E-02	3.801E-03	4.044E-04	2.178E-05
24	2.547E-01	1.994E-01	1.348E-01	6.866E-02	2.423E-02	6.660E-03	9.595E-04	2.843E-05
25	3.531E-01	2.816E-01	1.347E-01	8.245E-02	2.609E-02	8.869E-03	1.029E-03	6.912E-05
26	4.562E-01	3.682E-01	1.890E-01	1.145E-01	3.806E-02	1.068E-02	1.634E-03	4.007E-05
27	4.584E-01	3.464E-01	1.900E-01	9.559E-02	2.836E-02	8.618E-03	1.404E-03	1.013E-04
28	5.439E-01	4.470E-01	2.485E-01	1.128E-01	4.041E-02	1.220E-02	1.993E-03	5.977E-05
29	7.830E-01	6.483E-01	2.026E-01	1.359E-01	5.337E-02	1.696E-02	4.044E-03	2.909E-04
30	7.981E-01	5.213E-01	3.372E-01	1.811E-01	4.079E-02	2.145E-02	3.101E-03	4.664E-04
31	6.287E-01	5.219E-01	3.336E-01	1.407E-01	5.983E-02	3.056E-02	3.616E-03	5.251E-04
32	7.714E-01	4.643E-01	3.771E-01	1.998E-01	6.861E-02	2.534E-02	3.993E-03	4.289E-04
33	8.340E-01	5.742E-01	3.745E-01	1.703E-01	5.975E-02	2.201E-02	4.658E-03	2.916E-04
34	7.206E-01	6.759E-01	4.190E-01	3.146E-01	1.278E-01	7.218E-02	2.042E-02	2.368E-03
35	5.613E-01	5.096E-01	3.383E-01	1.719E-01	9.189E-02	3.883E-02	1.609E-02	2.788E-03
36	8.182E-01	4.605E-01	2.328E-01	1.314E-01	6.561E-02	2.287E-02	5.881E-03	3.367E-04
37	6.049E-01	4.317E-01	2.859E-01	1.407E-01	7.273E-02	3.326E-02	8.306E-03	1.488E-03

38	3.002E-01	2.013E-01	1.070E-01	6.388E-02	2.380E-02	1.014E-02	2.660E-03	2.489E-04
39	2.398E-01	1.109E-01	7.767E-02	2.528E-02	1.791E-02	7.451E-03	7.586E-04	8.659E-05
40	2.338E-01	1.006E-01	5.059E-02	2.161E-02	1.150E-02	3.333E-03	7.628E-04	1.157E-04
41	1.490E-01	7.891E-02	2.858E-02	1.580E-02	7.669E-03	1.833E-03	4.527E-04	5.758E-05
42	1.277E-01	7.792E-02	4.011E-02	1.479E-02	4.768E-03	1.821E-03	3.297E-04	5.112E-05
43	1.152E-01	4.710E-02	2.524E-02	1.215E-02	3.770E-03	1.139E-03	2.592E-04	3.290E-05
44	1.444E-01	5.152E-02	2.772E-02	1.457E-02	4.896E-03	1.512E-03	2.864E-04	9.479E-06
45	8.585E-02	4.733E-02	1.925E-02	9.056E-03	3.287E-03	9.623E-04	2.137E-04	2.561E-05
46	4.822E-02	2.341E-02	1.335E-02	6.328E-03	2.368E-03	5.892E-04	1.475E-04	4.392E-05
47	4.012E-02	2.081E-02	1.137E-02	5.662E-03	2.052E-03	6.553E-04	1.390E-04	1.268E-05
48	2.461E-02	1.243E-02	6.717E-03	3.300E-03	1.200E-03	5.051E-04	1.129E-04	1.498E-05
49	2.594E-02	1.593E-02	9.317E-03	4.561E-03	1.503E-03	6.141E-04	1.374E-04	2.018E-05
50	2.781E-02	1.560E-02	9.237E-03	5.037E-03	1.956E-03	6.271E-04	1.617E-04	2.187E-05
51	2.236E-02	1.345E-02	7.653E-03	4.139E-03	1.530E-03	4.754E-04	1.227E-04	1.225E-05
52	2.154E-02	1.218E-02	7.493E-03	3.510E-03	1.408E-03	4.628E-04	1.075E-04	1.551E-05
53	2.209E-02	1.305E-02	7.533E-03	4.133E-03	1.553E-03	5.447E-04	1.174E-04	1.670E-05
54	1.884E-02	1.098E-02	6.651E-03	3.467E-03	1.364E-03	4.680E-04	1.058E-04	5.113E-06
55	1.966E-02	1.187E-02	6.832E-03	3.708E-03	1.307E-03	4.298E-04	9.822E-05	6.698E-06
56	1.932E-02	1.094E-02	6.514E-03	3.298E-03	1.127E-03	4.000E-04	7.950E-05	1.018E-05
57	1.963E-02	1.198E-02	6.943E-03	3.717E-03	1.270E-03	3.792E-04	7.486E-05	1.264E-05
58	1.848E-02	1.018E-02	6.987E-03	3.305E-03	1.269E-03	4.112E-04	7.663E-05	7.206E-06
59	1.769E-02	1.019E-02	5.507E-03	3.102E-03	1.137E-03	3.427E-04	7.962E-05	6.857E-06
60	1.762E-02	9.857E-03	6.133E-03	2.981E-03	1.002E-03	3.281E-04	5.961E-05	0.000E+00
61	1.825E-02	1.014E-02	5.704E-03	2.781E-03	9.324E-04	3.084E-04	5.256E-05	3.222E-06
62	1.881E-02	1.023E-02	5.896E-03	2.690E-03	8.908E-04	3.117E-04	4.111E-05	5.363E-06
63	1.993E-02	1.060E-02	5.574E-03	2.700E-03	8.831E-04	2.516E-04	5.064E-05	4.512E-06
64	2.038E-02	1.109E-02	5.829E-03	2.839E-03	8.584E-04	2.543E-04	4.016E-05	2.199E-06
65	2.071E-02	1.167E-02	6.513E-03	2.846E-03	7.964E-04	2.243E-04	3.467E-05	3.361E-06
66	2.272E-02	1.185E-02	6.391E-03	2.958E-03	8.338E-04	2.141E-04	3.605E-05	3.484E-06
67	2.087E-02	1.092E-02	6.120E-03	2.647E-03	7.199E-04	2.166E-04	1.808E-05	1.126E-06
68	1.708E-02	9.564E-03	5.018E-03	2.253E-03	6.595E-04	1.706E-04	2.341E-05	2.034E-06
69	1.808E-02	8.757E-03	4.719E-03	2.168E-03	6.142E-04	1.602E-04	2.554E-05	0.000E+00
70	1.745E-02	9.225E-03	4.641E-03	1.968E-03	6.095E-04	1.543E-04	1.443E-05	1.906E-06
71	1.622E-02	8.204E-03	4.310E-03	1.926E-03	5.743E-04	1.579E-04	1.087E-05	0.000E+00
72	1.594E-02	7.830E-03	4.290E-03	1.731E-03	4.775E-04	1.128E-04	2.046E-05	1.879E-06
73	1.535E-02	7.796E-03	4.039E-03	1.750E-03	4.750E-04	1.091E-04	1.728E-05	9.593E-07
74	1.458E-02	7.151E-03	3.569E-03	1.540E-03	4.035E-04	8.342E-05	1.231E-05	9.150E-07
75	1.440E-02	6.703E-03	3.271E-03	1.580E-03	4.311E-04	6.942E-05	1.340E-05	0.000E+00
76	1.355E-02	6.398E-03	3.104E-03	1.277E-03	3.465E-04	8.412E-05	1.040E-05	0.000E+00
77	1.278E-02	5.945E-03	2.993E-03	1.182E-03	2.861E-04	7.376E-05	9.996E-06	8.229E-07

78	1.228E-02	5.679E-03	2.780E-03	1.142E-03	2.734E-04	6.533E-05	9.980E-06	0.000E+00
79	1.165E-02	5.377E-03	2.612E-03	9.801E-04	2.934E-04	6.637E-05	9.563E-06	0.000E+00
80	1.047E-02	4.948E-03	2.369E-03	9.868E-04	2.494E-04	6.476E-05	5.579E-06	7.686E-07
81	1.054E-02	4.841E-03	2.220E-03	8.797E-04	1.780E-04	4.089E-05	4.403E-06	8.079E-07
82	9.520E-03	4.540E-03	2.075E-03	9.078E-04	1.745E-04	3.158E-05	3.680E-06	0.000E+00
83	9.066E-03	4.044E-03	1.849E-03	7.848E-04	2.063E-04	3.649E-05	3.558E-06	0.000E+00
84	8.570E-03	3.737E-03	1.657E-03	7.081E-04	1.651E-04	3.060E-05	3.469E-06	7.543E-07
85	8.163E-03	3.523E-03	1.634E-03	6.444E-04	1.552E-04	3.769E-05	4.529E-06	0.000E+00
86	7.922E-03	3.514E-03	1.580E-03	5.713E-04	1.526E-04	2.238E-05	2.132E-06	0.000E+00
87	7.512E-03	3.144E-03	1.426E-03	4.794E-04	1.244E-04	1.786E-05	5.072E-06	0.000E+00
88	6.801E-03	3.036E-03	1.386E-03	5.541E-04	9.255E-05	1.387E-05	2.284E-06	0.000E+00
89	6.486E-03	2.944E-03	1.240E-03	4.282E-04	1.130E-04	1.866E-05	3.876E-06	0.000E+00
90	6.226E-03	2.383E-03	1.150E-03	4.106E-04	8.088E-05	2.050E-05	5.286E-07	0.000E+00
91	5.886E-03	2.518E-03	1.244E-03	4.115E-04	8.274E-05	1.807E-05	2.119E-06	0.000E+00
92	5.660E-03	2.249E-03	9.884E-04	3.546E-04	8.522E-05	1.306E-05	2.134E-06	6.441E-07
93	5.164E-03	2.257E-03	9.891E-04	3.508E-04	7.329E-05	2.023E-05	1.028E-06	0.000E+00
94	4.722E-03	1.988E-03	8.584E-04	3.524E-04	7.102E-05	1.506E-05	2.665E-06	0.000E+00
95	4.351E-03	1.747E-03	7.791E-04	2.972E-04	5.206E-05	1.144E-05	0.000E+00	0.000E+00
96	3.595E-03	1.570E-03	7.029E-04	2.527E-04	5.953E-05	8.908E-06	1.977E-06	0.000E+00
97	3.491E-03	1.376E-03	5.739E-04	2.243E-04	5.554E-05	1.017E-05	0.000E+00	6.082E-07
98	3.225E-03	1.259E-03	6.102E-04	1.862E-04	3.805E-05	9.836E-06	5.009E-07	0.000E+00
99	2.975E-03	1.165E-03	4.510E-04	1.950E-04	4.204E-05	9.761E-06	0.000E+00	0.000E+00
100	2.787E-03	1.108E-03	4.982E-04	1.646E-04	3.247E-05	8.406E-06	9.880E-07	5.858E-07
101	2.715E-03	9.505E-04	4.209E-04	1.405E-04	3.484E-05	8.569E-06	4.776E-07	6.151E-07
102	2.557E-03	1.013E-03	4.296E-04	1.416E-04	3.584E-05	7.026E-06	0.000E+00	0.000E+00
103	2.319E-03	1.024E-03	3.830E-04	1.586E-04	3.192E-05	9.525E-06	9.166E-07	0.000E+00
104	2.320E-03	8.437E-04	4.451E-04	1.134E-04	2.853E-05	4.173E-06	1.889E-06	0.000E+00
105	2.021E-03	8.422E-04	3.677E-04	1.015E-04	2.284E-05	6.229E-06	1.858E-06	0.000E+00
106	1.699E-03	6.794E-04	2.857E-04	1.038E-04	2.459E-05	4.137E-06	9.005E-07	0.000E+00
107	1.550E-03	5.820E-04	2.210E-04	1.048E-04	2.418E-05	7.136E-06	0.000E+00	5.889E-07
108	1.309E-03	5.220E-04	2.359E-04	7.359E-05	1.313E-05	5.010E-06	0.000E+00	5.824E-07
109	1.250E-03	4.737E-04	1.557E-04	7.808E-05	2.290E-05	2.981E-06	0.000E+00	0.000E+00
110	1.159E-03	4.973E-04	1.816E-04	8.914E-05	1.825E-05	1.989E-06	9.188E-07	0.000E+00
111	1.099E-03	4.437E-04	2.011E-04	6.868E-05	1.530E-05	1.996E-06	4.628E-07	5.748E-07
112	1.028E-03	4.426E-04	1.551E-04	4.555E-05	9.699E-06	1.991E-06	4.323E-07	5.396E-07
113	9.607E-04	3.805E-04	1.751E-04	5.359E-05	1.205E-05	4.046E-06	4.582E-07	0.000E+00
114	9.882E-04	3.504E-04	1.619E-04	5.352E-05	1.294E-05	0.000E+00	4.594E-07	5.375E-07
115	9.084E-04	3.748E-04	1.638E-04	6.748E-05	1.076E-05	1.981E-06	4.294E-07	0.000E+00
116	1.036E-03	3.324E-04	1.026E-04	6.909E-05	1.082E-05	1.921E-06	8.596E-07	0.000E+00
117	9.360E-04	3.463E-04	1.952E-04	6.417E-05	1.065E-05	2.006E-06	0.000E+00	0.000E+00

118 8.051E-04 3.306E-04 1.262E-04 4.025E-05 8.997E-06 1.781E-06 8.207E-07 0.000E+00

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
3	0.000E+00	0.000E+00	8.029E-06	1.197E-05	1.504E-05	1.431E-05	3.471E-06	3.372E-06
4	2.332E-04	3.345E-04	2.643E-04	2.013E-04	1.054E-04	3.039E-05	2.054E-05	2.479E-06
5	5.254E-04	3.729E-04	2.853E-04	2.025E-04	1.028E-04	2.956E-05	1.628E-05	1.834E-06
6	5.162E-04	3.905E-04	2.404E-04	1.929E-04	9.042E-05	3.797E-05	1.056E-05	1.601E-06
7	1.103E-03	6.502E-04	3.514E-04	2.120E-04	5.995E-05	3.680E-05	7.788E-06	0.000E+00
8	1.584E-03	7.551E-04	3.588E-04	2.450E-04	8.385E-05	2.526E-05	1.205E-05	8.543E-07
9	2.349E-03	8.839E-04	4.010E-04	1.678E-04	8.963E-05	3.077E-05	4.172E-06	1.537E-06
10	2.873E-03	7.726E-04	4.027E-04	1.660E-04	5.452E-05	3.128E-05	5.353E-06	0.000E+00
11	2.369E-03	8.016E-04	3.196E-04	1.254E-04	7.519E-05	1.388E-05	7.356E-06	0.000E+00
12	2.601E-03	8.279E-04	4.137E-04	1.110E-04	1.122E-05	4.644E-06	4.784E-06	0.000E+00
13	2.720E-03	6.941E-04	4.041E-04	1.355E-04	5.098E-05	2.285E-05	3.823E-06	0.000E+00
14	3.250E-03	9.908E-04	3.302E-04	1.895E-04	5.442E-05	1.438E-05	0.000E+00	0.000E+00
15	3.665E-03	1.423E-03	1.179E-04	9.994E-05	4.778E-05	1.795E-05	3.304E-06	0.000E+00
16	3.819E-03	1.259E-03	3.313E-04	1.553E-04	7.288E-05	0.000E+00	0.000E+00	0.000E+00
17	4.519E-03	1.078E-03	1.869E-04	1.295E-04	5.990E-05	8.586E-06	0.000E+00	0.000E+00
18	4.421E-03	1.202E-03	3.289E-04	2.102E-04	4.774E-05	9.643E-06	0.000E+00	0.000E+00
19	5.774E-03	1.630E-03	4.919E-04	1.445E-04	3.031E-05	1.630E-05	0.000E+00	0.000E+00
20	5.056E-03	1.174E-03	9.021E-05	5.192E-05	2.921E-05	0.000E+00	0.000E+00	0.000E+00
21	3.819E-03	6.007E-04	9.396E-05	9.642E-05	1.977E-05	0.000E+00	0.000E+00	0.000E+00
22	3.656E-03	6.200E-04	4.674E-05	3.008E-05	2.059E-05	7.793E-06	3.984E-06	0.000E+00
23	4.135E-03	3.079E-04	2.119E-04	3.834E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
24	2.981E-03	3.456E-04	2.590E-04	9.707E-05	1.325E-05	1.063E-05	0.000E+00	0.000E+00
25	7.596E-03	6.802E-04	1.966E-04	3.016E-05	4.516E-05	2.208E-05	0.000E+00	0.000E+00
26	1.127E-02	7.006E-03	1.700E-03	2.101E-04	1.945E-05	0.000E+00	0.000E+00	0.000E+00
27	8.241E-03	5.841E-04	3.987E-03	1.810E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00
28	5.439E-03	2.901E-03	0.000E+00	1.527E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00
29	1.760E-02	2.220E-03	2.840E-04	3.730E-04	1.191E-04	0.000E+00	0.000E+00	0.000E+00
30	3.059E-02	3.735E-03	0.000E+00	4.762E-04	8.771E-05	0.000E+00	0.000E+00	0.000E+00
31	2.407E-02	2.601E-03	3.205E-04	2.982E-04	2.024E-04	0.000E+00	0.000E+00	0.000E+00
32	2.885E-02	2.961E-02	1.813E-03	1.744E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00
33	2.892E-02	1.018E-02	1.104E-03	5.322E-04	0.000E+00	2.063E-04	0.000E+00	0.000E+00
34	7.886E-03	1.022E-02	1.331E-03	1.569E-04	1.056E-04	0.000E+00	0.000E+00	0.000E+00

35	1.078E-01	4.628E-02	2.623E-02	6.258E-03	1.081E-03	5.495E-04	1.252E-04	0.000E+00
36	3.212E-02	6.367E-03	2.450E-02	1.098E-02	1.219E-03	4.908E-04	4.930E-05	0.000E+00
37	3.528E-02	3.561E-03	1.069E-02	6.006E-04	5.932E-04	6.834E-05	3.039E-05	0.000E+00
38	9.021E-02	1.431E-02	3.880E-03	3.847E-03	1.856E-04	0.000E+00	3.937E-05	0.000E+00
39	1.111E-02	1.301E-02	9.344E-04	6.095E-04	2.786E-04	0.000E+00	4.077E-05	0.000E+00
40	1.215E-02	5.587E-04	6.332E-04	2.341E-04	7.395E-05	1.661E-05	3.595E-06	0.000E+00
41	1.035E-02	5.111E-04	3.534E-04	2.203E-04	6.476E-05	2.079E-05	0.000E+00	0.000E+00
42	7.967E-04	3.861E-04	1.615E-04	1.602E-04	4.242E-05	0.000E+00	0.000E+00	0.000E+00
43	1.230E-03	3.367E-04	1.308E-04	9.433E-05	4.491E-05	4.674E-06	0.000E+00	0.000E+00
44	2.611E-03	2.575E-04	1.790E-04	1.371E-04	2.156E-05	0.000E+00	0.000E+00	0.000E+00
45	2.996E-03	3.745E-04	2.235E-04	5.661E-05	1.069E-05	0.000E+00	0.000E+00	0.000E+00
46	7.951E-04	7.950E-04	1.776E-04	9.501E-05	2.658E-05	0.000E+00	0.000E+00	0.000E+00
47	7.289E-04	2.456E-04	1.419E-04	5.616E-05	2.721E-06	0.000E+00	0.000E+00	0.000E+00
48	6.237E-04	2.125E-04	1.848E-04	5.113E-05	1.039E-05	0.000E+00	0.000E+00	0.000E+00
49	4.292E-04	2.193E-04	8.796E-05	3.181E-05	1.229E-05	0.000E+00	0.000E+00	0.000E+00
50	6.251E-04	2.534E-04	1.386E-04	2.698E-05	8.612E-06	0.000E+00	0.000E+00	0.000E+00
51	6.548E-04	2.874E-04	1.280E-04	3.811E-05	1.312E-05	1.567E-06	0.000E+00	0.000E+00
52	6.022E-04	2.517E-04	9.631E-05	5.134E-05	8.258E-06	0.000E+00	0.000E+00	0.000E+00
53	6.092E-04	1.909E-04	7.820E-05	2.433E-05	1.436E-05	0.000E+00	0.000E+00	0.000E+00
54	5.700E-04	2.436E-04	1.276E-04	2.567E-05	3.271E-06	1.400E-06	0.000E+00	0.000E+00
55	5.193E-04	1.483E-04	4.528E-05	1.961E-05	6.397E-06	0.000E+00	0.000E+00	0.000E+00
56	5.294E-04	1.943E-04	9.883E-05	2.676E-05	5.441E-06	0.000E+00	0.000E+00	0.000E+00
57	4.982E-04	1.940E-04	7.002E-05	2.403E-05	1.357E-06	0.000E+00	0.000E+00	0.000E+00
58	5.358E-04	2.289E-04	7.314E-05	2.951E-05	2.621E-06	0.000E+00	0.000E+00	0.000E+00
59	4.806E-04	1.698E-04	5.941E-05	1.688E-05	2.589E-06	0.000E+00	0.000E+00	0.000E+00
60	5.071E-04	1.754E-04	7.456E-05	1.624E-05	2.316E-06	1.063E-06	0.000E+00	0.000E+00
61	5.497E-04	1.694E-04	4.806E-05	1.585E-05	2.335E-06	0.000E+00	0.000E+00	0.000E+00
62	4.349E-04	1.068E-04	2.155E-05	1.748E-05	2.220E-06	0.000E+00	0.000E+00	0.000E+00
63	4.010E-04	1.095E-04	6.277E-05	1.542E-05	4.398E-06	0.000E+00	0.000E+00	0.000E+00
64	3.962E-04	1.223E-04	4.330E-05	1.011E-05	1.162E-06	0.000E+00	0.000E+00	0.000E+00
65	4.105E-04	1.287E-04	2.944E-05	1.542E-05	3.590E-06	0.000E+00	0.000E+00	0.000E+00
66	4.143E-04	9.235E-05	4.088E-05	3.434E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
67	4.336E-04	1.546E-04	1.917E-05	1.476E-05	1.279E-06	0.000E+00	0.000E+00	0.000E+00
68	4.344E-04	9.978E-05	5.423E-05	5.064E-06	1.125E-06	0.000E+00	0.000E+00	0.000E+00
69	3.859E-04	8.282E-05	1.636E-05	1.254E-05	1.077E-06	0.000E+00	0.000E+00	0.000E+00
70	3.274E-04	7.345E-05	4.596E-05	6.211E-06	2.081E-06	0.000E+00	0.000E+00	0.000E+00
71	3.058E-04	8.639E-05	2.426E-05	5.889E-06	1.009E-06	0.000E+00	0.000E+00	0.000E+00
72	2.933E-04	8.161E-05	1.881E-05	2.976E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
73	2.715E-04	4.932E-05	3.090E-05	5.751E-06	9.743E-07	0.000E+00	0.000E+00	0.000E+00
74	2.146E-04	6.538E-05	2.120E-05	2.926E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00

75	2.031E-04	1.012E-04	1.141E-05	4.217E-06	0.000E+00	8.257E-07	0.000E+00	0.000E+00
76	2.272E-04	3.940E-05	1.418E-05	8.114E-06	9.429E-07	0.000E+00	0.000E+00	0.000E+00
77	2.262E-04	5.372E-05	1.156E-05	3.975E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
78	1.586E-04	4.408E-05	5.266E-06	3.936E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
79	1.796E-04	4.776E-05	1.615E-05	2.574E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
80	1.383E-04	2.980E-05	1.342E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
81	1.864E-04	3.752E-05	7.641E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
82	1.356E-04	1.803E-05	7.835E-06	1.179E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
83	1.354E-04	2.440E-05	1.475E-05	1.168E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
84	1.105E-04	3.157E-05	2.521E-06	2.316E-06	7.900E-07	0.000E+00	0.000E+00	0.000E+00
85	9.610E-05	1.574E-05	4.817E-06	2.291E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
86	1.067E-04	1.173E-05	0.000E+00	3.354E-06	0.000E+00	7.012E-07	0.000E+00	0.000E+00
87	1.080E-04	2.431E-05	4.168E-06	1.006E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
88	7.854E-05	9.295E-06	4.473E-06	4.388E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
89	6.940E-05	1.095E-05	6.934E-06	2.253E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
90	8.811E-05	8.964E-06	6.659E-06	1.111E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
91	5.322E-05	1.266E-05	2.140E-06	0.000E+00	0.000E+00	6.241E-07	0.000E+00	0.000E+00
92	5.452E-05	1.980E-05	2.112E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
93	4.859E-05	1.546E-05	2.085E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
94	6.743E-05	1.746E-05	2.078E-06	3.059E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
95	4.383E-05	1.028E-05	2.192E-06	9.957E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
96	3.514E-05	4.982E-06	2.151E-06	1.026E-06	0.000E+00	0.000E+00	2.812E-07	0.000E+00
97	3.999E-05	4.951E-06	1.960E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
98	3.068E-05	4.891E-06	2.054E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
99	3.531E-05	9.405E-06	0.000E+00	1.894E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
100	2.099E-05	6.262E-06	1.889E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
101	2.773E-05	3.056E-06	1.890E-06	9.579E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
102	2.798E-05	8.176E-06	1.990E-06	1.852E-06	6.472E-07	0.000E+00	0.000E+00	0.000E+00
103	2.079E-05	1.041E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
104	2.938E-05	9.126E-06	0.000E+00	9.400E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
105	3.577E-05	6.096E-06	1.973E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
106	1.546E-05	0.000E+00	1.959E-06	9.350E-07	6.188E-07	0.000E+00	0.000E+00	0.000E+00
107	1.033E-05	4.490E-06	0.000E+00	1.840E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
108	1.496E-05	1.461E-06	1.879E-06	8.629E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
109	9.724E-06	4.479E-06	0.000E+00	8.507E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
110	1.293E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
111	1.127E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
112	1.481E-05	1.514E-06	1.874E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
113	1.618E-05	4.419E-06	1.754E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
114	6.551E-06	2.920E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.404E-07	0.000E+00

115	8.023E-06	5.734E-06	0.000E+00	8.850E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
116	1.286E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
117	7.878E-06	2.986E-06	3.679E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
118	7.874E-06	2.894E-06	0.000E+00	8.814E-07	0.000E+00	0.000E+00	2.384E-07	0.000E+00
119	1.040E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	0	0	0	0	0	0	0
0	0	0	1	4	4	16	5
9	8	20	59	86	80	66	25
53	82	52	128	143	94	80	25
124	143	113	193	190	120	114	19
362	359	267	406	314	186	142	25
608	594	381	612	500	254	132	13
1055	975	653	960	698	358	143	16
1129	1034	699	997	800	339	139	11
1163	1105	723	1150	870	313	118	10
1048	1036	677	1101	732	274	83	8
1201	1277	805	1194	855	309	110	5
1179	1215	773	1337	842	312	90	6
1039	1070	720	1137	756	252	74	3
859	1036	593	1199	713	271	76	1
971	1054	661	1453	871	331	77	2
886	986	628	1257	755	257	59	3
908	1081	604	1494	851	284	70	1
906	1047	649	1373	810	238	65	1
948	1144	668	1263	708	223	56	4
850	1118	632	943	561	201	47	1
772	938	536	847	455	132	45	3
844	958	572	895	478	183	43	2
737	945	587	850	503	165	59	2
666	875	517	719	411	170	48	2
509	774	487	673	375	174	60	1
613	780	465	657	360	141	54	3
439	584	366	469	299	126	53	2
283	390	224	361	230	102	55	3
311	406	242	350	188	100	41	5
259	357	251	326	217	114	43	5
263	353	240	336	215	107	46	4

274	380	240	326	205	121	59	3
143	181	128	183	166	89	81	6
183	297	193	319	263	160	149	20
243	336	210	323	231	150	81	5
187	275	176	283	210	123	83	13
184	585	345	609	352	171	95	8
117	693	372	814	507	239	103	9
113	689	370	838	519	254	130	16
190	975	439	911	463	196	109	11
190	988	468	880	427	199	81	10
312	1173	531	848	389	141	70	7
224	1164	509	910	467	175	74	2
627	1502	629	797	433	144	71	7
1447	1458	687	723	407	112	62	15
1804	1474	674	752	412	144	69	5
2282	1397	610	629	343	159	77	8
2275	1744	823	862	430	193	92	11
2413	1665	794	936	541	190	110	12
2463	1744	797	909	502	172	98	8
2695	1760	870	850	512	182	95	11
2530	1751	812	932	524	200	96	11
2662	1793	874	947	559	208	105	4
2626	1836	849	960	508	181	92	5
2699	1768	846	890	457	176	78	8
2769	1956	911	1015	519	169	74	10
2746	1741	960	944	543	190	80	6
2756	1818	792	925	508	166	86	6
2819	1804	904	910	460	163	66	0
2986	1897	858	870	436	157	60	3
3110	1938	897	850	422	160	47	5
3199	1953	827	830	405	126	57	4
3278	2040	863	873	394	127	45	2
3255	2106	946	858	359	110	38	3
3424	2056	892	860	363	101	38	3
3349	2011	903	811	332	108	20	1
3029	1941	818	762	335	94	29	2
3230	1790	774	741	314	89	32	0
3321	2007	812	715	331	91	19	2
3019	1747	738	686	306	92	14	0
3043	1709	756	634	261	67	27	2

2987	1736	723	649	264	66	23	1
2927	1645	659	591	232	52	17	1
2933	1561	612	614	250	44	19	0
2839	1534	597	510	208	55	15	0
2733	1455	589	482	175	49	15	1
2660	1409	554	472	169	44	15	0
2596	1370	536	416	187	46	15	0
2383	1288	496	429	162	46	9	1
2432	1277	470	386	117	29	7	1
2246	1224	450	408	117	23	6	0
2182	1111	410	360	142	27	6	0
2087	1043	371	329	115	23	6	1
2026	1003	374	306	110	29	8	0
2148	1089	394	295	118	19	4	0
1919	918	335	234	90	14	9	0
1739	888	326	269	68	11	4	0
1693	880	297	213	84	15	7	0
1650	722	280	208	61	17	1	0
1575	769	305	210	63	15	4	0
1533	696	246	184	65	11	4	1
1405	703	247	182	57	17	2	0
1303	628	218	186	56	13	5	0
1222	561	201	159	42	10	0	0
1040	520	186	140	49	8	4	0
1012	455	153	124	46	9	0	1
956	426	166	105	32	9	1	0
886	397	124	110	36	9	0	0
837	380	137	95	28	8	2	1
815	326	116	80	30	8	1	1
828	376	128	87	33	7	0	0
710	358	108	93	28	9	2	0
709	295	125	66	25	4	4	0
623	296	104	60	20	6	4	0
531	243	82	62	22	4	2	0
489	210	64	63	22	7	0	1
419	191	69	45	12	5	0	1
402	175	46	48	21	3	0	0
375	184	54	55	17	2	2	0
355	164	60	42	14	2	1	1
333	164	46	28	9	2	1	1

311	141	52	33	11	4	1	0
320	130	48	33	12	0	1	1
296	139	49	42	10	2	1	0
336	124	31	43	10	2	2	0
306	129	59	40	10	2	0	0
284	133	41	27	9	2	2	0

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	2	6	12	13	8	7
48	72	46	73	58	19	28	3
113	89	54	82	64	20	25	2
120	100	50	84	59	27	17	2
246	160	70	89	38	25	12	0
279	152	57	80	45	15	15	1
276	119	45	39	31	13	4	1
286	88	38	33	17	11	4	0
209	77	25	24	19	4	5	0
122	51	21	13	2	1	2	0
160	47	22	18	10	5	2	0
160	57	17	21	10	3	0	0
121	56	4	9	7	3	1	0
81	32	8	11	8	0	0	0
92	26	4	10	7	1	0	0
70	26	6	11	5	1	0	0
85	27	7	5	3	2	0	0
60	18	1	4	3	0	0	0
56	14	2	7	2	0	0	0
56	19	1	2	2	1	1	0
33	5	4	2	0	0	0	0
34	8	2	5	1	1	0	0
34	11	3	1	2	1	0	0
30	9	4	5	1	0	0	0
21	6	6	3	0	0	0	0
17	9	0	3	0	0	0	0
16	14	2	5	2	0	0	0

20	14	0	3	1	0	0	0
23	10	1	2	2	0	0	0
22	15	5	1	0	0	0	0
29	9	3	3	0	2	0	0
19	10	4	1	1	0	0	0
36	24	10	9	4	1	1	0
31	19	17	23	7	1	1	0
29	14	6	5	5	1	1	0
33	17	9	17	1	0	1	0
11	16	7	9	5	0	1	0
3	11	10	14	7	2	1	0
5	11	6	16	7	3	0	0
4	12	5	17	7	0	0	0
7	13	4	11	8	1	0	0
5	13	7	18	4	0	0	0
8	16	8	7	2	0	0	0
15	30	11	16	6	0	0	0
48	29	14	12	1	0	0	0
56	30	18	13	4	0	0	0
78	47	15	11	7	0	0	0
107	53	22	10	5	0	0	0
110	54	20	13	7	1	0	0
124	60	19	21	5	0	0	0
146	51	17	11	10	0	0	0
124	60	26	11	2	1	0	0
140	45	11	10	5	0	0	0
135	56	23	13	4	0	0	0
133	58	17	12	1	0	0	0
144	69	18	15	2	0	0	0
137	54	15	9	2	0	0	0
151	58	20	9	2	1	0	0
168	58	13	9	2	0	0	0
136	37	6	10	2	0	0	0
127	38	18	9	4	0	0	0
121	42	12	6	1	0	0	0
125	44	8	9	3	0	0	0
124	31	11	2	0	0	0	0
125	50	5	8	1	0	0	0
134	34	15	3	1	0	0	0
131	31	5	8	1	0	0	0

112	28	14	4	2	0	0	0
111	35	8	4	1	0	0	0
104	32	6	2	0	0	0	0
99	20	10	4	1	0	0	0
79	27	7	2	0	0	0	0
78	43	4	3	0	1	0	0
89	17	5	6	1	0	0	0
91	24	4	3	0	0	0	0
65	20	2	3	0	0	0	0
74	22	6	2	0	0	0	0
59	14	5	0	0	0	0	0
81	18	3	0	0	0	0	0
60	9	3	1	0	0	0	0
61	12	6	1	0	0	0	0
51	16	1	2	1	0	0	0
45	8	2	2	0	0	0	0
51	6	0	3	0	1	0	0
56	14	2	1	0	0	0	0
38	5	2	4	0	0	0	0
34	6	3	2	0	0	0	0
44	5	3	1	0	0	0	0
27	7	1	0	0	1	0	0
28	11	1	0	0	0	0	0
25	9	1	0	0	0	0	0
35	10	1	3	0	0	0	0
23	6	1	1	0	0	0	0
19	3	1	1	0	0	1	0
22	3	1	0	0	0	0	0
17	3	1	0	0	0	0	0
20	6	0	2	0	0	0	0
12	4	1	0	0	0	0	0
16	2	1	1	0	0	0	0
16	5	1	2	1	0	0	0
13	7	0	0	0	0	0	0
17	6	0	1	0	0	0	0
21	4	1	0	0	0	0	0
9	0	1	1	1	0	0	0
6	3	0	2	0	0	0	0
9	1	1	1	0	0	0	0
6	3	0	1	0	0	0	0

8	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0
9	1	1	0	0	0	0	0
10	3	1	0	0	0	0	0
4	2	0	0	0	0	1	0
5	4	0	1	0	0	0	0
8	0	0	0	0	0	0	0
5	2	2	0	0	0	0	0
5	2	0	1	0	0	1	0
7	0	0	0	0	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = -7.56e+005 \quad (-8.632e+015, 8.632e+015)$$

$$b = -0.09333 \quad (-5097, 5097)$$

$$c = 7.56e+005 \quad (-8.632e+015, 8.632e+015)$$

$$d = -0.09334 \quad (-5097, 5097)$$

goftotal =

$$sse: 0.7001$$

$$rsquare: 0.9934$$

$$dfe: 4$$

$$adjrsquare: 0.9884$$

$$rmse: 0.4184$$

ctotal =

General model Exp1:

$$ctotal(x) = a \cdot \exp(b \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 30.73 \quad (19.15, 42.31)$$

$$b = -0.1294 \quad (-0.1478, -0.111)$$

goftotal =

$$sse: 7.3772e-003$$

$$rsquare: 9.9845e-001$$

dfe: 3
 adjrsquare: 9.9793e-001
 rmse: 4.9589e-002

curve fit iron:
 cttotal =

General model Exp2:
 $cttotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$
 Coefficients (with 95% confidence bounds):
 a = 4.819e+011 (-5.082e+016, 5.082e+016)
 b = -2.178 (-7932, 7928)
 c = 1.967 (1.422, 2.512)
 d = -0.1302 (-0.1407, -0.1196)

gofttotal =

sse: 2.9266e-006
 rsquare: 1.0000
 dfe: 4
 adjrsquare: 1.0000
 rmse: 8.5536e-004

cttotal =

General model Exp1:
 $cttotal(x) = a \cdot \exp(b \cdot x)$
 Coefficients (with 95% confidence bounds):
 a = 0.1723 (0.1126, 0.2321)
 b = -0.1087 (-0.119, -0.09829)

gofttotal =

sse: 8.8605e-009
 rsquare: 9.9953e-001
 dfe: 3
 adjrsquare: 9.9937e-001
 rmse: 5.4346e-005

Event 49	Date	Time*	Location*	Summing interval*				
	22-Nov-01	2330	S15W34	Nov 22 2300 to Nov 29 2200				
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	1.527E-05	1.877E-05	3.439E-06	7.909E-06	6.395E-06	2.994E-06	1.316E-06	1.073E-06
2	2.148E-05	3.829E-05	6.666E-06	1.316E-05	1.625E-05	8.949E-06	4.507E-06	1.097E-06
3	6.792E-04	5.210E-04	4.515E-04	2.222E-04	1.081E-04	2.784E-05	3.429E-06	1.271E-06
4	5.645E-03	3.607E-03	2.566E-03	1.182E-03	4.134E-04	9.712E-05	1.216E-05	0.000E+00
5	1.390E-02	8.243E-03	5.297E-03	2.413E-03	6.437E-04	9.737E-05	9.469E-06	1.306E-06
6	3.328E-02	2.050E-02	1.123E-02	5.217E-03	1.198E-03	2.237E-04	1.765E-05	1.408E-06
7	5.743E-02	3.195E-02	1.719E-02	7.426E-03	1.807E-03	3.468E-04	1.753E-05	0.000E+00
8	9.089E-02	5.031E-02	2.838E-02	1.171E-02	2.953E-03	5.694E-04	3.196E-05	0.000E+00
9	1.311E-01	7.180E-02	3.253E-02	1.445E-02	3.042E-03	5.677E-04	5.351E-05	6.624E-06
10	1.741E-01	1.044E-01	5.130E-02	2.005E-02	4.494E-03	8.870E-04	5.004E-05	8.279E-06
11	2.168E-01	1.227E-01	5.759E-02	2.497E-02	5.759E-03	8.741E-04	6.873E-06	8.586E-06
12	2.381E-01	1.344E-01	6.413E-02	2.744E-02	5.790E-03	9.027E-04	8.343E-06	0.000E+00
13	3.105E-01	1.736E-01	7.183E-02	2.780E-02	6.119E-03	8.458E-04	5.277E-05	0.000E+00
14	3.366E-01	1.770E-01	9.220E-02	2.748E-02	5.789E-03	6.077E-04	3.936E-05	0.000E+00
15	3.134E-01	1.647E-01	7.675E-02	2.550E-02	4.994E-03	6.593E-04	3.475E-05	1.294E-05
16	3.617E-01	1.997E-01	6.272E-02	2.503E-02	4.609E-03	6.658E-04	9.805E-05	1.241E-05
17	3.466E-01	1.559E-01	5.924E-02	1.953E-02	3.491E-03	6.680E-04	5.359E-05	1.381E-05
18	2.849E-01	1.372E-01	5.976E-02	1.859E-02	2.996E-03	6.168E-04	1.032E-04	0.000E+00
19	3.186E-01	1.209E-01	5.286E-02	1.749E-02	4.341E-03	5.870E-04	8.601E-05	0.000E+00
20	2.821E-01	1.298E-01	4.333E-02	1.771E-02	2.974E-03	7.415E-04	8.163E-05	1.194E-05
21	2.897E-01	1.171E-01	4.525E-02	1.811E-02	3.600E-03	6.325E-04	1.134E-04	0.000E+00
22	2.783E-01	1.125E-01	4.687E-02	1.402E-02	3.620E-03	8.028E-04	1.011E-04	0.000E+00
23	2.409E-01	1.076E-01	3.778E-02	1.503E-02	3.779E-03	1.156E-03	1.308E-04	4.676E-05
24	2.414E-01	8.760E-02	3.229E-02	1.337E-02	4.266E-03	1.207E-03	2.272E-04	3.789E-05
25	2.532E-01	1.087E-01	4.018E-02	1.710E-02	4.371E-03	1.524E-03	3.363E-04	4.315E-05
26	2.650E-01	1.377E-01	4.561E-02	2.202E-02	6.118E-03	2.024E-03	4.310E-04	4.095E-05
27	2.297E-01	1.421E-01	5.174E-02	2.672E-02	8.577E-03	3.943E-03	4.960E-04	7.550E-05
28	5.083E-01	1.877E-01	7.231E-02	4.599E-02	1.420E-02	3.759E-03	7.110E-04	9.531E-05
29	3.882E-01	2.158E-01	7.259E-02	4.209E-02	1.040E-02	3.231E-03	6.312E-04	0.000E+00
30	6.092E-01	2.735E-01	1.656E-01	3.554E-02	1.046E-02	2.709E-03	4.077E-04	2.826E-05

31	6.601E-01	2.918E-01	8.065E-02	2.827E-02	1.194E-02	2.549E-03	3.473E-04	0.000E+00
32	5.732E-01	1.509E-01	1.292E-01	3.579E-02	9.452E-03	2.795E-03	9.051E-04	0.000E+00
33	3.783E-01	1.897E-01	1.136E-01	3.077E-02	1.172E-02	4.306E-03	5.783E-04	2.492E-05
34	4.620E-01	1.025E-01	1.021E-01	3.829E-02	9.943E-03	2.928E-03	5.961E-04	4.030E-05
35	6.030E-01	3.571E-01	1.045E-01	7.421E-02	1.434E-02	5.125E-03	6.803E-04	8.171E-05
36	2.809E-01	1.551E-01	5.149E-02	2.832E-02	9.830E-03	3.158E-03	3.867E-04	2.726E-05
37	1.275E-01	5.982E-02	6.305E-02	1.925E-02	5.599E-03	1.630E-03	2.015E-04	2.520E-05
38	1.775E-01	7.095E-02	2.776E-02	1.373E-02	3.874E-03	1.017E-03	1.598E-04	1.062E-05
39	1.092E-01	4.928E-02	2.460E-02	1.063E-02	3.284E-03	7.909E-04	1.025E-04	8.644E-06
40	7.722E-02	4.252E-02	2.021E-02	9.148E-03	2.490E-03	7.121E-04	7.500E-05	0.000E+00
41	8.480E-02	3.134E-02	1.655E-02	6.948E-03	1.862E-03	4.859E-04	7.846E-05	7.339E-06
42	6.255E-02	2.743E-02	1.573E-02	6.515E-03	1.775E-03	4.637E-04	7.528E-05	0.000E+00
43	2.588E-02	1.451E-02	8.208E-03	4.093E-03	1.399E-03	4.112E-04	4.243E-05	9.454E-06
44	1.887E-02	1.020E-02	5.744E-03	2.607E-03	8.991E-04	2.469E-04	3.592E-05	2.630E-06
45	2.226E-02	1.152E-02	5.870E-03	2.571E-03	8.447E-04	2.075E-04	4.901E-05	1.261E-06
46	2.238E-02	1.085E-02	5.432E-03	2.299E-03	6.329E-04	1.618E-04	1.919E-05	0.000E+00
47	1.936E-02	9.158E-03	4.359E-03	1.903E-03	5.432E-04	1.530E-04	1.886E-05	1.167E-06
48	1.631E-02	7.469E-03	3.643E-03	1.604E-03	4.630E-04	1.127E-04	1.473E-05	0.000E+00
49	1.332E-02	6.362E-03	2.901E-03	1.150E-03	3.471E-04	8.839E-05	1.038E-05	1.025E-06
50	1.335E-02	6.144E-03	2.830E-03	1.214E-03	3.165E-04	8.004E-05	1.115E-05	0.000E+00
51	1.150E-02	5.123E-03	2.355E-03	9.528E-04	2.540E-04	5.181E-05	5.166E-06	2.801E-06
52	1.226E-02	5.320E-03	2.450E-03	9.438E-04	2.485E-04	5.809E-05	5.395E-06	0.000E+00
53	1.201E-02	4.921E-03	2.301E-03	8.970E-04	1.962E-04	6.543E-05	9.077E-06	0.000E+00
54	1.138E-02	4.599E-03	2.032E-03	7.681E-04	1.792E-04	3.434E-05	6.533E-06	0.000E+00
55	9.578E-03	4.013E-03	1.760E-03	6.110E-04	1.469E-04	3.671E-05	4.052E-06	8.664E-07
56	9.285E-03	3.495E-03	1.681E-03	6.278E-04	1.392E-04	3.180E-05	3.956E-06	0.000E+00
57	8.771E-03	3.420E-03	1.459E-03	4.956E-04	1.232E-04	2.691E-05	4.686E-06	0.000E+00
58	9.386E-03	3.676E-03	1.413E-03	4.967E-04	1.122E-04	1.575E-05	3.695E-06	0.000E+00
59	8.174E-03	2.810E-03	1.067E-03	4.127E-04	8.071E-05	2.247E-05	1.383E-06	8.600E-07
60	8.236E-03	2.936E-03	1.189E-03	3.622E-04	6.267E-05	1.942E-05	3.701E-06	0.000E+00
61	7.059E-03	2.498E-03	9.642E-04	3.210E-04	6.445E-05	6.424E-06	2.821E-06	9.557E-07
62	5.713E-03	2.003E-03	8.995E-04	2.640E-04	4.605E-05	1.186E-05	6.729E-07	8.364E-07
63	4.849E-03	1.570E-03	6.666E-04	2.050E-04	3.802E-05	1.319E-05	5.949E-06	0.000E+00
64	4.631E-03	1.642E-03	5.371E-04	1.857E-04	4.244E-05	5.418E-06	1.180E-06	0.000E+00
65	4.019E-03	1.452E-03	4.954E-04	2.111E-04	3.066E-05	6.755E-06	1.184E-06	7.264E-07
66	3.690E-03	1.202E-03	4.900E-04	1.657E-04	2.679E-05	5.329E-06	1.724E-06	0.000E+00
67	3.519E-03	1.122E-03	4.560E-04	1.602E-04	3.610E-05	7.844E-06	1.167E-06	0.000E+00
68	2.853E-03	9.320E-04	3.426E-04	1.172E-04	1.198E-05	6.087E-06	1.096E-06	0.000E+00
69	2.809E-03	8.710E-04	3.144E-04	1.169E-04	2.284E-05	3.701E-06	1.687E-06	0.000E+00
70	2.621E-03	8.538E-04	3.518E-04	9.923E-05	1.845E-05	5.885E-06	0.000E+00	0.000E+00

71	2.578E-03	8.508E-04	3.750E-04	1.172E-04	2.351E-05	4.722E-06	1.110E-06	0.000E+00
72	2.477E-03	9.319E-04	3.256E-04	1.243E-04	2.188E-05	9.446E-06	1.574E-06	0.000E+00
73	2.581E-03	8.419E-04	3.341E-04	8.830E-05	2.807E-05	9.349E-06	1.029E-06	0.000E+00
74	2.291E-03	7.794E-04	3.214E-04	1.086E-04	2.177E-05	9.354E-06	1.074E-06	0.000E+00
75	2.155E-03	6.472E-04	2.881E-04	9.298E-05	2.237E-05	2.206E-06	0.000E+00	6.156E-07
76	1.693E-03	7.111E-04	2.761E-04	8.750E-05	2.314E-05	0.000E+00	4.912E-07	0.000E+00
77	1.615E-03	5.550E-04	2.438E-04	7.999E-05	1.811E-05	4.498E-06	4.853E-07	0.000E+00
78	1.341E-03	5.424E-04	2.212E-04	6.906E-05	1.403E-05	2.118E-06	1.978E-06	0.000E+00
79	1.549E-03	5.260E-04	1.963E-04	5.248E-05	1.763E-05	9.753E-07	0.000E+00	5.487E-07
80	1.407E-03	5.328E-04	1.676E-04	7.159E-05	1.293E-05	5.419E-06	0.000E+00	0.000E+00
81	1.285E-03	3.929E-04	1.672E-04	5.914E-05	1.154E-05	2.140E-06	0.000E+00	0.000E+00
82	1.319E-03	4.043E-04	1.664E-04	4.314E-05	1.506E-05	3.207E-06	9.528E-07	0.000E+00
83	1.120E-03	4.014E-04	1.677E-04	3.807E-05	1.267E-05	2.047E-06	4.623E-07	6.031E-07
84	1.065E-03	3.813E-04	1.446E-04	3.903E-05	1.364E-05	2.144E-06	0.000E+00	0.000E+00
85	9.727E-04	3.523E-04	1.431E-04	4.573E-05	1.242E-05	1.071E-06	1.889E-06	0.000E+00
86	1.023E-03	3.033E-04	1.398E-04	3.371E-05	1.359E-05	9.993E-07	9.255E-07	5.611E-07
87	9.670E-04	3.147E-04	1.180E-04	3.345E-05	1.011E-05	1.998E-06	0.000E+00	5.711E-07
88	8.535E-04	3.405E-04	1.223E-04	4.216E-05	1.130E-05	4.110E-06	4.503E-07	0.000E+00
89	8.589E-04	2.649E-04	7.693E-05	3.626E-05	4.464E-06	1.000E-06	0.000E+00	0.000E+00
90	8.447E-04	2.828E-04	6.960E-05	3.796E-05	6.731E-06	4.103E-06	0.000E+00	0.000E+00
91	6.864E-04	2.910E-04	1.129E-04	3.462E-05	7.564E-06	2.956E-06	0.000E+00	0.000E+00
92	5.915E-04	2.306E-04	1.032E-04	3.947E-05	8.731E-06	9.807E-07	0.000E+00	0.000E+00
93	7.254E-04	2.442E-04	1.195E-04	2.951E-05	3.317E-06	2.075E-06	0.000E+00	0.000E+00
94	6.219E-04	2.405E-04	8.851E-05	2.779E-05	6.469E-06	1.957E-06	0.000E+00	5.510E-07
95	5.671E-04	2.162E-04	8.175E-05	2.313E-05	7.228E-06	1.925E-06	4.320E-07	0.000E+00
96	6.001E-04	1.829E-04	6.800E-05	3.080E-05	6.464E-06	0.000E+00	4.606E-07	5.779E-07
97	4.763E-04	2.135E-04	9.476E-05	2.446E-05	2.335E-06	2.148E-06	4.672E-07	0.000E+00
98	5.156E-04	1.708E-04	5.488E-05	1.758E-05	3.221E-06	0.000E+00	0.000E+00	0.000E+00
99	4.177E-04	1.683E-04	5.941E-05	1.792E-05	1.111E-06	3.012E-06	0.000E+00	0.000E+00
100	4.813E-04	1.589E-04	3.702E-05	2.426E-05	3.336E-06	0.000E+00	4.346E-07	0.000E+00
101	5.387E-04	1.445E-04	5.720E-05	1.926E-05	4.266E-06	0.000E+00	0.000E+00	5.711E-07
102	5.120E-04	1.422E-04	7.102E-05	2.263E-05	4.238E-06	1.017E-06	0.000E+00	0.000E+00
103	4.822E-04	1.708E-04	4.327E-05	1.460E-05	2.081E-06	9.586E-07	0.000E+00	0.000E+00
104	4.579E-04	1.429E-04	5.330E-05	1.762E-05	5.396E-06	0.000E+00	4.336E-07	0.000E+00
105	4.312E-04	1.685E-04	5.652E-05	1.421E-05	4.294E-06	2.032E-06	0.000E+00	0.000E+00
106	4.136E-04	1.263E-04	6.363E-05	2.241E-05	0.000E+00	0.000E+00	8.849E-07	5.676E-07
107	4.085E-04	1.146E-04	6.665E-05	1.296E-05	5.329E-06	2.984E-06	4.281E-07	0.000E+00
108	3.909E-04	1.173E-04	4.999E-05	1.915E-05	3.225E-06	1.903E-06	0.000E+00	0.000E+00
109	4.041E-04	1.201E-04	4.921E-05	1.769E-05	2.133E-06	9.521E-07	0.000E+00	0.000E+00
110	3.899E-04	1.275E-04	4.917E-05	1.120E-05	1.034E-06	0.000E+00	0.000E+00	0.000E+00

111	3.965E-04	1.587E-04	4.009E-05	2.428E-05	2.949E-06	9.413E-07	0.000E+00	0.000E+00
112	4.386E-04	1.155E-04	3.269E-05	1.266E-05	3.231E-06	9.521E-07	0.000E+00	0.000E+00
113	3.639E-04	1.231E-04	4.968E-05	1.563E-05	5.289E-06	1.954E-06	0.000E+00	0.000E+00
114	4.070E-04	1.268E-04	5.337E-05	9.536E-06	4.306E-06	9.471E-07	0.000E+00	5.625E-07
115	3.574E-04	1.242E-04	4.922E-05	9.525E-06	2.122E-06	0.000E+00	0.000E+00	0.000E+00
116	3.443E-04	7.628E-05	4.588E-05	1.920E-05	4.111E-06	3.009E-06	0.000E+00	0.000E+00
117	3.383E-04	8.220E-05	2.913E-05	1.738E-05	1.028E-06	1.951E-06	0.000E+00	0.000E+00
118	2.949E-04	8.221E-05	2.329E-05	1.113E-05	2.054E-06	9.429E-07	0.000E+00	0.000E+00
119	3.002E-04	1.341E-04	3.889E-05	1.115E-05	1.026E-06	9.464E-07	0.000E+00	0.000E+00
120	3.662E-04	9.771E-05	3.948E-05	6.337E-06	2.110E-06	0.000E+00	0.000E+00	5.281E-07
121	2.656E-04	7.355E-05	4.639E-05	1.271E-05	3.129E-06	0.000E+00	4.472E-07	0.000E+00
122	2.609E-04	8.119E-05	2.609E-05	6.193E-06	4.196E-06	9.936E-07	4.446E-07	0.000E+00
123	1.846E-04	5.485E-05	2.918E-05	6.179E-06	2.029E-06	0.000E+00	0.000E+00	0.000E+00
124	1.731E-04	7.299E-05	9.844E-06	7.874E-06	1.076E-06	0.000E+00	0.000E+00	0.000E+00
125	2.511E-04	5.238E-05	2.916E-05	1.100E-05	2.026E-06	0.000E+00	4.430E-07	0.000E+00
126	2.422E-04	6.285E-05	1.931E-05	4.744E-06	3.041E-06	0.000E+00	0.000E+00	0.000E+00
127	1.658E-04	4.943E-05	1.505E-05	1.308E-05	1.002E-06	0.000E+00	0.000E+00	0.000E+00
128	1.879E-04	8.353E-05	1.930E-05	1.109E-05	1.075E-06	9.329E-07	4.433E-07	0.000E+00
129	1.834E-04	5.515E-05	1.656E-05	4.661E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
130	2.217E-04	5.473E-05	2.935E-05	7.789E-06	2.151E-06	1.925E-06	0.000E+00	5.219E-07
131	1.199E-04	6.766E-05	2.608E-05	0.000E+00	2.082E-06	0.000E+00	0.000E+00	0.000E+00
132	1.718E-04	6.229E-05	9.586E-06	4.711E-06	3.084E-06	9.836E-07	4.410E-07	5.506E-07
133	1.733E-04	5.213E-05	2.253E-05	7.839E-06	3.147E-06	1.915E-06	4.410E-07	5.199E-07
134	2.036E-04	4.109E-05	2.277E-05	1.089E-05	0.000E+00	0.000E+00	4.164E-07	0.000E+00
135	1.549E-04	8.057E-05	1.962E-05	7.842E-06	0.000E+00	9.843E-07	0.000E+00	0.000E+00
136	2.177E-04	3.056E-05	6.650E-06	6.218E-06	2.075E-06	0.000E+00	0.000E+00	0.000E+00
137	1.756E-04	5.743E-05	2.270E-05	9.246E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
138	1.703E-04	6.874E-05	1.507E-05	3.109E-06	2.076E-06	0.000E+00	4.404E-07	0.000E+00
139	1.538E-04	3.640E-05	1.915E-05	1.595E-06	2.129E-06	9.814E-07	0.000E+00	0.000E+00
140	1.148E-04	2.097E-05	6.423E-06	4.689E-06	1.001E-06	0.000E+00	0.000E+00	0.000E+00
141	1.474E-04	3.850E-05	9.725E-06	3.004E-06	0.000E+00	9.236E-07	0.000E+00	1.063E-06
142	9.980E-05	3.881E-05	2.230E-05	6.163E-06	0.000E+00	9.200E-07	0.000E+00	0.000E+00
143	1.012E-04	2.383E-05	5.953E-06	4.265E-06	9.313E-07	0.000E+00	0.000E+00	0.000E+00
144	1.188E-04	1.818E-05	6.375E-06	4.471E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
145	6.672E-05	1.536E-05	6.554E-06	2.974E-06	0.000E+00	0.000E+00	0.000E+00	5.121E-07
146	1.022E-04	1.844E-05	1.544E-05	4.644E-06	1.054E-06	0.000E+00	0.000E+00	5.116E-07
147	6.669E-05	1.768E-05	6.365E-06	3.155E-06	1.055E-06	9.700E-07	0.000E+00	0.000E+00
148	7.891E-05	2.046E-05	1.855E-05	1.580E-06	0.000E+00	0.000E+00	4.346E-07	0.000E+00
149	5.838E-05	2.840E-05	9.651E-06	4.644E-06	0.000E+00	9.721E-07	0.000E+00	0.000E+00
150	7.322E-05	1.008E-05	6.371E-06	7.616E-06	0.000E+00	0.000E+00	0.000E+00	5.123E-07

17	3.241E-03	1.147E-04	5.181E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
18	1.129E-03	1.303E-04	0.000E+00	0.000E+00	1.467E-05	0.000E+00	0.000E+00	0.000E+00
19	1.499E-03	1.751E-04	5.190E-05	2.397E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
20	7.771E-04	4.832E-04	5.289E-05	2.384E-05	1.474E-05	0.000E+00	0.000E+00	0.000E+00
21	1.466E-03	1.788E-04	1.520E-04	0.000E+00	1.342E-05	0.000E+00	0.000E+00	0.000E+00
22	5.812E-04	4.012E-04	1.136E-04	2.649E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
23	4.625E-03	4.480E-04	6.349E-05	1.297E-04	2.704E-05	0.000E+00	0.000E+00	0.000E+00
24	1.340E-03	5.534E-04	1.911E-04	2.844E-04	5.176E-05	0.000E+00	0.000E+00	0.000E+00
25	4.576E-03	8.002E-04	3.915E-04	2.008E-04	9.253E-05	0.000E+00	5.021E-06	0.000E+00
26	5.427E-03	8.002E-03	4.628E-04	3.446E-04	3.439E-05	2.238E-05	0.000E+00	0.000E+00
27	8.968E-03	7.383E-03	4.689E-04	1.459E-04	4.853E-05	2.924E-05	0.000E+00	0.000E+00
28	3.476E-02	8.507E-04	6.164E-04	3.214E-04	3.447E-05	1.646E-05	1.391E-05	8.979E-06
29	1.060E-02	1.191E-03	3.790E-04	4.780E-04	6.809E-05	2.240E-05	0.000E+00	0.000E+00
30	1.906E-02	8.375E-04	8.430E-03	2.541E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00
31	1.940E-02	2.034E-03	2.659E-04	8.060E-05	8.107E-05	0.000E+00	0.000E+00	0.000E+00
32	2.862E-02	1.905E-03	8.736E-04	3.063E-04	1.252E-04	2.981E-05	0.000E+00	0.000E+00
33	6.699E-03	1.814E-03	5.076E-04	4.265E-04	2.631E-05	4.202E-05	0.000E+00	0.000E+00
34	3.707E-03	1.812E-03	8.441E-04	3.283E-04	1.623E-04	0.000E+00	0.000E+00	0.000E+00
35	3.263E-02	3.278E-03	8.070E-04	4.265E-04	2.020E-04	1.509E-05	0.000E+00	0.000E+00
36	1.581E-02	2.755E-03	1.143E-03	4.832E-04	3.586E-05	0.000E+00	0.000E+00	0.000E+00
37	4.555E-03	1.155E-03	3.546E-04	1.566E-04	4.878E-05	0.000E+00	0.000E+00	0.000E+00
38	5.122E-03	8.142E-04	4.181E-04	1.730E-04	5.753E-06	1.440E-05	0.000E+00	0.000E+00
39	1.700E-03	7.065E-04	1.527E-04	9.818E-05	2.016E-05	3.809E-06	0.000E+00	0.000E+00
40	1.490E-03	5.323E-04	2.553E-04	9.660E-05	1.291E-05	0.000E+00	0.000E+00	0.000E+00
41	1.811E-03	6.764E-04	2.962E-04	8.555E-05	3.790E-06	6.981E-06	0.000E+00	0.000E+00
42	3.665E-03	7.484E-04	1.847E-04	6.185E-05	1.236E-05	0.000E+00	0.000E+00	0.000E+00
43	2.112E-03	5.897E-04	1.965E-04	5.978E-05	6.227E-06	1.324E-06	0.000E+00	0.000E+00
44	1.404E-03	3.900E-04	1.460E-04	5.553E-05	5.499E-06	0.000E+00	0.000E+00	0.000E+00
45	1.325E-03	3.702E-04	1.112E-04	4.563E-05	1.005E-05	0.000E+00	0.000E+00	0.000E+00
46	9.961E-04	2.790E-04	1.116E-04	3.655E-05	5.397E-06	0.000E+00	0.000E+00	0.000E+00
47	8.181E-04	2.344E-04	8.344E-05	2.585E-05	3.557E-06	1.119E-06	0.000E+00	0.000E+00
48	6.710E-04	2.169E-04	7.805E-05	2.226E-05	1.176E-06	0.000E+00	0.000E+00	0.000E+00
49	5.512E-04	1.362E-04	6.635E-05	1.221E-05	1.956E-06	0.000E+00	0.000E+00	0.000E+00
50	5.137E-04	1.387E-04	3.513E-05	7.718E-06	1.036E-06	0.000E+00	4.268E-07	0.000E+00
51	4.969E-04	9.289E-05	2.091E-05	1.444E-05	1.891E-06	0.000E+00	0.000E+00	0.000E+00
52	4.029E-04	1.042E-04	2.515E-05	8.943E-06	1.967E-06	0.000E+00	0.000E+00	0.000E+00
53	3.840E-04	8.472E-05	3.246E-05	9.007E-06	1.043E-06	0.000E+00	0.000E+00	0.000E+00
54	3.671E-04	8.885E-05	1.786E-05	5.856E-06	2.724E-06	0.000E+00	0.000E+00	0.000E+00
55	3.270E-04	5.376E-05	5.591E-06	4.010E-06	1.661E-06	0.000E+00	0.000E+00	0.000E+00
56	2.412E-04	6.851E-05	1.394E-05	2.676E-06	9.086E-07	0.000E+00	0.000E+00	0.000E+00

57	2.283E-04	5.344E-05	1.070E-05	7.779E-06	8.943E-07	0.000E+00	0.000E+00	0.000E+00
58	2.170E-04	2.680E-05	1.245E-05	1.379E-06	9.671E-07	0.000E+00	0.000E+00	0.000E+00
59	1.531E-04	2.091E-05	2.727E-06	2.854E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
60	1.448E-04	2.617E-05	1.498E-05	1.376E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
61	1.112E-04	3.083E-05	5.971E-06	0.000E+00	9.471E-07	0.000E+00	0.000E+00	0.000E+00
62	1.071E-04	1.106E-05	8.024E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
63	9.576E-05	2.322E-05	2.453E-06	2.206E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
64	7.281E-05	9.782E-06	5.114E-06	0.000E+00	0.000E+00	0.000E+00	3.077E-07	0.000E+00
65	7.112E-05	1.369E-05	7.484E-06	1.181E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
66	5.919E-05	1.527E-05	4.731E-06	2.277E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
67	4.946E-05	1.296E-05	4.647E-06	0.000E+00	7.536E-07	0.000E+00	0.000E+00	0.000E+00
68	4.173E-05	5.454E-06	0.000E+00	1.029E-06	0.000E+00	6.215E-07	0.000E+00	0.000E+00
69	4.603E-05	8.987E-06	0.000E+00	3.193E-06	7.286E-07	6.251E-07	0.000E+00	0.000E+00
70	3.715E-05	1.063E-05	2.105E-06	1.069E-06	7.207E-07	0.000E+00	0.000E+00	0.000E+00
71	3.530E-05	3.421E-06	0.000E+00	2.091E-06	0.000E+00	0.000E+00	0.000E+00	3.601E-07
72	4.124E-05	7.044E-06	6.341E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.374E-07
73	5.145E-05	5.264E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
74	4.317E-05	1.660E-06	2.051E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
75	3.287E-05	6.814E-06	2.138E-06	1.024E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
76	2.380E-05	5.006E-06	2.093E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
77	2.341E-05	8.396E-06	4.009E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
78	2.688E-05	3.196E-06	1.920E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
79	1.129E-05	9.030E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
80	3.522E-05	6.405E-06	3.903E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
81	2.843E-05	3.150E-06	1.995E-06	0.000E+00	6.066E-07	0.000E+00	0.000E+00	0.000E+00
82	7.009E-06	6.224E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
83	2.053E-05	1.582E-06	0.000E+00	9.507E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
84	1.693E-05	2.971E-06	1.961E-06	8.779E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
85	1.351E-05	4.459E-06	1.859E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
86	1.503E-05	2.940E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
87	1.841E-05	4.500E-06	1.915E-06	0.000E+00	0.000E+00	5.396E-07	0.000E+00	0.000E+00
88	1.148E-05	3.129E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.919E-07
89	8.446E-06	1.455E-06	3.602E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
90	1.161E-05	3.101E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
91	1.480E-05	2.981E-06	5.561E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
92	1.461E-05	4.497E-06	0.000E+00	9.086E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
93	4.957E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
94	4.746E-06	3.032E-06	1.870E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
95	7.573E-06	4.091E-06	0.000E+00	1.628E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
96	4.920E-06	0.000E+00	1.772E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

137	3.106E-06	1.443E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
138	3.009E-06	1.361E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.312E-07	0.000E+00
139	3.092E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
140	3.091E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
141	3.180E-06	1.351E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
142	3.073E-06	0.000E+00	0.000E+00	8.471E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
143	0.000E+00	0.000E+00	1.649E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
144	1.579E-06	1.427E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
145	1.575E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
146	2.971E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
147	1.574E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
148	3.059E-06	0.000E+00	1.657E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
149	2.969E-06	1.342E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
150	1.572E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
151	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
152	3.144E-06	1.340E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
153	1.574E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
154	1.572E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
155	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
156	0.000E+00	1.337E-06	0.000E+00	0.000E+00	0.000E+00	4.811E-07	0.000E+00	0.000E+00
157	1.570E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
158	1.474E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
159	1.379E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
160	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
161	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
162	1.478E-06	0.000E+00	0.000E+00	0.000E+00	5.570E-07	0.000E+00	0.000E+00	0.000E+00
163	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
164	3.043E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
165	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
166	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
167	0.000E+00	1.411E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.264E-07	2.635E-07
168	0.000E+00	1.332E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
169	0.000E+00	1.331E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
5	7	1	5	6	3	3	2
7	14	2	8	15	9	10	2
193	170	119	122	89	25	7	2
1243	912	522	502	262	67	20	0

2251	1535	796	752	297	49	11	1
3234	2296	1029	999	352	71	13	1
2907	1952	852	834	308	64	7	0
2326	1567	713	737	281	59	8	0
2159	1454	555	699	223	46	10	1
1702	1336	549	719	254	54	7	1
1536	1184	486	764	279	48	1	1
1322	1091	451	709	238	42	1	0
1484	1274	573	613	196	35	5	0
1322	1208	513	578	186	23	3	0
1441	1389	578	521	166	28	3	1
1286	1211	482	474	138	26	8	1
1321	1174	475	400	119	26	5	1
1320	1129	471	363	103	25	9	0
1170	1035	404	354	150	23	8	0
1127	1020	385	342	94	31	7	1
987	879	318	354	114	19	10	0
889	862	299	282	115	32	9	0
796	827	289	318	135	50	13	3
657	718	287	291	172	56	25	3
607	816	342	399	181	74	39	4
464	731	334	435	228	90	42	3
370	702	351	461	268	120	42	5
339	779	424	547	260	128	55	6
301	651	344	408	212	74	32	0
328	475	219	254	139	41	15	1
267	319	141	152	95	26	7	0
251	455	249	277	145	47	33	0
215	616	307	415	237	101	30	1
225	600	326	479	230	82	36	2
229	557	265	386	200	85	24	2
142	737	396	665	343	134	37	2
173	894	496	885	419	148	37	4
150	867	418	814	344	108	38	2
324	1149	534	729	354	99	29	2
476	1287	547	697	306	99	23	0
747	1327	594	637	255	74	27	2
1273	1568	669	725	298	86	32	0
2568	1777	819	886	466	146	35	6
2470	1588	720	679	351	105	34	2

2873	1752	718	656	322	86	46	1
3003	1710	690	605	249	69	18	0
3095	1683	646	584	250	76	21	1
2671	1407	550	503	218	57	17	0
2436	1333	488	401	182	50	13	1
2419	1274	472	420	164	45	14	0
2229	1137	420	352	141	31	7	3
2302	1145	422	340	134	34	7	0
2326	1092	410	331	109	40	12	0
2244	1037	368	290	101	21	9	0
2019	969	340	246	89	24	6	1
1977	852	329	255	85	21	6	0
1850	826	284	201	75	18	7	0
1795	805	249	181	61	9	5	0
1648	648	197	159	47	14	2	1
1619	660	215	136	35	12	5	0
1413	572	177	123	37	4	4	1
1245	497	181	110	29	8	1	1
1195	442	151	96	27	10	10	0
1098	446	118	84	29	4	2	0
973	401	110	97	21	5	2	1
910	339	111	78	19	4	3	0
885	323	106	77	26	6	2	0
752	281	83	59	9	5	2	0
742	263	76	59	17	3	3	0
703	262	87	51	14	5	0	0
693	261	92	60	18	4	2	0
666	287	81	64	17	8	3	0
708	263	84	46	22	8	2	0
636	248	82	58	17	8	2	0
608	209	75	50	18	2	0	1
485	234	73	48	19	0	1	0
468	184	65	44	15	4	1	0
397	184	60	39	12	2	4	0
495	193	58	32	16	1	0	1
420	182	46	41	11	5	0	0
386	135	46	34	10	2	0	0
400	140	47	25	13	3	2	0
342	140	47	22	11	2	1	1
328	134	41	23	12	2	0	0

301	124	41	27	11	1	4	0
320	108	40	20	12	1	2	1
302	112	34	20	9	2	0	1
267	121	35	25	10	4	1	0
270	95	22	22	4	1	0	0
265	102	20	23	6	4	0	0
218	106	33	21	7	3	0	0
188	84	30	24	8	1	0	0
232	89	35	18	3	2	0	0
199	88	26	17	6	2	0	1
195	85	26	15	7	2	1	0
193	67	20	19	6	0	1	1
143	73	26	14	2	2	1	0
167	63	16	11	3	0	0	0
136	63	18	11	1	3	0	0
156	59	11	15	3	0	1	0
175	54	17	12	4	0	0	1
167	53	21	14	4	1	0	0
157	64	13	9	2	1	0	0
149	53	16	11	5	0	1	0
140	63	17	9	4	2	0	0
135	47	19	14	0	0	2	1
134	43	20	8	5	3	1	0
128	44	15	12	3	2	0	0
133	45	15	11	2	1	0	0
128	48	15	7	1	0	0	0
139	64	13	16	3	1	0	0
144	43	10	8	3	1	0	0
120	46	15	10	5	2	0	0
134	48	16	6	4	1	0	1
117	47	15	6	2	0	0	0
114	29	14	12	4	3	0	0
112	31	9	11	1	2	0	0
98	31	7	7	2	1	0	0
99	51	12	7	1	1	0	0
121	37	12	4	2	0	0	1
88	28	14	8	3	0	1	0
87	31	8	4	4	1	1	0
62	21	9	4	2	0	0	0
58	28	3	5	1	0	0	0

84	20	9	7	2	0	1	0
81	24	6	3	3	0	0	0
60	20	5	9	1	0	0	0
63	32	6	7	1	1	1	0
62	21	5	3	0	0	0	0
74	21	9	5	2	2	0	1
40	26	8	0	2	0	0	0
58	24	3	3	3	1	1	1
58	20	7	5	3	2	1	1
69	16	7	7	0	0	1	0
52	31	6	5	0	1	0	0
73	12	2	4	2	0	0	0
59	22	7	6	0	0	0	0
55	23	4	2	2	0	1	0
52	14	6	1	2	1	0	0
39	8	2	3	1	0	0	0
50	15	3	2	0	1	0	2
34	15	7	4	0	1	0	0
37	10	2	3	1	0	0	0
40	7	2	3	0	0	0	0
23	6	2	2	0	0	0	1
35	7	5	3	1	0	0	1
23	7	2	2	1	1	0	0
27	8	6	1	0	0	1	0
20	11	3	3	0	1	0	0
25	4	2	5	0	0	0	1
24	11	3	3	2	0	0	1
17	8	3	2	0	0	0	0
19	9	3	2	1	0	0	0
19	5	0	1	1	0	0	0
19	7	2	2	0	0	0	0
21	5	2	2	0	0	0	0
23	9	4	3	2	0	0	0
15	4	2	2	0	0	0	1
10	6	2	1	1	0	0	0
18	10	0	0	0	0	1	0
12	7	1	3	0	0	0	0
25	8	1	2	0	0	0	0
14	6	3	1	2	0	0	0
12	2	1	0	0	0	0	0

12	5	0	3	0	0	0	0
7	6	2	0	0	0	0	0
14	7	3	2	1	1	0	1
13	4	0	0	0	0	0	0
10	4	1	1	0	0	0	0

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
8	5	1	8	6	2	1	1
9	10	5	8	6	2	1	0
51	19	7	4	8	1	1	0
134	34	6	7	3	1	2	0
149	35	9	7	5	1	1	0
153	30	7	7	1	0	0	0
95	12	4	5	0	1	1	0
54	9	1	1	1	0	0	0
43	6	2	1	1	1	0	0
22	5	2	0	0	0	0	0
22	4	0	0	0	0	0	0
14	1	2	0	0	0	0	0
14	3	0	0	0	0	0	0
13	1	1	0	0	0	0	0
9	3	2	0	1	0	0	0
14	0	0	0	0	0	0	0
7	3	1	0	0	0	0	0
11	3	0	0	1	0	0	0
9	4	1	1	0	0	0	0
10	7	1	1	1	0	0	0
14	4	3	0	1	0	0	0
5	6	2	1	0	0	0	0
19	7	1	6	2	0	0	0
14	10	4	11	4	0	0	0
13	20	8	11	7	0	1	0
19	18	9	8	2	2	0	0
16	19	7	7	3	2	0	0
15	16	9	12	2	1	2	1
13	15	4	12	2	1	0	0
15	7	3	5	0	0	0	0

15	12	1	1	1	0	0	0
18	20	8	6	4	1	0	0
21	24	5	11	1	2	0	0
12	26	10	10	7	0	0	0
28	30	6	7	5	1	0	0
12	48	15	21	3	0	0	0
14	35	9	19	7	0	0	0
11	28	11	19	1	3	0	0
14	42	7	13	4	1	0	0
23	39	15	15	3	0	0	0
43	59	21	15	1	2	0	0
104	70	17	13	4	0	0	0
405	143	39	25	4	1	0	0
352	113	34	27	4	0	0	0
324	104	25	22	7	0	0	0
257	82	26	18	4	0	0	0
249	80	23	15	3	1	0	0
210	75	22	13	1	0	0	0
193	53	21	8	2	0	0	0
178	53	11	5	1	0	1	0
185	38	7	10	2	0	0	0
145	41	8	6	2	0	0	0
141	35	11	6	1	0	0	0
138	37	6	4	3	0	0	0
131	24	2	3	2	0	0	0
98	31	5	2	1	0	0	0
92	24	4	6	1	0	0	0
79	11	4	1	1	0	0	0
59	9	1	2	0	0	0	0
55	11	5	1	0	0	0	0
43	13	2	0	1	0	0	0
44	5	3	0	0	0	0	0
45	12	1	2	0	0	0	0
33	5	2	0	0	0	1	0
33	7	3	1	0	0	0	0
28	8	2	2	0	0	0	0
24	7	2	0	1	0	0	0
21	3	0	1	0	1	0	0
23	5	0	3	1	1	0	0
19	6	1	1	1	0	0	0

18	2	0	2	0	0	0	1
21	4	3	0	0	0	0	1
27	3	0	0	0	0	0	0
23	1	1	0	0	0	0	0
18	4	1	1	0	0	0	0
13	3	1	0	0	0	0	0
13	5	2	0	0	0	0	0
15	2	1	0	0	0	0	0
7	6	0	0	0	0	0	0
20	4	2	0	0	0	0	0
16	2	1	0	1	0	0	0
4	4	0	0	0	0	0	0
12	1	0	1	0	0	0	0
10	2	1	1	0	0	0	0
8	3	1	0	0	0	0	0
9	2	0	0	0	0	0	0
11	3	1	0	0	1	0	0
7	2	0	0	0	0	0	1
5	1	2	0	0	0	0	0
7	2	0	0	0	0	0	0
9	2	3	0	0	0	0	0
9	3	0	1	0	0	0	0
3	0	0	0	0	0	0	0
3	2	1	0	0	0	0	0
5	3	0	2	0	0	0	0
3	0	1	0	0	0	0	0
0	2	1	1	0	0	1	0
5	3	0	0	0	0	0	0
1	1	1	0	0	0	0	0
3	2	1	0	1	0	0	0
3	1	0	0	1	0	0	0
0	1	0	0	0	0	0	0
6	0	0	0	1	0	0	0
3	2	0	0	0	0	0	0
3	1	0	0	0	0	0	0
4	2	1	0	0	0	0	0
2	0	0	1	0	1	0	0
5	0	0	1	0	0	0	0
3	1	0	1	0	0	0	0
2	1	0	0	0	0	0	0

2	1	1	0	0	0	0	0
1	1	0	0	1	0	0	0
2	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
4	0	0	0	0	0	0	1
3	0	0	0	0	0	0	0
2	2	0	0	0	0	0	0
4	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
3	2	0	0	0	0	0	0
1	0	0	0	1	0	0	0
2	1	1	0	0	0	0	0
3	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
2	0	1	0	0	0	0	1
1	1	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	1	0	0	0	0	0
2	0	0	0	0	0	0	0
2	0	0	0	0	0	0	1
2	0	0	0	0	0	0	0
1	0	0	0	0	0	1	0
2	1	0	0	0	0	0	0
0	0	1	0	0	0	0	0
1	0	0	0	0	0	0	1
2	0	0	0	0	0	0	0
2	1	0	0	0	0	0	0
2	1	0	0	0	0	1	0
2	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
2	1	0	0	0	0	0	0
2	0	0	1	0	0	0	0
0	0	1	0	0	0	0	0
1	1	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	1	0	0	0	0	0
2	1	0	0	0	0	0	0
1	0	0	0	0	0	0	0

0	0	0	0	0	0	0	0
2	1	0	0	0	0	0	0
1	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	1	0	0	0	1	0	0
1	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	1	0	0	0
0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	1	0	0	0	0	1	1
0	1	0	0	0	0	0	0
0	1	0	0	0	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = -4.986e+004 \quad (-1.065e+013, 1.065e+013)$$

$$b = -0.1995 \quad (-3326, 3326)$$

$$c = 4.992e+004 \quad (-1.065e+013, 1.065e+013)$$

$$d = -0.1996 \quad (-3323, 3323)$$

goftotal =

sse: 0.0440

rsquare: 0.9994

dfe: 4

adjrsquare: 0.9989

rmse: 0.1049

ctotal =

General model Exp1:

$$ctotal(x) = a * \exp(b * x)$$

Coefficients (with 95% confidence bounds):

$$a = 32.2 \quad (18.37, 46.03)$$

$$b = -0.1932 \quad (-0.2151, -0.1712)$$

goftotal =

$$sse: 3.5157e-004$$

$$rsquare: 9.9927e-001$$

$$dfe: 3$$

$$adjrsquare: 9.9903e-001$$

$$rmse: 1.0825e-002$$

Event 50	Date		Time*	Location*		Summing interval*		
	26-Dec-01		540	N08W54		Dec 26 to Dec 28 2000		
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	0.000E+00	0.000E+00	0.000E+00	2.901E-06	0.000E+00	8.873E-07	0.000E+00	0.000E+00
2	5.674E-06	2.214E-05	2.531E-05	6.875E-05	1.637E-04	1.929E-04	1.548E-04	8.107E-05
3	1.129E-03	1.516E-03	1.977E-03	1.825E-03	1.298E-03	9.041E-04	4.072E-04	1.375E-04
4	7.337E-03	6.195E-03	4.993E-03	3.535E-03	1.855E-03	1.015E-03	3.505E-04	9.853E-05
5	1.271E-02	9.140E-03	6.016E-03	3.877E-03	1.645E-03	7.986E-04	2.286E-04	3.257E-05
6	1.580E-02	9.977E-03	6.879E-03	4.081E-03	1.590E-03	6.927E-04	1.705E-04	3.123E-05
7	2.097E-02	1.367E-02	8.472E-03	4.436E-03	1.534E-03	5.379E-04	1.117E-04	2.334E-05
8	2.457E-02	1.424E-02	8.159E-03	3.774E-03	1.245E-03	3.526E-04	1.023E-04	2.395E-05
9	2.698E-02	1.456E-02	7.615E-03	3.355E-03	9.703E-04	2.951E-04	6.325E-05	4.651E-06
10	2.164E-02	1.099E-02	5.562E-03	2.321E-03	6.737E-04	1.642E-04	4.722E-05	1.544E-05
11	2.058E-02	9.658E-03	4.331E-03	1.758E-03	5.093E-04	1.373E-04	2.862E-05	7.567E-06
12	1.958E-02	8.637E-03	3.794E-03	1.460E-03	4.119E-04	9.875E-05	2.032E-05	4.939E-06
13	1.430E-02	6.187E-03	2.951E-03	1.074E-03	3.129E-04	8.242E-05	2.428E-05	8.507E-07
14	7.067E-03	3.099E-03	1.537E-03	6.128E-04	1.659E-04	6.648E-05	1.112E-05	1.669E-06
15	6.655E-03	2.731E-03	1.261E-03	5.135E-04	1.270E-04	3.254E-05	7.347E-06	1.584E-06
16	6.931E-03	2.778E-03	1.145E-03	4.147E-04	1.382E-04	4.838E-05	9.654E-06	2.616E-06
17	7.139E-03	2.703E-03	1.210E-03	4.315E-04	1.126E-04	3.417E-05	8.737E-06	9.073E-07
18	5.533E-03	1.923E-03	9.341E-04	2.975E-04	9.663E-05	3.046E-05	9.751E-06	2.408E-06
19	4.061E-03	1.486E-03	6.647E-04	2.266E-04	7.709E-05	2.408E-05	6.580E-06	1.479E-06
20	3.799E-03	1.625E-03	7.151E-04	2.539E-04	6.339E-05	2.014E-05	9.428E-06	7.764E-07
21	3.743E-03	1.382E-03	5.702E-04	2.181E-04	5.347E-05	1.498E-05	7.364E-06	1.467E-06
22	3.659E-03	1.183E-03	5.406E-04	1.886E-04	5.875E-05	1.762E-05	4.224E-06	8.000E-07
23	3.742E-03	1.192E-03	4.549E-04	1.877E-04	5.033E-05	1.582E-05	1.316E-06	7.550E-07

24	3.344E-03	1.053E-03	4.335E-04	1.604E-04	4.921E-05	1.718E-05	4.124E-06	7.027E-07
25	2.301E-03	8.060E-04	3.130E-04	1.513E-04	2.234E-05	1.550E-05	4.805E-06	0.000E+00
26	1.830E-03	6.667E-04	2.949E-04	1.481E-04	3.396E-05	2.097E-05	6.359E-06	6.411E-07
27	1.625E-03	6.582E-04	2.813E-04	1.185E-04	3.773E-05	6.776E-06	1.025E-06	6.144E-07
28	1.564E-03	6.109E-04	3.289E-04	1.137E-04	2.748E-05	1.036E-05	2.598E-06	6.316E-07
29	1.477E-03	5.810E-04	2.488E-04	9.432E-05	3.870E-05	1.229E-05	1.549E-06	6.039E-07
30	1.330E-03	4.942E-04	2.145E-04	9.773E-05	2.164E-05	3.431E-06	5.141E-07	0.000E+00
31	1.460E-03	5.016E-04	1.734E-04	8.415E-05	2.751E-05	1.304E-05	9.862E-07	0.000E+00
32	1.247E-03	5.014E-04	2.400E-04	6.987E-05	2.239E-05	7.666E-06	1.462E-06	0.000E+00
33	1.534E-03	5.000E-04	1.685E-04	7.513E-05	1.846E-05	8.431E-06	1.964E-06	0.000E+00
34	1.829E-03	5.396E-04	2.523E-04	8.290E-05	2.147E-05	8.203E-06	2.114E-06	0.000E+00
35	1.582E-03	5.013E-04	2.308E-04	6.146E-05	1.607E-05	5.714E-06	1.577E-06	0.000E+00
36	1.210E-03	3.967E-04	1.642E-04	7.020E-05	1.827E-05	5.639E-06	2.987E-06	0.000E+00
37	1.265E-03	4.189E-04	1.860E-04	5.730E-05	9.423E-06	7.701E-06	1.528E-06	0.000E+00
38	1.337E-03	3.285E-04	1.690E-04	8.191E-05	1.766E-05	4.439E-06	5.086E-07	5.941E-07
39	1.416E-03	4.650E-04	1.946E-04	6.787E-05	1.455E-05	2.146E-06	9.714E-07	0.000E+00
40	1.644E-03	4.381E-04	1.870E-04	6.196E-05	1.343E-05	1.070E-06	0.000E+00	1.211E-06
41	1.296E-03	3.948E-04	1.527E-04	4.697E-05	1.310E-05	2.270E-06	2.472E-06	0.000E+00
42	1.094E-03	3.614E-04	1.619E-04	6.506E-05	1.550E-05	4.424E-06	9.852E-07	6.101E-07
43	1.354E-03	3.567E-04	1.463E-04	4.631E-05	1.357E-05	3.402E-06	0.000E+00	0.000E+00
44	1.255E-03	3.534E-04	1.234E-04	5.040E-05	8.341E-06	1.141E-06	0.000E+00	0.000E+00
45	9.630E-04	2.725E-04	1.161E-04	3.688E-05	6.954E-06	3.324E-06	4.899E-07	0.000E+00
46	7.432E-04	2.318E-04	7.772E-05	3.268E-05	6.969E-06	4.086E-06	9.018E-07	0.000E+00
47	7.415E-04	1.677E-04	8.100E-05	2.887E-05	3.504E-06	1.000E-06	0.000E+00	0.000E+00
48	6.261E-04	1.789E-04	6.722E-05	3.697E-05	3.425E-06	3.227E-06	0.000E+00	0.000E+00
49	4.531E-04	1.674E-04	5.440E-05	2.296E-05	5.203E-06	0.000E+00	4.337E-07	0.000E+00
50	3.301E-04	1.138E-04	5.803E-05	2.128E-05	9.680E-06	9.714E-07	0.000E+00	0.000E+00
51	3.034E-04	1.208E-04	4.653E-05	1.952E-05	3.163E-06	1.047E-06	0.000E+00	0.000E+00
52	4.646E-04	1.351E-04	8.481E-05	2.630E-05	9.725E-06	0.000E+00	4.661E-07	0.000E+00
53	3.801E-04	1.289E-04	3.701E-05	1.939E-05	7.459E-06	0.000E+00	4.322E-07	0.000E+00
54	4.378E-04	1.295E-04	5.699E-05	2.604E-05	6.476E-06	9.650E-07	0.000E+00	0.000E+00
55	2.402E-04	9.095E-05	4.663E-05	1.904E-05	2.088E-06	1.019E-06	0.000E+00	5.717E-07
56	2.233E-04	9.261E-05	5.272E-05	1.748E-05	5.384E-06	1.947E-06	0.000E+00	5.603E-07
57	1.984E-04	5.351E-05	4.247E-05	1.413E-05	6.470E-06	1.004E-06	4.481E-07	5.614E-07
58	2.266E-04	9.284E-05	3.250E-05	6.334E-06	2.176E-06	3.888E-06	4.211E-07	0.000E+00
59	2.203E-04	7.103E-05	3.296E-05	1.243E-05	4.219E-06	9.986E-07	0.000E+00	0.000E+00
60	1.764E-04	5.768E-05	3.243E-05	1.562E-05	3.176E-06	9.929E-07	8.392E-07	5.256E-07
61	1.845E-04	7.294E-05	1.915E-05	1.416E-05	3.234E-06	1.929E-06	0.000E+00	5.226E-07
62	1.911E-04	6.595E-05	2.861E-05	7.887E-06	3.172E-06	0.000E+00	8.634E-07	0.000E+00
63	1.899E-04	8.946E-05	3.310E-05	1.413E-05	2.090E-06	0.000E+00	4.432E-07	0.000E+00

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	0.000E+00	0.000E+00	0.000E+00	2.738E-04	2.234E-04	1.256E-04	0.000E+00	0.000E+00
2	8.662E-05	2.232E-04	2.450E-04	9.289E-04	4.356E-04	2.036E-04	5.336E-05	1.598E-05
3	2.713E-03	1.791E-03	1.391E-03	8.868E-04	3.238E-04	1.386E-04	4.616E-05	1.649E-05
4	4.531E-03	2.403E-03	1.617E-03	5.648E-04	1.954E-04	6.907E-05	3.601E-05	3.544E-06
5	4.127E-03	2.092E-03	1.107E-03	4.009E-04	1.234E-04	3.218E-05	2.004E-05	3.423E-06
6	4.066E-03	1.683E-03	7.885E-04	2.865E-04	8.759E-05	2.387E-05	1.096E-05	8.171E-07
7	3.132E-03	1.416E-03	5.446E-04	2.006E-04	7.047E-05	2.599E-05	1.048E-05	8.829E-07
8	2.636E-03	9.514E-04	4.596E-04	1.884E-04	4.603E-05	1.157E-05	3.291E-06	1.758E-06
9	2.209E-03	7.675E-04	3.598E-04	1.123E-04	3.694E-05	7.682E-06	3.867E-06	0.000E+00
10	1.419E-03	3.951E-04	2.536E-04	7.047E-05	2.201E-05	8.281E-06	2.157E-06	0.000E+00
11	9.816E-04	3.242E-04	1.490E-04	7.638E-05	1.462E-05	6.476E-06	5.067E-07	0.000E+00
12	9.749E-04	3.479E-04	1.475E-04	6.094E-05	1.205E-05	6.246E-06	1.573E-06	0.000E+00
13	7.645E-04	2.176E-04	1.257E-04	3.038E-05	1.175E-05	2.315E-06	1.800E-06	4.414E-07
14	4.185E-04	1.671E-04	4.524E-05	1.657E-05	1.702E-05	3.969E-06	0.000E+00	0.000E+00
15	3.808E-04	1.012E-04	6.764E-05	2.512E-05	2.657E-06	2.431E-06	1.034E-06	0.000E+00
16	3.184E-04	1.482E-04	5.542E-05	2.060E-05	5.388E-06	0.000E+00	3.613E-07	0.000E+00
17	2.863E-04	1.088E-04	5.234E-05	2.839E-05	4.977E-06	6.650E-06	3.531E-07	0.000E+00
18	2.268E-04	8.608E-05	2.421E-05	1.886E-05	5.319E-06	4.960E-06	6.933E-07	0.000E+00
19	1.971E-04	7.154E-05	4.167E-05	1.734E-05	3.841E-06	2.145E-06	6.223E-07	0.000E+00
20	2.189E-04	6.600E-05	4.112E-05	1.180E-05	1.554E-06	2.146E-06	0.000E+00	0.000E+00
21	1.817E-04	5.808E-05	1.228E-05	1.765E-05	2.362E-06	1.448E-06	6.421E-07	0.000E+00
22	1.105E-04	6.161E-05	2.422E-05	3.785E-06	4.902E-06	7.421E-07	0.000E+00	7.943E-07
23	1.318E-04	3.525E-05	2.086E-05	5.534E-06	5.212E-06	0.000E+00	0.000E+00	0.000E+00
24	1.385E-04	4.054E-05	2.335E-05	7.296E-06	3.458E-06	6.604E-07	0.000E+00	3.512E-07
25	7.475E-05	4.410E-05	2.633E-05	1.620E-05	1.365E-06	1.876E-06	0.000E+00	0.000E+00
26	9.385E-05	2.883E-05	1.238E-05	7.738E-06	3.875E-06	0.000E+00	0.000E+00	0.000E+00
27	7.724E-05	2.469E-05	8.092E-06	8.973E-06	3.957E-06	6.201E-07	0.000E+00	0.000E+00
28	7.829E-05	3.518E-05	1.438E-05	4.892E-06	1.923E-06	0.000E+00	0.000E+00	0.000E+00
29	6.545E-05	4.068E-05	8.204E-06	7.696E-06	0.000E+00	1.747E-06	2.537E-07	0.000E+00
30	6.813E-05	2.138E-05	2.423E-05	2.841E-06	6.160E-07	5.679E-07	0.000E+00	0.000E+00
31	6.264E-05	1.283E-05	1.017E-05	9.599E-06	1.268E-06	5.981E-07	0.000E+00	0.000E+00
32	7.403E-05	2.257E-05	1.924E-06	2.727E-06	0.000E+00	1.091E-06	2.490E-07	0.000E+00
33	3.577E-05	2.585E-05	9.655E-06	4.052E-06	0.000E+00	1.232E-06	0.000E+00	0.000E+00
34	7.354E-05	1.013E-05	8.526E-06	1.912E-06	0.000E+00	6.311E-07	0.000E+00	0.000E+00

35	5.887E-05	1.147E-05	1.067E-05	3.917E-06	0.000E+00	0.000E+00	2.643E-07	0.000E+00
36	3.829E-05	1.312E-05	2.074E-06	5.791E-06	1.235E-06	0.000E+00	2.534E-07	0.000E+00
37	4.421E-05	8.121E-06	3.991E-06	3.738E-06	1.234E-06	0.000E+00	0.000E+00	0.000E+00
38	4.819E-05	1.432E-05	3.831E-06	6.643E-06	6.553E-07	0.000E+00	0.000E+00	0.000E+00
39	5.974E-05	1.804E-05	1.939E-06	1.936E-06	0.000E+00	5.983E-07	2.526E-07	0.000E+00
40	3.250E-05	1.146E-05	8.120E-06	2.779E-06	0.000E+00	5.527E-07	0.000E+00	0.000E+00
41	2.628E-05	1.284E-05	5.993E-06	9.243E-07	1.266E-06	5.553E-07	0.000E+00	0.000E+00
42	2.505E-05	1.156E-05	2.019E-06	1.018E-06	0.000E+00	0.000E+00	7.784E-07	0.000E+00
43	2.893E-05	6.598E-06	6.097E-06	2.871E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
44	3.978E-05	1.448E-05	5.948E-06	9.421E-07	0.000E+00	0.000E+00	2.556E-07	0.000E+00
45	3.645E-05	3.279E-06	2.056E-06	2.707E-06	6.235E-07	5.343E-07	5.086E-07	0.000E+00
46	2.373E-05	4.577E-06	0.000E+00	0.000E+00	1.161E-06	5.427E-07	0.000E+00	0.000E+00
47	6.901E-06	6.204E-06	3.771E-06	2.696E-06	6.233E-07	0.000E+00	0.000E+00	0.000E+00
48	1.353E-05	1.471E-06	0.000E+00	2.517E-06	0.000E+00	0.000E+00	2.397E-07	3.136E-07
49	1.871E-05	5.542E-06	3.453E-06	0.000E+00	1.154E-06	0.000E+00	0.000E+00	0.000E+00
50	1.457E-05	8.706E-06	1.756E-06	1.799E-06	0.000E+00	5.119E-07	2.270E-07	0.000E+00
51	1.482E-05	5.859E-06	0.000E+00	0.000E+00	5.651E-07	0.000E+00	0.000E+00	0.000E+00
52	1.486E-05	2.949E-06	5.451E-06	1.731E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
53	1.314E-05	0.000E+00	0.000E+00	2.662E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
54	1.781E-05	1.411E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
55	1.120E-05	2.860E-06	1.714E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
56	1.255E-05	4.326E-06	1.819E-06	8.214E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
57	8.046E-06	4.251E-06	0.000E+00	8.686E-07	0.000E+00	0.000E+00	2.217E-07	5.654E-07
58	1.255E-05	4.237E-06	1.709E-06	8.164E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
59	7.722E-06	1.466E-06	5.224E-06	2.487E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
60	6.360E-06	1.375E-06	1.799E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
61	4.554E-06	1.456E-06	0.000E+00	1.624E-06	5.388E-07	0.000E+00	0.000E+00	0.000E+00
62	6.343E-06	0.000E+00	1.694E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
63	7.761E-06	2.824E-06	1.691E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	0	0	2	0	1	0	0
1	3	3	16	59	78	143	64
131	195	203	389	412	310	312	84
784	758	493	723	572	339	261	58
1352	1114	589	787	501	264	168	19
1842	1333	742	913	532	251	137	20
2241	1679	838	913	472	180	84	14
2713	1817	839	807	399	123	80	15

3159	1972	827	758	329	109	52	3
2990	1741	708	615	268	71	45	12
2964	1592	574	482	210	61	28	6
2871	1447	514	412	174	46	21	4
2484	1226	478	370	160	46	31	1
1560	783	312	258	105	46	17	2
1445	677	252	213	79	22	11	2
1455	670	222	166	82	32	14	3
1511	654	235	174	68	23	13	1
1224	487	190	126	61	21	15	3
972	407	146	103	53	18	11	2
924	452	160	118	44	15	16	1
887	375	124	98	36	11	12	2
870	322	119	86	40	13	7	1
849	308	95	82	33	11	2	1
805	290	96	74	34	13	7	1
615	246	77	77	17	13	9	0
506	211	75	78	27	18	12	1
462	214	73	65	31	6	2	1
439	197	85	61	22	9	5	1
425	191	66	52	32	11	3	1
386	164	57	54	18	3	1	0
427	168	47	47	23	12	2	0
366	168	65	39	19	7	3	0
466	173	47	44	16	8	4	0
507	171	64	44	17	7	4	0
445	162	60	33	13	5	3	0
351	132	44	39	15	5	6	0
370	140	50	32	8	7	3	0
394	110	46	46	15	4	1	1
412	155	52	38	12	2	2	0
477	145	50	34	11	1	0	2
378	131	41	26	11	2	5	0
319	120	43	36	13	4	2	1
388	117	39	25	11	3	0	0
364	117	33	28	7	1	0	0
288	93	32	21	6	3	1	0
229	82	22	19	6	4	2	0
229	59	23	17	3	1	0	0
193	63	19	22	3	3	0	0

153	65	17	15	5	0	1	0
106	42	17	13	9	1	0	0
98	44	14	12	3	1	0	0
148	49	25	16	9	0	1	0
123	48	11	12	7	0	1	0
141	48	17	16	6	1	0	0
79	34	14	12	2	1	0	1
73	35	16	11	5	2	0	1
66	20	13	9	6	1	1	1
76	35	10	4	2	4	1	0
73	27	10	8	4	1	0	0
59	22	10	10	3	1	2	1
62	28	6	9	3	2	0	1
64	25	9	5	3	0	2	0
64	34	10	9	2	0	1	0

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	0	0	0	0	0	0	0
20	59	54	130	166	104	110	29
582	423	265	370	262	132	68	20
936	546	301	343	188	87	51	4
839	470	201	214	112	43	28	4
906	416	158	167	78	22	17	1
641	323	101	111	51	15	15	1
557	225	88	81	43	17	5	2
493	192	73	79	29	8	6	0
377	116	60	56	28	6	4	0
271	99	36	36	17	7	1	0
275	110	38	39	12	6	3	0
261	84	37	40	12	6	4	1
178	78	17	24	14	3	0	0
158	47	25	13	20	5	3	0
128	66	20	19	3	3	1	0
116	49	19	16	6	0	1	0
95	40	9	22	6	9	2	0
90	36	17	16	7	7	2	0

102	34	17	15	5	3	0	0
82	29	5	10	2	3	2	0
50	31	10	15	3	2	0	2
57	17	8	3	6	1	0	0
64	21	10	5	7	0	0	1
38	25	12	7	5	1	0	0
50	17	6	16	2	3	0	0
42	15	4	8	6	0	0	0
42	21	7	9	6	1	0	0
36	25	4	5	3	0	1	0
38	13	12	8	0	3	0	0
35	8	5	3	1	1	0	0
41	14	1	10	2	1	1	0
21	17	5	3	0	2	0	0
39	6	4	4	0	2	0	0
32	7	5	2	0	1	1	0
21	8	1	4	0	0	1	0
25	5	2	6	2	0	0	0
27	9	2	4	2	0	0	0
33	11	1	7	1	0	1	0
18	7	4	2	0	1	0	0
15	8	3	3	0	1	0	0
14	7	1	1	2	1	3	0
16	4	3	1	0	0	0	0
22	9	3	3	0	0	1	0
21	2	1	1	0	0	2	0
14	3	0	3	1	1	0	0
4	4	2	0	2	1	0	0
8	1	0	3	1	0	1	1
12	4	2	3	0	0	0	0
9	6	1	0	2	0	1	0
9	4	0	2	0	1	0	0
9	2	3	0	1	0	0	0
8	0	0	2	0	0	0	0
11	1	0	3	0	0	0	0
7	2	1	0	0	0	0	0
8	3	1	0	0	0	0	0
5	3	0	1	0	0	1	2
8	3	1	1	0	0	0	0
5	1	3	1	0	0	0	0

4	1	1	3	0	0	0	0
3	1	0	0	0	0	0	0
4	0	1	2	1	0	0	0
5	2	1	0	0	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 1.461 \quad (1.294, 1.628)$$

$$b = -0.2217 \quad (-0.2503, -0.1931)$$

$$c = 0.03858 \quad (-0.03759, 0.1148)$$

$$d = -0.06009 \quad (-0.1196, -0.000634)$$

goftotal =

$$sse: 4.6292e-006$$

$$rsquare: 0.9999$$

$$dfe: 4$$

$$adjrsquare: 0.9998$$

$$rmse: 0.0011$$

ctotal =

General model Exp1:

$$ctotal(x) = a \cdot \exp(b \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.4262 \quad (0.1442, 0.7082)$$

$$b = -0.1321 \quad (-0.1646, -0.09966)$$

goftotal =

$$sse: 3.7711e-006$$

$$rsquare: 9.9532e-001$$

dfe: 3
 adjrsquare: 9.9375e-001
 rmse: 1.1212e-003
 custom:

curve fit iron:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

a = 0.1567 (0.09902, 0.2144)
 b = -0.1453 (-0.1954, -0.09525)
 c = 0.006438 (-0.01013, 0.023)
 d = -0.03329 (-0.0826, 0.01601)

goftotal =

sse: 4.9456e-007
 rsquare: 9.9918e-001
 dfe: 4
 adjrsquare: 9.9856e-001
 rmse: 3.5163e-004

ctotal =

General model Exp1:

$$ctotal(x) = a \cdot \exp(b \cdot x)$$

Coefficients (with 95% confidence bounds):

a = 0.03202 (0.01435, 0.04969)
 b = -0.06382 (-0.07929, -0.04834)

goftotal =

sse: 5.1515e-008
 rsquare: 9.9539e-001
 dfe: 3
 adjrsquare: 9.9385e-001
 rmse: 1.3104e-004

	28-Dec-01	2045	S26E90	Dec 28 to Jan 05 2300				
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	1.49E-04	6.59E-05	1.67E-05	1.25E-05	3.17E-06	0.00E+00	4.44E-07	0.00E+00
2	1.63E-04	7.55E-05	3.36E-05	1.17E-05	1.90E-06	9.25E-07	0.00E+00	0.00E+00
3	2.08E-04	7.09E-05	1.91E-05	9.58E-06	3.04E-06	1.92E-06	0.00E+00	0.00E+00
4	1.88E-04	5.75E-05	2.24E-05	7.85E-06	2.09E-06	0.00E+00	4.17E-07	0.00E+00
5	1.66E-04	6.07E-05	2.91E-05	1.42E-05	4.25E-06	9.99E-07	0.00E+00	0.00E+00
6	2.50E-04	6.84E-05	2.97E-05	6.39E-06	4.21E-06	0.00E+00	4.46E-07	5.25E-07
7	2.00E-04	6.35E-05	2.90E-05	1.43E-05	1.08E-06	0.00E+00	0.00E+00	0.00E+00
8	1.81E-04	8.16E-05	1.67E-05	1.24E-05	3.19E-06	0.00E+00	4.47E-07	0.00E+00
9	1.93E-04	9.74E-05	3.29E-05	2.54E-05	4.23E-06	0.00E+00	8.73E-07	5.62E-07
10	2.64E-04	6.46E-05	5.33E-05	1.80E-05	4.25E-06	2.04E-06	4.58E-07	0.00E+00
11	2.65E-04	8.99E-05	6.11E-05	1.60E-05	2.19E-06	9.72E-07	0.00E+00	5.47E-07
12	5.27E-04	2.23E-04	1.10E-04	3.74E-05	7.19E-06	1.05E-06	5.13E-07	0.00E+00
13	4.55E-04	1.43E-04	5.80E-05	1.78E-05	4.53E-06	2.17E-06	0.00E+00	5.94E-07
14	4.49E-04	1.74E-04	7.83E-05	1.91E-05	7.93E-06	0.00E+00	0.00E+00	0.00E+00
15	3.53E-04	1.20E-04	3.50E-05	2.17E-05	7.64E-06	0.00E+00	1.37E-06	0.00E+00
16	4.22E-04	1.70E-04	5.93E-05	1.82E-05	4.40E-06	2.05E-06	4.73E-07	0.00E+00
17	3.14E-04	1.53E-04	4.42E-05	1.97E-05	3.42E-06	2.03E-06	1.37E-06	0.00E+00
18	3.81E-04	9.24E-05	4.45E-05	2.58E-05	1.32E-05	5.58E-06	1.28E-06	5.11E-07
19	2.56E-04	8.20E-05	4.77E-05	2.43E-05	9.91E-06	4.01E-06	1.34E-06	1.16E-06
20	2.55E-04	1.14E-04	7.05E-05	1.64E-05	8.64E-06	3.04E-06	0.00E+00	5.35E-07
21	2.92E-04	1.25E-04	5.08E-05	2.10E-05	9.77E-06	9.64E-07	4.34E-07	0.00E+00
22	2.21E-04	7.80E-05	4.73E-05	1.45E-05	5.36E-06	1.01E-06	4.58E-07	5.34E-07
23	2.39E-04	8.49E-05	3.03E-05	1.13E-05	3.26E-06	1.92E-06	8.59E-07	0.00E+00
24	1.73E-04	9.76E-05	6.96E-05	1.27E-05	1.04E-06	5.00E-06	0.00E+00	0.00E+00
25	1.74E-04	8.58E-05	4.99E-05	1.27E-05	3.16E-06	2.97E-06	4.25E-07	0.00E+00
26	1.83E-04	7.92E-05	5.23E-05	1.62E-05	3.22E-06	2.01E-06	0.00E+00	0.00E+00
27	1.73E-04	5.85E-05	4.58E-05	1.44E-05	4.31E-06	9.48E-07	4.51E-07	5.30E-07
28	1.85E-04	7.65E-05	3.29E-05	1.26E-05	6.41E-06	2.95E-06	4.23E-07	5.31E-07
29	2.05E-04	6.30E-05	2.01E-05	2.22E-05	2.11E-06	1.95E-06	4.22E-07	0.00E+00
30	2.05E-04	6.05E-05	2.33E-05	1.28E-05	2.11E-06	0.00E+00	0.00E+00	0.00E+00
31	1.76E-04	5.04E-05	4.00E-05	9.70E-06	3.21E-06	2.90E-06	4.50E-07	0.00E+00
32	2.22E-04	6.96E-05	2.60E-05	8.10E-06	0.00E+00	1.90E-06	0.00E+00	5.62E-07
33	1.65E-04	6.92E-05	4.59E-05	8.01E-06	6.47E-06	1.02E-06	0.00E+00	5.29E-07
34	1.87E-04	7.75E-05	4.31E-05	8.85E-06	4.83E-06	0.00E+00	8.18E-07	0.00E+00
35	2.37E-04	9.68E-05	2.32E-05	9.90E-06	2.15E-06	1.01E-06	9.22E-07	0.00E+00
36	2.53E-04	1.01E-04	6.43E-05	1.31E-05	4.48E-06	2.00E-06	9.30E-07	5.39E-07

37	1.32E-04	6.55E-05	2.27E-05	1.42E-05	1.02E-06	9.99E-07	0.00E+00	5.59E-07
38	1.32E-04	6.60E-05	1.98E-05	1.11E-05	3.12E-06	0.00E+00	0.00E+00	0.00E+00
39	1.55E-04	7.08E-05	3.95E-05	1.12E-05	6.25E-06	0.00E+00	0.00E+00	0.00E+00
40	1.81E-04	4.77E-05	1.95E-05	1.52E-06	3.10E-06	0.00E+00	0.00E+00	0.00E+00
41	1.45E-04	5.54E-05	2.58E-05	1.25E-05	0.00E+00	1.98E-06	0.00E+00	0.00E+00
42	1.64E-04	7.75E-05	4.90E-05	6.35E-06	3.10E-06	0.00E+00	0.00E+00	0.00E+00
43	2.50E-04	9.19E-05	6.81E-05	2.68E-05	6.17E-06	0.00E+00	0.00E+00	0.00E+00
44	2.25E-04	1.11E-04	2.94E-05	2.53E-05	4.33E-06	9.98E-07	4.20E-07	0.00E+00
45	1.92E-04	1.07E-04	5.53E-05	1.75E-05	5.15E-06	0.00E+00	0.00E+00	0.00E+00
46	2.77E-04	1.57E-04	7.12E-05	2.51E-05	3.13E-06	9.39E-07	0.00E+00	5.58E-07
47	2.52E-04	1.10E-04	6.85E-05	3.13E-05	3.12E-06	9.97E-07	0.00E+00	0.00E+00
48	3.10E-04	1.08E-04	6.82E-05	2.05E-05	6.31E-06	1.94E-06	0.00E+00	0.00E+00
49	4.26E-04	2.00E-04	8.92E-05	2.03E-05	1.03E-06	9.46E-07	1.74E-06	0.00E+00
50	6.35E-04	2.55E-04	1.38E-04	3.94E-05	7.97E-06	3.80E-06	4.29E-07	0.00E+00
51	8.17E-04	3.74E-04	1.39E-04	4.40E-05	8.79E-06	0.00E+00	4.37E-07	5.42E-07
52	9.24E-04	4.72E-04	1.97E-04	5.09E-05	1.87E-05	9.81E-07	0.00E+00	0.00E+00
53	9.22E-04	3.76E-04	1.43E-04	6.51E-05	8.90E-06	0.00E+00	0.00E+00	0.00E+00
54	9.77E-04	4.77E-04	1.80E-04	6.45E-05	1.32E-05	2.03E-06	0.00E+00	0.00E+00
55	1.07E-03	4.56E-04	1.64E-04	6.90E-05	1.90E-05	3.07E-06	4.72E-07	0.00E+00
56	1.37E-03	5.10E-04	2.43E-04	7.60E-05	1.28E-05	6.26E-06	4.80E-07	0.00E+00
57	1.73E-03	7.14E-04	3.01E-04	9.80E-05	2.10E-05	2.18E-06	5.10E-07	0.00E+00
58	2.17E-03	8.09E-04	3.61E-04	1.19E-04	2.85E-05	6.52E-06	5.00E-07	0.00E+00
59	2.53E-03	1.06E-03	4.06E-04	1.49E-04	2.51E-05	4.29E-06	0.00E+00	6.00E-07
60	2.33E-03	9.41E-04	4.12E-04	1.66E-04	4.31E-05	8.74E-06	0.00E+00	0.00E+00
61	2.20E-03	8.99E-04	3.79E-04	1.28E-04	1.53E-05	4.41E-06	0.00E+00	0.00E+00
62	2.22E-03	9.56E-04	3.19E-04	1.38E-04	3.33E-05	7.73E-06	9.80E-07	5.92E-07
63	2.14E-03	9.26E-04	3.63E-04	1.34E-04	2.57E-05	3.33E-06	4.83E-07	0.00E+00
64	2.41E-03	9.37E-04	4.42E-04	1.21E-04	2.20E-05	5.59E-06	9.68E-07	6.54E-07
65	3.21E-03	1.28E-03	5.36E-04	1.74E-04	4.84E-05	1.04E-05	1.56E-06	0.00E+00
66	3.71E-03	1.50E-03	6.01E-04	1.86E-04	2.77E-05	4.45E-06	0.00E+00	0.00E+00
67	3.35E-03	1.35E-03	5.66E-04	1.64E-04	3.11E-05	1.17E-05	5.10E-07	0.00E+00
68	3.57E-03	1.33E-03	5.98E-04	2.04E-04	3.10E-05	2.44E-06	5.17E-07	6.75E-07
69	3.69E-03	1.46E-03	5.58E-04	1.95E-04	3.39E-05	5.85E-06	0.00E+00	0.00E+00
70	3.92E-03	1.48E-03	6.91E-04	2.12E-04	3.51E-05	4.85E-06	1.04E-06	0.00E+00
71	4.13E-03	1.50E-03	5.41E-04	1.59E-04	3.23E-05	7.13E-06	0.00E+00	0.00E+00
72	3.82E-03	1.42E-03	5.16E-04	2.04E-04	3.41E-05	4.86E-06	5.44E-07	0.00E+00
73	3.81E-03	1.44E-03	5.62E-04	1.88E-04	3.06E-05	1.30E-05	5.18E-07	0.00E+00
74	3.51E-03	1.35E-03	5.22E-04	1.70E-04	2.43E-05	8.08E-06	1.05E-06	6.35E-07
75	3.51E-03	1.29E-03	4.81E-04	1.80E-04	4.45E-05	8.07E-06	0.00E+00	6.76E-07
76	3.25E-03	1.21E-03	5.01E-04	1.41E-04	4.03E-05	4.64E-06	5.37E-07	0.00E+00

77	3.29E-03	1.24E-03	5.01E-04	1.78E-04	2.90E-05	3.42E-06	5.34E-07	0.00E+00
78	3.37E-03	1.29E-03	4.75E-04	1.69E-04	3.63E-05	2.31E-06	1.00E-06	6.27E-07
79	3.03E-03	1.12E-03	4.20E-04	1.50E-04	3.97E-05	9.13E-06	5.29E-07	0.00E+00
80	2.98E-03	1.13E-03	4.26E-04	1.73E-04	2.24E-05	5.81E-06	5.25E-07	0.00E+00
81	3.00E-03	1.12E-03	4.31E-04	1.63E-04	2.59E-05	2.22E-06	0.00E+00	0.00E+00
82	2.81E-03	1.06E-03	5.37E-04	1.57E-04	3.24E-05	1.02E-06	4.58E-07	0.00E+00
83	3.10E-03	1.08E-03	4.38E-04	1.50E-04	3.74E-05	6.84E-06	9.89E-07	0.00E+00
84	2.80E-03	9.82E-04	3.97E-04	1.52E-04	2.74E-05	3.49E-06	0.00E+00	0.00E+00
85	2.68E-03	1.09E-03	4.94E-04	1.49E-04	2.56E-05	5.67E-06	0.00E+00	0.00E+00
86	2.74E-03	1.09E-03	3.60E-04	1.41E-04	3.22E-05	7.05E-06	0.00E+00	6.50E-07
87	2.77E-03	9.84E-04	4.48E-04	1.52E-04	2.46E-05	2.25E-06	1.04E-06	0.00E+00
88	2.93E-03	1.04E-03	4.65E-04	1.32E-04	2.90E-05	7.77E-06	1.04E-06	0.00E+00
89	2.58E-03	9.22E-04	4.81E-04	1.37E-04	2.08E-05	1.15E-06	5.16E-07	0.00E+00
90	2.58E-03	9.49E-04	3.82E-04	1.52E-04	2.45E-05	3.38E-06	0.00E+00	0.00E+00
91	2.71E-03	8.81E-04	3.90E-04	1.25E-04	1.82E-05	5.57E-06	5.11E-07	6.42E-07
92	2.51E-03	1.02E-03	4.23E-04	1.13E-04	1.79E-05	2.22E-06	0.00E+00	0.00E+00
93	2.40E-03	9.35E-04	3.35E-04	1.20E-04	2.01E-05	4.47E-06	4.77E-07	0.00E+00
94	2.29E-03	8.33E-04	4.20E-04	8.75E-05	2.26E-05	4.34E-06	4.81E-07	0.00E+00
95	2.38E-03	8.99E-04	3.68E-04	1.45E-04	1.65E-05	2.20E-06	5.06E-07	0.00E+00
96	2.26E-03	8.26E-04	3.93E-04	9.57E-05	2.35E-05	3.24E-06	9.76E-07	0.00E+00
97	2.31E-03	9.30E-04	3.69E-04	1.24E-04	2.73E-05	1.06E-06	0.00E+00	0.00E+00
98	2.26E-03	8.53E-04	3.12E-04	1.22E-04	2.98E-05	2.04E-06	0.00E+00	0.00E+00
99	2.02E-03	9.09E-04	3.81E-04	9.66E-05	2.47E-05	1.11E-06	5.00E-07	0.00E+00
100	2.13E-03	8.39E-04	3.57E-04	9.45E-05	1.65E-05	2.22E-06	0.00E+00	0.00E+00
101	2.06E-03	7.90E-04	3.25E-04	1.02E-04	1.85E-05	1.11E-06	4.66E-07	0.00E+00
102	2.09E-03	7.54E-04	3.02E-04	1.14E-04	1.29E-05	4.45E-06	4.98E-07	0.00E+00
103	2.16E-03	8.09E-04	3.30E-04	1.13E-04	1.63E-05	2.14E-06	0.00E+00	5.95E-07
104	2.17E-03	8.09E-04	3.34E-04	1.12E-04	1.97E-05	2.16E-06	0.00E+00	6.19E-07
105	2.20E-03	7.98E-04	3.21E-04	7.33E-05	2.67E-05	5.34E-06	4.92E-07	0.00E+00
106	2.13E-03	7.64E-04	3.20E-04	1.29E-04	2.10E-05	3.26E-06	9.65E-07	0.00E+00
107	2.25E-03	8.70E-04	3.06E-04	1.17E-04	1.99E-05	3.36E-06	5.05E-07	0.00E+00
108	2.45E-03	9.84E-04	4.03E-04	1.33E-04	3.22E-05	2.23E-06	0.00E+00	0.00E+00
109	2.58E-03	8.56E-04	3.98E-04	1.22E-04	1.41E-05	4.41E-06	0.00E+00	0.00E+00
110	2.70E-03	9.47E-04	4.79E-04	1.50E-04	2.14E-05	7.63E-06	4.78E-07	0.00E+00
111	2.59E-03	1.06E-03	3.75E-04	1.09E-04	1.78E-05	2.25E-06	4.76E-07	0.00E+00
112	2.56E-03	1.12E-03	4.64E-04	1.19E-04	3.22E-05	4.49E-06	5.02E-07	0.00E+00
113	2.76E-03	1.11E-03	4.27E-04	1.28E-04	3.14E-05	4.44E-06	4.81E-07	0.00E+00
114	2.81E-03	9.90E-04	4.10E-04	1.20E-04	2.11E-05	3.10E-06	0.00E+00	0.00E+00
115	2.54E-03	9.46E-04	4.08E-04	1.15E-04	2.01E-05	6.48E-06	0.00E+00	0.00E+00
116	2.61E-03	9.77E-04	3.16E-04	1.24E-04	1.64E-05	3.29E-06	0.00E+00	0.00E+00

117	2.32E-03	9.12E-04	3.60E-04	9.34E-05	1.51E-05	1.04E-06	0.00E+00	0.00E+00
118	2.25E-03	8.30E-04	3.46E-04	1.04E-04	2.22E-05	4.35E-06	4.67E-07	0.00E+00
119	2.29E-03	8.81E-04	3.23E-04	1.09E-04	2.10E-05	3.25E-06	4.69E-07	0.00E+00
120	1.97E-03	7.64E-04	3.55E-04	1.31E-04	1.61E-05	8.57E-06	9.90E-07	0.00E+00
121	2.11E-03	7.91E-04	2.83E-04	1.23E-04	1.74E-05	1.05E-06	0.00E+00	0.00E+00
122	2.20E-03	7.32E-04	3.22E-04	1.01E-04	2.20E-05	6.41E-06	9.31E-07	6.13E-07
123	1.98E-03	7.50E-04	2.90E-04	8.99E-05	1.86E-05	5.21E-06	0.00E+00	0.00E+00
124	1.99E-03	6.43E-04	3.04E-04	6.55E-05	6.96E-06	0.00E+00	0.00E+00	0.00E+00
125	1.75E-03	6.09E-04	2.64E-04	7.00E-05	1.83E-05	0.00E+00	9.13E-07	0.00E+00
126	1.72E-03	6.02E-04	2.79E-04	7.35E-05	2.06E-05	2.09E-06	0.00E+00	0.00E+00
127	1.68E-03	6.63E-04	2.67E-04	8.88E-05	1.24E-05	4.13E-06	4.83E-07	0.00E+00
128	1.77E-03	6.60E-04	2.58E-04	8.55E-05	1.38E-05	4.21E-06	0.00E+00	0.00E+00
129	1.78E-03	6.13E-04	2.78E-04	7.05E-05	1.03E-05	1.02E-06	0.00E+00	0.00E+00
130	1.84E-03	6.35E-04	2.74E-04	1.14E-04	9.49E-06	9.47E-07	8.58E-07	0.00E+00
131	1.72E-03	6.85E-04	3.28E-04	1.09E-04	1.75E-05	3.16E-06	4.55E-07	0.00E+00
132	1.67E-03	6.00E-04	2.30E-04	6.14E-05	1.37E-05	3.27E-06	0.00E+00	0.00E+00
133	1.64E-03	5.99E-04	2.97E-04	7.29E-05	1.26E-05	2.09E-06	0.00E+00	0.00E+00
134	1.55E-03	6.40E-04	1.68E-04	9.68E-05	1.36E-05	1.07E-06	9.59E-07	0.00E+00
135	1.63E-03	5.59E-04	2.53E-04	6.13E-05	7.93E-06	0.00E+00	0.00E+00	1.16E-06
136	1.69E-03	6.00E-04	2.00E-04	5.60E-05	2.15E-05	1.07E-06	9.33E-07	5.66E-07
137	1.53E-03	5.13E-04	2.86E-04	6.08E-05	1.34E-05	1.07E-06	0.00E+00	0.00E+00
138	1.54E-03	5.88E-04	2.17E-04	7.08E-05	1.59E-05	1.01E-06	0.00E+00	0.00E+00
139	1.58E-03	5.27E-04	2.19E-04	7.49E-05	1.48E-05	2.15E-06	0.00E+00	0.00E+00
140	1.52E-03	5.20E-04	2.13E-04	6.00E-05	1.50E-05	2.03E-06	0.00E+00	0.00E+00
141	1.64E-03	4.82E-04	2.35E-04	5.10E-05	4.67E-06	1.07E-06	4.54E-07	6.00E-07
142	1.34E-03	4.92E-04	2.45E-04	4.92E-05	1.33E-05	2.13E-06	0.00E+00	0.00E+00
143	1.41E-03	5.10E-04	1.96E-04	5.86E-05	1.11E-05	1.07E-06	0.00E+00	0.00E+00
144	1.27E-03	5.16E-04	2.03E-04	4.90E-05	1.02E-05	4.16E-06	0.00E+00	0.00E+00
145	1.43E-03	5.67E-04	1.82E-04	5.38E-05	8.90E-06	2.12E-06	0.00E+00	0.00E+00
146	1.45E-03	4.51E-04	1.96E-04	5.48E-05	1.35E-05	2.92E-06	0.00E+00	0.00E+00
147	1.51E-03	5.43E-04	1.80E-04	5.24E-05	5.58E-06	2.08E-06	0.00E+00	0.00E+00
148	1.41E-03	5.56E-04	1.98E-04	5.39E-05	9.04E-06	3.09E-06	0.00E+00	0.00E+00
149	1.40E-03	4.94E-04	1.86E-04	5.77E-05	1.02E-05	0.00E+00	4.52E-07	5.93E-07
150	1.41E-03	4.16E-04	1.85E-04	3.87E-05	3.49E-06	1.07E-06	4.78E-07	0.00E+00
151	1.31E-03	3.51E-04	1.59E-04	4.22E-05	4.37E-06	1.01E-06	0.00E+00	5.97E-07
152	1.26E-03	4.61E-04	1.18E-04	5.37E-05	5.72E-06	0.00E+00	0.00E+00	5.92E-07
153	1.27E-03	4.14E-04	1.31E-04	5.56E-05	8.84E-06	0.00E+00	0.00E+00	0.00E+00
154	1.15E-03	3.91E-04	1.43E-04	2.16E-05	6.77E-06	9.98E-07	4.48E-07	0.00E+00
155	1.15E-03	3.80E-04	7.18E-05	3.98E-05	4.33E-06	0.00E+00	4.47E-07	0.00E+00
156	1.21E-03	3.97E-04	1.56E-04	4.00E-05	6.77E-06	0.00E+00	0.00E+00	0.00E+00

157	1.03E-03	3.55E-04	1.25E-04	3.85E-05	4.46E-06	0.00E+00	0.00E+00	0.00E+00
158	9.81E-04	2.75E-04	1.26E-04	2.48E-05	6.73E-06	1.05E-06	0.00E+00	0.00E+00
159	9.86E-04	3.20E-04	1.18E-04	3.30E-05	3.37E-06	0.00E+00	0.00E+00	5.54E-07
160	1.05E-03	3.23E-04	1.28E-04	2.64E-05	5.42E-06	0.00E+00	0.00E+00	5.56E-07
161	1.06E-03	4.00E-04	1.10E-04	4.49E-05	6.63E-06	9.85E-07	0.00E+00	0.00E+00
162	1.03E-03	2.67E-04	1.15E-04	3.67E-05	3.11E-06	0.00E+00	0.00E+00	0.00E+00
163	9.48E-04	3.05E-04	8.86E-05	3.00E-05	3.39E-06	9.84E-07	0.00E+00	0.00E+00
164	8.59E-04	3.18E-04	1.23E-04	3.14E-05	6.67E-06	0.00E+00	0.00E+00	0.00E+00
165	7.98E-04	2.16E-04	4.79E-05	2.47E-05	2.12E-06	1.04E-06	0.00E+00	0.00E+00
166	7.69E-04	2.12E-04	6.53E-05	2.60E-05	3.25E-06	0.00E+00	0.00E+00	0.00E+00
167	7.25E-04	2.71E-04	7.42E-05	2.46E-05	4.41E-06	1.01E-06	4.63E-07	0.00E+00
168	7.72E-04	2.54E-04	8.51E-05	2.93E-05	3.17E-06	2.06E-06	0.00E+00	0.00E+00
169	7.32E-04	2.37E-04	8.83E-05	1.96E-05	8.54E-06	2.97E-06	4.61E-07	0.00E+00
170	7.10E-04	1.94E-04	6.10E-05	1.78E-05	4.40E-06	0.00E+00	0.00E+00	0.00E+00
171	6.80E-04	2.61E-04	6.72E-05	2.11E-05	5.45E-06	1.03E-06	0.00E+00	5.40E-07
172	6.76E-04	2.62E-04	7.06E-05	1.47E-05	4.39E-06	0.00E+00	0.00E+00	0.00E+00
173	7.39E-04	2.08E-04	9.38E-05	3.53E-05	7.61E-06	0.00E+00	0.00E+00	5.39E-07
174	6.27E-04	1.80E-04	4.37E-05	1.61E-05	4.37E-06	1.03E-06	0.00E+00	5.37E-07
175	6.04E-04	2.05E-04	4.35E-05	2.26E-05	1.04E-06	1.02E-06	4.31E-07	0.00E+00
176	5.96E-04	1.46E-04	5.38E-05	1.65E-05	4.37E-06	0.00E+00	0.00E+00	0.00E+00
177	5.46E-04	1.60E-04	7.95E-05	2.73E-05	4.30E-06	9.57E-07	0.00E+00	5.40E-07
178	5.10E-04	1.95E-04	6.56E-05	1.51E-05	4.97E-06	9.46E-07	0.00E+00	0.00E+00
179	5.00E-04	1.76E-04	3.97E-05	1.11E-05	3.24E-06	0.00E+00	0.00E+00	0.00E+00
180	4.86E-04	1.47E-04	6.30E-05	1.78E-05	3.11E-06	1.91E-06	0.00E+00	0.00E+00
181	4.26E-04	1.78E-04	2.67E-05	1.59E-05	1.03E-06	0.00E+00	4.28E-07	5.65E-07
182	4.46E-04	1.60E-04	2.31E-05	1.28E-05	1.03E-06	9.52E-07	0.00E+00	5.36E-07
183	5.15E-04	1.62E-04	5.62E-05	1.44E-05	1.10E-06	0.00E+00	0.00E+00	0.00E+00
184	4.57E-04	1.01E-04	4.29E-05	4.92E-06	2.19E-06	9.49E-07	0.00E+00	0.00E+00
185	4.53E-04	1.51E-04	3.31E-05	9.45E-06	6.38E-06	9.48E-07	0.00E+00	0.00E+00
186	5.20E-04	1.71E-04	4.30E-05	9.47E-06	0.00E+00	0.00E+00	4.51E-07	0.00E+00
187	4.65E-04	1.59E-04	4.92E-05	1.43E-05	2.19E-06	0.00E+00	9.01E-07	0.00E+00
188	4.50E-04	9.52E-05	7.26E-05	9.61E-06	3.15E-06	0.00E+00	0.00E+00	0.00E+00
189	4.21E-04	1.58E-04	7.29E-05	1.42E-05	2.06E-06	0.00E+00	4.24E-07	0.00E+00
190	4.44E-04	1.59E-04	4.61E-05	7.89E-06	3.15E-06	0.00E+00	0.00E+00	0.00E+00
191	3.90E-04	1.43E-04	4.94E-05	7.99E-06	1.03E-06	0.00E+00	0.00E+00	0.00E+00
192	3.80E-04	1.13E-04	2.95E-05	9.32E-06	5.31E-06	0.00E+00	0.00E+00	0.00E+00
193	4.06E-04	1.11E-04	5.95E-05	1.76E-05	0.00E+00	0.00E+00	4.22E-07	0.00E+00
194	3.20E-04	1.16E-04	4.28E-05	1.03E-05	2.86E-06	0.00E+00	0.00E+00	0.00E+00
195	3.11E-04	8.71E-05	4.61E-05	1.12E-05	1.03E-06	0.00E+00	0.00E+00	0.00E+00
196	3.29E-04	1.08E-04	9.72E-06	7.93E-06	1.09E-06	9.39E-07	4.20E-07	0.00E+00

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	1.222E-05	4.195E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2	5.675E-06	1.285E-06	1.580E-06	7.567E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
3	1.098E-05	2.906E-06	0.000E+00	8.614E-07	5.702E-07	0.000E+00	0.000E+00	2.881E-07
4	3.029E-06	0.000E+00	3.479E-06	0.000E+00	1.075E-06	4.921E-07	0.000E+00	0.000E+00
5	6.267E-06	1.370E-06	0.000E+00	8.107E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
6	9.516E-06	4.383E-06	1.703E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
7	6.294E-06	1.385E-06	1.810E-06	1.634E-06	0.000E+00	0.000E+00	2.213E-07	0.000E+00
8	4.864E-06	5.695E-06	0.000E+00	1.682E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
9	9.376E-06	1.474E-06	0.000E+00	0.000E+00	5.769E-07	0.000E+00	0.000E+00	0.000E+00
10	9.595E-06	0.000E+00	0.000E+00	0.000E+00	1.133E-06	0.000E+00	0.000E+00	0.000E+00
11	9.758E-06	4.601E-06	1.860E-06	0.000E+00	0.000E+00	5.424E-07	0.000E+00	0.000E+00
12	1.795E-05	1.665E-06	3.997E-06	1.858E-06	0.000E+00	0.000E+00	2.636E-07	0.000E+00
13	5.184E-06	1.629E-06	3.954E-06	0.000E+00	0.000E+00	1.133E-06	0.000E+00	0.000E+00
14	1.200E-05	0.000E+00	0.000E+00	1.843E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
15	1.067E-05	1.569E-06	0.000E+00	0.000E+00	5.736E-07	0.000E+00	0.000E+00	0.000E+00
16	4.876E-06	1.566E-06	0.000E+00	0.000E+00	6.096E-07	0.000E+00	0.000E+00	0.000E+00
17	1.508E-05	3.050E-06	1.887E-06	8.507E-07	6.041E-07	0.000E+00	0.000E+00	0.000E+00
18	9.151E-06	5.517E-06	1.746E-06	2.425E-06	5.325E-07	4.818E-07	0.000E+00	0.000E+00
19	1.938E-05	1.189E-05	0.000E+00	8.950E-07	1.721E-06	0.000E+00	0.000E+00	0.000E+00
20	1.782E-05	7.296E-06	0.000E+00	1.734E-06	0.000E+00	5.427E-07	0.000E+00	0.000E+00
21	1.266E-05	8.971E-06	5.579E-06	8.864E-07	1.197E-06	5.096E-07	0.000E+00	0.000E+00
22	2.572E-05	2.889E-06	3.501E-06	3.414E-06	0.000E+00	1.085E-06	0.000E+00	0.000E+00
23	9.516E-06	1.165E-05	1.839E-06	2.640E-06	5.889E-07	0.000E+00	2.241E-07	0.000E+00
24	1.886E-05	6.996E-06	3.665E-06	8.786E-07	1.133E-06	0.000E+00	2.379E-07	0.000E+00
25	1.119E-05	8.634E-06	5.175E-06	0.000E+00	5.488E-07	0.000E+00	0.000E+00	0.000E+00
26	9.433E-06	2.784E-06	1.823E-06	0.000E+00	5.485E-07	0.000E+00	0.000E+00	0.000E+00
27	1.299E-05	4.261E-06	3.540E-06	8.750E-07	5.801E-07	0.000E+00	0.000E+00	0.000E+00
28	1.906E-05	1.386E-06	0.000E+00	1.639E-06	0.000E+00	4.996E-07	0.000E+00	0.000E+00
29	1.407E-05	7.095E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
30	6.329E-06	1.467E-06	0.000E+00	0.000E+00	0.000E+00	4.996E-07	0.000E+00	0.000E+00
31	4.696E-06	1.387E-06	1.709E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.736E-07
32	8.070E-06	4.183E-06	0.000E+00	8.700E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
33	9.849E-06	1.468E-06	1.715E-06	0.000E+00	5.457E-07	0.000E+00	0.000E+00	0.000E+00
34	0.000E+00	1.386E-06	3.223E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
35	8.089E-06	7.251E-06	1.763E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
36	1.121E-05	2.905E-06	3.474E-06	1.734E-06	0.000E+00	0.000E+00	2.419E-07	0.000E+00

37	4.684E-06	1.470E-06	1.706E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.908E-07
38	9.334E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
39	3.243E-06	2.925E-06	0.000E+00	8.657E-07	5.766E-07	0.000E+00	0.000E+00	0.000E+00
40	1.511E-06	1.374E-06	1.689E-06	0.000E+00	0.000E+00	5.222E-07	2.349E-07	0.000E+00
41	4.534E-06	0.000E+00	0.000E+00	8.593E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
42	7.942E-06	0.000E+00	1.689E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
43	4.661E-06	1.379E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
44	1.249E-05	1.463E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
45	4.651E-06	1.374E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
46	4.679E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
47	4.654E-06	1.374E-06	0.000E+00	8.136E-07	0.000E+00	0.000E+00	0.000E+00	2.891E-07
48	3.041E-06	0.000E+00	0.000E+00	8.664E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
49	4.789E-06	2.948E-06	1.712E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
50	6.005E-06	0.000E+00	3.371E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
51	8.296E-06	1.511E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
52	1.649E-05	3.074E-06	3.668E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
53	1.586E-06	1.434E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
54	8.319E-06	0.000E+00	0.000E+00	1.716E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
55	8.457E-06	1.561E-06	1.909E-06	8.779E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
56	1.015E-05	0.000E+00	1.953E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
57	1.213E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
58	1.763E-05	1.639E-06	1.904E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
59	1.251E-05	3.253E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
60	1.237E-05	1.586E-06	0.000E+00	0.000E+00	6.136E-07	0.000E+00	0.000E+00	0.000E+00
61	2.137E-05	3.125E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
62	8.799E-06	1.583E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
63	2.327E-05	4.833E-06	1.941E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
64	2.023E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
65	2.287E-05	1.641E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
66	4.114E-05	3.225E-06	4.019E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
67	2.665E-05	8.772E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.859E-07	0.000E+00
68	1.758E-05	1.780E-06	0.000E+00	0.000E+00	6.962E-07	0.000E+00	0.000E+00	0.000E+00
69	3.251E-05	6.988E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
70	2.939E-05	1.571E-05	2.246E-06	2.066E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
71	5.607E-05	5.199E-06	4.296E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
72	3.625E-05	7.098E-06	0.000E+00	1.004E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
73	2.316E-05	5.235E-06	0.000E+00	0.000E+00	0.000E+00	6.001E-07	0.000E+00	0.000E+00
74	2.075E-05	6.884E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
75	3.238E-05	3.419E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
76	2.278E-05	3.389E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

77	2.835E-05	8.636E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
78	4.158E-05	5.146E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
79	2.027E-05	3.309E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
80	2.007E-05	5.066E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.757E-07	0.000E+00
81	2.053E-05	1.723E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
82	2.087E-05	1.511E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
83	2.775E-05	3.248E-06	2.197E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
84	3.105E-05	5.013E-06	2.107E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
85	2.062E-05	0.000E+00	4.231E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
86	2.044E-05	3.239E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
87	4.588E-05	3.392E-06	2.094E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.184E-07
88	2.555E-05	3.304E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
89	3.290E-05	3.357E-06	0.000E+00	9.979E-07	0.000E+00	0.000E+00	0.000E+00	3.340E-07
90	1.975E-05	1.684E-06	1.963E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
91	2.174E-05	6.438E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
92	2.148E-05	3.157E-06	2.076E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
93	1.997E-05	3.268E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
94	1.600E-05	1.549E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
95	1.784E-05	1.661E-06	2.045E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
96	1.395E-05	1.551E-06	2.034E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.257E-07
97	1.564E-05	1.550E-06	2.046E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
98	1.654E-05	4.518E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
99	1.597E-05	1.548E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
100	1.581E-05	4.785E-06	1.901E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
101	1.736E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
102	2.427E-05	4.769E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
103	8.936E-06	4.692E-06	2.026E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
104	7.096E-06	1.538E-06	1.893E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.029E-07
105	6.809E-06	4.764E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.444E-07	3.214E-07
106	1.396E-05	6.356E-06	0.000E+00	9.629E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
107	1.899E-05	3.082E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
108	2.485E-05	3.110E-06	2.026E-06	9.443E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
109	2.475E-05	1.649E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
110	3.533E-05	3.216E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
111	1.261E-05	1.649E-06	2.037E-06	9.800E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
112	2.507E-05	5.013E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
113	2.883E-05	1.574E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
114	2.147E-05	1.528E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
115	2.123E-05	3.201E-06	2.021E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
116	2.273E-05	3.113E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

117	1.399E-05	4.693E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.464E-07	0.000E+00
118	1.910E-05	1.612E-06	1.891E-06	9.579E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
119	2.427E-05	3.155E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
120	2.622E-05	7.909E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
121	2.110E-05	3.239E-06	1.994E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
122	5.162E-06	3.041E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
123	2.077E-05	1.508E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
124	2.553E-05	4.601E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
125	2.404E-05	1.495E-06	0.000E+00	8.850E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
126	1.693E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
127	1.525E-05	3.010E-06	1.844E-06	0.000E+00	0.000E+00	5.706E-07	0.000E+00	0.000E+00
128	1.179E-05	1.496E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
129	1.185E-05	6.176E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
130	1.458E-05	1.394E-06	0.000E+00	8.747E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
131	1.537E-05	1.571E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
132	1.536E-05	1.577E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
133	1.177E-05	3.149E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.371E-07	0.000E+00
134	1.843E-05	1.494E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.516E-07	3.105E-07
135	6.652E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
136	1.711E-05	4.451E-06	0.000E+00	9.336E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
137	1.337E-05	1.476E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
138	8.529E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
139	1.170E-05	4.571E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
140	1.540E-05	4.549E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
141	8.526E-06	0.000E+00	0.000E+00	8.829E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
142	1.356E-05	9.042E-06	1.930E-06	9.243E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
143	8.445E-06	1.571E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
144	3.244E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
145	1.340E-05	0.000E+00	1.824E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
146	6.393E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.869E-07
147	1.006E-05	1.569E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
148	1.167E-05	2.965E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.106E-07
149	5.106E-06	3.061E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
150	3.279E-06	1.521E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
151	3.489E-06	1.583E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
152	3.358E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
153	6.706E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
154	1.184E-05	1.464E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
155	8.250E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
156	8.295E-06	0.000E+00	0.000E+00	0.000E+00	6.095E-07	0.000E+00	0.000E+00	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
50	25	5	8	3	0	1	0
58	31	11	8	2	1	0	0
70	27	6	6	3	2	0	0
63	22	7	5	2	0	1	0
55	23	9	9	4	1	0	0
84	26	9	4	4	0	1	1
66	24	9	9	1	0	0	0
60	31	5	8	3	0	1	0
64	37	10	16	4	0	2	1
86	24	16	11	4	2	1	0
85	33	18	10	2	1	0	1
154	75	30	21	6	1	1	0
136	49	16	10	4	2	0	1
137	61	22	11	7	0	0	0
110	43	10	13	7	0	3	0
133	61	17	11	4	2	1	0
99	55	13	12	3	2	3	0
130	36	14	17	13	6	3	1
82	30	14	15	9	4	3	2
82	42	21	10	8	3	0	1
94	46	15	13	9	1	1	0
72	29	14	9	5	1	1	1
78	32	9	7	3	2	2	0
57	37	21	8	1	5	0	0
57	32	15	8	3	3	1	0
60	30	16	10	3	2	0	0
57	22	14	9	4	1	1	1
61	29	10	8	6	3	1	1
68	24	6	14	2	2	1	0
68	23	7	8	2	0	0	0
58	19	12	6	3	3	1	0
73	26	8	5	0	2	0	1
54	26	14	5	6	1	0	1
66	31	14	6	5	0	2	0
77	36	7	6	2	1	2	0
82	37	19	8	4	2	2	1
44	25	7	9	1	1	0	1

44	25	6	7	3	0	0	0
52	27	12	7	6	0	0	0
61	18	6	1	3	0	0	0
49	21	8	8	0	2	0	0
55	30	15	4	3	0	0	0
84	35	21	17	6	0	0	0
75	42	9	16	4	1	1	0
64	41	17	11	5	0	0	0
92	60	22	16	3	1	0	1
84	42	21	20	3	1	0	0
103	41	21	13	6	2	0	0
141	76	27	13	1	1	4	0
220	101	44	26	8	4	1	0
263	137	41	27	8	0	1	1
294	172	57	31	17	1	0	0
294	137	42	40	8	0	0	0
309	173	52	39	12	2	0	0
335	163	47	41	17	3	1	0
425	181	69	45	11	6	1	0
520	245	83	56	18	2	1	0
647	275	99	68	24	6	1	0
737	354	109	83	21	4	0	1
681	316	111	93	36	8	0	0
649	302	103	72	13	4	0	0
651	321	86	77	28	7	2	1
620	306	97	74	21	3	1	0
692	307	117	66	18	5	2	1
886	402	136	92	38	9	3	0
1079	498	161	103	23	4	0	0
915	423	142	86	24	10	1	0
971	414	149	106	24	2	1	1
1000	453	139	101	26	5	0	0
1056	455	171	109	27	4	2	0
1118	464	134	82	25	6	0	0
1030	440	128	105	26	4	1	0
1036	447	141	98	24	11	1	0
967	425	132	89	19	7	2	1
968	406	122	95	35	7	0	1
908	384	128	75	32	4	1	0
915	394	129	95	23	3	1	0

939	411	122	90	29	2	2	1
846	359	108	80	32	8	1	0
840	364	111	94	18	5	1	0
847	360	112	88	21	2	0	0
856	368	150	91	28	1	1	0
876	349	114	81	30	6	2	0
796	319	103	82	22	3	0	0
764	355	130	81	21	5	0	0
772	351	93	76	26	6	0	1
792	322	118	83	20	2	2	0
844	341	122	72	24	7	2	0
732	297	124	75	18	1	1	0
741	311	101	83	20	3	0	0
784	292	104	69	15	5	1	1
730	339	113	63	15	2	0	0
704	312	90	67	17	4	1	0
674	280	114	49	19	4	1	0
700	302	99	81	14	2	1	0
668	279	107	54	20	3	2	0
680	314	100	70	23	1	0	0
718	309	91	74	27	2	0	0
602	309	104	55	21	1	1	0
637	287	99	54	14	2	0	0
617	271	90	58	16	1	1	0
625	257	83	65	11	4	1	0
645	277	91	65	14	2	0	1
649	277	92	64	17	2	0	1
657	273	88	42	23	5	1	0
638	261	88	74	18	3	2	0
664	295	83	66	17	3	1	0
720	330	109	74	27	2	0	0
760	288	108	68	12	4	0	0
795	319	129	84	18	7	1	0
762	358	101	61	15	2	1	0
748	375	125	66	27	4	1	0
798	367	114	71	26	4	1	0
888	358	119	72	19	3	0	0
749	319	111	65	17	6	0	0
773	332	86	70	14	3	0	0
691	311	99	53	13	1	0	0

675	285	96	60	19	4	1	0
686	302	89	62	18	3	1	0
594	262	98	75	14	8	2	0
632	272	78	70	15	1	0	0
663	251	89	58	19	6	2	1
602	262	81	52	16	5	0	0
608	225	85	38	6	0	0	0
537	214	74	41	16	0	2	0
529	211	79	43	18	2	0	0
517	232	75	52	11	4	1	0
540	231	73	50	12	4	0	0
546	214	78	41	9	1	0	0
607	239	83	72	9	1	2	0
530	241	93	64	15	3	1	0
514	212	65	36	12	3	0	0
508	212	85	43	11	2	0	0
480	227	48	57	12	1	2	0
504	198	72	36	7	0	0	2
522	212	57	33	19	1	2	1
475	181	81	36	12	1	0	0
473	208	62	42	14	1	0	0
488	186	62	44	13	2	0	0
467	183	60	35	13	2	0	0
506	170	67	30	4	1	1	1
414	174	70	29	12	2	0	0
437	182	56	35	10	1	0	0
396	184	58	29	9	4	0	0
447	202	52	32	8	2	0	0
482	172	60	35	13	3	0	0
465	192	51	31	5	2	0	0
439	197	56	32	8	3	0	0
433	175	53	34	9	0	1	1
435	147	53	23	3	1	1	0
404	124	45	25	4	1	0	1
392	165	34	32	5	0	0	1
397	148	38	33	8	0	0	0
361	140	41	13	6	1	1	0
360	137	21	24	4	0	1	0
380	143	45	24	6	0	0	0
325	128	36	23	4	0	0	0

310	99	36	15	6	1	0	0
310	115	34	20	3	0	0	1
333	117	37	16	5	0	0	1
334	145	32	27	6	1	0	0
350	104	36	24	3	0	0	0
302	111	26	18	3	1	0	0
273	116	36	19	6	0	0	0
255	79	14	15	2	1	0	0
246	77	19	16	3	0	0	0
232	99	22	15	4	1	1	0
248	93	25	18	3	2	0	0
235	87	26	12	8	3	1	0
229	72	18	11	4	0	0	0
220	96	20	13	5	1	0	1
219	97	21	9	4	0	0	0
240	77	28	22	7	0	0	1
203	67	13	10	4	1	0	1
197	76	13	14	1	1	1	0
193	54	16	10	4	0	0	0
178	60	24	17	4	1	0	1
178	78	21	10	5	1	0	0
164	66	12	7	3	0	0	0
159	55	19	11	3	2	0	0
140	67	8	10	1	0	1	1
146	60	7	8	1	1	0	1
169	61	17	9	1	0	0	0
150	38	13	3	2	1	0	0
149	57	10	6	6	1	0	0
171	64	13	6	0	0	1	0
153	60	15	9	2	0	2	0
148	36	22	6	3	0	0	0
139	60	22	9	2	0	1	0
147	60	14	5	3	0	0	0
129	54	15	5	1	0	0	0
126	43	9	6	5	0	0	0
135	42	18	11	0	0	1	0
114	47	14	7	3	0	0	0
103	33	14	7	1	0	0	0
109	41	3	5	1	1	1	0

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
8	3	0	0	0	0	0	0
4	1	1	1	0	0	0	0
7	2	0	1	1	0	0	1
2	0	2	0	2	1	0	0
4	1	0	1	0	0	0	0
6	3	1	0	0	0	0	0
4	1	1	2	0	0	1	0
3	4	0	2	0	0	0	0
6	1	0	0	1	0	0	0
6	0	0	0	2	0	0	0
6	3	1	0	0	1	0	0
10	1	2	2	0	0	1	0
3	1	2	0	0	2	0	0
7	0	0	2	0	0	0	0
6	1	0	0	1	0	0	0
3	1	0	0	1	0	0	0
9	2	1	1	1	0	0	0
6	4	1	3	1	1	0	0
12	8	0	1	3	0	0	0
11	5	0	2	0	1	0	0
8	6	3	1	2	1	0	0
16	2	2	4	0	2	0	0
6	8	1	3	1	0	1	0
12	5	2	1	2	0	1	0
7	6	3	0	1	0	0	0
6	2	1	0	1	0	0	0
8	3	2	1	1	0	0	0
12	1	0	2	0	1	0	0
9	5	0	0	0	0	0	0
4	1	0	0	0	1	0	0
3	1	1	0	0	0	0	1
5	3	0	1	0	0	0	0
6	1	1	0	1	0	0	0
0	1	2	0	0	0	0	0
5	5	1	0	0	0	0	0
7	2	2	2	0	0	1	0
3	1	1	0	0	0	0	1

6	0	0	0	0	0	0	0
2	2	0	1	1	0	0	0
1	1	1	0	0	1	1	0
3	0	0	1	0	0	0	0
5	0	1	0	0	0	0	0
3	1	0	0	0	0	0	0
8	1	0	0	0	0	0	0
3	1	0	0	0	0	0	0
3	0	0	0	0	0	0	0
3	1	0	1	0	0	0	1
2	0	0	1	0	0	0	0
3	2	1	0	0	0	0	0
4	0	2	0	0	0	0	0
5	1	0	0	0	0	0	0
10	2	2	0	0	0	0	0
1	1	0	0	0	0	0	0
5	0	0	2	0	0	0	0
5	1	1	1	0	0	0	0
6	0	1	0	0	0	0	0
7	0	0	0	0	0	0	0
10	1	1	0	0	0	0	0
7	2	0	0	0	0	0	0
7	1	0	0	1	0	0	0
12	2	0	0	0	0	0	0
5	1	0	0	0	0	0	0
13	3	1	0	0	0	0	0
11	0	0	0	0	0	0	0
12	1	0	0	0	0	0	0
23	2	2	0	0	0	0	0
14	5	0	0	0	0	1	0
9	1	0	0	1	0	0	0
17	4	0	0	0	0	0	0
15	9	1	2	0	0	0	0
29	3	2	0	0	0	0	0
19	4	0	1	0	0	0	0
12	3	0	0	0	1	0	0
11	4	0	0	0	0	0	0
17	2	0	0	0	0	0	0
12	2	0	0	0	0	0	0
15	5	0	0	0	0	0	0

22	3	0	0	0	0	0	0
11	2	0	0	0	0	0	0
11	3	0	0	0	0	1	0
11	1	0	0	0	0	0	0
12	1	0	0	0	0	0	0
15	2	1	0	0	0	0	0
17	3	1	0	0	0	0	0
11	0	2	0	0	0	0	0
11	2	0	0	0	0	0	0
25	2	1	0	0	0	0	1
14	2	0	0	0	0	0	0
18	2	0	1	0	0	0	1
11	1	1	0	0	0	0	0
12	4	0	0	0	0	0	0
12	2	1	0	0	0	0	0
11	2	0	0	0	0	0	0
9	1	0	0	0	0	0	0
10	1	1	0	0	0	0	0
8	1	1	0	0	0	0	1
9	1	1	0	0	0	0	0
10	3	0	0	0	0	0	0
9	1	0	0	0	0	0	0
9	3	1	0	0	0	0	0
10	0	0	0	0	0	0	0
14	3	0	0	0	0	0	0
5	3	1	0	0	0	0	0
4	1	1	0	0	0	0	1
4	3	0	0	0	0	1	1
8	4	0	1	0	0	0	0
11	2	0	0	0	0	0	0
14	2	1	1	0	0	0	0
14	1	0	0	0	0	0	0
20	2	0	0	0	0	0	0
7	1	1	1	0	0	0	0
14	3	0	0	0	0	0	0
16	1	0	0	0	0	0	0
13	1	0	0	0	0	0	0
12	2	1	0	0	0	0	0
13	2	0	0	0	0	0	0
8	3	0	0	0	0	1	0

11	1	1	1	0	0	0	0
14	2	0	0	0	0	0	0
15	5	0	0	0	0	0	0
12	2	1	0	0	0	0	0
3	2	0	0	0	0	0	0
12	1	0	0	0	0	0	0
15	3	0	0	0	0	0	0
14	1	0	1	0	0	0	0
10	0	0	0	0	0	0	0
9	2	1	0	0	1	0	0
7	1	0	0	0	0	0	0
7	4	0	0	0	0	0	0
9	1	0	1	0	0	0	0
9	1	0	0	0	0	0	0
9	1	0	0	0	0	0	0
7	2	0	0	0	0	1	0
11	1	0	0	0	0	1	1
4	0	0	0	0	0	0	0
10	3	0	1	0	0	0	0
8	1	0	0	0	0	0	0
5	0	0	0	0	0	0	0
7	3	0	0	0	0	0	0
9	3	0	0	0	0	0	0
5	0	0	1	0	0	0	0
8	6	1	1	0	0	0	0
5	1	0	0	0	0	0	0
2	0	0	0	0	0	0	0
8	0	1	0	0	0	0	0
4	0	0	0	0	0	0	1
6	1	0	0	0	0	0	0
7	2	0	0	0	0	0	1
3	2	0	0	0	0	0	0
2	1	0	0	0	0	0	0
2	1	0	0	0	0	0	0
2	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
7	1	0	0	0	0	0	0
5	0	0	0	0	0	0	0
5	0	0	0	1	0	0	0
3	0	0	0	0	0	0	0

6	0	0	0	0	0	0	0
8	2	0	0	0	0	0	0
4	0	0	0	0	0	2	0
3	0	1	0	1	0	0	0
5	1	0	0	0	0	0	0
3	0	0	0	0	0	0	0
2	2	0	0	0	0	0	0
6	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
5	1	0	0	0	0	0	0
2	0	0	0	0	0	0	0
4	0	0	0	0	0	1	0
6	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
2	0	0	0	0	0	0	1
2	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
2	1	0	0	0	0	0	0
1	1	0	0	0	0	0	0
1	0	0	0	0	0	0	0
1	1	0	0	0	0	0	0
2	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
1	1	0	0	0	0	1	0
2	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
4	1	0	0	0	0	0	1
1	0	0	0	0	0	0	0
2	2	0	0	0	0	0	0
0	0	0	0	0	0	0	0
2	1	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1
5	0	0	0	0	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 2.97 \quad (2.719, 3.222)$$

$$b = -0.2946 \quad (-0.3082, -0.2811)$$

$$c = 0.002867 \quad (-0.0179, 0.02364)$$

$$d = -0.05582 \quad (-0.3074, 0.1958)$$

goftotal =

$$sse: 1.2253e-006$$

$$rsquare: 1.0000$$

$$dfe: 4$$

$$adjrsquare: 1.0000$$

$$rmse: 5.5346e-004$$

ctotal =

General model Exp1:

$$ctotal(x) = a \cdot \exp(b \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 1.127 \quad (0.7457, 1.509)$$

$$b = -0.2375 \quad (-0.255, -0.2199)$$

goftotal =

$$sse: 2.6751e-008$$

$$rsquare: 9.9976e-001$$

$$dfe: 3$$

$$adjrsquare: 9.9968e-001$$

$$rmse: 9.4430e-005$$

Event 54	Date	Time*	Location*	Summing interval*				
	20-Feb-02	612	N12W72	Feb 20 to feb 21				
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	0.000E+00	0.000E+00	0.000E+00	2.357E-05	1.762E-05	5.782E-06	2.948E-06	0.000E+00
2	8.047E-04	4.173E-04	2.310E-04	9.519E-05	2.888E-05	9.644E-06	8.858E-07	1.125E-06
3	4.930E-04	2.378E-04	1.210E-04	4.221E-05	2.172E-05	2.973E-06	1.818E-06	0.000E+00

1	7.774E-06	1.561E-05	1.378E-05	4.104E-06	3.844E-06	0.000E+00	0.000E+00	0.000E+00
2	1.818E-04	4.341E-05	3.529E-05	1.109E-05	1.705E-06	0.000E+00	0.000E+00	0.000E+00
3	7.634E-05	3.668E-05	1.255E-05	5.154E-06	5.594E-07	5.071E-07	2.286E-07	0.000E+00
4	3.614E-05	2.852E-05	6.971E-06	3.392E-06	1.714E-06	0.000E+00	2.370E-07	0.000E+00
5	2.983E-05	1.583E-05	7.100E-06	8.229E-07	0.000E+00	5.014E-07	2.380E-07	0.000E+00
6	2.863E-05	8.377E-06	5.321E-06	8.679E-07	0.000E+00	0.000E+00	0.000E+00	2.889E-07
7	2.023E-05	7.228E-06	0.000E+00	8.171E-07	5.769E-07	0.000E+00	0.000E+00	0.000E+00
8	2.347E-05	5.750E-06	1.803E-06	1.676E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
9	2.334E-05	9.985E-06	3.503E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
10	3.172E-05	5.719E-06	1.819E-06	0.000E+00	1.125E-06	0.000E+00	0.000E+00	0.000E+00
11	2.545E-05	5.539E-06	1.814E-06	8.186E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
12	1.885E-05	2.853E-06	7.155E-06	8.693E-07	5.772E-07	4.989E-07	0.000E+00	0.000E+00
13	2.362E-05	4.234E-06	3.418E-06	3.324E-06	1.665E-06	0.000E+00	0.000E+00	0.000E+00
14	1.879E-05	2.844E-06	1.811E-06	8.671E-07	5.426E-07	0.000E+00	0.000E+00	0.000E+00
15	2.041E-05	1.380E-06	1.809E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
16	1.336E-05	5.389E-06	1.689E-06	7.633E-07	0.000E+00	0.000E+00	2.065E-07	0.000E+00
17	1.752E-05	9.901E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
18	7.808E-06	2.839E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
19	3.230E-06	5.754E-06	0.000E+00	8.629E-07	5.409E-07	0.000E+00	0.000E+00	0.000E+00
20	7.886E-06	1.459E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
21	1.262E-05	0.000E+00	3.496E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
22	9.387E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
23	7.678E-06	2.742E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
24	1.609E-06	2.824E-06	0.000E+00	1.621E-06	0.000E+00	0.000E+00	2.196E-07	0.000E+00
25	3.215E-06	1.453E-06	1.691E-06	8.093E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
26	6.150E-06	1.452E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
27	1.606E-06	2.819E-06	0.000E+00	8.586E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
28	3.026E-06	1.449E-06	0.000E+00	0.000E+00	5.704E-07	0.000E+00	0.000E+00	0.000E+00
29	4.721E-06	0.000E+00	0.000E+00	8.079E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
30	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.703E-07
31	4.809E-06	1.449E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
32	1.409E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
33	1.509E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
34	1.601E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.318E-07	0.000E+00
35	3.017E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
36	1.601E-06	0.000E+00	0.000E+00	8.557E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
37	0.000E+00	2.809E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
38	1.600E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
39	1.509E-06	0.000E+00	0.000E+00	8.550E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	0	0	15	17	6	7	0
263	157	70	60	27	10	2	2
159	87	36	26	20	3	4	0
71	28	19	23	6	3	0	1
62	48	22	12	9	2	1	0
44	20	5	8	2	2	1	1
33	23	6	5	3	0	0	0
21	11	7	8	1	1	0	1
41	18	8	7	8	0	0	0
58	31	14	7	5	2	1	1
45	13	8	6	4	1	0	1
35	28	4	5	2	2	1	0
37	13	8	4	7	1	1	1
33	14	5	4	1	0	0	0
25	14	3	5	0	1	0	0
31	16	6	1	3	1	0	0
23	6	3	2	2	1	0	0
22	10	3	4	0	0	0	0
19	10	7	3	2	1	0	1
13	3	2	2	0	0	0	0
14	5	1	2	1	0	0	0
11	6	3	0	1	0	0	1
12	2	2	2	2	0	0	0
11	3	0	5	1	0	0	1
10	5	2	2	0	0	0	0
8	2	0	0	1	0	0	0
12	1	1	3	0	0	1	1
14	5	0	1	0	1	0	0
7	6	1	1	0	0	1	1
4	6	4	0	1	0	0	1
4	3	1	3	1	0	0	0
5	2	1	0	1	1	0	0
1	1	2	0	0	0	0	0
3	1	0	0	0	0	1	1
3	2	0	2	0	0	0	0
3	0	0	0	0	0	1	0
3	1	1	1	0	0	0	0
6	0	1	0	0	0	0	0

3	3	0	0	0	1	0	0
---	---	---	---	---	---	---	---

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
5	11	8	5	7	0	0	0
114	30	20	13	3	0	0	0
47	25	7	6	1	1	1	0
23	20	4	4	3	0	1	0
19	11	4	1	0	1	1	0
18	6	3	1	0	0	0	1
13	5	0	1	1	0	0	0
15	4	1	2	0	0	0	0
15	7	2	0	0	0	0	0
20	4	1	0	2	0	0	0
16	4	1	1	0	0	0	0
12	2	4	1	1	1	0	0
15	3	2	4	3	0	0	0
12	2	1	1	1	0	0	0
13	1	1	0	0	0	0	0
9	4	1	1	0	0	1	0
11	7	0	0	0	0	0	0
5	2	0	0	0	0	0	0
2	4	0	1	1	0	0	0
5	1	0	0	0	0	0	0
8	0	2	0	0	0	0	0
6	0	0	0	0	0	0	0
5	2	0	0	0	0	0	0
1	2	0	2	0	0	1	0
2	1	1	1	0	0	0	0
4	1	0	0	0	0	0	0
1	2	0	1	0	0	0	0
2	1	0	0	1	0	0	0
3	0	0	1	0	0	0	0
0	0	0	0	0	0	0	1
3	1	0	0	0	0	0	0
1	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
1	0	0	0	0	0	1	0
2	0	0	0	0	0	0	0

1	0	0	1	0	0	0	0
0	2	0	0	0	0	0	0
1	0	0	0	0	0	0	0
1	0	0	1	0	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a * \exp(b * x) + c * \exp(d * x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.02058 \text{ (0.01703, 0.02414)}$$

$$b = -0.2229 \text{ (-0.2432, -0.2026)}$$

$$c = 1.496e-005 \text{ (-7.303e-005, 0.000103)}$$

$$d = 0.009704 \text{ (-0.08993, 0.1093)}$$

goftotal =

$$sse: 4.3809e-009$$

$$rsquare: 0.9994$$

$$dfe: 4$$

$$adjrsquare: 0.9990$$

$$rmse: 3.3094e-005$$

ctotal =

General model Exp1:

$$ctotal(x) = a * \exp(b * x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.002297 \text{ (-0.000678, 0.005273)}$$

$$b = -0.1036 \text{ (-0.1649, -0.04229)}$$

goftotal =

$$sse: 2.0546e-009$$

$$rsquare: 9.7428e-001$$

$$dfe: 3$$

$$adjrsquare: 9.6571e-001$$

$$rmse: 2.6170e-005$$

Event 57	Date	Time*	Location*	Summing interval*
	22-Mar-02	1114	SW90	Mar 22 to Mar 24 1300

<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.199E-07
2	3.059E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
3	1.506E-05	2.694E-06	3.140E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
4	2.670E-05	5.542E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
5	4.986E-05	1.372E-05	0.000E+00	1.698E-06	0.000E+00	0.000E+00	9.114E-07	0.000E+00
6	3.495E-05	1.128E-05	0.000E+00	1.621E-06	0.000E+00	0.000E+00	0.000E+00	5.897E-07
7	6.709E-05	2.702E-06	3.387E-06	0.000E+00	2.179E-06	0.000E+00	0.000E+00	0.000E+00
8	1.077E-04	8.317E-06	3.381E-06	0.000E+00	1.159E-06	0.000E+00	4.870E-07	5.971E-07
9	1.597E-04	2.318E-05	0.000E+00	1.674E-06	0.000E+00	1.031E-06	0.000E+00	6.152E-07
10	1.106E-04	2.398E-05	6.503E-06	1.663E-06	0.000E+00	0.000E+00	0.000E+00	5.701E-07
11	7.918E-05	8.784E-06	3.724E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
12	9.214E-05	9.039E-06	3.823E-06	0.000E+00	0.000E+00	1.114E-06	9.852E-07	0.000E+00
13	7.933E-05	5.840E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
14	1.247E-04	1.195E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.092E-07
15	9.899E-05	2.425E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
16	6.602E-05	6.052E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
17	8.682E-05	1.171E-05	0.000E+00	1.874E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
18	7.866E-05	5.861E-06	1.113E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
19	6.831E-05	2.896E-06	0.000E+00	1.737E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
20	6.501E-05	9.214E-06	0.000E+00	1.847E-06	2.380E-06	0.000E+00	0.000E+00	0.000E+00
21	5.434E-05	3.071E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.284E-07
22	5.658E-05	3.020E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
23	5.362E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
24	8.379E-05	3.091E-06	1.145E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.227E-07
25	1.108E-04	1.573E-05	0.000E+00	2.021E-06	0.000E+00	1.086E-06	0.000E+00	0.000E+00
26	1.309E-04	4.258E-05	0.000E+00	5.366E-06	1.178E-06	0.000E+00	9.824E-07	0.000E+00
27	1.276E-04	4.562E-05	2.136E-05	1.133E-05	1.296E-06	0.000E+00	9.992E-07	0.000E+00
28	7.067E-05	1.194E-05	2.198E-05	3.682E-06	1.213E-06	1.041E-06	0.000E+00	0.000E+00
29	1.281E-04	8.596E-06	7.331E-06	5.297E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
30	3.860E-05	2.946E-06	1.065E-05	1.729E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
31	1.430E-04	2.789E-05	4.132E-06	2.139E-06	0.000E+00	0.000E+00	0.000E+00	6.094E-07
32	1.317E-04	4.428E-05	2.030E-05	1.849E-06	0.000E+00	1.179E-06	0.000E+00	6.306E-07
33	1.121E-04	3.425E-05	8.086E-06	1.834E-06	1.300E-06	0.000E+00	0.000E+00	0.000E+00
34	1.032E-04	2.068E-05	3.724E-06	0.000E+00	1.127E-06	0.000E+00	0.000E+00	5.804E-07
35	4.102E-05	8.099E-06	3.320E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.501E-07
36	2.469E-05	0.000E+00	6.744E-06	0.000E+00	0.000E+00	0.000E+00	8.944E-07	0.000E+00
37	3.486E-05	1.657E-05	3.596E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

22	0.000E+00	0.000E+00	0.000E+00	9.279E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
23	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.416E-07	0.000E+00	0.000E+00	0.000E+00
24	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
25	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
26	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
27	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
28	1.717E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
29	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
30	1.826E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
31	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
32	3.836E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
33	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
34	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.469E-07
35	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
36	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
37	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
38	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
39	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
40	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
41	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
42	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
43	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.075E-07	0.000E+00
44	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
45	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
46	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
47	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
48	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
49	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
50	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
51	1.530E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	0	0	0	0	0	0	1
1	0	0	0	0	0	0	0
5	1	1	0	0	0	0	0
9	2	0	0	0	0	0	0
16	5	0	1	0	0	2	0
11	4	0	1	0	0	0	1
21	1	1	0	2	0	0	0

33	3	1	0	1	0	1	1
48	8	0	1	0	1	0	1
36	9	2	1	0	0	0	1
24	3	1	0	0	0	0	0
27	3	1	0	0	1	2	0
23	2	0	0	0	0	0	0
36	4	0	0	0	0	0	1
28	8	0	0	0	0	0	0
19	2	0	0	0	0	0	0
25	4	0	1	0	0	0	0
23	2	3	0	0	0	0	0
20	1	0	1	0	0	0	0
19	3	0	1	2	0	0	0
16	1	0	0	0	0	0	1
17	1	0	0	0	0	0	0
16	0	0	0	0	0	0	0
24	1	3	0	0	0	0	1
31	5	0	1	0	1	0	0
38	14	0	3	1	0	2	0
37	14	5	6	1	0	2	0
21	4	6	2	1	1	0	0
38	3	2	3	0	0	0	0
12	1	3	1	0	0	0	0
37	8	1	1	0	0	0	1
36	14	5	1	0	1	0	1
31	11	2	1	1	0	0	0
30	7	1	0	1	0	0	1
13	3	1	0	0	0	0	1
8	0	2	0	0	0	2	0
11	6	1	0	0	0	0	0
11	3	1	2	0	0	0	0
6	3	1	0	0	0	0	0
9	3	0	0	1	1	0	0
3	2	0	0	0	0	0	0
4	0	1	0	0	0	0	0
3	2	0	1	0	0	1	0
2	2	0	1	0	0	0	0
3	1	0	0	0	0	0	0
4	2	0	1	0	0	0	0
3	3	0	1	0	0	0	0

2	2	1	0	0	0	0	0
5	0	0	0	0	0	0	0
5	4	0	0	0	0	1	0
5	2	0	0	0	0	0	0

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	1	1
0	0	0	0	0	0	1	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	1	0
0	0	0	0	0	0	0	0
0	0	0	1	0	0	0	0
0	0	0	0	1	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0

0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	1	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.1284 \quad (0.02421, 0.2326)$$

$$b = -0.4499 \quad (-0.5435, -0.3564)$$

$$c = 7.683e-008 \quad (-9.119e-005, 9.135e-005)$$

$$d = 0.01737 \quad (-19.4, 19.43)$$

goftotal =

sse: 1.4042e-008

rsquare: 0.9975

dfe: 4

adjrsquare: 0.9956

rmse: 5.9250e-005

ctotal =

General model Exp1:

$$ctotal(x) = a * \exp(b * x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.0001173 \quad (-0.0002499, 0.0004846)$$

$$b = -0.05702 \quad (-0.1881, 0.07405)$$

goftotal =

sse: 5.3838e-010

rsquare: 6.8645e-001

dfe: 3

adjrsquare: 5.8194e-001

rmse: 1.3396e-005

Event 58	Date	Time*	Location*	Summing interval*				
	17-Apr-02	824	S14W34	Apr 17 to Apr 18 0000				
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.145E-07	0.000E+00
2	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.156E-07	0.000E+00
3	0.000E+00	5.104E-06	3.163E-06	1.529E-06	0.000E+00	0.000E+00	4.173E-07	0.000E+00
4	1.056E-04	8.063E-05	5.845E-05	2.185E-05	1.562E-05	6.860E-06	1.759E-06	0.000E+00
5	4.418E-04	2.120E-04	1.527E-04	7.407E-05	4.376E-05	1.274E-05	2.204E-06	5.709E-07
6	4.879E-04	2.516E-04	1.606E-04	1.016E-04	3.014E-05	7.786E-06	1.289E-06	5.374E-07
7	6.169E-04	3.390E-04	1.398E-04	8.336E-05	2.642E-05	1.406E-05	4.433E-06	5.671E-07
8	9.237E-04	4.406E-04	1.962E-04	1.371E-04	3.522E-05	1.663E-05	1.400E-06	0.000E+00
9	1.170E-03	5.845E-04	2.423E-04	1.045E-04	4.328E-05	1.465E-05	2.334E-06	1.180E-06
10	1.024E-03	4.136E-04	2.116E-04	9.865E-05	2.613E-05	9.585E-06	4.228E-06	5.717E-07
11	6.757E-04	3.288E-04	1.566E-04	6.717E-05	1.562E-05	8.216E-06	1.357E-06	0.000E+00
12	6.306E-04	2.757E-04	1.369E-04	6.517E-05	2.018E-05	9.424E-06	4.470E-07	5.905E-07
13	5.819E-04	2.397E-04	1.006E-04	4.533E-05	1.516E-05	3.957E-06	9.184E-07	0.000E+00
14	5.800E-04	2.392E-04	1.272E-04	4.702E-05	1.637E-05	4.439E-06	1.928E-06	0.000E+00
15	6.227E-04	2.263E-04	1.192E-04	2.440E-05	6.910E-06	4.319E-06	9.395E-07	0.000E+00
16	6.460E-04	2.331E-04	1.000E-04	5.156E-05	1.606E-05	1.079E-06	4.921E-07	5.791E-07
17	4.695E-04	2.442E-04	1.226E-04	3.901E-05	1.015E-05	2.101E-06	4.776E-07	0.000E+00
18	5.101E-04	1.495E-04	7.008E-05	4.202E-05	1.011E-05	1.010E-06	4.853E-07	0.000E+00
19	4.091E-04	1.322E-04	8.891E-05	1.522E-05	8.926E-06	9.850E-07	0.000E+00	5.526E-07

20	3.452E-04	1.301E-04	6.208E-05	1.520E-05	8.875E-06	0.000E+00	9.227E-07	5.597E-07
21	2.855E-04	1.155E-04	4.742E-05	1.496E-05	1.205E-05	1.041E-06	4.655E-07	0.000E+00
22	2.259E-04	1.095E-04	3.062E-05	1.615E-05	2.258E-06	1.039E-06	9.028E-07	5.466E-07
23	1.927E-04	7.411E-05	3.403E-05	9.843E-06	4.439E-06	1.036E-06	4.645E-07	0.000E+00
24	2.166E-04	9.553E-05	2.394E-05	1.142E-05	1.061E-06	0.000E+00	0.000E+00	5.481E-07
25	1.723E-04	9.492E-05	3.040E-05	5.073E-06	0.000E+00	1.039E-06	0.000E+00	0.000E+00
26	1.477E-04	9.559E-05	2.002E-05	9.829E-06	3.247E-06	9.829E-07	0.000E+00	0.000E+00
27	1.671E-04	4.346E-05	1.680E-05	8.096E-06	2.175E-06	0.000E+00	0.000E+00	0.000E+00
28	1.084E-04	5.413E-05	2.407E-05	7.976E-06	3.156E-06	1.027E-06	0.000E+00	0.000E+00
29	1.338E-04	5.285E-05	9.495E-06	6.039E-06	0.000E+00	0.000E+00	0.000E+00	5.029E-07
30	1.196E-04	4.283E-05	2.655E-05	9.557E-06	2.216E-06	9.593E-07	0.000E+00	5.374E-07
31	7.609E-05	4.800E-05	3.015E-05	6.344E-06	2.146E-06	9.607E-07	4.286E-07	0.000E+00
32	7.660E-05	4.267E-05	1.293E-05	4.956E-06	2.204E-06	1.971E-06	0.000E+00	0.000E+00
33	8.249E-05	2.918E-05	2.377E-05	6.314E-06	2.074E-06	9.564E-07	0.000E+00	0.000E+00
34	8.488E-05	3.467E-05	1.652E-05	1.557E-06	2.138E-06	0.000E+00	0.000E+00	0.000E+00
35	6.775E-05	2.678E-05	1.312E-05	4.861E-06	2.141E-06	1.016E-06	4.541E-07	0.000E+00
36	7.061E-05	2.129E-05	1.335E-05	0.000E+00	1.039E-06	1.022E-06	0.000E+00	0.000E+00
37	6.089E-05	2.137E-05	6.641E-06	3.201E-06	2.141E-06	0.000E+00	0.000E+00	5.661E-07
38	4.231E-05	2.394E-05	1.310E-05	6.577E-06	0.000E+00	0.000E+00	4.314E-07	0.000E+00
39	7.693E-05	2.673E-05	0.000E+00	0.000E+00	1.107E-06	0.000E+00	4.576E-07	0.000E+00
40	8.552E-05	1.886E-05	9.709E-06	1.560E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
3	0.000E+00	0.000E+00	1.789E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
4	1.097E-05	4.134E-06	3.510E-06	1.679E-06	2.200E-06	0.000E+00	0.000E+00	0.000E+00
5	2.406E-05	1.168E-05	5.521E-06	2.559E-06	1.130E-06	0.000E+00	2.241E-07	0.000E+00
6	4.852E-05	1.459E-05	3.592E-06	1.765E-06	5.540E-07	0.000E+00	2.257E-07	0.000E+00
7	2.450E-05	1.021E-05	7.269E-06	2.653E-06	5.519E-07	0.000E+00	0.000E+00	0.000E+00
8	4.335E-05	7.628E-06	5.454E-06	6.250E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
9	4.796E-05	1.840E-05	1.522E-05	1.826E-06	1.215E-06	5.707E-07	0.000E+00	0.000E+00
10	3.865E-05	1.828E-05	3.782E-06	9.307E-07	1.238E-06	0.000E+00	0.000E+00	0.000E+00
11	3.171E-05	1.062E-05	1.806E-06	1.796E-06	6.054E-07	0.000E+00	0.000E+00	3.046E-07
12	2.697E-05	2.938E-06	0.000E+00	8.871E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
13	6.357E-06	5.921E-06	1.851E-06	1.732E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00

14	1.394E-05	3.037E-06	1.890E-06	9.564E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
15	1.762E-05	4.722E-06	0.000E+00	9.100E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
16	1.733E-05	1.560E-06	3.887E-06	9.386E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
17	1.204E-05	6.168E-06	0.000E+00	1.838E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
18	1.683E-05	3.060E-06	1.933E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
19	9.832E-06	4.517E-06	3.571E-06	0.000E+00	0.000E+00	0.000E+00	2.484E-07	0.000E+00
20	1.990E-05	0.000E+00	3.715E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
21	8.254E-06	3.059E-06	0.000E+00	1.704E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
22	6.566E-06	4.309E-06	1.879E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
23	4.958E-06	1.520E-06	0.000E+00	9.014E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
24	1.140E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
25	4.770E-06	4.493E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
26	1.689E-06	0.000E+00	0.000E+00	8.957E-07	5.942E-07	0.000E+00	0.000E+00	0.000E+00
27	9.554E-06	0.000E+00	0.000E+00	0.000E+00	5.938E-07	0.000E+00	2.421E-07	0.000E+00
28	3.146E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
29	6.121E-06	1.319E-06	0.000E+00	1.657E-06	5.514E-07	0.000E+00	0.000E+00	0.000E+00
30	3.118E-06	1.494E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
31	1.653E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
32	1.552E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
33	3.199E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
34	1.648E-06	0.000E+00	1.732E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
35	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
36	3.297E-06	1.403E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
37	1.644E-06	1.401E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
38	1.643E-06	0.000E+00	1.834E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
39	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
40	1.649E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hourly Oxygen Counts								
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8	
0	0	0	0	0	0	0	1	0
0	0	0	0	0	0	0	1	0
0	2	1	1	0	0	0	1	0
35	31	18	14	15	7	4	4	0
144	79	46	46	41	13	5	5	1
159	94	48	63	28	8	3	3	1
197	124	41	51	24	14	10	10	1
287	157	56	81	31	16	3	3	0
359	204	68	61	38	14	5	5	2
316	145	60	58	23	9	9	9	1

211	118	45	40	14	8	3	0
195	98	39	39	18	9	1	1
188	89	30	28	14	4	2	0
174	82	35	27	14	4	4	0
186	77	33	14	6	4	2	0
198	81	28	30	14	1	1	1
145	86	35	23	9	2	1	0
158	53	20	25	9	1	1	0
129	48	26	9	8	1	0	1
108	47	18	9	8	0	2	1
91	42	14	9	11	1	1	0
72	40	9	10	2	1	2	1
62	27	10	6	4	1	1	0
69	35	7	7	1	0	0	1
55	35	9	3	0	1	0	0
47	35	6	6	3	1	0	0
54	16	5	5	2	0	0	0
35	20	7	5	3	1	0	0
47	21	3	4	0	0	0	1
39	16	8	6	2	1	0	1
25	18	9	4	2	1	1	0
25	16	4	3	2	2	0	0
27	11	7	4	2	1	0	0
28	13	5	1	2	0	0	0
22	10	4	3	2	1	1	0
23	8	4	0	1	1	0	0
20	8	2	2	2	0	0	1
14	9	4	4	0	0	1	0
25	10	0	0	1	0	1	0
28	7	3	1	0	0	0	0

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	0
7	3	2	2	4	0	0	0

15	8	3	3	2	0	1	0
30	10	2	2	1	0	1	0
15	7	4	3	1	0	0	0
26	5	3	7	0	0	0	0
28	12	8	2	2	1	0	0
23	12	2	1	2	0	0	0
19	7	1	2	1	0	0	1
16	2	0	1	0	0	0	0
4	4	1	2	0	0	0	0
8	2	1	1	0	0	0	0
10	3	0	1	0	0	0	0
10	1	2	1	0	0	0	0
7	4	0	2	0	0	0	0
10	2	1	0	0	0	0	0
6	3	2	0	0	0	1	0
12	0	2	0	0	0	0	0
5	2	0	2	0	0	0	0
4	3	1	0	0	0	0	0
3	1	0	1	0	0	0	0
7	0	0	0	0	0	0	0
3	3	0	0	0	0	0	0
1	0	0	1	1	0	0	0
6	0	0	0	1	0	1	0
2	0	0	0	0	0	0	0
4	1	0	2	1	0	0	0
2	1	0	0	0	0	0	0
1	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
1	0	1	0	0	0	0	0
0	0	0	0	0	0	0	0
2	1	0	0	0	0	0	0
1	1	0	0	0	0	0	0
1	0	1	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a * \exp(b * x) + c * \exp(d * x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.09498 \quad (0.07674, 0.1132)$$

$$b = -0.2535 \quad (-0.2802, -0.2268)$$

$$c = 0.000404 \quad (-0.0006123, 0.00142)$$

$$d = -0.02487 \quad (-0.09329, 0.04354)$$

goftotal =

$$sse: 3.2346e-008$$

$$rsquare: 0.9997$$

$$dfe: 4$$

$$adjrsquare: 0.9994$$

$$rmse: 8.9925e-005$$

ctotal =

General model Exp1:

$$ctotal(x) = a * \exp(b * x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.008347 \quad (-0.002898, 0.01959)$$

$$b = -0.1099 \quad (-0.1743, -0.04553)$$

goftotal =

$$sse: 2.0526e-008$$

$$rsquare: 9.7533e-001$$

$$dfe: 3$$

$$adjrsquare: 9.6711e-001$$

$$rmse: 8.2717e-005$$

Event 59

Date

Time*

Location*

Summing interval*

21-Apr-02

151

S14W84

Apr 21 0100 to Apr 26 0000

<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	5.764E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.886E-07
2	6.757E-06	1.195E-04	2.204E-04	3.257E-04	3.161E-04	2.710E-04	1.267E-04	3.708E-05
3	2.785E-03	3.333E-03	3.186E-03	2.492E-03	1.611E-03	9.033E-04	3.011E-04	3.132E-05
4	2.437E-02	2.057E-02	1.543E-02	1.008E-02	4.703E-03	1.751E-03	2.930E-04	3.114E-05
5	2.573E-02	2.114E-02	1.548E-02	1.024E-02	4.271E-03	1.459E-03	2.574E-04	2.041E-05
6	2.815E-02	2.402E-02	1.889E-02	1.131E-02	4.419E-03	1.412E-03	2.347E-04	6.044E-06
7	4.339E-02	3.370E-02	2.471E-02	1.498E-02	6.157E-03	2.141E-03	3.036E-04	2.184E-05
8	6.044E-02	4.814E-02	3.471E-02	1.866E-02	8.308E-03	2.454E-03	3.620E-04	2.100E-05
9	7.949E-02	6.033E-02	4.326E-02	2.384E-02	1.010E-02	3.202E-03	3.995E-04	1.754E-05
10	8.557E-02	6.432E-02	4.191E-02	2.265E-02	9.013E-03	2.851E-03	3.096E-04	1.221E-05
11	1.150E-01	7.852E-02	4.464E-02	2.420E-02	9.170E-03	2.712E-03	2.964E-04	6.683E-06
12	1.450E-01	8.671E-02	4.957E-02	2.656E-02	1.040E-02	2.947E-03	3.289E-04	7.764E-06
13	1.465E-01	8.961E-02	4.783E-02	2.530E-02	8.797E-03	2.491E-03	2.729E-04	8.507E-06
14	1.429E-01	8.269E-02	4.618E-02	2.164E-02	7.919E-03	2.492E-03	3.191E-04	8.629E-06
15	1.279E-01	7.763E-02	4.002E-02	2.113E-02	6.927E-03	2.152E-03	2.857E-04	2.573E-05
16	1.149E-01	7.023E-02	4.094E-02	2.207E-02	7.258E-03	2.466E-03	2.612E-04	1.410E-05
17	1.097E-01	6.609E-02	4.140E-02	2.041E-02	7.799E-03	2.274E-03	3.266E-04	8.457E-06
18	1.091E-01	6.411E-02	3.956E-02	2.002E-02	7.110E-03	2.191E-03	3.403E-04	2.753E-05
19	1.108E-01	6.291E-02	3.291E-02	1.885E-02	6.478E-03	1.953E-03	2.720E-04	1.596E-05
20	1.017E-01	5.673E-02	3.135E-02	1.693E-02	6.173E-03	1.909E-03	2.258E-04	0.000E+00
21	1.144E-01	4.960E-02	2.460E-02	1.338E-02	4.832E-03	1.534E-03	2.409E-04	1.668E-05
22	1.048E-01	4.935E-02	2.331E-02	1.260E-02	4.979E-03	1.329E-03	1.541E-04	9.200E-06
23	8.729E-02	4.409E-02	2.190E-02	1.172E-02	4.329E-03	1.383E-03	1.506E-04	1.381E-05
24	7.164E-02	3.365E-02	1.719E-02	1.013E-02	4.204E-03	1.025E-03	1.480E-04	4.374E-06
25	6.709E-02	3.358E-02	1.802E-02	1.074E-02	3.973E-03	1.152E-03	1.792E-04	5.229E-06
26	5.402E-02	2.652E-02	1.487E-02	9.234E-03	3.240E-03	1.091E-03	9.659E-05	0.000E+00
27	5.105E-02	2.558E-02	1.670E-02	9.271E-03	3.663E-03	9.306E-04	1.292E-04	4.384E-06
28	5.322E-02	2.731E-02	1.738E-02	1.010E-02	3.616E-03	9.133E-04	1.055E-04	1.547E-05
29	4.538E-02	2.619E-02	1.640E-02	1.049E-02	3.639E-03	1.203E-03	1.291E-04	7.059E-06
30	4.196E-02	2.381E-02	1.606E-02	8.757E-03	3.425E-03	8.908E-04	1.160E-04	6.519E-06
31	3.574E-02	2.336E-02	1.523E-02	9.227E-03	3.247E-03	8.464E-04	1.141E-04	9.418E-06
32	3.651E-02	2.211E-02	1.487E-02	8.754E-03	3.097E-03	8.332E-04	8.185E-05	8.984E-06
33	3.072E-02	2.073E-02	1.339E-02	7.967E-03	2.764E-03	7.813E-04	7.832E-05	0.000E+00
34	3.061E-02	2.028E-02	1.344E-02	8.383E-03	2.677E-03	7.009E-04	9.993E-05	0.000E+00
35	2.934E-02	1.998E-02	1.382E-02	7.491E-03	2.812E-03	6.572E-04	8.754E-05	2.296E-06
36	2.838E-02	1.848E-02	1.311E-02	7.257E-03	2.495E-03	6.682E-04	8.119E-05	2.013E-06
37	2.402E-02	1.670E-02	1.058E-02	6.492E-03	2.237E-03	5.691E-04	6.778E-05	4.012E-06

38	2.133E-02	1.537E-02	9.713E-03	5.862E-03	2.016E-03	5.163E-04	5.105E-05	0.000E+00
39	2.025E-02	1.461E-02	9.957E-03	5.558E-03	1.926E-03	5.400E-04	5.486E-05	1.529E-06
40	2.167E-02	1.424E-02	9.877E-03	5.467E-03	1.716E-03	4.760E-04	5.137E-05	1.412E-06
41	1.988E-02	1.403E-02	9.701E-03	5.112E-03	1.793E-03	3.918E-04	4.600E-05	0.000E+00
42	1.911E-02	1.327E-02	9.202E-03	5.016E-03	1.627E-03	4.163E-04	5.200E-05	0.000E+00
43	1.759E-02	1.219E-02	8.053E-03	4.382E-03	1.514E-03	3.712E-04	4.821E-05	0.000E+00
44	1.499E-02	1.013E-02	7.205E-03	3.933E-03	1.370E-03	2.657E-04	3.082E-05	2.138E-06
45	1.407E-02	1.008E-02	6.945E-03	3.393E-03	1.178E-03	2.748E-04	3.873E-05	1.883E-06
46	1.384E-02	9.474E-03	6.579E-03	3.509E-03	1.155E-03	2.824E-04	3.881E-05	0.000E+00
47	1.207E-02	8.809E-03	5.999E-03	3.121E-03	1.044E-03	2.981E-04	2.820E-05	0.000E+00
48	1.294E-02	9.285E-03	6.354E-03	3.023E-03	1.039E-03	2.422E-04	2.130E-05	2.649E-06
49	1.268E-02	8.767E-03	5.708E-03	3.133E-03	9.855E-04	2.102E-04	2.520E-05	0.000E+00
50	1.149E-02	8.123E-03	5.855E-03	2.987E-03	8.182E-04	2.112E-04	1.898E-05	8.086E-07
51	1.119E-02	7.943E-03	5.319E-03	2.718E-03	8.759E-04	2.027E-04	1.651E-05	0.000E+00
52	1.151E-02	8.042E-03	5.483E-03	2.650E-03	8.004E-04	1.602E-04	2.109E-05	0.000E+00
53	1.031E-02	7.232E-03	4.625E-03	2.349E-03	7.185E-04	1.553E-04	1.467E-05	7.557E-07
54	8.176E-03	5.744E-03	3.699E-03	1.930E-03	5.860E-04	1.147E-04	1.204E-05	1.468E-06
55	8.243E-03	5.435E-03	3.935E-03	1.780E-03	5.429E-04	1.273E-04	1.018E-05	1.431E-06
56	6.419E-03	4.561E-03	2.871E-03	1.291E-03	4.190E-04	1.053E-04	9.782E-06	0.000E+00
57	6.193E-03	4.162E-03	2.614E-03	1.346E-03	3.897E-04	9.253E-05	8.042E-06	0.000E+00
58	6.008E-03	4.007E-03	2.708E-03	1.316E-03	3.738E-04	6.540E-05	8.525E-06	6.464E-07
59	5.958E-03	3.881E-03	2.446E-03	1.136E-03	3.560E-04	6.935E-05	7.830E-06	0.000E+00
60	4.537E-03	2.959E-03	1.742E-03	9.556E-04	2.367E-04	6.399E-05	1.015E-05	6.564E-07
61	5.640E-03	3.653E-03	2.334E-03	1.056E-03	3.223E-04	5.880E-05	5.741E-06	6.255E-07
62	5.970E-03	4.192E-03	2.506E-03	1.247E-03	3.256E-04	6.132E-05	7.856E-06	6.399E-07
63	6.325E-03	4.012E-03	2.421E-03	1.154E-03	3.231E-04	6.592E-05	4.156E-06	6.752E-07
64	6.498E-03	4.068E-03	2.591E-03	1.106E-03	3.208E-04	5.643E-05	9.953E-06	0.000E+00
65	5.985E-03	3.727E-03	2.226E-03	1.119E-03	2.966E-04	6.034E-05	4.727E-06	0.000E+00
66	6.322E-03	4.076E-03	2.466E-03	1.105E-03	2.743E-04	5.380E-05	5.218E-06	6.325E-07
67	6.139E-03	3.970E-03	2.373E-03	9.711E-04	2.631E-04	4.863E-05	5.175E-06	0.000E+00
68	6.403E-03	3.753E-03	2.270E-03	1.052E-03	2.486E-04	5.378E-05	4.985E-06	0.000E+00
69	6.653E-03	3.702E-03	2.366E-03	9.917E-04	2.651E-04	4.776E-05	2.051E-06	0.000E+00
70	6.524E-03	3.712E-03	2.137E-03	9.827E-04	2.393E-04	4.535E-05	4.755E-06	0.000E+00
71	6.644E-03	3.877E-03	2.230E-03	9.557E-04	2.576E-04	5.448E-05	4.651E-06	0.000E+00
72	6.470E-03	3.822E-03	2.120E-03	8.548E-04	2.232E-04	4.639E-05	3.607E-06	0.000E+00
73	6.811E-03	4.391E-03	2.406E-03	1.063E-03	2.486E-04	5.222E-05	5.793E-06	0.000E+00
74	7.098E-03	4.243E-03	2.021E-03	8.808E-04	2.277E-04	4.791E-05	4.167E-06	0.000E+00
75	6.221E-03	3.695E-03	1.997E-03	8.232E-04	1.772E-04	2.656E-05	2.087E-06	0.000E+00
76	5.650E-03	3.123E-03	1.860E-03	7.510E-04	1.521E-04	3.660E-05	1.495E-06	0.000E+00
77	5.156E-03	2.860E-03	1.680E-03	6.800E-04	1.747E-04	2.368E-05	2.521E-06	0.000E+00

78	5.079E-03	2.825E-03	1.680E-03	6.117E-04	1.761E-04	2.808E-05	1.496E-06	0.000E+00
79	4.466E-03	2.767E-03	1.479E-03	6.435E-04	1.309E-04	2.227E-05	1.486E-06	1.240E-06
80	4.055E-03	2.243E-03	1.146E-03	4.629E-04	1.049E-04	2.622E-05	2.501E-06	0.000E+00
81	3.470E-03	2.112E-03	1.192E-03	4.710E-04	1.194E-04	1.199E-05	1.441E-06	0.000E+00
82	2.937E-03	1.609E-03	9.993E-04	3.286E-04	8.629E-05	2.108E-05	4.921E-07	0.000E+00
83	2.588E-03	1.645E-03	7.870E-04	3.259E-04	8.409E-05	1.392E-05	1.407E-06	0.000E+00
84	2.422E-03	1.244E-03	7.698E-04	3.419E-04	6.711E-05	1.087E-05	1.755E-06	0.000E+00
85	2.267E-03	1.255E-03	6.646E-04	2.615E-04	5.433E-05	1.055E-05	9.629E-07	0.000E+00
86	1.845E-03	1.090E-03	5.160E-04	2.126E-04	6.840E-05	1.231E-05	0.000E+00	0.000E+00
87	1.585E-03	8.989E-04	5.113E-04	2.022E-04	3.660E-05	8.273E-06	8.919E-07	0.000E+00
88	1.485E-03	8.449E-04	4.242E-04	1.760E-04	5.319E-05	6.188E-06	9.143E-07	0.000E+00
89	1.570E-03	8.686E-04	4.102E-04	1.779E-04	4.756E-05	4.081E-06	4.704E-07	0.000E+00
90	1.351E-03	7.419E-04	4.285E-04	1.795E-04	3.658E-05	6.971E-06	8.849E-07	0.000E+00
91	1.279E-03	7.182E-04	4.127E-04	1.814E-04	4.284E-05	1.003E-05	9.093E-07	5.849E-07
92	1.227E-03	7.469E-04	3.342E-04	1.685E-04	4.914E-05	1.004E-05	0.000E+00	0.000E+00
93	1.225E-03	7.855E-04	3.976E-04	1.598E-04	3.835E-05	6.079E-06	0.000E+00	0.000E+00
94	1.085E-03	6.200E-04	2.903E-04	1.333E-04	3.069E-05	5.081E-06	4.389E-07	0.000E+00
95	1.099E-03	5.547E-04	3.107E-04	1.128E-04	2.948E-05	4.951E-06	4.380E-07	0.000E+00
96	1.079E-03	4.887E-04	2.877E-04	9.853E-05	2.074E-05	8.057E-06	9.008E-07	5.442E-07
97	8.710E-04	3.964E-04	2.195E-04	9.640E-05	2.595E-05	4.004E-06	4.611E-07	0.000E+00
98	7.336E-04	3.577E-04	2.333E-04	9.121E-05	1.717E-05	2.057E-06	0.000E+00	0.000E+00
99	7.665E-04	3.869E-04	2.721E-04	9.045E-05	3.037E-05	4.054E-06	4.605E-07	0.000E+00
100	6.946E-04	3.553E-04	1.783E-04	8.388E-05	2.339E-05	2.763E-06	4.041E-07	0.000E+00
101	6.637E-04	4.569E-04	2.121E-04	7.177E-05	1.950E-05	3.987E-06	4.595E-07	1.083E-06
102	6.636E-04	4.012E-04	2.333E-04	7.143E-05	2.053E-05	3.984E-06	0.000E+00	0.000E+00
103	7.333E-04	3.813E-04	1.912E-04	7.746E-05	2.032E-05	1.025E-06	4.589E-07	0.000E+00
104	6.247E-04	3.387E-04	2.050E-04	6.154E-05	1.317E-05	3.017E-06	0.000E+00	0.000E+00
105	6.552E-04	3.352E-04	1.842E-04	8.912E-05	1.415E-05	2.049E-06	0.000E+00	0.000E+00
106	6.353E-04	3.698E-04	1.886E-04	8.557E-05	1.173E-05	4.886E-06	0.000E+00	0.000E+00
107	6.416E-04	3.509E-04	1.770E-04	6.911E-05	1.178E-05	5.905E-06	4.321E-07	0.000E+00
108	6.077E-04	3.427E-04	1.980E-04	6.788E-05	1.393E-05	1.023E-06	0.000E+00	0.000E+00
109	5.980E-04	3.382E-04	1.777E-04	8.027E-05	1.406E-05	1.987E-06	4.574E-07	0.000E+00
110	6.306E-04	3.207E-04	1.838E-04	6.306E-05	1.863E-05	2.951E-06	0.000E+00	5.721E-07
111	6.112E-04	3.491E-04	1.444E-04	4.677E-05	9.603E-06	1.985E-06	0.000E+00	5.713E-07
112	5.741E-04	2.986E-04	1.209E-04	6.420E-05	9.654E-06	4.983E-06	4.567E-07	0.000E+00
113	5.039E-04	2.620E-04	1.374E-04	6.297E-05	1.715E-05	1.020E-06	4.565E-07	0.000E+00
114	5.601E-04	3.077E-04	1.432E-04	4.802E-05	1.290E-05	9.607E-07	0.000E+00	0.000E+00
115	5.361E-04	2.913E-04	1.437E-04	5.852E-05	1.068E-05	9.600E-07	8.862E-07	0.000E+00
116	4.958E-04	3.045E-04	1.208E-04	4.514E-05	1.410E-05	1.847E-06	1.203E-06	0.000E+00
117	4.732E-04	2.622E-04	8.722E-05	4.281E-05	7.421E-06	2.936E-06	4.296E-07	5.691E-07

118	4.288E-04	2.492E-04	1.161E-04	6.108E-05	9.752E-06	0.000E+00	0.000E+00	0.000E+00
119	4.950E-04	2.253E-04	1.639E-04	4.035E-05	7.675E-06	9.600E-07	0.000E+00	0.000E+00
120	5.404E-04	2.405E-04	1.563E-04	3.828E-05	1.391E-05	9.579E-07	4.290E-07	0.000E+00
121	4.806E-04	2.601E-04	1.441E-04	2.717E-05	1.183E-05	9.579E-07	0.000E+00	0.000E+00
122	5.047E-04	1.894E-04	1.259E-04	4.992E-05	1.066E-05	1.974E-06	0.000E+00	0.000E+00
123	4.640E-04	2.406E-04	9.012E-05	4.817E-05	7.409E-06	1.016E-06	0.000E+00	0.000E+00
124	4.488E-04	1.901E-04	1.036E-04	5.127E-05	1.169E-05	2.989E-06	0.000E+00	0.000E+00
125	4.287E-04	1.983E-04	8.356E-05	4.814E-05	7.656E-06	1.015E-06	0.000E+00	0.000E+00
126	4.573E-04	2.039E-04	1.001E-04	3.830E-05	1.065E-05	3.045E-06	4.281E-07	5.675E-07
127	4.610E-04	1.872E-04	1.060E-04	2.673E-05	7.364E-06	3.041E-06	0.000E+00	0.000E+00
128	3.777E-04	1.908E-04	1.395E-04	4.466E-05	3.239E-06	2.924E-06	0.000E+00	0.000E+00
129	4.056E-04	1.890E-04	7.272E-05	3.834E-05	9.565E-06	0.000E+00	0.000E+00	0.000E+00
130	3.788E-04	1.496E-04	1.058E-04	3.373E-05	1.278E-05	0.000E+00	0.000E+00	0.000E+00
131	3.597E-04	1.517E-04	7.358E-05	2.250E-05	2.192E-06	0.000E+00	0.000E+00	5.641E-07
132	3.003E-04	1.314E-04	9.895E-05	2.370E-05	4.992E-06	8.873E-07	3.970E-07	0.000E+00
133	3.555E-04	1.767E-04	7.330E-05	2.712E-05	2.126E-06	9.500E-07	0.000E+00	0.000E+00
134	3.363E-04	1.662E-04	6.961E-05	2.532E-05	6.261E-06	0.000E+00	0.000E+00	0.000E+00
135	3.295E-04	1.328E-04	8.866E-05	2.058E-05	8.575E-06	1.959E-06	4.256E-07	0.000E+00
136	2.675E-04	1.350E-04	8.275E-05	2.056E-05	6.384E-06	1.900E-06	4.513E-07	5.635E-07
137	3.292E-04	1.829E-04	4.930E-05	2.384E-05	2.064E-06	0.000E+00	0.000E+00	0.000E+00
138	2.982E-04	1.379E-04	9.295E-05	2.847E-05	1.095E-06	1.008E-06	4.254E-07	5.634E-07
139	3.148E-04	1.783E-04	6.267E-05	2.692E-05	8.439E-06	1.007E-06	4.509E-07	0.000E+00
140	2.041E-04	1.592E-04	8.620E-05	3.170E-05	9.584E-06	0.000E+00	0.000E+00	0.000E+00
141	3.167E-04	1.001E-04	4.938E-05	2.870E-05	3.212E-06	0.000E+00	4.243E-07	0.000E+00
142	2.859E-04	9.194E-05	5.597E-05	2.869E-05	4.305E-06	0.000E+00	0.000E+00	0.000E+00
143	2.360E-04	1.143E-04	7.609E-05	2.386E-05	4.299E-06	2.899E-06	0.000E+00	0.000E+00

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2	1.360E-04	1.127E-04	1.360E-04	1.030E-04	3.294E-05	5.741E-06	6.733E-07	3.616E-07
3	2.026E-03	1.269E-03	6.433E-04	2.777E-04	5.853E-05	5.616E-06	4.424E-07	0.000E+00
4	6.941E-03	2.368E-03	7.603E-04	2.354E-04	3.030E-05	2.096E-06	8.020E-07	0.000E+00
5	4.237E-03	1.153E-03	4.353E-04	1.494E-04	2.325E-05	0.000E+00	0.000E+00	0.000E+00
6	2.838E-03	8.158E-04	2.762E-04	7.799E-05	3.904E-06	1.785E-06	0.000E+00	0.000E+00
7	2.997E-03	8.942E-04	4.683E-04	7.824E-05	1.066E-05	3.589E-06	0.000E+00	0.000E+00
8	3.692E-03	1.046E-03	1.537E-04	1.035E-04	4.624E-06	0.000E+00	0.000E+00	0.000E+00
9	3.501E-03	9.910E-04	1.918E-04	3.504E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00

10	3.358E-03	8.409E-04	1.311E-04	8.041E-05	1.157E-05	0.000E+00	0.000E+00	0.000E+00
11	3.281E-03	6.154E-04	1.523E-04	4.429E-05	5.928E-06	0.000E+00	0.000E+00	0.000E+00
12	3.131E-03	8.258E-04	1.924E-04	6.281E-05	0.000E+00	0.000E+00	3.759E-06	0.000E+00
13	2.981E-03	8.789E-04	4.436E-05	5.460E-05	8.964E-06	0.000E+00	0.000E+00	0.000E+00
14	2.963E-03	4.759E-04	1.622E-04	3.451E-05	1.671E-05	0.000E+00	0.000E+00	0.000E+00
15	1.930E-03	5.586E-04	1.588E-04	4.074E-05	8.214E-06	0.000E+00	0.000E+00	0.000E+00
16	1.505E-03	7.156E-04	1.849E-04	7.165E-05	6.956E-06	0.000E+00	0.000E+00	0.000E+00
17	2.157E-03	4.419E-04	2.456E-04	7.879E-05	1.551E-05	0.000E+00	0.000E+00	0.000E+00
18	2.891E-03	7.057E-04	2.569E-04	2.539E-05	1.781E-05	0.000E+00	0.000E+00	0.000E+00
19	1.611E-03	4.029E-04	3.266E-04	1.120E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
20	1.630E-03	3.290E-04	8.012E-05	2.222E-05	8.220E-06	0.000E+00	0.000E+00	0.000E+00
21	1.033E-03	2.183E-04	1.013E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
22	1.418E-03	1.998E-04	5.046E-05	1.482E-05	0.000E+00	7.421E-06	0.000E+00	0.000E+00
23	7.784E-04	1.747E-04	0.000E+00	3.197E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
24	1.284E-03	2.797E-04	4.140E-05	6.717E-05	4.079E-06	0.000E+00	0.000E+00	0.000E+00
25	7.596E-04	4.053E-04	8.581E-05	2.455E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
26	8.871E-04	1.440E-04	4.259E-05	2.496E-05	3.940E-06	0.000E+00	0.000E+00	0.000E+00
27	7.390E-04	1.757E-04	3.106E-05	2.568E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
28	5.227E-04	2.604E-04	5.461E-05	3.263E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
29	8.012E-04	2.784E-04	2.857E-05	5.486E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
30	7.077E-04	1.518E-04	5.982E-05	5.376E-06	7.704E-06	0.000E+00	0.000E+00	0.000E+00
31	6.430E-04	2.648E-04	5.456E-05	5.294E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
32	6.316E-04	2.140E-04	6.466E-05	8.931E-06	0.000E+00	0.000E+00	1.278E-06	0.000E+00
33	7.532E-04	1.570E-04	7.643E-05	1.222E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
34	5.807E-04	1.104E-04	2.644E-05	8.339E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
35	5.790E-04	1.518E-04	2.515E-05	1.120E-05	7.334E-06	0.000E+00	0.000E+00	0.000E+00
36	4.617E-04	1.565E-04	2.921E-05	7.345E-06	4.505E-06	0.000E+00	0.000E+00	0.000E+00
37	4.943E-04	1.543E-04	4.785E-05	6.472E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
38	4.127E-04	1.303E-04	4.468E-05	1.088E-05	0.000E+00	1.640E-06	0.000E+00	0.000E+00
39	4.434E-04	8.703E-05	3.503E-05	7.319E-06	1.615E-06	0.000E+00	0.000E+00	0.000E+00
40	4.607E-04	1.064E-04	1.976E-05	7.088E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
41	4.479E-04	9.415E-05	1.407E-05	1.324E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
42	3.544E-04	1.137E-04	4.333E-05	1.254E-05	1.391E-06	0.000E+00	0.000E+00	0.000E+00
43	3.446E-04	9.787E-05	7.729E-06	1.250E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
44	3.996E-04	6.128E-05	1.313E-05	3.281E-06	2.182E-06	0.000E+00	0.000E+00	0.000E+00
45	3.065E-04	8.720E-05	2.527E-05	4.679E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
46	2.545E-04	6.974E-05	2.453E-05	5.861E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
47	2.961E-04	6.162E-05	2.347E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.572E-07
48	2.465E-04	6.509E-05	2.988E-06	7.083E-06	1.831E-06	0.000E+00	0.000E+00	0.000E+00
49	2.740E-04	4.324E-05	1.157E-05	1.298E-06	1.724E-06	0.000E+00	0.000E+00	0.000E+00

50	2.623E-04	6.843E-05	1.631E-05	2.615E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
51	2.461E-04	5.459E-05	8.098E-06	1.242E-06	8.750E-07	0.000E+00	0.000E+00	0.000E+00
52	2.139E-04	3.537E-05	9.753E-06	3.528E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
53	1.777E-04	3.961E-05	1.474E-05	3.491E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
54	1.495E-04	3.380E-05	4.791E-06	3.410E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
55	1.416E-04	3.338E-05	4.466E-06	3.317E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
56	1.138E-04	3.028E-05	4.466E-06	2.076E-06	6.721E-07	0.000E+00	0.000E+00	0.000E+00
57	1.084E-04	2.443E-05	6.419E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
58	1.036E-04	2.096E-05	2.219E-06	1.063E-06	7.075E-07	0.000E+00	0.000E+00	0.000E+00
59	1.128E-04	1.556E-05	8.424E-06	9.950E-07	0.000E+00	0.000E+00	0.000E+00	3.350E-07
60	5.442E-05	2.167E-05	8.090E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
61	1.086E-04	1.518E-05	2.172E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
62	7.869E-05	1.572E-05	8.658E-06	3.034E-06	0.000E+00	0.000E+00	2.689E-07	0.000E+00
63	8.990E-05	2.738E-05	6.342E-06	3.032E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
64	8.747E-05	1.045E-05	0.000E+00	9.900E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
65	7.868E-05	1.862E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
66	6.493E-05	3.458E-05	4.354E-06	2.021E-06	6.561E-07	0.000E+00	0.000E+00	0.000E+00
67	8.537E-05	1.343E-05	4.224E-06	1.038E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
68	8.594E-05	1.588E-05	1.904E-06	9.100E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
69	7.574E-05	2.228E-05	2.168E-06	1.041E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
70	6.802E-05	2.058E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
71	7.562E-05	1.359E-05	2.180E-06	9.807E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
72	8.354E-05	5.084E-06	0.000E+00	1.042E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
73	6.920E-05	1.218E-05	4.396E-06	9.929E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
74	4.574E-05	7.001E-06	4.404E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
75	6.928E-05	1.201E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
76	4.427E-05	1.007E-05	4.290E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
77	5.317E-05	9.874E-06	1.996E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
78	4.360E-05	8.218E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
79	3.292E-05	6.451E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
80	4.299E-05	8.100E-06	0.000E+00	2.886E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
81	2.312E-05	1.651E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
82	2.416E-05	1.604E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
83	1.729E-05	4.614E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
84	1.403E-05	1.477E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
85	2.055E-05	1.486E-06	1.840E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
86	2.355E-05	2.939E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
87	1.514E-05	1.549E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
88	2.153E-05	1.544E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
89	1.847E-05	2.906E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

130	1.543E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
131	3.087E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
132	4.583E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
133	3.084E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
134	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
135	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
136	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
137	3.179E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
138	3.178E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
139	3.177E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
140	1.634E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
141	7.882E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
142	1.538E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
143	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
2	0	0	0	0	0	0	1
1	21	32	99	149	143	153	36
436	601	460	754	734	451	336	28
1860	1868	1146	1743	1243	505	193	17
2027	1974	1172	1793	1126	427	169	10
1997	2038	1286	1868	1096	380	142	3
1802	1641	973	1500	924	346	110	6
1844	1709	1005	1412	949	309	99	5
1701	1512	872	1393	902	313	87	3
1790	1608	833	1321	797	277	69	2
1714	1398	650	1177	680	221	55	1
1583	1156	557	1017	619	196	49	1
1547	1184	534	918	495	158	39	1
1517	1177	561	836	469	168	48	1
1527	1257	552	887	445	156	47	3
1631	1276	624	979	495	188	45	2
1541	1190	634	896	525	167	55	1
1538	1156	601	896	487	166	59	4
1203	1106	510	721	382	131	42	2
1370	1176	590	743	413	144	39	0
1056	883	414	518	288	104	37	2
1059	941	414	516	311	97	26	1
990	955	409	526	296	108	25	2

1051	994	459	582	380	104	33	1
1012	937	463	637	347	109	39	1
1161	1015	521	694	377	141	27	0
1064	1095	586	741	444	126	39	1
1160	1126	591	787	416	122	30	4
1057	1131	598	836	448	165	41	2
1202	1163	664	785	454	134	40	2
1233	1265	706	945	510	146	44	3
1408	1364	749	987	528	160	35	3
1460	1429	752	1015	528	164	36	0
1546	1430	782	1089	525	149	49	0
1717	1535	866	1079	609	155	46	1
1943	1663	962	1171	605	178	48	1
1844	1619	827	1118	574	160	42	2
1998	1781	909	1149	592	167	37	0
2194	1903	1044	1226	637	194	44	1
2488	1939	1082	1261	594	179	43	1
2419	2024	1124	1251	655	156	41	0
2554	2086	1161	1319	645	178	50	0
2687	2155	1147	1298	672	178	52	0
2651	2047	1173	1330	692	146	38	2
2594	2127	1179	1195	621	158	50	2
2632	2061	1152	1275	628	167	51	0
2389	1995	1091	1179	591	183	39	0
2613	2142	1180	1167	599	152	30	3
2626	2074	1088	1237	584	135	36	0
2448	1975	1145	1214	498	140	28	1
2449	1989	1070	1134	548	137	25	0
2746	2197	1204	1208	546	118	35	0
2456	1970	1012	1066	489	115	24	1
2051	1648	852	924	420	89	21	2
2093	1581	919	865	394	100	18	2
1708	1388	703	656	319	87	18	0
1664	1279	647	692	300	77	15	0
1628	1243	675	680	290	55	16	1
1639	1221	619	597	281	59	15	0
1288	962	455	519	192	56	20	1
1567	1161	596	559	257	51	11	1
1633	1313	630	652	255	52	15	1
1732	1257	609	603	253	56	8	1

1788	1280	655	580	252	48	19	0
1661	1182	567	593	235	52	9	0
1747	1288	626	582	217	46	10	1
1700	1259	604	514	209	42	10	0
1910	1280	622	600	212	50	10	0
1838	1170	602	523	209	41	4	0
1798	1171	541	518	189	39	9	0
1836	1223	566	504	203	47	9	0
1789	1208	538	452	176	40	7	0
1860	1372	604	557	194	44	11	0
1949	1331	511	462	179	41	8	0
1726	1173	510	436	141	23	4	0
1596	1008	483	404	123	32	3	0
1466	932	439	369	142	21	5	0
1452	925	442	334	144	25	3	0
1289	914	392	354	108	20	3	2
1191	753	309	260	88	24	5	0
1025	715	324	267	101	11	3	0
890	557	279	190	75	20	1	0
788	573	220	189	73	13	3	0
794	466	232	214	63	11	4	0
700	442	189	154	48	10	2	0
575	388	148	127	61	12	0	0
500	323	148	121	33	8	2	0
469	304	123	106	48	6	2	0
497	314	119	107	43	4	1	0
428	269	125	108	33	7	2	0
406	261	120	110	39	10	2	1
389	270	97	102	45	10	0	0
390	286	116	97	35	6	0	0
346	226	85	81	28	5	1	0
351	203	91	69	27	5	1	0
346	179	85	60	19	8	2	1
281	146	65	59	24	4	1	0
237	132	69	56	16	2	0	0
247	143	81	56	28	4	1	0
241	141	57	56	23	3	1	0
215	169	63	44	18	4	1	2
214	148	69	44	19	4	0	0
237	141	57	48	19	1	1	0

202	125	61	38	12	3	0	0
213	124	55	55	13	2	0	0
206	137	56	53	11	5	0	0
208	130	53	43	11	6	1	0
197	127	59	42	13	1	0	0
194	125	53	49	13	2	1	0
204	119	55	39	17	3	0	1
199	130	43	29	9	2	0	1
187	111	36	40	9	5	1	0
164	97	41	39	16	1	1	0
182	114	43	30	12	1	0	0
175	109	43	36	10	1	2	0
173	122	39	30	14	2	3	0
154	98	26	27	7	3	1	1
140	93	35	38	9	0	0	0
161	84	49	25	7	1	0	0
176	90	47	24	13	1	1	0
157	97	43	17	11	1	0	0
165	71	38	31	10	2	0	0
151	90	27	30	7	1	0	0
147	71	31	32	11	3	0	0
140	74	25	30	7	1	0	0
150	76	30	24	10	3	1	1
151	70	32	17	7	3	0	0
124	71	42	28	3	3	0	0
133	71	22	24	9	0	0	0
125	56	32	21	12	0	0	0
118	57	22	14	2	0	0	1
106	53	32	16	5	1	1	0
117	66	22	17	2	1	0	0
111	63	21	16	6	0	0	0
108	50	27	13	8	2	1	0
88	51	25	13	6	2	1	1
108	69	15	15	2	0	0	0
98	52	28	18	1	1	1	1
103	67	19	17	8	1	1	0
67	60	26	20	9	0	0	0
104	38	15	18	3	0	1	0
94	35	17	18	4	0	0	0
78	43	23	15	4	3	0	0

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	0	0	0	0	0	0	0
41	40	38	63	33	7	2	1
609	437	178	162	51	5	1	0
1059	425	112	79	16	1	1	0
645	204	59	49	12	0	0	0
384	129	37	25	2	1	0	0
239	84	33	13	3	1	0	0
218	69	9	15	1	0	0	0
141	45	7	4	0	0	0	0
134	38	5	9	2	0	0	0
93	19	4	4	1	0	0	0
63	19	4	5	0	0	1	0
62	21	1	4	1	0	0	0
62	13	4	3	2	0	0	0
50	16	4	3	1	0	0	0
41	22	5	6	1	0	0	0
57	15	7	7	2	0	0	0
57	22	8	2	2	0	0	0
40	15	9	1	0	0	0	0
45	11	3	2	1	0	0	0
20	9	2	0	0	0	0	0
25	8	2	1	0	1	0	0
20	7	0	3	0	0	0	0
39	16	2	8	1	0	0	0
23	20	4	3	0	0	0	0
39	12	3	4	1	0	0	0
33	13	2	4	0	0	0	0
25	21	4	5	0	0	0	0
39	19	2	1	0	0	0	0
38	12	5	1	2	0	0	0
41	19	4	1	0	0	0	0
50	26	5	2	0	0	1	0
69	19	7	3	0	0	0	0
59	15	3	2	0	0	0	0
65	22	3	3	3	0	0	0

58	26	4	2	2	0	0	0
70	28	7	2	0	0	0	0
74	28	8	4	0	1	0	0
92	21	7	3	1	0	0	0
101	27	4	3	0	0	0	0
105	25	3	6	0	0	0	0
90	33	10	6	1	0	0	0
101	32	2	7	0	0	0	0
135	23	4	2	2	0	0	0
108	34	8	3	0	0	0	0
93	28	8	4	0	0	0	0
112	26	8	0	0	0	0	1
95	28	1	5	2	0	0	0
108	19	4	1	2	0	0	0
107	31	6	2	0	0	0	0
103	25	3	1	1	0	0	0
98	18	4	3	0	0	0	0
81	20	6	3	0	0	0	0
72	18	2	3	0	0	0	0
69	18	2	3	0	0	0	0
58	17	2	2	1	0	0	0
56	14	3	0	0	0	0	0
54	12	1	1	1	0	0	0
59	9	4	1	0	0	0	1
30	13	4	0	0	0	0	0
58	9	1	0	0	0	0	0
41	9	4	3	0	0	1	0
47	16	3	3	0	0	0	0
46	6	0	1	0	0	0	0
42	11	0	0	0	0	0	0
34	20	2	2	1	0	0	0
45	8	2	1	0	0	0	0
49	10	1	1	0	0	0	0
40	13	1	1	0	0	0	0
36	12	0	0	0	0	0	0
40	8	1	1	0	0	0	0
44	3	0	1	0	0	0	0
36	7	2	1	0	0	0	0
24	4	2	0	0	0	0	0
37	7	0	0	0	0	0	0

24	6	2	0	0	0	0	0
29	6	1	0	0	0	0	0
24	5	0	0	0	0	0	0
18	4	0	0	0	0	0	0
24	5	0	3	0	0	0	0
13	1	0	0	0	0	0	0
14	1	0	0	0	0	0	0
10	3	0	0	0	0	0	0
9	1	0	0	0	0	0	0
12	1	1	0	0	0	0	0
14	2	0	0	0	0	0	0
9	1	0	0	0	0	0	0
13	1	0	0	0	0	0	0
11	2	0	0	0	0	0	0
9	2	0	1	0	0	0	0
11	2	0	0	1	0	0	0
8	1	0	0	0	0	0	0
5	0	2	1	0	0	0	0
6	0	2	0	0	0	0	0
8	2	0	0	0	0	0	0
3	3	0	0	1	0	1	0
3	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
3	0	0	1	0	0	0	0
1	1	0	1	0	0	0	0
5	0	1	0	0	0	0	0
4	0	0	0	0	0	0	0
9	1	0	0	0	0	0	0
3	1	0	0	0	0	0	0
7	1	0	0	0	0	0	0
1	3	1	0	0	0	0	0
3	1	0	0	0	0	0	0
2	0	0	0	0	0	0	0
2	1	0	0	0	0	0	0
3	1	0	0	0	0	0	0
1	2	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0

4	0	1	0	0	0	0	0
5	0	0	0	1	0	0	0
2	0	0	0	0	0	0	0
0	0	1	0	0	0	0	0
3	0	0	0	0	0	0	1
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
2	0	1	0	0	0	0	0
1	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = -57.09 \quad (-1.611e+006, 1.611e+006)$$

$b = -0.1275$ (-27.93, 27.67)
 $c = 65.79$ (-1.611e+006, 1.611e+006)
 $d = -0.1295$ (-25.12, 24.86)

goftotal =

sse: 3.9228e-003
 rsquare: 9.9931e-001
 dfe: 4
 adjrsquare: 9.9880e-001
 rmse: 3.1316e-002

ctotal =

General model Exp1:
 $ctotal(x) = a \cdot \exp(b \cdot x)$
 Coefficients (with 95% confidence bounds):
 $a = 8.571$ (7.873, 9.269)
 $b = -0.1441$ (-0.1482, -0.1401)

goftotal =

sse: 1.2041e-005
 rsquare: 9.9994e-001
 dfe: 3
 adjrsquare: 9.9993e-001
 rmse: 2.0034e-003

Event 60	Date	Time*	Location*	Summing interval*				
	22-May-02	354	S19W56	May 22 to May 25 0000				
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2	0.000E+00	2.511E-06	0.000E+00	0.000E+00	0.000E+00	9.807E-07	0.000E+00	0.000E+00

3	0.000E+00	0.000E+00	3.315E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
4	2.877E-06	0.000E+00	0.000E+00	0.000E+00	1.068E-06	0.000E+00	0.000E+00	5.176E-07
5	8.843E-06	0.000E+00	0.000E+00	1.516E-06	0.000E+00	9.314E-07	0.000E+00	5.191E-07
6	6.150E-06	5.239E-06	0.000E+00	4.647E-06	3.113E-06	9.357E-07	8.626E-07	0.000E+00
7	1.752E-05	2.117E-05	2.315E-05	1.250E-05	8.461E-06	1.933E-06	0.000E+00	0.000E+00
8	5.370E-05	3.916E-05	1.961E-05	1.421E-05	0.000E+00	4.920E-06	1.311E-06	0.000E+00
9	4.542E-05	6.096E-05	1.667E-05	1.243E-05	1.065E-05	2.879E-06	1.288E-06	0.000E+00
10	1.308E-04	7.594E-05	7.298E-05	2.655E-05	8.947E-06	6.427E-06	2.065E-06	0.000E+00
11	2.294E-04	1.424E-04	6.526E-05	3.709E-05	9.616E-06	3.853E-06	0.000E+00	0.000E+00
12	3.625E-04	1.627E-04	7.585E-05	4.615E-05	7.569E-06	4.876E-06	1.755E-06	0.000E+00
13	5.198E-04	2.377E-04	1.037E-04	6.586E-05	8.594E-06	4.991E-06	8.931E-07	0.000E+00
14	6.063E-04	1.946E-04	1.057E-04	5.211E-05	1.625E-05	2.018E-06	9.053E-07	0.000E+00
15	8.260E-04	3.261E-04	1.590E-04	6.625E-05	1.912E-05	8.375E-06	4.431E-07	0.000E+00
16	9.045E-04	3.493E-04	1.703E-04	6.503E-05	2.180E-05	6.349E-06	4.861E-07	0.000E+00
17	1.177E-03	3.945E-04	1.972E-04	7.480E-05	1.749E-05	8.413E-06	4.661E-07	0.000E+00
18	1.446E-03	5.180E-04	2.435E-04	7.490E-05	3.734E-05	1.763E-05	1.018E-06	0.000E+00
19	1.529E-03	5.884E-04	3.072E-04	1.328E-04	4.406E-05	1.231E-05	2.033E-06	0.000E+00
20	1.870E-03	6.643E-04	3.866E-04	1.781E-04	4.437E-05	1.863E-05	3.135E-06	0.000E+00
21	2.040E-03	6.693E-04	3.240E-04	1.187E-04	3.697E-05	1.578E-05	1.085E-06	0.000E+00
22	2.226E-03	8.320E-04	3.883E-04	1.461E-04	4.577E-05	1.263E-05	2.103E-06	0.000E+00
23	1.340E-03	5.062E-04	1.741E-04	7.647E-05	2.984E-05	8.839E-06	1.520E-06	0.000E+00
24	1.739E-03	7.229E-04	3.629E-04	1.246E-04	3.650E-05	1.508E-05	5.497E-07	0.000E+00
25	2.976E-03	1.077E-03	4.444E-04	1.661E-04	7.986E-05	1.497E-05	1.182E-06	0.000E+00
26	2.391E-03	8.293E-04	3.175E-04	1.285E-04	4.650E-05	1.652E-05	2.753E-06	0.000E+00
27	3.100E-03	9.233E-04	3.574E-04	1.371E-04	3.458E-05	1.437E-05	7.700E-07	0.000E+00
28	3.606E-03	1.068E-03	4.951E-04	1.711E-04	5.563E-05	1.674E-05	2.266E-06	0.000E+00
29	3.736E-03	1.142E-03	4.260E-04	2.335E-04	7.541E-05	2.473E-05	2.270E-06	0.000E+00
30	4.684E-03	1.647E-03	6.540E-04	3.568E-04	9.181E-05	2.762E-05	5.351E-06	0.000E+00
31	9.074E-02	2.909E-02	8.400E-03	2.536E-03	3.453E-04	4.129E-05	1.076E-05	0.000E+00
32	3.204E-02	1.300E-02	3.953E-03	9.438E-04	9.998E-05	3.081E-05	3.499E-06	0.000E+00
33	3.282E-03	8.388E-04	3.334E-04	1.454E-04	2.895E-05	8.074E-06	2.546E-06	0.000E+00
34	2.342E-03	7.515E-04	3.408E-04	1.247E-04	4.372E-05	1.419E-05	0.000E+00	0.000E+00
35	1.949E-03	6.796E-04	2.641E-04	1.320E-04	5.003E-05	1.309E-05	1.627E-06	0.000E+00
36	1.994E-03	6.005E-04	2.299E-04	1.249E-04	3.460E-05	1.197E-05	2.640E-06	0.000E+00
37	5.389E-03	1.725E-03	7.720E-04	2.984E-04	1.149E-04	1.697E-05	4.302E-06	2.219E-06
38	3.020E-03	1.012E-03	4.388E-04	2.003E-04	6.542E-05	2.241E-05	1.971E-06	7.564E-07
39	1.553E-03	5.505E-04	2.549E-04	1.054E-04	4.712E-05	1.565E-05	4.366E-06	6.299E-07
40	9.562E-04	4.897E-04	1.883E-04	1.087E-04	3.900E-05	1.883E-05	3.006E-06	5.933E-07
41	9.963E-04	3.153E-04	1.333E-04	1.221E-04	3.083E-05	1.300E-05	3.423E-06	2.407E-06
42	9.052E-04	3.880E-04	2.032E-04	1.095E-04	4.593E-05	2.484E-05	5.874E-06	0.000E+00

43	1.058E-03	4.044E-04	2.232E-04	1.221E-04	3.977E-05	2.029E-05	8.125E-06	0.000E+00
44	9.157E-04	4.370E-04	2.229E-04	1.249E-04	5.687E-05	2.598E-05	3.772E-06	0.000E+00
45	1.016E-03	4.365E-04	2.239E-04	1.193E-04	4.513E-05	2.130E-05	4.819E-06	0.000E+00
46	9.309E-04	4.798E-04	3.103E-04	1.376E-04	5.261E-05	3.164E-05	3.340E-06	1.187E-06
47	1.034E-03	4.928E-04	2.800E-04	1.757E-04	5.857E-05	2.207E-05	3.350E-06	2.397E-06
48	1.013E-03	5.257E-04	3.630E-04	1.505E-04	5.785E-05	2.302E-05	5.715E-06	1.139E-06
49	9.297E-04	4.350E-04	3.060E-04	1.632E-04	4.853E-05	2.712E-05	4.189E-06	1.137E-06
50	8.594E-04	4.421E-04	3.030E-04	1.504E-04	7.339E-05	1.750E-05	5.537E-06	0.000E+00
51	8.440E-04	4.685E-04	2.871E-04	1.515E-04	8.158E-05	2.682E-05	6.881E-06	5.624E-07
52	9.263E-04	4.631E-04	2.666E-04	1.362E-04	7.251E-05	1.451E-05	3.686E-06	0.000E+00
53	9.839E-04	5.385E-04	2.874E-04	1.598E-04	6.234E-05	2.582E-05	2.301E-06	1.159E-06
54	9.139E-04	4.903E-04	2.609E-04	1.801E-04	6.286E-05	2.361E-05	4.585E-06	0.000E+00
55	9.050E-04	4.480E-04	2.481E-04	1.384E-04	6.121E-05	1.114E-05	3.728E-06	0.000E+00
56	1.331E-03	7.189E-04	3.384E-04	2.007E-04	6.221E-05	2.189E-05	1.920E-06	5.649E-07
57	9.571E-04	5.342E-04	3.486E-04	1.451E-04	7.225E-05	1.345E-05	5.082E-06	1.116E-06
58	1.139E-03	6.144E-04	3.472E-04	1.623E-04	5.733E-05	2.315E-05	3.847E-06	0.000E+00
59	9.246E-04	4.486E-04	2.695E-04	1.480E-04	5.328E-05	1.114E-05	8.876E-07	0.000E+00
60	9.497E-04	4.616E-04	2.781E-04	1.275E-04	4.196E-05	1.442E-05	4.508E-06	5.526E-07
61	8.976E-04	4.320E-04	2.902E-04	1.300E-04	3.622E-05	1.631E-05	1.323E-06	0.000E+00
62	1.158E-03	4.858E-04	3.213E-04	1.619E-04	3.888E-05	8.076E-06	9.194E-07	5.917E-07
63	1.020E-03	5.121E-04	2.759E-04	1.292E-04	5.306E-05	1.337E-05	3.247E-06	0.000E+00
64	9.057E-04	5.442E-04	2.111E-04	1.328E-04	4.813E-05	4.070E-06	1.795E-06	1.107E-06
65	8.243E-04	4.222E-04	2.768E-04	1.044E-04	4.152E-05	9.124E-06	1.836E-06	0.000E+00
66	5.050E-04	2.922E-04	1.154E-04	7.654E-05	2.259E-05	7.084E-06	1.325E-06	0.000E+00
67	1.873E-04	1.256E-04	6.602E-05	2.545E-05	4.376E-06	3.964E-06	4.520E-07	0.000E+00
68	8.138E-05	5.540E-05	2.563E-05	1.415E-05	9.445E-06	1.938E-06	0.000E+00	0.000E+00
69	8.105E-05	1.848E-05	2.593E-05	1.126E-05	4.136E-06	1.874E-06	0.000E+00	5.578E-07
70	5.345E-05	2.876E-05	2.331E-05	1.742E-05	2.098E-06	1.989E-06	8.907E-07	0.000E+00
71	5.648E-05	1.857E-05	9.872E-06	3.139E-06	3.114E-06	9.936E-07	0.000E+00	5.555E-07
72	4.549E-05	3.154E-05	1.990E-05	6.269E-06	0.000E+00	9.343E-07	4.444E-07	0.000E+00
73	5.142E-05	1.013E-05	1.300E-05	6.262E-06	5.194E-06	9.921E-07	0.000E+00	0.000E+00
74	4.443E-05	7.526E-06	1.194E-05	1.017E-05	0.000E+00	0.000E+00	0.000E+00	5.171E-07
75	4.213E-05	1.581E-05	6.299E-06	1.515E-06	2.026E-06	2.855E-06	4.170E-07	0.000E+00
76	3.324E-05	1.817E-05	6.673E-06	4.824E-06	2.025E-06	0.000E+00	8.594E-07	5.217E-07
77	4.530E-05	2.337E-05	0.000E+00	6.151E-06	2.146E-06	0.000E+00	4.424E-07	0.000E+00
78	3.338E-05	1.548E-05	6.479E-06	4.726E-06	1.011E-06	0.000E+00	8.589E-07	0.000E+00
79	4.424E-05	1.563E-05	6.479E-06	4.728E-06	0.000E+00	0.000E+00	8.587E-07	0.000E+00
80	2.094E-05	2.115E-05	6.287E-06	6.149E-06	3.095E-06	9.307E-07	4.421E-07	0.000E+00
81	2.689E-05	1.011E-05	6.480E-06	3.120E-06	1.072E-06	0.000E+00	0.000E+00	0.000E+00
82	3.014E-05	2.383E-05	9.436E-06	6.334E-06	2.023E-06	9.314E-07	8.592E-07	0.000E+00

83	2.978E-05	1.547E-05	6.287E-06	9.363E-06	4.169E-06	1.861E-06	0.000E+00	0.000E+00
84	3.014E-05	1.816E-05	1.001E-05	1.514E-06	3.156E-06	0.000E+00	0.000E+00	0.000E+00
85	2.980E-05	1.042E-05	9.629E-06	6.246E-06	4.170E-06	0.000E+00	0.000E+00	0.000E+00
86	3.574E-05	2.337E-05	1.001E-05	3.121E-06	3.157E-06	9.871E-07	0.000E+00	5.208E-07
87	3.611E-05	2.069E-05	1.277E-05	4.638E-06	1.073E-06	2.908E-06	0.000E+00	0.000E+00
88	2.656E-05	2.086E-05	1.945E-05	4.731E-06	1.074E-06	9.314E-07	4.424E-07	0.000E+00
89	3.593E-05	1.579E-05	1.278E-05	1.515E-06	4.109E-06	9.321E-07	0.000E+00	5.525E-07
90	3.606E-05	1.902E-05	6.051E-06	5.740E-06	9.433E-07	0.000E+00	0.000E+00	0.000E+00
91	2.671E-05	1.057E-05	1.962E-05	7.938E-06	1.010E-06	9.871E-07	0.000E+00	0.000E+00
92	3.536E-05	7.729E-06	9.613E-06	1.513E-06	1.072E-06	0.000E+00	0.000E+00	0.000E+00
93	1.207E-05	1.545E-05	9.608E-06	6.236E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
4	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
5	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
6	1.514E-06	1.454E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
7	3.233E-06	0.000E+00	3.506E-06	0.000E+00	0.000E+00	4.966E-07	0.000E+00	0.000E+00
8	8.089E-06	4.299E-06	1.701E-06	8.143E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
9	4.586E-06	0.000E+00	3.516E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
10	8.832E-06	6.610E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
11	1.254E-05	4.289E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
12	2.060E-05	7.171E-06	1.832E-06	0.000E+00	5.509E-07	0.000E+00	0.000E+00	0.000E+00
13	1.774E-05	5.746E-06	1.872E-06	8.364E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
14	2.148E-05	0.000E+00	1.784E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
15	1.512E-05	9.202E-06	1.919E-06	8.821E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
16	2.635E-05	1.596E-06	1.972E-06	9.586E-07	0.000E+00	0.000E+00	2.548E-07	0.000E+00
17	3.488E-05	3.140E-06	3.874E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.182E-07
18	3.561E-05	8.095E-06	4.044E-06	0.000E+00	6.415E-07	0.000E+00	0.000E+00	0.000E+00
19	2.023E-05	4.971E-06	6.204E-06	1.036E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
20	3.413E-05	1.359E-05	6.334E-06	9.750E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
21	3.521E-05	1.562E-05	2.278E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

22	4.134E-05	1.390E-05	4.672E-06	1.141E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
23	3.003E-05	8.669E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.546E-07
24	3.694E-05	9.232E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
25	6.491E-05	1.381E-05	2.411E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
26	3.725E-05	5.331E-06	0.000E+00	2.151E-06	0.000E+00	0.000E+00	0.000E+00	3.322E-07
27	4.685E-05	1.027E-05	5.318E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
28	3.235E-05	9.740E-06	9.251E-06	0.000E+00	9.179E-07	0.000E+00	4.000E-07	0.000E+00
29	3.817E-05	4.679E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
30	6.181E-05	2.733E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
31	1.325E-04	4.995E-05	1.648E-05	1.829E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
32	1.732E-04	1.098E-05	2.014E-05	1.636E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
33	1.656E-05	4.662E-06	2.478E-06	0.000E+00	1.003E-06	0.000E+00	0.000E+00	0.000E+00
34	2.832E-05	5.508E-06	2.206E-06	1.149E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
35	3.432E-05	5.118E-06	2.123E-06	3.091E-06	6.801E-07	0.000E+00	0.000E+00	0.000E+00
36	1.337E-05	1.058E-05	2.178E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
37	4.896E-05	2.556E-05	1.741E-05	3.544E-06	1.116E-06	0.000E+00	0.000E+00	0.000E+00
38	4.080E-05	1.494E-05	7.759E-06	3.578E-06	1.075E-06	7.693E-07	0.000E+00	0.000E+00
39	2.319E-05	7.231E-06	4.392E-06	1.042E-06	6.496E-07	0.000E+00	0.000E+00	0.000E+00
40	1.445E-05	8.048E-06	6.016E-06	9.336E-07	0.000E+00	5.974E-07	0.000E+00	0.000E+00
41	3.584E-05	8.085E-06	3.937E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
42	3.751E-05	7.399E-06	5.356E-06	1.745E-06	5.633E-07	0.000E+00	0.000E+00	0.000E+00
43	4.659E-05	1.441E-05	2.006E-06	9.007E-07	6.374E-07	0.000E+00	0.000E+00	0.000E+00
44	3.998E-05	7.894E-06	3.988E-06	1.909E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
45	2.906E-05	2.038E-05	9.591E-06	3.643E-06	1.788E-06	0.000E+00	0.000E+00	0.000E+00
46	6.193E-05	1.105E-05	7.580E-06	3.627E-06	0.000E+00	0.000E+00	2.423E-07	0.000E+00
47	5.289E-05	2.789E-05	9.393E-06	3.609E-06	0.000E+00	5.407E-07	0.000E+00	0.000E+00
48	4.083E-05	1.422E-05	5.553E-06	8.871E-07	1.251E-06	0.000E+00	0.000E+00	0.000E+00
49	3.363E-05	1.809E-05	7.680E-06	1.756E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
50	4.511E-05	2.287E-05	1.326E-05	2.735E-06	6.194E-07	0.000E+00	0.000E+00	0.000E+00
51	5.204E-05	1.219E-05	0.000E+00	2.733E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
52	6.211E-05	2.129E-05	9.446E-06	3.649E-06	5.800E-07	0.000E+00	0.000E+00	0.000E+00
53	5.018E-05	1.942E-05	1.341E-05	2.717E-06	1.194E-06	0.000E+00	0.000E+00	0.000E+00
54	5.556E-05	1.952E-05	9.282E-06	3.626E-06	6.116E-07	5.611E-07	0.000E+00	0.000E+00
55	5.132E-05	1.369E-05	1.128E-05	1.781E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
56	6.867E-05	1.697E-05	1.494E-05	1.764E-06	6.171E-07	0.000E+00	0.000E+00	0.000E+00
57	6.343E-05	1.947E-05	7.225E-06	8.707E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
58	6.999E-05	1.840E-05	6.883E-06	5.004E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
59	4.498E-05	9.094E-06	1.504E-05	3.546E-06	5.711E-07	0.000E+00	2.474E-07	0.000E+00
60	4.471E-05	1.956E-05	1.904E-06	3.483E-06	6.062E-07	0.000E+00	0.000E+00	0.000E+00
61	5.092E-05	1.489E-05	0.000E+00	3.474E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00

62	4.643E-05	7.492E-06	3.616E-06	9.179E-07	0.000E+00	5.524E-07	0.000E+00	0.000E+00
63	4.810E-05	1.667E-05	7.386E-06	1.766E-06	5.725E-07	0.000E+00	0.000E+00	0.000E+00
64	5.403E-05	2.217E-05	7.383E-06	1.769E-06	5.700E-07	0.000E+00	0.000E+00	0.000E+00
65	4.597E-05	1.780E-05	9.110E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
66	1.770E-05	7.269E-06	3.632E-06	8.393E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
67	4.621E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
68	4.857E-06	2.761E-06	0.000E+00	8.657E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
69	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.677E-07	0.000E+00
70	0.000E+00	1.459E-06	0.000E+00	8.136E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
71	1.520E-06	1.374E-06	1.695E-06	8.121E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
72	3.035E-06	1.371E-06	1.797E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
73	1.517E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.323E-07	0.000E+00
74	1.415E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
75	0.000E+00	0.000E+00	1.793E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
76	3.024E-06	1.366E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
77	3.206E-06	1.451E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
78	0.000E+00	2.899E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
79	1.511E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
80	1.511E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
81	1.510E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
82	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
83	1.511E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.865E-07
84	1.604E-06	0.000E+00	0.000E+00	0.000E+00	5.367E-07	0.000E+00	0.000E+00	0.000E+00
85	1.512E-06	0.000E+00	0.000E+00	8.579E-07	0.000E+00	0.000E+00	0.000E+00	2.703E-07
86	3.115E-06	1.366E-06	0.000E+00	0.000E+00	5.367E-07	0.000E+00	0.000E+00	0.000E+00
87	1.604E-06	1.366E-06	1.688E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
88	0.000E+00	2.734E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
89	1.512E-06	0.000E+00	0.000E+00	8.079E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
90	4.404E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
91	1.604E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
92	1.602E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
93	0.000E+00	0.000E+00	3.471E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	0	0	0	0	0	0	0
0	1	0	0	0	1	0	0
0	0	1	0	0	0	0	0
1	0	0	0	1	0	0	1
3	0	0	1	0	1	0	1
2	2	0	3	3	1	2	0

6	8	7	8	8	2	0	0
18	15	6	9	0	5	3	0
15	23	5	8	10	3	3	0
46	31	24	18	9	7	5	0
75	54	20	23	9	4	0	0
119	61	23	29	7	5	4	0
168	88	31	41	8	5	2	0
193	71	31	32	15	2	2	0
255	115	45	39	17	8	1	0
276	122	48	38	19	6	1	0
356	136	55	43	15	8	1	0
425	174	66	42	31	16	2	0
434	191	80	72	36	11	4	0
516	209	98	94	35	16	6	0
544	203	79	60	28	13	2	0
565	242	90	71	33	10	4	0
380	165	46	42	24	8	3	0
441	209	84	60	27	12	1	0
714	296	98	76	55	11	2	0
649	257	79	66	36	14	5	0
699	240	74	59	23	10	1	0
695	235	88	63	31	10	3	0
725	253	76	87	42	15	3	0
875	351	113	127	49	16	7	0
1515	1621	405	301	74	14	6	0
830	580	170	97	17	6	1	0
690	204	64	63	18	6	4	0
600	220	80	61	32	11	0	0
527	210	66	68	39	11	3	0
545	186	58	65	27	10	5	0
909	336	119	98	55	9	5	2
646	245	86	83	40	14	3	1
411	167	63	54	36	13	8	1
275	161	50	59	32	17	6	1
295	107	36	69	26	12	7	4
289	142	60	67	42	25	13	0
317	139	62	70	34	19	17	0
277	150	62	72	49	24	8	0
308	151	62	69	39	20	10	0
283	167	87	80	46	30	7	2

316	172	79	102	51	21	7	4
310	184	102	88	51	22	12	2
288	154	87	96	43	26	9	2
265	156	86	89	65	17	12	0
261	166	82	90	72	26	15	1
289	165	76	81	64	14	8	0
306	192	82	95	55	25	5	2
286	175	75	108	56	23	10	0
285	161	72	83	55	11	8	0
412	255	96	119	55	21	4	1
301	192	100	87	65	13	11	2
382	235	107	104	55	24	9	0
292	161	78	89	48	11	2	0
300	168	81	77	38	14	10	1
285	157	84	79	33	16	3	0
365	175	93	97	35	8	2	1
322	185	80	78	48	13	7	0
287	197	61	80	44	4	4	2
263	154	81	63	38	9	4	0
163	108	34	47	21	7	3	0
62	47	20	16	4	4	1	0
27	21	8	9	9	2	0	0
27	7	8	7	4	2	0	1
18	11	7	11	2	2	2	0
19	7	3	2	3	1	0	1
15	12	6	4	0	1	1	0
17	4	4	4	5	1	0	0
16	3	4	7	0	0	0	1
14	6	2	1	2	3	1	0
11	7	2	3	2	0	2	1
15	9	0	4	2	0	1	0
11	6	2	3	1	0	2	0
15	6	2	3	0	0	2	0
7	8	2	4	3	1	1	0
9	4	2	2	1	0	0	0
10	9	3	4	2	1	2	0
10	6	2	6	4	2	0	0
10	7	3	1	3	0	0	0
10	4	3	4	4	0	0	0
12	9	3	2	3	1	0	1

12	8	4	3	1	3	0	0
9	8	6	3	1	1	1	0
12	6	4	1	4	1	0	1
13	8	2	4	1	0	0	0
9	4	6	5	1	1	0	0
12	3	3	1	1	0	0	0
4	6	3	4	0	0	0	0

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	1	0	0	0	0	0	0
2	0	2	0	0	1	0	0
5	3	1	1	0	0	0	0
3	0	2	0	0	0	0	0
6	5	0	0	0	0	0	0
8	3	0	0	0	0	0	0
13	5	1	0	1	0	0	0
11	4	1	1	0	0	0	0
13	0	1	0	0	0	0	0
9	6	1	1	0	0	0	0
15	1	1	1	0	0	1	0
20	2	2	0	0	0	0	1
20	5	2	0	1	0	0	0
11	3	3	1	0	0	0	0
18	8	3	1	0	0	0	0
18	9	1	0	0	0	0	0
20	8	2	1	0	0	0	0
16	5	0	0	0	0	0	1
18	5	0	0	0	0	0	0
30	7	1	0	0	0	0	0

19	3	0	2	0	0	0	1
20	5	2	0	0	0	0	0
12	4	3	0	1	0	1	0
14	2	0	0	0	0	0	0
22	11	0	0	0	0	0	0
14	7	2	1	0	0	0	0
7	2	3	1	0	0	0	0
7	2	1	0	1	0	0	0
14	3	1	1	0	0	0	0
18	3	1	3	1	0	0	0
7	6	1	0	0	0	0	0
16	9	5	2	1	0	0	0
17	7	3	3	1	1	0	0
12	4	2	1	1	0	0	0
8	5	3	1	0	1	0	0
20	5	2	0	0	0	0	0
23	5	3	2	1	0	0	0
27	9	1	1	1	0	0	0
23	5	2	2	0	0	0	0
17	13	5	4	3	0	0	0
36	7	4	4	0	0	1	0
31	18	5	4	0	1	0	0
24	9	3	1	2	0	0	0
20	12	4	2	0	0	0	0
27	15	7	3	1	0	0	0
31	8	0	3	0	0	0	0
37	14	5	4	1	0	0	0
30	13	7	3	2	0	0	0
33	13	5	4	1	1	0	0
31	9	6	2	0	0	0	0
41	11	8	2	1	0	0	0
38	13	4	1	0	0	0	0
45	13	4	6	0	0	0	0
27	6	8	4	1	0	1	0
27	13	1	4	1	0	0	0
31	10	0	4	0	0	0	0
28	5	2	1	0	1	0	0
29	11	4	2	1	0	0	0
33	15	4	2	1	0	0	0
28	12	5	0	0	0	0	0

11	5	2	1	0	0	0	0
3	0	0	0	0	0	0	0
3	2	0	1	0	0	0	0
0	0	0	0	0	0	2	0
0	1	0	1	0	0	0	0
1	1	1	1	0	0	0	0
2	1	1	0	0	0	0	0
1	0	0	0	0	0	1	0
1	0	0	0	0	0	0	0
0	0	1	0	0	0	0	0
2	1	0	0	0	0	0	0
2	1	0	0	0	0	0	0
0	2	0	0	0	0	0	0
1	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	1
1	0	0	0	1	0	0	0
1	0	0	1	0	0	0	1
2	1	0	0	1	0	0	0
1	1	1	0	0	0	0	0
0	2	0	0	0	0	0	0
1	0	0	1	0	0	0	0
3	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	2	0	0	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 2.638 \quad (1.917, 3.359)$$

$$b = -0.3152 \quad (-0.3577, -0.2727)$$

$$c = 0.008628 \quad (-0.03789, 0.05515)$$

$$d = -0.05927 \text{ } (-0.2544, 0.1359)$$

goftotal =

sse: 5.6033e-006
 rsquare: 0.9998
 dfe: 4
 adjrsquare: 0.9996
 rmse: 0.0012

ctotal =

General model Exp1:
 $ctotal(x) = a * \exp(b * x)$
 Coefficients (with 95% confidence bounds):
 a = 0.3015 (0.138, 0.465)
 b = -0.1773 (-0.2047, -0.1498)

goftotal =

sse: 1.1317e-007
 rsquare: 9.9852e-001
 dfe: 3
 adjrsquare: 9.9802e-001
 rmse: 1.9423e-004

Event 61	Date		Time*	Location*			Summing interval*	
	7-Jul-02		1143	SW110			Jul 7 to Jul 9 2000	
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	0.000E+00	0.000E+00	3.319E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2	0.000E+00	0.000E+00	2.931E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
3	0.000E+00	0.000E+00	9.652E-06	3.030E-06	1.073E-06	0.000E+00	0.000E+00	0.000E+00

4	1.192E-05	8.023E-06	9.919E-06	1.619E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
5	4.822E-05	2.681E-05	1.304E-05	0.000E+00	0.000E+00	1.901E-06	0.000E+00	0.000E+00
6	3.059E-05	2.415E-05	1.713E-05	7.861E-06	1.101E-06	0.000E+00	0.000E+00	0.000E+00
7	7.404E-05	3.454E-05	2.666E-05	1.445E-05	4.254E-06	2.893E-06	0.000E+00	0.000E+00
8	7.351E-05	2.738E-05	4.045E-05	1.282E-05	5.444E-06	1.996E-06	0.000E+00	0.000E+00
9	1.525E-04	6.571E-05	5.831E-05	2.022E-05	7.760E-06	0.000E+00	8.914E-07	0.000E+00
10	1.967E-04	9.470E-05	3.061E-05	1.821E-05	5.586E-06	1.057E-06	4.745E-07	0.000E+00
11	1.808E-04	6.622E-05	3.139E-05	1.991E-05	8.789E-06	2.038E-06	0.000E+00	0.000E+00
12	9.028E-05	4.658E-05	3.375E-05	9.566E-06	5.461E-06	1.991E-06	0.000E+00	0.000E+00
13	9.540E-05	3.795E-05	2.992E-05	3.135E-06	2.224E-06	0.000E+00	0.000E+00	0.000E+00
14	8.748E-05	2.462E-05	2.373E-05	1.007E-05	3.331E-06	1.026E-06	0.000E+00	0.000E+00
15	1.051E-04	4.874E-05	2.693E-05	8.344E-06	2.104E-06	1.025E-06	0.000E+00	0.000E+00
16	7.994E-05	4.344E-05	1.979E-05	2.250E-05	3.335E-06	2.959E-06	8.933E-07	0.000E+00
17	6.706E-05	2.143E-05	2.362E-05	3.210E-06	3.122E-06	0.000E+00	0.000E+00	0.000E+00
18	5.137E-05	1.769E-05	1.808E-05	1.060E-05	9.687E-07	0.000E+00	8.236E-07	5.288E-07
19	6.006E-05	2.133E-05	1.346E-05	6.577E-06	3.105E-06	0.000E+00	4.527E-07	0.000E+00
20	3.969E-05	3.169E-05	1.649E-05	7.759E-06	7.306E-06	0.000E+00	4.518E-07	5.645E-07
21	6.994E-05	3.721E-05	6.831E-06	6.396E-06	2.135E-06	9.543E-07	4.271E-07	0.000E+00
22	6.102E-05	2.371E-05	2.289E-05	6.377E-06	4.259E-06	1.008E-06	8.771E-07	0.000E+00
23	4.503E-05	1.351E-05	3.394E-06	7.799E-06	2.059E-06	9.471E-07	0.000E+00	0.000E+00
24	4.550E-05	1.059E-05	9.776E-06	4.896E-06	3.206E-06	0.000E+00	0.000E+00	0.000E+00
25	2.419E-05	1.859E-05	9.963E-06	7.782E-06	1.026E-06	0.000E+00	0.000E+00	0.000E+00
26	1.209E-05	5.131E-06	1.315E-05	6.241E-06	1.089E-06	1.002E-06	0.000E+00	0.000E+00
27	3.351E-05	2.628E-05	6.573E-06	3.165E-06	0.000E+00	9.443E-07	4.229E-07	1.650E-06
28	4.244E-05	1.056E-05	3.379E-06	4.791E-06	1.088E-06	0.000E+00	0.000E+00	0.000E+00
29	4.552E-05	2.141E-05	1.274E-05	3.066E-06	2.112E-06	0.000E+00	0.000E+00	0.000E+00
30	2.362E-05	2.111E-05	6.571E-06	6.511E-06	2.051E-06	1.001E-06	0.000E+00	0.000E+00
31	3.928E-05	1.852E-05	1.329E-05	4.778E-06	0.000E+00	1.944E-06	4.470E-07	0.000E+00
32	1.824E-05	1.308E-05	6.353E-06	6.213E-06	1.021E-06	0.000E+00	0.000E+00	0.000E+00
33	4.252E-05	2.633E-05	6.549E-06	3.062E-06	2.106E-06	0.000E+00	0.000E+00	0.000E+00
34	2.280E-05	9.674E-06	9.248E-06	0.000E+00	1.011E-06	9.307E-07	0.000E+00	0.000E+00
35	8.753E-06	7.966E-06	1.347E-05	1.529E-06	1.021E-06	9.971E-07	0.000E+00	5.578E-07
36	2.405E-05	1.051E-05	1.269E-05	1.622E-06	1.021E-06	0.000E+00	0.000E+00	0.000E+00
37	2.110E-05	5.095E-06	9.893E-06	6.291E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
38	2.982E-05	7.945E-06	0.000E+00	3.144E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
39	3.000E-05	1.589E-05	3.165E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
40	1.834E-05	1.288E-05	1.304E-05	4.664E-06	0.000E+00	1.873E-06	0.000E+00	5.557E-07
41	6.169E-06	1.287E-05	6.520E-06	3.233E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
42	2.052E-05	1.302E-05	6.514E-06	1.617E-06	0.000E+00	0.000E+00	0.000E+00	5.234E-07
43	9.066E-06	1.047E-05	0.000E+00	0.000E+00	1.079E-06	0.000E+00	0.000E+00	0.000E+00

44	3.077E-06	7.611E-06	6.312E-06	1.521E-06	0.000E+00	0.000E+00	0.000E+00	5.226E-07
45	3.078E-06	5.228E-06	3.348E-06	1.520E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
46	1.775E-05	7.917E-06	0.000E+00	0.000E+00	1.076E-06	0.000E+00	0.000E+00	0.000E+00
47	1.213E-05	7.608E-06	3.154E-06	1.613E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
48	1.775E-05	8.070E-06	3.154E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
49	1.673E-05	7.387E-06	3.123E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
50	5.796E-06	2.312E-05	3.152E-06	1.611E-06	0.000E+00	0.000E+00	0.000E+00	5.222E-07
51	1.756E-05	2.687E-06	3.342E-06	1.611E-06	1.013E-06	9.336E-07	0.000E+00	0.000E+00
52	9.042E-06	5.065E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
53	2.113E-05	1.043E-05	3.339E-06	1.608E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
54	1.463E-05	7.894E-06	0.000E+00	3.213E-06	0.000E+00	0.000E+00	1.327E-06	0.000E+00
55	9.022E-06	2.681E-06	0.000E+00	1.515E-06	1.073E-06	0.000E+00	4.168E-07	0.000E+00
56	3.066E-06	2.526E-06	0.000E+00	4.728E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
57	9.021E-06	0.000E+00	3.333E-06	1.513E-06	1.072E-06	0.000E+00	0.000E+00	0.000E+00
58	5.954E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.307E-07	4.166E-07	5.206E-07

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
3	1.511E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
4	0.000E+00	1.473E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
5	0.000E+00	1.391E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
6	1.647E-06	1.486E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
7	1.666E-06	0.000E+00	0.000E+00	1.674E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
8	0.000E+00	1.408E-06	0.000E+00	0.000E+00	5.868E-07	0.000E+00	0.000E+00	0.000E+00
9	4.244E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.739E-07
10	3.317E-06	2.911E-06	0.000E+00	2.633E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
11	1.003E-05	6.051E-06	0.000E+00	1.757E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
12	4.804E-06	0.000E+00	1.866E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.817E-07
13	1.657E-06	1.497E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
14	6.449E-06	0.000E+00	0.000E+00	0.000E+00	5.577E-07	0.000E+00	2.280E-07	0.000E+00
15	4.810E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
16	4.800E-06	1.493E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.810E-07
17	0.000E+00	4.384E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
18	2.987E-06	1.309E-06	0.000E+00	7.727E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00

19	3.191E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.376E-07	0.000E+00
20	3.185E-06	0.000E+00	0.000E+00	0.000E+00	5.821E-07	0.000E+00	0.000E+00	0.000E+00
21	6.291E-06	2.884E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
22	1.639E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
23	6.155E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
24	0.000E+00	1.474E-06	1.717E-06	0.000E+00	0.000E+00	0.000E+00	2.354E-07	0.000E+00
25	9.671E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
26	6.324E-06	1.386E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.911E-07
27	4.604E-06	1.471E-06	1.817E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.911E-07
28	3.158E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
29	1.531E-06	0.000E+00	1.811E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
30	3.066E-06	1.384E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
31	1.621E-06	0.000E+00	0.000E+00	0.000E+00	5.444E-07	0.000E+00	0.000E+00	0.000E+00
32	1.527E-06	1.380E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
33	1.528E-06	1.464E-06	1.810E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
34	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
35	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.894E-07
36	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
37	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.339E-07	0.000E+00
38	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
39	1.521E-06	0.000E+00	0.000E+00	0.000E+00	5.410E-07	0.000E+00	0.000E+00	0.000E+00
40	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
41	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.884E-07
42	1.613E-06	2.828E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
43	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
44	4.552E-06	1.455E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
45	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
46	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
47	1.516E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
48	1.609E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
49	1.501E-06	1.279E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
50	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
51	4.821E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
52	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
53	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
54	3.117E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.189E-07	0.000E+00
55	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
56	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
57	1.603E-06	1.364E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.187E-07	0.000E+00
58	0.000E+00	1.365E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	0	1	0	0	0	0	0
0	0	1	0	0	0	0	0
0	0	3	2	1	0	0	0
4	3	3	1	0	0	0	0
16	10	4	0	0	2	0	0
10	9	5	5	1	0	0	0
24	13	8	9	4	3	0	0
24	10	12	8	5	2	0	0
51	24	17	12	7	0	2	0
62	34	9	11	5	1	1	0
57	24	9	12	8	2	0	0
29	17	10	6	5	2	0	0
31	14	9	2	2	0	0	0
28	9	7	6	3	1	0	0
34	18	8	5	2	1	0	0
26	16	6	14	3	3	2	0
22	8	7	2	3	0	0	0
18	7	6	7	1	0	2	1
20	8	4	4	3	0	1	0
13	12	5	5	7	0	1	1
23	14	2	4	2	1	1	0
20	9	7	4	4	1	2	0
15	5	1	5	2	1	0	0
15	4	3	3	3	0	0	0
8	7	3	5	1	0	0	0
4	2	4	4	1	1	0	0
11	10	2	2	0	1	1	3
14	4	1	3	1	0	0	0
15	8	4	2	2	0	0	0
8	8	2	4	2	1	0	0
13	7	4	3	0	2	1	0
6	5	2	4	1	0	0	0
14	10	2	2	2	0	0	0
8	4	3	0	1	1	0	0
3	3	4	1	1	1	0	1
8	4	4	1	1	0	0	0
7	2	3	4	0	0	0	0

10	3	0	2	0	0	0	0
10	6	1	0	0	0	0	0
6	5	4	3	0	2	0	1
2	5	2	2	0	0	0	0
7	5	2	1	0	0	0	1
3	4	0	0	1	0	0	0
1	3	2	1	0	0	0	1
1	2	1	1	0	0	0	0
6	3	0	0	1	0	0	0
4	3	1	1	0	0	0	0
6	3	1	0	0	0	0	0
6	3	1	0	0	0	0	0
2	9	1	1	0	0	0	1
6	1	1	1	1	1	0	0
3	2	0	0	0	0	0	0
7	4	1	1	0	0	0	0
5	3	0	2	0	0	3	0
3	1	0	1	1	0	1	0
1	1	0	3	0	0	0	0
3	0	1	1	1	0	0	0
2	0	0	0	0	1	1	1

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	1	0	0	0	0	0	0
0	1	0	0	0	0	0	0
1	1	0	0	0	0	0	0
1	0	0	2	0	0	0	0
0	1	0	0	1	0	0	0
3	0	0	0	0	0	0	1
2	2	0	3	0	0	0	0
6	4	0	2	0	0	0	0
3	0	1	0	0	0	0	1
1	1	0	0	0	0	0	0

4	0	0	0	1	0	1	0
3	0	0	0	0	0	0	0
3	1	0	0	0	0	0	1
0	3	0	0	0	0	0	0
2	1	0	1	0	0	0	0
2	0	0	0	0	0	1	0
2	0	0	0	1	0	0	0
4	2	0	0	0	0	0	0
1	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
0	1	1	0	0	0	1	0
6	0	0	0	0	0	0	0
4	1	0	0	0	0	0	1
3	1	1	0	0	0	0	1
2	0	0	0	0	0	0	0
1	0	1	0	0	0	0	0
2	1	0	0	0	0	0	0
1	0	0	0	1	0	0	0
1	1	0	0	0	0	0	0
1	1	1	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0
0	0	0	0	0	0	1	0
0	0	0	0	0	0	0	0
1	0	0	0	1	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1
1	2	0	0	0	0	0	0
0	0	0	0	0	0	0	0
3	1	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
1	1	0	0	0	0	0	0
0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

2	0	0	0	0	0	1	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	1	0	0	0	0	1	0
0	1	0	0	0	0	0	0
0	1	0	0	0	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.008969 \quad (0.005518, 0.01242)$$

$$b = -0.1776 \quad (-0.2326, -0.1225)$$

$$c = -2.163e-005 \quad (-0.0004542, 0.0004109)$$

$$d = -0.011 \quad (-0.4222, 0.4002)$$

goftotal =

$$sse: 1.1385e-008$$

$$rsquare: 0.9965$$

$$dfe: 4$$

$$adjrsquare: 0.9939$$

$$rmse: 5.3351e-005$$

ctotal =

General model Exp1:

$$ctotal(x) = a \cdot \exp(b \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.001771 \quad (-0.00123, 0.004772)$$

$$b = -0.1023 \quad (-0.1823, -0.02224)$$

goftotal =

$$sse: 2.2524e-009$$

$$rsquare: 9.5663e-001$$

$$dfe: 3$$

$$adjrsquare: 9.4217e-001$$

$$rmse: 2.7401e-005$$

Event 62

Date

Time*

Location*

Summing interval*

	15-Jul-02		2008		N19W01		Jul 16 0000 to Jul 18 2300	
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.401E-07	0.000E+00
4	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
5	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.836E-07	0.000E+00	0.000E+00
6	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
7	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.153E-07	0.000E+00
8	2.879E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.407E-07	0.000E+00
9	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
10	8.809E-06	2.516E-06	3.131E-06	4.707E-06	1.006E-06	0.000E+00	8.549E-07	0.000E+00
11	2.881E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.814E-07	0.000E+00
12	9.169E-06	5.037E-06	3.134E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
13	2.330E-05	5.072E-06	6.280E-06	1.613E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
14	4.835E-05	1.828E-05	1.621E-05	4.759E-06	2.036E-06	9.379E-07	0.000E+00	5.563E-07
15	4.821E-05	2.637E-05	2.304E-05	1.397E-05	3.129E-06	0.000E+00	4.484E-07	0.000E+00
16	8.556E-05	5.326E-05	3.029E-05	1.122E-05	2.060E-06	1.902E-06	0.000E+00	0.000E+00
17	1.327E-04	9.427E-05	6.027E-05	1.766E-05	9.598E-06	1.989E-06	8.901E-07	0.000E+00
18	2.550E-04	9.788E-05	7.104E-05	3.235E-05	1.295E-05	3.999E-06	1.817E-06	0.000E+00
19	2.815E-04	1.376E-04	7.794E-05	4.243E-05	1.541E-05	6.121E-06	1.359E-06	5.436E-07
20	3.381E-04	1.654E-04	1.109E-04	6.168E-05	2.759E-05	1.039E-05	8.495E-07	5.165E-07
21	6.029E-04	3.325E-04	1.971E-04	1.552E-04	4.983E-05	1.233E-05	9.669E-07	0.000E+00
22	7.327E-04	3.604E-04	2.047E-04	1.117E-04	3.659E-05	1.470E-05	2.293E-06	0.000E+00
23	5.910E-04	3.897E-04	2.569E-04	1.531E-04	4.095E-05	7.388E-06	2.344E-06	0.000E+00
24	8.449E-04	4.568E-04	3.107E-04	1.425E-04	4.236E-05	1.708E-05	3.267E-06	0.000E+00
25	1.004E-03	4.897E-04	3.034E-04	1.327E-04	4.164E-05	1.266E-05	4.631E-07	0.000E+00
26	1.196E-03	4.863E-04	3.202E-04	1.142E-04	2.703E-05	1.098E-05	1.447E-06	0.000E+00
27	1.351E-03	5.600E-04	3.520E-04	1.497E-04	2.519E-05	1.220E-05	5.086E-07	0.000E+00
28	1.517E-03	7.148E-04	3.620E-04	1.291E-04	3.466E-05	7.043E-06	1.565E-06	0.000E+00
29	1.568E-03	7.670E-04	3.215E-04	1.463E-04	2.885E-05	4.550E-06	0.000E+00	0.000E+00
30	1.582E-03	6.158E-04	2.855E-04	1.241E-04	3.573E-05	1.063E-05	1.085E-06	0.000E+00
31	1.643E-03	6.271E-04	2.554E-04	1.235E-04	3.254E-05	1.209E-06	0.000E+00	0.000E+00
32	1.966E-03	7.155E-04	3.767E-04	1.328E-04	1.863E-05	1.302E-06	1.172E-06	0.000E+00
33	2.095E-03	7.380E-04	2.657E-04	9.900E-05	2.229E-05	5.445E-06	0.000E+00	0.000E+00
34	2.135E-03	7.877E-04	2.919E-04	1.062E-04	1.938E-05	5.507E-06	5.872E-07	0.000E+00
35	2.640E-03	7.689E-04	3.479E-04	1.138E-04	2.889E-05	1.454E-06	1.355E-06	8.550E-07
36	2.771E-03	9.002E-04	3.383E-04	9.159E-05	2.463E-05	0.000E+00	0.000E+00	2.474E-06

37	3.072E-03	9.265E-04	2.713E-04	6.115E-05	3.555E-05	3.339E-06	0.000E+00	8.957E-07
38	4.167E-03	1.174E-03	4.331E-04	1.042E-04	1.677E-05	1.969E-06	8.757E-07	0.000E+00
39	6.573E-03	1.634E-03	4.801E-04	1.200E-04	8.745E-06	7.430E-06	0.000E+00	0.000E+00
40	5.461E-03	1.384E-03	5.016E-04	1.422E-04	1.612E-05	2.219E-06	1.160E-06	0.000E+00
41	4.019E-03	1.021E-03	2.308E-04	1.186E-04	4.696E-06	0.000E+00	9.571E-07	0.000E+00
42	3.940E-03	9.556E-04	3.448E-04	6.961E-05	2.173E-05	1.934E-06	0.000E+00	0.000E+00
43	3.016E-03	8.398E-04	2.133E-04	5.129E-05	6.087E-06	7.469E-06	0.000E+00	0.000E+00
44	1.223E-03	3.457E-04	1.019E-04	3.606E-05	9.396E-06	1.481E-06	1.245E-06	0.000E+00
45	9.890E-04	2.489E-04	8.617E-05	2.468E-05	4.581E-06	2.669E-06	6.281E-07	0.000E+00
46	1.071E-03	2.366E-04	5.563E-05	1.735E-05	5.933E-06	0.000E+00	0.000E+00	0.000E+00
47	8.982E-04	1.925E-04	7.567E-05	2.306E-05	5.701E-06	0.000E+00	6.006E-07	0.000E+00
48	7.948E-04	2.014E-04	1.101E-04	1.052E-05	5.651E-06	1.255E-06	0.000E+00	0.000E+00
49	7.818E-04	1.391E-04	7.413E-05	1.891E-05	8.446E-06	1.264E-06	5.877E-07	7.386E-07
50	6.765E-04	2.099E-04	5.595E-05	1.243E-05	2.661E-06	1.305E-06	0.000E+00	0.000E+00
51	5.927E-04	1.742E-04	6.621E-05	1.595E-05	4.024E-06	0.000E+00	0.000E+00	0.000E+00
52	5.542E-04	1.374E-04	4.539E-05	1.492E-05	1.250E-06	2.180E-06	0.000E+00	0.000E+00
53	4.239E-04	1.528E-04	3.970E-05	2.129E-05	6.374E-06	0.000E+00	0.000E+00	1.315E-06
54	4.043E-04	1.169E-04	5.101E-05	5.604E-06	1.223E-06	1.191E-06	1.034E-06	0.000E+00
55	3.945E-04	7.449E-05	4.233E-05	5.543E-06	2.484E-06	0.000E+00	9.950E-07	6.631E-07
56	3.332E-04	7.397E-05	3.496E-05	1.476E-05	1.279E-06	2.259E-06	0.000E+00	6.599E-07
57	3.293E-04	5.173E-05	2.594E-05	1.611E-05	3.579E-06	1.081E-06	4.839E-07	0.000E+00
58	2.207E-04	7.131E-05	3.002E-05	7.157E-06	4.853E-06	0.000E+00	0.000E+00	0.000E+00
59	2.679E-04	5.558E-05	3.258E-05	1.909E-05	4.759E-06	3.161E-06	1.941E-06	6.218E-07
60	2.255E-04	4.954E-05	2.186E-05	7.231E-06	5.892E-06	2.158E-06	0.000E+00	0.000E+00
61	2.427E-04	7.203E-05	2.144E-05	1.920E-05	1.132E-06	2.145E-06	0.000E+00	0.000E+00
62	1.813E-04	7.238E-05	2.495E-05	1.558E-05	2.302E-06	1.091E-06	0.000E+00	0.000E+00
63	1.746E-04	4.904E-05	3.601E-05	1.924E-05	2.377E-06	1.028E-06	0.000E+00	0.000E+00
64	1.647E-04	6.860E-05	3.510E-05	1.899E-05	2.231E-06	3.141E-06	0.000E+00	0.000E+00
65	2.184E-04	8.641E-05	1.754E-05	1.364E-05	3.405E-06	1.024E-06	4.866E-07	0.000E+00
66	2.242E-04	8.000E-05	3.176E-05	5.059E-06	1.169E-06	3.107E-06	0.000E+00	0.000E+00
67	1.403E-04	6.260E-05	1.795E-05	1.711E-05	5.709E-06	1.075E-06	0.000E+00	1.173E-06
68	1.659E-04	5.843E-05	3.597E-05	7.977E-06	4.311E-06	1.953E-06	0.000E+00	5.619E-07
69	1.976E-04	3.974E-05	4.235E-05	2.059E-05	3.369E-06	0.000E+00	0.000E+00	0.000E+00
70	2.108E-04	4.845E-05	1.052E-05	8.541E-06	1.106E-06	0.000E+00	4.529E-07	5.672E-07
71	1.674E-04	6.485E-05	2.791E-05	1.374E-05	3.419E-06	2.021E-06	4.534E-07	0.000E+00
72	1.477E-04	5.647E-05	1.399E-05	8.281E-06	4.499E-06	1.006E-06	0.000E+00	5.611E-07

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62

	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
4	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.513E-07
5	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
6	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
7	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
8	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.692E-07
9	0.000E+00	2.886E-06	1.681E-06	8.043E-07	5.674E-07	0.000E+00	0.000E+00	0.000E+00
10	4.609E-06	0.000E+00	1.781E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.691E-07
11	1.598E-06	0.000E+00	0.000E+00	0.000E+00	5.347E-07	0.000E+00	0.000E+00	0.000E+00
12	1.506E-06	2.722E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
13	1.519E-06	0.000E+00	0.000E+00	8.093E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
14	4.566E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
15	4.776E-06	0.000E+00	1.704E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
16	7.893E-06	2.968E-06	0.000E+00	2.579E-06	0.000E+00	5.331E-07	0.000E+00	0.000E+00
17	6.249E-06	1.415E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
18	9.646E-06	2.841E-06	0.000E+00	1.693E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
19	1.803E-05	5.891E-06	1.762E-06	8.557E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
20	2.140E-05	2.707E-06	1.777E-06	8.440E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
21	2.838E-05	9.169E-06	1.976E-06	1.734E-06	0.000E+00	0.000E+00	0.000E+00	3.164E-07
22	3.082E-05	1.218E-05	7.499E-06	1.818E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
23	2.882E-05	6.134E-06	5.629E-06	9.279E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
24	2.748E-05	7.566E-06	1.953E-06	8.821E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
25	4.339E-05	9.317E-06	0.000E+00	9.043E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
26	5.428E-05	1.105E-05	7.869E-06	1.885E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
27	2.842E-05	8.099E-06	1.936E-06	0.000E+00	0.000E+00	5.995E-07	0.000E+00	0.000E+00
28	3.326E-05	1.020E-05	2.151E-06	1.030E-06	6.756E-07	5.756E-07	0.000E+00	0.000E+00
29	3.755E-05	1.025E-05	4.306E-06	0.000E+00	0.000E+00	6.284E-07	0.000E+00	0.000E+00
30	3.237E-05	7.039E-06	0.000E+00	1.076E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
31	3.658E-05	7.274E-06	4.395E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
32	3.412E-05	5.789E-06	2.231E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
33	2.868E-05	2.067E-06	9.661E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
34	3.319E-05	6.056E-06	2.389E-06	1.096E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
35	3.067E-05	2.195E-06	0.000E+00	1.325E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
36	1.705E-05	2.092E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
37	2.164E-05	9.351E-06	3.028E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
38	3.590E-05	8.855E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
39	4.158E-05	7.484E-06	3.471E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

0	0	0	0	0	0	1	0
0	0	0	0	0	0	0	0
0	0	0	0	0	1	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	1	0
1	0	0	0	0	0	1	0
0	0	0	0	0	0	0	0
3	1	1	3	1	0	2	0
1	0	0	0	0	0	2	0
3	2	1	0	0	0	0	0
8	2	2	1	0	0	0	0
16	7	5	3	2	1	0	1
16	10	7	9	3	0	1	0
28	20	9	7	2	2	0	0
43	35	18	11	9	2	2	0
82	36	21	20	12	4	4	0
90	50	23	26	14	6	3	1
115	64	35	40	27	11	2	1
186	118	56	92	44	12	2	0
226	127	58	66	32	14	5	0
182	138	73	90	36	7	5	0
259	160	88	83	37	16	7	0
303	169	85	77	36	12	1	0
356	166	88	65	23	10	3	0
393	186	94	83	21	11	1	0
428	231	94	70	28	6	3	0
438	245	83	78	23	4	0	0
431	192	72	65	28	9	2	0
425	186	61	61	24	1	0	0
482	200	85	62	13	1	2	0
498	200	58	45	15	4	0	0
499	211	63	48	13	4	1	0
550	183	67	45	17	1	2	1
597	222	67	38	15	0	0	3
597	206	49	23	20	2	0	1
688	222	66	33	8	1	1	0
811	231	56	28	3	3	0	0
705	203	60	35	6	1	1	0
602	175	32	34	2	0	1	0
627	173	50	21	10	1	0	0

0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1
0	2	1	1	1	0	0	0
3	0	1	0	0	0	0	1
1	0	0	0	1	0	0	0
1	2	0	0	0	0	0	0
1	0	0	1	0	0	0	0
3	0	0	0	0	0	0	0
3	0	1	0	0	0	0	0
5	2	0	3	0	1	0	0
4	1	0	0	0	0	0	0
6	2	0	2	0	0	0	0
11	4	1	1	0	0	0	0
14	2	1	1	0	0	0	0
17	6	1	2	0	0	0	1
18	8	4	2	0	0	0	0
17	4	3	1	0	0	0	0
16	5	1	1	0	0	0	0
25	6	0	1	0	0	0	0
31	7	4	2	0	0	0	0
16	5	1	0	0	1	0	0
18	6	1	1	1	1	0	0
20	6	2	0	0	1	0	0
17	4	0	1	0	0	0	0
18	4	2	0	0	0	0	0
16	3	1	0	0	0	0	0
13	1	4	0	0	0	0	0
15	3	1	1	0	0	0	0
12	1	0	1	0	0	0	0
7	1	0	0	0	0	0	0
8	4	1	0	0	0	0	0
11	3	0	0	0	0	0	0
10	2	1	0	0	0	0	0
10	1	0	0	0	0	0	1
3	3	0	0	0	0	1	0
6	0	0	0	0	0	1	0
5	0	0	0	0	0	0	0
5	2	1	0	0	0	0	0
5	1	0	0	0	0	0	0

4	1	0	0	0	0	0	1
5	1	0	0	0	0	0	1
2	1	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	1	0	0	0
2	0	0	0	0	0	0	0
2	1	0	1	0	1	0	0
1	2	1	0	0	0	0	1
1	1	0	0	0	0	0	0
3	1	0	0	0	0	0	0
1	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
3	2	0	3	0	0	1	1
7	1	1	1	1	0	0	0
4	4	1	3	1	1	1	0
12	5	0	1	3	0	0	0
9	5	1	2	0	0	0	0
6	1	1	4	1	0	0	0
8	5	2	0	1	0	0	0
13	3	2	1	0	1	1	0
9	2	2	3	1	0	0	0
7	3	2	0	0	0	0	1
4	5	0	2	0	0	0	0
13	6	0	1	1	0	0	0
11	5	0	1	0	0	0	0
13	4	2	1	0	0	0	0
9	8	0	0	0	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 1.136 \quad (0.7919, 1.48)$$

$$b = -0.3459 \quad (-0.3862, -0.3056)$$

c = 0.002063 (-0.004855, 0.008981)
d = -0.03708 (-0.1505, 0.07635)

goftotal =

sse: 8.9151e-007
rsquare: 9.9968e-001
dfe: 4
adjrsquare: 9.9943e-001
rmse: 4.7210e-004

ctotal =

General model Exp1:
 $ctotal(x) = a * \exp(b * x)$
Coefficients (with 95% confidence bounds):
a = 0.1011 (0.02537, 0.1768)
b = -0.1836 (-0.2217, -0.1455)

goftotal =

sse: 1.7391e-008
rsquare: 9.9750e-001
dfe: 3
adjrsquare: 9.9667e-001
rmse: 7.6138e-005

Event 63	Date	Time*	Location*	Summing interval*				
	20-Jul-02	2130	SE90	Jul 20 to Jul 29 1200				
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	1.801E-05	1.274E-05	2.593E-05	6.199E-06	5.281E-06	9.950E-07	8.656E-07	0.000E+00
2	6.585E-05	2.100E-05	2.909E-05	1.401E-05	3.180E-06	9.950E-07	0.000E+00	5.248E-07

3	3.327E-05	2.624E-05	6.526E-06	1.087E-05	5.219E-06	2.814E-06	0.000E+00	1.670E-06
4	5.708E-05	3.163E-05	3.301E-05	1.581E-05	2.099E-06	9.943E-07	4.198E-07	0.000E+00
5	4.162E-05	1.319E-05	1.304E-05	1.076E-05	3.116E-06	9.943E-07	4.452E-07	5.241E-07
6	4.471E-05	2.606E-05	1.304E-05	1.247E-05	3.116E-06	2.811E-06	8.388E-07	0.000E+00
7	4.819E-05	1.574E-05	2.967E-05	1.087E-05	5.216E-06	1.933E-06	4.194E-07	0.000E+00
8	6.262E-05	2.849E-05	3.583E-05	1.097E-05	5.159E-06	1.991E-06	4.201E-07	0.000E+00
9	5.337E-05	5.510E-05	2.654E-05	1.917E-05	5.225E-06	1.878E-06	4.456E-07	0.000E+00
10	8.055E-05	4.222E-05	4.223E-05	1.747E-05	1.058E-05	1.936E-06	4.207E-07	0.000E+00
11	4.870E-05	4.706E-05	3.294E-05	2.532E-05	9.624E-06	9.429E-07	1.263E-06	0.000E+00
12	6.531E-05	4.487E-05	2.297E-05	2.498E-05	4.138E-06	1.876E-06	0.000E+00	5.572E-07
13	6.599E-05	5.548E-05	1.937E-05	1.734E-05	1.157E-05	3.862E-06	4.452E-07	5.569E-07
14	7.335E-05	4.688E-05	2.444E-05	1.631E-05	6.905E-06	1.809E-06	4.172E-07	0.000E+00
15	8.111E-05	7.604E-05	3.577E-05	1.904E-05	9.455E-06	4.710E-06	4.216E-07	0.000E+00
16	8.932E-05	3.928E-05	3.952E-05	2.200E-05	7.349E-06	1.941E-06	8.679E-07	0.000E+00
17	6.322E-05	5.002E-05	3.923E-05	9.263E-06	9.307E-06	1.936E-06	0.000E+00	0.000E+00
18	7.776E-05	4.455E-05	3.914E-05	1.587E-05	3.132E-06	3.874E-06	8.684E-07	0.000E+00
19	9.376E-05	4.731E-05	4.553E-05	2.049E-05	9.587E-06	1.885E-06	8.949E-07	1.055E-06
20	7.768E-05	3.963E-05	4.611E-05	1.579E-05	8.435E-06	0.000E+00	1.317E-06	0.000E+00
21	8.070E-05	4.239E-05	2.608E-05	1.744E-05	1.075E-05	2.001E-06	0.000E+00	5.604E-07
22	1.323E-04	6.537E-05	6.497E-05	2.380E-05	7.369E-06	1.947E-06	4.229E-07	0.000E+00
23	1.276E-04	8.232E-05	6.589E-05	2.193E-05	1.265E-05	1.894E-06	8.736E-07	0.000E+00
24	2.118E-04	9.792E-05	3.601E-05	2.071E-05	6.494E-06	2.902E-06	8.489E-07	0.000E+00
25	1.367E-04	9.797E-05	4.583E-05	3.144E-05	9.523E-06	4.801E-06	1.300E-06	0.000E+00
26	1.491E-04	9.278E-05	5.639E-05	4.914E-05	1.813E-05	7.874E-06	0.000E+00	0.000E+00
27	1.800E-04	9.336E-05	5.272E-05	2.223E-05	7.482E-06	3.916E-06	4.260E-07	0.000E+00
28	1.763E-04	1.192E-04	8.589E-05	3.673E-05	7.421E-06	2.969E-06	0.000E+00	0.000E+00
29	1.476E-04	1.192E-04	6.603E-05	3.509E-05	1.175E-05	3.805E-06	8.517E-07	0.000E+00
30	1.897E-04	1.149E-04	6.221E-05	4.161E-05	1.585E-05	3.772E-06	8.445E-07	0.000E+00
31	2.062E-04	1.170E-04	7.573E-05	3.191E-05	1.491E-05	2.974E-06	8.526E-07	0.000E+00
32	3.370E-04	1.897E-04	1.272E-04	5.817E-05	1.622E-05	4.919E-06	0.000E+00	5.664E-07
33	3.401E-04	2.541E-04	1.272E-04	8.264E-05	2.616E-05	4.964E-06	2.226E-06	0.000E+00
34	5.160E-04	2.369E-04	1.358E-04	8.295E-05	1.757E-05	4.014E-06	4.363E-07	0.000E+00
35	5.605E-04	2.787E-04	1.915E-04	9.000E-05	2.627E-05	3.054E-06	9.051E-07	5.859E-07
36	6.984E-04	3.182E-04	1.749E-04	1.022E-04	2.864E-05	4.068E-06	1.352E-06	0.000E+00
37	7.490E-04	3.625E-04	2.475E-04	9.628E-05	2.552E-05	8.162E-06	9.134E-07	0.000E+00
38	7.213E-04	3.715E-04	1.915E-04	1.031E-04	1.984E-05	1.203E-05	1.353E-06	0.000E+00
39	5.838E-04	2.935E-04	1.820E-04	1.011E-04	3.757E-05	4.010E-06	8.833E-07	1.137E-06
40	5.259E-04	3.280E-04	1.851E-04	7.016E-05	1.656E-05	1.511E-05	9.391E-07	0.000E+00
41	6.650E-04	3.794E-04	2.480E-04	9.304E-05	2.893E-05	8.123E-06	4.439E-07	0.000E+00
42	6.604E-04	3.654E-04	1.617E-04	1.057E-04	2.778E-05	1.540E-05	0.000E+00	0.000E+00

43	6.808E-04	3.432E-04	2.523E-04	1.162E-04	3.842E-05	7.269E-06	9.181E-07	5.917E-07
44	7.764E-04	4.039E-04	2.015E-04	1.049E-04	3.323E-05	7.269E-06	1.864E-06	0.000E+00
45	7.330E-04	4.110E-04	2.240E-04	1.120E-04	2.426E-05	8.332E-06	1.892E-06	0.000E+00
46	6.865E-04	3.524E-04	2.218E-04	1.061E-04	2.314E-05	6.736E-06	1.273E-06	1.071E-06
47	7.888E-04	3.419E-04	2.087E-04	8.057E-05	4.145E-05	2.006E-06	4.739E-07	0.000E+00
48	7.963E-04	3.454E-04	2.046E-04	9.977E-05	2.000E-05	5.178E-06	1.397E-06	0.000E+00
49	7.434E-04	3.470E-04	2.153E-04	1.077E-04	3.237E-05	1.431E-05	1.426E-06	1.119E-06
50	8.265E-04	3.903E-04	2.610E-04	9.107E-05	2.454E-05	1.236E-05	4.789E-07	5.940E-07
51	8.736E-04	4.296E-04	2.204E-04	1.154E-04	3.950E-05	8.321E-06	1.435E-06	5.966E-07
52	8.605E-04	4.367E-04	3.043E-04	9.962E-05	2.834E-05	1.035E-05	4.760E-07	0.000E+00
53	7.678E-04	4.554E-04	2.722E-04	1.219E-04	2.361E-05	7.245E-06	1.380E-06	6.006E-07
54	9.388E-04	4.965E-04	2.762E-04	1.107E-04	2.378E-05	5.084E-06	1.855E-06	0.000E+00
55	8.724E-04	5.345E-04	2.548E-04	1.024E-04	3.341E-05	6.197E-06	4.752E-07	5.600E-07
56	8.535E-04	4.979E-04	2.446E-04	8.554E-05	3.003E-05	6.154E-06	9.013E-07	0.000E+00
57	9.585E-04	4.588E-04	2.740E-04	1.353E-04	2.852E-05	7.120E-06	4.786E-07	0.000E+00
58	8.930E-04	5.248E-04	2.077E-04	1.111E-04	3.695E-05	4.169E-06	9.339E-07	5.644E-07
59	9.864E-04	4.249E-04	2.456E-04	1.197E-04	2.481E-05	1.033E-05	1.379E-06	0.000E+00
60	8.759E-04	4.270E-04	2.713E-04	9.791E-05	2.685E-05	1.025E-05	8.993E-07	0.000E+00
61	1.000E-03	4.569E-04	2.334E-04	9.389E-05	2.512E-05	3.196E-06	4.486E-07	0.000E+00
62	9.611E-04	5.023E-04	2.503E-04	1.272E-04	3.143E-05	1.931E-06	8.907E-07	0.000E+00
63	9.630E-04	4.248E-04	2.487E-04	1.215E-04	2.697E-05	5.198E-06	4.463E-07	0.000E+00
64	9.138E-04	4.060E-04	2.325E-04	8.018E-05	2.449E-05	8.246E-06	9.496E-07	0.000E+00
65	8.597E-04	3.882E-04	1.955E-04	1.021E-04	3.605E-05	7.145E-06	9.364E-07	0.000E+00
66	9.645E-04	4.038E-04	2.542E-04	8.237E-05	1.794E-05	1.027E-05	9.238E-07	0.000E+00
67	8.949E-04	4.143E-04	2.436E-04	8.421E-05	2.882E-05	3.063E-06	1.344E-06	5.603E-07
68	8.966E-04	4.033E-04	2.075E-04	1.095E-04	2.799E-05	6.195E-06	9.257E-07	5.931E-07
69	8.465E-04	4.059E-04	2.222E-04	8.179E-05	1.784E-05	3.190E-06	0.000E+00	0.000E+00
70	9.995E-04	4.193E-04	1.841E-04	5.932E-05	2.834E-05	1.142E-05	1.852E-06	0.000E+00
71	8.319E-04	5.044E-04	2.724E-04	6.726E-05	2.506E-05	7.215E-06	9.550E-07	0.000E+00
72	1.058E-03	4.680E-04	2.266E-04	7.208E-05	2.582E-05	7.131E-06	9.533E-07	5.587E-07
73	7.658E-04	3.813E-04	2.083E-04	7.028E-05	1.878E-05	3.125E-06	4.473E-07	0.000E+00
74	8.413E-04	3.590E-04	1.810E-04	8.957E-05	2.024E-05	7.291E-06	9.203E-07	0.000E+00
75	7.831E-04	3.564E-04	1.627E-04	8.553E-05	1.786E-05	5.110E-06	1.368E-06	0.000E+00
76	7.566E-04	3.834E-04	1.850E-04	8.866E-05	2.340E-05	7.165E-06	0.000E+00	0.000E+00
77	7.760E-04	3.902E-04	1.908E-04	7.702E-05	1.466E-05	7.094E-06	9.189E-07	0.000E+00
78	9.003E-04	3.438E-04	1.743E-04	7.839E-05	2.264E-05	1.860E-06	1.248E-06	0.000E+00
79	9.217E-04	3.671E-04	2.447E-04	9.385E-05	2.547E-05	5.219E-06	0.000E+00	0.000E+00
80	8.658E-04	3.938E-04	2.015E-04	7.538E-05	2.367E-05	4.049E-06	8.924E-07	0.000E+00
81	9.405E-04	3.664E-04	1.771E-04	7.299E-05	2.100E-05	5.094E-06	0.000E+00	5.912E-07
82	9.605E-04	4.873E-04	2.059E-04	5.971E-05	1.898E-05	3.989E-06	9.195E-07	0.000E+00

83	9.166E-04	3.858E-04	2.073E-04	8.340E-05	2.113E-05	9.291E-06	9.234E-07	0.000E+00
84	1.005E-03	4.116E-04	2.187E-04	6.298E-05	1.452E-05	5.039E-06	4.741E-07	0.000E+00
85	8.151E-04	4.004E-04	1.702E-04	8.055E-05	8.923E-06	5.234E-06	4.477E-07	0.000E+00
86	8.983E-04	4.169E-04	1.905E-04	6.207E-05	1.115E-05	3.053E-06	0.000E+00	0.000E+00
87	1.019E-03	4.833E-04	2.105E-04	7.478E-05	2.037E-05	5.161E-06	9.050E-07	0.000E+00
88	1.164E-03	4.099E-04	2.299E-04	7.128E-05	2.057E-05	4.292E-06	9.056E-07	0.000E+00
89	1.163E-03	4.847E-04	2.428E-04	8.995E-05	2.509E-05	6.188E-06	1.413E-06	0.000E+00
90	1.085E-03	5.223E-04	2.539E-04	7.944E-05	1.929E-05	5.230E-06	0.000E+00	5.654E-07
91	1.060E-03	4.713E-04	2.242E-04	1.144E-04	2.033E-05	2.071E-06	0.000E+00	0.000E+00
92	1.095E-03	5.182E-04	2.509E-04	9.414E-05	1.916E-05	5.145E-06	1.377E-06	0.000E+00
93	1.072E-03	4.192E-04	1.708E-04	6.382E-05	2.018E-05	1.066E-06	2.808E-06	0.000E+00
94	1.001E-03	3.976E-04	2.458E-04	4.815E-05	1.025E-05	3.897E-06	8.869E-07	0.000E+00
95	8.880E-04	3.640E-04	2.291E-04	6.826E-05	1.004E-05	3.041E-06	0.000E+00	0.000E+00
96	8.991E-04	3.447E-04	1.834E-04	6.144E-05	1.098E-05	4.031E-06	4.438E-07	0.000E+00
97	7.927E-04	3.303E-04	1.720E-04	5.790E-05	5.647E-06	2.044E-06	0.000E+00	5.883E-07
98	7.705E-04	3.543E-04	1.680E-04	5.095E-05	1.769E-05	4.086E-06	8.872E-07	5.551E-07
99	7.355E-04	2.997E-04	1.477E-04	3.613E-05	1.434E-05	3.019E-06	0.000E+00	0.000E+00
100	7.024E-04	2.926E-04	1.293E-04	5.434E-05	6.566E-06	1.973E-06	4.416E-07	5.523E-07
101	7.124E-04	3.527E-04	1.170E-04	5.597E-05	6.694E-06	1.046E-06	9.099E-07	5.513E-07
102	6.935E-04	2.671E-04	1.368E-04	5.739E-05	1.544E-05	9.850E-07	0.000E+00	0.000E+00
103	7.043E-04	2.905E-04	1.268E-04	5.560E-05	6.549E-06	5.167E-06	4.414E-07	0.000E+00
104	6.612E-04	3.224E-04	1.161E-04	4.792E-05	1.332E-05	4.126E-06	0.000E+00	0.000E+00
105	7.748E-04	3.041E-04	1.446E-04	5.596E-05	9.987E-06	4.131E-06	4.422E-07	0.000E+00
106	8.398E-04	3.120E-04	1.439E-04	6.324E-05	1.121E-05	2.041E-06	0.000E+00	0.000E+00
107	7.887E-04	3.108E-04	1.577E-04	6.932E-05	1.317E-05	2.039E-06	4.695E-07	5.531E-07
108	8.237E-04	3.592E-04	1.530E-04	5.346E-05	1.664E-05	3.099E-06	9.160E-07	0.000E+00
109	8.044E-04	3.284E-04	1.394E-04	5.797E-05	1.690E-05	2.051E-06	9.207E-07	0.000E+00
110	1.030E-03	3.487E-04	1.364E-04	6.584E-05	1.142E-05	2.957E-06	0.000E+00	1.102E-06
111	8.812E-04	3.620E-04	1.285E-04	5.866E-05	1.777E-05	2.106E-06	0.000E+00	0.000E+00
112	8.013E-04	3.343E-04	1.518E-04	5.115E-05	1.536E-05	1.976E-06	0.000E+00	0.000E+00
113	7.750E-04	3.342E-04	1.578E-04	4.278E-05	1.328E-05	1.047E-06	4.687E-07	0.000E+00
114	6.934E-04	2.739E-04	1.234E-04	7.280E-05	6.639E-06	3.087E-06	0.000E+00	0.000E+00
115	7.063E-04	2.565E-04	1.202E-04	5.119E-05	8.845E-06	3.026E-06	8.845E-07	0.000E+00
116	7.438E-04	2.730E-04	1.031E-04	3.021E-05	6.564E-06	2.097E-06	0.000E+00	5.853E-07
117	7.228E-04	3.098E-04	1.166E-04	6.151E-05	1.225E-05	2.036E-06	4.700E-07	0.000E+00
118	6.969E-04	3.151E-04	1.097E-04	4.924E-05	9.846E-06	3.020E-06	4.444E-07	5.519E-07
119	5.903E-04	3.263E-04	7.888E-05	6.110E-05	8.814E-06	9.871E-07	4.670E-07	0.000E+00
120	7.084E-04	2.523E-04	1.437E-04	5.962E-05	1.436E-05	9.843E-07	0.000E+00	0.000E+00
121	6.395E-04	2.558E-04	1.057E-04	4.302E-05	1.303E-05	9.843E-07	0.000E+00	0.000E+00
122	6.860E-04	2.728E-04	1.437E-04	3.957E-05	1.314E-05	1.042E-06	4.664E-07	0.000E+00

123	7.436E-04	2.874E-04	1.372E-04	3.250E-05	7.784E-06	9.821E-07	4.394E-07	0.000E+00
124	6.276E-04	2.558E-04	8.900E-05	2.962E-05	6.590E-06	2.083E-06	9.055E-07	0.000E+00
125	6.675E-04	2.034E-04	1.265E-04	4.608E-05	5.589E-06	9.800E-07	0.000E+00	0.000E+00
126	5.567E-04	2.061E-04	1.111E-04	4.543E-05	4.103E-06	2.809E-06	0.000E+00	0.000E+00
127	6.252E-04	2.997E-04	8.903E-05	3.470E-05	1.080E-05	0.000E+00	0.000E+00	5.505E-07
128	6.415E-04	2.241E-04	8.502E-05	5.268E-05	6.646E-06	2.018E-06	0.000E+00	0.000E+00
129	5.551E-04	2.305E-04	8.516E-05	3.775E-05	5.565E-06	2.991E-06	4.374E-07	0.000E+00
130	5.957E-04	2.387E-04	9.137E-05	3.454E-05	1.408E-05	1.952E-06	0.000E+00	0.000E+00
131	5.744E-04	1.877E-04	7.446E-05	3.775E-05	7.671E-06	1.033E-06	0.000E+00	0.000E+00
132	6.044E-04	2.420E-04	1.013E-04	3.144E-05	9.865E-06	0.000E+00	8.736E-07	0.000E+00
133	6.209E-04	2.417E-04	1.020E-04	4.627E-05	3.249E-06	2.017E-06	0.000E+00	0.000E+00
134	5.517E-04	1.751E-04	1.067E-04	4.602E-05	5.579E-06	9.779E-07	4.651E-07	0.000E+00
135	5.957E-04	2.498E-04	1.230E-04	4.267E-05	8.828E-06	9.800E-07	0.000E+00	0.000E+00
136	6.562E-04	2.236E-04	8.458E-05	3.905E-05	1.214E-05	1.039E-06	0.000E+00	0.000E+00
137	5.499E-04	2.230E-04	9.742E-05	4.234E-05	5.440E-06	1.961E-06	4.373E-07	0.000E+00
138	6.773E-04	2.346E-04	1.226E-04	3.586E-05	6.503E-06	0.000E+00	9.013E-07	0.000E+00
139	6.147E-04	2.137E-04	1.287E-04	4.602E-05	3.310E-06	9.757E-07	4.634E-07	0.000E+00
140	5.420E-04	2.623E-04	1.014E-04	2.933E-05	5.553E-06	1.034E-06	4.367E-07	0.000E+00
141	4.986E-04	2.102E-04	1.131E-04	4.223E-05	7.743E-06	9.750E-07	9.278E-07	0.000E+00
142	6.394E-04	1.733E-04	1.232E-04	3.688E-05	1.320E-05	1.874E-06	0.000E+00	0.000E+00
143	5.613E-04	2.297E-04	9.830E-05	3.617E-05	8.601E-06	2.012E-06	0.000E+00	0.000E+00
144	5.447E-04	1.820E-04	6.409E-05	1.967E-05	8.661E-06	0.000E+00	4.616E-07	0.000E+00
145	5.145E-04	1.877E-04	8.827E-05	5.202E-05	4.421E-06	3.039E-06	0.000E+00	0.000E+00
146	4.231E-04	1.847E-04	9.210E-05	4.688E-05	4.358E-06	9.764E-07	0.000E+00	0.000E+00
147	5.457E-04	2.411E-04	1.048E-04	4.551E-05	8.948E-06	1.038E-06	8.753E-07	0.000E+00
148	4.782E-04	1.576E-04	7.087E-05	3.750E-05	9.841E-06	4.929E-06	4.360E-07	0.000E+00
149	5.319E-04	2.075E-04	9.149E-05	4.427E-05	8.734E-06	9.729E-07	0.000E+00	0.000E+00
150	5.089E-04	2.059E-04	8.499E-05	4.362E-05	1.294E-05	9.750E-07	0.000E+00	0.000E+00
151	4.757E-04	2.104E-04	1.052E-04	2.934E-05	9.637E-06	3.031E-06	4.626E-07	5.769E-07
152	4.751E-04	2.078E-04	6.082E-05	2.615E-05	4.413E-06	1.942E-06	0.000E+00	5.754E-07
153	4.331E-04	1.842E-04	6.075E-05	2.909E-05	2.174E-06	9.700E-07	0.000E+00	5.746E-07
154	5.188E-04	2.159E-04	5.065E-05	2.414E-05	1.084E-05	2.969E-06	0.000E+00	0.000E+00
155	3.755E-04	1.767E-04	8.766E-05	3.870E-05	7.730E-06	1.025E-06	0.000E+00	0.000E+00
156	3.999E-04	1.337E-04	6.354E-05	4.221E-05	3.212E-06	9.671E-07	4.331E-07	0.000E+00
157	4.036E-04	1.317E-04	6.117E-05	2.272E-05	6.540E-06	1.986E-06	0.000E+00	0.000E+00
158	3.571E-04	1.451E-04	6.767E-05	3.468E-05	7.991E-06	1.908E-06	0.000E+00	0.000E+00
159	3.140E-04	1.433E-04	4.360E-05	1.622E-05	7.438E-06	9.607E-07	4.564E-07	0.000E+00
160	3.189E-04	1.232E-04	6.707E-05	3.065E-05	9.584E-06	9.629E-07	0.000E+00	0.000E+00
161	2.629E-04	1.068E-04	5.992E-05	3.200E-05	6.509E-06	9.607E-07	4.555E-07	0.000E+00
162	2.700E-04	1.505E-04	6.588E-05	2.137E-05	2.214E-06	9.607E-07	4.561E-07	5.704E-07

163	3.010E-04	1.130E-04	6.360E-05	1.444E-05	7.431E-06	9.600E-07	4.301E-07	0.000E+00
164	2.669E-04	1.264E-04	6.391E-05	9.649E-06	4.294E-06	9.593E-07	0.000E+00	0.000E+00
165	2.942E-04	9.673E-05	6.692E-05	2.104E-05	2.149E-06	9.607E-07	4.552E-07	5.694E-07
166	3.153E-04	1.238E-04	7.740E-05	9.640E-06	5.397E-06	1.974E-06	0.000E+00	5.364E-07
167	2.172E-04	1.303E-04	5.697E-05	1.441E-05	8.640E-06	2.991E-06	0.000E+00	5.688E-07
168	2.063E-04	1.204E-04	5.045E-05	2.071E-05	6.364E-06	1.914E-06	0.000E+00	0.000E+00
169	2.632E-04	1.126E-04	4.301E-05	1.137E-05	1.102E-06	1.914E-06	0.000E+00	0.000E+00
170	2.838E-04	8.912E-05	3.608E-05	2.084E-05	3.427E-06	1.094E-06	0.000E+00	6.121E-07
171	2.336E-04	1.107E-04	5.332E-05	2.219E-05	3.246E-06	0.000E+00	0.000E+00	5.679E-07
172	3.451E-04	9.100E-05	4.570E-05	1.616E-05	4.289E-06	9.586E-07	4.291E-07	0.000E+00
173	2.851E-04	1.466E-04	6.286E-05	2.405E-05	5.395E-06	1.017E-06	4.551E-07	0.000E+00
174	2.177E-04	1.024E-04	4.071E-05	1.507E-05	4.914E-06	0.000E+00	4.000E-07	0.000E+00
175	2.517E-04	9.919E-05	7.655E-05	1.284E-05	6.494E-06	0.000E+00	4.287E-07	0.000E+00
176	3.183E-04	9.359E-05	6.963E-05	1.264E-05	6.422E-06	9.571E-07	4.549E-07	0.000E+00
177	2.131E-04	1.061E-04	6.062E-05	1.281E-05	8.551E-06	0.000E+00	0.000E+00	0.000E+00
178	2.391E-04	6.895E-05	6.360E-05	1.600E-05	6.534E-06	1.966E-06	0.000E+00	0.000E+00
179	1.902E-04	1.020E-04	4.267E-05	1.599E-05	7.506E-06	9.536E-07	4.530E-07	0.000E+00
180	2.421E-04	8.799E-05	3.320E-05	1.609E-05	3.234E-06	9.536E-07	0.000E+00	0.000E+00
181	2.477E-04	7.748E-05	6.374E-05	9.784E-06	0.000E+00	1.011E-06	9.061E-07	0.000E+00
182	1.394E-04	6.936E-05	5.651E-05	1.763E-05	1.099E-06	9.529E-07	0.000E+00	0.000E+00
183	2.208E-04	4.737E-05	1.649E-05	1.579E-05	2.197E-06	0.000E+00	8.791E-07	0.000E+00
184	1.723E-04	6.108E-05	3.674E-05	1.258E-05	3.229E-06	9.514E-07	4.261E-07	0.000E+00
185	1.770E-04	8.808E-05	3.612E-05	8.021E-06	5.421E-06	1.961E-06	0.000E+00	0.000E+00
186	2.444E-04	6.646E-05	3.631E-05	1.276E-05	1.096E-06	0.000E+00	0.000E+00	0.000E+00
187	1.996E-04	6.899E-05	4.250E-05	1.293E-05	2.064E-06	0.000E+00	4.251E-07	0.000E+00
188	1.611E-04	7.454E-05	3.585E-05	6.557E-06	3.156E-06	0.000E+00	0.000E+00	5.629E-07
189	2.040E-04	5.020E-05	2.283E-05	7.905E-06	3.090E-06	0.000E+00	0.000E+00	5.636E-07
190	1.555E-04	5.919E-05	3.401E-05	1.188E-05	9.613E-07	0.000E+00	3.965E-07	0.000E+00
191	1.724E-04	5.311E-05	2.341E-05	1.937E-05	3.156E-06	0.000E+00	4.507E-07	0.000E+00
192	1.928E-04	4.747E-05	2.641E-05	8.092E-06	2.124E-06	0.000E+00	0.000E+00	5.309E-07
193	1.784E-04	6.580E-05	2.980E-05	7.903E-06	2.121E-06	0.000E+00	0.000E+00	0.000E+00
194	1.384E-04	4.516E-05	1.960E-05	1.407E-05	2.059E-06	0.000E+00	0.000E+00	5.309E-07
195	1.274E-04	5.607E-05	1.921E-05	1.108E-05	3.277E-06	0.000E+00	0.000E+00	0.000E+00
196	1.723E-04	4.244E-05	1.640E-05	9.440E-06	2.183E-06	9.479E-07	0.000E+00	0.000E+00
197	1.694E-04	5.333E-05	3.201E-06	6.449E-06	2.186E-06	1.953E-06	0.000E+00	0.000E+00
198	1.248E-04	6.080E-05	1.976E-05	8.071E-06	2.117E-06	0.000E+00	4.236E-07	0.000E+00
199	1.180E-04	5.569E-05	1.637E-05	9.240E-06	2.118E-06	0.000E+00	0.000E+00	0.000E+00
200	1.370E-04	5.105E-05	2.036E-05	1.270E-05	4.239E-06	0.000E+00	0.000E+00	0.000E+00
201	1.245E-04	6.083E-05	2.954E-05	6.443E-06	2.180E-06	9.464E-07	0.000E+00	0.000E+00
202	1.144E-04	5.039E-05	1.957E-05	1.106E-05	3.146E-06	2.896E-06	4.497E-07	0.000E+00

203	1.479E-04	7.717E-05	2.674E-05	1.106E-05	2.118E-06	0.000E+00	0.000E+00	0.000E+00
204	1.516E-04	3.724E-05	9.789E-06	9.523E-06	3.209E-06	9.471E-07	0.000E+00	5.296E-07
205	1.295E-04	6.891E-05	1.339E-05	9.438E-06	2.059E-06	9.471E-07	0.000E+00	0.000E+00
206	1.588E-04	6.488E-05	2.162E-05	4.314E-06	9.580E-07	0.000E+00	0.000E+00	0.000E+00
207	1.030E-04	2.950E-05	2.015E-05	1.124E-05	2.057E-06	9.464E-07	0.000E+00	0.000E+00

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	3.14E-06	2.84E-06	1.80E-06	0.00E+00	5.74E-07	0.00E+00	0.00E+00	0.00E+00
2	3.23E-06	0.00E+00	0.00E+00	1.63E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	6.28E-06	5.67E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4	1.52E-06	4.38E-06	0.00E+00	1.68E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5	4.66E-06	4.29E-06	1.70E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6	4.75E-06	2.92E-06	0.00E+00	8.63E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00
7	4.75E-06	0.00E+00	1.70E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8	0.00E+00	2.92E-06	1.70E-06	0.00E+00	1.12E-06	0.00E+00	0.00E+00	0.00E+00
9	6.38E-06	1.38E-06	1.81E-06	0.00E+00	0.00E+00	0.00E+00	2.21E-07	0.00E+00
10	3.24E-06	2.93E-06	0.00E+00	8.66E-07	5.75E-07	0.00E+00	0.00E+00	0.00E+00
11	0.00E+00	1.47E-06	0.00E+00	0.00E+00	1.15E-06	0.00E+00	2.35E-07	2.89E-07
12	4.67E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
13	7.98E-06	4.29E-06	0.00E+00	0.00E+00	5.74E-07	4.95E-07	0.00E+00	0.00E+00
14	3.03E-06	0.00E+00	0.00E+00	0.00E+00	5.07E-07	0.00E+00	0.00E+00	0.00E+00
15	1.11E-05	1.38E-06	0.00E+00	8.67E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00
16	0.00E+00	1.47E-06	0.00E+00	1.68E-06	5.77E-07	0.00E+00	0.00E+00	0.00E+00
17	4.67E-06	2.92E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
18	1.53E-06	1.46E-06	1.81E-06	0.00E+00	5.77E-07	0.00E+00	0.00E+00	0.00E+00
19	0.00E+00	1.47E-06	0.00E+00	8.68E-07	5.44E-07	0.00E+00	0.00E+00	0.00E+00
20	1.62E-06	0.00E+00	0.00E+00	0.00E+00	5.77E-07	0.00E+00	0.00E+00	0.00E+00
21	4.78E-06	2.94E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
22	3.16E-06	2.77E-06	0.00E+00	0.00E+00	5.45E-07	0.00E+00	0.00E+00	0.00E+00
23	6.33E-06	2.86E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
24	0.00E+00	2.78E-06	3.54E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
25	9.34E-06	0.00E+00	0.00E+00	1.70E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
26	7.89E-06	4.26E-06	0.00E+00	1.70E-06	5.47E-07	0.00E+00	0.00E+00	0.00E+00
27	9.36E-06	0.00E+00	1.83E-06	0.00E+00	5.48E-07	0.00E+00	0.00E+00	0.00E+00
28	9.46E-06	4.27E-06	1.83E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
29	9.64E-06	7.32E-06	1.72E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
30	8.83E-06	1.30E-06	1.71E-06	8.18E-07	5.12E-07	0.00E+00	0.00E+00	2.58E-07

31	6.38E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
32	1.13E-05	1.51E-06	0.00E+00	8.37E-07	0.00E+00	0.00E+00	2.41E-07	0.00E+00
33	1.93E-05	0.00E+00	3.49E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
34	6.52E-06	5.89E-06	1.87E-06	8.97E-07	0.00E+00	0.00E+00	2.43E-07	0.00E+00
35	1.64E-05	4.61E-06	0.00E+00	8.56E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00
36	1.31E-05	2.98E-06	3.57E-06	8.57E-07	5.70E-07	0.00E+00	0.00E+00	0.00E+00
37	2.00E-05	7.35E-06	1.90E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
38	1.16E-05	2.90E-06	0.00E+00	0.00E+00	6.05E-07	0.00E+00	2.32E-07	0.00E+00
39	9.81E-06	4.52E-06	1.79E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.86E-07
40	9.82E-06	4.61E-06	0.00E+00	0.00E+00	6.05E-07	0.00E+00	0.00E+00	2.87E-07
41	1.48E-05	5.99E-06	1.91E-06	9.14E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00
42	1.64E-05	7.47E-06	0.00E+00	9.15E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00
43	1.99E-05	4.64E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
44	9.99E-06	7.48E-06	5.63E-06	8.64E-07	1.83E-06	0.00E+00	0.00E+00	0.00E+00
45	6.77E-06	5.94E-06	0.00E+00	8.65E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00
46	1.70E-05	2.72E-06	0.00E+00	2.47E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
47	8.23E-06	3.03E-06	1.93E-06	9.22E-07	0.00E+00	0.00E+00	0.00E+00	2.90E-07
48	1.52E-05	9.15E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.35E-07	0.00E+00
49	1.65E-05	4.41E-06	1.82E-06	1.79E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
50	1.36E-05	6.07E-06	3.74E-06	8.71E-07	1.23E-06	0.00E+00	2.37E-07	0.00E+00
51	1.52E-05	7.78E-06	3.78E-06	1.80E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
52	1.53E-05	5.98E-06	0.00E+00	8.69E-07	0.00E+00	5.67E-07	0.00E+00	0.00E+00
53	1.67E-05	6.17E-06	3.75E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
54	1.18E-05	4.51E-06	1.82E-06	0.00E+00	6.15E-07	0.00E+00	0.00E+00	2.92E-07
55	1.17E-05	1.56E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
56	2.67E-05	9.11E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.09E-07
57	2.67E-05	4.53E-06	1.82E-06	8.75E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00
58	2.72E-05	3.14E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
59	1.68E-05	6.08E-06	1.82E-06	9.26E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00
60	1.51E-05	2.95E-06	1.82E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
61	1.85E-05	3.04E-06	3.86E-06	8.73E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00
62	2.54E-05	0.00E+00	1.80E-06	1.73E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
63	1.82E-05	4.50E-06	0.00E+00	8.65E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00
64	1.33E-05	3.11E-06	1.92E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.91E-07
65	1.51E-05	1.55E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
66	1.18E-05	3.12E-06	1.81E-06	0.00E+00	6.13E-07	0.00E+00	0.00E+00	0.00E+00
67	1.17E-05	5.87E-06	3.63E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
68	2.88E-05	4.59E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
69	1.50E-05	0.00E+00	0.00E+00	1.74E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
70	2.33E-05	4.60E-06	1.82E-06	8.73E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00

71	1.02E-05	3.04E-06	1.93E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
72	1.66E-05	3.02E-06	1.81E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
73	1.16E-05	4.58E-06	0.00E+00	9.19E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00
74	1.00E-05	1.55E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
75	1.50E-05	6.12E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
76	6.67E-06	1.55E-06	5.65E-06	9.18E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00
77	1.16E-05	1.46E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
78	2.68E-05	1.36E-06	3.47E-06	8.07E-07	0.00E+00	0.00E+00	0.00E+00	2.86E-07
79	1.50E-05	4.47E-06	1.81E-06	9.16E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00
80	1.18E-05	1.55E-06	1.81E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
81	6.55E-06	3.01E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
82	1.51E-05	1.55E-06	1.80E-06	1.78E-06	0.00E+00	0.00E+00	0.00E+00	2.89E-07
83	1.19E-05	6.02E-06	0.00E+00	1.78E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
84	9.89E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
85	1.51E-05	4.57E-06	0.00E+00	2.70E-06	0.00E+00	0.00E+00	2.35E-07	0.00E+00
86	9.81E-06	2.93E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
87	1.47E-05	4.42E-06	0.00E+00	8.75E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00
88	1.36E-05	1.49E-06	3.67E-06	9.31E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00
89	1.85E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
90	1.35E-05	0.00E+00	0.00E+00	8.73E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00
91	1.37E-05	2.95E-06	0.00E+00	8.74E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00
92	1.49E-05	7.64E-06	0.00E+00	0.00E+00	6.15E-07	0.00E+00	0.00E+00	0.00E+00
93	1.69E-05	9.11E-06	1.82E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.10E-07
94	2.03E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.23E-07	0.00E+00	0.00E+00
95	1.66E-05	3.00E-06	0.00E+00	0.00E+00	5.73E-07	0.00E+00	0.00E+00	0.00E+00
96	4.83E-06	1.54E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.33E-07	0.00E+00
97	6.56E-06	3.01E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
98	1.19E-05	5.99E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
99	1.15E-05	2.98E-06	3.69E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
100	0.00E+00	1.45E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
101	8.11E-06	1.45E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
102	8.10E-06	2.98E-06	3.57E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
103	8.29E-06	1.53E-06	1.79E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.03E-07
104	8.40E-06	5.88E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
105	5.01E-06	5.98E-06	1.79E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
106	1.32E-05	1.54E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
107	1.49E-05	2.90E-06	1.90E-06	9.11E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00
108	8.26E-06	4.55E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
109	8.18E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
110	1.51E-06	2.89E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

111	1.33E-05	1.57E-06	1.80E-06	9.16E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00
112	1.33E-05	2.99E-06	0.00E+00	0.00E+00	6.04E-07	0.00E+00	2.47E-07	2.87E-07
113	4.81E-06	1.54E-06	1.91E-06	9.12E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00
114	1.00E-05	3.08E-06	0.00E+00	9.09E-07	0.00E+00	0.00E+00	2.47E-07	0.00E+00
115	9.92E-06	2.98E-06	0.00E+00	0.00E+00	5.70E-07	0.00E+00	0.00E+00	0.00E+00
116	1.14E-05	3.08E-06	0.00E+00	9.13E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00
117	8.31E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
118	9.99E-06	4.60E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
119	8.18E-06	1.45E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
120	1.86E-05	1.45E-06	0.00E+00	0.00E+00	5.68E-07	0.00E+00	0.00E+00	0.00E+00
121	1.48E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
122	6.48E-06	1.53E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
123	4.98E-06	1.53E-06	0.00E+00	9.03E-07	0.00E+00	5.50E-07	2.31E-07	0.00E+00
124	1.16E-05	0.00E+00	1.89E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
125	8.06E-06	2.88E-06	0.00E+00	8.50E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00
126	6.23E-06	1.43E-06	3.33E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
127	4.87E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
128	0.00E+00	1.44E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
129	9.81E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
130	9.88E-06	1.43E-06	0.00E+00	8.96E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00
131	6.52E-06	1.43E-06	1.87E-06	0.00E+00	0.00E+00	0.00E+00	2.29E-07	0.00E+00
132	8.12E-06	1.43E-06	1.77E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
133	8.22E-06	0.00E+00	1.78E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
134	1.14E-05	1.44E-06	0.00E+00	8.51E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00
135	8.04E-06	0.00E+00	1.88E-06	0.00E+00	5.64E-07	0.00E+00	0.00E+00	0.00E+00
136	4.96E-06	1.52E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
137	6.46E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.84E-07
138	1.58E-06	1.52E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
139	9.90E-06	1.52E-06	1.88E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
140	9.70E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.01E-07
141	3.27E-06	0.00E+00	3.54E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
142	3.04E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
143	3.35E-06	1.52E-06	1.88E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
144	5.03E-06	1.52E-06	0.00E+00	0.00E+00	0.00E+00	5.15E-07	0.00E+00	0.00E+00
145	1.68E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
146	8.20E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
147	1.32E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.01E-07
148	8.00E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
149	3.26E-06	1.51E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
150	4.93E-06	1.52E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

191	3.17E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
192	3.27E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
193	1.63E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.23E-07	0.00E+00
194	0.00E+00	0.00E+00	1.72E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
195	1.63E-06	0.00E+00	1.72E-06	0.00E+00	5.80E-07	0.00E+00	0.00E+00	0.00E+00
196	1.63E-06	1.47E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
197	0.00E+00	0.00E+00	0.00E+00	8.23E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00
198	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
199	1.54E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
200	1.54E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
201	3.17E-06	1.47E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
202	1.63E-06	1.47E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
203	3.17E-06	1.47E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
204	3.26E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
205	0.00E+00	0.00E+00	1.72E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
206	4.39E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
207	4.80E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
6	5	8	4	5	1	2	0
22	8	9	9	3	1	0	1
11	10	2	7	5	3	0	3
19	12	10	10	2	1	1	0
14	5	4	7	3	1	1	1
15	10	4	8	3	3	2	0
16	6	9	7	5	2	1	0
21	11	11	7	5	2	1	0
18	21	8	12	5	2	1	0
27	16	13	11	10	2	1	0
16	18	10	16	9	1	3	0
22	17	7	16	4	2	0	1
22	21	6	11	11	4	1	1
26	19	8	11	7	2	1	0
27	29	11	12	9	5	1	0
30	15	12	14	7	2	2	0
21	19	12	6	9	2	0	0
26	17	12	10	3	4	2	0
31	18	14	13	9	2	2	2

26	15	14	10	8	0	3	0
27	16	8	11	10	2	0	1
44	25	20	15	7	2	1	0
42	31	20	14	12	2	2	0
70	37	11	13	6	3	2	0
45	37	14	20	9	5	3	0
49	35	17	31	17	8	0	0
59	35	16	14	7	4	1	0
58	45	26	23	7	3	0	0
49	45	20	22	11	4	2	0
67	46	20	28	16	4	2	0
68	44	23	20	14	3	2	0
110	71	38	36	15	5	0	1
110	94	38	51	24	5	5	0
166	87	40	51	16	4	1	0
179	102	56	55	24	3	2	1
222	116	51	62	26	4	3	0
236	131	72	58	23	8	2	0
229	134	56	62	18	12	3	0
185	107	53	61	34	4	2	2
166	119	54	42	15	15	2	0
210	137	72	56	26	8	1	0
208	132	47	64	25	15	0	0
214	123	73	70	35	7	2	1
244	145	58	63	30	7	4	0
230	147	65	67	22	8	4	0
230	135	68	68	22	7	3	2
247	122	60	48	37	2	1	0
249	124	59	59	18	5	3	0
233	124	62	64	29	14	3	2
257	139	75	54	22	12	1	1
270	153	63	68	35	8	3	1
268	155	87	59	25	10	1	0
239	162	78	72	21	7	3	1
292	176	79	66	21	5	4	0
273	191	73	61	30	6	1	1
266	178	70	51	27	6	2	0
297	163	78	80	25	7	1	0
277	187	59	66	33	4	2	1
307	151	70	71	22	10	3	0

273	152	78	58	24	10	2	0
311	163	67	56	22	3	1	0
321	192	77	81	30	2	2	0
301	152	71	72	24	5	1	0
286	145	67	48	22	8	2	0
269	138	56	61	32	7	2	0
301	144	73	49	16	10	2	0
280	148	70	50	26	3	3	1
280	144	60	65	25	6	2	1
264	145	64	49	16	3	0	0
312	149	53	35	25	11	4	0
259	180	78	40	22	7	2	0
330	167	65	43	23	7	2	1
239	136	60	42	17	3	1	0
264	128	52	54	18	7	2	0
246	128	47	51	16	5	3	0
237	138	53	53	21	7	0	0
244	140	55	46	13	7	2	0
303	132	54	50	22	2	3	0
290	132	71	56	23	5	0	0
271	141	58	45	21	4	2	0
295	132	51	44	19	5	0	1
301	175	59	36	17	4	2	0
287	138	60	50	19	9	2	0
317	148	63	38	13	5	1	0
255	144	49	48	8	5	1	0
282	150	55	37	10	3	0	0
317	172	60	44	18	5	2	0
360	145	65	42	18	4	2	0
360	172	69	53	22	6	3	0
337	185	72	47	17	5	0	1
330	168	64	68	18	2	0	0
341	185	72	56	17	5	3	0
333	149	49	38	18	1	6	0
336	153	76	31	10	4	2	0
279	131	66	41	9	3	0	0
283	124	53	37	10	4	1	0
249	119	50	35	5	2	0	1
243	128	49	31	16	4	2	1
233	108	43	22	13	3	0	0

222	106	38	33	6	2	1	1
226	128	34	34	6	1	2	1
220	97	40	35	14	1	0	0
223	105	37	34	6	5	1	0
210	117	34	29	12	4	0	0
245	110	42	34	9	4	1	0
265	113	42	38	10	2	0	0
250	113	46	42	12	2	1	1
259	129	44	32	15	3	2	0
253	118	40	35	15	2	2	0
346	134	42	42	11	3	0	2
277	130	37	35	16	2	0	0
254	121	44	31	14	2	0	0
245	121	46	26	12	1	1	0
219	99	36	44	6	3	0	0
223	93	35	31	8	3	2	0
236	99	30	18	6	2	0	1
230	112	34	37	11	2	1	0
221	114	32	30	9	3	1	1
188	119	23	37	8	1	1	0
225	92	42	36	13	1	0	0
203	93	31	26	12	1	0	0
218	99	42	24	12	1	1	0
237	105	40	20	7	1	1	0
200	93	26	18	6	2	2	0
213	74	37	28	5	1	0	0
191	81	35	30	4	3	0	0
199	109	26	21	10	0	0	1
205	82	25	32	6	2	0	0
177	85	25	23	5	3	1	0
191	88	27	21	13	2	0	0
184	69	22	23	7	1	0	0
193	89	30	19	9	0	2	0
199	88	30	28	3	2	0	0
176	64	31	28	5	1	1	0
190	91	36	26	8	1	0	0
210	82	25	24	11	1	0	0
176	82	29	25	5	2	1	0
216	86	36	22	6	0	2	0
197	78	38	28	3	1	1	0

174	96	30	18	5	1	1	0
160	77	33	26	7	1	2	0
219	68	39	24	13	2	0	0
180	84	29	22	8	2	0	0
175	67	19	12	8	0	1	0
165	69	26	32	4	3	0	0
136	68	27	29	4	1	0	0
175	88	31	28	8	1	2	0
154	58	21	23	9	5	1	0
171	76	27	27	8	1	0	0
164	76	25	27	12	1	0	0
153	77	31	18	9	3	1	1
153	77	18	16	4	2	0	1
140	68	18	18	2	1	0	1
167	80	15	15	10	3	0	0
122	65	26	24	7	1	0	0
130	50	19	26	3	1	1	0
131	49	18	14	6	2	0	0
124	58	22	23	8	2	0	0
102	53	13	10	7	1	1	0
104	46	20	19	9	1	0	0
86	40	18	20	6	1	1	0
88	56	20	13	2	1	1	1
98	42	19	9	7	1	1	0
87	47	19	6	4	1	0	0
96	36	20	13	2	1	1	1
103	46	23	6	5	2	0	1
71	49	17	9	8	3	0	1
67	45	15	13	6	2	0	0
86	42	13	7	1	2	0	0
86	31	10	12	3	1	0	1
76	41	16	14	3	0	0	1
113	34	14	10	4	1	1	0
93	55	19	15	5	1	1	0
76	41	13	10	5	0	1	0
82	37	23	8	6	0	1	0
104	35	21	8	6	1	1	0
70	40	18	8	8	0	0	0
78	26	19	10	6	2	0	0
63	38	13	10	7	1	1	0

79	33	10	10	3	1	0	0
81	29	19	6	0	1	2	0
46	26	17	11	1	1	0	0
72	18	5	10	2	0	2	0
57	23	11	8	3	1	1	0
58	33	11	5	5	2	0	0
80	25	11	8	1	0	0	0
66	26	13	8	2	0	1	0
53	28	11	4	3	0	0	1
67	19	7	5	3	0	0	1
55	24	11	8	1	0	1	0
57	20	7	12	3	0	1	0
64	18	8	5	2	0	0	1
59	25	9	5	2	0	0	0
46	17	6	9	2	0	0	1
42	21	6	7	3	0	0	0
57	16	5	6	2	1	0	0
56	20	1	4	2	2	0	0
41	23	6	5	2	0	1	0
39	21	5	6	2	0	0	0
45	19	6	8	4	0	0	0
41	23	9	4	2	1	0	0
38	19	6	7	3	3	1	0
49	29	8	7	2	0	0	0
50	14	3	6	3	1	0	1
43	26	4	6	2	1	0	0
56	26	7	3	1	0	0	0
34	11	6	7	2	1	0	0

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
2	2	1	0	1	0	0	0
2	0	0	2	0	0	0	0
4	4	0	0	0	0	0	0
1	3	0	2	0	0	0	0
3	3	1	0	0	0	0	0
3	2	0	1	0	0	0	0
3	0	1	0	0	0	0	0

0	2	1	0	2	0	0	0
4	1	1	0	0	0	1	0
2	2	0	1	1	0	0	0
0	1	0	0	2	0	1	1
3	0	0	0	0	0	0	0
5	3	0	0	1	1	0	0
2	0	0	0	1	0	0	0
7	1	0	1	0	0	0	0
0	1	0	2	1	0	0	0
3	2	0	0	0	0	0	0
1	1	1	0	1	0	0	0
0	1	0	1	1	0	0	0
1	0	0	0	1	0	0	0
3	2	0	0	0	0	0	0
2	2	0	0	1	0	0	0
4	2	0	0	0	0	0	0
0	2	2	0	0	0	0	0
6	0	0	2	0	0	0	0
5	3	0	2	1	0	0	0
6	0	1	0	1	0	0	0
6	3	1	0	0	0	0	0
6	5	1	0	0	0	0	0
6	1	1	1	1	0	0	1
4	0	0	0	0	0	0	0
7	1	0	1	0	0	1	0
12	0	2	0	0	0	0	0
4	4	1	1	0	0	1	0
10	3	0	1	0	0	0	0
8	2	2	1	1	0	0	0
12	5	1	0	0	0	0	0
7	2	0	0	1	0	1	0
6	3	1	0	0	0	0	1
6	3	0	0	1	0	0	1
9	4	1	1	0	0	0	0
10	5	0	1	0	0	0	0
12	3	0	0	0	0	0	0
6	5	3	1	3	0	0	0
4	4	0	1	0	0	0	0
11	2	0	3	0	0	0	0
5	2	1	1	0	0	0	1

9	6	0	0	0	0	1	0
10	3	1	2	0	0	0	0
8	4	2	1	2	0	1	0
9	5	2	2	0	0	0	0
9	4	0	1	0	1	0	0
10	4	2	0	0	0	0	0
7	3	1	0	1	0	0	1
7	1	0	0	0	0	0	0
16	6	0	0	0	0	0	1
16	3	1	1	0	0	0	0
16	2	0	0	0	0	0	0
10	4	1	1	0	0	0	0
9	2	1	0	0	0	0	0
11	2	2	1	0	0	0	0
16	0	1	2	0	0	0	0
11	3	0	1	0	0	0	0
8	2	1	0	0	0	0	1
9	1	0	0	0	0	0	0
7	2	1	0	1	0	0	0
7	4	2	0	0	0	0	0
17	3	0	0	0	0	0	0
9	0	0	2	0	0	0	0
14	3	1	1	0	0	0	0
6	2	1	0	0	0	0	0
10	2	1	0	0	0	0	0
7	3	0	1	0	0	0	0
6	1	0	0	0	0	0	0
9	4	0	0	0	0	0	0
4	1	3	1	0	0	0	0
7	1	0	0	0	0	0	0
17	1	2	1	0	0	0	1
9	3	1	1	0	0	0	0
7	1	1	0	0	0	0	0
4	2	0	0	0	0	0	0
9	1	1	2	0	0	0	1
7	4	0	2	0	0	0	0
6	0	0	0	0	0	0	0
9	3	0	3	0	0	1	0
6	2	0	0	0	0	0	0
9	3	0	1	0	0	0	0

8	1	2	1	0	0	0	0
11	0	0	0	0	0	0	0
8	0	0	1	0	0	0	0
8	2	0	1	0	0	0	0
9	5	0	0	1	0	0	0
10	6	1	0	0	0	0	1
13	0	0	0	0	1	0	0
10	2	0	0	1	0	0	0
3	1	0	0	0	0	1	0
4	2	0	0	0	0	0	0
7	4	0	0	0	0	0	0
7	2	2	0	0	0	0	0
0	1	0	0	0	0	0	0
5	1	0	0	0	0	0	0
5	2	2	0	0	0	0	0
5	1	1	0	0	0	0	1
5	4	0	0	0	0	0	0
3	4	1	0	0	0	0	0
8	1	0	0	0	0	0	0
9	2	1	1	0	0	0	0
5	3	0	0	0	0	0	0
5	0	0	0	0	0	0	0
1	2	0	0	0	0	0	0
8	1	1	1	0	0	0	0
8	2	0	0	1	0	1	1
3	1	1	1	0	0	0	0
6	2	0	1	0	0	1	0
6	2	0	0	1	0	0	0
7	2	0	1	0	0	0	0
5	0	0	0	0	0	0	0
6	3	0	0	0	0	0	0
5	1	0	0	0	0	0	0
11	1	0	0	1	0	0	0
9	0	0	0	0	0	0	0
4	1	0	0	0	0	0	0
3	1	0	1	0	1	1	0
7	0	1	0	0	0	0	0
5	2	0	1	0	0	0	0
4	1	2	0	0	0	0	0
3	0	0	0	0	0	0	0

0	1	0	0	0	0	0	0
6	0	0	0	0	0	0	0
6	1	0	1	0	0	0	0
4	1	1	0	0	0	1	0
5	1	1	0	0	0	0	0
5	0	1	0	0	0	0	0
7	1	0	1	0	0	0	0
5	0	1	0	1	0	0	0
3	1	0	0	0	0	0	0
4	0	0	0	0	0	0	1
1	1	0	0	0	0	0	0
6	1	1	0	0	0	0	0
6	0	0	0	0	0	0	1
2	0	2	0	0	0	0	0
2	0	0	0	0	0	0	0
2	1	1	0	0	0	0	0
3	1	0	0	0	1	0	0
1	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
8	0	0	0	0	0	0	1
5	0	0	0	0	0	0	0
2	1	0	0	0	0	0	0
3	1	0	0	0	0	0	0
3	1	0	0	0	0	0	0
3	2	0	0	0	0	0	0
3	1	0	0	0	0	0	0
6	0	0	0	0	0	0	0
2	0	0	0	1	0	0	0
3	1	0	0	0	0	0	0
2	1	0	0	0	0	0	0
2	1	1	0	0	0	0	0
3	1	0	0	0	0	0	0
3	1	0	0	0	0	0	0
2	1	1	0	0	0	0	0
2	4	0	0	0	0	0	0
6	2	0	1	0	0	0	0
2	0	0	0	0	0	0	0
4	1	0	0	0	0	0	0
4	1	0	0	0	0	0	0
0	1	0	0	0	1	0	0

0	1	0	0	0	1	0	0
3	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
3	0	1	0	0	0	0	0
2	1	1	0	0	0	1	0
2	1	1	1	0	0	0	0
1	0	0	0	0	0	0	0
0	2	0	0	0	0	0	0
2	0	0	0	0	0	0	0
1	1	0	0	0	0	1	0
1	0	0	0	0	0	0	0
4	1	0	0	0	0	0	0
1	1	0	0	0	0	0	0
2	0	1	0	0	1	0	0
4	0	0	0	0	0	0	0
3	1	1	0	0	0	0	0
2	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
1	1	0	0	0	0	0	0
2	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
1	0	0	0	0	0	1	0
0	0	1	0	0	0	0	0
1	0	1	0	1	0	0	0
1	1	0	0	0	0	0	0
0	0	0	1	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	1	0	0	0	0	0	0
1	1	0	0	0	0	0	0
2	1	0	0	0	0	0	0
2	0	0	0	0	0	0	0
0	0	1	0	0	0	0	0
3	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0

Curve fit oxygen:

total =

General model Exp2:

$$ctotal(x) = a * \exp(b * x) + c * \exp(d * x)$$

Coefficients (with 95% confidence bounds):

$$\begin{aligned} a &= 0.7152 \quad (0.6525, 0.7778) \\ b &= -0.2405 \quad (-0.2563, -0.2247) \\ c &= 0.003678 \quad (-0.007307, 0.01466) \\ d &= -0.04798 \quad (-0.1396, 0.0436) \end{aligned}$$

goftotal =

$$\begin{aligned} \text{sse} &: 3.8233e-007 \\ \text{rsquare} &: 0.9999 \\ \text{dfe} &: 4 \\ \text{adjrsquare} &: 0.9999 \\ \text{rmse} &: 3.0916e-004 \end{aligned}$$

self 20 to 40:

ctotal =

General model Exp1:

$$ctotal(x) = a * \exp(b * x)$$

Coefficients (with 95% confidence bounds):

$$\begin{aligned} a &= 0.3563 \quad (0.2216, 0.4909) \\ b &= -0.1919 \quad (-0.2111, -0.1726) \end{aligned}$$

goftotal =

$$\begin{aligned} \text{sse} &: 3.5659e-008 \\ \text{rsquare} &: 9.9942e-001 \\ \text{dfe} &: 3 \\ \text{adjrsquare} &: 9.9923e-001 \end{aligned}$$

rmse: 1.0902e-004

Event 64	Date		Time*	Location*			Summing interval*	
	14-Aug-02		212	N09W54			Aug 14 to Aug 15 2200	
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	8.829E-06	2.822E-05	1.294E-05	1.842E-05	9.264E-06	3.829E-06	8.316E-07	5.500E-07
2	7.119E-04	3.699E-04	2.065E-04	7.098E-05	2.345E-05	9.804E-06	2.568E-06	0.000E+00
3	4.331E-04	1.512E-04	6.911E-05	3.331E-05	1.465E-05	1.955E-06	4.222E-07	1.086E-06
4	2.203E-04	8.242E-05	2.957E-05	1.923E-05	4.205E-06	2.991E-06	4.509E-07	5.305E-07
5	1.709E-04	5.924E-05	1.351E-05	6.418E-06	2.202E-06	3.833E-06	4.307E-07	0.000E+00
6	4.278E-04	2.178E-04	8.801E-05	4.812E-05	1.180E-05	2.004E-06	0.000E+00	0.000E+00
7	1.445E-03	6.768E-04	3.107E-04	6.706E-05	1.819E-05	4.326E-06	0.000E+00	0.000E+00
8	4.374E-04	1.957E-04	8.428E-05	2.572E-05	8.751E-06	1.027E-06	9.197E-07	0.000E+00
9	9.724E-04	3.059E-04	1.095E-04	5.038E-05	7.599E-06	3.116E-06	0.000E+00	0.000E+00
10	1.093E-03	3.168E-04	8.818E-05	2.214E-05	8.510E-06	0.000E+00	0.000E+00	0.000E+00
11	3.639E-04	1.127E-04	3.065E-05	1.485E-05	1.120E-06	0.000E+00	4.350E-07	0.000E+00
12	2.960E-04	1.067E-04	5.044E-05	3.354E-06	3.283E-06	0.000E+00	4.616E-07	0.000E+00
13	6.302E-04	1.928E-04	4.724E-05	1.266E-05	1.124E-06	0.000E+00	0.000E+00	6.472E-07
14	1.483E-03	2.704E-04	3.495E-05	1.460E-05	2.767E-06	2.550E-06	0.000E+00	0.000E+00
15	5.912E-04	1.436E-04	3.977E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
16	3.895E-04	4.305E-05	1.149E-05	3.495E-06	0.000E+00	0.000E+00	5.256E-07	0.000E+00
17	2.744E-04	8.571E-05	1.421E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
18	1.301E-04	2.845E-05	7.100E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
19	9.495E-05	1.073E-05	6.581E-06	0.000E+00	1.153E-06	0.000E+00	0.000E+00	0.000E+00
20	1.027E-04	2.772E-05	3.262E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
21	1.287E-04	3.247E-05	3.516E-06	1.603E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
22	2.483E-04	3.029E-05	6.701E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
23	1.712E-04	4.474E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
24	2.191E-04	4.194E-05	3.402E-06	1.612E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
25	1.812E-04	3.104E-05	0.000E+00	1.727E-06	0.000E+00	0.000E+00	4.765E-07	0.000E+00
26	1.773E-04	2.613E-05	6.733E-06	0.000E+00	1.021E-06	0.000E+00	0.000E+00	0.000E+00
27	1.327E-04	2.503E-05	0.000E+00	1.618E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
28	9.833E-05	2.246E-05	6.904E-06	1.694E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
29	8.057E-05	1.915E-05	1.013E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
30	1.087E-04	1.354E-05	0.000E+00	4.952E-06	1.060E-06	0.000E+00	0.000E+00	0.000E+00
31	8.271E-05	8.204E-06	3.267E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
32	6.833E-05	1.343E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
33	3.401E-05	5.381E-06	3.263E-06	0.000E+00	0.000E+00	0.000E+00	4.580E-07	0.000E+00

23	1.714E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
24	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.509E-07	0.000E+00
25	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
26	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
27	0.000E+00	1.474E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
28	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
29	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
30	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
31	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
32	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
33	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.799E-07
34	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
35	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
36	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
37	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
38	0.000E+00	0.000E+00	1.819E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
39	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
40	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
41	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.353E-07	0.000E+00
42	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
43	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
44	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
45	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
3	11	4	12	9	4	2	1
237	141	63	45	22	10	6	0
143	57	21	21	14	2	1	2
72	31	9	12	4	3	1	1
56	22	4	4	2	4	1	0
139	81	26	30	11	2	0	0
440	234	87	39	16	4	0	0
141	72	25	16	8	1	2	0
306	110	32	30	7	3	0	0
362	121	27	14	8	0	0	0
116	41	9	9	1	0	1	0
95	39	15	2	3	0	1	0

172	62	12	7	1	0	0	1
366	76	8	7	2	2	0	0
161	45	10	0	0	0	0	0
110	14	3	2	0	0	1	0
81	29	4	0	0	0	0	0
40	10	2	0	0	0	0	0
30	4	2	0	1	0	0	0
33	10	1	0	0	0	0	0
41	12	1	1	0	0	0	0
78	11	2	0	0	0	0	0
53	17	0	0	0	0	0	0
68	15	1	1	0	0	0	0
57	11	0	1	0	0	1	0
59	10	2	0	1	0	0	0
42	9	0	1	0	0	0	0
31	8	2	1	0	0	0	0
26	7	3	0	0	0	0	0
35	5	0	3	1	0	0	0
27	3	1	0	0	0	0	0
22	5	0	0	0	0	0	0
11	2	1	0	0	0	1	0
22	2	1	0	0	0	0	0
7	3	0	0	2	0	0	0
7	0	0	0	0	0	1	0
5	0	0	0	0	0	0	0
4	2	1	0	0	0	0	0
9	0	0	0	0	0	0	0
7	0	0	0	0	0	0	1
3	0	0	0	0	0	0	0
2	1	0	0	0	0	0	0
0	0	0	0	0	0	0	0
2	2	1	0	0	0	0	0
2	1	0	0	0	0	1	0

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
13	9	3	0	1	0	0	0

0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.2141 \quad (0.1833, 0.2449)$$

$$b = -0.3493 \quad (-0.3672, -0.3314)$$

$$c = 8.347e-005 \quad (-0.0002334, 0.0004004)$$

$$d = -0.01858 \quad (-0.1252, 0.08806)$$

goftotal =

$$sse: 9.1234e-009$$

$$rsquare: 0.9999$$

$$dfe: 4$$

$$adjrsquare: 0.9998$$

$$rmse: 4.7758e-005$$

ctotal =

General model Exp1:

$$ctotal(x) = a \cdot \exp(b \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.003316 \quad (-0.002658, 0.00929)$$

$$b = -0.1154 \quad (-0.2021, -0.02868)$$

goftotal =

$$sse: 4.2548e-009$$

$$rsquare: 9.6166e-001$$

$$dfe: 3$$

$$adjrsquare: 9.4889e-001$$

$$rmse: 3.7660e-005$$

Event 65	Date	Time*	Location*	Summing interval*				
	22-Aug-02	157	S07W62	Aug 22 to Aug 23				
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82

	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	5.364E-05	1.317E-05	6.440E-06	1.090E-05	3.199E-06	0.000E+00	4.396E-07	0.000E+00
2	4.758E-05	1.803E-05	6.249E-06	6.406E-06	2.151E-06	9.414E-07	0.000E+00	0.000E+00
3	5.188E-05	3.549E-05	1.003E-05	1.304E-05	5.404E-06	3.923E-06	1.337E-06	1.092E-06
4	6.771E-05	5.126E-05	4.037E-05	2.799E-05	1.198E-05	9.104E-06	1.364E-06	5.800E-07
5	5.269E-05	3.805E-05	1.998E-05	1.310E-05	1.193E-05	2.906E-06	1.836E-06	1.116E-06
6	9.050E-05	5.497E-05	5.397E-05	2.269E-05	5.414E-06	5.036E-06	2.239E-06	5.428E-07
7	1.257E-04	7.988E-05	5.789E-05	2.829E-05	6.838E-06	8.022E-06	1.810E-06	1.129E-06
8	9.229E-05	3.752E-05	2.640E-05	1.779E-05	8.563E-06	3.872E-06	4.358E-07	0.000E+00
9	1.711E-04	7.798E-05	4.854E-05	1.671E-05	1.333E-05	8.134E-06	1.325E-06	5.785E-07
10	1.771E-04	8.587E-05	6.168E-05	3.416E-05	9.848E-06	7.091E-06	1.381E-06	5.543E-07
11	1.297E-04	1.002E-04	3.817E-05	1.846E-05	1.027E-05	3.825E-06	1.230E-06	5.133E-07
12	2.195E-04	8.353E-05	6.260E-05	3.208E-05	1.568E-05	4.096E-06	1.812E-06	0.000E+00
13	2.857E-04	1.204E-04	6.603E-05	5.029E-05	1.478E-05	1.144E-05	1.849E-06	5.939E-07
14	2.651E-04	1.807E-04	4.810E-05	2.654E-05	1.580E-05	2.004E-06	4.747E-07	0.000E+00
15	2.218E-04	1.617E-04	5.876E-05	3.364E-05	1.249E-05	3.119E-06	3.181E-06	5.559E-07
16	2.706E-04	1.417E-04	9.410E-05	3.178E-05	1.003E-05	4.103E-06	9.216E-07	0.000E+00
17	2.621E-04	1.435E-04	5.288E-05	3.373E-05	1.547E-05	5.121E-06	1.817E-06	5.950E-07
18	1.921E-04	1.127E-04	4.817E-05	1.811E-05	8.801E-06	5.036E-06	1.825E-06	0.000E+00
19	1.308E-04	5.117E-05	2.384E-05	9.905E-06	9.719E-06	9.750E-07	4.635E-07	5.776E-07
20	1.372E-04	6.603E-05	4.386E-05	2.281E-05	8.806E-06	0.000E+00	9.011E-07	0.000E+00
21	1.384E-04	6.841E-05	5.079E-05	1.137E-05	8.767E-06	3.055E-06	4.661E-07	5.805E-07
22	1.378E-04	7.411E-05	3.085E-05	2.002E-05	9.907E-06	0.000E+00	0.000E+00	0.000E+00
23	1.502E-04	5.305E-05	3.689E-05	1.314E-05	6.610E-06	9.843E-07	0.000E+00	0.000E+00
24	1.021E-04	4.365E-05	3.037E-05	1.967E-05	5.439E-06	0.000E+00	8.864E-07	5.786E-07
25	8.687E-05	2.432E-05	2.027E-05	9.786E-06	1.045E-06	1.984E-06	4.304E-07	0.000E+00
26	7.955E-05	2.429E-05	3.029E-05	9.684E-06	1.105E-06	1.024E-06	8.921E-07	0.000E+00
27	3.093E-05	9.772E-06	3.062E-05	1.451E-06	2.037E-06	1.824E-06	8.163E-07	4.990E-07

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	3.433E-05	1.391E-05	1.677E-06	1.704E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2	3.260E-05	7.133E-06	0.000E+00	1.723E-06	0.000E+00	4.976E-07	0.000E+00	0.000E+00
3	1.608E-05	1.470E-05	0.000E+00	5.162E-06	0.000E+00	5.469E-07	2.244E-07	0.000E+00
4	6.296E-05	2.052E-05	1.258E-05	5.256E-06	1.688E-06	5.404E-07	0.000E+00	2.842E-07
5	3.685E-05	1.740E-05	3.711E-06	4.396E-06	1.123E-06	1.058E-06	2.254E-07	0.000E+00
6	3.391E-05	1.334E-05	5.381E-06	7.716E-06	5.655E-07	0.000E+00	0.000E+00	0.000E+00
7	4.772E-05	2.988E-05	7.356E-06	7.853E-06	2.877E-06	5.691E-07	0.000E+00	0.000E+00

8	3.080E-05	1.758E-05	3.503E-06	2.580E-06	0.000E+00	5.135E-07	0.000E+00	0.000E+00
9	6.463E-05	3.422E-05	5.628E-06	9.744E-06	1.753E-06	0.000E+00	0.000E+00	0.000E+00
10	4.287E-05	2.389E-05	5.581E-06	3.526E-06	1.147E-06	1.104E-06	0.000E+00	0.000E+00
11	5.548E-05	2.334E-05	1.213E-05	1.644E-06	1.612E-06	0.000E+00	4.458E-07	5.637E-07
12	5.670E-05	2.866E-05	7.441E-06	3.464E-06	1.760E-06	5.269E-07	0.000E+00	0.000E+00
13	8.424E-05	3.306E-05	1.120E-05	2.628E-06	1.188E-06	0.000E+00	0.000E+00	0.000E+00
14	9.053E-05	2.285E-05	9.401E-06	5.433E-06	1.190E-06	5.289E-07	0.000E+00	0.000E+00
15	6.663E-05	1.547E-05	3.731E-06	2.699E-06	1.231E-06	5.253E-07	0.000E+00	0.000E+00
16	8.245E-05	1.502E-05	1.698E-05	3.564E-06	1.194E-06	1.116E-06	0.000E+00	0.000E+00
17	6.306E-05	1.355E-05	1.131E-05	3.576E-06	1.804E-06	5.276E-07	0.000E+00	0.000E+00
18	5.751E-05	8.981E-06	5.700E-06	1.753E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
19	3.726E-05	4.461E-06	1.764E-06	4.381E-06	0.000E+00	0.000E+00	2.437E-07	0.000E+00
20	3.778E-05	1.190E-05	5.526E-06	3.387E-06	5.961E-07	5.475E-07	0.000E+00	0.000E+00
21	2.772E-05	1.050E-05	5.327E-06	8.479E-07	0.000E+00	5.190E-07	0.000E+00	0.000E+00
22	2.944E-05	5.836E-06	3.771E-06	1.809E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
23	3.439E-05	1.638E-05	7.229E-06	3.511E-06	5.999E-07	0.000E+00	0.000E+00	0.000E+00
24	1.931E-05	8.736E-06	3.591E-06	1.679E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
25	2.234E-05	7.408E-06	3.479E-06	1.769E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
26	1.586E-05	1.764E-05	0.000E+00	2.557E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
27	1.490E-05	1.079E-05	3.315E-06	8.147E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
18	5	2	7	3	0	1	0
16	7	2	4	2	1	0	0
17	13	3	8	5	4	3	2
22	19	12	17	11	9	3	1
17	14	6	8	11	3	4	2
29	20	16	14	5	5	5	1
40	29	17	17	6	8	4	2
30	14	8	11	8	4	1	0
54	28	14	10	12	8	3	1
56	31	18	21	9	7	3	1
44	39	12	12	10	4	3	1
69	30	18	19	14	4	4	0
89	43	19	30	13	11	4	1
83	65	14	16	14	2	1	0
69	58	17	20	11	3	7	1
84	50	27	19	9	4	2	0
82	51	15	20	14	5	4	1

61	41	14	11	8	5	4	0
42	19	7	6	9	1	1	1
44	24	13	14	8	0	2	0
44	25	15	7	8	3	1	1
44	27	9	12	9	0	0	0
48	19	11	8	6	1	0	0
33	16	9	12	5	0	2	1
28	9	6	6	1	2	1	0
26	9	9	6	1	1	2	0
11	4	10	1	2	2	2	1

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
22	10	1	2	0	0	0	0
21	5	0	2	0	1	0	0
10	10	0	6	0	1	1	0
38	14	7	6	3	1	0	1
23	12	2	5	2	2	1	0
21	9	3	9	1	0	0	0
29	20	4	9	5	1	0	0
19	12	2	3	0	1	0	0
39	23	3	11	3	0	0	0
26	16	3	4	2	2	0	0
36	17	7	2	3	0	2	2
34	19	4	4	3	1	0	0
50	22	6	3	2	0	0	0
54	15	5	6	2	1	0	0
40	10	2	3	2	1	0	0
49	10	9	4	2	2	0	0
38	9	6	4	3	1	0	0
35	6	3	2	0	0	0	0
23	3	1	5	0	0	1	0
23	8	3	4	1	1	0	0
17	7	3	1	0	1	0	0
18	4	2	2	0	0	0	0
21	11	4	4	1	0	0	0
12	6	2	2	0	0	0	0
14	5	2	2	0	0	0	0

10	12	0	3	0	0	0	0
10	8	2	1	0	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.01345 \quad (0.008735, 0.01816)$$

$$b = -0.1655 \quad (-0.2617, -0.06932)$$

$$c = -9.924e-005 \quad (-0.003777, 0.003579)$$

$$d = -0.03953 \quad (-0.9343, 0.8553)$$

goftotal =

$$sse: 3.0961e-008$$

$$rsquare: 0.9964$$

$$dfe: 4$$

$$adjrsquare: 0.9938$$

$$rmse: 8.7979e-005$$

ctotal =

General model Exp1:

$$ctotal(x) = a \cdot \exp(b \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.002526 \quad (-7.132e-005, 0.005123)$$

$$b = -0.08663 \quad (-0.1338, -0.03947)$$

goftotal =

$$sse: 4.1910e-009$$

$$rsquare: 9.7648e-001$$

$$dfe: 3$$

$$adjrsquare: 9.6864e-001$$

$$rmse: 3.7377e-005$$

Event 66	Date		Time*	Location*	Summing interval*			
	24-Aug-02		112	S08W81	Aug 24 to Aug 26 0000			
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	1.478E-05	0.000E+00	3.141E-06	0.000E+00	0.000E+00	9.293E-07	4.417E-07	0.000E+00
2	6.330E-06	7.756E-06	0.000E+00	1.609E-06	0.000E+00	0.000E+00	0.000E+00	1.361E-06
3	4.328E-06	7.383E-06	1.978E-05	1.222E-05	3.813E-05	3.625E-05	1.552E-05	4.196E-06
4	2.730E-05	3.146E-05	8.292E-05	5.027E-05	4.268E-05	3.095E-05	1.842E-05	4.897E-06
5	1.317E-04	1.693E-04	8.459E-05	1.388E-04	7.094E-05	5.515E-05	1.801E-05	7.798E-06
6	5.514E-04	4.264E-04	3.427E-04	2.151E-04	1.074E-04	4.816E-05	2.122E-05	6.308E-06
7	2.173E-03	1.345E-03	9.013E-04	4.520E-04	1.319E-04	5.913E-05	7.622E-06	7.929E-06
8	3.479E-03	2.028E-03	1.169E-03	4.600E-04	1.023E-04	4.693E-05	1.147E-05	4.978E-06
9	3.857E-03	2.174E-03	1.208E-03	4.668E-04	1.239E-04	4.564E-05	8.062E-06	1.613E-06
10	6.988E-03	3.238E-03	1.505E-03	6.016E-04	1.488E-04	4.603E-05	9.492E-06	3.404E-06
11	1.034E-02	4.557E-03	2.027E-03	7.036E-04	1.513E-04	3.172E-05	1.050E-05	2.805E-06
12	1.157E-02	4.449E-03	1.883E-03	7.267E-04	1.167E-04	3.767E-05	5.811E-06	9.053E-07
13	9.967E-03	4.101E-03	1.645E-03	5.434E-04	1.288E-04	3.056E-05	6.813E-06	1.904E-06
14	8.977E-03	3.192E-03	1.389E-03	4.616E-04	8.036E-05	2.739E-05	2.271E-06	0.000E+00
15	8.921E-03	3.482E-03	1.417E-03	4.938E-04	1.242E-04	2.687E-05	5.237E-06	0.000E+00
16	8.687E-03	3.126E-03	1.496E-03	5.499E-04	1.076E-04	3.220E-05	1.459E-06	9.757E-07
17	7.601E-03	2.758E-03	1.239E-03	4.049E-04	9.487E-05	1.899E-05	2.074E-06	1.828E-06
18	6.632E-03	2.550E-03	9.888E-04	3.971E-04	7.416E-05	1.700E-05	5.440E-06	1.761E-06
19	6.107E-03	2.137E-03	8.125E-04	3.374E-04	6.137E-05	2.028E-05	3.587E-06	8.829E-07
20	6.537E-03	2.676E-03	1.046E-03	3.447E-04	9.432E-05	1.145E-05	3.632E-06	0.000E+00
21	6.423E-03	2.455E-03	9.390E-04	3.141E-04	8.823E-05	1.364E-05	2.281E-06	9.771E-07
22	6.174E-03	2.452E-03	9.068E-04	3.701E-04	6.669E-05	1.004E-05	1.457E-06	9.029E-07
23	5.668E-03	2.188E-03	9.296E-04	3.011E-04	6.044E-05	4.699E-06	1.441E-06	8.864E-07
24	3.853E-03	1.409E-03	5.376E-04	2.209E-04	2.989E-05	1.368E-05	2.002E-06	7.593E-07
25	3.257E-03	1.186E-03	5.048E-04	1.516E-04	3.733E-05	9.064E-06	1.197E-06	1.468E-06
26	3.231E-03	1.228E-03	5.206E-04	1.714E-04	2.602E-05	5.283E-06	1.815E-06	7.621E-07
27	2.812E-03	1.115E-03	4.218E-04	1.483E-04	2.209E-05	5.009E-06	5.819E-07	7.436E-07
28	2.739E-03	9.842E-04	4.443E-04	1.132E-04	2.995E-05	4.839E-06	2.758E-06	0.000E+00
29	2.596E-03	8.684E-04	3.374E-04	1.209E-04	2.940E-05	7.718E-06	0.000E+00	0.000E+00
30	2.486E-03	8.184E-04	3.519E-04	1.159E-04	2.068E-05	8.999E-06	1.719E-06	1.479E-06
31	2.953E-03	1.144E-03	4.309E-04	1.296E-04	2.090E-05	1.055E-05	0.000E+00	7.250E-07

32	3.439E-03	1.018E-03	5.371E-04	1.220E-04	3.551E-05	1.747E-06	1.288E-06	0.000E+00
33	4.248E-03	1.355E-03	5.123E-04	1.366E-04	8.211E-06	1.978E-06	0.000E+00	0.000E+00
34	4.084E-03	1.215E-03	4.354E-04	1.291E-04	2.236E-05	5.561E-06	0.000E+00	1.947E-06
35	3.197E-03	9.413E-04	3.314E-04	6.682E-05	1.472E-05	4.979E-06	6.936E-07	0.000E+00
36	2.696E-03	8.427E-04	2.283E-04	6.047E-05	1.087E-05	4.821E-06	1.483E-06	0.000E+00
37	2.194E-03	6.004E-04	2.048E-04	4.997E-05	1.504E-05	3.061E-06	1.369E-06	0.000E+00
38	1.939E-03	5.911E-04	1.877E-04	4.949E-05	4.714E-06	0.000E+00	0.000E+00	0.000E+00
39	1.824E-03	4.491E-04	1.384E-04	3.228E-05	1.087E-05	1.376E-06	2.526E-06	7.771E-07
40	1.427E-03	5.253E-04	1.321E-04	4.490E-05	1.057E-05	1.439E-06	0.000E+00	0.000E+00
41	1.288E-03	3.145E-04	1.295E-04	3.672E-05	7.127E-06	1.286E-06	0.000E+00	0.000E+00
42	1.020E-03	3.156E-04	1.143E-04	3.393E-05	9.556E-06	3.852E-06	1.093E-06	6.904E-07
43	7.481E-04	2.701E-04	6.739E-05	4.062E-05	5.026E-06	2.449E-06	5.487E-07	0.000E+00
44	7.014E-04	1.852E-04	7.967E-05	2.947E-05	3.451E-06	1.024E-06	4.619E-07	0.000E+00
45	7.569E-04	2.336E-04	7.726E-05	2.260E-05	4.985E-06	1.185E-06	0.000E+00	0.000E+00
46	6.922E-04	1.739E-04	7.074E-05	1.624E-05	5.927E-06	0.000E+00	1.965E-06	0.000E+00
47	6.428E-04	2.121E-04	6.267E-05	2.859E-05	4.668E-06	1.119E-06	4.737E-07	6.319E-07
48	6.182E-04	2.657E-04	6.664E-05	1.600E-05	3.536E-06	0.000E+00	0.000E+00	0.000E+00
49	5.598E-04	1.747E-04	8.432E-05	2.435E-05	3.428E-06	0.000E+00	0.000E+00	0.000E+00

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	3.020E-06	4.093E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.861E-07
2	0.000E+00	0.000E+00	0.000E+00	8.807E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
3	1.172E-05	3.990E-05	4.204E-05	3.149E-05	2.973E-05	1.357E-05	3.358E-06	4.187E-07
4	9.075E-05	5.732E-05	5.603E-05	4.312E-05	3.519E-05	1.336E-05	4.732E-06	3.878E-07
5	1.707E-04	1.284E-04	9.264E-05	5.864E-05	2.804E-05	1.203E-05	2.979E-06	0.000E+00
6	2.695E-04	1.778E-04	8.268E-05	5.601E-05	3.062E-05	4.874E-06	1.470E-06	7.294E-07
7	4.671E-04	2.043E-04	1.035E-04	5.696E-05	1.970E-05	8.911E-06	3.014E-06	0.000E+00
8	4.697E-04	1.591E-04	7.989E-05	3.933E-05	1.699E-05	5.117E-06	2.331E-06	4.163E-07
9	3.507E-04	1.886E-04	7.317E-05	5.233E-05	1.354E-05	6.026E-06	1.314E-06	0.000E+00
10	4.409E-04	1.409E-04	6.903E-05	3.608E-05	1.036E-05	1.659E-06	7.167E-07	0.000E+00
11	4.092E-04	1.373E-04	5.992E-05	1.040E-05	1.107E-05	3.562E-06	3.879E-07	0.000E+00
12	3.317E-04	1.065E-04	6.303E-05	2.441E-05	1.251E-05	2.601E-06	4.032E-07	4.921E-07
13	2.754E-04	9.025E-05	3.188E-05	2.217E-05	2.950E-06	2.806E-06	4.009E-07	4.951E-07
14	2.560E-04	7.042E-05	2.514E-05	1.984E-05	3.949E-06	2.770E-06	8.485E-07	0.000E+00
15	1.957E-04	8.829E-05	3.663E-05	1.038E-05	8.876E-06	8.300E-07	3.961E-07	0.000E+00

16	2.026E-04	5.915E-05	2.166E-05	1.460E-05	4.831E-06	3.520E-06	3.811E-07	0.000E+00
17	2.059E-04	7.463E-05	1.144E-05	1.240E-05	2.771E-06	0.000E+00	0.000E+00	0.000E+00
18	1.383E-04	5.378E-05	4.170E-05	6.622E-06	4.415E-06	7.943E-07	3.736E-07	0.000E+00
19	1.172E-04	5.060E-05	2.248E-05	9.542E-06	9.371E-07	1.656E-06	1.092E-06	0.000E+00
20	1.142E-04	3.677E-05	3.357E-05	4.186E-06	2.894E-06	8.850E-07	0.000E+00	5.035E-07
21	1.029E-04	4.560E-05	0.000E+00	7.580E-06	0.000E+00	9.129E-07	0.000E+00	0.000E+00
22	1.587E-04	1.691E-05	1.531E-05	8.747E-06	9.743E-07	0.000E+00	0.000E+00	0.000E+00
23	9.029E-05	2.292E-05	2.560E-05	6.834E-06	9.143E-07	8.893E-07	0.000E+00	0.000E+00
24	8.175E-05	1.622E-05	9.984E-06	7.152E-06	3.092E-06	0.000E+00	6.541E-07	0.000E+00
25	9.019E-05	2.542E-05	1.667E-05	4.581E-06	3.029E-06	1.350E-06	0.000E+00	0.000E+00
26	5.691E-05	2.167E-05	2.164E-05	3.354E-06	2.312E-06	0.000E+00	0.000E+00	0.000E+00
27	5.783E-05	1.340E-05	4.392E-06	1.200E-06	2.139E-06	6.560E-07	0.000E+00	0.000E+00
28	4.331E-05	1.260E-05	4.439E-06	4.132E-06	1.356E-06	0.000E+00	0.000E+00	0.000E+00
29	6.877E-05	1.336E-05	7.033E-06	4.399E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
30	3.758E-05	7.438E-06	6.927E-06	4.328E-06	1.457E-06	6.874E-07	0.000E+00	0.000E+00
31	5.306E-05	9.956E-06	4.840E-06	2.342E-06	1.559E-06	0.000E+00	0.000E+00	0.000E+00
32	5.955E-05	7.504E-06	1.330E-05	4.853E-06	9.829E-07	0.000E+00	0.000E+00	0.000E+00
33	6.453E-05	8.568E-06	0.000E+00	3.141E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
34	2.446E-05	2.671E-06	3.250E-06	3.384E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
35	2.150E-05	6.957E-06	0.000E+00	2.802E-06	1.931E-06	1.845E-06	0.000E+00	0.000E+00
36	2.382E-05	9.757E-06	1.177E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
37	1.990E-05	2.264E-06	2.933E-06	0.000E+00	8.336E-07	7.736E-07	0.000E+00	0.000E+00
38	3.075E-05	1.264E-05	5.300E-06	2.505E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
39	2.568E-05	2.144E-06	2.601E-06	1.268E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
40	8.731E-06	1.022E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.383E-07	0.000E+00
41	3.421E-05	5.797E-06	2.473E-06	3.481E-06	1.470E-06	6.796E-07	0.000E+00	0.000E+00
42	6.004E-06	3.619E-06	2.373E-06	2.196E-06	0.000E+00	6.523E-07	0.000E+00	0.000E+00
43	1.147E-05	3.345E-06	0.000E+00	1.939E-06	0.000E+00	0.000E+00	2.760E-07	0.000E+00
44	1.566E-05	3.249E-06	4.017E-06	0.000E+00	6.295E-07	0.000E+00	0.000E+00	0.000E+00
45	3.582E-06	5.032E-06	4.071E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
46	1.793E-05	1.559E-06	0.000E+00	0.000E+00	6.158E-07	0.000E+00	0.000E+00	3.298E-07
47	8.859E-06	1.638E-06	0.000E+00	9.693E-07	1.215E-06	0.000E+00	2.464E-07	0.000E+00
48	7.127E-06	6.529E-06	3.981E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
49	6.891E-06	0.000E+00	1.971E-06	9.086E-07	1.292E-06	0.000E+00	0.000E+00	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8

5	0	1	0	0	1	1	0
2	3	0	1	0	0	0	2
1	2	4	5	24	25	24	5
7	9	19	24	30	24	31	7
34	50	20	68	52	44	32	11
136	120	78	102	78	37	37	9
487	345	186	194	85	41	12	10
788	525	243	199	66	33	18	6
890	576	257	206	82	33	13	2
1462	778	291	244	90	30	14	4
1919	968	347	249	81	18	14	3
2267	998	338	271	66	23	8	1
1860	874	282	195	69	18	9	2
1677	682	240	165	43	16	3	0
1705	763	249	181	68	16	7	0
1664	684	263	201	59	19	2	1
1504	625	227	155	54	12	3	2
1387	610	192	159	44	11	8	2
1248	499	152	132	36	13	5	1
1266	593	187	127	52	7	5	0
1202	526	161	112	47	8	3	1
1198	547	162	137	37	6	2	1
1142	501	173	116	34	3	2	1
893	374	115	98	20	10	3	1
794	331	113	70	26	7	2	2
776	337	116	79	18	4	3	1
705	319	97	71	16	4	1	1
727	299	109	58	23	4	5	0
649	248	78	58	21	6	0	0
631	238	82	56	15	7	3	2
711	315	97	60	14	8	0	1
719	245	103	50	21	1	2	0
730	267	81	45	4	1	0	0
713	242	70	43	11	3	0	2
617	208	59	25	8	3	1	0
534	191	42	23	6	3	2	0
464	145	40	20	9	2	2	0
427	149	38	21	3	0	0	0
416	117	29	14	7	1	4	1
334	141	29	20	7	1	0	0

314	88	29	17	5	1	0	0
263	93	27	17	7	3	2	1
205	85	17	21	4	2	1	0
211	64	22	17	3	1	1	0
212	75	20	12	4	1	0	0
203	58	19	9	5	0	4	0
190	72	17	16	4	1	1	1
182	89	18	9	3	0	0	0
167	60	23	14	3	0	0	0

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
2	3	0	0	0	0	0	1
0	0	0	1	0	0	0	0
5	19	16	25	36	18	10	1
44	31	24	39	48	20	16	1
84	70	41	54	39	18	10	0
129	94	35	50	41	7	5	2
200	97	40	46	24	12	9	0
205	76	31	32	21	7	7	1
155	92	29	43	17	8	4	0
178	63	25	27	12	2	2	0
147	54	19	7	11	4	1	0
125	44	21	17	13	3	1	1
99	36	10	15	3	3	1	1
91	28	8	13	4	3	2	0
72	36	12	7	9	1	1	0
74	24	7	10	5	4	1	0
78	32	4	9	3	0	0	0
55	24	15	5	5	1	1	0
46	22	8	7	1	2	3	0
42	15	11	3	3	1	0	1
37	18	0	5	0	1	0	0
59	7	5	6	1	0	0	0
35	10	9	5	1	1	0	0
36	8	4	6	4	0	2	0
42	13	7	4	4	2	0	0
26	11	9	3	3	0	0	0

28	7	2	1	3	1	0	0
22	7	2	4	2	0	0	0
33	7	3	4	0	0	0	0
18	4	3	4	2	1	0	0
24	5	2	2	2	0	0	0
24	3	5	4	1	0	0	0
21	3	0	2	0	0	0	0
8	1	1	2	0	0	0	0
8	3	0	2	2	2	0	0
9	4	4	0	0	0	0	0
8	1	1	0	1	1	0	0
13	6	2	2	0	0	0	0
11	1	1	1	0	0	0	0
4	5	0	0	0	0	1	0
16	3	1	3	2	1	0	0
3	2	1	2	0	1	0	0
6	2	0	2	0	0	1	0
9	2	2	0	1	0	0	0
2	3	2	0	0	0	0	0
10	1	0	0	1	0	0	1
5	1	0	1	2	0	1	0
4	4	2	0	0	0	0	0
4	0	1	1	2	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 1.62 \quad (1.417, 1.824)$$

$$b = -0.2785 \quad (-0.2981, -0.2589)$$

$$c = 0.003101 \quad (-0.01341, 0.01961)$$

$$d = -0.04674 \quad (-0.2212, 0.1277)$$

goftotal =

$$sse: 1.4270e-006$$

$$rsquare: 0.9999$$

$$dfe: 4$$

adjrsquare: 0.9999
 rmse: 5.9728e-004

ctotal =

General model Exp1:

$$ctotal(x) = a * \exp(b * x)$$

Coefficients (with 95% confidence bounds):

a = 0.4492 (0.0892, 0.8092)
 b = -0.2013 (-0.2424, -0.1603)

goftotal =

sse: 1.5556e-007
 rsquare: 9.9773e-001
 dfe: 3
 adjrsquare: 9.9697e-001
 rmse: 2.2772e-004

curve fit iron:

ctotal =

General model Exp2:

$$ctotal(x) = a * \exp(b * x) + c * \exp(d * x)$$

Coefficients (with 95% confidence bounds):

a = 0.05046 (0.004305, 0.09662)
 b = -0.1766 (-0.2474, -0.1058)
 c = 0.0001542 (-0.0004363, 0.0007446)
 d = 0.002137 (-0.03819, 0.04246)

goftotal =

sse: 1.9493e-007
 rsquare: 9.9005e-001
 dfe: 4
 adjrsquare: 9.8259e-001
 rmse: 2.2076e-004

ctotal =

General model Exp1:

$$ctotal(x) = a * \exp(b * x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.002828 \text{ (0.001033, 0.004623)}$$

$$b = -0.05125 \text{ (-0.06839, -0.03411)}$$

goftotal =

sse: 1.8509e-009

rsquare: 9.9118e-001

dfe: 3

adjrsquare: 9.8823e-001

rmse: 2.4839e-005

Event 67	Date		Time*	Location*		Summing interval*		
	5-Sep-02		1706	N09E28		Sep 6 0500 to Sep 9 1500		
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	1.513E-05	1.055E-05	6.280E-06	0.000E+00	0.000E+00	0.000E+00	4.161E-07	0.000E+00
2	3.631E-05	1.866E-05	1.297E-05	4.736E-06	0.000E+00	0.000E+00	4.431E-07	5.531E-07
3	3.553E-05	1.537E-05	9.461E-06	1.615E-06	1.078E-06	0.000E+00	0.000E+00	0.000E+00
4	6.845E-05	3.412E-05	2.270E-05	4.660E-06	2.159E-06	0.000E+00	0.000E+00	5.233E-07
5	7.246E-05	5.028E-05	1.961E-05	7.824E-06	2.162E-06	0.000E+00	0.000E+00	0.000E+00
6	1.444E-04	5.607E-05	2.585E-05	1.111E-05	2.045E-06	0.000E+00	4.223E-07	0.000E+00
7	1.789E-04	6.607E-05	1.637E-05	1.903E-05	4.172E-06	9.471E-07	0.000E+00	0.000E+00
8	1.570E-04	7.149E-05	2.952E-05	8.068E-06	1.089E-06	0.000E+00	4.239E-07	0.000E+00
9	2.420E-04	6.875E-05	2.969E-05	3.089E-06	1.031E-06	9.514E-07	4.253E-07	0.000E+00
10	2.331E-04	8.031E-05	4.321E-05	1.141E-05	3.106E-06	0.000E+00	0.000E+00	0.000E+00
11	2.906E-04	1.339E-04	5.374E-05	1.791E-05	4.410E-06	9.550E-07	8.812E-07	0.000E+00
12	3.837E-04	1.454E-04	4.023E-05	1.429E-05	4.297E-06	9.607E-07	0.000E+00	0.000E+00
13	2.999E-04	1.070E-04	6.654E-05	3.047E-05	8.544E-06	0.000E+00	0.000E+00	0.000E+00
14	2.080E-04	1.097E-04	4.645E-05	1.632E-05	2.146E-06	9.529E-07	4.529E-07	5.705E-07
15	2.782E-04	1.044E-04	3.063E-05	1.329E-05	4.925E-06	9.493E-07	0.000E+00	0.000E+00
16	2.928E-04	1.406E-04	3.679E-05	1.644E-05	3.209E-06	2.948E-06	0.000E+00	0.000E+00
17	1.873E-04	7.758E-05	4.378E-05	8.054E-06	3.187E-06	9.571E-07	0.000E+00	0.000E+00
18	1.475E-04	5.578E-05	3.338E-05	2.045E-05	3.232E-06	2.975E-06	9.057E-07	0.000E+00
19	1.949E-04	9.350E-05	1.955E-05	1.439E-05	9.654E-06	0.000E+00	0.000E+00	0.000E+00

20	1.986E-04	8.788E-05	5.650E-05	2.414E-05	1.090E-05	1.974E-06	4.552E-07	1.104E-06
21	1.712E-04	7.512E-05	4.951E-05	9.694E-06	1.068E-05	9.529E-07	4.531E-07	0.000E+00
22	2.464E-04	1.026E-04	5.353E-05	2.430E-05	8.603E-06	2.987E-06	4.295E-07	0.000E+00
23	4.921E-04	2.196E-04	8.158E-05	4.225E-05	8.816E-06	1.041E-06	0.000E+00	0.000E+00
24	2.490E-04	1.237E-04	7.699E-05	2.426E-05	7.414E-06	0.000E+00	8.851E-07	0.000E+00
25	3.228E-04	1.470E-04	6.090E-05	1.637E-05	4.334E-06	9.621E-07	4.409E-07	5.754E-07
26	5.321E-04	2.301E-04	9.931E-05	2.804E-05	8.802E-06	4.077E-06	0.000E+00	5.812E-07
27	5.235E-04	2.104E-04	8.297E-05	3.185E-05	1.226E-05	0.000E+00	0.000E+00	0.000E+00
28	1.071E-03	3.620E-04	1.694E-04	5.223E-05	1.242E-05	5.240E-06	0.000E+00	1.202E-06
29	1.398E-03	5.932E-04	2.639E-04	8.544E-05	1.460E-05	2.247E-06	4.957E-07	0.000E+00
30	1.454E-03	4.917E-04	1.883E-04	7.459E-05	7.168E-06	2.226E-06	4.793E-07	0.000E+00
31	1.725E-03	7.087E-04	2.276E-04	8.803E-05	1.833E-05	2.085E-06	4.787E-07	1.137E-06
32	1.071E-03	3.770E-04	1.249E-04	5.067E-05	1.219E-05	1.134E-06	0.000E+00	0.000E+00
33	7.839E-04	2.897E-04	1.581E-04	1.886E-05	7.968E-06	5.271E-06	0.000E+00	0.000E+00
34	2.047E-03	8.763E-04	3.120E-04	1.304E-04	4.322E-05	8.609E-06	6.141E-07	6.169E-07
35	3.891E-03	1.713E-03	9.225E-04	3.010E-04	6.023E-05	7.849E-06	2.057E-06	0.000E+00
36	3.719E-03	1.781E-03	6.778E-04	2.354E-04	4.809E-05	4.326E-06	1.275E-06	0.000E+00
37	2.343E-03	9.482E-04	3.468E-04	9.400E-05	1.237E-05	7.045E-06	0.000E+00	0.000E+00
38	1.352E-03	4.731E-04	1.863E-04	5.754E-05	5.054E-06	0.000E+00	0.000E+00	0.000E+00
39	1.147E-03	3.995E-04	1.638E-04	6.029E-05	1.007E-05	1.211E-06	0.000E+00	0.000E+00
40	8.218E-04	2.435E-04	8.576E-05	3.783E-05	3.594E-06	0.000E+00	0.000E+00	0.000E+00
41	4.993E-04	2.033E-04	6.784E-05	1.901E-05	2.325E-06	0.000E+00	0.000E+00	5.903E-07
42	4.410E-04	1.522E-04	6.032E-05	2.422E-05	1.109E-06	0.000E+00	0.000E+00	6.076E-07
43	4.693E-04	1.513E-04	3.917E-05	5.094E-06	2.226E-06	1.091E-06	0.000E+00	0.000E+00
44	3.169E-04	1.303E-04	3.233E-05	1.174E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
45	2.606E-04	6.658E-05	3.773E-05	9.804E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
46	1.791E-04	4.670E-05	2.776E-05	3.394E-06	1.131E-06	9.814E-07	0.000E+00	5.511E-07
47	2.207E-04	7.941E-05	1.905E-05	4.537E-06	1.053E-06	9.127E-07	4.085E-07	0.000E+00
48	1.534E-04	3.535E-05	1.658E-05	3.254E-06	2.104E-06	0.000E+00	4.594E-07	0.000E+00
49	1.208E-04	4.603E-05	1.002E-05	3.246E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
50	1.494E-04	3.553E-05	6.719E-06	4.809E-06	1.110E-06	9.629E-07	0.000E+00	0.000E+00
51	1.452E-04	3.330E-05	1.321E-05	3.136E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
52	8.927E-05	4.010E-05	3.246E-06	3.224E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
53	1.067E-04	2.952E-05	6.692E-06	1.564E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
54	1.259E-04	1.612E-05	1.967E-05	1.563E-06	1.106E-06	1.018E-06	0.000E+00	0.000E+00
55	8.545E-05	4.318E-05	6.869E-06	1.559E-06	1.039E-06	0.000E+00	0.000E+00	5.685E-07
56	7.304E-05	1.055E-05	1.653E-05	4.759E-06	1.039E-06	0.000E+00	0.000E+00	0.000E+00
57	6.959E-05	1.052E-05	1.689E-05	1.551E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
58	7.945E-05	1.356E-05	6.631E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
59	7.599E-05	8.061E-06	1.003E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

52	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
53	1.656E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
54	1.654E-06	1.495E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
55	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
56	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
57	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
58	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
59	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
60	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
61	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
62	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
63	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
64	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
65	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
66	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
67	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
68	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
69	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
70	0.000E+00	0.000E+00	0.000E+00	8.664E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
71	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
72	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
73	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
74	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
75	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
76	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.258E-07	0.000E+00	0.000E+00
77	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
78	1.612E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
79	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
80	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.714E-07
81	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.880E-07
82	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
83	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
5	4	2	0	0	0	1	0
12	7	4	3	0	0	1	1
12	6	3	1	1	0	0	0
23	13	7	3	2	0	0	1

24	19	6	5	2	0	0	0
48	21	8	7	2	0	1	0
59	25	5	12	4	1	0	0
52	27	9	5	1	0	1	0
80	26	9	2	1	1	1	0
76	30	13	7	3	0	0	0
95	50	16	11	4	1	2	0
125	54	12	9	4	1	0	0
97	40	20	19	8	0	0	0
68	41	14	10	2	1	1	1
98	42	10	9	5	1	0	0
95	52	11	10	3	3	0	0
61	29	13	5	3	1	0	0
48	21	10	13	3	3	2	0
64	35	6	9	9	0	0	0
65	33	17	15	10	2	1	2
56	28	15	6	10	1	1	0
80	38	16	15	8	3	1	0
157	80	24	26	8	1	0	0
81	46	23	15	7	0	2	0
104	54	18	10	4	1	1	1
167	83	29	17	8	4	0	1
165	75	24	19	11	0	0	0
320	124	47	30	11	5	0	2
403	196	70	47	12	2	1	0
419	163	50	41	6	2	1	0
527	248	64	51	16	2	1	2
312	125	33	28	10	1	0	0
237	100	44	11	7	5	0	0
530	256	73	63	31	7	1	1
761	377	161	114	34	5	3	0
677	357	112	84	26	2	2	0
547	252	74	42	8	5	0	0
369	148	47	30	4	0	0	0
318	126	42	32	8	1	0	0
237	80	23	21	3	0	0	0
151	70	19	11	2	0	0	1
134	53	17	14	1	0	0	1
143	53	11	3	2	1	0	0
98	46	9	7	0	0	0	0

82	24	11	6	0	0	0	0
57	17	8	2	1	1	0	1
76	31	6	3	1	1	1	0
50	13	5	2	2	0	1	0
39	17	3	2	0	0	0	0
48	13	2	3	1	1	0	0
47	12	4	2	0	0	0	0
29	15	1	2	0	0	0	0
35	11	2	1	0	0	0	0
41	6	6	1	1	1	0	0
28	16	2	1	1	0	0	1
24	4	5	3	1	0	0	0
23	4	5	1	0	0	0	0
26	5	2	0	0	0	0	0
25	3	3	0	0	0	0	0
26	6	3	2	1	0	0	0
31	5	3	0	0	0	1	0
34	8	2	1	2	0	1	0
33	7	2	0	1	0	0	0
18	6	2	1	0	0	0	0
13	3	1	2	0	0	1	1
9	4	1	2	0	0	0	0
10	9	1	0	0	1	1	1
18	2	0	0	0	0	0	0
10	7	0	0	0	0	0	0
9	4	0	1	0	0	0	0
4	6	0	0	1	0	0	0
10	2	0	0	0	0	2	0
10	5	0	1	1	0	0	0
8	0	0	0	0	1	0	0
7	1	2	2	0	1	0	0
8	1	1	0	0	0	0	0
5	0	0	0	0	0	0	0
11	0	0	0	0	0	1	0
7	3	1	0	1	0	0	0
9	2	0	0	0	0	0	0
6	1	2	0	1	0	0	0
1	1	0	0	0	0	0	0
8	2	0	0	0	0	0	0

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	1	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	1	0	0	0	0	0	0
2	1	0	1	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
2	1	0	0	0	0	0	0
2	1	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	1	1	1	0	0	0	0
2	0	0	1	0	0	0	0
1	1	0	0	0	0	0	0
0	1	1	0	0	0	0	0
0	3	0	0	0	0	0	0
1	0	0	1	0	0	0	0
2	0	0	0	1	0	0	0
5	0	1	0	0	0	0	0
2	0	0	1	0	0	0	0
3	0	0	0	0	0	0	0
7	0	0	0	0	0	0	1
3	0	0	1	0	1	0	1
5	0	0	0	0	0	0	0
4	3	1	0	0	0	0	0
13	1	0	0	0	0	0	0
10	6	0	0	0	0	0	0
8	1	0	0	0	0	0	0
2	1	0	0	0	0	0	0
17	1	0	0	1	0	0	0
33	4	0	0	0	1	0	0
20	3	1	0	0	1	0	0

10	3	0	0	0	0	0	0
0	1	0	0	0	0	0	1
5	1	0	0	0	0	0	0
0	1	0	0	0	0	0	0
2	0	0	0	0	0	1	0
2	0	0	0	0	0	0	0
0	1	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
1	1	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	1	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	1	0	0

0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.3131 \quad (0.2767, 0.3495)$$

$$b = -0.276 \quad (-0.291, -0.261)$$

$$c = 6.767e-005 \quad (-0.0009624, 0.001098)$$

$$d = -0.01661 \quad (-0.405, 0.3718)$$

goftotal =

$$sse: 8.2218e-008$$

$$rsquare: 0.9999$$

$$dfe: 4$$

$$adjrsquare: 0.9998$$

$$rmse: 1.4337e-004$$

ctotal =

General model Exp1:

$$ctotal(x) = a \cdot \exp(b \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.06995 \quad (0.01691, 0.123)$$

$$b = -0.1954 \quad (-0.2341, -0.1566)$$

goftotal =

sse: 4.6016e-009
rsquare: 9.9786e-001
dfe: 3
adjrsquare: 9.9715e-001
rmse: 3.9165e-005

Event 68 and 68A	Date	Time*	Location*	Summing interval*				
	9-Nov-02	1323	S12W29	Nov 9 1400 to Nov 11 2300				
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	2.875E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2	3.057E-06	2.674E-06	0.000E+00	0.000E+00	1.068E-06	9.829E-07	0.000E+00	0.000E+00
3	8.822E-06	1.574E-05	6.461E-06	3.111E-06	2.140E-06	0.000E+00	4.155E-07	0.000E+00
4	4.520E-05	3.427E-05	9.700E-06	7.799E-06	1.013E-06	0.000E+00	0.000E+00	0.000E+00
5	1.541E-04	1.131E-04	5.812E-05	1.477E-05	4.813E-06	8.853E-07	4.240E-07	5.253E-07
6	2.408E-04	1.388E-04	5.973E-05	2.628E-05	6.569E-06	2.987E-06	4.269E-07	0.000E+00
7	6.322E-04	2.107E-04	1.175E-04	3.523E-05	8.894E-06	2.066E-06	4.455E-07	0.000E+00
8	1.309E-03	6.529E-04	2.627E-04	9.759E-05	1.967E-05	2.151E-06	4.927E-07	5.880E-07
9	2.516E-03	1.112E-03	5.111E-04	1.834E-04	3.088E-05	5.529E-06	1.968E-06	0.000E+00
10	3.408E-03	1.593E-03	6.518E-04	2.328E-04	3.681E-05	1.069E-05	1.015E-06	0.000E+00
11	7.213E-03	2.895E-03	1.140E-03	3.033E-04	6.920E-05	9.949E-06	7.336E-07	0.000E+00
12	8.495E-03	3.327E-03	1.425E-03	4.060E-04	6.451E-05	9.898E-06	6.249E-07	0.000E+00
13	1.396E-02	4.680E-03	1.787E-03	4.753E-04	8.091E-05	8.402E-06	0.000E+00	0.000E+00
14	1.367E-02	4.742E-03	1.461E-03	4.149E-04	6.623E-05	6.634E-06	0.000E+00	0.000E+00
15	1.371E-02	4.705E-03	1.874E-03	3.939E-04	9.000E-05	9.754E-06	0.000E+00	0.000E+00
16	1.030E-02	3.396E-03	1.103E-03	3.691E-04	5.224E-05	8.054E-06	9.257E-07	0.000E+00
17	8.226E-03	2.665E-03	1.149E-03	2.908E-04	4.889E-05	5.636E-06	7.371E-07	0.000E+00
18	3.258E-03	1.218E-03	4.209E-04	1.286E-04	1.692E-05	2.825E-06	1.532E-06	0.000E+00
19	3.134E-03	1.099E-03	4.516E-04	1.427E-04	2.689E-05	2.412E-06	5.426E-07	0.000E+00
20	2.476E-03	9.084E-04	2.768E-04	1.006E-04	1.757E-05	3.354E-06	0.000E+00	0.000E+00
21	3.189E-03	1.064E-03	3.592E-04	9.675E-05	1.644E-05	2.363E-06	0.000E+00	0.000E+00
22	3.979E-03	1.215E-03	4.022E-04	1.181E-04	2.999E-05	2.698E-06	6.222E-07	0.000E+00
23	2.848E-03	1.016E-03	3.056E-04	1.315E-04	1.968E-05	5.203E-06	5.706E-07	0.000E+00
24	2.650E-03	8.747E-04	2.868E-04	9.365E-05	2.091E-05	1.351E-06	0.000E+00	0.000E+00
25	2.231E-03	6.692E-04	2.741E-04	9.356E-05	1.358E-05	3.693E-06	0.000E+00	7.364E-07
26	1.632E-03	5.482E-04	2.079E-04	6.164E-05	3.942E-06	1.085E-06	5.182E-07	0.000E+00
27	1.914E-03	6.237E-04	1.843E-04	6.313E-05	1.320E-05	1.254E-06	0.000E+00	0.000E+00
28	1.876E-03	5.611E-04	2.513E-04	5.342E-05	5.301E-06	1.290E-06	0.000E+00	0.000E+00

29	1.898E-03	4.857E-04	2.280E-04	5.016E-05	9.281E-06	5.958E-06	0.000E+00	7.085E-07
30	2.120E-03	6.914E-04	2.496E-04	7.538E-05	4.256E-06	1.312E-06	0.000E+00	0.000E+00
31	1.601E-03	4.820E-04	2.141E-04	5.371E-05	6.822E-06	3.851E-06	5.184E-07	0.000E+00
32	1.450E-03	4.183E-04	1.292E-04	3.818E-05	8.139E-06	0.000E+00	5.153E-07	0.000E+00
33	1.288E-03	4.198E-04	1.324E-04	3.678E-05	5.231E-06	1.183E-06	0.000E+00	0.000E+00
34	1.010E-03	2.112E-04	1.338E-04	4.067E-05	8.715E-06	0.000E+00	0.000E+00	0.000E+00
35	9.587E-04	2.459E-04	1.106E-04	3.997E-05	1.251E-06	1.149E-06	0.000E+00	0.000E+00
36	7.530E-04	2.258E-04	6.235E-05	1.614E-05	5.952E-06	0.000E+00	4.835E-07	0.000E+00
37	6.645E-04	1.602E-04	4.046E-05	1.961E-05	2.192E-06	0.000E+00	0.000E+00	0.000E+00
38	4.581E-04	1.812E-04	6.469E-05	1.383E-05	1.173E-06	1.036E-06	4.875E-07	0.000E+00
39	4.024E-04	1.290E-04	4.190E-05	6.681E-06	1.090E-06	0.000E+00	0.000E+00	0.000E+00
40	2.540E-04	4.849E-05	2.009E-05	9.876E-06	1.119E-06	0.000E+00	4.611E-07	0.000E+00
41	2.436E-04	5.672E-05	2.678E-05	1.671E-06	0.000E+00	0.000E+00	4.336E-07	0.000E+00
42	1.539E-04	6.788E-05	2.677E-05	5.011E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
43	1.693E-04	4.846E-05	3.250E-06	8.023E-06	2.092E-06	9.621E-07	0.000E+00	0.000E+00
44	1.408E-04	3.240E-05	3.436E-06	6.446E-06	1.044E-06	0.000E+00	9.137E-07	0.000E+00
45	1.584E-04	2.972E-05	1.011E-05	0.000E+00	0.000E+00	0.000E+00	4.289E-07	0.000E+00
46	1.164E-04	3.986E-05	1.027E-05	7.965E-06	1.101E-06	1.016E-06	0.000E+00	0.000E+00
47	1.045E-04	3.196E-05	1.325E-05	4.834E-06	0.000E+00	0.000E+00	0.000E+00	5.652E-07
48	7.607E-05	2.148E-05	6.763E-06	4.820E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
49	2.061E-05	1.052E-05	6.545E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
50	5.124E-05	1.052E-05	6.347E-06	1.623E-06	1.085E-06	0.000E+00	0.000E+00	5.576E-07
51	5.702E-05	1.551E-05	6.557E-06	1.625E-06	0.000E+00	0.000E+00	0.000E+00	5.271E-07
52	4.871E-05	1.037E-05	9.922E-06	0.000E+00	0.000E+00	9.414E-07	0.000E+00	0.000E+00
53	4.777E-05	4.905E-06	0.000E+00	1.513E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
54	3.605E-05	7.644E-06	3.369E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
55	2.731E-05	1.275E-05	3.169E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
56	3.263E-05	5.259E-06	3.173E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
57	2.662E-05	1.338E-05	3.173E-06	1.624E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
58	4.479E-05	5.409E-06	0.000E+00	4.768E-06	1.020E-06	0.000E+00	0.000E+00	1.114E-06

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.175E-07	0.000E+00
2	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
3	4.708E-06	1.361E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
4	3.039E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
5	6.115E-06	8.279E-06	3.395E-06	0.000E+00	0.000E+00	4.726E-07	0.000E+00	2.569E-07

46	3.102E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
47	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
48	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.748E-07
49	1.527E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
50	3.051E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
51	1.623E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.901E-07
52	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.344E-07	0.000E+00
53	2.934E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
54	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
55	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
56	1.619E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
57	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
58	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
1	0	0	0	0	0	0	0
1	1	0	0	1	1	0	0
3	6	2	2	2	0	1	0
15	13	3	5	1	0	0	0
54	46	19	10	5	1	1	1
78	52	18	17	5	3	1	0
198	76	34	21	8	2	1	0
377	218	70	54	16	2	1	1
713	359	133	99	25	5	4	0
916	488	163	120	29	9	2	0
1653	763	242	135	47	7	1	0
1882	844	291	172	41	7	1	0
1968	784	241	133	35	4	0	0
2097	829	206	121	29	3	0	0
1782	696	223	98	33	4	0	0
1646	621	162	112	24	4	1	0
1469	542	190	100	25	3	1	0
854	364	102	64	13	2	3	0
844	339	111	73	21	2	1	0
696	292	72	54	14	3	0	0
883	337	92	51	13	2	0	0
929	325	87	53	20	2	1	0
709	288	69	63	14	4	1	0
631	238	63	43	14	1	0	0

0	0	0	0	0	0	0	0
3	1	0	0	0	0	0	0
2	0	0	0	0	0	0	0
4	6	2	0	0	1	0	1
10	1	1	0	0	0	0	0
8	3	1	0	1	0	0	0
9	8	0	1	0	0	0	0
26	2	2	0	0	0	0	0
24	1	2	0	0	0	0	0
29	6	0	0	0	0	0	0
35	1	1	1	0	0	0	0
17	4	0	1	1	0	0	0
24	5	0	0	0	0	0	0
14	2	1	0	0	0	0	0
20	2	0	1	0	0	0	0
18	3	1	0	0	0	0	0
12	6	0	0	0	0	0	0
21	5	1	0	0	0	0	0
15	0	2	1	0	0	0	0
17	0	1	0	0	0	0	0
10	4	0	1	0	1	0	0
18	6	0	0	0	0	0	0
15	4	0	1	0	0	0	0
11	5	0	0	0	0	0	0
3	2	0	0	0	0	0	0
9	1	0	0	0	0	0	0
9	1	0	0	0	0	0	0
14	1	1	0	0	0	0	0
9	0	0	0	0	0	0	0
7	3	0	0	0	0	0	0
10	1	0	1	0	0	1	0
10	1	0	0	0	0	0	0
8	0	0	0	0	0	0	0
8	0	0	0	0	0	1	0
4	1	0	0	0	0	0	0
5	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
2	1	0	0	0	0	0	0
1	2	0	0	0	0	0	0
5	0	0	0	0	0	0	0

2	1	0	0	0	0	0	0
3	1	0	0	0	0	1	0
2	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
1	0	0	0	0	0	0	1
0	0	0	0	0	0	1	0
2	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 1.665 \quad (1.561, 1.769)$$

$$b = -0.3148 \quad (-0.3228, -0.3068)$$

$$c = 0.0002522 \quad (-0.001635, 0.00214)$$

$$d = -0.02052 \quad (-0.2296, 0.1886)$$

goftotal =

$$sse: 2.3727e-007$$

$$rsquare: 9.9998e-001$$

$$dfe: 4$$

$$adjrsquare: 9.9996e-001$$

$$rmse: 2.4355e-004$$

ctotal =

General model Exp1:

$$ctotal(x) = a * \exp(b * x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.3795 \text{ (0.09674, 0.6623)}$$

$$b = -0.2337 \text{ (-0.2722, -0.1952)}$$

goftotal =

sse: 1.7843e-008

rsquare: 9.9881e-001

dfe: 3

adjrsquare: 9.9841e-001

rmse: 7.7122e-005

Event 69 and 69 A	Date	Time*	Location*	Summing interval*				
	28-May-03	27	S07W17	May 28 0200 to May 30 2300				
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed φ	Listed φ	Listed φ	Listed φ	Listed φ	Listed φ	Listed φ	Listed φ
1	0.000E+00	2.519E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.509E-07
3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
4	0.000E+00	0.000E+00	3.144E-06	1.606E-06	1.072E-06	0.000E+00	4.169E-07	0.000E+00
5	6.147E-06	0.000E+00	0.000E+00	0.000E+00	2.153E-06	9.893E-07	4.426E-07	0.000E+00
6	6.198E-06	2.545E-06	0.000E+00	0.000E+00	1.019E-06	0.000E+00	0.000E+00	5.600E-07
7	5.891E-06	1.048E-05	1.663E-05	1.640E-06	4.194E-06	9.493E-07	1.754E-06	0.000E+00
8	1.540E-05	1.071E-05	6.468E-06	4.668E-06	1.100E-06	0.000E+00	4.278E-07	0.000E+00
9	3.381E-05	2.400E-05	1.674E-05	1.666E-06	3.281E-06	9.693E-07	0.000E+00	5.725E-07
10	1.531E-05	2.417E-05	1.321E-05	4.719E-06	6.425E-06	1.926E-06	2.210E-06	0.000E+00
11	4.661E-05	3.246E-05	3.394E-05	1.300E-05	5.501E-06	1.955E-06	4.657E-07	0.000E+00
12	5.664E-05	2.738E-05	3.079E-05	8.414E-06	6.684E-06	6.094E-06	4.685E-07	5.863E-07
13	9.115E-05	5.406E-05	4.459E-05	1.977E-05	1.447E-05	7.063E-06	8.804E-07	0.000E+00
14	1.604E-04	1.186E-04	5.436E-05	2.817E-05	1.315E-05	1.043E-06	2.310E-06	0.000E+00
15	1.814E-04	1.371E-04	6.349E-05	3.585E-05	1.205E-05	4.018E-06	1.800E-06	5.466E-07
16	2.478E-04	1.491E-04	4.842E-05	3.646E-05	1.639E-05	1.881E-06	8.703E-07	0.000E+00
17	3.700E-04	1.818E-04	1.130E-04	4.134E-05	1.101E-05	5.032E-06	1.791E-06	0.000E+00
18	6.674E-04	3.483E-04	1.704E-04	6.372E-05	2.483E-05	2.056E-06	4.684E-07	0.000E+00
19	4.800E-04	2.287E-04	1.197E-04	5.182E-05	1.954E-05	4.096E-06	1.805E-06	5.513E-07

20	5.871E-04	2.513E-04	1.270E-04	4.801E-05	1.194E-05	8.150E-06	1.328E-06	5.537E-07
21	6.338E-04	3.148E-04	1.483E-04	7.222E-05	1.330E-05	1.025E-05	0.000E+00	0.000E+00
22	8.330E-04	3.292E-04	1.816E-04	5.718E-05	1.785E-05	9.304E-06	1.345E-06	0.000E+00
23	8.789E-04	3.302E-04	2.274E-04	7.207E-05	2.347E-05	7.259E-06	2.353E-06	0.000E+00
24	1.087E-03	4.814E-04	2.296E-04	7.988E-05	2.709E-05	3.103E-06	4.554E-07	5.671E-07
25	1.108E-03	3.980E-04	2.212E-04	7.118E-05	2.714E-05	4.231E-06	1.390E-06	5.684E-07
26	9.019E-04	4.312E-04	1.954E-04	8.004E-05	2.373E-05	4.164E-06	0.000E+00	0.000E+00
27	1.349E-03	6.431E-04	2.607E-04	1.109E-04	2.541E-05	7.530E-06	4.913E-07	6.187E-07
28	1.386E-03	4.861E-04	2.426E-04	7.051E-05	1.827E-05	6.276E-06	1.915E-06	0.000E+00
29	1.582E-03	6.134E-04	2.684E-04	1.043E-04	1.861E-05	5.321E-06	9.643E-07	0.000E+00
30	1.712E-03	6.497E-04	2.676E-04	1.104E-04	2.459E-05	7.529E-06	9.603E-07	0.000E+00
31	1.800E-03	7.438E-04	3.225E-04	1.309E-04	3.400E-05	5.544E-06	9.556E-07	0.000E+00
32	2.132E-03	8.207E-04	4.099E-04	1.601E-04	4.094E-05	9.219E-06	4.661E-07	0.000E+00
33	2.577E-03	1.070E-03	4.818E-04	1.485E-04	4.649E-05	6.746E-06	5.187E-07	1.294E-06
34	2.866E-03	1.181E-03	5.148E-04	2.109E-04	3.810E-05	7.794E-06	1.981E-06	1.229E-06
35	6.346E-03	2.235E-03	8.957E-04	3.466E-04	5.844E-05	1.515E-05	5.511E-07	8.907E-07
36	8.855E-03	3.182E-03	1.301E-03	4.659E-04	1.046E-04	1.624E-05	7.514E-07	0.000E+00
37	1.033E-02	3.411E-03	1.356E-03	5.061E-04	9.444E-05	2.133E-05	0.000E+00	0.000E+00
38	1.318E-02	4.454E-03	1.788E-03	5.256E-04	6.974E-05	1.393E-05	3.560E-06	1.118E-06
39	1.370E-02	4.669E-03	1.559E-03	5.113E-04	1.029E-04	1.312E-05	0.000E+00	0.000E+00
40	1.532E-02	4.790E-03	1.708E-03	4.841E-04	7.152E-05	7.364E-06	3.976E-06	0.000E+00
41	1.325E-02	4.180E-03	1.472E-03	4.217E-04	7.768E-05	9.299E-06	1.003E-06	0.000E+00
42	4.540E-03	1.410E-03	3.897E-04	1.199E-04	2.014E-05	1.358E-06	1.266E-06	0.000E+00
43	3.407E-03	9.440E-04	3.296E-04	8.687E-05	1.307E-05	1.351E-06	0.000E+00	0.000E+00
44	2.594E-03	7.073E-04	2.928E-04	8.168E-05	9.435E-06	0.000E+00	0.000E+00	0.000E+00
45	2.289E-03	6.934E-04	2.464E-04	7.055E-05	1.246E-05	3.774E-06	0.000E+00	0.000E+00
46	1.697E-03	5.501E-04	1.179E-04	5.109E-05	5.169E-06	1.144E-06	0.000E+00	0.000E+00
47	1.584E-03	3.730E-04	1.612E-04	3.873E-05	3.641E-06	0.000E+00	0.000E+00	0.000E+00
48	9.068E-04	2.389E-04	1.051E-04	2.926E-05	5.525E-06	0.000E+00	8.927E-07	5.597E-07
49	7.746E-04	1.695E-04	6.203E-05	2.201E-05	3.429E-06	1.030E-06	0.000E+00	0.000E+00
50	5.667E-04	1.251E-04	6.012E-05	8.416E-06	6.799E-06	0.000E+00	0.000E+00	0.000E+00
51	4.527E-04	1.213E-04	3.850E-05	1.338E-05	1.166E-06	1.016E-06	0.000E+00	0.000E+00
52	4.362E-04	1.154E-04	2.807E-05	1.161E-05	4.549E-06	0.000E+00	4.769E-07	0.000E+00
53	3.425E-04	9.127E-05	3.164E-05	1.323E-05	0.000E+00	9.914E-07	0.000E+00	5.544E-07
54	3.569E-04	9.423E-05	2.086E-05	9.946E-06	1.139E-06	0.000E+00	0.000E+00	0.000E+00
55	2.742E-04	7.708E-05	2.741E-05	8.296E-06	1.134E-06	1.046E-06	0.000E+00	0.000E+00
56	2.209E-04	3.040E-05	2.749E-05	1.690E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
57	2.960E-04	6.222E-05	3.030E-05	5.063E-06	1.062E-06	1.041E-06	4.654E-07	0.000E+00
58	1.578E-04	5.509E-05	1.642E-05	9.783E-06	2.182E-06	0.000E+00	0.000E+00	0.000E+00
59	2.351E-04	2.707E-05	2.710E-05	6.616E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00

60	1.946E-04	7.067E-05	2.398E-05	4.774E-06	1.121E-06	0.000E+00	0.000E+00	5.563E-07
61	4.486E-04	1.028E-04	3.193E-05	1.200E-05	1.107E-06	0.000E+00	4.475E-07	0.000E+00
62	5.882E-04	1.367E-04	5.076E-05	8.934E-06	2.341E-06	0.000E+00	0.000E+00	0.000E+00
63	3.293E-04	7.864E-05	2.113E-05	8.611E-06	0.000E+00	1.002E-06	0.000E+00	0.000E+00
64	1.351E-04	2.554E-05	3.305E-06	4.586E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
65	1.492E-04	3.215E-05	3.480E-06	1.581E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
66	1.728E-04	4.091E-05	1.013E-05	3.290E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
67	1.843E-04	2.917E-05	6.797E-06	1.686E-06	0.000E+00	0.000E+00	0.000E+00	5.799E-07
68	1.432E-04	4.321E-05	1.724E-05	1.691E-06	0.000E+00	0.000E+00	4.367E-07	0.000E+00
69	1.042E-04	1.357E-05	3.264E-06	3.239E-06	0.000E+00	0.000E+00	0.000E+00	5.406E-07
70	5.795E-05	2.453E-05	3.211E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.316E-07	0.000E+00
4	0.000E+00	0.000E+00	1.686E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
5	0.000E+00	0.000E+00	0.000E+00	1.670E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
6	0.000E+00	1.460E-06	0.000E+00	8.229E-07	0.000E+00	0.000E+00	2.224E-07	0.000E+00
7	1.544E-06	0.000E+00	0.000E+00	8.221E-07	5.799E-07	5.325E-07	0.000E+00	0.000E+00
8	1.281E-05	2.805E-06	7.271E-06	8.793E-07	0.000E+00	5.354E-07	0.000E+00	0.000E+00
9	1.441E-05	4.518E-06	3.516E-06	1.781E-06	0.000E+00	5.124E-07	0.000E+00	0.000E+00
10	1.116E-05	1.416E-06	1.751E-06	0.000E+00	1.177E-06	5.107E-07	0.000E+00	0.000E+00
11	1.306E-05	9.048E-06	5.422E-06	1.746E-06	5.954E-07	5.455E-07	0.000E+00	0.000E+00
12	1.500E-05	1.541E-06	5.477E-06	9.043E-07	1.177E-06	0.000E+00	0.000E+00	0.000E+00
13	9.964E-06	1.198E-05	1.786E-06	4.371E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
14	2.480E-05	4.499E-06	1.793E-06	9.050E-07	6.034E-07	5.480E-07	0.000E+00	0.000E+00
15	2.969E-05	4.379E-06	0.000E+00	3.492E-06	5.638E-07	5.477E-07	0.000E+00	0.000E+00
16	3.088E-05	9.557E-06	9.951E-06	2.477E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
17	2.942E-05	1.037E-05	1.886E-06	5.274E-06	1.767E-06	0.000E+00	0.000E+00	0.000E+00
18	4.173E-05	1.191E-05	7.344E-06	3.507E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
19	3.449E-05	6.071E-06	5.499E-06	2.705E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
20	3.027E-05	9.142E-06	5.378E-06	2.731E-06	5.714E-07	0.000E+00	0.000E+00	0.000E+00
21	4.811E-05	8.883E-06	0.000E+00	1.783E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
22	6.021E-05	1.239E-05	3.737E-06	3.521E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
23	5.197E-05	1.533E-05	5.794E-06	8.700E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
24	5.788E-05	1.218E-05	5.626E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

65	1.676E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
66	1.590E-06	0.000E+00	1.775E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
67	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
68	1.574E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
69	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.974E-07
70	1.543E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.761E-07

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	1	0	0	0	0	0	0
0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0
0	0	1	1	1	0	1	0
2	0	0	0	2	1	1	0
2	1	0	0	1	0	0	1
2	4	5	1	4	1	4	0
5	4	2	3	1	0	1	0
11	9	5	1	3	1	0	1
5	9	4	3	6	2	5	0
15	12	10	8	5	2	1	0
18	10	9	5	6	6	1	1
29	20	13	12	13	7	2	0
51	43	16	17	12	1	5	0
58	50	19	22	11	4	4	1
85	58	15	24	16	2	2	0
117	66	33	25	10	5	4	0
209	125	49	38	22	2	1	0
152	83	35	31	18	4	4	1
186	91	37	29	11	8	3	1
199	113	43	43	12	10	0	0
260	118	52	34	16	9	3	0
274	117	65	43	21	7	5	0
336	170	65	47	24	3	1	1
343	140	63	42	24	4	3	1
279	152	56	47	21	4	0	0
407	221	72	64	22	7	1	1
422	169	68	41	16	6	4	0
475	210	74	60	16	5	2	0
511	221	73	63	21	7	2	0
533	252	88	74	29	5	2	0

673	297	119	97	37	9	1	0
738	351	127	81	38	6	1	2
811	382	134	114	31	7	4	2
1471	595	193	156	39	11	1	1
1756	720	237	176	59	10	1	0
1891	712	230	177	50	12	0	0
2087	808	261	159	32	7	4	1
2053	802	216	146	44	6	0	0
2081	756	216	127	28	3	4	0
1989	737	210	121	36	5	1	0
1010	359	79	51	13	1	2	0
821	260	73	40	9	1	0	0
665	207	69	40	7	0	0	0
599	207	59	35	9	3	0	0
466	172	30	27	4	1	0	0
445	120	42	21	3	0	0	0
289	87	31	18	5	0	2	1
235	59	17	13	3	1	0	0
174	44	17	5	6	0	0	0
140	43	11	8	1	1	0	0
137	41	8	7	4	0	1	0
108	33	9	8	0	1	0	1
113	34	6	6	1	0	0	0
87	28	8	5	1	1	0	0
70	11	8	1	0	0	0	0
94	23	9	3	1	1	1	0
51	20	5	6	2	0	0	0
76	10	8	4	0	0	0	0
62	26	7	3	1	0	0	1
138	36	9	7	1	0	1	0
176	47	14	5	2	0	0	0
103	28	6	5	0	1	0	0
46	10	1	3	0	0	0	0
48	12	1	1	0	0	0	0
55	15	3	2	0	0	0	0
59	11	2	1	0	0	0	1
46	16	5	1	0	0	1	0
34	5	1	2	0	0	0	1
19	9	1	0	0	0	0	0

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	1	0
0	0	1	0	0	0	0	0
0	0	0	2	0	0	0	0
0	1	0	1	0	0	1	0
1	0	0	1	1	1	0	0
8	2	4	1	0	1	0	0
9	3	2	2	0	1	0	0
7	1	1	0	2	1	0	0
8	6	3	2	1	1	0	0
9	1	3	1	2	0	0	0
6	8	1	5	0	0	0	0
15	3	1	1	1	1	0	0
18	3	0	4	1	1	0	0
20	7	6	3	0	0	0	0
18	7	1	6	3	0	0	0
25	8	4	4	0	0	0	0
21	4	3	3	0	0	0	0
18	6	3	3	1	0	0	0
29	6	0	2	0	0	0	0
36	8	2	4	0	0	0	0
31	10	3	1	0	0	0	0
34	8	3	0	0	0	0	0
38	7	5	1	1	1	0	0
33	6	2	1	0	0	0	0
37	3	1	2	1	0	1	0
28	5	3	0	0	0	0	0
29	5	4	1	0	0	0	0
44	9	0	3	1	0	0	0
43	8	0	3	0	0	0	0
60	14	3	3	1	1	0	0
46	11	0	3	0	0	0	0
64	8	1	1	1	0	0	0
88	12	1	0	0	0	0	0
110	16	4	2	3	0	0	1

80	22	1	1	0	0	0	0
96	20	4	0	0	0	0	0
88	10	3	1	2	0	0	0
64	14	1	0	0	0	0	0
75	10	1	2	0	0	0	0
37	11	0	1	0	0	0	0
37	7	2	2	0	0	0	0
17	5	2	0	0	0	0	0
17	4	1	0	0	0	0	0
11	1	0	0	0	0	0	0
11	1	1	0	0	0	0	0
9	1	0	0	0	0	0	0
5	1	0	0	0	0	0	0
8	2	1	0	0	0	0	1
5	1	1	0	0	0	0	0
4	1	0	0	0	0	0	1
2	1	0	0	0	0	0	1
3	2	1	0	0	0	0	0
3	1	0	0	0	0	0	0
1	0	0	0	0	1	0	0
2	2	0	0	0	0	0	0
0	1	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
2	1	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
1	0	1	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1
1	0	0	0	0	0	0	1

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 1.836 \quad (1.626, 2.046)$$

$$b = -0.3277 \quad (-0.3451, -0.3102)$$

$$c = 0.004181 \quad (-0.007231, 0.01559)$$

$$d = -0.06045 \quad (-0.1613, 0.04043)$$

goftotal =

$$sse: 3.4122e-007$$

$$rsquare: 9.9997e-001$$

$$dfe: 4$$

$$adjrsquare: 9.9994e-001$$

$$rmse: 2.9207e-004$$

ctotal =

General model Exp1:

$$ctotal(x) = a \cdot \exp(b \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.2544 \quad (0.05549, 0.4532)$$

$$b = -0.2033 \quad (-0.2434, -0.1632)$$

goftotal =

$$sse: 4.2806e-008$$

$$rsquare: 9.9798e-001$$

$$dfe: 3$$

$$adjrsquare: 9.9730e-001$$

$$rmse: 1.1945e-004$$

36	6.117E-06	0.000E+00	0.000E+00	0.000E+00	1.009E-06	0.000E+00	0.000E+00	0.000E+00
37	8.994E-06	2.671E-06	3.326E-06	0.000E+00	1.008E-06	0.000E+00	0.000E+00	5.194E-07
38	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
39	6.110E-06	7.704E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
40	2.686E-06	0.000E+00	0.000E+00	1.409E-06	0.000E+00	9.173E-07	4.110E-07	5.136E-07
41	3.052E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.400E-07	0.000E+00
42	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
43	3.051E-06	2.514E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
44	0.000E+00	0.000E+00	3.319E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
45	3.049E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
46	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.494E-07

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	1.626E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2	1.666E-06	2.836E-06	0.000E+00	0.000E+00	5.919E-07	0.000E+00	0.000E+00	0.000E+00
3	2.483E-05	1.028E-05	0.000E+00	2.683E-06	1.195E-06	5.430E-07	2.279E-07	0.000E+00
4	7.652E-05	1.505E-05	9.593E-06	2.643E-06	5.836E-07	0.000E+00	0.000E+00	0.000E+00
5	4.008E-05	1.067E-05	1.919E-06	9.164E-07	0.000E+00	0.000E+00	2.564E-07	0.000E+00
6	3.383E-05	9.236E-06	7.374E-06	9.257E-07	5.780E-07	5.619E-07	0.000E+00	0.000E+00
7	2.216E-05	1.374E-05	1.149E-05	3.696E-06	5.952E-07	5.432E-07	0.000E+00	0.000E+00
8	3.960E-05	2.873E-06	5.424E-06	9.020E-07	1.725E-06	0.000E+00	0.000E+00	0.000E+00
9	2.292E-05	3.156E-06	1.896E-06	0.000E+00	6.027E-07	5.551E-07	0.000E+00	0.000E+00
10	1.579E-05	3.258E-06	0.000E+00	0.000E+00	6.416E-07	5.511E-07	2.461E-07	0.000E+00
11	1.049E-05	1.607E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
12	1.013E-05	3.009E-06	1.849E-06	0.000E+00	0.000E+00	5.731E-07	0.000E+00	0.000E+00
13	8.391E-06	1.571E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
14	0.000E+00	2.991E-06	0.000E+00	8.564E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
15	6.533E-06	2.939E-06	1.774E-06	8.436E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
16	6.392E-06	0.000E+00	0.000E+00	8.893E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
17	3.128E-06	2.829E-06	0.000E+00	8.357E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
18	6.426E-06	1.409E-06	1.741E-06	0.000E+00	0.000E+00	0.000E+00	2.258E-07	0.000E+00
19	4.753E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
20	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
21	4.829E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
22	1.636E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
23	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
24	0.000E+00	1.291E-06	0.000E+00	0.000E+00	0.000E+00	4.933E-07	0.000E+00	0.000E+00

25	0.000E+00	0.000E+00	1.706E-06	8.164E-07	0.000E+00	5.276E-07	0.000E+00	0.000E+00
26	0.000E+00	1.462E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
27	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
28	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
29	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
30	0.000E+00	0.000E+00	0.000E+00	8.107E-07	0.000E+00	4.937E-07	0.000E+00	0.000E+00
31	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
32	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
33	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.189E-07	0.000E+00
34	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.321E-07	0.000E+00
35	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.910E-07	0.000E+00	0.000E+00
36	0.000E+00	0.000E+00	1.684E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
37	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
38	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
39	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
40	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
41	1.596E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
42	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
43	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
44	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
45	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
46	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.175E-07	2.685E-07

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
5	3	1	0	1	0	2	2
5	5	0	0	0	0	0	1
30	21	9	7	5	2	0	0
123	73	24	25	23	6	3	0
150	49	20	18	9	6	4	1
147	38	17	23	10	5	1	2
150	46	20	14	8	3	5	1
140	41	13	8	4	1	0	0
101	34	8	11	5	1	1	0
90	26	5	4	5	4	0	0
68	21	12	4	5	1	0	0
60	12	5	7	3	0	3	0
39	11	4	2	2	0	1	0
29	15	3	3	2	2	1	0

28	10	4	1	0	0	0	0
26	2	4	1	1	0	0	0
28	9	0	1	2	0	0	0
16	5	4	3	0	0	1	1
7	4	1	0	1	0	0	0
10	6	4	1	1	0	0	0
2	4	0	2	0	1	0	0
6	5	2	0	0	0	2	0
7	4	1	2	1	2	0	0
7	5	2	4	0	0	1	1
3	3	1	1	2	0	1	0
4	4	0	2	0	0	1	0
5	1	1	0	1	0	0	0
4	2	0	1	0	0	1	0
2	2	0	1	0	0	0	0
0	1	1	0	0	0	0	0
1	1	1	0	0	1	0	0
2	0	1	2	0	0	0	0
4	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
2	0	0	0	1	0	0	0
3	1	1	0	1	0	0	1
0	0	0	0	0	0	0	0
2	3	0	0	0	0	0	0
1	0	0	1	0	1	1	1
1	0	0	0	0	0	1	0
0	0	0	0	0	0	0	0
1	1	0	0	0	0	0	0
0	0	1	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
1	0	0	0	0	0	0	0
1	2	0	0	1	0	0	0
15	7	0	3	2	1	1	0

46	10	5	3	1	0	0	0
24	7	1	1	0	0	1	0
20	6	4	1	1	1	0	0
13	9	6	4	1	1	0	0
24	2	3	1	3	0	0	0
13	2	1	0	1	1	0	0
9	2	0	0	1	1	1	0
6	1	0	0	0	0	0	0
6	2	1	0	0	1	0	0
5	1	0	0	0	0	0	0
0	2	0	1	0	0	0	0
4	2	1	1	0	0	0	0
4	0	0	1	0	0	0	0
2	2	0	1	0	0	0	0
4	1	1	0	0	0	1	0
3	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	1	0	0	0	1	0	0
0	0	1	1	0	1	0	0
0	1	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	1	0	1	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.06277 \quad (0.03129, 0.09425)$$

$$b = -0.3316 \quad (-0.3904, -0.2727)$$

$$c = 3.422e-005 \quad (-0.0001495, 0.0002179)$$

$$d = 0.005967 \quad (-0.09464, 0.1066)$$

goftotal =

$$sse: 2.0728e-008$$

$$rsquare: 0.9980$$

$$dfe: 4$$

$$adjrsquare: 0.9965$$

$$rmse: 7.1986e-005$$

ctotal =

General model Exp1:

$$ctotal(x) = a \cdot \exp(b \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.001065 \quad (-0.0002838, 0.002414)$$

$$b = -0.08434 \quad (-0.1421, -0.02655)$$

goftotal =

$$sse: 1.2957e-009$$

$$rsquare: 9.6373e-001$$

$$dfe: 3$$

$$adjrsquare: 9.5164e-001$$

$$rmse: 2.0782e-005$$

Event 72	Date		Time*	Location*			Summing interval*	
	26-Oct-03		1819	N02W38			Oct 26 1800 to Oct 28 0900	
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	6.248E-05	1.723E-04	2.348E-04	1.708E-04	6.095E-05	2.928E-05	8.371E-06	1.764E-06
2	2.001E-03	1.429E-03	9.387E-04	3.962E-04	1.398E-04	4.563E-05	1.462E-05	0.000E+00
3	4.437E-03	1.723E-03	7.946E-04	3.173E-04	8.392E-05	2.192E-05	4.425E-06	7.493E-07
4	1.315E-02	6.088E-03	2.466E-03	9.756E-04	1.633E-04	4.088E-05	8.814E-06	0.000E+00
5	2.010E-02	7.747E-03	2.868E-03	9.301E-04	1.969E-04	5.022E-05	1.137E-05	0.000E+00
6	1.795E-02	7.298E-03	3.489E-03	1.316E-03	3.861E-04	1.099E-04	2.356E-05	0.000E+00
7	1.324E-02	6.366E-03	3.364E-03	1.465E-03	5.967E-04	1.618E-04	3.642E-05	3.923E-06
8	2.306E-02	1.097E-02	5.797E-03	2.701E-03	9.550E-04	3.245E-04	6.738E-05	8.439E-06
9	2.348E-02	1.219E-02	6.165E-03	3.193E-03	1.199E-03	5.278E-04	1.438E-04	2.700E-05
10	2.408E-02	1.341E-02	7.717E-03	3.677E-03	1.480E-03	4.894E-04	1.762E-04	3.710E-05
11	2.698E-02	1.434E-02	8.099E-03	3.661E-03	1.330E-03	6.135E-04	1.569E-04	3.532E-05
12	2.439E-02	1.175E-02	6.122E-03	2.973E-03	1.155E-03	4.450E-04	1.045E-04	3.371E-05
13	2.383E-02	1.157E-02	6.164E-03	2.882E-03	8.956E-04	3.350E-04	9.696E-05	1.460E-05
14	1.164E-02	5.493E-03	2.736E-03	1.360E-03	4.458E-04	2.009E-04	4.021E-05	7.062E-06
15	4.654E-03	2.360E-03	1.078E-03	5.622E-04	2.041E-04	7.706E-05	2.205E-05	2.749E-06
16	5.872E-03	2.644E-03	1.524E-03	6.877E-04	2.031E-04	6.687E-05	2.284E-05	2.564E-06
17	6.176E-03	2.680E-03	1.380E-03	6.015E-04	1.591E-04	7.045E-05	1.425E-05	2.889E-06
18	2.770E-03	1.346E-03	7.392E-04	2.815E-04	1.020E-04	3.279E-05	1.460E-05	2.010E-06
19	2.305E-03	1.022E-03	5.675E-04	2.527E-04	7.612E-05	2.645E-05	2.972E-06	1.830E-06
20	1.850E-03	8.348E-04	4.413E-04	1.987E-04	6.794E-05	2.706E-05	7.227E-06	1.781E-06
21	1.464E-03	6.688E-04	3.320E-04	1.311E-04	4.169E-05	2.018E-05	6.107E-06	6.091E-07
22	1.375E-03	7.009E-04	3.027E-04	1.387E-04	4.609E-05	1.391E-05	4.851E-06	1.139E-06
23	1.234E-03	5.034E-04	2.674E-04	1.201E-04	4.235E-05	1.392E-05	2.352E-06	0.000E+00
24	1.068E-03	4.257E-04	2.487E-04	9.043E-05	2.890E-05	1.446E-05	2.879E-06	5.701E-07
25	1.004E-03	3.890E-04	2.386E-04	8.797E-05	3.839E-05	6.249E-06	5.089E-06	0.000E+00
26	1.013E-03	3.670E-04	1.894E-04	8.114E-05	2.450E-05	9.277E-06	4.775E-07	5.619E-07
27	9.503E-04	3.719E-04	1.621E-04	9.025E-05	3.466E-05	3.119E-06	2.320E-06	0.000E+00
28	7.943E-04	3.269E-04	1.563E-04	8.195E-05	1.877E-05	1.229E-05	2.789E-06	5.896E-07
29	7.518E-04	3.356E-04	1.592E-04	5.530E-05	1.759E-05	6.205E-06	9.429E-07	5.886E-07
30	7.749E-04	3.719E-04	1.623E-04	7.116E-05	1.988E-05	5.196E-06	2.243E-06	0.000E+00
31	7.587E-04	2.739E-04	1.205E-04	4.972E-05	1.452E-05	3.096E-06	4.424E-07	0.000E+00
32	5.347E-04	2.169E-04	1.233E-04	4.598E-05	1.440E-05	3.002E-06	1.345E-06	5.507E-07
33	3.870E-04	1.816E-04	7.082E-05	3.247E-05	1.512E-05	5.100E-06	4.339E-07	5.421E-07
34	4.054E-04	1.513E-04	6.397E-05	3.905E-05	1.735E-05	3.017E-06	1.325E-06	5.417E-07

35	2.896E-04	1.380E-04	5.715E-05	2.705E-05	1.498E-05	6.929E-06	4.572E-07	0.000E+00
36	2.733E-04	1.261E-04	7.602E-05	2.696E-05	6.519E-06	4.015E-06	0.000E+00	5.362E-07
37	2.567E-04	1.230E-04	7.008E-05	2.868E-05	5.260E-06	3.827E-06	4.287E-07	0.000E+00
38	2.541E-04	1.081E-04	5.348E-05	2.405E-05	1.017E-05	9.460E-07	8.007E-07	1.029E-06
39	2.138E-04	9.972E-05	4.583E-05	2.092E-05	6.486E-06	1.964E-06	4.549E-07	5.685E-07
40	1.113E-04	6.090E-05	2.944E-05	1.407E-05	5.245E-06	9.421E-07	1.266E-06	0.000E+00

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	3.796E-05	2.776E-05	1.156E-05	5.521E-06	2.451E-06	0.000E+00	2.319E-07	0.000E+00
2	1.417E-04	6.186E-05	1.475E-05	7.049E-06	4.683E-06	1.264E-06	2.795E-07	0.000E+00
3	1.034E-04	3.612E-05	1.474E-05	1.051E-06	2.535E-06	0.000E+00	0.000E+00	0.000E+00
4	2.543E-04	6.526E-05	1.477E-05	5.049E-06	1.104E-06	0.000E+00	0.000E+00	0.000E+00
5	3.188E-04	7.571E-05	2.389E-05	9.808E-06	0.000E+00	0.000E+00	4.916E-07	0.000E+00
6	3.246E-04	9.163E-05	3.335E-05	2.134E-05	2.021E-06	9.727E-07	0.000E+00	0.000E+00
7	5.962E-04	2.120E-04	7.757E-05	3.738E-05	8.204E-06	0.000E+00	0.000E+00	0.000E+00
8	1.095E-03	3.667E-04	1.847E-04	8.373E-05	1.718E-05	4.025E-06	0.000E+00	0.000E+00
9	1.345E-03	5.810E-04	3.027E-04	1.334E-04	2.605E-05	9.188E-06	2.878E-06	0.000E+00
10	1.649E-03	5.718E-04	2.710E-04	1.197E-04	3.504E-05	1.523E-05	2.452E-06	0.000E+00
11	1.692E-03	5.300E-04	2.125E-04	1.683E-04	4.474E-05	1.241E-05	1.782E-06	0.000E+00
12	1.287E-03	4.524E-04	2.341E-04	9.815E-05	3.496E-05	8.691E-06	3.322E-06	0.000E+00
13	1.118E-03	4.468E-04	1.944E-04	1.361E-04	3.206E-05	1.239E-05	2.267E-06	0.000E+00
14	6.070E-04	2.078E-04	8.971E-05	3.690E-05	1.020E-05	2.821E-06	1.731E-06	5.118E-07
15	2.560E-04	6.607E-05	2.148E-05	2.116E-05	3.727E-06	0.000E+00	6.236E-07	0.000E+00
16	3.236E-04	8.268E-05	4.118E-05	2.195E-05	6.005E-06	2.238E-06	0.000E+00	0.000E+00
17	3.033E-04	8.829E-05	5.116E-05	1.661E-05	4.678E-06	6.124E-07	3.304E-07	0.000E+00
18	1.860E-04	7.571E-05	2.574E-05	8.328E-06	2.690E-06	0.000E+00	0.000E+00	0.000E+00
19	1.213E-04	2.626E-05	1.591E-05	9.193E-07	1.911E-06	0.000E+00	0.000E+00	0.000E+00
20	7.609E-05	3.186E-05	9.933E-06	4.668E-06	6.054E-07	1.145E-06	5.184E-07	0.000E+00
21	7.556E-05	2.185E-05	9.705E-06	7.363E-06	5.934E-07	1.118E-06	0.000E+00	0.000E+00
22	8.116E-05	1.741E-05	1.244E-05	1.719E-06	0.000E+00	1.583E-06	0.000E+00	0.000E+00
23	4.098E-05	2.445E-05	5.794E-06	1.771E-06	1.260E-06	0.000E+00	0.000E+00	0.000E+00
24	5.470E-05	1.661E-05	5.656E-06	2.808E-06	5.846E-07	0.000E+00	0.000E+00	0.000E+00
25	2.887E-05	1.524E-05	5.604E-06	2.684E-06	0.000E+00	5.668E-07	0.000E+00	0.000E+00
26	6.074E-05	7.632E-06	9.426E-06	3.531E-06	1.194E-06	1.092E-06	0.000E+00	0.000E+00
27	2.840E-05	1.210E-05	3.842E-06	3.630E-06	0.000E+00	5.301E-07	0.000E+00	0.000E+00
28	3.458E-05	1.088E-05	7.467E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
29	3.173E-05	4.466E-06	3.819E-06	1.725E-06	1.181E-06	1.607E-06	0.000E+00	0.000E+00

30	2.633E-05	7.438E-06	1.908E-06	9.100E-07	6.069E-07	0.000E+00	0.000E+00	0.000E+00
31	2.165E-05	3.091E-06	1.791E-06	9.093E-07	6.095E-07	0.000E+00	0.000E+00	0.000E+00
32	2.822E-05	6.110E-06	5.434E-06	9.064E-07	1.736E-06	0.000E+00	0.000E+00	0.000E+00
33	1.163E-05	1.175E-05	0.000E+00	1.736E-06	5.946E-07	0.000E+00	0.000E+00	0.000E+00
34	1.944E-05	8.783E-06	3.614E-06	8.943E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
35	2.073E-05	5.831E-06	0.000E+00	8.864E-07	5.904E-07	0.000E+00	0.000E+00	0.000E+00
36	1.599E-05	2.909E-06	3.589E-06	8.343E-07	5.546E-07	5.081E-07	0.000E+00	2.784E-07
37	1.116E-05	4.211E-06	3.578E-06	8.807E-07	5.514E-07	0.000E+00	0.000E+00	0.000E+00
38	1.819E-05	2.781E-06	3.337E-06	8.220E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
39	1.266E-05	2.898E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
40	6.312E-06	2.854E-06	1.707E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
19	59	65	98	53	28	18	3
543	446	236	208	110	39	28	0
1033	454	168	139	55	16	7	1
2099	1121	364	299	75	20	10	0
2700	1266	375	266	83	23	12	0
2514	1225	476	379	170	52	26	0
2099	1194	506	456	281	82	41	4
2636	1622	689	672	355	131	61	6
2592	1736	705	766	433	208	127	19
2556	1863	855	873	526	190	152	26
2851	1918	871	846	458	229	132	24
3059	1807	756	767	445	184	97	25
3003	1782	763	747	347	140	91	11
2119	1146	457	473	233	113	51	7
1176	677	248	269	147	62	38	4
1409	724	337	315	142	50	38	3
1484	742	305	279	110	52	24	4
760	426	188	147	81	28	28	3
668	339	151	139	63	24	6	3
552	285	121	113	58	25	15	3
445	233	93	76	36	19	13	1
448	261	91	87	43	14	11	2
378	176	75	70	37	13	5	0
327	149	70	53	25	14	6	1
311	138	68	52	34	6	11	0
316	131	54	48	22	9	1	1

297	133	47	54	31	3	5	0
249	117	45	49	17	12	6	1
237	121	46	33	16	6	2	1
245	134	47	43	18	5	5	0
240	99	35	30	13	3	1	0
170	79	36	28	13	3	3	1
125	67	21	20	14	5	1	1
131	56	19	24	16	3	3	1
94	51	17	17	14	7	1	0
89	47	23	17	6	4	0	1
84	46	21	18	5	4	1	0
89	43	17	16	10	1	2	2
70	37	14	13	6	2	1	1
37	23	9	9	5	1	3	0

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
22	18	6	6	4	0	1	0
74	36	7	7	7	2	1	0
47	17	6	1	3	0	0	0
78	22	4	3	1	0	0	0
87	24	6	5	0	0	1	0
89	30	9	12	2	1	0	0
179	74	23	22	8	0	0	0
240	100	41	39	12	3	0	0
278	154	65	61	18	7	5	0
323	146	56	53	23	11	4	0
336	130	42	73	29	9	3	0
305	130	53	48	26	7	6	0
265	124	45	66	24	10	4	0
212	80	28	24	10	3	4	1
124	36	9	19	5	0	2	0
152	43	17	19	8	3	0	0
140	45	21	15	6	1	1	0
99	44	12	8	4	0	0	0
67	16	8	1	3	0	0	0
44	20	5	5	1	2	2	0
44	14	5	8	1	2	0	0

51	12	7	2	0	3	0	0
24	16	3	2	2	0	0	0
32	11	3	3	1	0	0	0
17	10	3	3	0	1	0	0
36	5	5	4	2	2	0	0
17	8	2	4	0	1	0	0
21	7	4	0	0	0	0	0
19	3	2	2	2	3	0	0
16	5	1	1	1	0	0	0
13	2	1	1	1	0	0	0
17	4	3	1	3	0	0	0
7	8	0	2	1	0	0	0
12	6	2	1	0	0	0	0
13	4	0	1	1	0	0	0
10	2	2	1	1	1	0	1
7	3	2	1	1	0	0	0
12	2	2	1	0	0	0	0
8	2	0	0	0	0	0	0
4	2	1	0	0	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 1.538 \quad (1.329, 1.746)$$

$$b = -0.2277 \quad (-0.2571, -0.1983)$$

$$c = 0.02093 \quad (-0.045, 0.08685)$$

$$d = -0.05535 \quad (-0.151, 0.04033)$$

goftotal =

sse: 5.9058e-006

rsquare: 9.9986e-001

dfe: 4

adjrsquare: 9.9976e-001

rmse: 1.2151e-003

ctotal =

General model Exp1:

$$ctotal(x) = a * \exp(b * x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.4304 \quad (0.1968, 0.664)$$

$$b = -0.144 \quad (-0.1709, -0.1171)$$

goftotal =

$$sse: 1.3595e-006$$

$$rsquare: 9.9746e-001$$

$$dfe: 3$$

$$adjrsquare: 9.9662e-001$$

$$rmse: 6.7318e-004$$

curve fit iron:

ctotal =

General model Exp2:

$$ctotal(x) = a * \exp(b * x) + c * \exp(d * x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.1371 \quad (0.07181, 0.2024)$$

$$b = -0.2031 \quad (-0.254, -0.1521)$$

$$c = 0.002563 \quad (-0.002869, 0.007996)$$

$$d = -0.0439 \quad (-0.09402, 0.006217)$$

goftotal =

$$sse: 3.7433e-008$$

$$rsquare: 9.9960e-001$$

$$dfe: 4$$

$$adjrsquare: 9.9930e-001$$

$$rmse: 9.6738e-005$$

ctotal =

General model Exp1:

$$ctotal(x) = a * \exp(b * x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.007795 \text{ } (-0.005482, 0.02107)$$

$$b = -0.06806 \text{ } (-0.1163, -0.0198)$$

goftotal =

sse: 1.9298e-008

rsquare: 9.6696e-001

dfe: 3

adjrsquare: 9.5594e-001

rmse: 8.0204e-005

Event 73	Date	Time*	Location*	Summing interval*				
	28-Oct-03	1110	S16E08	Oct 28 1100 to Oct 29 2000				
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	8.509E-05	3.150E-05	1.320E-05	6.246E-06	3.071E-06	1.911E-06	4.651E-07	0.000E+00
2	4.270E-03	5.915E-03	5.106E-03	4.049E-03	1.477E-03	4.718E-04	8.891E-05	2.030E-05
3	5.420E-02	5.130E-02	3.504E-02	2.023E-02	8.485E-03	3.364E-03	8.143E-04	8.098E-05
4	2.546E-01	1.804E-01	1.155E-01	6.650E-02	2.736E-02	1.414E-02	3.814E-03	6.544E-04
5	3.458E-01	2.875E-01	1.742E-01	1.057E-01	4.660E-02	1.968E-02	5.744E-03	7.746E-04
6	3.861E-01	3.405E-01	1.922E-01	1.253E-01	5.567E-02	2.328E-02	5.869E-03	7.099E-04
7	5.993E-01	3.433E-01	1.956E-01	1.427E-01	6.205E-02	2.860E-02	6.604E-03	7.553E-04
8	5.666E-01	3.844E-01	2.046E-01	1.464E-01	6.494E-02	3.197E-02	5.802E-03	6.480E-04
9	4.514E-01	4.283E-01	2.157E-01	1.724E-01	6.601E-02	2.902E-02	5.833E-03	8.052E-04
10	5.539E-01	3.596E-01	2.800E-01	1.771E-01	7.372E-02	3.131E-02	6.821E-03	6.758E-04
11	5.578E-01	4.587E-01	2.601E-01	1.985E-01	8.594E-02	3.747E-02	6.985E-03	4.110E-04
12	5.064E-01	4.581E-01	2.839E-01	2.296E-01	8.551E-02	3.209E-02	6.872E-03	7.897E-04
13	6.318E-01	5.241E-01	3.335E-01	2.458E-01	9.557E-02	4.528E-02	7.594E-03	7.067E-04
14	6.370E-01	6.720E-01	4.771E-01	2.254E-01	1.290E-01	4.757E-02	6.688E-03	2.218E-04
15	8.245E-01	7.219E-01	3.719E-01	2.403E-01	1.235E-01	4.629E-02	7.541E-03	3.419E-04
16	9.106E-01	6.726E-01	4.997E-01	3.336E-01	1.076E-01	3.142E-02	6.809E-03	1.186E-04
17	1.126E+00	7.649E-01	5.207E-01	2.653E-01	1.027E-01	3.993E-02	4.303E-03	3.454E-04
18	1.185E+00	6.255E-01	5.785E-01	2.181E-01	9.313E-02	1.903E-02	2.479E-03	2.078E-04

19	1.414E+00	7.311E-01	4.231E-01	2.678E-01	1.195E-01	1.984E-02	3.380E-03	0.000E+00
20	1.402E+00	7.662E-01	4.034E-01	2.071E-01	9.470E-02	1.614E-02	1.947E-03	0.000E+00
21	1.360E+00	7.656E-01	3.706E-01	1.431E-01	4.824E-02	8.455E-03	2.276E-03	0.000E+00
22	1.385E+00	7.858E-01	4.850E-01	1.666E-01	5.920E-02	1.869E-02	1.183E-03	0.000E+00
23	1.061E+00	4.304E-01	3.285E-01	1.391E-01	3.546E-02	1.475E-02	5.348E-04	0.000E+00
24	8.578E-01	4.423E-01	2.284E-01	1.297E-01	3.002E-02	5.820E-03	6.823E-04	0.000E+00
25	3.067E-01	2.354E-01	1.307E-01	6.538E-02	1.696E-02	3.868E-03	4.908E-04	1.310E-04
26	2.957E-01	1.250E-01	5.675E-02	2.559E-02	9.220E-03	2.597E-03	3.486E-04	2.951E-05
27	4.987E-02	2.575E-02	1.326E-02	6.411E-03	1.676E-03	4.854E-04	6.131E-05	4.074E-06
28	4.517E-02	2.240E-02	1.077E-02	4.667E-03	1.239E-03	3.562E-04	3.296E-05	2.244E-06
29	4.811E-02	2.804E-02	1.205E-02	5.791E-03	1.415E-03	2.669E-04	2.899E-05	5.760E-06
30	3.468E-02	1.801E-02	8.822E-03	3.995E-03	9.952E-04	2.560E-04	4.025E-05	8.457E-06
31	2.661E-02	1.384E-02	7.156E-03	3.238E-03	8.955E-04	2.206E-04	2.829E-05	5.571E-06
32	4.007E-02	2.121E-02	1.127E-02	4.947E-03	1.349E-03	3.876E-04	5.938E-05	2.361E-06
33	6.613E-02	3.461E-02	1.898E-02	8.670E-03	2.307E-03	5.668E-04	6.512E-05	3.443E-06
34	2.879E-02	1.355E-02	7.135E-03	3.254E-03	8.250E-04	1.934E-04	4.034E-05	5.181E-06
35	1.766E-02	8.668E-03	4.602E-03	2.027E-03	5.726E-04	1.178E-04	2.562E-05	4.692E-06
36	2.825E-02	1.515E-02	8.477E-03	4.259E-03	1.487E-03	4.707E-04	1.495E-04	4.632E-05
37	5.812E-02	3.474E-02	2.022E-02	1.009E-02	3.547E-03	1.504E-03	3.617E-04	1.101E-04
38	3.016E-02	2.068E-02	1.277E-02	6.493E-03	2.967E-03	1.068E-03	3.479E-04	6.069E-05
39	2.824E-02	2.145E-02	1.411E-02	8.730E-03	3.543E-03	1.620E-03	5.085E-04	1.000E-04
40	7.378E-02	5.533E-02	3.493E-02	2.156E-02	8.703E-03	4.393E-03	1.211E-03	2.315E-04
41	4.059E-02	3.235E-02	2.218E-02	1.501E-02	6.474E-03	3.198E-03	9.906E-04	1.945E-04
42	4.306E-02	3.259E-02	2.132E-02	1.461E-02	6.316E-03	3.041E-03	9.300E-04	1.538E-04
43	5.006E-02	3.971E-02	2.615E-02	1.588E-02	7.111E-03	2.725E-03	7.782E-04	1.173E-04
44	5.231E-02	3.818E-02	2.633E-02	1.516E-02	6.722E-03	3.196E-03	6.818E-04	1.179E-04
45	6.428E-02	4.314E-02	2.680E-02	1.498E-02	7.499E-03	3.211E-03	7.615E-04	8.469E-05
46	7.958E-02	5.060E-02	3.103E-02	1.769E-02	7.565E-03	3.361E-03	7.535E-04	7.660E-05
47	1.049E-01	6.425E-02	3.440E-02	1.943E-02	7.265E-03	3.536E-03	8.270E-04	1.535E-04
48	1.269E-01	7.883E-02	3.721E-02	2.248E-02	9.545E-03	4.093E-03	8.463E-04	8.492E-05
49	1.185E-01	6.906E-02	3.975E-02	2.036E-02	8.437E-03	3.351E-03	9.057E-04	9.490E-05
50	1.276E-01	7.573E-02	3.479E-02	2.258E-02	8.436E-03	3.315E-03	7.091E-04	1.252E-04
51	1.106E-01	7.407E-02	3.934E-02	1.913E-02	8.815E-03	3.039E-03	7.019E-04	7.988E-05
52	1.186E-01	7.557E-02	3.784E-02	2.153E-02	8.615E-03	2.960E-03	6.353E-04	1.127E-04
53	1.346E-01	6.617E-02	3.117E-02	2.453E-02	7.971E-03	2.911E-03	7.027E-04	6.965E-05
54	1.319E-01	1.069E-01	4.814E-02	2.242E-02	8.177E-03	2.845E-03	6.114E-04	1.071E-04
55	1.487E-01	7.941E-02	3.959E-02	2.197E-02	8.645E-03	2.929E-03	6.043E-04	6.888E-05
56	1.058E-01	6.050E-02	3.669E-02	1.836E-02	6.159E-03	2.279E-03	4.488E-04	5.870E-05
57	2.298E-01	9.791E-02	5.500E-02	2.783E-02	1.090E-02	3.012E-03	4.254E-04	2.440E-05
58	1.159E-01	6.026E-02	4.613E-02	1.877E-02	5.935E-03	1.712E-03	3.413E-04	4.564E-06

59	8.274E-02	4.137E-02	2.288E-02	1.112E-02	3.474E-03	9.295E-04	1.704E-04	2.079E-05
60	6.841E-02	3.181E-02	1.929E-02	7.758E-03	2.663E-03	7.940E-04	1.600E-04	8.453E-06
61	6.169E-02	2.997E-02	1.506E-02	6.597E-03	2.116E-03	4.764E-04	1.079E-04	7.441E-06
62	4.983E-02	2.434E-02	1.180E-02	5.645E-03	1.646E-03	3.950E-04	7.818E-05	2.536E-06
63	3.513E-02	1.669E-02	8.178E-03	3.886E-03	1.005E-03	3.204E-04	3.969E-05	3.498E-06
64	1.738E-02	7.899E-03	4.202E-03	1.935E-03	6.179E-04	1.606E-04	2.429E-05	2.431E-06
65	7.816E-03	3.880E-03	1.902E-03	1.070E-03	3.010E-04	8.346E-05	1.446E-05	3.976E-06
66	7.014E-03	3.474E-03	1.661E-03	7.870E-04	2.244E-04	8.564E-05	9.586E-06	2.398E-06
67	5.198E-03	2.537E-03	1.335E-03	5.915E-04	1.827E-04	4.854E-05	8.772E-06	1.383E-06
68	3.825E-03	1.822E-03	9.283E-04	4.515E-04	1.332E-04	3.984E-05	5.464E-06	2.070E-06
69	3.399E-03	1.640E-03	7.316E-04	3.908E-04	1.050E-04	2.202E-05	5.422E-06	0.000E+00
70	3.535E-03	1.544E-03	7.829E-04	3.670E-04	1.183E-04	2.661E-05	5.843E-06	6.535E-07
71	3.451E-03	1.487E-03	8.225E-04	2.827E-04	8.872E-05	3.520E-05	6.565E-06	2.069E-06
72	3.307E-03	1.464E-03	7.376E-04	2.826E-04	9.245E-05	2.867E-05	4.312E-06	6.546E-07
73	2.435E-03	1.142E-03	5.303E-04	1.908E-04	5.852E-05	1.472E-05	3.569E-06	0.000E+00
74	1.696E-03	7.572E-04	4.859E-04	1.773E-04	4.916E-05	2.179E-05	3.912E-06	0.000E+00
75	1.456E-03	6.276E-04	3.591E-04	1.425E-04	3.993E-05	1.193E-05	3.911E-06	6.186E-07
76	1.436E-03	6.875E-04	3.646E-04	1.412E-04	4.438E-05	1.626E-05	4.333E-06	0.000E+00
77	1.285E-03	5.874E-04	2.831E-04	1.465E-04	3.782E-05	1.003E-05	8.913E-07	5.431E-07
78	1.128E-03	5.212E-04	2.600E-04	1.285E-04	3.609E-05	1.421E-05	3.381E-06	0.000E+00
79	1.205E-03	5.643E-04	3.066E-04	1.035E-04	2.399E-05	1.060E-05	1.900E-06	0.000E+00
80	1.111E-03	5.080E-04	2.107E-04	1.019E-04	2.409E-05	1.181E-05	1.927E-06	6.047E-07
81	9.055E-04	4.796E-04	2.078E-04	9.841E-05	2.936E-05	1.268E-05	1.847E-06	6.017E-07
82	9.793E-04	3.883E-04	1.613E-04	7.465E-05	2.743E-05	1.040E-05	9.095E-07	0.000E+00
83	8.326E-04	3.530E-04	2.352E-04	7.424E-05	2.571E-05	1.260E-05	1.352E-06	0.000E+00
84	8.756E-04	3.577E-04	2.180E-04	8.593E-05	1.883E-05	9.365E-06	2.361E-06	0.000E+00
85	8.303E-04	3.872E-04	2.334E-04	7.553E-05	2.484E-05	6.088E-06	2.380E-06	0.000E+00
86	7.949E-04	3.626E-04	2.179E-04	8.020E-05	2.805E-05	1.061E-06	1.840E-06	0.000E+00
87	7.443E-04	4.023E-04	2.248E-04	7.664E-05	2.893E-05	3.041E-06	9.447E-07	5.560E-07
88	7.364E-04	3.182E-04	1.514E-04	7.976E-05	1.880E-05	3.090E-06	4.431E-07	5.539E-07
89	6.261E-04	2.980E-04	1.658E-04	7.440E-05	2.880E-05	6.166E-06	4.690E-07	1.137E-06
90	6.225E-04	2.702E-04	1.614E-04	6.091E-05	1.860E-05	6.034E-06	1.818E-06	0.000E+00
91	7.929E-04	3.505E-04	2.003E-04	7.756E-05	2.661E-05	6.114E-06	1.824E-06	0.000E+00
92	6.561E-04	2.766E-04	1.503E-04	7.771E-05	1.999E-05	3.012E-06	1.378E-06	0.000E+00
93	6.228E-04	3.495E-04	1.246E-04	5.091E-05	2.149E-05	4.657E-06	8.217E-07	5.438E-07
94	5.640E-04	2.686E-04	1.332E-04	5.255E-05	1.438E-05	5.034E-06	4.382E-07	1.165E-06
95	5.141E-04	2.384E-04	1.387E-04	5.610E-05	1.209E-05	4.083E-06	4.649E-07	0.000E+00
96	5.938E-04	2.191E-04	1.221E-04	6.250E-05	1.108E-05	4.952E-06	1.830E-06	0.000E+00
97	5.244E-04	2.690E-04	9.127E-05	5.408E-05	2.091E-05	6.911E-06	8.737E-07	1.156E-06
98	4.748E-04	2.314E-04	9.860E-05	5.384E-05	1.091E-05	2.010E-06	9.259E-07	0.000E+00

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	4.719E-06	1.400E-06	0.000E+00	1.739E-06	0.000E+00	5.491E-07	0.000E+00	0.000E+00
2	2.347E-04	4.904E-05	3.044E-05	5.038E-06	3.408E-06	6.266E-06	4.114E-06	2.559E-06
3	1.744E-03	6.995E-04	1.866E-04	9.210E-05	5.494E-05	1.893E-05	5.843E-06	3.319E-06
4	1.048E-02	2.671E-03	1.084E-03	2.403E-04	5.811E-05	0.000E+00	7.900E-06	0.000E+00
5	2.264E-02	3.100E-03	8.636E-04	7.994E-04	7.829E-05	4.954E-05	1.726E-05	0.000E+00
6	2.155E-02	4.812E-03	2.018E-03	5.138E-04	1.661E-04	0.000E+00	1.748E-05	0.000E+00
7	1.870E-02	8.972E-03	9.495E-04	2.891E-04	4.854E-05	0.000E+00	0.000E+00	0.000E+00
8	2.721E-02	3.333E-03	3.192E-03	1.652E-03	1.023E-04	0.000E+00	1.686E-05	0.000E+00
9	2.277E-02	6.215E-03	2.713E-03	1.486E-03	1.107E-04	0.000E+00	2.188E-05	2.901E-05
10	2.142E-02	6.485E-03	1.363E-03	1.799E-04	5.524E-05	0.000E+00	4.647E-05	0.000E+00
11	2.764E-02	5.125E-03	1.915E-03	4.632E-04	9.003E-04	0.000E+00	0.000E+00	0.000E+00
12	4.243E-02	7.798E-03	6.267E-03	3.842E-04	0.000E+00	0.000E+00	2.251E-05	0.000E+00
13	5.494E-02	1.869E-02	2.067E-03	5.919E-04	8.407E-05	0.000E+00	0.000E+00	0.000E+00
14	6.025E-02	1.727E-02	1.329E-03	8.083E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00
15	5.004E-02	1.254E-02	2.185E-03	6.857E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00
16	1.018E-01	7.631E-03	9.725E-04	5.914E-04	1.460E-04	0.000E+00	0.000E+00	0.000E+00
17	4.354E-02	3.049E-03	1.898E-03	2.979E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00
18	1.341E-02	4.714E-03	1.359E-03	4.034E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00
19	4.811E-02	1.539E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
20	2.394E-02	2.524E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
21	4.737E-03	1.203E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.388E-04	0.000E+00
22	2.064E-02	1.636E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
23	1.929E-02	2.165E-03	0.000E+00	2.408E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00
24	2.255E-02	3.331E-04	0.000E+00	3.066E-04	0.000E+00	0.000E+00	5.459E-05	0.000E+00
25	1.537E-03	4.532E-04	5.265E-04	4.450E-05	1.675E-05	4.306E-05	0.000E+00	0.000E+00
26	3.099E-04	3.933E-04	0.000E+00	9.013E-05	5.222E-05	1.588E-05	6.056E-06	0.000E+00
27	5.408E-04	1.586E-04	6.050E-05	3.295E-05	1.401E-05	2.966E-06	0.000E+00	0.000E+00
28	4.520E-04	8.351E-05	3.221E-05	2.463E-05	1.446E-05	4.314E-06	0.000E+00	0.000E+00
29	3.276E-04	1.497E-04	6.478E-05	3.818E-05	1.083E-05	4.697E-06	3.195E-06	0.000E+00
30	3.464E-04	1.255E-04	9.498E-05	2.631E-05	1.466E-05	1.901E-06	8.450E-07	0.000E+00
31	2.817E-04	9.269E-05	4.850E-05	8.560E-06	1.924E-06	3.631E-06	1.514E-06	2.971E-06
32	5.350E-04	6.157E-05	3.910E-05	3.426E-05	2.311E-06	1.964E-06	9.214E-07	0.000E+00
33	3.739E-04	6.836E-05	8.236E-05	2.041E-05	1.619E-05	6.243E-06	3.206E-06	3.614E-06
34	2.793E-04	1.053E-04	2.626E-05	2.383E-05	6.068E-06	0.000E+00	7.099E-07	0.000E+00
35	1.805E-04	3.835E-05	1.014E-05	1.159E-05	3.335E-06	1.501E-06	1.295E-06	0.000E+00

36	1.049E-03	4.445E-04	2.175E-04	7.563E-05	2.975E-05	2.952E-05	6.176E-06	0.000E+00
37	2.245E-03	8.633E-04	3.798E-04	1.673E-04	9.468E-05	1.649E-05	1.472E-05	0.000E+00
38	2.569E-03	8.320E-04	3.557E-04	2.305E-04	5.850E-05	2.179E-05	6.418E-06	4.923E-06
39	3.247E-03	1.111E-03	5.372E-04	2.945E-04	1.426E-04	1.712E-05	1.491E-05	0.000E+00
40	9.955E-03	2.577E-03	9.954E-04	5.199E-04	1.666E-04	7.379E-05	4.349E-06	5.371E-06
41	6.640E-03	2.089E-03	1.023E-03	4.643E-04	1.707E-04	6.962E-05	6.011E-06	0.000E+00
42	5.424E-03	2.027E-03	8.973E-04	4.525E-04	1.418E-04	1.908E-05	7.470E-06	0.000E+00
43	5.027E-03	1.660E-03	6.552E-04	5.055E-04	1.457E-04	4.027E-05	3.165E-06	0.000E+00
44	5.295E-03	2.099E-03	9.751E-04	4.367E-04	1.342E-04	3.684E-05	5.890E-06	0.000E+00
45	6.346E-03	2.240E-03	6.670E-04	5.497E-04	1.421E-04	4.129E-05	3.016E-06	0.000E+00
46	6.199E-03	2.023E-03	1.087E-03	5.076E-04	9.572E-05	4.096E-05	9.036E-06	0.000E+00
47	6.995E-03	2.492E-03	1.080E-03	5.978E-04	1.614E-04	6.434E-05	4.226E-06	0.000E+00
48	6.672E-03	2.465E-03	1.455E-03	8.442E-04	3.049E-04	5.128E-05	1.998E-05	0.000E+00
49	7.772E-03	3.268E-03	1.033E-03	4.890E-04	1.780E-04	6.263E-05	1.543E-05	0.000E+00
50	5.734E-03	2.493E-03	1.329E-03	4.925E-04	2.015E-04	8.528E-05	1.257E-05	4.666E-06
51	1.050E-02	2.602E-03	1.455E-03	6.197E-04	1.178E-04	2.979E-05	1.094E-05	0.000E+00
52	6.296E-03	1.512E-03	1.128E-03	4.758E-04	1.036E-04	1.043E-05	3.895E-06	0.000E+00
53	3.764E-03	1.482E-03	8.731E-04	5.041E-04	9.522E-05	2.019E-05	1.365E-05	0.000E+00
54	1.159E-02	7.315E-03	6.160E-04	4.731E-04	1.308E-04	3.265E-05	2.456E-06	0.000E+00
55	1.115E-02	6.601E-03	1.686E-03	6.986E-04	1.409E-04	2.153E-05	1.972E-06	0.000E+00
56	1.133E-02	3.556E-03	7.570E-04	4.668E-04	1.067E-04	1.868E-05	4.166E-06	0.000E+00
57	8.683E-03	3.383E-03	1.287E-03	6.241E-04	1.157E-04	2.291E-05	6.190E-06	0.000E+00
58	5.973E-03	2.190E-03	7.645E-04	2.654E-04	6.032E-05	1.850E-05	1.917E-06	0.000E+00
59	3.931E-03	1.386E-03	5.455E-04	1.908E-04	2.471E-05	3.251E-06	5.176E-06	0.000E+00
60	3.280E-03	1.136E-03	4.154E-04	1.204E-04	2.723E-05	5.317E-06	0.000E+00	0.000E+00
61	4.399E-03	8.582E-04	3.040E-04	1.187E-04	1.631E-05	2.280E-06	0.000E+00	0.000E+00
62	2.222E-03	6.524E-04	2.598E-04	8.959E-05	1.557E-05	0.000E+00	0.000E+00	0.000E+00
63	1.577E-03	4.261E-04	1.392E-04	5.079E-05	1.736E-06	1.508E-06	0.000E+00	0.000E+00
64	9.188E-04	2.988E-04	7.449E-05	3.510E-05	8.606E-06	8.807E-07	0.000E+00	0.000E+00
65	4.186E-04	1.379E-04	2.927E-05	1.122E-05	1.587E-06	1.484E-06	0.000E+00	0.000E+00
66	3.304E-04	1.158E-04	3.575E-05	1.219E-05	4.154E-06	0.000E+00	0.000E+00	0.000E+00
67	2.797E-04	5.583E-05	3.115E-05	1.115E-05	3.791E-06	7.029E-07	0.000E+00	0.000E+00
68	1.845E-04	3.245E-05	2.447E-05	9.721E-06	1.408E-06	6.664E-07	2.850E-07	0.000E+00
69	1.238E-04	4.866E-05	6.488E-06	3.174E-06	1.384E-06	0.000E+00	0.000E+00	0.000E+00
70	1.474E-04	5.660E-05	1.737E-05	2.056E-06	7.193E-07	0.000E+00	0.000E+00	0.000E+00
71	1.660E-04	3.091E-05	2.421E-05	5.363E-06	3.534E-06	6.231E-07	0.000E+00	0.000E+00
72	1.395E-04	3.504E-05	2.140E-05	2.073E-06	2.001E-06	6.564E-07	0.000E+00	0.000E+00
73	1.133E-04	2.351E-05	6.280E-06	3.969E-06	6.423E-07	1.790E-06	2.628E-07	0.000E+00
74	5.486E-05	1.785E-05	6.000E-06	5.619E-06	1.311E-06	0.000E+00	2.511E-07	0.000E+00
75	7.727E-05	9.366E-06	9.844E-06	5.681E-06	6.073E-07	1.140E-06	0.000E+00	0.000E+00

76	5.413E-05	1.283E-05	2.006E-06	2.787E-06	6.057E-07	0.000E+00	0.000E+00	0.000E+00
77	3.740E-05	1.013E-05	3.599E-06	4.292E-06	1.748E-06	0.000E+00	0.000E+00	0.000E+00
78	4.686E-05	1.266E-05	9.539E-06	3.704E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
79	4.947E-05	7.696E-06	1.981E-06	4.624E-06	1.187E-06	5.775E-07	0.000E+00	0.000E+00
80	3.929E-05	1.244E-05	1.979E-06	3.731E-06	0.000E+00	0.000E+00	2.566E-07	0.000E+00
81	3.935E-05	1.222E-05	1.958E-06	1.817E-06	5.849E-07	0.000E+00	0.000E+00	0.000E+00
82	2.366E-05	1.814E-05	7.583E-06	0.000E+00	1.172E-06	5.378E-07	0.000E+00	0.000E+00
83	3.180E-05	1.063E-05	7.541E-06	2.784E-06	0.000E+00	5.326E-07	0.000E+00	0.000E+00
84	2.510E-05	1.372E-05	1.826E-06	9.257E-07	1.159E-06	0.000E+00	0.000E+00	0.000E+00
85	3.067E-05	4.590E-06	0.000E+00	8.721E-07	0.000E+00	5.636E-07	0.000E+00	0.000E+00
86	3.533E-05	4.464E-06	1.804E-06	9.157E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
87	3.639E-05	6.104E-06	1.908E-06	1.830E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
88	2.811E-05	5.897E-06	9.296E-06	1.771E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
89	3.337E-05	7.342E-06	3.816E-06	2.677E-06	0.000E+00	0.000E+00	2.471E-07	0.000E+00
90	1.499E-05	8.857E-06	1.894E-06	8.557E-07	1.170E-06	0.000E+00	2.317E-07	0.000E+00
91	2.651E-05	4.514E-06	1.901E-06	2.569E-06	5.707E-07	0.000E+00	0.000E+00	0.000E+00
92	3.132E-05	9.026E-06	1.789E-06	9.107E-07	6.026E-07	5.549E-07	0.000E+00	0.000E+00
93	1.863E-05	8.244E-06	0.000E+00	0.000E+00	1.058E-06	0.000E+00	0.000E+00	0.000E+00
94	2.607E-05	5.944E-06	1.786E-06	9.050E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
95	2.980E-05	4.559E-06	0.000E+00	0.000E+00	5.971E-07	5.481E-07	0.000E+00	0.000E+00
96	1.628E-05	5.826E-06	1.875E-06	0.000E+00	0.000E+00	0.000E+00	2.299E-07	0.000E+00
97	2.125E-05	4.463E-06	0.000E+00	8.964E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
98	1.472E-05	6.066E-06	1.767E-06	0.000E+00	5.610E-07	0.000E+00	0.000E+00	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
28	12	4	4	3	2	1	0
484	837	613	1149	687	243	95	17
1720	1892	1055	2146	1340	544	295	25
729	664	326	1304	843	514	325	46
656	697	400	869	619	362	241	27
621	711	438	691	529	317	179	18
635	701	436	642	507	296	174	16
638	731	415	753	561	355	159	14
518	603	411	638	512	298	142	16
527	588	450	667	498	258	147	12
551	656	442	686	537	314	146	7
417	604	393	707	536	278	140	13
435	558	387	640	501	311	122	9

327	485	338	473	418	236	79	2
338	424	332	458	402	191	84	3
319	405	289	434	292	135	66	1
244	333	207	313	189	84	29	2
224	256	169	191	144	46	13	1
175	186	105	157	93	32	13	0
142	139	91	76	64	21	5	0
144	169	86	82	53	13	8	0
181	222	122	125	81	23	5	0
224	212	145	164	75	32	4	0
257	382	186	273	146	43	10	0
212	590	352	504	288	79	24	4
187	867	428	824	442	150	46	3
1303	1443	614	653	258	80	22	1
1585	1270	537	490	202	63	14	1
1548	1606	600	636	238	51	12	2
2115	1481	600	583	221	62	22	4
2405	1517	634	602	250	67	19	3
1781	1576	701	696	292	88	31	1
1152	1731	716	825	345	95	25	1
2244	1431	614	572	220	59	26	3
1949	1124	483	441	185	42	20	3
1398	906	389	411	214	74	46	11
1027	981	495	576	277	144	79	18
1051	971	519	578	394	162	115	16
1019	935	522	681	429	222	149	24
703	775	419	608	399	242	150	22
777	815	472	702	482	265	188	30
868	855	463	722	487	256	180	23
927	943	516	710	486	211	135	16
1017	959	540	739	497	268	128	18
1098	1010	529	685	525	260	134	12
1024	984	526	706	466	238	119	10
666	806	405	598	348	195	106	16
391	633	323	623	397	209	100	7
247	663	359	702	468	233	136	12
313	686	348	771	465	216	113	16
254	733	421	808	540	239	125	11
342	723	367	788	492	212	103	14
97	682	365	1095	621	304	164	13

244	729	366	918	523	241	120	16
258	852	452	976	579	248	111	10
214	1091	524	1087	560	248	110	11
129	834	430	908	422	186	62	4
146	1062	459	1001	508	181	80	1
649	1683	802	1036	505	152	61	6
927	1795	821	919	477	156	70	3
1042	1932	851	887	426	106	54	3
1423	1701	697	763	343	92	40	1
2115	1667	673	700	276	96	27	2
2474	1369	592	572	278	76	27	2
1736	989	389	455	191	58	22	5
1605	910	349	344	147	61	15	3
1295	720	304	282	131	38	15	2
999	544	223	225	99	33	10	3
893	492	177	196	79	18	10	0
946	474	193	188	91	22	11	1
911	449	200	143	67	29	12	3
891	450	183	145	71	24	8	1
688	369	138	103	47	13	7	0
497	254	131	99	41	20	8	0
434	214	99	81	34	11	8	1
429	235	100	80	38	15	9	0
416	217	85	91	35	10	2	1
339	179	72	74	31	13	7	0
366	196	86	60	21	10	4	0
338	176	59	59	21	11	4	1
279	169	59	58	26	12	4	1
301	137	46	44	24	10	2	0
258	125	67	44	23	12	3	0
272	127	62	51	17	9	5	0
258	138	67	45	22	6	5	0
249	130	63	48	25	1	4	0
235	145	65	46	26	3	2	1
232	115	44	48	17	3	1	1
198	108	48	45	26	6	1	2
198	98	47	37	17	6	4	0
251	127	58	47	24	6	4	0
208	100	44	47	18	3	3	0
211	136	39	33	21	5	2	1

180	98	39	32	13	5	1	2
164	87	41	34	11	4	1	0
190	80	36	38	10	5	4	0
168	99	27	33	19	7	2	2
153	85	29	33	10	2	2	0

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
3	1	0	2	0	1	0	0
58	16	6	4	4	6	12	5
103	41	7	18	15	5	6	1
54	24	6	14	5	0	2	0
47	20	5	14	2	2	2	0
60	27	14	8	4	0	1	0
55	29	6	4	1	0	0	0
69	27	12	11	2	0	1	0
51	26	6	6	2	0	1	1
53	20	7	2	1	0	2	0
51	22	10	5	3	0	0	0
73	22	5	4	0	0	1	0
75	32	8	5	1	0	0	0
60	21	4	5	0	0	0	0
64	21	6	4	0	0	0	0
50	7	2	3	1	0	0	0
23	6	3	1	0	0	0	0
16	8	2	1	0	0	0	0
8	4	0	0	0	0	0	0
7	2	0	0	0	0	0	0
3	2	0	0	0	0	1	0
9	2	0	0	0	0	0	0
8	5	0	1	0	0	0	0
9	2	0	2	0	0	2	0
5	5	4	1	1	1	0	0
1	11	0	6	6	2	1	0
27	16	5	7	4	1	0	0
30	10	3	7	5	2	0	0
25	17	7	8	4	2	3	0
43	18	12	7	6	1	1	0

49	19	8	3	1	2	2	3
43	10	5	8	1	1	1	0
19	8	7	4	5	2	2	2
42	21	4	8	3	0	1	0
38	9	2	5	2	1	2	0
69	30	15	14	8	8	3	0
66	53	21	19	16	3	6	0
177	77	26	39	16	6	4	2
213	90	34	45	34	4	8	0
169	68	26	29	16	6	1	1
244	98	42	42	25	11	2	0
207	93	37	42	20	3	3	0
179	75	23	44	18	6	1	0
196	98	39	42	18	6	2	0
217	96	25	46	19	6	1	0
148	80	35	39	11	6	3	0
79	73	24	36	13	7	1	0
46	41	22	32	23	5	4	0
29	47	21	35	19	8	4	0
36	58	23	29	23	11	4	1
35	49	17	44	15	5	4	0
35	41	25	35	12	2	1	0
8	40	19	49	14	4	6	0
36	55	12	39	17	5	1	0
36	53	31	59	17	3	1	0
35	93	24	54	19	3	2	0
17	47	21	37	12	3	1	0
18	72	20	31	10	4	1	0
58	111	37	34	7	1	4	0
103	122	36	27	9	2	0	0
105	112	32	30	6	1	0	0
122	91	30	23	6	0	0	0
188	74	21	17	1	1	0	0
267	101	21	19	8	1	0	0
179	65	11	9	2	2	0	0
145	56	14	10	5	0	0	0
133	29	13	10	5	1	0	0
92	18	11	9	2	1	1	0
62	27	3	3	2	0	0	0
76	32	8	2	1	0	0	0

84	17	11	5	5	1	0	0
72	20	10	2	3	1	0	0
61	14	3	4	1	3	1	0
31	11	3	6	2	0	1	0
44	6	5	6	1	2	0	0
31	8	1	3	1	0	0	0
23	7	2	5	3	0	0	0
27	8	5	4	0	0	0	0
29	5	1	5	2	1	0	0
23	8	1	4	0	0	1	0
23	8	1	2	1	0	0	0
14	12	4	0	2	1	0	0
19	7	4	3	0	1	0	0
15	9	1	1	2	0	0	0
18	3	0	1	0	1	0	0
21	3	1	1	0	0	0	0
22	4	1	2	0	0	0	0
17	4	5	2	0	0	0	0
20	5	2	3	0	0	1	0
9	6	1	1	2	0	1	0
16	3	1	3	1	0	0	0
19	6	1	1	1	1	0	0
12	6	0	0	2	0	0	0
16	4	1	1	0	0	0	0
18	3	0	0	1	1	0	0
10	4	1	0	0	0	1	0
13	3	0	1	0	0	0	0
9	4	1	0	1	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

a = 4091 (-1.778e+010, 1.778e+010)

b = -0.1192 (-386.9, 386.7)

c = -4035 (-1.778e+010, 1.778e+010)

d = -0.119 (-390.9, 390.7)

goftotal =

sse: 4.3800e-001
 rsquare: 9.9844e-001
 dfe: 4
 adjrsquare: 9.9728e-001
 rmse: 3.3091e-001

ctotal =

General model Exp1:
 $ctotal(x) = a * \exp(b * x)$
 Coefficients (with 95% confidence bounds):
 a = 48.92 (40.76, 57.07)
 b = -0.1283 (-0.1365, -0.1202)

goftotal =

sse: 3.8802e-003
 rsquare: 9.9969e-001
 dfe: 3
 adjrsquare: 9.9959e-001
 rmse: 3.5964e-002

curve fit iron:

ctotal =

General model Exp2:
 $ctotal(x) = a * \exp(b * x) + c * \exp(d * x)$
 Coefficients (with 95% confidence bounds):
 a = 16.17 (11.34, 21.01)
 b = -0.2344 (-0.2614, -0.2074)
 c = 0.02082 (-0.09496, 0.1366)
 d = -0.03361 (-0.1664, 0.09916)

goftotal =

sse: 7.9075e-005

rsquare: 9.9982e-001
 dfe: 4
 adjrsquare: 9.9969e-001
 rmse: 4.4462e-003
 cttotal =

General model Exp1:
 $ctotal(x) = a * \exp(b * x)$
 Coefficients (with 95% confidence bounds):
 a = 0.7651 (0.3764, 1.154)
 b = -0.1114 (-0.1266, -0.09621)

goftotal =

sse: 2.9125e-007
 rsquare: 9.9903e-001
 dfe: 3
 adjrsquare: 9.9871e-001
 rmse: 3.1158e-004

Event 75	Date		Time*		Location*		Summing interval*	
	2-Nov-03		1105		S20W56		Nov 2 1100 to Nov 4 1000	
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	8.212E-04	3.433E-04	1.979E-04	6.583E-05	2.090E-05	2.021E-06	2.226E-06	0.000E+00
2	1.195E-03	3.718E-04	2.036E-04	8.553E-05	2.919E-05	7.258E-06	9.524E-07	5.986E-07
3	9.376E-04	3.816E-04	1.560E-04	8.091E-05	2.685E-05	6.197E-06	4.767E-07	5.925E-07
4	1.089E-03	3.738E-04	1.386E-04	8.828E-05	2.524E-05	6.369E-06	9.374E-07	0.000E+00
5	1.111E-03	4.149E-04	2.231E-04	5.524E-05	1.090E-05	3.985E-06	8.970E-07	0.000E+00
6	1.105E-03	3.917E-04	1.558E-04	6.795E-05	2.357E-05	1.115E-06	4.659E-07	0.000E+00
7	7.770E-04	2.784E-04	1.368E-04	5.702E-05	1.024E-05	2.096E-06	8.953E-07	6.134E-07
8	9.049E-04	3.726E-04	1.274E-04	1.924E-04	1.858E-04	2.798E-04	2.421E-04	7.866E-05
9	5.729E-03	5.323E-03	4.616E-03	3.372E-03	2.304E-03	1.601E-03	5.127E-04	7.315E-05
10	7.086E-02	5.172E-02	3.614E-02	2.209E-02	7.785E-03	2.510E-03	3.648E-04	4.374E-05
11	1.688E-01	1.222E-01	7.691E-02	4.545E-02	1.383E-02	3.428E-03	5.395E-04	2.226E-05
12	2.640E-01	1.872E-01	1.142E-01	5.163E-02	1.441E-02	3.517E-03	3.344E-04	7.957E-06
13	3.665E-01	2.501E-01	1.423E-01	6.109E-02	1.561E-02	3.143E-03	2.186E-04	9.586E-06
14	4.112E-01	2.567E-01	1.451E-01	5.922E-02	1.296E-02	1.821E-03	1.810E-04	8.221E-06
15	3.797E-01	2.202E-01	1.101E-01	4.070E-02	8.045E-03	1.132E-03	2.086E-04	1.660E-05

16	2.902E-01	1.590E-01	7.841E-02	2.750E-02	5.145E-03	9.791E-04	1.396E-04	5.477E-06
17	2.362E-01	1.185E-01	5.663E-02	1.909E-02	3.570E-03	1.006E-03	1.510E-04	1.620E-05
18	2.930E-01	1.338E-01	5.805E-02	2.066E-02	4.515E-03	1.042E-03	1.669E-04	1.872E-05
19	2.692E-01	1.219E-01	5.161E-02	1.843E-02	4.780E-03	9.164E-04	1.925E-04	3.991E-05
20	2.770E-01	1.233E-01	5.559E-02	2.010E-02	4.345E-03	1.267E-03	1.204E-04	8.214E-06
21	3.031E-01	1.530E-01	5.609E-02	2.231E-02	4.973E-03	9.233E-04	1.897E-04	4.294E-05
22	2.940E-01	1.276E-01	5.113E-02	1.800E-02	3.558E-03	7.557E-04	7.920E-05	2.608E-05
23	2.548E-01	1.007E-01	4.402E-02	1.357E-02	2.834E-03	5.171E-04	8.721E-05	2.881E-05
24	2.201E-01	1.065E-01	3.408E-02	1.159E-02	2.210E-03	3.912E-04	1.143E-04	1.783E-05
25	2.203E-01	7.482E-02	3.133E-02	9.765E-03	2.118E-03	5.495E-04	1.077E-04	0.000E+00
26	2.417E-01	9.884E-02	3.527E-02	9.427E-03	1.920E-03	6.031E-04	6.906E-05	6.859E-06
27	2.387E-01	8.308E-02	2.469E-02	7.677E-03	1.527E-03	5.164E-04	9.559E-05	0.000E+00
28	1.944E-01	8.939E-02	2.041E-02	7.100E-03	1.303E-03	4.045E-04	4.259E-05	1.051E-05
29	1.604E-01	6.432E-02	1.693E-02	5.213E-03	9.483E-04	2.326E-04	4.709E-05	1.380E-05
30	1.647E-01	4.861E-02	1.518E-02	4.168E-03	8.232E-04	2.445E-04	3.510E-05	9.019E-06
31	1.299E-01	4.177E-02	1.273E-02	3.912E-03	7.621E-04	2.301E-04	2.520E-05	8.737E-06
32	1.047E-01	3.471E-02	9.552E-03	3.330E-03	6.630E-04	1.270E-04	2.942E-05	4.677E-06
33	9.878E-02	3.127E-02	9.090E-03	2.658E-03	4.141E-04	1.448E-04	1.081E-05	0.000E+00
34	7.954E-02	1.847E-02	5.841E-03	2.176E-03	4.310E-04	1.602E-04	1.371E-05	4.185E-06
35	6.231E-02	2.102E-02	6.313E-03	1.652E-03	3.642E-04	1.417E-04	1.572E-05	0.000E+00
36	5.425E-02	1.690E-02	4.102E-03	1.723E-03	3.259E-04	8.695E-05	1.876E-05	0.000E+00
37	4.564E-02	1.438E-02	3.481E-03	1.101E-03	2.788E-04	6.382E-05	2.240E-05	0.000E+00
38	3.697E-02	1.005E-02	3.267E-03	8.460E-04	2.451E-04	6.619E-05	5.955E-06	0.000E+00
39	3.160E-02	8.105E-03	2.421E-03	8.642E-04	1.951E-04	4.368E-05	5.509E-06	0.000E+00
40	2.357E-02	7.408E-03	1.665E-03	7.350E-04	1.415E-04	5.683E-05	2.245E-05	3.002E-06
41	2.065E-02	5.553E-03	1.950E-03	5.284E-04	9.691E-05	5.286E-05	2.330E-06	2.794E-06
42	1.711E-02	4.804E-03	1.340E-03	5.135E-04	8.505E-05	3.272E-05	1.077E-05	5.222E-06
43	1.541E-02	4.615E-03	1.416E-03	4.434E-04	1.278E-04	1.947E-05	6.380E-06	2.521E-06
44	1.032E-02	3.135E-03	1.074E-03	2.790E-04	9.543E-05	4.759E-05	2.401E-06	0.000E+00
45	5.868E-03	1.505E-03	6.684E-04	1.774E-04	7.299E-05	1.282E-05	1.849E-06	1.088E-06
46	4.357E-03	1.242E-03	5.011E-04	2.311E-04	4.998E-05	1.822E-05	3.627E-06	1.142E-06
47	4.306E-03	1.468E-03	5.474E-04	1.939E-04	6.785E-05	1.882E-05	8.321E-07	0.000E+00
48	4.691E-03	1.266E-03	4.799E-04	2.286E-04	4.073E-05	1.907E-05	9.279E-07	1.210E-06
49	3.676E-03	1.242E-03	5.278E-04	1.810E-04	5.856E-05	9.798E-06	8.829E-07	1.091E-06
50	3.324E-03	1.029E-03	4.535E-04	2.142E-04	4.987E-05	9.446E-06	1.660E-06	1.098E-06
51	2.535E-03	9.287E-04	2.575E-04	1.264E-04	3.282E-05	3.324E-06	3.799E-06	0.000E+00
52	2.053E-03	6.668E-04	2.242E-04	9.626E-05	2.407E-05	1.334E-05	3.315E-06	7.950E-07
53	1.521E-03	5.368E-04	2.244E-04	9.688E-05	1.942E-05	8.791E-06	1.196E-06	1.403E-06
54	1.255E-03	4.193E-04	1.915E-04	6.603E-05	3.143E-05	1.125E-05	0.000E+00	0.000E+00
55	1.054E-03	2.970E-04	1.516E-04	6.330E-05	2.238E-05	8.654E-06	5.302E-07	0.000E+00

56	1.008E-03	2.899E-04	1.532E-04	5.460E-05	1.041E-05	5.875E-06	0.000E+00	0.000E+00
57	7.784E-04	2.650E-04	1.228E-04	5.243E-05	1.071E-05	6.089E-06	1.060E-06	6.875E-07
58	7.608E-04	2.807E-04	1.008E-04	4.872E-05	1.958E-05	4.485E-06	0.000E+00	1.295E-06

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	1.155E-05	4.426E-06	1.802E-06	0.000E+00	6.009E-07	0.000E+00	0.000E+00	0.000E+00
2	8.453E-06	7.516E-06	3.646E-06	9.143E-07	6.076E-07	5.299E-07	4.723E-07	0.000E+00
3	1.502E-05	3.116E-06	1.930E-06	9.193E-07	5.745E-07	0.000E+00	2.341E-07	0.000E+00
4	1.880E-05	4.701E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
5	2.144E-05	2.909E-06	1.773E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
6	5.291E-06	1.603E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
7	8.949E-06	7.991E-06	0.000E+00	8.650E-07	5.785E-07	0.000E+00	0.000E+00	0.000E+00
8	1.864E-05	1.098E-04	1.699E-04	1.953E-04	1.255E-04	4.569E-05	1.140E-05	2.702E-06
9	1.329E-03	1.268E-03	1.072E-03	5.902E-04	1.947E-04	5.215E-05	3.308E-06	9.243E-07
10	5.117E-03	2.248E-03	1.284E-03	3.788E-04	1.092E-04	1.324E-05	2.667E-06	0.000E+00
11	9.409E-03	2.470E-03	1.520E-03	2.966E-04	4.911E-05	1.484E-05	6.602E-06	0.000E+00
12	6.515E-03	1.818E-03	3.407E-04	7.430E-05	2.048E-05	0.000E+00	2.623E-06	0.000E+00
13	6.958E-03	9.251E-04	3.488E-04	9.278E-05	3.745E-05	1.958E-05	0.000E+00	0.000E+00
14	5.015E-03	1.231E-03	0.000E+00	1.247E-04	9.693E-06	0.000E+00	0.000E+00	0.000E+00
15	4.087E-03	1.017E-03	4.640E-04	6.594E-05	8.750E-06	9.714E-06	7.234E-06	0.000E+00
16	2.182E-03	3.851E-04	3.757E-04	7.088E-05	2.079E-05	5.967E-06	0.000E+00	0.000E+00
17	1.570E-03	6.798E-04	3.457E-04	9.061E-05	1.204E-05	0.000E+00	0.000E+00	0.000E+00
18	3.004E-03	1.167E-03	6.899E-05	9.014E-05	4.269E-05	1.466E-05	0.000E+00	0.000E+00
19	5.616E-03	1.723E-03	2.750E-04	9.788E-05	2.695E-05	0.000E+00	0.000E+00	0.000E+00
20	2.655E-03	6.829E-04	2.430E-04	1.276E-04	3.055E-05	0.000E+00	2.221E-06	0.000E+00
21	2.851E-03	6.527E-04	5.467E-05	1.903E-04	2.170E-05	0.000E+00	0.000E+00	0.000E+00
22	1.590E-03	5.486E-04	2.035E-04	5.509E-05	3.329E-05	0.000E+00	0.000E+00	0.000E+00
23	2.778E-03	7.343E-04	1.025E-04	8.113E-05	7.264E-06	0.000E+00	0.000E+00	0.000E+00
24	1.242E-03	2.469E-04	1.841E-04	2.138E-04	1.385E-05	0.000E+00	0.000E+00	0.000E+00
25	1.113E-03	2.737E-04	1.382E-04	5.626E-05	9.754E-06	1.187E-05	2.342E-06	0.000E+00
26	1.223E-03	2.908E-04	2.184E-04	5.156E-05	1.720E-05	4.876E-06	0.000E+00	0.000E+00
27	1.621E-03	2.360E-04	1.060E-04	7.224E-05	1.633E-05	0.000E+00	0.000E+00	0.000E+00
28	5.769E-04	1.858E-04	6.652E-05	2.594E-05	3.200E-05	0.000E+00	0.000E+00	0.000E+00
29	5.522E-04	8.359E-05	9.836E-05	3.405E-05	1.944E-05	0.000E+00	0.000E+00	0.000E+00
30	2.551E-04	1.376E-04	1.817E-05	0.000E+00	1.444E-05	0.000E+00	0.000E+00	0.000E+00
31	4.609E-04	1.344E-04	3.969E-05	3.609E-05	1.426E-05	8.594E-06	0.000E+00	0.000E+00
32	1.210E-04	3.695E-04	0.000E+00	1.386E-05	5.383E-06	0.000E+00	0.000E+00	0.000E+00

33	2.201E-04	8.034E-05	3.188E-05	0.000E+00	4.572E-06	0.000E+00	0.000E+00	0.000E+00
34	2.830E-04	1.826E-04	4.546E-05	2.572E-05	1.285E-05	3.948E-06	0.000E+00	0.000E+00
35	4.094E-04	8.334E-05	2.994E-05	0.000E+00	0.000E+00	0.000E+00	1.674E-06	0.000E+00
36	2.433E-04	3.311E-05	5.431E-05	3.152E-05	8.284E-06	0.000E+00	0.000E+00	0.000E+00
37	3.032E-04	1.067E-04	4.785E-05	0.000E+00	3.551E-06	0.000E+00	0.000E+00	0.000E+00
38	1.980E-04	4.158E-05	6.231E-05	5.675E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
39	2.018E-04	8.479E-05	1.179E-05	1.146E-05	3.464E-06	0.000E+00	0.000E+00	0.000E+00
40	1.185E-04	3.521E-05	0.000E+00	9.875E-06	3.096E-06	0.000E+00	0.000E+00	0.000E+00
41	1.029E-04	2.388E-05	2.925E-05	4.699E-06	3.214E-06	0.000E+00	0.000E+00	0.000E+00
42	9.650E-05	2.123E-05	8.700E-06	7.960E-06	2.788E-06	0.000E+00	0.000E+00	0.000E+00
43	4.354E-05	5.050E-05	0.000E+00	0.000E+00	1.158E-05	0.000E+00	0.000E+00	0.000E+00
44	9.115E-05	4.327E-05	1.180E-05	2.328E-06	0.000E+00	1.417E-06	0.000E+00	0.000E+00
45	6.258E-05	6.504E-06	1.577E-05	2.091E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
46	4.928E-05	1.207E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
47	7.768E-05	9.657E-06	7.356E-06	2.029E-06	1.109E-06	0.000E+00	0.000E+00	0.000E+00
48	7.191E-05	2.143E-05	1.132E-05	3.716E-06	0.000E+00	0.000E+00	4.870E-07	0.000E+00
49	6.171E-05	1.711E-05	7.111E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
50	3.883E-05	1.302E-05	6.769E-06	1.532E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
51	3.312E-05	1.195E-05	9.576E-06	4.286E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
52	3.423E-05	1.091E-05	1.079E-05	2.487E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
53	1.465E-05	7.399E-06	2.355E-06	2.214E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
54	2.884E-05	7.670E-06	2.361E-06	2.181E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
55	2.232E-05	3.667E-06	2.104E-06	2.081E-06	7.221E-07	0.000E+00	0.000E+00	0.000E+00
56	5.916E-06	5.241E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
57	1.191E-05	3.649E-06	0.000E+00	1.014E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
58	1.473E-05	6.588E-06	1.983E-06	0.000E+00	6.311E-07	0.000E+00	0.000E+00	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
261	125	58	40	19	2	5	0
372	133	58	51	26	7	2	1
293	136	45	48	24	6	1	1
333	131	39	52	22	6	2	0
357	153	66	34	10	4	2	0
330	134	43	39	20	1	1	0
231	95	37	32	9	2	2	1
130	59	16	45	64	104	201	55
632	680	477	719	741	560	398	46
1946	1694	927	2025	1114	408	141	14

1490	1318	606	2853	1311	361	125	4
1411	1191	566	2493	1081	289	63	1
1296	1107	480	2310	900	201	32	1
1381	1143	514	1856	620	105	23	1
1690	1267	518	1571	471	75	31	2
2135	1481	584	1412	395	85	28	1
2495	1637	628	1180	333	101	34	3
1916	1514	550	840	286	73	26	2
1739	1391	535	835	332	68	32	4
1749	1494	590	939	308	99	21	1
1767	1610	610	1062	359	77	36	6
1691	1681	595	812	253	59	14	4
1431	1705	620	695	219	45	16	4
1309	1749	579	605	185	35	23	3
1102	1670	564	531	181	53	23	0
952	1592	505	430	131	43	12	1
888	1608	487	413	131	48	19	0
896	1480	435	395	109	39	9	2
802	1616	451	348	97	27	12	3
755	1526	445	326	96	31	10	2
650	1340	349	263	84	28	7	2
644	1178	299	238	75	15	8	1
708	1000	288	200	48	18	3	0
810	807	209	169	52	21	4	1
831	773	222	137	45	19	5	0
862	680	160	148	42	12	6	0
1003	674	155	106	40	10	8	0
957	502	143	79	34	10	2	0
1001	455	111	85	29	7	2	0
1023	472	86	80	23	10	9	1
1025	376	107	60	17	10	1	1
1006	367	83	66	16	7	5	2
913	349	86	56	24	4	3	1
899	316	88	48	24	13	2	0
865	254	91	50	31	6	2	1
699	227	74	71	23	9	4	1
657	257	77	56	29	9	1	0
717	221	67	67	18	9	1	1
597	231	79	56	27	5	1	1
585	206	73	72	25	5	2	1

484	203	45	46	18	2	5	0
448	166	45	40	15	9	5	1
380	154	52	47	14	7	2	2
319	121	45	32	23	9	0	0
280	90	37	32	17	7	1	0
271	89	38	28	8	5	0	0
210	82	30	27	8	5	2	1
219	92	27	27	16	4	0	2

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
7	3	1	0	1	0	0	0
5	5	2	1	1	1	2	0
9	2	1	1	1	0	1	0
11	3	0	0	0	0	0	0
13	2	1	0	0	0	0	0
3	1	0	0	0	0	0	0
5	5	0	1	1	0	0	0
4	27	34	83	83	34	20	4
283	302	210	234	117	34	5	1
301	158	70	77	33	6	2	0
161	48	15	37	9	3	3	0
73	22	5	7	3	0	1	0
44	10	2	7	4	2	0	0
38	11	0	8	1	0	0	0
33	7	5	5	1	1	2	0
30	7	5	7	3	1	0	0
33	15	6	11	2	0	0	0
39	19	1	7	5	2	0	0
36	27	5	9	4	0	0	0
37	17	5	12	4	0	1	0
41	15	2	14	3	0	0	0
21	14	5	5	4	0	0	0
26	11	3	8	1	0	0	0
18	10	6	10	2	0	0	0
15	13	5	6	2	2	1	0
8	11	7	4	2	1	0	0
16	11	4	7	2	0	0	0

5	11	3	3	4	0	0	0
4	5	5	4	4	0	0	0
3	10	1	0	3	0	0	0
6	9	2	5	3	2	0	0
2	8	0	2	1	0	0	0
4	6	2	0	1	0	0	0
7	15	3	4	3	1	0	0
12	7	2	0	0	0	1	0
9	3	4	5	2	0	0	0
15	11	4	0	1	0	0	0
10	4	5	1	0	0	0	0
4	9	1	2	1	0	0	0
10	4	0	2	1	0	0	0
10	3	3	1	1	0	0	0
11	3	1	2	1	0	0	0
5	7	0	0	4	0	0	0
15	8	2	1	0	1	0	0
18	2	4	1	0	0	0	0
15	4	0	0	0	0	0	0
23	3	2	1	1	0	0	0
21	7	3	2	0	0	1	0
19	6	2	0	0	0	0	0
13	5	2	1	0	0	0	0
12	5	3	3	0	0	0	0
14	5	4	2	0	0	0	0
7	4	1	2	0	0	0	0
14	4	1	2	0	0	0	0
11	2	1	2	1	0	0	0
3	3	0	0	0	0	0	0
6	2	0	1	0	0	0	0
8	4	1	0	1	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = -1.636e+005 \quad (-5.881e+014, 5.881e+014)$$

$b = -0.1791$ $(-1.051e+004, 1.051e+004)$
 $c = 1.636e+005$ $(-5.881e+014, 5.881e+014)$
 $d = -0.1791$ $(-1.051e+004, 1.051e+004)$

goftotal =

sse: 1.8193e-002
 rsquare: 9.9923e-001
 dfe: 4
 adjrsquare: 9.9865e-001
 rmse: 6.7441e-002

ctotal =

General model Exp1:
 $ctotal(x) = a \cdot \exp(b \cdot x)$
 Coefficients (with 95% confidence bounds):
 $a = 24.11$ (14.72, 33.5)
 $b = -0.2051$ (-0.2251, -0.1851)

goftotal =

sse: 8.6942e-005
 rsquare: 9.9950e-001
 dfe: 3
 adjrsquare: 9.9933e-001
 rmse: 5.3834e-003

curve fit iron:

ctotal =

General model Exp2:
 $ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$
 Coefficients (with 95% confidence bounds):
 $a = 1.007$ (0.7436, 1.271)
 $b = -0.2179$ (-0.2452, -0.1905)
 $c = 0.009065$ (-0.008678, 0.02681)
 $d = -0.04813$ (-0.09657, 0.0003113)

goftotal =

sse: 3.0161e-007
 rsquare: 9.9990e-001
 dfe: 4
 adjrsquare: 9.9983e-001
 rmse: 2.7459e-004

25 to 141 self fit :

ctotal =

General model Exp1:
 $ctotal(x) = a * \exp(b * x)$
 Coefficients (with 95% confidence bounds):
 a = 0.05839 (0.04239, 0.07439)
 b = -0.09102 (-0.09908, -0.08296)

goftotal =

sse: 3.2179e-009
 rsquare: 9.9952e-001
 dfe: 3
 adjrsquare: 9.9935e-001
 rmse: 3.2751e-005

Event 76	Date		Time*		Location*		Summing interval*	
	4-Nov-03		1929		S19W83		Nov 4 2100 to Nov 9 2300	
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	7.144E-04	2.266E-04	1.263E-04	5.752E-05	1.911E-05	5.485E-06	5.092E-07	0.000E+00
2	1.198E-03	3.505E-04	1.454E-04	4.549E-05	4.760E-06	4.526E-06	1.501E-06	0.000E+00
3	3.356E-03	6.859E-04	1.886E-04	5.253E-05	1.440E-05	2.649E-06	5.773E-07	0.000E+00
4	5.947E-03	1.351E-03	5.530E-04	1.024E-04	3.676E-05	1.480E-05	2.607E-06	0.000E+00
5	5.919E-03	1.293E-03	5.207E-04	1.472E-04	4.266E-05	1.619E-05	3.960E-06	8.157E-07
6	9.847E-03	2.770E-03	1.094E-03	3.234E-04	1.272E-04	3.471E-05	9.023E-06	1.664E-06

7	1.359E-02	4.430E-03	1.882E-03	7.779E-04	2.374E-04	4.811E-05	7.133E-06	3.589E-06
8	1.915E-02	7.277E-03	3.268E-03	1.301E-03	3.715E-04	1.051E-04	9.808E-06	2.770E-06
9	2.257E-02	8.341E-03	3.521E-03	1.490E-03	3.580E-04	9.100E-05	1.576E-05	9.314E-07
10	2.542E-02	9.853E-03	4.510E-03	1.797E-03	4.109E-04	8.402E-05	1.281E-05	1.018E-06
11	2.697E-02	1.042E-02	4.733E-03	2.000E-03	3.759E-04	9.252E-05	1.375E-05	1.227E-06
12	2.960E-02	1.181E-02	5.163E-03	1.949E-03	5.378E-04	8.835E-05	1.338E-05	1.229E-06
13	2.694E-02	1.077E-02	5.018E-03	1.998E-03	4.552E-04	1.224E-04	1.109E-05	0.000E+00
14	1.775E-02	7.138E-03	3.582E-03	1.441E-03	3.596E-04	6.989E-05	7.220E-06	0.000E+00
15	1.540E-02	6.718E-03	3.450E-03	1.317E-03	3.907E-04	7.886E-05	9.719E-06	9.900E-07
16	1.432E-02	6.368E-03	3.057E-03	1.379E-03	3.204E-04	6.359E-05	5.229E-06	3.826E-06
17	1.130E-02	4.992E-03	2.447E-03	1.220E-03	2.792E-04	7.793E-05	1.374E-05	1.709E-06
18	1.100E-02	4.869E-03	2.580E-03	1.110E-03	2.954E-04	6.806E-05	6.158E-06	8.164E-07
19	1.202E-02	5.630E-03	2.953E-03	1.307E-03	3.015E-04	6.996E-05	7.879E-06	0.000E+00
20	1.042E-02	5.173E-03	2.528E-03	1.096E-03	3.009E-04	7.054E-05	1.360E-05	0.000E+00
21	9.940E-03	4.949E-03	2.780E-03	1.129E-03	3.050E-04	7.135E-05	8.342E-06	0.000E+00
22	9.864E-03	4.997E-03	2.424E-03	1.127E-03	2.973E-04	5.035E-05	7.514E-06	0.000E+00
23	1.012E-02	4.927E-03	2.432E-03	1.160E-03	2.801E-04	6.587E-05	3.790E-06	3.264E-06
24	1.075E-02	5.597E-03	2.685E-03	1.207E-03	3.314E-04	5.072E-05	3.790E-06	0.000E+00
25	1.219E-02	5.727E-03	2.973E-03	1.305E-03	2.979E-04	6.077E-05	4.520E-06	0.000E+00
26	1.112E-02	5.382E-03	2.822E-03	1.197E-03	2.926E-04	6.572E-05	5.609E-06	8.229E-07
27	1.020E-02	4.867E-03	2.652E-03	1.028E-03	2.800E-04	4.817E-05	1.193E-06	7.487E-07
28	9.617E-03	4.445E-03	2.544E-03	9.406E-04	2.235E-04	3.239E-05	6.036E-06	7.357E-07
29	8.543E-03	4.316E-03	2.188E-03	8.265E-04	1.974E-04	4.015E-05	2.406E-06	1.488E-06
30	8.089E-03	4.156E-03	2.063E-03	7.715E-04	1.913E-04	2.996E-05	2.331E-06	0.000E+00
31	7.704E-03	3.719E-03	1.855E-03	7.320E-04	1.642E-04	2.675E-05	2.841E-06	0.000E+00
32	7.602E-03	3.360E-03	1.733E-03	7.535E-04	1.787E-04	3.294E-05	5.168E-06	0.000E+00
33	6.772E-03	3.071E-03	1.543E-03	5.886E-04	1.367E-04	2.337E-05	5.648E-06	0.000E+00
34	6.412E-03	3.047E-03	1.549E-03	6.160E-04	1.212E-04	1.493E-05	1.670E-06	0.000E+00
35	5.960E-03	2.745E-03	1.495E-03	5.075E-04	1.203E-04	2.071E-05	1.682E-06	6.643E-07
36	5.876E-03	2.711E-03	1.147E-03	4.705E-04	9.642E-05	1.812E-05	2.173E-06	0.000E+00
37	5.074E-03	2.388E-03	1.148E-03	4.439E-04	9.553E-05	1.203E-05	2.153E-06	0.000E+00
38	5.594E-03	2.506E-03	1.152E-03	4.478E-04	9.569E-05	2.019E-05	2.683E-06	6.834E-07
39	5.141E-03	2.390E-03	1.083E-03	4.117E-04	8.255E-05	1.770E-05	1.584E-06	0.000E+00
40	4.869E-03	2.358E-03	1.020E-03	3.385E-04	6.386E-05	1.502E-05	5.107E-07	0.000E+00
41	4.283E-03	2.044E-03	9.539E-04	3.458E-04	6.174E-05	9.322E-06	0.000E+00	0.000E+00
42	3.949E-03	1.728E-03	7.487E-04	3.331E-04	7.587E-05	1.393E-05	5.039E-07	0.000E+00
43	3.509E-03	1.493E-03	6.091E-04	2.697E-04	5.087E-05	1.056E-05	1.406E-06	0.000E+00
44	3.373E-03	1.593E-03	5.883E-04	2.829E-04	4.244E-05	8.834E-06	1.005E-06	0.000E+00
45	3.290E-03	1.517E-03	5.911E-04	2.281E-04	4.853E-05	1.001E-05	4.839E-07	0.000E+00
46	3.010E-03	1.270E-03	6.138E-04	1.855E-04	3.514E-05	4.426E-06	1.982E-06	0.000E+00

47	2.508E-03	9.464E-04	4.953E-04	1.554E-04	2.707E-05	9.841E-06	1.008E-06	0.000E+00
48	1.936E-03	8.739E-04	4.172E-04	9.748E-05	2.224E-05	4.354E-06	0.000E+00	6.155E-07
49	1.754E-03	7.394E-04	3.268E-04	8.862E-05	2.555E-05	3.106E-06	1.876E-06	0.000E+00
50	1.720E-03	6.505E-04	3.732E-04	1.100E-04	1.944E-05	4.289E-06	4.612E-07	0.000E+00
51	1.422E-03	6.605E-04	2.525E-04	9.337E-05	1.834E-05	5.216E-06	9.406E-07	0.000E+00
52	1.444E-03	6.054E-04	2.542E-04	9.140E-05	2.390E-05	5.075E-06	9.349E-07	0.000E+00
53	1.292E-03	5.746E-04	1.832E-04	6.269E-05	8.936E-06	1.076E-06	2.295E-06	0.000E+00
54	1.226E-03	4.337E-04	2.261E-04	4.566E-05	1.012E-05	2.137E-06	4.774E-07	0.000E+00
55	1.124E-03	4.281E-04	1.885E-04	4.720E-05	2.173E-06	0.000E+00	4.477E-07	0.000E+00
56	1.011E-03	4.118E-04	2.268E-04	5.699E-05	1.116E-05	4.051E-06	0.000E+00	0.000E+00
57	1.016E-03	4.521E-04	1.531E-04	4.603E-05	6.695E-06	1.994E-06	0.000E+00	0.000E+00
58	1.111E-03	5.011E-04	1.827E-04	4.058E-05	1.575E-05	2.111E-06	9.195E-07	0.000E+00
59	9.649E-04	3.908E-04	1.639E-04	4.192E-05	1.138E-05	2.781E-06	1.711E-06	0.000E+00
60	7.906E-04	3.118E-04	2.191E-04	4.939E-05	5.484E-06	4.133E-06	0.000E+00	0.000E+00
61	7.894E-04	3.474E-04	1.966E-04	4.154E-05	1.332E-05	3.021E-06	8.833E-07	5.863E-07
62	7.885E-04	3.349E-04	8.948E-05	4.333E-05	5.560E-06	1.047E-06	4.420E-07	0.000E+00
63	7.712E-04	2.839E-04	1.061E-04	3.808E-05	9.767E-06	9.857E-07	0.000E+00	0.000E+00
64	7.823E-04	3.606E-04	1.708E-04	3.955E-05	1.204E-05	3.019E-06	4.686E-07	0.000E+00
65	7.796E-04	2.625E-04	1.493E-04	5.252E-05	1.407E-05	3.006E-06	4.656E-07	0.000E+00
66	6.600E-04	2.361E-04	9.579E-05	4.277E-05	7.634E-06	3.976E-06	4.376E-07	0.000E+00
67	7.011E-04	2.493E-04	1.190E-04	4.255E-05	8.802E-06	5.000E-06	0.000E+00	0.000E+00
68	6.284E-04	2.372E-04	7.455E-05	3.395E-05	4.360E-06	2.006E-06	4.359E-07	0.000E+00
69	4.897E-04	1.896E-04	6.730E-05	2.272E-05	1.082E-05	1.032E-06	1.359E-06	0.000E+00
70	5.031E-04	1.979E-04	9.457E-05	3.622E-05	7.761E-06	2.998E-06	4.639E-07	5.481E-07
71	4.971E-04	2.062E-04	7.695E-05	3.165E-05	8.854E-06	5.229E-06	9.169E-07	5.859E-07
72	4.086E-04	1.681E-04	6.176E-05	4.037E-05	4.460E-06	2.053E-06	4.467E-07	5.566E-07
73	5.016E-04	1.961E-04	7.548E-05	2.471E-05	9.998E-06	4.014E-06	0.000E+00	0.000E+00
74	4.677E-04	2.103E-04	6.837E-05	2.470E-05	5.495E-06	4.136E-06	0.000E+00	0.000E+00
75	4.436E-04	1.590E-04	9.709E-05	2.301E-05	7.251E-06	1.905E-06	4.391E-07	0.000E+00
76	3.560E-04	1.593E-04	8.179E-05	2.304E-05	1.318E-05	1.042E-06	0.000E+00	0.000E+00
77	3.601E-04	1.342E-04	5.781E-05	2.785E-05	4.396E-06	3.008E-06	0.000E+00	0.000E+00
78	3.012E-04	1.538E-04	8.169E-05	1.146E-05	4.391E-06	3.062E-06	0.000E+00	0.000E+00
79	3.757E-04	1.153E-04	6.446E-05	1.314E-05	6.447E-06	9.800E-07	0.000E+00	0.000E+00
80	3.541E-04	1.197E-04	7.182E-05	3.124E-05	8.675E-06	9.750E-07	4.636E-07	0.000E+00
81	3.147E-04	1.465E-04	4.084E-05	4.371E-05	6.602E-06	2.977E-06	4.617E-07	0.000E+00
82	3.377E-04	1.223E-04	7.088E-05	1.600E-05	3.356E-06	4.000E-06	0.000E+00	1.152E-06
83	2.902E-04	1.596E-04	3.675E-05	1.947E-05	3.351E-06	1.029E-06	8.665E-07	0.000E+00
84	3.351E-04	8.375E-05	5.997E-05	1.130E-05	4.264E-06	9.664E-07	9.186E-07	0.000E+00
85	2.793E-04	1.703E-04	6.753E-05	1.802E-05	7.651E-06	0.000E+00	1.348E-06	5.729E-07
86	2.596E-04	6.189E-05	3.737E-05	2.555E-05	2.156E-06	9.629E-07	4.572E-07	1.143E-06

87	2.849E-04	1.075E-04	5.031E-05	1.613E-05	7.568E-06	1.983E-06	4.309E-07	0.000E+00
88	2.420E-04	9.919E-05	2.958E-05	2.586E-05	8.598E-06	4.018E-06	4.558E-07	5.695E-07
89	2.598E-04	1.049E-04	3.358E-05	6.337E-06	6.441E-06	1.977E-06	4.558E-07	0.000E+00
90	2.376E-04	1.017E-04	3.393E-05	1.616E-05	3.185E-06	1.974E-06	0.000E+00	0.000E+00
91	2.102E-04	7.007E-05	4.652E-05	1.368E-05	3.992E-06	0.000E+00	0.000E+00	0.000E+00
92	1.794E-04	7.968E-05	3.277E-05	1.462E-05	7.497E-06	2.021E-06	0.000E+00	0.000E+00
93	1.690E-04	5.889E-05	2.669E-05	1.286E-05	1.096E-06	2.911E-06	0.000E+00	0.000E+00
94	1.658E-04	4.861E-05	1.302E-05	7.820E-06	4.251E-06	1.899E-06	8.501E-07	5.315E-07
95	1.606E-04	6.901E-05	4.020E-05	1.609E-05	1.029E-06	1.897E-06	0.000E+00	0.000E+00
96	1.332E-04	7.439E-05	3.918E-05	1.570E-05	7.331E-06	9.479E-07	0.000E+00	5.628E-07
97	1.217E-04	5.283E-05	3.256E-05	6.349E-06	5.204E-06	9.464E-07	4.238E-07	5.299E-07
98	1.264E-04	3.704E-05	2.312E-05	1.422E-05	3.144E-06	0.000E+00	0.000E+00	0.000E+00
99	1.387E-04	4.454E-05	1.953E-05	1.113E-05	6.405E-06	9.450E-07	4.489E-07	0.000E+00
100	1.383E-04	7.429E-05	1.991E-05	1.267E-05	7.492E-06	0.000E+00	4.229E-07	0.000E+00
101	1.360E-04	6.100E-05	4.958E-05	1.583E-05	4.164E-06	0.000E+00	8.709E-07	0.000E+00
102	1.146E-04	6.054E-05	3.268E-05	1.900E-05	4.290E-06	2.003E-06	2.165E-06	5.282E-07
103	1.082E-04	5.489E-05	2.965E-05	1.592E-05	1.089E-06	2.944E-06	2.191E-06	0.000E+00
104	1.331E-04	6.088E-05	3.598E-05	1.427E-05	3.197E-06	3.001E-06	0.000E+00	5.594E-07
105	1.026E-04	5.766E-05	2.979E-05	1.732E-05	7.472E-06	0.000E+00	0.000E+00	5.590E-07
106	8.637E-05	4.741E-05	3.296E-05	1.119E-05	6.322E-06	1.940E-06	4.474E-07	0.000E+00
107	1.300E-04	5.479E-05	1.538E-05	1.187E-05	3.933E-06	0.000E+00	0.000E+00	1.013E-06
108	1.196E-04	3.668E-05	2.282E-05	9.460E-06	2.042E-06	1.938E-06	0.000E+00	5.585E-07
109	1.322E-04	3.981E-05	1.307E-05	7.917E-06	7.328E-06	1.935E-06	8.671E-07	0.000E+00
110	1.291E-04	3.377E-05	2.931E-05	1.870E-05	5.348E-06	9.964E-07	0.000E+00	0.000E+00
111	9.829E-05	4.378E-05	3.265E-05	1.421E-05	9.483E-06	0.000E+00	8.912E-07	5.570E-07
112	8.718E-05	3.932E-05	3.921E-05	9.536E-06	1.081E-06	3.809E-06	4.458E-07	0.000E+00
113	8.068E-05	4.195E-05	1.304E-05	1.257E-05	1.017E-06	1.873E-06	4.194E-07	0.000E+00
114	5.367E-05	4.249E-05	1.302E-05	6.272E-06	5.264E-06	0.000E+00	0.000E+00	5.231E-07
115	3.299E-05	3.931E-05	9.854E-06	7.603E-06	4.123E-06	9.914E-07	4.186E-07	5.548E-07
116	7.214E-05	2.331E-05	1.951E-05	3.226E-06	1.015E-06	1.926E-06	0.000E+00	5.544E-07
117	5.656E-05	2.869E-05	3.253E-05	7.789E-06	2.092E-06	1.869E-06	8.625E-07	0.000E+00
118	5.383E-05	2.331E-05	1.636E-05	6.267E-06	2.031E-06	9.350E-07	4.184E-07	0.000E+00
119	8.646E-05	1.807E-05	2.267E-05	9.584E-06	2.154E-06	2.861E-06	4.184E-07	0.000E+00
120	8.627E-05	2.614E-05	2.286E-05	1.548E-05	1.076E-06	9.914E-07	8.623E-07	0.000E+00
121	6.233E-05	2.883E-05	1.931E-05	6.172E-06	1.076E-06	0.000E+00	4.436E-07	5.226E-07
122	6.283E-05	3.135E-05	2.265E-05	4.834E-06	3.104E-06	9.900E-07	4.179E-07	1.045E-06
123	9.704E-05	3.872E-05	6.068E-06	5.671E-06	2.956E-06	1.797E-06	0.000E+00	0.000E+00

Iron

<E>

<E>

<E>

<E>

<E>

<E>

<E>

<E>

Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	2.544E-05	4.985E-06	0.000E+00	9.200E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2	1.817E-05	4.942E-06	2.044E-06	0.000E+00	6.684E-07	0.000E+00	2.517E-07	0.000E+00
3	1.271E-05	5.943E-06	2.296E-06	0.000E+00	8.000E-07	7.407E-07	0.000E+00	0.000E+00
4	1.930E-05	2.081E-06	2.571E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
5	3.349E-05	1.301E-05	2.643E-06	1.298E-06	0.000E+00	0.000E+00	3.514E-07	0.000E+00
6	4.330E-05	1.785E-05	9.209E-06	1.392E-06	1.017E-06	8.014E-07	0.000E+00	0.000E+00
7	8.145E-05	3.334E-05	8.976E-06	7.163E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
8	1.543E-04	1.980E-05	1.868E-05	8.841E-06	1.913E-06	9.171E-07	8.100E-07	0.000E+00
9	1.135E-04	5.064E-05	6.951E-06	4.489E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
10	1.678E-04	3.954E-05	1.049E-05	8.174E-06	5.484E-06	0.000E+00	0.000E+00	0.000E+00
11	1.134E-04	3.236E-05	1.300E-05	9.892E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
12	2.181E-04	3.004E-05	1.214E-05	5.678E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
13	1.558E-04	1.567E-05	7.505E-06	1.828E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
14	1.370E-04	2.350E-05	1.274E-05	3.131E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
15	1.782E-04	3.292E-05	1.859E-05	8.482E-06	0.000E+00	1.716E-06	0.000E+00	0.000E+00
16	1.197E-04	2.224E-05	1.209E-05	2.808E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
17	1.458E-04	3.135E-05	1.385E-05	1.381E-06	1.839E-06	0.000E+00	0.000E+00	0.000E+00
18	1.026E-04	2.684E-05	5.439E-06	5.308E-06	8.500E-07	0.000E+00	0.000E+00	0.000E+00
19	1.279E-04	4.127E-05	1.053E-05	3.826E-06	8.693E-07	0.000E+00	0.000E+00	0.000E+00
20	1.315E-04	6.261E-05	5.222E-06	8.939E-06	1.712E-06	0.000E+00	0.000E+00	0.000E+00
21	1.436E-04	3.811E-05	2.356E-05	3.713E-06	8.764E-07	1.561E-06	3.369E-07	0.000E+00
22	1.663E-04	3.936E-05	1.583E-05	1.208E-06	1.674E-06	0.000E+00	0.000E+00	0.000E+00
23	1.495E-04	2.700E-05	5.208E-06	2.499E-06	8.121E-07	0.000E+00	0.000E+00	0.000E+00
24	1.402E-04	4.214E-05	1.029E-05	3.842E-06	3.374E-06	0.000E+00	0.000E+00	0.000E+00
25	1.588E-04	2.591E-05	2.356E-05	8.918E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
26	1.672E-04	3.873E-05	2.616E-06	2.474E-06	1.644E-06	0.000E+00	3.351E-07	0.000E+00
27	1.030E-04	3.969E-05	2.231E-06	3.344E-06	7.567E-07	0.000E+00	0.000E+00	0.000E+00
28	1.179E-04	2.769E-05	1.255E-05	0.000E+00	0.000E+00	6.920E-07	0.000E+00	0.000E+00
29	1.424E-04	4.484E-05	7.454E-06	3.425E-06	1.538E-06	0.000E+00	0.000E+00	3.978E-07
30	1.110E-04	1.324E-05	2.432E-06	1.101E-06	7.800E-07	1.380E-06	0.000E+00	0.000E+00
31	8.515E-05	1.697E-05	2.407E-06	4.377E-06	0.000E+00	1.300E-06	0.000E+00	0.000E+00
32	9.486E-05	1.292E-05	7.054E-06	1.121E-06	1.417E-06	0.000E+00	0.000E+00	0.000E+00
33	9.237E-05	1.268E-05	2.179E-06	1.044E-06	2.867E-06	0.000E+00	0.000E+00	0.000E+00
34	7.709E-05	1.992E-05	0.000E+00	3.328E-06	7.379E-07	0.000E+00	0.000E+00	0.000E+00
35	6.080E-05	1.409E-05	8.659E-06	1.013E-06	1.400E-06	0.000E+00	2.743E-07	0.000E+00
36	7.053E-05	1.958E-05	1.094E-05	2.096E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
37	6.028E-05	1.586E-05	2.111E-06	4.150E-06	6.745E-07	0.000E+00	0.000E+00	3.601E-07
38	6.578E-05	7.012E-06	0.000E+00	5.273E-06	6.655E-07	1.258E-06	0.000E+00	3.332E-07

39	6.539E-05	1.770E-05	2.094E-06	2.009E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
40	3.787E-05	8.629E-06	4.256E-06	1.059E-06	6.624E-07	0.000E+00	0.000E+00	0.000E+00
41	3.988E-05	1.865E-05	6.280E-06	9.850E-07	0.000E+00	6.325E-07	0.000E+00	0.000E+00
42	6.481E-05	1.342E-05	4.043E-06	1.039E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
43	5.869E-05	6.299E-06	1.859E-06	8.900E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
44	3.952E-05	6.489E-06	4.061E-06	1.886E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
45	3.773E-05	1.586E-06	4.036E-06	1.001E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
46	3.067E-05	3.345E-06	5.839E-06	1.933E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
47	2.089E-05	8.039E-06	5.853E-06	3.664E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
48	2.281E-05	3.244E-06	3.776E-06	9.600E-07	6.354E-07	0.000E+00	0.000E+00	0.000E+00
49	2.240E-05	1.614E-06	0.000E+00	0.000E+00	5.979E-07	0.000E+00	0.000E+00	3.190E-07
50	2.211E-05	3.110E-06	5.703E-06	8.879E-07	5.943E-07	0.000E+00	0.000E+00	0.000E+00
51	1.843E-05	3.081E-06	1.848E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
52	5.247E-06	2.977E-06	5.752E-06	1.815E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
53	1.182E-05	7.612E-06	3.899E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
54	1.175E-05	6.192E-06	1.824E-06	2.674E-06	0.000E+00	5.310E-07	0.000E+00	0.000E+00
55	8.409E-06	2.932E-06	1.809E-06	0.000E+00	0.000E+00	5.274E-07	0.000E+00	0.000E+00
56	9.800E-06	4.472E-06	0.000E+00	0.000E+00	5.754E-07	0.000E+00	0.000E+00	0.000E+00
57	1.859E-05	4.658E-06	1.915E-06	0.000E+00	1.149E-06	0.000E+00	0.000E+00	0.000E+00
58	2.000E-05	0.000E+00	1.803E-06	1.833E-06	0.000E+00	0.000E+00	2.338E-07	0.000E+00
59	1.409E-05	4.247E-06	1.781E-06	0.000E+00	5.346E-07	0.000E+00	0.000E+00	0.000E+00
60	1.322E-05	3.076E-06	3.580E-06	1.820E-06	0.000E+00	0.000E+00	0.000E+00	2.860E-07
61	1.802E-05	0.000E+00	1.786E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
62	8.004E-06	2.986E-06	3.577E-06	1.764E-06	5.683E-07	0.000E+00	0.000E+00	0.000E+00
63	9.999E-06	1.448E-06	1.789E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
64	1.159E-05	1.446E-06	1.896E-06	1.816E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
65	3.287E-06	0.000E+00	0.000E+00	1.754E-06	5.673E-07	0.000E+00	0.000E+00	0.000E+00
66	1.289E-05	2.956E-06	3.660E-06	9.000E-07	0.000E+00	0.000E+00	0.000E+00	2.841E-07
67	6.626E-06	7.336E-06	0.000E+00	1.746E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
68	1.126E-05	6.066E-06	0.000E+00	1.688E-06	5.961E-07	0.000E+00	0.000E+00	0.000E+00
69	9.579E-06	4.453E-06	1.868E-06	8.943E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
70	4.985E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.428E-07	0.000E+00
71	6.662E-06	4.482E-06	3.826E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
72	9.794E-06	4.563E-06	0.000E+00	8.664E-07	6.101E-07	0.000E+00	2.345E-07	0.000E+00
73	4.922E-06	1.449E-06	0.000E+00	0.000E+00	6.046E-07	0.000E+00	0.000E+00	0.000E+00
74	4.812E-06	0.000E+00	0.000E+00	1.715E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
75	7.857E-06	0.000E+00	0.000E+00	8.467E-07	5.317E-07	0.000E+00	0.000E+00	0.000E+00
76	6.661E-06	2.967E-06	0.000E+00	0.000E+00	5.661E-07	0.000E+00	0.000E+00	0.000E+00
77	1.156E-05	1.526E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
78	1.690E-06	1.526E-06	1.779E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

79	8.334E-06	4.402E-06	3.656E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
80	9.801E-06	1.522E-06	0.000E+00	8.464E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
81	3.352E-06	1.427E-06	0.000E+00	8.964E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
82	3.251E-06	1.513E-06	3.522E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
83	8.057E-06	7.192E-06	0.000E+00	8.929E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
84	6.566E-06	2.924E-06	1.859E-06	8.393E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
85	4.797E-06	0.000E+00	1.748E-06	0.000E+00	5.902E-07	0.000E+00	0.000E+00	0.000E+00
86	6.541E-06	1.499E-06	3.598E-06	1.723E-06	0.000E+00	0.000E+00	0.000E+00	2.964E-07
87	6.534E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
88	9.551E-06	2.903E-06	0.000E+00	8.843E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
89	4.866E-06	1.406E-06	1.741E-06	0.000E+00	5.538E-07	0.000E+00	0.000E+00	0.000E+00
90	4.764E-06	1.491E-06	1.736E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
91	5.970E-06	1.389E-06	1.617E-06	2.327E-06	5.463E-07	0.000E+00	2.097E-07	0.000E+00
92	3.189E-06	1.398E-06	1.831E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
93	3.184E-06	1.397E-06	1.722E-06	8.250E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
94	6.353E-06	1.392E-06	0.000E+00	0.000E+00	0.000E+00	5.019E-07	0.000E+00	0.000E+00
95	4.902E-06	0.000E+00	0.000E+00	0.000E+00	1.128E-06	0.000E+00	2.229E-07	2.754E-07
96	4.710E-06	1.476E-06	0.000E+00	2.618E-06	0.000E+00	0.000E+00	0.000E+00	2.919E-07
97	1.538E-06	1.389E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
98	1.630E-06	1.472E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
99	4.788E-06	2.855E-06	3.633E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
100	4.879E-06	2.939E-06	0.000E+00	0.000E+00	1.089E-06	0.000E+00	0.000E+00	0.000E+00
101	4.601E-06	0.000E+00	0.000E+00	8.193E-07	0.000E+00	5.297E-07	0.000E+00	0.000E+00
102	4.692E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
103	4.689E-06	0.000E+00	1.814E-06	8.179E-07	5.439E-07	0.000E+00	0.000E+00	0.000E+00
104	3.247E-06	0.000E+00	0.000E+00	8.686E-07	0.000E+00	0.000E+00	0.000E+00	2.736E-07
105	7.925E-06	1.466E-06	1.811E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
106	6.208E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
107	5.879E-06	2.655E-06	0.000E+00	0.000E+00	5.065E-07	0.000E+00	0.000E+00	0.000E+00
108	4.766E-06	2.759E-06	1.807E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
109	1.524E-06	4.301E-06	0.000E+00	8.657E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
110	3.143E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
111	4.571E-06	0.000E+00	1.804E-06	0.000E+00	5.742E-07	0.000E+00	0.000E+00	0.000E+00
112	3.141E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
113	4.746E-06	2.750E-06	1.805E-06	8.121E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
114	0.000E+00	0.000E+00	0.000E+00	8.607E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
115	1.517E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
116	1.518E-06	1.371E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
117	3.035E-06	2.826E-06	0.000E+00	8.607E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
118	0.000E+00	1.371E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

119	3.219E-06	0.000E+00	0.000E+00	8.607E-07	5.392E-07	0.000E+00	0.000E+00	0.000E+00
120	4.736E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
121	3.218E-06	0.000E+00	1.796E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
122	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.238E-07	0.000E+00	0.000E+00
123	1.415E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
209	75	34	32	16	5	1	0
334	113	38	25	4	4	3	0
810	189	42	24	10	2	1	0
1290	334	110	42	23	10	4	0
1305	327	106	62	27	11	6	1
2008	647	205	126	74	22	13	2
2723	1017	347	298	136	30	10	4
3661	1592	574	475	203	62	13	3
3947	1683	570	504	181	51	19	1
4202	1897	697	579	198	44	15	1
4395	2002	731	643	182	48	16	1
3946	1962	692	548	225	40	14	1
3960	1906	711	598	203	59	12	0
3186	1466	592	494	185	39	9	0
2952	1473	607	482	214	47	13	1
2766	1403	544	509	177	38	7	4
2356	1192	469	486	166	51	20	2
2347	1189	507	451	180	45	9	1
2618	1404	592	544	188	47	12	0
2330	1322	519	467	192	49	21	0
2237	1272	574	485	196	50	13	0
2254	1307	511	493	194	36	12	0
2262	1262	501	496	179	46	6	4
2407	1433	553	516	212	35	6	0
2684	1442	601	549	187	42	7	0
2548	1412	593	524	192	47	9	1
2546	1389	609	490	200	37	2	1
2298	1214	560	430	153	24	10	1
2071	1197	489	383	137	30	4	2
1995	1171	467	363	135	23	4	0
1942	1075	431	352	118	21	5	0

1929	975	404	365	130	26	9	0
1759	912	369	291	101	19	10	0
1658	902	368	305	90	12	3	0
1580	832	365	257	91	17	3	1
1559	824	280	239	73	15	4	0
1362	732	283	228	73	10	4	0
1514	775	286	231	74	17	5	1
1391	741	269	212	64	15	3	0
1334	740	257	177	50	13	1	0
1187	647	243	183	49	8	0	0
1112	557	194	179	61	12	1	0
1067	520	170	157	44	10	3	0
970	525	155	156	35	8	2	0
949	501	157	125	40	9	1	0
875	422	164	103	29	4	4	0
745	322	135	88	23	9	2	0
581	300	115	56	19	4	0	1
531	256	91	51	22	3	4	0
524	226	105	64	17	4	1	0
437	232	71	55	16	5	2	0
445	214	72	54	21	5	2	0
399	204	52	37	8	1	5	0
380	154	65	27	9	2	1	0
351	153	54	28	2	0	1	0
317	148	66	34	10	4	0	0
319	162	44	28	6	2	0	0
349	179	53	24	14	2	2	0
326	151	51	27	11	3	4	0
250	113	64	30	5	4	0	0
250	125	57	25	12	3	2	1
250	121	26	26	5	1	1	0
245	103	31	23	9	1	0	0
248	131	50	24	11	3	1	0
248	96	44	32	13	3	1	0
211	86	28	26	7	4	1	0
224	91	35	26	8	5	0	0
201	87	22	21	4	2	1	0
158	70	20	14	10	1	3	0
160	72	28	22	7	3	1	1
156	74	22	19	8	5	2	1

128	60	18	24	4	2	1	1
158	71	22	15	9	4	0	0
148	76	20	15	5	4	0	0
151	62	30	15	7	2	1	0
113	58	24	14	12	1	0	0
115	49	17	17	4	3	0	0
96	56	24	7	4	3	0	0
120	42	19	8	6	1	0	0
113	44	21	19	8	1	1	0
101	54	12	27	6	3	1	0
109	45	21	10	3	4	0	2
94	59	11	12	3	1	2	0
108	31	18	7	4	1	2	0
91	63	20	11	7	0	3	1
84	23	11	16	2	1	1	2
93	40	15	10	7	2	1	0
79	37	9	16	8	4	1	1
85	39	10	4	6	2	1	0
78	38	10	10	3	2	0	0
74	28	15	9	4	0	0	0
59	30	10	9	7	2	0	0
55	22	8	8	1	3	0	0
55	18	4	5	4	2	2	1
53	26	12	10	1	2	0	0
44	28	12	10	7	1	0	1
40	20	10	4	5	1	1	1
42	14	7	9	3	0	0	0
46	17	6	7	6	1	1	0
46	28	6	8	7	0	1	0
45	23	15	10	4	0	2	0
38	23	10	12	4	2	5	1
36	21	9	10	1	3	5	0
44	23	11	9	3	3	0	1
34	22	9	11	7	0	0	1
29	18	10	7	6	2	1	0
46	22	5	8	4	0	0	2
40	14	7	6	2	2	0	1
44	15	4	5	7	2	2	0
43	13	9	12	5	1	0	0
33	17	10	9	9	0	2	1

29	15	12	6	1	4	1	0
27	16	4	8	1	2	1	0
18	16	4	4	5	0	0	1
11	15	3	5	4	1	1	1
24	9	6	2	1	2	0	1
19	11	10	5	2	2	2	0
18	9	5	4	2	1	1	0
29	7	7	6	2	3	1	0
29	10	7	10	1	1	2	0
21	11	6	4	1	0	1	1
21	12	7	3	3	1	1	2
35	16	2	4	3	2	0	0

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
14	3	0	1	0	0	0	0
10	3	1	0	1	0	1	0
6	3	1	0	1	1	0	0
8	1	1	0	0	0	0	0
14	6	1	1	0	0	1	0
17	8	3	1	1	1	0	0
31	14	3	5	0	0	0	0
57	8	6	6	2	1	2	0
37	19	2	3	0	0	0	0
53	14	3	5	5	0	0	0
35	12	4	6	0	0	0	0
55	9	3	3	0	0	0	0
43	5	2	1	0	0	0	0
47	9	4	2	0	0	0	0
65	13	6	6	0	2	0	0
44	9	4	2	0	0	0	0
58	14	5	1	2	0	0	0
42	12	2	4	1	0	0	0
53	19	4	3	1	0	0	0
56	30	2	7	2	0	0	0
62	18	9	3	1	2	1	0
72	19	6	1	2	0	0	0
64	13	2	2	1	0	0	0

60	20	4	3	4	0	0	0
67	12	9	7	0	0	0	0
73	19	1	2	2	0	1	0
49	21	1	3	1	0	0	0
54	14	5	0	0	1	0	0
66	23	3	3	2	0	0	1
52	7	1	1	1	2	0	0
41	9	1	4	0	2	0	0
46	7	3	1	2	0	0	0
46	7	1	1	4	0	0	0
38	11	0	3	1	0	0	0
31	8	4	1	2	0	1	0
36	11	5	2	0	0	0	0
31	9	1	4	1	0	0	1
34	4	0	5	1	2	0	1
34	10	1	2	0	0	0	0
20	5	2	1	1	0	0	0
21	11	3	1	0	1	0	0
35	8	2	1	0	0	0	0
34	4	1	1	0	0	0	0
22	4	2	2	0	0	0	0
21	1	2	1	0	0	0	0
17	2	3	2	0	0	0	0
12	5	3	4	0	0	0	0
13	2	2	1	1	0	0	0
13	1	0	0	1	0	0	1
13	2	3	1	1	0	0	0
11	2	1	0	0	0	0	0
3	2	3	2	0	0	0	0
7	5	2	0	0	0	0	0
7	4	1	3	0	1	0	0
5	2	1	0	0	1	0	0
6	3	0	0	1	0	0	0
11	3	1	0	2	0	0	0
12	0	1	2	0	0	1	0
9	3	1	0	1	0	0	0
8	2	2	2	0	0	0	1
11	0	1	0	0	0	0	0
5	2	2	2	1	0	0	0
6	1	1	0	0	0	0	0

7	1	1	2	0	0	0	0
2	0	0	2	1	0	0	0
8	2	2	1	0	0	0	1
4	5	0	2	0	0	0	0
7	4	0	2	1	0	0	0
6	3	1	1	0	0	0	0
3	0	0	0	0	0	1	0
4	3	2	0	0	0	0	0
6	3	0	1	1	0	1	0
3	1	0	0	1	0	0	0
3	0	0	2	0	0	0	0
5	0	0	1	1	0	0	0
4	2	0	0	1	0	0	0
7	1	0	0	0	0	0	0
1	1	1	0	0	0	0	0
5	3	2	0	0	0	0	0
6	1	0	1	0	0	0	0
2	1	0	1	0	0	0	0
2	1	2	0	0	0	0	0
5	5	0	1	0	0	0	0
4	2	1	1	0	0	0	0
3	0	1	0	1	0	0	0
4	1	2	2	0	0	0	1
4	0	0	0	0	0	0	0
6	2	0	1	0	0	0	0
3	1	1	0	1	0	0	0
3	1	1	0	0	0	0	0
4	1	1	3	1	0	1	0
2	1	1	0	0	0	0	0
2	1	1	1	0	0	0	0
4	1	0	0	0	1	0	0
3	0	0	0	2	0	1	1
3	1	0	3	0	0	0	1
1	1	0	0	0	0	0	0
1	1	0	0	0	0	0	0
3	2	2	0	0	0	0	0
3	2	0	0	2	0	0	0
3	0	0	1	0	1	0	0
3	0	0	0	0	0	0	0
3	0	1	1	1	0	0	0

2	0	0	1	0	0	0	1
5	1	1	0	0	0	0	0
4	0	0	0	0	0	0	0
4	2	0	0	1	0	0	0
3	2	1	0	0	0	0	0
1	3	0	1	0	0	0	0
2	0	0	0	0	0	0	0
3	0	1	0	1	0	0	0
2	0	0	0	0	0	0	0
3	2	1	1	0	0	0	0
0	0	0	1	0	0	0	0
1	0	0	0	0	0	0	0
1	1	0	0	0	0	0	0
2	2	0	1	0	0	0	0
0	1	0	0	0	0	0	0
2	0	0	1	1	0	0	0
3	0	0	0	0	0	0	0
2	0	1	0	0	0	0	0
0	0	0	0	0	1	0	0
1	0	0	0	0	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 3.983 \quad (3.588, 4.377)$$

$$b = -0.2787 \quad (-0.3441, -0.2134)$$

$$c = 0.2476 \quad (-0.7731, 1.268)$$

$$d = -0.1407 \quad (-0.2773, -0.004069)$$

goftotal =

sse: 3.7925e-006

rsquare: 9.9998e-001

dfe: 4

adjrsquare: 9.9996e-001

rmse: 9.7372e-004

ctotal =

General model Exp1:

$$ctotal(x) = a * \exp(b * x)$$

Coefficients (with 95% confidence bounds):

$$a = 1.794 \quad (1.297, 2.29)$$

$$b = -0.2024 \quad (-0.2166, -0.1882)$$

goftotal =

$$sse: 2.7899e-007$$

$$rsquare: 9.9974e-001$$

$$dfe: 3$$

$$adjrsquare: 9.9965e-001$$

$$rmse: 3.0496e-004$$

curve fit iron:

ctotal =

General model Exp2:

$$ctotal(x) = a * \exp(b * x) + c * \exp(d * x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.06361 \quad (0.0261, 0.1011)$$

$$b = -0.2035 \quad (-0.2484, -0.1586)$$

$$c = 3.58e-006 \quad (-0.000213, 0.0002202)$$

$$d = 0.005749 \quad (-0.5747, 0.5862)$$

goftotal =

$$sse: 4.6852e-008$$

$$rsquare: 9.9695e-001$$

$$dfe: 4$$

$$adjrsquare: 9.9466e-001$$

$$rmse: 1.0823e-004$$

ctotal =

General model Exp1:

$$ctotal(x) = a * \exp(b * x)$$

Coefficients (with 95% confidence bounds):

a = 0.001194 (-0.001266, 0.003655)

b = -0.06085 (-0.1182, -0.003505)

goftotal =

sse: 1.3350e-009

rsquare: 9.4208e-001

dfe: 3

adjrsquare: 9.2277e-001

rmse: 2.1095e-005

Event 77	Date	Time*	Location*	Summing interval*				
	20-Nov-03	747	N01W08	Nov 20 to Nov 22 0000				
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	7.229E-05	1.825E-05	1.340E-05	6.285E-06	3.156E-06	9.486E-07	4.499E-07	0.000E+00
2	2.151E-04	4.793E-05	4.062E-05	2.103E-05	1.927E-05	9.970E-06	6.212E-06	1.102E-06
3	5.508E-04	2.272E-04	1.569E-04	7.028E-05	2.231E-05	1.846E-05	5.020E-06	5.223E-06
4	3.518E-04	9.876E-05	1.052E-04	4.566E-05	1.753E-05	1.109E-05	4.937E-06	0.000E+00
5	2.447E-04	1.439E-04	9.381E-05	5.831E-05	3.273E-05	1.081E-05	5.731E-06	1.716E-06
6	3.536E-04	1.970E-04	1.480E-04	8.521E-05	3.388E-05	1.716E-05	3.181E-06	1.118E-06
7	4.004E-04	2.028E-04	6.195E-05	5.233E-05	2.048E-05	1.300E-05	4.894E-06	2.276E-06
8	3.985E-04	1.670E-04	1.012E-04	5.919E-05	1.919E-05	4.703E-06	3.379E-06	0.000E+00
9	3.454E-04	1.502E-04	8.753E-05	3.266E-05	1.838E-05	6.946E-06	4.291E-06	5.448E-07
10	2.855E-04	1.475E-04	7.156E-05	3.486E-05	2.397E-05	7.989E-06	3.158E-06	5.466E-07
11	2.669E-04	1.110E-04	4.002E-05	2.902E-05	6.500E-06	3.930E-06	0.000E+00	1.117E-06
12	1.755E-04	8.916E-05	5.344E-05	2.407E-05	1.731E-05	3.007E-06	1.803E-06	1.108E-06
13	2.219E-04	7.647E-05	3.015E-05	3.230E-05	8.745E-06	5.004E-06	1.374E-06	1.689E-06
14	2.572E-04	1.201E-04	6.406E-05	1.954E-05	8.685E-06	9.729E-07	1.361E-06	5.794E-07
15	2.636E-04	9.503E-05	6.096E-05	1.320E-05	8.556E-06	6.907E-06	1.329E-06	5.766E-07
16	1.996E-04	6.525E-05	2.680E-05	1.274E-05	8.575E-06	2.031E-06	8.809E-07	5.349E-07
17	1.586E-04	5.342E-05	1.950E-05	1.262E-05	6.419E-06	1.905E-06	4.280E-07	5.666E-07
18	1.935E-04	6.421E-05	3.684E-05	1.275E-05	1.191E-05	6.899E-06	8.838E-07	0.000E+00
19	1.118E-04	7.456E-05	2.324E-05	1.418E-05	7.592E-06	7.768E-06	1.275E-06	5.319E-07
20	1.276E-04	3.692E-05	2.617E-05	6.535E-06	5.329E-06	2.843E-06	0.000E+00	0.000E+00
21	1.216E-04	3.968E-05	2.937E-05	8.176E-06	3.211E-06	1.952E-06	8.482E-07	0.000E+00
22	1.851E-04	9.258E-05	4.974E-05	2.395E-05	7.489E-06	2.903E-06	9.036E-07	5.336E-07
23	2.089E-04	8.550E-05	5.674E-05	2.073E-05	5.388E-06	3.995E-06	8.573E-07	0.000E+00
24	1.889E-04	8.846E-05	4.291E-05	1.060E-05	9.065E-06	6.461E-06	1.623E-06	0.000E+00

25	1.586E-04	7.744E-05	3.702E-05	2.248E-05	4.303E-06	3.059E-06	1.773E-06	0.000E+00
26	2.318E-04	7.246E-05	5.011E-05	1.281E-05	8.678E-06	9.614E-07	0.000E+00	0.000E+00
27	2.420E-04	8.395E-05	4.967E-05	1.118E-05	3.273E-06	9.629E-07	4.587E-07	0.000E+00
28	2.444E-04	6.209E-05	3.976E-05	1.434E-05	3.275E-06	9.664E-07	0.000E+00	1.114E-06
29	1.827E-04	7.229E-05	2.672E-05	1.640E-05	2.097E-06	0.000E+00	8.916E-07	0.000E+00
30	2.104E-04	6.765E-05	4.378E-05	1.135E-05	3.292E-06	0.000E+00	8.681E-07	0.000E+00
31	2.109E-04	7.573E-05	3.053E-05	9.683E-06	2.175E-06	1.029E-06	0.000E+00	5.752E-07
32	2.798E-04	9.876E-05	6.176E-05	1.308E-05	2.261E-06	0.000E+00	0.000E+00	0.000E+00
33	2.778E-04	9.126E-05	2.708E-05	2.347E-05	2.285E-06	1.049E-06	0.000E+00	0.000E+00
34	4.508E-04	1.650E-04	6.020E-05	1.026E-05	2.163E-06	1.085E-06	0.000E+00	0.000E+00
35	5.018E-04	1.589E-04	5.937E-05	6.841E-06	2.277E-06	0.000E+00	0.000E+00	0.000E+00
36	6.035E-04	2.248E-04	7.199E-05	6.851E-06	2.407E-06	1.101E-06	0.000E+00	0.000E+00
37	6.182E-04	2.303E-04	8.961E-05	1.651E-05	2.277E-06	0.000E+00	0.000E+00	0.000E+00
38	6.626E-04	2.419E-04	8.454E-05	2.849E-05	3.449E-06	0.000E+00	0.000E+00	0.000E+00
39	6.296E-04	2.166E-04	5.817E-05	1.401E-05	2.359E-06	1.054E-06	0.000E+00	0.000E+00
40	5.413E-04	1.996E-04	7.776E-05	1.972E-05	2.185E-06	0.000E+00	4.395E-07	0.000E+00
41	5.623E-04	2.044E-04	1.044E-04	1.606E-05	1.132E-06	0.000E+00	0.000E+00	0.000E+00
42	5.286E-04	1.918E-04	7.188E-05	1.406E-05	1.190E-06	1.096E-06	0.000E+00	0.000E+00
43	5.604E-04	1.562E-04	7.822E-05	1.377E-05	5.781E-06	1.025E-06	0.000E+00	0.000E+00
44	5.157E-04	1.929E-04	4.553E-05	2.422E-05	2.288E-06	0.000E+00	0.000E+00	5.712E-07
45	4.352E-04	2.088E-04	6.768E-05	8.409E-06	3.404E-06	0.000E+00	0.000E+00	0.000E+00
46	4.946E-04	1.281E-04	7.786E-05	1.870E-05	1.105E-06	2.098E-06	0.000E+00	6.038E-07
47	4.140E-04	1.556E-04	6.022E-05	8.416E-06	1.168E-06	0.000E+00	0.000E+00	0.000E+00
48	4.660E-04	1.450E-04	4.885E-05	1.695E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
49	4.823E-04	1.415E-04	7.720E-05	1.745E-06	0.000E+00	1.072E-06	0.000E+00	0.000E+00
50	4.002E-04	1.299E-04	4.606E-05	1.387E-05	1.167E-06	0.000E+00	0.000E+00	0.000E+00
51	4.307E-04	1.296E-04	2.718E-05	1.185E-05	2.251E-06	1.005E-06	0.000E+00	0.000E+00
52	3.961E-04	1.357E-04	3.830E-05	5.018E-06	2.316E-06	1.069E-06	0.000E+00	0.000E+00
53	4.135E-04	9.926E-05	6.274E-05	6.741E-06	1.094E-06	0.000E+00	0.000E+00	0.000E+00
54	4.030E-04	1.094E-04	6.227E-05	6.813E-06	1.088E-06	0.000E+00	0.000E+00	0.000E+00
55	3.862E-04	9.204E-05	4.524E-05	4.967E-06	1.085E-06	0.000E+00	0.000E+00	0.000E+00
56	3.447E-04	9.921E-05	2.978E-05	1.407E-05	1.073E-06	0.000E+00	0.000E+00	0.000E+00
57	3.656E-04	7.880E-05	3.164E-05	5.079E-06	1.084E-06	0.000E+00	4.763E-07	0.000E+00
58	3.459E-04	8.916E-05	3.145E-05	3.333E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
59	2.816E-04	7.506E-05	1.721E-05	4.856E-06	0.000E+00	0.000E+00	0.000E+00	5.557E-07
60	3.576E-04	8.594E-05	2.818E-05	5.164E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
61	3.114E-04	1.020E-04	3.488E-05	6.676E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
62	3.472E-04	9.376E-05	3.504E-05	3.246E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
63	2.597E-04	6.073E-05	2.397E-05	5.024E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
64	2.807E-04	6.618E-05	1.331E-05	5.006E-06	2.140E-06	0.000E+00	0.000E+00	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
24	7	4	4	3	1	1	0
70	18	12	13	18	10	14	2
172	81	45	42	20	18	11	9
112	36	31	28	16	11	11	0
79	53	28	36	30	11	13	3
114	72	44	52	31	17	7	2
128	74	18	32	19	13	11	4
137	66	32	39	19	5	8	0
111	55	26	20	17	7	10	1
91	54	21	21	22	8	7	1
86	41	12	18	6	4	0	2
57	33	16	15	16	3	4	2
72	28	9	20	8	5	3	3
83	44	19	12	8	1	3	1
85	35	18	8	8	7	3	1
65	24	8	8	8	2	2	1
52	20	6	8	6	2	1	1
63	24	11	8	11	7	2	0
37	28	7	9	7	8	3	1
42	14	8	4	5	3	0	0
40	15	9	5	3	2	2	0
61	35	15	15	7	3	2	1
68	32	17	13	5	4	2	0
66	35	14	7	9	7	4	0
52	29	11	14	4	3	4	0
75	27	15	8	8	1	0	0
78	31	15	7	3	1	1	0
79	23	12	9	3	1	0	2
59	27	8	10	2	0	2	0
68	25	13	7	3	0	2	0
68	28	9	6	2	1	0	1
89	36	18	8	2	0	0	0
89	33	8	14	2	1	0	0
139	58	17	6	2	1	0	0
154	56	17	4	2	0	0	0

182	78	20	4	2	1	0	0
182	77	24	9	2	0	0	0
196	82	23	16	3	0	0	0
188	74	16	8	2	1	0	0
173	73	23	12	2	0	1	0
169	70	29	9	1	0	0	0
160	67	20	8	1	1	0	0
171	54	22	8	5	1	0	0
158	67	13	14	2	0	0	1
134	73	19	5	3	0	0	0
152	45	22	11	1	2	0	1
128	55	17	5	1	0	0	0
144	51	14	10	0	0	0	0
150	50	22	1	0	1	0	0
124	46	13	8	1	0	0	0
134	46	8	7	2	1	0	0
123	48	11	3	2	1	0	0
129	35	18	4	1	0	0	0
125	39	18	4	1	0	0	0
121	33	13	3	1	0	0	0
116	38	9	9	1	0	0	0
114	28	9	3	1	0	1	0
109	32	9	2	0	0	0	0
88	27	5	3	0	0	0	1
112	31	8	3	0	0	0	0
98	37	10	4	0	0	0	0
109	34	10	2	0	0	0	0
82	22	7	3	0	0	0	0
89	24	4	3	2	0	0	0

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
1	0	1	0	1	0	0	1
5	3	3	3	5	1	2	0
21	9	6	5	2	1	0	0
14	7	3	2	1	1	0	0

11	8	2	1	1	0	0	0
16	8	1	1	3	0	0	0
15	7	6	2	2	0	1	0
16	5	4	6	0	0	0	0
14	1	0	1	1	1	0	0
8	4	2	3	2	0	0	0
7	5	0	4	0	0	0	0
5	3	1	0	0	0	0	0
6	2	1	0	0	1	0	0
4	3	1	1	0	0	0	0
4	2	1	1	0	0	0	0
4	2	0	2	0	0	0	0
8	1	0	0	0	0	0	0
4	1	0	3	0	0	0	0
6	5	0	0	0	0	0	0
5	3	2	3	0	0	0	0
7	2	0	1	0	0	0	0
1	1	1	0	1	0	0	0
5	3	0	0	0	0	0	0
9	2	1	1	0	0	0	0
7	2	0	1	0	0	0	0
2	4	2	1	0	0	0	0
4	3	1	0	1	0	0	0
2	0	1	0	0	0	0	0
1	0	0	0	0	0	0	0
2	1	0	0	0	0	0	0
1	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	1	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	1	0	0	0	0	0	0
3	0	0	1	0	0	0	0
2	1	0	1	0	0	0	0
1	0	0	0	0	1	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
1	1	0	0	0	0	0	0
0	0	0	0	0	0	0	0

0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
0	0	0	1	1	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	1	0	0	0	0	0	0
1	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a * \exp(b * x) + c * \exp(d * x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.2766 \quad (0.2153, 0.3379)$$

$$b = -0.3157 \quad (-0.3466, -0.2849)$$

$$c = 0.0008522 \quad (-0.001276, 0.002981)$$

$$d = -0.03979 \quad (-0.123, 0.04337)$$

goftotal =

sse: 5.6694e-008

rsquare: 0.9998

dfc: 4

adjrsquare: 0.9996

rmse: 1.1905e-004

ctotal =

General model Exp1:

$$ctotal(x) = a * \exp(b * x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.005218 \quad (-0.003448, 0.01388)$$

$$b = -0.08756 \quad (-0.1639, -0.01123)$$

goftotal =

sse: 4.4170e-008

rsquare: 9.4406e-001

dfe: 3

adjrsquare: 9.2541e-001

rmse: 1.2134e-004

Event 77	Date		Time*	Location*		Summing interval*		
	2-Dec-03		948	S13W65		Dec 2 1000 to Dec 4 1000		
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed φ	Listed φ	Listed φ	Listed φ	Listed φ	Listed φ	Listed φ	Listed φ
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
3	5.924E-06	5.184E-06	3.322E-06	0.000E+00	1.066E-06	0.000E+00	0.000E+00	5.486E-07
4	8.086E-05	3.793E-05	2.003E-05	1.603E-05	2.141E-06	0.000E+00	0.000E+00	0.000E+00
5	3.379E-04	1.037E-04	2.890E-05	1.564E-05	0.000E+00	1.009E-06	0.000E+00	0.000E+00
6	7.734E-04	1.841E-04	9.004E-05	2.446E-05	2.272E-06	1.146E-06	0.000E+00	0.000E+00
7	3.152E-03	7.559E-04	1.515E-04	4.447E-05	3.372E-06	1.476E-06	1.382E-06	0.000E+00
8	5.443E-03	1.162E-03	2.074E-04	4.817E-05	2.154E-06	0.000E+00	0.000E+00	0.000E+00
9	4.998E-03	1.085E-03	1.939E-04	3.890E-05	2.001E-06	1.842E-06	0.000E+00	0.000E+00
10	3.649E-03	6.206E-04	1.774E-04	2.897E-05	4.371E-06	0.000E+00	0.000E+00	0.000E+00
11	2.696E-03	4.627E-04	1.012E-04	1.911E-05	2.106E-06	0.000E+00	0.000E+00	0.000E+00
12	2.504E-03	4.182E-04	4.491E-05	2.532E-05	2.035E-06	0.000E+00	0.000E+00	0.000E+00
13	1.935E-03	4.146E-04	1.007E-04	2.830E-05	3.885E-06	0.000E+00	0.000E+00	0.000E+00
14	1.762E-03	3.472E-04	9.028E-05	4.941E-06	3.550E-06	0.000E+00	0.000E+00	0.000E+00
15	1.471E-03	3.882E-04	8.302E-05	2.763E-05	6.707E-06	1.455E-06	0.000E+00	0.000E+00
16	1.805E-03	3.613E-04	9.388E-05	2.176E-05	7.951E-06	1.414E-06	0.000E+00	0.000E+00

43	1.747E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
44	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
45	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
46	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
47	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
48	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
49	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
2	2	1	0	1	0	0	1
26	14	6	10	2	0	0	0
102	36	8	9	0	1	0	0
221	59	24	13	2	1	0	0
642	173	28	17	2	1	2	0
931	228	33	16	1	0	0	0
863	215	31	13	1	1	0	0
621	122	28	10	2	0	0	0
462	91	16	6	1	0	0	0
424	81	7	8	1	0	0	0
356	87	17	10	2	0	0	0
365	83	17	2	2	0	0	0
310	94	16	11	4	1	0	0
395	90	19	9	5	1	0	0
433	137	31	23	3	1	0	0
427	140	35	18	4	0	0	0
434	144	30	22	10	0	0	0
565	215	76	47	18	1	0	0
594	223	65	37	10	2	0	0
521	191	55	29	9	2	0	0
387	127	43	19	6	0	0	0
426	139	39	23	11	2	0	0
371	123	25	22	2	0	0	0
441	127	39	24	3	0	0	0
492	154	34	25	4	1	0	1
460	130	25	22	3	0	0	0
373	108	26	17	3	0	0	0

331	84	25	8	1	0	0	0
279	69	17	2	1	0	0	0
254	66	9	6	0	0	0	1
175	55	11	3	1	0	0	0
174	50	11	4	0	0	1	0
174	46	9	1	0	0	0	0
119	29	5	2	0	0	1	0
117	31	3	2	0	0	0	0
92	22	7	2	0	1	0	0
101	18	5	1	0	1	0	0
78	17	3	1	0	0	0	0
60	18	6	0	1	0	0	0
71	13	4	2	0	0	1	0
53	12	3	0	0	0	0	0
57	10	4	0	0	0	0	0
21	3	1	1	0	0	0	0
2	0	0	0	0	0	0	0
32	10	3	0	1	0	0	0
43	9	1	0	0	0	0	0
38	8	5	0	0	0	0	0

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	1	0	0	0
0	0	1	0	0	0	0	0
2	0	0	0	1	0	0	0
0	1	0	0	0	0	0	0
1	2	2	1	0	0	0	0
1	0	0	1	0	0	0	0
3	1	0	0	0	0	0	0
1	1	0	0	0	0	0	0
0	0	1	0	0	0	0	0
0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 2.22 \quad (1.969, 2.471)$$

$$b = -0.4283 \quad (-0.4416, -0.4149)$$

$$c = 0.0001452 \quad (-0.0004185, 0.000709)$$

$$d = -0.004705 \quad (-0.09568, 0.08627)$$

goftotal =

$$sse: 1.0866e-007$$

$$rsquare: 1.0000$$

$$dfe: 4$$

$$adjrsquare: 0.9999$$

$$rmse: 1.6482e-004$$

ctotal =

General model Exp1:

$$ctotal(x) = a \cdot \exp(b \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.0313 \quad (-0.04445, 0.1071)$$

$$b = -0.1805 \quad (-0.3034, -0.05769)$$

goftotal =

$$sse: 2.0440e-008$$

$$rsquare: 9.7536e-001$$

$$dfe: 3$$

$$adjrsquare: 9.6715e-001$$

$$rmse: 8.2542e-005$$

Event 79	Date		Time*	Location*	Summing interval*			
	11-Apr-04		419	S14W47	Apr 11 to Apr 12 2000			
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	0.000E+00	0.000E+00	0.000E+00	1.513E-06	0.000E+00	9.286E-07	0.000E+00	0.000E+00
2	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.011E-06	1.918E-06	1.249E-06	1.073E-06
3	4.716E-05	1.973E-05	1.789E-05	1.439E-05	1.273E-05	1.803E-06	1.218E-06	4.858E-07
4	7.901E-05	4.540E-05	3.287E-05	4.268E-05	1.573E-05	4.922E-06	3.029E-06	1.064E-06
5	1.349E-04	7.471E-05	4.346E-05	3.250E-05	1.204E-05	1.173E-05	1.778E-06	0.000E+00
6	5.164E-04	2.315E-04	1.642E-04	9.537E-05	2.343E-05	7.336E-06	3.711E-06	5.595E-07
7	7.313E-04	2.698E-04	1.870E-04	8.483E-05	2.502E-05	1.053E-05	4.184E-06	5.718E-07
8	8.725E-04	3.047E-04	1.714E-04	7.222E-05	4.118E-05	1.272E-05	2.383E-06	0.000E+00
9	2.120E-03	6.125E-04	2.603E-04	1.448E-04	3.403E-05	9.901E-06	2.415E-06	0.000E+00
10	2.462E-03	9.095E-04	3.821E-04	1.137E-04	3.710E-05	6.802E-06	1.019E-06	0.000E+00
11	2.912E-03	8.305E-04	2.865E-04	1.062E-04	2.877E-05	7.971E-06	2.628E-06	0.000E+00
12	2.517E-03	6.233E-04	2.591E-04	6.271E-05	2.525E-05	5.859E-06	2.568E-06	0.000E+00
13	2.407E-03	7.005E-04	2.199E-04	7.822E-05	9.349E-06	7.266E-06	5.233E-07	6.187E-07
14	1.741E-03	3.946E-04	1.385E-04	5.697E-05	9.929E-06	2.212E-06	5.114E-07	6.490E-07
15	1.593E-03	3.863E-04	1.206E-04	5.029E-05	8.811E-06	8.255E-06	1.597E-06	1.440E-06
16	2.121E-03	3.693E-04	1.748E-04	4.003E-05	8.241E-06	3.647E-06	1.135E-06	7.031E-07
17	2.039E-03	4.284E-04	1.143E-04	3.067E-05	1.178E-05	0.000E+00	6.071E-07	0.000E+00
18	1.683E-03	3.498E-04	7.655E-05	2.811E-05	1.036E-05	1.317E-06	5.883E-07	0.000E+00
19	1.584E-03	3.102E-04	7.996E-05	2.831E-05	5.241E-06	2.470E-06	5.846E-07	1.439E-06
20	1.378E-03	2.549E-04	1.118E-04	3.386E-05	1.143E-05	6.550E-06	0.000E+00	0.000E+00
21	1.009E-03	1.700E-04	4.583E-05	1.222E-05	7.851E-06	0.000E+00	0.000E+00	0.000E+00
22	6.230E-04	1.037E-04	5.112E-05	1.727E-05	2.572E-06	0.000E+00	5.300E-07	0.000E+00
23	5.526E-04	1.314E-04	3.800E-05	5.646E-06	2.422E-06	1.119E-06	0.000E+00	0.000E+00
24	5.450E-04	9.629E-05	3.058E-05	1.799E-06	0.000E+00	0.000E+00	4.959E-07	0.000E+00
25	5.580E-04	1.152E-04	3.816E-05	7.329E-06	2.450E-06	1.079E-06	0.000E+00	6.452E-07
26	3.519E-04	5.734E-05	2.673E-05	9.214E-06	2.428E-06	1.079E-06	4.797E-07	0.000E+00
27	3.415E-04	7.698E-05	1.103E-05	1.743E-06	1.166E-06	0.000E+00	4.775E-07	0.000E+00
28	3.136E-04	6.812E-05	1.471E-05	6.988E-06	2.291E-06	0.000E+00	5.025E-07	0.000E+00
29	2.282E-04	5.865E-05	1.499E-05	1.240E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
30	3.089E-04	5.013E-05	1.107E-05	3.425E-06	1.147E-06	0.000E+00	0.000E+00	0.000E+00
31	2.131E-04	5.753E-05	1.049E-05	1.790E-06	1.124E-06	1.044E-06	4.630E-07	0.000E+00
32	1.596E-04	4.320E-05	2.530E-05	8.843E-06	2.391E-06	1.096E-06	0.000E+00	0.000E+00

33	1.602E-04	3.704E-05	7.324E-06	5.086E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
34	1.198E-04	1.960E-05	1.067E-05	3.481E-06	1.096E-06	0.000E+00	0.000E+00	0.000E+00
35	1.521E-04	3.664E-05	1.656E-05	6.265E-06	1.082E-06	0.000E+00	0.000E+00	0.000E+00
36	9.909E-05	2.521E-05	1.035E-05	0.000E+00	2.303E-06	0.000E+00	0.000E+00	5.898E-07
37	1.268E-04	1.368E-05	3.576E-06	1.626E-06	1.076E-06	1.051E-06	0.000E+00	5.545E-07
38	9.253E-05	1.653E-05	6.884E-06	0.000E+00	0.000E+00	0.000E+00	4.494E-07	0.000E+00
39	4.001E-05	0.000E+00	0.000E+00	0.000E+00	1.096E-06	0.000E+00	0.000E+00	0.000E+00
40	3.032E-05	1.044E-05	0.000E+00	1.540E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
41	1.829E-05	2.561E-06	3.186E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2	1.603E-06	0.000E+00	1.789E-06	0.000E+00	0.000E+00	0.000E+00	2.320E-07	0.000E+00
3	1.168E-05	2.721E-06	3.361E-06	8.007E-07	1.063E-06	9.543E-07	0.000E+00	0.000E+00
4	2.360E-05	8.771E-06	7.194E-06	4.221E-06	1.680E-06	0.000E+00	0.000E+00	0.000E+00
5	3.563E-05	2.066E-05	8.943E-06	4.238E-06	3.377E-06	5.417E-07	2.273E-07	0.000E+00
6	7.750E-05	2.431E-05	1.327E-05	5.330E-06	5.839E-07	0.000E+00	0.000E+00	0.000E+00
7	7.485E-05	2.945E-05	2.102E-05	4.511E-06	6.214E-07	0.000E+00	2.534E-07	0.000E+00
8	7.252E-05	3.291E-05	2.110E-05	3.686E-06	6.271E-07	5.462E-07	0.000E+00	0.000E+00
9	1.128E-04	2.583E-05	1.001E-05	3.755E-06	2.515E-06	0.000E+00	0.000E+00	0.000E+00
10	8.747E-05	2.339E-05	6.069E-06	6.834E-06	6.268E-07	0.000E+00	0.000E+00	0.000E+00
11	7.697E-05	1.855E-05	8.338E-06	4.000E-06	6.881E-07	0.000E+00	0.000E+00	0.000E+00
12	6.866E-05	1.882E-05	8.404E-06	6.002E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
13	5.657E-05	1.041E-05	6.479E-06	5.249E-06	7.082E-07	6.102E-07	0.000E+00	0.000E+00
14	4.555E-05	1.170E-05	8.414E-06	9.407E-07	1.883E-06	0.000E+00	0.000E+00	0.000E+00
15	3.557E-05	1.203E-05	4.538E-06	1.986E-06	0.000E+00	0.000E+00	0.000E+00	3.421E-07
16	5.462E-05	5.701E-06	2.251E-06	1.167E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
17	2.451E-05	6.024E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.866E-07
18	2.590E-05	0.000E+00	2.526E-06	2.470E-06	0.000E+00	6.946E-07	0.000E+00	0.000E+00
19	2.800E-05	9.030E-06	2.491E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
20	2.124E-05	5.714E-06	2.370E-06	1.182E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
21	1.785E-05	7.341E-06	2.269E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
22	3.840E-06	8.494E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
23	7.345E-06	1.736E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
24	1.087E-05	1.723E-06	2.139E-06	0.000E+00	0.000E+00	0.000E+00	2.774E-07	0.000E+00
25	9.301E-06	3.181E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
26	9.147E-06	3.183E-06	1.973E-06	9.893E-07	6.223E-07	0.000E+00	0.000E+00	0.000E+00

27	5.495E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.080E-07
28	1.815E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
29	3.651E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.256E-07
30	3.417E-06	1.546E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
31	3.566E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
32	7.019E-06	1.607E-06	0.000E+00	9.550E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
33	5.085E-06	1.506E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
34	3.285E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.097E-07
35	1.520E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
36	1.721E-06	1.559E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
37	1.621E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
38	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
39	4.832E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
40	1.632E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
41	1.626E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.992E-07	0.000E+00	0.000E+00

Hourly Oxygen Counts								
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8	
0	0	0	1	0	1	0	0	0
0	0	0	0	1	2	3	2	2
17	8	6	10	13	2	3	1	1
26	17	10	27	15	5	7	2	2
44	28	13	20	11	12	4	0	0
161	83	47	57	21	7	8	1	1
225	95	53	50	22	10	9	1	1
265	106	48	42	36	12	5	0	0
629	207	71	82	29	9	5	0	0
705	297	101	62	30	6	2	0	0
816	266	74	57	23	7	5	0	0
700	199	66	33	20	5	5	0	0
643	214	54	40	7	6	1	1	1
495	128	36	31	8	2	1	1	1
436	121	30	26	7	7	3	2	2
529	106	40	19	6	3	2	1	1
489	117	25	14	8	0	1	0	0
404	95	17	13	7	1	1	0	0
407	92	19	14	4	2	1	2	2
337	71	25	16	8	5	0	0	0
261	50	11	6	6	0	0	0	0
174	33	13	9	2	0	1	0	0

155	42	10	3	2	1	0	0
154	31	8	1	0	0	1	0
159	38	10	4	2	1	0	1
102	19	7	5	2	1	1	0
100	26	3	1	1	0	1	0
93	23	4	4	2	0	1	0
67	20	4	7	0	0	0	0
92	17	3	2	1	0	0	0
64	20	3	1	1	1	1	0
48	15	7	5	2	1	0	0
49	13	2	3	0	0	0	0
37	7	3	2	1	0	0	0
51	14	5	4	1	0	0	0
31	9	3	0	2	0	0	1
40	5	1	1	1	1	0	1
29	6	2	0	0	0	1	0
13	0	0	0	1	0	0	0
10	4	0	1	0	0	0	0
6	1	1	0	0	0	0	0

Hourly Iron Counts

	Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	0	0	0	0	0	0	0	0
1	0	0	1	0	0	0	1	0
8	2	2	2	1	2	2	0	0
15	6	4	4	5	3	0	0	0
22	14	5	5	5	6	1	1	0
46	16	7	7	6	1	0	0	0
44	19	11	11	5	1	0	1	0
42	21	11	11	4	1	1	0	0
64	16	5	5	4	4	0	0	0
48	14	3	3	7	1	0	0	0
41	11	4	4	4	1	0	0	0
36	11	4	4	6	0	0	0	0
29	6	3	3	5	1	1	0	0
25	7	4	4	1	3	0	0	0
19	7	2	2	2	0	0	0	1
26	3	1	1	1	0	0	0	0

11	3	0	0	0	0	0	1
12	0	1	2	0	1	0	0
14	5	1	0	0	0	0	0
10	3	1	1	0	0	0	0
9	4	1	0	0	0	0	0
2	5	0	0	0	0	0	0
4	1	0	0	0	0	0	0
6	1	1	0	0	0	1	0
5	2	0	0	0	0	0	0
5	2	1	1	1	0	0	0
3	0	0	0	0	0	0	1
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	1
2	1	0	0	0	0	0	0
2	0	0	0	0	0	0	0
4	1	0	1	0	0	0	0
3	1	0	0	0	0	0	0
2	0	0	0	0	0	0	1
1	0	0	0	0	0	0	0
1	1	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
1	0	0	0	0	1	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 1.032 \quad (0.5489, 1.516)$$

$$b = -0.4184 \quad (-0.4774, -0.3595)$$

$$c = 0.00104 \quad (-0.002202, 0.004282)$$

$$d = -0.03479 \quad (-0.145, 0.07545)$$

goftotal =

sse: 3.1894e-007
 rsquare: 0.9995
 dfe: 4
 adjrsquare: 0.9991
 rmse: 2.8237e-004

ctotal =

General model Exp1:
 $ctotal(x) = a * \exp(b * x)$
 Coefficients (with 95% confidence bounds):
 a = 0.008028 (-0.006806, 0.02286)
 b = -0.1068 (-0.1947, -0.01889)

goftotal =

sse: 4.2596e-008
 rsquare: 9.5332e-001
 dfe: 3
 adjrsquare: 9.3775e-001
 rmse: 1.1916e-004

Event 80	Date	Time*	Location*	Summing interval*				
	25-Jul-04	1514	N08W33	Jul 25 1700 to Jul 28 1300				
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	5.217E-05	2.144E-05	1.995E-05	3.171E-06	1.082E-06	1.004E-06	4.461E-07	0.000E+00
2	2.227E-04	1.004E-04	4.824E-05	1.002E-05	1.070E-06	2.118E-06	4.421E-07	5.474E-07
3	8.456E-04	3.482E-04	1.157E-04	3.589E-05	4.774E-06	1.054E-06	0.000E+00	0.000E+00
4	5.543E-04	2.094E-04	6.227E-05	2.327E-05	4.864E-06	2.114E-06	4.879E-07	6.097E-07
5	3.486E-04	1.361E-04	3.918E-05	1.532E-05	6.859E-06	1.086E-06	9.634E-07	1.147E-06
6	5.067E-04	1.576E-04	7.791E-05	2.143E-05	1.217E-06	0.000E+00	0.000E+00	0.000E+00
7	5.092E-04	1.953E-04	8.402E-05	2.264E-05	2.411E-06	2.278E-06	0.000E+00	0.000E+00
8	3.618E-04	1.237E-04	8.093E-05	2.218E-05	2.606E-06	0.000E+00	0.000E+00	5.941E-07
9	3.757E-04	1.655E-04	6.319E-05	2.278E-05	1.311E-05	2.114E-06	1.001E-06	0.000E+00

10	1.012E-03	4.246E-04	1.908E-04	7.146E-05	1.081E-05	3.204E-06	9.616E-07	0.000E+00
11	1.462E-03	6.624E-04	2.951E-04	7.721E-05	2.183E-05	2.192E-06	1.114E-06	1.374E-06
12	2.360E-03	9.310E-04	4.286E-04	1.053E-04	3.712E-05	4.972E-06	1.107E-06	0.000E+00
13	2.209E-03	8.990E-04	4.153E-04	1.454E-04	1.843E-05	2.409E-06	1.084E-06	0.000E+00
14	2.399E-03	9.123E-04	3.601E-04	1.485E-04	3.624E-05	8.094E-06	0.000E+00	0.000E+00
15	2.274E-03	9.721E-04	3.211E-04	1.241E-04	3.610E-05	5.527E-06	0.000E+00	0.000E+00
16	2.457E-03	8.563E-04	3.267E-04	1.234E-04	1.501E-05	0.000E+00	6.385E-07	0.000E+00
17	2.600E-03	9.579E-04	3.995E-04	1.184E-04	2.600E-05	2.679E-06	0.000E+00	0.000E+00
18	2.556E-03	9.734E-04	3.691E-04	1.132E-04	2.490E-05	4.132E-06	5.840E-07	7.221E-07
19	2.545E-03	9.821E-04	3.738E-04	1.134E-04	2.179E-05	5.301E-06	5.829E-07	0.000E+00
20	2.634E-03	7.623E-04	3.721E-04	1.040E-04	1.611E-05	6.771E-06	1.251E-06	0.000E+00
21	3.057E-03	1.022E-03	3.519E-04	9.657E-05	3.788E-05	1.506E-06	0.000E+00	0.000E+00
22	3.495E-03	1.074E-03	5.559E-04	1.435E-04	3.060E-05	3.024E-06	7.179E-07	8.457E-07
23	3.343E-03	1.163E-03	4.744E-04	1.495E-04	2.424E-05	7.528E-06	1.380E-06	0.000E+00
24	5.606E-03	2.136E-03	7.438E-04	2.849E-04	5.155E-05	9.371E-06	6.881E-07	0.000E+00
25	7.295E-03	2.523E-03	1.171E-03	4.100E-04	9.558E-05	1.285E-05	7.943E-07	0.000E+00
26	1.509E-02	6.104E-03	2.883E-03	1.047E-03	1.773E-04	3.243E-05	3.303E-06	0.000E+00
27	1.832E-02	7.454E-03	3.023E-03	1.150E-03	2.083E-04	1.930E-05	0.000E+00	0.000E+00
28	1.954E-02	7.821E-03	2.877E-03	1.102E-03	1.983E-04	3.206E-05	0.000E+00	0.000E+00
29	3.420E-02	1.393E-02	5.427E-03	1.715E-03	3.115E-04	3.475E-05	2.616E-06	0.000E+00
30	2.758E-02	9.532E-03	3.418E-03	1.268E-03	2.693E-04	2.044E-05	8.992E-06	0.000E+00
31	7.762E-03	2.889E-03	1.075E-03	3.474E-04	7.602E-05	2.370E-05	1.691E-06	0.000E+00
32	3.145E-03	1.208E-03	4.436E-04	1.642E-04	2.222E-05	5.507E-06	0.000E+00	0.000E+00
33	9.033E-04	3.792E-04	1.461E-04	6.913E-05	1.384E-05	2.711E-06	6.375E-07	0.000E+00
34	1.983E-03	6.740E-04	3.466E-04	1.036E-04	3.310E-05	6.331E-06	5.578E-07	0.000E+00
35	7.073E-04	2.797E-04	6.359E-05	5.112E-05	6.406E-06	3.632E-06	5.264E-07	6.760E-07
36	2.531E-04	1.001E-04	4.604E-05	2.689E-05	5.734E-06	2.011E-06	4.496E-07	0.000E+00
37	4.226E-04	1.391E-04	8.184E-05	2.692E-05	1.252E-05	0.000E+00	0.000E+00	0.000E+00
38	5.397E-04	2.038E-04	7.913E-05	2.599E-05	6.881E-06	1.095E-06	9.431E-07	0.000E+00
39	5.851E-04	1.957E-04	1.268E-04	4.576E-05	1.136E-05	1.066E-06	0.000E+00	5.616E-07
40	4.339E-04	1.745E-04	8.845E-05	2.214E-05	5.778E-06	1.009E-06	0.000E+00	0.000E+00
41	6.049E-04	1.985E-04	1.215E-04	3.612E-05	1.042E-05	2.061E-06	4.571E-07	0.000E+00
42	5.908E-04	2.346E-04	1.045E-04	5.159E-05	4.736E-06	0.000E+00	0.000E+00	0.000E+00
43	5.331E-04	2.512E-04	9.986E-05	3.750E-05	9.279E-06	2.112E-06	0.000E+00	0.000E+00
44	6.946E-04	2.496E-04	1.018E-04	2.974E-05	1.179E-05	2.135E-06	9.289E-07	0.000E+00
45	6.343E-04	2.078E-04	8.778E-05	2.572E-05	9.686E-06	1.983E-06	9.142E-07	1.116E-06
46	6.328E-04	2.342E-04	8.931E-05	2.946E-05	1.264E-05	1.053E-06	0.000E+00	0.000E+00
47	7.878E-04	2.519E-04	1.281E-04	4.373E-05	8.275E-06	4.166E-06	4.939E-07	0.000E+00
48	6.391E-04	2.641E-04	1.080E-04	2.614E-05	4.651E-06	0.000E+00	4.911E-07	0.000E+00
49	7.009E-04	2.983E-04	1.223E-04	4.915E-05	9.241E-06	0.000E+00	0.000E+00	6.118E-07

16	4.254E-05	4.075E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.369E-07	0.000E+00
17	2.264E-05	3.931E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
18	3.466E-05	5.913E-06	4.814E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
19	1.739E-05	1.914E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
20	1.099E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
21	2.621E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
22	3.014E-05	4.379E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
23	2.282E-05	4.671E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
24	3.136E-05	6.346E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
25	6.689E-05	1.090E-05	3.480E-06	1.731E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
26	9.197E-05	2.192E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
27	2.028E-04	4.173E-05	6.476E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
28	2.419E-04	2.987E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
29	1.676E-04	0.000E+00	7.893E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
30	2.652E-04	1.768E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
31	3.221E-04	3.018E-05	2.745E-05	6.010E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
32	9.454E-05	3.108E-05	8.500E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
33	5.522E-05	4.731E-06	0.000E+00	2.408E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
34	4.436E-06	4.141E-06	0.000E+00	1.164E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
35	2.246E-05	4.269E-06	8.743E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
36	9.109E-06	1.916E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
37	8.364E-06	3.040E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.916E-07
38	6.791E-06	1.585E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
39	1.182E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
40	1.608E-04	1.378E-05	3.815E-06	0.000E+00	0.000E+00	5.394E-07	0.000E+00	6.085E-07
41	3.013E-05	6.174E-06	1.839E-06	1.815E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
42	4.964E-05	1.100E-05	3.825E-06	0.000E+00	0.000E+00	0.000E+00	2.428E-07	0.000E+00
43	5.165E-05	9.252E-06	1.866E-06	9.500E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
44	4.792E-05	9.228E-06	1.856E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
45	3.294E-05	1.406E-05	1.984E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
46	3.406E-05	7.159E-06	1.841E-06	8.787E-07	0.000E+00	0.000E+00	2.379E-07	0.000E+00
47	1.923E-05	1.246E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
48	2.459E-05	4.806E-06	3.784E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
49	1.709E-05	9.400E-06	0.000E+00	9.486E-07	0.000E+00	0.000E+00	0.000E+00	3.174E-07
50	1.728E-05	3.127E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
51	8.837E-06	9.345E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
52	1.074E-05	3.273E-06	4.095E-06	0.000E+00	6.663E-07	0.000E+00	5.094E-07	0.000E+00
53	1.664E-05	5.009E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
54	9.083E-06	1.689E-06	2.009E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
55	1.227E-05	1.628E-06	1.891E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

56	1.404E-05	1.611E-06	1.992E-06	8.971E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
57	1.735E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
58	8.584E-06	1.602E-06	1.994E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
59	1.200E-05	1.607E-06	1.871E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
60	6.827E-06	3.180E-06	1.851E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.959E-07
61	1.045E-05	1.588E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
62	4.705E-06	2.789E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
63	1.045E-05	0.000E+00	0.000E+00	9.314E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
64	8.591E-06	3.054E-06	1.940E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
65	4.901E-06	0.000E+00	1.933E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.923E-07
66	4.955E-06	1.460E-06	0.000E+00	8.671E-07	0.000E+00	0.000E+00	0.000E+00	2.901E-07
67	6.434E-06	1.544E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
68	1.704E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.226E-07	0.000E+00	0.000E+00
69	1.689E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
17	8	6	2	1	1	1	0
70	36	14	6	1	2	1	1
247	116	31	20	4	1	0	0
162	70	17	13	4	2	1	1
106	47	11	9	6	1	2	2
149	53	21	12	1	0	0	0
144	63	22	12	2	2	0	0
103	40	21	12	2	0	0	1
111	56	17	13	11	2	2	0
296	142	51	40	9	3	2	0
388	202	72	40	17	2	2	2
602	273	101	51	27	4	2	0
589	273	102	74	14	2	2	0
576	250	80	68	25	6	0	0
530	259	69	55	24	4	0	0
573	229	70	55	10	0	1	0
630	265	89	55	18	2	0	0
614	268	82	52	17	3	1	1
612	270	83	52	15	4	1	0
624	207	81	47	11	5	2	0
659	253	71	39	23	1	0	0
724	254	106	57	18	2	1	1

721	287	94	62	15	5	2	0
964	419	117	95	24	5	1	0
1137	450	170	124	44	6	1	0
1407	651	251	186	47	11	2	0
1413	683	225	178	48	5	0	0
1255	611	182	145	40	7	0	0
1333	836	273	189	51	6	1	0
780	464	142	113	37	3	3	0
585	255	78	49	16	5	1	0
395	177	53	38	8	3	0	0
205	100	31	30	9	2	1	0
415	161	68	42	20	4	1	0
193	88	16	27	5	3	1	1
79	36	13	16	5	2	1	0
130	49	23	16	11	0	0	0
163	71	22	15	6	1	2	0
181	69	36	27	10	1	0	1
134	62	25	13	5	1	0	0
184	69	34	21	9	2	1	0
180	82	29	30	4	0	0	0
164	88	28	22	8	2	0	0
209	86	28	17	10	2	2	0
205	77	26	16	9	2	2	2
192	81	25	17	11	1	0	0
234	86	35	25	7	4	1	0
193	91	30	15	4	0	1	0
212	103	34	28	8	0	0	1
251	92	33	24	14	2	2	0
301	108	45	28	9	3	1	0
384	161	43	37	10	5	1	1
339	167	47	23	9	1	2	0
338	125	40	32	8	1	0	0
245	91	33	23	3	0	0	0
264	95	35	18	4	2	0	0
238	76	28	22	5	1	1	1
217	73	22	17	6	3	0	1
205	70	24	13	11	2	0	0
190	77	21	14	2	0	0	1
231	82	16	16	1	1	1	1
178	67	18	12	2	0	0	0

171	77	13	16	3	0	1	0
148	60	12	12	8	0	0	0
123	53	15	19	3	0	0	0
117	47	12	8	2	0	0	0
117	39	10	9	3	1	0	1
94	37	13	7	1	1	0	1
76	25	14	6	1	0	0	0

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	1	0	0	0	0	0	1
1	0	0	1	0	0	0	0
5	0	0	0	0	0	1	0
11	1	0	0	0	0	0	0
1	0	0	0	0	1	1	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	1
5	1	1	0	0	0	0	0
1	1	0	0	0	0	0	0
1	3	0	0	0	0	0	0
3	0	0	0	0	0	0	1
11	1	1	0	0	0	0	0
12	1	1	0	0	0	0	0
13	3	1	0	0	0	0	0
9	3	0	0	0	0	0	0
19	2	0	0	0	0	1	0
10	2	0	0	0	0	0	0
16	3	2	0	0	0	0	0
8	1	0	0	0	0	0	0
5	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0
12	2	0	0	0	0	0	0
9	2	0	0	0	0	0	0
13	3	0	0	0	0	0	0
22	4	1	1	0	0	0	0
27	7	0	0	0	0	0	0
36	8	1	0	0	0	0	0
37	5	0	0	0	0	0	0

20	0	1	0	0	0	0	0
19	2	0	0	0	0	0	0
21	3	2	1	0	0	0	0
14	5	1	0	0	0	0	0
12	1	0	1	0	0	0	0
2	2	0	1	0	0	0	0
9	2	3	0	0	0	0	0
5	1	0	0	0	0	0	0
5	2	0	0	0	0	0	1
4	1	0	0	0	0	0	0
7	0	0	0	0	0	0	0
95	9	2	0	0	1	0	2
18	4	1	2	0	0	0	0
29	7	2	0	0	0	1	0
30	6	1	1	0	0	0	0
28	6	1	0	0	0	0	0
19	9	1	0	0	0	0	0
21	5	1	1	0	0	1	0
11	8	0	0	0	0	0	0
14	3	2	0	0	0	0	0
10	6	0	1	0	0	0	1
10	2	0	0	0	0	0	0
5	6	0	0	0	0	0	0
6	2	2	0	1	0	2	0
9	3	0	0	0	0	0	0
5	1	1	0	0	0	0	0
7	1	1	0	0	0	0	0
8	1	1	1	0	0	0	0
10	0	0	0	0	0	0	0
5	1	1	0	0	0	0	0
7	1	1	0	0	0	0	0
4	2	1	0	0	0	0	1
6	1	0	0	0	0	0	0
3	2	0	0	0	0	0	0
6	0	0	1	0	0	0	0
5	2	1	0	0	0	0	0
3	0	1	0	0	0	0	1
3	1	0	1	0	0	0	1
4	1	0	0	0	0	0	0
1	0	0	0	0	1	0	0

1	0	0	0	0	0	0	0
---	---	---	---	---	---	---	---

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 2.13 \quad (1.772, 2.487)$$

$$b = -0.2908 \quad (-0.3183, -0.2634)$$

$$c = 0.00259 \quad (-0.03032, 0.0355)$$

$$d = -0.05711 \quad (-0.4976, 0.3833)$$

goftotal =

$$sse: 2.6761e-006$$

$$rsquare: 0.9999$$

$$dfe: 4$$

$$adjrsquare: 0.9998$$

$$rmse: 8.1793e-004$$

ctotal =

General model Exp1:

$$ctotal(x) = a \cdot \exp(b \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.8652 \quad (0.7184, 1.012)$$

$$b = -0.2349 \quad (-0.2437, -0.2261)$$

goftotal =

$$sse: 4.5241e-009$$

$$rsquare: 9.9994e-001$$

$$dfe: 3$$

$$adjrsquare: 9.9992e-001$$

$$rmse: 3.8833e-005$$

Event 81	Date	Time*	Location*	Summing interval*				
	12-Sep-04	56	N04E42	Sep 12 1100 to Se 17 0000				
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	2.892E-06	2.531E-06	3.149E-06	1.516E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2	5.794E-06	0.000E+00	0.000E+00	0.000E+00	1.012E-06	0.000E+00	0.000E+00	0.000E+00
3	3.074E-06	0.000E+00	3.149E-06	0.000E+00	0.000E+00	0.000E+00	4.174E-07	0.000E+00
4	9.228E-06	2.694E-06	0.000E+00	0.000E+00	1.014E-06	0.000E+00	4.438E-07	0.000E+00
5	1.504E-05	1.569E-05	0.000E+00	0.000E+00	1.014E-06	0.000E+00	4.436E-07	0.000E+00
6	1.521E-05	1.061E-05	3.346E-06	0.000E+00	1.076E-06	0.000E+00	0.000E+00	0.000E+00
7	2.647E-05	7.613E-06	6.700E-06	1.613E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
8	0.000E+00	5.386E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
9	2.104E-05	5.236E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.445E-07	0.000E+00
10	2.106E-05	2.541E-06	1.006E-05	1.615E-06	1.078E-06	0.000E+00	4.186E-07	5.239E-07
11	8.303E-06	9.924E-06	3.128E-06	0.000E+00	1.006E-06	0.000E+00	4.151E-07	1.007E-06
12	2.124E-05	5.079E-06	3.164E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.550E-07
13	2.378E-05	7.775E-06	0.000E+00	1.614E-06	0.000E+00	0.000E+00	0.000E+00	5.238E-07
14	1.199E-05	7.781E-06	3.352E-06	1.524E-06	0.000E+00	0.000E+00	0.000E+00	5.237E-07
15	2.109E-05	0.000E+00	3.164E-06	1.619E-06	0.000E+00	9.943E-07	0.000E+00	0.000E+00
16	1.781E-05	2.336E-05	3.358E-06	0.000E+00	0.000E+00	0.000E+00	4.196E-07	5.236E-07
17	1.492E-05	2.701E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.251E-07
18	4.233E-05	5.242E-06	6.521E-06	1.617E-06	0.000E+00	9.364E-07	0.000E+00	0.000E+00
19	2.399E-05	0.000E+00	3.361E-06	1.525E-06	0.000E+00	9.950E-07	0.000E+00	1.081E-06
20	2.998E-05	1.841E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
21	2.729E-05	1.051E-05	0.000E+00	0.000E+00	0.000E+00	9.379E-07	4.457E-07	5.248E-07
22	3.896E-05	5.251E-06	0.000E+00	4.674E-06	0.000E+00	0.000E+00	0.000E+00	5.571E-07
23	2.350E-05	7.954E-06	9.889E-06	3.146E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
24	2.097E-05	1.563E-05	3.176E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.082E-06
25	5.417E-05	1.355E-05	9.726E-06	1.531E-06	3.251E-06	0.000E+00	0.000E+00	5.579E-07
26	5.155E-05	2.339E-05	1.957E-05	3.169E-06	0.000E+00	0.000E+00	0.000E+00	1.093E-06
27	7.938E-05	1.960E-05	1.823E-05	1.519E-06	1.969E-06	0.000E+00	0.000E+00	0.000E+00
28	1.129E-04	3.713E-05	1.317E-05	3.281E-06	1.029E-06	0.000E+00	0.000E+00	0.000E+00
29	2.708E-04	1.518E-04	7.385E-05	1.967E-05	1.053E-06	1.026E-06	4.599E-07	5.747E-07
30	5.467E-04	1.896E-04	1.026E-04	1.537E-05	5.657E-06	1.085E-06	4.893E-07	0.000E+00
31	2.382E-04	9.563E-05	3.038E-05	1.924E-05	0.000E+00	0.000E+00	0.000E+00	5.697E-07
32	3.428E-04	9.424E-05	4.015E-05	9.622E-06	5.441E-06	0.000E+00	4.329E-07	5.409E-07
33	3.957E-04	1.413E-04	9.271E-05	3.394E-05	7.144E-06	0.000E+00	0.000E+00	0.000E+00

34	2.268E-03	8.101E-04	3.214E-04	1.000E-04	1.093E-05	2.410E-06	5.239E-07	0.000E+00
35	1.354E-02	4.949E-03	1.796E-03	5.126E-04	6.333E-05	1.739E-05	0.000E+00	0.000E+00
36	1.535E-02	5.645E-03	2.007E-03	6.113E-04	8.519E-05	1.728E-05	0.000E+00	0.000E+00
37	1.459E-02	5.096E-03	2.068E-03	6.605E-04	6.165E-05	6.539E-06	0.000E+00	1.904E-06
38	9.754E-03	3.092E-03	1.034E-03	2.635E-04	3.644E-05	0.000E+00	0.000E+00	0.000E+00
39	8.023E-03	2.680E-03	6.358E-04	1.785E-04	1.415E-05	5.239E-06	1.127E-06	0.000E+00
40	7.522E-03	2.192E-03	7.041E-04	1.924E-04	2.509E-05	0.000E+00	0.000E+00	0.000E+00
41	6.404E-03	2.049E-03	5.141E-04	1.219E-04	2.569E-05	0.000E+00	0.000E+00	0.000E+00
42	6.694E-03	1.871E-03	5.096E-04	1.553E-04	9.969E-06	2.927E-06	0.000E+00	0.000E+00
43	6.768E-03	1.932E-03	5.863E-04	1.257E-04	6.617E-06	0.000E+00	0.000E+00	0.000E+00
44	5.923E-03	1.655E-03	3.779E-04	6.750E-05	9.896E-06	2.948E-06	0.000E+00	0.000E+00
45	5.642E-03	1.546E-03	2.964E-04	8.600E-05	2.855E-06	2.774E-06	0.000E+00	0.000E+00
46	4.918E-03	1.065E-03	2.661E-04	6.790E-05	1.812E-05	2.281E-06	0.000E+00	0.000E+00
47	3.908E-03	9.510E-04	1.785E-04	4.707E-05	2.608E-06	2.303E-06	0.000E+00	1.318E-06
48	3.801E-03	8.348E-04	2.109E-04	4.055E-05	2.461E-06	0.000E+00	0.000E+00	1.299E-06
49	3.060E-03	7.300E-04	1.792E-04	2.601E-05	2.329E-06	0.000E+00	0.000E+00	0.000E+00
50	2.558E-03	6.173E-04	1.296E-04	2.300E-05	1.922E-06	0.000E+00	0.000E+00	0.000E+00
51	2.059E-03	3.546E-04	9.934E-05	1.824E-05	1.809E-06	0.000E+00	0.000E+00	0.000E+00
52	2.109E-03	4.281E-04	1.041E-04	2.478E-05	1.687E-06	0.000E+00	0.000E+00	1.798E-06
53	1.604E-03	2.931E-04	8.492E-05	2.318E-06	0.000E+00	1.414E-06	6.379E-07	7.993E-07
54	1.161E-03	2.326E-04	4.604E-05	6.635E-06	0.000E+00	0.000E+00	6.253E-07	0.000E+00
55	1.078E-03	1.692E-04	3.037E-05	6.244E-06	1.450E-06	0.000E+00	5.414E-07	0.000E+00
56	8.609E-04	1.809E-04	1.669E-05	6.073E-06	1.327E-06	0.000E+00	0.000E+00	0.000E+00
57	6.212E-04	9.275E-05	3.991E-05	7.758E-06	1.236E-06	0.000E+00	0.000E+00	0.000E+00
58	7.054E-04	1.495E-04	3.708E-05	4.034E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
59	8.071E-04	1.427E-04	1.138E-05	3.777E-06	2.402E-06	0.000E+00	0.000E+00	6.143E-07
60	8.632E-04	1.626E-04	5.412E-05	0.000E+00	1.370E-06	0.000E+00	0.000E+00	0.000E+00
61	7.266E-04	1.608E-04	4.140E-05	1.909E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
62	6.408E-04	8.747E-05	3.280E-05	3.928E-06	0.000E+00	0.000E+00	5.254E-07	0.000E+00
63	5.857E-04	9.346E-05	3.206E-05	9.667E-06	0.000E+00	0.000E+00	0.000E+00	6.509E-07
64	5.880E-04	1.096E-04	7.710E-06	3.727E-06	0.000E+00	1.154E-06	0.000E+00	0.000E+00
65	5.802E-04	7.570E-05	1.168E-05	1.959E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
66	4.688E-04	1.249E-04	3.075E-05	0.000E+00	0.000E+00	1.191E-06	0.000E+00	0.000E+00
67	4.028E-04	7.096E-05	1.546E-05	3.702E-06	1.279E-06	1.172E-06	0.000E+00	0.000E+00
68	4.515E-04	1.077E-04	2.267E-05	1.790E-06	0.000E+00	0.000E+00	4.919E-07	0.000E+00
69	3.908E-04	7.637E-05	1.518E-05	3.558E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
70	4.013E-04	6.649E-05	2.624E-05	3.739E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
71	4.141E-04	4.254E-05	1.864E-05	0.000E+00	1.178E-06	0.000E+00	0.000E+00	0.000E+00
72	3.352E-04	3.851E-05	7.455E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
73	3.567E-04	3.254E-05	1.099E-05	3.457E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00

74	3.318E-04	3.789E-05	1.473E-05	1.722E-06	0.000E+00	0.000E+00	5.029E-07	0.000E+00
75	2.444E-04	6.012E-05	1.699E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
76	2.324E-04	5.796E-05	1.498E-05	0.000E+00	1.136E-06	0.000E+00	9.924E-07	1.168E-06
77	1.983E-04	2.048E-05	7.445E-06	1.796E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
78	2.295E-04	2.364E-05	7.191E-06	0.000E+00	0.000E+00	0.000E+00	4.616E-07	0.000E+00
79	2.075E-04	4.828E-05	1.063E-05	0.000E+00	1.187E-06	0.000E+00	0.000E+00	0.000E+00
80	1.793E-04	2.570E-05	1.425E-05	1.771E-06	1.181E-06	0.000E+00	0.000E+00	0.000E+00
81	1.536E-04	2.267E-05	3.452E-06	1.661E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
82	1.704E-04	1.445E-05	3.429E-06	1.652E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
83	1.392E-04	2.792E-05	0.000E+00	3.389E-06	0.000E+00	1.071E-06	4.519E-07	0.000E+00
84	1.571E-04	4.181E-05	7.014E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
85	1.575E-04	1.410E-05	3.592E-06	0.000E+00	0.000E+00	0.000E+00	8.969E-07	0.000E+00
86	9.640E-05	1.967E-05	6.752E-06	0.000E+00	0.000E+00	0.000E+00	8.951E-07	0.000E+00
87	1.082E-04	1.116E-05	1.009E-05	1.626E-06	1.149E-06	0.000E+00	0.000E+00	0.000E+00
88	1.079E-04	1.685E-05	3.554E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.551E-07
89	1.206E-04	8.392E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
90	5.667E-05	8.209E-06	3.334E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
91	6.491E-05	2.293E-05	3.103E-06	3.083E-06	0.000E+00	0.000E+00	4.117E-07	0.000E+00
92	7.483E-05	5.334E-06	0.000E+00	3.196E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
93	5.653E-05	5.656E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
94	9.340E-05	5.484E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.655E-07	5.485E-07
95	8.137E-05	1.092E-05	3.296E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
96	5.548E-05	8.081E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
97	5.009E-05	1.399E-05	3.278E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
98	5.254E-05	1.068E-05	0.000E+00	1.669E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
99	2.529E-05	5.405E-06	0.000E+00	1.572E-06	0.000E+00	0.000E+00	4.595E-07	0.000E+00
100	2.842E-05	2.778E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
101	3.362E-05	5.230E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
102	3.692E-05	2.612E-06	0.000E+00	0.000E+00	1.108E-06	0.000E+00	8.609E-07	0.000E+00
103	3.053E-05	2.762E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
104	3.361E-05	2.602E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.543E-07	1.072E-06
105	2.448E-05	5.512E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.544E-07	1.071E-06
106	2.130E-05	2.756E-06	0.000E+00	1.554E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
107	2.833E-05	2.415E-06	0.000E+00	0.000E+00	9.680E-07	0.000E+00	0.000E+00	0.000E+00
108	5.918E-06	2.581E-06	3.211E-06	0.000E+00	0.000E+00	9.507E-07	0.000E+00	5.659E-07
109	2.101E-05	2.581E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
110	2.119E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.251E-07	0.000E+00

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62

80	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
81	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
82	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
83	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
84	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
85	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
86	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
87	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
88	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
89	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.464E-07	0.000E+00
90	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.045E-07	0.000E+00	0.000E+00	0.000E+00
91	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
92	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.847E-07
93	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
94	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
95	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
96	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
97	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
98	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.412E-07	0.000E+00
99	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
100	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
101	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
102	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.262E-07	0.000E+00
103	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
104	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
105	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
106	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
107	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
108	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
109	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
110	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
1	1	1	1	0	0	0	0
2	0	0	0	1	0	0	0
1	0	1	0	0	0	1	0
3	1	0	0	1	0	1	0

5	6	0	0	1	0	1	0
5	4	1	0	1	0	0	0
9	3	2	1	0	0	0	0
0	2	0	0	0	0	0	0
7	2	0	0	0	0	1	0
7	1	3	1	1	0	1	1
3	4	1	0	1	0	1	2
7	2	1	0	0	0	0	1
8	3	0	1	0	0	0	1
4	3	1	1	0	0	0	1
7	0	1	1	0	1	0	0
6	9	1	0	0	0	1	1
5	1	0	0	0	0	0	1
14	2	2	1	0	1	0	0
8	0	1	1	0	1	0	2
10	7	0	0	0	0	0	0
9	4	0	0	0	1	1	1
13	2	0	3	0	0	0	1
8	3	3	2	0	0	0	0
7	6	1	0	0	0	0	2
18	5	3	1	3	0	0	1
17	9	6	2	0	0	0	2
28	8	6	1	2	0	0	0
37	14	4	2	1	0	0	0
88	56	22	12	1	1	1	1
168	66	29	9	5	1	1	0
77	35	9	12	0	0	0	1
111	35	12	6	5	0	1	1
125	51	27	19	6	0	0	0
581	240	76	48	8	2	1	0
1789	751	219	126	24	7	0	0
1741	741	214	134	28	6	0	0
1482	597	195	129	18	2	0	1
1088	394	107	56	12	0	0	0
990	378	72	42	5	2	1	0
852	284	73	41	8	0	0	0
797	291	59	29	9	0	0	0
709	227	49	32	3	1	0	0
728	238	58	26	2	0	0	0
648	206	38	14	3	1	0	0

681	213	33	20	1	1	0	0
644	160	32	17	7	1	0	0
554	154	23	13	1	1	0	1
550	138	28	11	1	0	0	1
498	136	27	8	1	0	0	0
474	131	22	8	1	0	0	0
411	81	18	7	1	0	0	0
441	102	20	10	1	0	0	2
361	75	17	1	0	1	1	1
276	63	10	3	0	0	1	0
273	49	7	3	1	0	1	0
223	54	4	3	1	0	0	0
171	29	10	4	1	0	0	0
186	45	9	2	0	0	0	0
228	46	3	2	2	0	0	1
229	49	13	0	1	0	0	0
193	49	10	1	0	0	0	0
171	27	8	2	0	0	1	0
158	29	8	5	0	0	0	1
160	34	2	2	0	1	0	0
160	24	3	1	0	0	0	0
131	40	8	0	0	1	0	0
114	23	4	2	1	1	0	0
129	35	6	1	0	0	1	0
112	25	4	2	0	0	0	0
116	22	7	2	0	0	0	0
120	14	5	0	1	0	0	0
98	13	2	0	0	0	0	0
105	11	3	2	0	0	0	0
98	13	4	1	0	0	1	0
78	22	5	0	0	0	0	0
70	20	4	0	1	0	2	2
60	7	2	1	0	0	0	0
69	8	2	0	0	0	1	0
63	17	3	0	1	0	0	0
55	9	4	1	1	0	0	0
47	8	1	1	0	0	0	0
53	5	1	1	0	0	0	0
43	10	0	2	0	1	1	0
49	15	2	0	0	0	0	0

0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1
0	0	0	1	0	0	0	0
0	0	0	0	0	1	0	0
0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	1
0	0	0	0	0	0	1	0
0	0	0	0	0	0	1	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0
0	0	0	0	0	0	1	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	1	1
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	1	1	1
1	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
1	0	0	0	0	0	1	0
5	1	0	0	0	0	1	0
4	0	0	0	0	0	0	0
8	1	0	0	0	0	0	0
6	0	0	0	0	0	0	0
1	0	0	0	0	0	1	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

self 20 to 40:

ctotal =

General model Exp1:

$$ctotal(x) = a * \exp(b * x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.3238 \quad (-0.2977, 0.9454)$$

$$b = -0.2415 \quad (-0.341, -0.1421)$$

goftotal =

sse: 5.7498e-008

rsquare: 9.9309e-001

dfe: 3

adjrsquare: 9.9079e-001

rmse: 1.3844e-004

Event 83	Date		Time*	Location*	Summing interval*			
	1-Nov-04		650	W120	Nov 1 to Nov 2 1600			
Oxygen	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	9.484E-06	1.638E-05	3.153E-06	0.000E+00	2.337E-06	5.363E-06	3.408E-06	1.215E-06
2	6.801E-05	9.041E-05	1.241E-04	4.268E-05	1.965E-05	8.980E-06	3.558E-06	0.000E+00
3	5.280E-04	1.637E-04	9.344E-05	4.729E-05	1.981E-05	4.857E-06	3.272E-06	0.000E+00
4	1.686E-04	8.703E-05	5.279E-05	2.721E-05	1.185E-05	4.450E-06	4.827E-07	0.000E+00
5	1.500E-04	6.274E-05	3.651E-05	1.609E-05	4.724E-06	3.286E-06	5.099E-07	0.000E+00
6	1.126E-04	4.355E-05	3.938E-05	1.250E-05	5.869E-06	4.221E-06	4.965E-07	0.000E+00
7	5.264E-05	5.878E-05	5.179E-05	1.509E-05	4.526E-06	0.000E+00	4.784E-07	0.000E+00
8	5.726E-05	1.720E-05	3.135E-05	1.529E-05	2.189E-06	3.075E-06	0.000E+00	0.000E+00
9	6.016E-05	3.367E-05	2.062E-05	1.166E-05	3.425E-06	3.017E-06	4.794E-07	5.989E-07
10	7.486E-05	5.026E-05	1.015E-05	6.614E-06	2.176E-06	2.064E-06	9.501E-07	0.000E+00
11	5.766E-05	2.237E-05	1.360E-05	1.663E-05	1.078E-06	9.929E-07	4.697E-07	0.000E+00
12	4.997E-05	3.298E-05	3.102E-05	3.312E-06	5.690E-06	3.081E-06	4.420E-07	0.000E+00
13	3.113E-05	2.208E-05	9.896E-06	3.283E-06	2.184E-06	0.000E+00	1.315E-06	0.000E+00
14	3.130E-05	2.204E-05	3.303E-06	8.054E-06	3.312E-06	1.039E-06	4.378E-07	5.800E-07
15	3.088E-05	1.105E-05	1.006E-05	9.673E-06	1.116E-06	0.000E+00	9.257E-07	0.000E+00
16	3.178E-05	1.266E-05	6.270E-06	6.129E-06	9.780E-07	0.000E+00	4.281E-07	0.000E+00
17	2.767E-05	1.619E-05	0.000E+00	1.571E-06	3.205E-06	0.000E+00	0.000E+00	0.000E+00
18	1.547E-05	1.075E-05	6.691E-06	4.971E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
19	1.508E-05	8.139E-06	3.436E-06	1.657E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
20	1.540E-05	0.000E+00	1.008E-05	1.651E-06	0.000E+00	0.000E+00	0.000E+00	1.135E-06
21	1.852E-05	0.000E+00	0.000E+00	1.555E-06	1.039E-06	1.014E-06	0.000E+00	5.671E-07
22	1.501E-05	1.085E-05	6.851E-06	4.661E-06	1.039E-06	0.000E+00	0.000E+00	0.000E+00
23	1.849E-05	7.923E-06	1.006E-05	1.551E-06	0.000E+00	1.011E-06	4.534E-07	0.000E+00
24	1.534E-05	5.169E-06	1.325E-05	1.645E-06	1.096E-06	1.011E-06	0.000E+00	0.000E+00
25	1.234E-05	2.580E-06	1.022E-05	7.919E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
26	1.493E-05	2.580E-06	3.407E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
27	1.215E-05	7.889E-06	3.205E-06	1.545E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
28	9.191E-06	1.061E-05	0.000E+00	3.274E-06	0.000E+00	0.000E+00	0.000E+00	5.306E-07
29	1.195E-05	2.573E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
30	9.184E-06	1.045E-05	0.000E+00	4.623E-06	1.091E-06	9.471E-07	4.238E-07	5.616E-07
31	1.505E-05	7.862E-06	6.581E-06	1.538E-06	0.000E+00	0.000E+00	0.000E+00	1.123E-06
32	2.906E-06	4.934E-06	0.000E+00	1.435E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
33	3.110E-06	2.720E-06	3.380E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
34	8.964E-06	5.276E-06	0.000E+00	0.000E+00	2.173E-06	0.000E+00	8.445E-07	0.000E+00

35 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
3	6	1	0	2	5	7	2
19	29	32	23	16	8	7	0
140	50	23	24	15	4	6	0
49	29	14	15	10	4	1	0
44	21	10	9	4	3	1	0
34	15	11	7	5	4	1	0
16	21	15	9	4	0	1	0
18	6	9	9	2	3	0	0
19	12	6	7	3	3	1	1
23	18	3	4	2	2	2	0
18	8	4	10	1	1	1	0
16	12	9	2	5	3	1	0
10	8	3	2	2	0	3	0
10	8	1	5	3	1	1	1
10	4	3	6	1	0	2	0
11	5	2	4	1	0	1	0
9	6	0	1	3	0	0	0
5	4	2	3	0	0	0	0
5	3	1	1	0	0	0	0
5	0	3	1	0	0	0	2
6	0	0	1	1	1	0	1
5	4	2	3	1	0	0	0
6	3	3	1	0	1	1	0
5	2	4	1	1	1	0	0
4	1	3	5	0	0	0	0
5	1	1	0	0	0	0	0
4	3	1	1	0	0	0	0
3	4	0	2	0	0	0	1
4	1	0	0	0	0	0	0
3	4	0	3	1	1	1	1
5	3	2	1	0	0	0	2
1	2	0	1	0	0	0	0
1	1	1	0	0	0	0	0
3	2	0	0	2	0	2	0
2	0	0	0	0	0	0	2

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.006795 \quad (0.003749, 0.009841)$$

$$b = -0.1822 \quad (-0.2776, -0.08685)$$

$$c = 9.868e-005 \quad (-0.001117, 0.001315)$$

$$d = -0.03636 \quad (-0.3478, 0.275)$$

goftotal =

$$sse: 6.5919e-009$$

$$rsquare: 0.9965$$

$$dfe: 4$$

$$adjrsquare: 0.9938$$

$$rmse: 4.0595e-005$$

ctotal =

General model Exp1:

$$ctotal(x) = a \cdot \exp(b \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.001041 \quad (-0.0007117, 0.002794)$$

$$b = -0.07862 \quad (-0.1544, -0.00285)$$

goftotal =

$$sse: 3.0905e-009$$

$$rsquare: 9.3047e-001$$

$$dfe: 3$$

$$adjrsquare: 9.0729e-001$$

$$rmse: 3.2096e-005$$

Event 84 and 85	Date	Time*	Location*	Summing interval*				
	7-Nov-04	1606	N09W17	Nov 7 0600 to Nov 9 1600				
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	1.815E-05	5.278E-06	3.201E-06	0.000E+00	1.019E-06	0.000E+00	0.000E+00	5.296E-07
2	2.453E-05	5.157E-06	3.213E-06	0.000E+00	0.000E+00	0.000E+00	4.513E-07	5.331E-07
3	4.517E-05	1.081E-05	0.000E+00	0.000E+00	2.135E-06	1.017E-06	0.000E+00	5.642E-07
4	7.371E-05	1.596E-05	3.245E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
5	7.288E-05	1.599E-05	0.000E+00	3.187E-06	0.000E+00	0.000E+00	0.000E+00	1.066E-06
6	1.560E-04	1.893E-05	1.315E-05	3.126E-06	1.033E-06	0.000E+00	4.295E-07	0.000E+00
7	1.595E-04	4.421E-05	1.687E-05	4.993E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
8	4.596E-04	8.285E-05	1.417E-05	6.769E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
9	5.766E-04	1.598E-04	3.628E-05	1.033E-05	2.357E-06	0.000E+00	4.600E-07	6.093E-07
10	6.274E-04	1.401E-04	2.843E-05	1.028E-05	1.104E-06	0.000E+00	4.768E-07	5.684E-07
11	3.165E-04	7.686E-05	2.762E-05	4.804E-06	0.000E+00	0.000E+00	0.000E+00	5.498E-07
12	3.325E-04	5.684E-05	2.459E-05	1.744E-06	1.164E-06	1.081E-06	4.842E-07	0.000E+00
13	3.208E-04	1.264E-04	5.144E-05	3.056E-05	7.247E-06	5.629E-06	4.737E-07	6.369E-07
14	1.544E-03	6.387E-04	2.471E-04	1.056E-04	3.212E-05	1.285E-05	1.051E-06	6.436E-07
15	5.026E-03	1.944E-03	7.852E-04	3.307E-04	7.149E-05	2.543E-05	4.353E-06	0.000E+00
16	2.042E-02	7.821E-03	3.648E-03	1.668E-03	3.355E-04	1.070E-04	1.700E-05	2.795E-06
17	9.918E-03	4.077E-03	2.065E-03	9.532E-04	2.859E-04	1.283E-04	1.307E-05	1.096E-06
18	3.849E-03	1.553E-03	7.219E-04	3.215E-04	9.826E-05	2.419E-05	3.411E-06	8.571E-07
19	5.756E-03	2.176E-03	1.184E-03	4.392E-04	1.236E-04	2.935E-05	1.547E-06	0.000E+00
20	6.617E-03	2.712E-03	1.083E-03	4.040E-04	9.862E-05	1.590E-05	1.479E-06	0.000E+00
21	8.890E-03	3.219E-03	1.328E-03	4.703E-04	1.232E-04	2.809E-05	3.566E-06	9.550E-07
22	9.867E-03	3.458E-03	1.512E-03	4.400E-04	8.916E-05	1.744E-05	1.948E-06	0.000E+00
23	6.172E-03	2.137E-03	8.654E-04	3.072E-04	6.716E-05	1.934E-05	2.628E-06	0.000E+00
24	2.391E-03	8.975E-04	3.896E-04	1.273E-04	2.557E-05	6.421E-06	1.662E-06	0.000E+00
25	2.128E-03	6.276E-04	2.282E-04	8.581E-05	2.282E-05	3.623E-06	0.000E+00	1.382E-06
26	2.852E-03	9.244E-04	3.444E-04	1.009E-04	2.238E-05	3.877E-06	5.589E-07	7.047E-07
27	3.666E-03	1.189E-03	4.666E-04	1.300E-04	1.362E-05	7.174E-06	2.531E-06	7.300E-07
28	3.487E-03	1.122E-03	3.442E-04	1.090E-04	1.866E-05	7.166E-06	0.000E+00	0.000E+00
29	3.284E-03	8.807E-04	3.514E-04	1.301E-04	1.908E-05	5.598E-06	0.000E+00	0.000E+00
30	2.666E-03	7.249E-04	2.209E-04	8.536E-05	1.437E-05	1.312E-06	5.874E-07	6.994E-07
31	1.251E-03	3.819E-04	1.521E-04	2.716E-05	1.053E-05	4.948E-06	0.000E+00	0.000E+00
32	6.952E-04	2.378E-04	1.070E-04	2.374E-05	1.335E-05	1.155E-06	0.000E+00	0.000E+00
33	4.776E-04	1.637E-04	6.608E-05	3.557E-05	9.909E-06	4.628E-06	0.000E+00	0.000E+00

34	6.820E-04	2.424E-04	1.404E-04	2.778E-05	1.556E-05	1.299E-06	0.000E+00	0.000E+00
35	2.819E-03	8.208E-04	3.184E-04	9.135E-05	2.093E-05	2.574E-06	0.000E+00	0.000E+00
36	4.381E-03	1.206E-03	3.111E-04	1.415E-04	1.955E-05	0.000E+00	0.000E+00	0.000E+00
37	3.956E-03	1.277E-03	4.145E-04	1.059E-04	2.017E-05	5.674E-06	0.000E+00	0.000E+00
38	3.369E-03	1.191E-03	3.518E-04	1.002E-04	2.084E-05	3.473E-06	0.000E+00	0.000E+00
39	3.492E-03	1.045E-03	3.744E-04	1.295E-04	1.143E-05	0.000E+00	0.000E+00	1.039E-06
40	3.229E-03	8.419E-04	2.861E-04	7.453E-05	1.544E-05	1.721E-06	0.000E+00	0.000E+00
41	3.141E-03	8.610E-04	3.268E-04	9.278E-05	9.615E-06	1.651E-06	7.500E-07	0.000E+00
42	3.328E-03	9.936E-04	2.398E-04	9.826E-05	2.564E-05	5.081E-06	7.407E-07	0.000E+00
43	3.687E-03	1.151E-03	4.468E-04	1.491E-04	1.909E-05	7.207E-06	0.000E+00	0.000E+00
44	3.338E-03	1.034E-03	3.860E-04	1.625E-04	2.286E-05	1.704E-06	0.000E+00	0.000E+00
45	3.549E-03	1.171E-03	4.495E-04	1.342E-04	2.668E-05	1.564E-06	0.000E+00	9.064E-07
46	4.025E-03	1.286E-03	3.793E-04	1.426E-04	3.049E-05	6.873E-06	1.514E-06	9.286E-07
47	3.803E-03	1.194E-03	4.589E-04	1.494E-04	2.257E-05	3.411E-06	0.000E+00	0.000E+00
48	3.373E-03	1.147E-03	4.700E-04	1.475E-04	2.961E-05	9.146E-06	0.000E+00	0.000E+00
49	3.287E-03	1.037E-03	3.889E-04	1.170E-04	2.625E-05	1.638E-06	0.000E+00	0.000E+00
50	2.970E-03	9.836E-04	2.975E-04	1.149E-04	2.896E-05	3.025E-06	0.000E+00	0.000E+00
51	2.766E-03	9.746E-04	2.490E-04	1.156E-04	2.503E-05	3.007E-06	0.000E+00	0.000E+00
52	2.655E-03	9.437E-04	4.362E-04	1.258E-04	2.415E-05	1.054E-05	6.408E-07	7.971E-07
53	3.722E-03	1.338E-03	4.774E-04	1.775E-04	3.791E-05	6.576E-06	6.892E-07	8.371E-07
54	4.568E-03	1.535E-03	5.558E-04	2.126E-04	2.172E-05	6.176E-06	0.000E+00	8.171E-07
55	3.796E-03	1.572E-03	5.335E-04	1.469E-04	3.246E-05	4.448E-06	0.000E+00	0.000E+00
56	4.383E-03	1.674E-03	6.465E-04	1.916E-04	3.354E-05	7.500E-06	0.000E+00	0.000E+00
57	3.888E-03	1.290E-03	5.857E-04	1.573E-04	2.855E-05	5.689E-06	6.543E-07	8.450E-07
58	2.713E-03	1.095E-03	3.693E-04	1.087E-04	2.847E-05	2.620E-06	6.239E-07	7.486E-07
59	2.917E-03	8.613E-04	3.153E-04	1.188E-04	1.890E-05	3.806E-06	0.000E+00	0.000E+00
60	3.003E-03	9.962E-04	3.686E-04	1.465E-04	2.324E-05	1.299E-06	0.000E+00	0.000E+00
61	2.851E-03	9.909E-04	4.086E-04	1.467E-04	3.175E-05	5.473E-06	1.768E-06	0.000E+00
62	1.915E-03	5.178E-04	2.813E-04	1.000E-04	2.426E-05	3.599E-06	2.135E-06	0.000E+00
63	2.206E-03	1.088E-03	5.612E-04	2.410E-04	8.006E-05	2.592E-05	4.344E-06	1.404E-06
64	3.407E-03	1.341E-03	6.101E-04	2.332E-04	6.410E-05	1.082E-05	4.551E-06	6.057E-07
65	1.735E-03	6.244E-04	3.041E-04	8.305E-05	2.528E-05	1.276E-05	5.441E-07	0.000E+00
66	2.153E-03	6.103E-04	2.447E-04	7.974E-05	1.537E-05	4.141E-06	1.589E-06	0.000E+00
67	1.992E-03	6.218E-04	1.854E-04	6.278E-05	1.696E-05	6.453E-06	0.000E+00	0.000E+00
68	1.711E-03	5.521E-04	2.178E-04	4.668E-05	1.226E-05	0.000E+00	1.802E-06	1.443E-06
69	2.055E-03	5.562E-04	1.829E-04	7.462E-05	1.006E-05	3.650E-06	1.862E-06	0.000E+00
70	1.329E-03	4.245E-04	1.446E-04	4.936E-05	9.504E-06	4.771E-06	5.027E-07	8.021E-07
71	7.453E-04	2.879E-04	1.537E-04	5.554E-05	2.431E-05	1.649E-05	2.594E-06	6.305E-07
72	1.682E-03	8.445E-04	5.697E-04	2.488E-04	7.321E-05	2.332E-05	3.289E-06	2.080E-06
73	2.776E-03	1.848E-03	1.259E-03	6.495E-04	1.813E-04	3.686E-05	6.199E-06	6.669E-07

74	5.297E-03	3.243E-03	1.954E-03	7.870E-04	1.986E-04	3.947E-05	7.308E-06	4.332E-06
75	7.155E-03	4.291E-03	2.275E-03	9.129E-04	2.298E-04	4.874E-05	1.078E-05	2.251E-06
76	9.261E-03	5.155E-03	2.412E-03	1.102E-03	2.649E-04	8.065E-05	1.959E-05	8.057E-07
77	1.106E-02	5.398E-03	2.262E-03	8.689E-04	2.381E-04	6.143E-05	1.528E-05	1.628E-06
78	1.229E-02	5.541E-03	2.326E-03	9.606E-04	2.120E-04	6.392E-05	1.158E-05	4.553E-06
79	1.346E-02	6.211E-03	2.672E-03	9.654E-04	2.035E-04	6.369E-05	1.880E-05	2.284E-06
80	9.562E-03	4.395E-03	2.073E-03	7.790E-04	1.813E-04	5.822E-05	1.456E-05	4.119E-06
81	1.188E-02	5.354E-03	2.275E-03	8.866E-04	2.574E-04	9.220E-05	2.485E-05	5.410E-06
82	1.801E-02	7.994E-03	4.032E-03	1.557E-03	5.020E-04	1.259E-04	3.293E-05	5.491E-06
83	1.877E-02	8.531E-03	3.675E-03	1.468E-03	4.629E-04	1.229E-04	2.255E-05	7.481E-06
84	1.984E-02	7.925E-03	3.756E-03	1.378E-03	3.122E-04	1.359E-04	2.423E-05	8.212E-06
85	1.992E-02	8.094E-03	3.570E-03	1.420E-03	3.696E-04	1.189E-04	2.025E-05	6.157E-06
86	2.038E-02	8.955E-03	3.748E-03	1.590E-03	4.647E-04	8.542E-05	2.217E-05	3.035E-06
87	1.754E-02	7.759E-03	3.183E-03	1.504E-03	4.235E-04	9.694E-05	2.698E-05	4.516E-06
88	1.828E-02	7.785E-03	3.171E-03	1.342E-03	4.099E-04	1.191E-04	1.609E-05	3.317E-06
89	1.745E-02	7.279E-03	3.230E-03	1.390E-03	3.522E-04	9.448E-05	2.037E-05	1.146E-06
90	1.467E-02	5.904E-03	2.588E-03	1.195E-03	3.326E-04	8.681E-05	1.225E-05	2.119E-06
91	1.176E-02	4.859E-03	2.335E-03	8.898E-04	2.857E-04	7.301E-05	1.265E-05	2.964E-06
92	1.107E-02	4.617E-03	2.074E-03	8.307E-04	2.273E-04	5.848E-05	1.111E-05	0.000E+00
93	1.016E-02	4.188E-03	1.864E-03	7.668E-04	1.910E-04	5.404E-05	6.579E-06	1.861E-06
94	1.009E-02	3.893E-03	1.724E-03	6.705E-04	1.513E-04	5.626E-05	1.020E-05	9.464E-07
95	8.396E-03	3.343E-03	1.451E-03	6.444E-04	1.362E-04	3.448E-05	4.731E-06	8.214E-07
96	8.457E-03	3.168E-03	1.423E-03	5.080E-04	1.537E-04	4.519E-05	9.440E-06	0.000E+00
97	6.988E-03	2.751E-03	1.221E-03	4.814E-04	1.193E-04	2.643E-05	1.848E-06	7.971E-07
98	6.399E-03	2.439E-03	1.256E-03	4.545E-04	1.407E-04	2.913E-05	3.752E-06	0.000E+00
99	6.539E-03	3.008E-03	1.287E-03	5.641E-04	1.320E-04	3.403E-05	1.884E-06	0.000E+00
100	6.773E-03	2.855E-03	1.480E-03	5.317E-04	1.294E-04	4.626E-05	5.476E-06	0.000E+00
101	6.561E-03	2.882E-03	1.417E-03	6.255E-04	1.473E-04	4.480E-05	4.285E-06	0.000E+00
102	6.738E-03	2.868E-03	1.341E-03	5.425E-04	1.273E-04	4.865E-05	2.937E-06	7.321E-07
103	6.208E-03	2.610E-03	1.165E-03	5.062E-04	1.305E-04	4.194E-05	4.892E-06	7.279E-07
104	5.944E-03	2.544E-03	1.172E-03	5.186E-04	1.241E-04	2.823E-05	3.028E-06	7.714E-07
105	6.012E-03	2.564E-03	1.144E-03	5.567E-04	1.311E-04	3.239E-05	2.973E-06	0.000E+00
106	5.686E-03	2.447E-03	1.207E-03	5.373E-04	1.170E-04	3.577E-05	6.650E-06	7.643E-07
107	6.468E-03	2.585E-03	1.253E-03	5.495E-04	1.586E-04	3.186E-05	1.221E-06	0.000E+00
108	6.346E-03	2.755E-03	1.378E-03	5.152E-04	1.239E-04	2.160E-05	4.750E-06	7.721E-07
109	7.024E-03	3.053E-03	1.570E-03	5.017E-04	1.240E-04	2.121E-05	6.878E-06	0.000E+00
110	7.084E-03	3.061E-03	1.329E-03	5.047E-04	1.184E-04	2.403E-05	2.668E-06	1.543E-06
111	6.528E-03	3.008E-03	1.331E-03	5.387E-04	1.318E-04	3.436E-05	3.702E-06	0.000E+00
112	6.002E-03	2.666E-03	1.128E-03	4.297E-04	1.062E-04	2.872E-05	2.799E-06	0.000E+00
113	3.902E-03	1.681E-03	7.795E-04	2.833E-04	6.935E-05	1.637E-05	5.865E-07	7.138E-07

114	3.010E-03	1.236E-03	6.276E-04	2.287E-04	5.357E-05	5.932E-06	2.171E-06	0.000E+00
115	2.918E-03	1.334E-03	5.735E-04	2.123E-04	6.516E-05	1.306E-05	2.599E-06	0.000E+00
116	2.749E-03	1.132E-03	6.525E-04	2.205E-04	4.501E-05	1.844E-05	2.574E-06	6.694E-07
117	3.325E-03	1.488E-03	5.720E-04	1.981E-04	7.613E-05	1.402E-05	2.218E-06	0.000E+00
118	4.103E-03	1.785E-03	7.539E-04	2.708E-04	6.333E-05	7.434E-06	2.697E-06	0.000E+00
119	4.145E-03	1.847E-03	8.157E-04	3.246E-04	6.998E-05	1.631E-05	2.283E-06	6.819E-07
120	4.037E-03	1.810E-03	7.829E-04	2.895E-04	9.364E-05	1.649E-05	1.659E-06	0.000E+00
121	4.169E-03	1.755E-03	6.853E-04	3.131E-04	7.390E-05	1.399E-05	1.125E-06	0.000E+00
122	4.530E-03	1.850E-03	8.644E-04	3.339E-04	9.959E-05	1.167E-05	2.865E-06	1.446E-06
123	5.429E-03	2.221E-03	9.000E-04	3.662E-04	7.616E-05	2.205E-05	6.004E-07	0.000E+00
124	4.098E-03	1.512E-03	7.604E-04	2.275E-04	6.150E-05	9.074E-06	1.164E-06	7.471E-07
125	4.818E-03	1.631E-03	6.629E-04	2.477E-04	5.289E-05	2.690E-06	6.021E-07	2.279E-06
126	4.237E-03	1.621E-03	6.599E-04	2.285E-04	6.312E-05	1.080E-05	1.818E-06	0.000E+00
127	3.200E-03	1.402E-03	6.274E-04	2.245E-04	3.933E-05	3.699E-06	1.127E-06	0.000E+00
128	3.727E-03	1.454E-03	5.408E-04	2.176E-04	5.529E-05	9.407E-06	0.000E+00	0.000E+00
129	2.281E-03	1.011E-03	4.802E-04	1.772E-04	2.250E-05	5.912E-06	1.016E-06	0.000E+00
130	3.813E-03	1.530E-03	5.842E-04	2.475E-04	4.159E-05	7.415E-06	0.000E+00	0.000E+00
131	3.083E-03	1.244E-03	5.943E-04	1.941E-04	3.784E-05	6.011E-06	0.000E+00	0.000E+00
132	2.564E-03	1.159E-03	5.713E-04	1.850E-04	4.536E-05	1.044E-05	4.889E-07	0.000E+00
133	1.499E-03	6.817E-04	2.893E-04	9.200E-05	2.037E-05	3.254E-06	0.000E+00	0.000E+00
134	1.623E-03	6.899E-04	2.717E-04	9.498E-05	2.174E-05	3.281E-06	4.820E-07	0.000E+00
135	1.596E-03	5.709E-04	2.915E-04	1.078E-04	2.511E-05	3.284E-06	5.092E-07	0.000E+00
136	1.390E-03	5.664E-04	2.912E-04	1.227E-04	2.368E-05	1.323E-05	0.000E+00	0.000E+00
137	1.504E-03	6.318E-04	3.030E-04	7.428E-05	1.532E-05	0.000E+00	4.753E-07	0.000E+00
138	1.169E-03	5.441E-04	3.105E-04	1.251E-04	1.400E-05	6.637E-06	0.000E+00	6.272E-07
139	1.377E-03	5.493E-04	2.078E-04	7.709E-05	1.168E-05	3.276E-06	4.982E-07	0.000E+00
140	1.278E-03	5.034E-04	2.471E-04	6.635E-05	1.514E-05	0.000E+00	4.979E-07	5.863E-07
141	1.344E-03	5.022E-04	2.550E-04	7.000E-05	1.786E-05	6.572E-06	0.000E+00	0.000E+00
142	1.172E-03	5.109E-04	1.918E-04	7.295E-05	1.876E-05	2.145E-06	4.935E-07	0.000E+00
143	1.174E-03	4.584E-04	2.001E-04	8.145E-05	1.039E-05	2.192E-06	4.916E-07	6.141E-07
144	1.089E-03	4.114E-04	1.881E-04	6.736E-05	1.280E-05	0.000E+00	0.000E+00	0.000E+00
145	1.016E-03	4.757E-04	1.690E-04	6.184E-05	2.179E-05	3.151E-06	4.612E-07	0.000E+00
146	1.113E-03	4.897E-04	1.832E-04	7.080E-05	1.710E-05	3.154E-06	0.000E+00	5.766E-07
147	9.963E-04	4.403E-04	2.136E-04	7.024E-05	9.169E-06	1.024E-06	9.450E-07	0.000E+00
148	1.063E-03	4.202E-04	1.453E-04	6.707E-05	7.062E-06	0.000E+00	4.851E-07	0.000E+00
149	9.693E-04	3.308E-04	2.156E-04	4.227E-05	1.478E-05	1.085E-06	0.000E+00	6.029E-07
150	8.835E-04	3.597E-04	1.524E-04	5.075E-05	1.128E-05	1.075E-06	4.814E-07	0.000E+00
151	9.473E-04	3.219E-04	1.401E-04	3.027E-05	1.338E-05	1.066E-06	4.493E-07	0.000E+00
152	7.468E-04	3.697E-04	1.418E-04	3.485E-05	6.651E-06	1.064E-06	4.744E-07	1.188E-06
153	7.650E-04	3.099E-04	1.456E-04	3.206E-05	1.017E-05	2.121E-06	0.000E+00	0.000E+00

154	7.931E-04	3.287E-04	1.481E-04	5.347E-05	9.960E-06	9.986E-07	0.000E+00	5.582E-07
155	8.167E-04	3.139E-04	1.485E-04	4.336E-05	7.844E-06	3.056E-06	0.000E+00	0.000E+00
156	7.808E-04	3.431E-04	1.103E-04	4.494E-05	1.446E-05	3.110E-06	0.000E+00	0.000E+00
157	7.430E-04	3.845E-04	1.399E-04	5.147E-05	1.132E-05	2.055E-06	0.000E+00	1.706E-06
158	7.108E-04	2.754E-04	1.415E-04	6.373E-05	1.436E-05	2.109E-06	0.000E+00	0.000E+00
159	7.044E-04	2.577E-04	1.245E-04	4.836E-05	1.567E-05	9.900E-07	4.709E-07	0.000E+00
160	6.721E-04	2.924E-04	1.762E-04	5.904E-05	7.203E-06	0.000E+00	4.118E-07	5.157E-07
161	6.225E-04	2.561E-04	9.539E-05	4.569E-05	7.729E-06	1.966E-06	0.000E+00	0.000E+00
162	5.433E-04	1.992E-04	1.058E-04	4.724E-05	2.251E-06	2.016E-06	0.000E+00	0.000E+00
163	5.413E-04	2.594E-04	1.054E-04	2.608E-05	8.679E-06	0.000E+00	0.000E+00	0.000E+00
164	4.801E-04	2.030E-04	9.862E-05	2.776E-05	9.887E-06	0.000E+00	0.000E+00	0.000E+00
165	5.340E-04	2.167E-04	1.252E-04	3.603E-05	2.174E-06	2.063E-06	0.000E+00	0.000E+00
166	4.960E-04	2.060E-04	1.046E-04	4.954E-05	6.523E-06	9.707E-07	4.619E-07	0.000E+00
167	4.209E-04	2.388E-04	1.318E-04	4.059E-05	8.765E-06	0.000E+00	0.000E+00	0.000E+00
168	5.330E-04	2.652E-04	1.020E-04	4.892E-05	8.644E-06	0.000E+00	1.333E-06	5.761E-07
169	4.151E-04	1.937E-04	9.141E-05	2.907E-05	7.631E-06	0.000E+00	0.000E+00	5.436E-07
170	4.399E-04	2.425E-04	1.144E-04	4.032E-05	4.277E-06	1.028E-06	0.000E+00	0.000E+00
171	5.204E-04	1.920E-04	9.132E-05	3.897E-05	6.519E-06	0.000E+00	0.000E+00	0.000E+00
172	5.496E-04	2.059E-04	8.413E-05	2.613E-05	4.216E-06	9.707E-07	0.000E+00	0.000E+00
173	5.214E-04	2.112E-04	6.748E-05	1.773E-05	6.639E-06	9.700E-07	0.000E+00	5.419E-07
174	4.705E-04	1.790E-04	7.774E-05	3.114E-05	4.215E-06	1.942E-06	4.339E-07	0.000E+00
175	3.797E-04	1.873E-04	7.163E-05	3.264E-05	2.102E-06	9.671E-07	0.000E+00	0.000E+00
176	4.561E-04	1.595E-04	5.370E-05	1.817E-05	1.961E-06	1.805E-06	1.237E-06	0.000E+00
177	4.389E-04	1.530E-04	8.549E-05	1.622E-05	6.497E-06	3.076E-06	0.000E+00	5.751E-07
178	4.195E-04	1.813E-04	8.803E-05	2.591E-05	2.105E-06	1.941E-06	0.000E+00	0.000E+00
179	4.070E-04	1.618E-04	6.421E-05	3.269E-05	6.561E-06	0.000E+00	4.316E-07	0.000E+00
180	3.837E-04	1.906E-04	6.996E-05	2.734E-05	8.630E-06	9.650E-07	4.314E-07	5.391E-07
181	3.755E-04	1.283E-04	3.659E-05	2.585E-05	2.158E-06	1.023E-06	4.580E-07	0.000E+00
182	3.968E-04	1.189E-04	6.014E-05	2.584E-05	8.628E-06	0.000E+00	0.000E+00	0.000E+00
183	3.551E-04	1.569E-04	5.075E-05	1.752E-05	4.371E-06	1.021E-06	4.571E-07	0.000E+00
184	3.324E-04	1.499E-04	2.334E-05	1.624E-05	4.306E-06	0.000E+00	0.000E+00	5.381E-07
185	3.622E-04	1.793E-04	7.118E-05	1.133E-05	2.213E-06	0.000E+00	8.861E-07	0.000E+00
186	3.391E-04	1.460E-04	6.002E-05	2.588E-05	3.196E-06	9.607E-07	0.000E+00	5.709E-07
187	3.316E-04	1.559E-04	8.289E-05	1.141E-05	4.299E-06	0.000E+00	4.566E-07	0.000E+00
188	2.881E-04	1.387E-04	5.241E-05	1.589E-05	0.000E+00	1.018E-06	0.000E+00	0.000E+00
189	3.134E-04	1.314E-04	7.953E-05	1.920E-05	1.042E-06	0.000E+00	0.000E+00	0.000E+00
190	3.151E-04	1.181E-04	3.411E-05	2.234E-05	9.700E-07	0.000E+00	8.484E-07	1.061E-06
191	3.038E-04	1.232E-04	5.331E-05	1.284E-05	2.206E-06	9.564E-07	4.545E-07	0.000E+00
192	3.898E-04	9.686E-05	2.647E-05	1.442E-05	1.040E-06	0.000E+00	4.288E-07	5.356E-07
193	2.990E-04	9.981E-05	3.699E-05	4.968E-06	4.230E-06	2.937E-06	0.000E+00	0.000E+00

194	2.825E-04	1.056E-04	4.665E-05	1.752E-05	2.209E-06	0.000E+00	0.000E+00	0.000E+00
195	2.734E-04	1.312E-04	6.006E-05	1.452E-05	3.251E-06	9.571E-07	0.000E+00	0.000E+00
196	2.087E-04	1.014E-04	4.320E-05	1.750E-05	1.039E-06	2.987E-06	4.544E-07	0.000E+00
197	2.745E-04	6.908E-05	2.662E-05	1.273E-05	2.203E-06	0.000E+00	0.000E+00	5.674E-07
198	2.515E-04	9.092E-05	2.739E-05	1.913E-05	2.139E-06	0.000E+00	0.000E+00	0.000E+00
199	2.464E-04	1.040E-04	2.679E-05	1.281E-05	1.101E-06	0.000E+00	0.000E+00	0.000E+00
200	2.484E-04	9.815E-05	3.304E-05	1.756E-05	2.201E-06	0.000E+00	4.534E-07	5.669E-07
201	1.762E-04	7.508E-05	4.612E-05	1.290E-05	1.100E-06	1.966E-06	0.000E+00	0.000E+00
202	2.281E-04	5.875E-05	5.236E-05	8.049E-06	2.074E-06	9.550E-07	0.000E+00	0.000E+00
203	2.411E-04	7.761E-05	2.634E-05	2.073E-05	2.136E-06	1.965E-06	0.000E+00	0.000E+00
204	2.073E-04	8.524E-05	4.352E-05	6.501E-06	3.176E-06	0.000E+00	0.000E+00	5.347E-07
205	2.476E-04	8.036E-05	3.943E-05	6.601E-06	1.105E-06	0.000E+00	0.000E+00	0.000E+00
206	2.617E-04	7.721E-05	3.738E-05	6.065E-06	9.680E-07	0.000E+00	0.000E+00	0.000E+00
207	2.161E-04	8.524E-05	3.299E-05	9.782E-06	2.135E-06	0.000E+00	0.000E+00	0.000E+00
208	1.932E-04	6.728E-05	3.321E-05	1.124E-05	4.209E-06	9.536E-07	0.000E+00	0.000E+00
209	2.483E-04	7.954E-05	4.007E-05	6.406E-06	2.140E-06	0.000E+00	4.541E-07	0.000E+00
210	2.482E-04	1.063E-04	1.292E-05	1.099E-05	4.348E-06	0.000E+00	0.000E+00	0.000E+00
211	2.031E-04	1.019E-04	5.994E-05	1.605E-05	5.451E-06	0.000E+00	0.000E+00	5.681E-07
212	2.514E-04	7.736E-05	3.670E-05	7.876E-06	1.102E-06	0.000E+00	0.000E+00	5.344E-07
213	2.043E-04	5.895E-05	4.272E-05	1.446E-05	2.138E-06	0.000E+00	0.000E+00	0.000E+00
214	1.990E-04	5.291E-05	1.973E-05	1.260E-05	1.101E-06	1.013E-06	0.000E+00	0.000E+00
215	2.322E-04	4.995E-05	1.989E-05	6.298E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
216	1.825E-04	8.172E-05	2.309E-05	8.120E-06	0.000E+00	1.961E-06	0.000E+00	5.656E-07
217	1.649E-04	6.091E-05	5.933E-05	6.281E-06	1.032E-06	0.000E+00	0.000E+00	5.316E-07
218	1.915E-04	4.009E-05	2.684E-05	4.727E-06	1.030E-06	0.000E+00	0.000E+00	0.000E+00
219	1.300E-04	5.018E-05	3.640E-05	9.444E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
220	1.545E-04	5.564E-05	1.359E-05	7.996E-06	1.030E-06	0.000E+00	0.000E+00	1.061E-06
221	1.394E-04	4.287E-05	2.297E-05	9.337E-06	1.029E-06	9.464E-07	0.000E+00	0.000E+00
222	1.355E-04	2.965E-05	2.457E-05	8.963E-06	9.600E-07	0.000E+00	0.000E+00	0.000E+00
223	1.203E-04	2.882E-05	3.384E-06	8.052E-06	0.000E+00	0.000E+00	4.481E-07	0.000E+00
224	7.520E-05	3.136E-05	2.289E-05	4.885E-06	1.086E-06	9.436E-07	4.481E-07	0.000E+00
225	8.392E-05	5.274E-05	1.988E-05	6.414E-06	0.000E+00	0.000E+00	8.704E-07	5.602E-07
226	7.800E-05	4.938E-05	1.272E-05	1.534E-06	1.085E-06	9.429E-07	0.000E+00	0.000E+00
227	1.025E-04	2.392E-05	0.000E+00	6.309E-06	3.129E-06	9.407E-07	8.679E-07	0.000E+00

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.406E-07	0.000E+00	0.000E+00	2.723E-07

2	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
4	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
5	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.959E-07
6	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
7	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
8	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.826E-07
9	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
10	0.000E+00	1.526E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
11	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
12	3.308E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.394E-07	0.000E+00
14	3.605E-06	3.320E-06	1.952E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
15	5.222E-05	1.561E-05	1.895E-06	2.982E-06	6.513E-07	0.000E+00	0.000E+00	0.000E+00
16	1.086E-04	2.701E-05	4.881E-06	2.522E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
17	5.462E-04	8.431E-05	5.442E-05	1.934E-05	0.000E+00	0.000E+00	0.000E+00	8.067E-07
18	3.211E-04	7.832E-05	2.833E-05	1.308E-05	8.621E-07	0.000E+00	0.000E+00	0.000E+00
19	7.765E-05	3.613E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.446E-07
20	9.666E-05	3.433E-05	1.229E-05	3.187E-06	0.000E+00	0.000E+00	0.000E+00	5.260E-07
21	1.178E-04	2.947E-05	3.467E-06	1.386E-06	1.021E-06	0.000E+00	0.000E+00	0.000E+00
22	1.226E-04	2.060E-05	1.610E-05	1.754E-06	0.000E+00	0.000E+00	4.807E-07	0.000E+00
23	1.446E-04	3.732E-05	7.704E-06	0.000E+00	1.164E-06	0.000E+00	0.000E+00	0.000E+00
24	8.601E-05	1.107E-05	2.264E-06	1.448E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
25	2.704E-05	7.368E-06	4.749E-06	2.234E-06	0.000E+00	0.000E+00	0.000E+00	3.766E-07
26	1.393E-05	7.136E-06	4.406E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
27	3.943E-05	5.556E-06	2.430E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
28	2.228E-05	1.615E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
29	3.668E-05	4.103E-06	0.000E+00	1.168E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
30	2.714E-05	4.060E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.747E-07	0.000E+00
31	1.495E-05	1.818E-06	5.091E-06	1.129E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
32	2.296E-05	1.646E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
33	8.722E-06	3.181E-06	1.979E-06	9.367E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
34	1.318E-05	1.655E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
35	1.320E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
36	2.384E-05	1.044E-05	0.000E+00	0.000E+00	1.001E-06	0.000E+00	2.859E-07	0.000E+00
37	8.952E-06	5.576E-06	0.000E+00	1.424E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
38	2.745E-05	2.901E-06	0.000E+00	1.695E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
39	2.497E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
40	1.423E-05	5.171E-06	6.150E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
41	2.582E-05	0.000E+00	3.121E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

42	1.099E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
43	1.900E-05	4.831E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
44	3.726E-05	2.426E-06	3.381E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
45	3.329E-05	2.529E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
46	2.970E-05	4.966E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
47	3.110E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
48	5.305E-06	2.523E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
49	2.233E-05	4.577E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
50	1.808E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
51	1.497E-05	9.138E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
52	2.488E-05	2.331E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.750E-07	0.000E+00
53	7.399E-06	2.157E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
54	2.838E-05	4.707E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.787E-07
55	2.523E-05	2.144E-06	2.836E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
56	2.907E-05	2.265E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
57	1.682E-05	0.000E+00	2.564E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
58	1.656E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
59	1.926E-05	0.000E+00	0.000E+00	0.000E+00	7.950E-07	0.000E+00	0.000E+00	0.000E+00
60	2.749E-05	2.021E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
61	1.737E-05	2.026E-06	2.353E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
62	1.507E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.131E-07	0.000E+00
63	1.403E-05	3.604E-06	2.143E-06	2.090E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
64	4.778E-05	1.360E-05	2.170E-06	3.225E-06	6.579E-07	0.000E+00	0.000E+00	0.000E+00
65	3.318E-05	5.084E-06	4.317E-06	9.760E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
66	1.537E-05	5.121E-06	2.019E-06	0.000E+00	6.760E-07	0.000E+00	0.000E+00	0.000E+00
67	8.160E-06	5.703E-06	0.000E+00	0.000E+00	7.214E-07	0.000E+00	0.000E+00	0.000E+00
68	1.991E-05	7.854E-06	4.926E-06	0.000E+00	0.000E+00	0.000E+00	3.389E-07	0.000E+00
69	8.078E-06	1.844E-06	2.464E-06	9.171E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
70	1.082E-05	4.225E-06	5.646E-06	0.000E+00	1.388E-06	0.000E+00	0.000E+00	0.000E+00
71	1.241E-05	1.999E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
72	1.146E-05	1.736E-06	4.167E-06	1.022E-06	6.961E-07	6.307E-07	5.550E-07	0.000E+00
73	5.194E-05	1.244E-05	1.098E-05	2.111E-06	0.000E+00	6.796E-07	0.000E+00	0.000E+00
74	1.086E-04	2.230E-05	1.151E-05	3.164E-06	7.006E-07	0.000E+00	2.916E-07	0.000E+00
75	7.577E-05	3.396E-05	6.938E-06	5.771E-06	1.511E-06	6.699E-07	0.000E+00	3.554E-07
76	1.435E-04	5.499E-05	1.399E-05	1.261E-05	2.294E-06	1.376E-06	1.237E-06	0.000E+00
77	1.716E-04	8.583E-05	3.642E-05	8.729E-06	2.451E-06	7.614E-07	3.496E-07	0.000E+00
78	1.671E-04	4.766E-05	3.027E-05	1.051E-05	5.505E-06	2.071E-06	6.694E-07	0.000E+00
79	1.618E-04	5.443E-05	1.492E-05	5.822E-06	2.331E-06	2.236E-06	3.055E-07	0.000E+00
80	1.543E-04	6.622E-05	1.759E-05	1.905E-05	6.235E-06	1.395E-06	1.579E-06	0.000E+00
81	1.657E-04	5.310E-05	2.845E-05	1.369E-05	7.042E-06	2.592E-06	8.293E-07	3.406E-07

82	2.730E-04	1.049E-04	5.695E-05	2.229E-05	8.684E-06	0.000E+00	6.613E-07	0.000E+00
83	5.203E-04	2.101E-04	9.017E-05	4.149E-05	1.068E-05	2.434E-06	0.000E+00	3.967E-07
84	4.933E-04	1.919E-04	8.054E-05	2.547E-05	8.426E-06	1.156E-06	0.000E+00	0.000E+00
85	4.836E-04	1.700E-04	7.767E-05	2.897E-05	6.206E-06	0.000E+00	8.231E-07	0.000E+00
86	5.143E-04	1.641E-04	7.584E-05	3.097E-05	1.191E-05	1.042E-06	4.036E-07	0.000E+00
87	6.179E-04	1.718E-04	8.032E-05	3.176E-05	1.011E-05	0.000E+00	0.000E+00	5.916E-07
88	5.186E-04	2.093E-04	1.059E-04	2.959E-05	5.784E-06	2.149E-06	0.000E+00	0.000E+00
89	5.554E-04	1.465E-04	6.537E-05	2.087E-05	1.031E-05	1.102E-06	0.000E+00	0.000E+00
90	5.014E-04	1.258E-04	6.534E-05	2.956E-05	4.449E-06	9.664E-07	0.000E+00	0.000E+00
91	4.808E-04	1.163E-04	5.448E-05	2.360E-05	8.328E-06	2.878E-06	0.000E+00	0.000E+00
92	3.283E-04	8.746E-05	5.078E-05	1.833E-05	6.064E-06	0.000E+00	4.006E-07	0.000E+00
93	3.154E-04	1.043E-04	3.890E-05	1.758E-05	3.969E-06	8.929E-07	3.761E-07	0.000E+00
94	2.933E-04	9.636E-05	2.043E-05	1.831E-05	1.894E-06	2.668E-06	0.000E+00	0.000E+00
95	2.380E-04	7.998E-05	2.046E-05	7.007E-06	3.671E-06	7.900E-07	0.000E+00	0.000E+00
96	1.794E-04	3.691E-05	8.026E-06	7.769E-06	8.400E-07	0.000E+00	0.000E+00	0.000E+00
97	1.563E-04	6.008E-05	2.307E-05	6.101E-06	8.227E-07	0.000E+00	0.000E+00	0.000E+00
98	1.083E-04	3.673E-05	1.271E-05	3.525E-06	3.286E-06	2.262E-06	0.000E+00	0.000E+00
99	1.452E-04	3.794E-05	2.401E-06	8.409E-06	2.406E-06	7.141E-07	0.000E+00	0.000E+00
100	1.390E-04	5.205E-05	1.702E-05	9.585E-06	3.152E-06	0.000E+00	0.000E+00	0.000E+00
101	1.379E-04	5.242E-05	1.964E-05	5.949E-06	2.384E-06	6.917E-07	0.000E+00	0.000E+00
102	1.376E-04	2.816E-05	2.227E-05	2.434E-06	2.433E-06	0.000E+00	0.000E+00	0.000E+00
103	1.417E-04	4.734E-05	1.214E-05	2.279E-06	7.993E-07	0.000E+00	0.000E+00	3.806E-07
104	1.192E-04	3.728E-05	2.191E-05	4.809E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
105	9.314E-05	3.701E-05	9.697E-06	8.114E-06	7.950E-07	0.000E+00	0.000E+00	0.000E+00
106	9.275E-05	3.561E-05	1.708E-05	4.521E-06	7.986E-07	0.000E+00	3.247E-07	0.000E+00
107	1.147E-04	3.493E-05	1.946E-05	1.122E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
108	1.048E-04	2.346E-05	1.264E-05	2.359E-06	0.000E+00	7.207E-07	0.000E+00	0.000E+00
109	1.146E-04	2.615E-05	1.259E-05	2.324E-06	7.950E-07	0.000E+00	0.000E+00	0.000E+00
110	9.102E-05	2.257E-05	1.007E-05	1.249E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
111	9.254E-05	1.887E-05	2.628E-06	5.024E-06	8.136E-07	0.000E+00	0.000E+00	0.000E+00
112	1.183E-04	3.253E-05	5.001E-06	1.244E-06	7.721E-07	7.607E-07	0.000E+00	0.000E+00
113	6.662E-05	2.016E-05	6.915E-06	1.078E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
114	2.622E-05	9.058E-06	6.479E-06	4.351E-06	7.095E-07	0.000E+00	0.000E+00	0.000E+00
115	2.961E-05	6.931E-06	0.000E+00	1.011E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
116	3.238E-05	8.706E-06	6.304E-06	0.000E+00	1.353E-06	0.000E+00	0.000E+00	0.000E+00
117	4.711E-05	1.004E-05	1.024E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
118	3.860E-05	3.306E-06	2.049E-06	2.020E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
119	6.259E-05	3.521E-06	0.000E+00	2.096E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
120	3.675E-05	1.299E-05	4.714E-06	2.246E-06	7.479E-07	0.000E+00	5.728E-07	0.000E+00
121	5.673E-05	1.269E-05	2.303E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

122	3.663E-05	1.278E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
123	7.488E-05	7.612E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
124	4.070E-05	1.439E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
125	4.040E-05	1.996E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
126	2.874E-05	3.798E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
127	1.934E-05	1.841E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
128	2.611E-05	7.149E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
129	4.308E-05	3.661E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
130	2.634E-05	5.013E-06	2.058E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
131	2.809E-05	1.796E-06	2.239E-06	3.276E-06	0.000E+00	6.923E-07	0.000E+00	0.000E+00
132	1.583E-05	5.439E-06	4.332E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
133	2.451E-05	3.372E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
134	1.777E-05	1.676E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
135	1.076E-05	1.574E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
136	1.773E-05	0.000E+00	0.000E+00	9.893E-07	0.000E+00	0.000E+00	2.672E-07	0.000E+00
137	1.420E-05	0.000E+00	2.031E-06	9.214E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
138	8.919E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
139	8.860E-06	4.812E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.466E-07	0.000E+00
140	7.121E-06	0.000E+00	0.000E+00	0.000E+00	6.038E-07	0.000E+00	0.000E+00	0.000E+00
141	6.898E-06	1.621E-06	1.894E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
142	1.723E-05	1.528E-06	2.003E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
143	1.362E-05	1.619E-06	0.000E+00	0.000E+00	6.350E-07	0.000E+00	0.000E+00	0.000E+00
144	1.028E-05	1.518E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.425E-07	0.000E+00
145	4.886E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
146	5.117E-06	0.000E+00	1.981E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
147	1.774E-06	3.110E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
148	5.287E-06	3.101E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
149	3.421E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
150	1.011E-05	1.580E-06	0.000E+00	8.879E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
151	1.008E-05	1.486E-06	0.000E+00	8.821E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
152	3.262E-06	3.134E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
153	6.598E-06	1.471E-06	0.000E+00	8.664E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
154	1.022E-05	3.108E-06	1.811E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
155	1.721E-06	0.000E+00	0.000E+00	9.200E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
156	6.576E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
157	3.434E-06	1.549E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
158	1.721E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
159	6.747E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
160	6.726E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
161	4.655E-06	4.231E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

202	1.550E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
203	1.550E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
204	1.548E-06	1.399E-06	1.728E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
205	1.646E-06	1.487E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
206	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
207	2.985E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
208	3.286E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
209	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
210	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.247E-07	0.000E+00
211	1.649E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
212	3.105E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
213	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.950E-07
214	1.646E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
215	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
216	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
217	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
218	0.000E+00	1.479E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
219	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
220	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
221	1.539E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
222	3.076E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
223	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
224	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.738E-07
225	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
226	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
227	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
6	2	1	0	1	0	0	1
8	2	1	0	0	0	1	1
15	4	0	0	2	1	0	1
24	6	1	0	0	0	0	0
24	6	0	2	0	0	0	2
51	7	4	2	1	0	1	0
51	16	5	3	0	0	0	0
141	29	4	4	0	0	0	0
173	55	10	6	2	0	1	1
191	49	8	6	1	0	1	1

100	28	8	3	0	0	0	1
103	20	7	1	1	1	1	0
94	42	14	17	6	5	1	1
416	198	61	54	25	11	2	1
961	421	140	119	39	17	5	0
2140	978	372	357	109	37	14	2
1563	738	303	285	128	63	14	1
803	371	139	129	59	16	5	1
1101	480	208	162	70	18	2	0
1200	566	182	141	51	9	2	0
1421	588	196	144	57	14	4	1
1474	594	208	126	38	8	2	0
1137	456	146	111	36	12	4	0
610	262	91	62	19	5	3	0
559	188	55	43	17	3	0	2
711	264	79	48	16	3	1	1
823	305	98	57	9	5	4	1
796	295	72	48	12	5	0	0
763	233	75	58	13	4	0	0
640	199	48	39	10	1	1	1
338	118	38	14	8	4	0	0
203	78	29	13	11	1	0	0
135	53	17	19	8	4	0	0
186	75	35	15	12	1	0	0
595	199	63	36	13	2	0	0
770	241	51	48	10	0	0	0
685	252	66	35	10	3	0	0
627	253	60	36	11	2	0	0
640	219	63	46	6	0	0	1
588	176	48	26	8	1	0	0
586	184	56	33	5	1	1	0
635	217	42	36	14	3	1	0
673	240	75	52	10	4	0	0
621	220	66	58	12	1	0	0
692	261	81	50	15	1	0	1
739	269	64	50	16	4	2	1
720	258	80	54	12	2	0	0
718	279	92	60	18	6	0	0
661	238	72	45	15	1	0	0
621	235	57	46	17	2	0	0

578	232	48	46	15	2	0	0
576	233	87	52	15	7	1	1
755	310	89	69	22	4	1	1
946	365	106	84	13	4	0	1
813	385	105	60	20	3	0	0
950	415	129	79	21	5	0	0
863	327	120	67	18	4	1	1
657	303	82	50	20	2	1	1
710	240	71	55	13	3	0	0
719	273	81	67	16	1	0	0
688	273	91	68	22	4	3	0
499	155	67	50	18	3	4	0
581	326	135	121	60	21	8	2
900	408	151	121	49	9	9	1
481	198	77	44	20	11	1	0
542	176	57	38	11	3	3	0
480	172	41	29	12	5	0	0
432	160	51	23	9	0	3	2
485	153	39	33	7	3	3	0
333	121	34	24	7	4	1	1
204	90	39	29	19	14	5	1
443	254	138	125	55	19	6	3
711	540	296	317	132	29	11	1
1322	927	450	375	142	31	13	6
1730	1191	505	423	159	37	18	3
2060	1311	493	470	168	56	30	1
2606	1455	492	391	160	45	25	2
2901	1496	506	434	143	47	19	6
3178	1676	580	435	137	47	31	3
2537	1334	505	395	137	48	27	6
2810	1449	496	401	175	68	41	7
2985	1552	632	505	249	66	39	5
3296	1715	591	490	231	67	26	7
3514	1624	618	471	160	76	30	8
3461	1615	573	473	184	64	25	6
3335	1703	574	505	222	44	26	3
2793	1421	468	459	194	48	30	4
2920	1431	469	412	188	60	18	3
2817	1352	483	431	164	48	23	1
2600	1200	423	406	169	48	15	2

2164	1021	395	313	150	42	16	3
2124	1014	366	306	125	35	15	0
1996	940	335	287	107	33	9	2
2023	895	318	257	87	35	14	1
1807	825	288	266	84	23	7	1
1942	833	301	223	101	32	15	0
1603	722	258	211	78	19	3	1
1489	651	270	203	94	21	6	0
1543	813	279	254	89	25	3	0
1604	773	323	241	87	34	9	0
1548	777	308	282	100	33	7	0
1610	783	294	247	87	36	5	1
1481	711	255	230	89	31	8	1
1429	700	259	238	85	21	5	1
1444	704	253	257	90	24	5	0
1376	677	269	248	81	27	11	1
1540	705	275	251	108	24	2	0
1520	755	304	236	85	16	8	1
1614	804	332	219	81	15	11	0
1604	792	278	218	76	17	4	2
1525	803	286	240	88	25	6	0
1543	785	267	212	78	23	5	0
1014	498	186	140	51	13	1	1
808	379	155	117	41	5	4	0
798	416	144	111	51	11	5	0
767	362	168	118	36	16	5	1
890	454	141	101	58	12	4	0
1063	529	180	134	47	6	5	0
1060	541	192	159	51	13	4	1
1041	535	186	143	69	13	3	0
1070	515	161	153	54	11	2	0
1128	527	199	159	71	9	5	2
1258	589	192	162	50	16	1	0
1000	422	171	106	43	7	2	1
1140	442	144	112	36	2	1	3
1019	446	146	105	43	8	3	0
824	413	148	110	29	3	2	0
1006	448	134	113	43	8	0	0
630	320	122	94	18	5	2	0
981	451	139	122	31	6	0	0

824	380	146	99	29	5	0	0
708	367	145	97	36	9	1	0
434	226	77	51	17	3	0	0
473	230	73	53	18	3	1	0
465	191	78	60	21	3	1	0
410	191	79	69	20	12	0	0
444	213	82	42	13	0	1	0
347	185	85	71	12	6	0	1
410	188	57	44	10	3	1	0
384	172	68	38	13	0	1	1
403	173	70	40	15	6	0	0
353	176	53	42	16	2	1	0
355	159	56	47	9	2	1	1
354	153	56	42	12	0	0	0
309	165	47	36	19	3	1	0
339	170	51	41	15	3	0	1
303	154	60	41	8	1	2	0
326	147	41	39	6	0	1	0
297	116	61	25	13	1	0	1
273	127	43	30	10	1	1	0
294	114	40	18	12	1	1	0
233	132	41	21	6	1	1	2
239	111	42	19	9	2	0	0
249	117	43	32	9	1	0	1
256	113	43	26	7	3	0	0
246	123	32	27	13	3	0	0
232	137	40	31	10	2	0	3
223	99	41	38	13	2	0	0
222	93	36	29	14	1	1	0
228	113	55	38	7	0	1	1
198	93	28	28	7	2	0	0
174	73	31	29	2	2	0	0
174	95	31	16	8	0	0	0
155	75	29	17	9	0	0	0
172	80	37	22	2	2	0	0
160	76	31	30	6	1	1	0
136	88	39	25	8	0	0	0
172	97	30	30	8	0	3	1
134	71	27	18	7	0	0	1
141	90	34	25	4	1	0	0

167	71	27	24	6	0	0	0
177	76	25	16	4	1	0	0
169	78	20	11	6	1	0	1
152	66	23	19	4	2	1	0
123	69	21	20	2	1	0	0
158	63	17	12	2	2	3	0
142	57	25	10	6	3	0	1
135	67	26	16	2	2	0	0
131	60	19	21	6	0	1	0
124	71	21	17	8	1	1	1
122	48	11	16	2	1	1	0
129	44	18	16	8	0	0	0
116	58	15	11	4	1	1	0
108	56	7	10	4	0	0	1
118	67	21	7	2	0	2	0
110	54	18	16	3	1	0	1
108	58	25	7	4	0	1	0
94	52	16	10	0	1	0	0
102	49	24	12	1	0	0	0
110	47	11	15	1	0	2	2
99	46	16	8	2	1	1	0
128	36	8	9	1	0	1	1
98	37	11	3	4	3	0	0
92	39	14	11	2	0	0	0
90	49	18	9	3	1	0	0
68	38	13	11	1	3	1	0
90	26	8	8	2	0	0	1
82	34	8	12	2	0	0	0
81	39	8	8	1	0	0	0
82	37	10	11	2	0	1	1
58	28	14	8	1	2	0	0
75	22	16	5	2	1	0	0
79	29	8	13	2	2	0	0
68	32	13	4	3	0	0	1
81	30	12	4	1	0	0	0
92	31	12	4	1	0	0	0
71	32	10	6	2	0	0	0
63	25	10	7	4	1	0	0
81	30	12	4	2	0	1	0
81	40	4	7	4	0	0	0

67	38	18	10	5	0	0	1
82	29	11	5	1	0	0	1
67	22	13	9	2	0	0	0
65	20	6	8	1	1	0	0
76	19	6	4	0	0	0	0
60	31	7	5	0	2	0	1
54	23	18	4	1	0	0	1
63	15	8	3	1	0	0	0
43	19	11	6	0	0	0	0
51	21	4	5	1	0	0	2
46	16	7	6	1	1	0	0
48	12	8	6	1	0	0	0
40	11	1	5	0	0	1	0
25	12	7	3	1	1	1	0
28	20	6	4	0	0	2	1
26	19	4	1	1	1	0	0
34	9	0	4	3	1	2	0

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	2
0	0	0	0	0	0	0	0
0	1	0	0	0	0	0	0
0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
0	0	0	0	0	0	1	0
2	2	1	0	0	0	0	0
27	9	1	3	1	0	0	0
42	10	2	1	0	0	0	0
106	19	10	8	0	0	0	1
97	27	7	8	1	0	0	0
31	16	0	0	0	0	0	1

36	14	4	2	0	0	0	1
40	11	1	1	1	0	0	0
38	7	4	1	0	0	1	0
41	12	2	0	1	0	0	0
30	5	1	1	0	0	0	0
13	4	2	2	0	0	0	1
7	4	2	0	0	0	0	0
19	3	1	0	0	0	0	0
10	8	0	0	0	0	0	0
16	2	0	1	0	0	0	0
12	2	0	0	0	0	1	0
7	1	2	1	0	0	0	0
12	1	0	0	0	0	0	0
5	2	1	1	0	0	0	0
7	1	0	0	0	0	0	0
7	0	0	0	0	0	0	0
9	5	0	0	1	0	1	0
3	2	0	1	0	0	0	0
9	1	0	1	0	0	0	0
9	0	0	0	0	0	0	0
5	2	2	0	0	0	0	0
9	0	1	0	0	0	0	0
4	0	0	0	0	0	0	0
7	2	0	0	0	0	0	0
13	1	1	0	0	0	0	0
12	1	0	0	0	0	0	0
11	2	0	0	0	0	0	0
11	0	0	0	0	0	0	0
2	1	0	0	0	0	0	0
9	2	0	0	0	0	0	0
7	0	0	0	0	0	0	0
6	4	0	0	0	0	0	0
10	1	0	0	0	0	1	0
3	1	0	0	0	0	0	0
11	2	0	0	0	0	0	1
10	1	1	0	0	0	0	0
12	1	0	0	0	0	0	0
7	0	1	0	0	0	0	0
7	0	0	0	0	0	0	0
9	0	0	0	1	0	0	0

13	1	0	0	0	0	0	0
8	1	1	0	0	0	0	0
7	0	0	0	0	0	2	0
7	2	1	2	0	0	0	0
24	8	1	3	1	0	0	0
17	3	2	1	0	0	0	0
8	3	1	0	1	0	0	0
4	3	0	0	1	0	0	0
9	4	2	0	0	0	1	0
4	1	1	1	0	0	0	0
5	2	2	0	2	0	0	0
6	1	0	0	0	0	0	0
6	1	2	1	1	1	2	0
26	7	5	2	0	1	0	0
53	12	5	3	1	0	1	0
36	18	3	5	2	1	0	1
66	28	6	11	3	2	4	0
73	40	14	7	3	1	1	0
75	24	12	9	7	3	2	0
73	27	6	5	3	3	1	0
70	33	7	16	8	2	5	0
84	30	13	13	10	4	3	1
124	53	23	19	11	0	2	0
163	73	25	25	11	2	0	1
164	70	24	17	8	1	0	0
164	64	24	19	6	0	2	0
171	61	22	19	11	1	1	0
195	60	23	19	9	0	0	1
158	71	29	17	5	2	0	0
170	50	18	12	9	1	0	0
155	43	18	17	4	1	0	0
164	44	17	15	8	3	0	0
116	34	16	12	6	0	1	0
116	42	13	12	4	1	1	0
110	40	7	13	2	3	0	0
91	34	7	5	4	1	0	0
74	17	3	6	1	0	0	0
69	29	9	5	1	0	0	0
48	18	5	3	4	3	0	0
65	19	1	7	3	1	0	0

63	26	7	8	4	0	0	0
62	26	8	5	3	1	0	0
62	14	9	2	3	0	0	0
65	24	5	2	1	0	0	1
54	19	9	4	0	0	0	0
43	19	4	7	1	0	0	0
43	18	7	4	1	0	1	0
53	18	8	1	0	0	0	0
48	12	5	2	0	1	0	0
52	13	5	2	1	0	0	0
40	11	4	1	0	0	0	0
40	9	1	4	1	0	0	0
53	16	2	1	1	1	0	0
33	11	3	1	0	0	0	0
13	5	3	4	1	0	0	0
15	4	0	1	0	0	0	0
17	5	3	0	2	0	0	0
25	6	5	0	0	0	0	0
20	2	1	2	0	0	0	0
31	2	0	2	0	0	0	0
18	7	2	2	1	0	2	0
28	7	1	0	0	0	0	0
18	7	0	0	0	0	0	0
36	4	0	0	0	0	0	0
18	7	0	0	0	0	0	0
19	1	0	0	0	0	0	0
13	2	0	0	0	0	0	0
9	1	0	0	0	0	0	0
13	4	0	0	0	0	0	0
22	2	0	0	0	0	0	0
14	3	1	0	0	0	0	0
14	1	1	3	0	1	0	0
8	3	2	0	0	0	0	0
13	2	0	0	0	0	0	0
10	1	0	0	0	0	0	0
6	1	0	0	0	0	0	0
10	0	0	1	0	0	1	0
8	0	1	1	0	0	0	0
5	0	0	0	0	0	0	0
5	3	0	0	0	0	1	0

4	0	0	0	1	0	0	0
4	1	1	0	0	0	0	0
10	1	1	0	0	0	0	0
8	1	0	0	1	0	0	0
6	1	0	0	0	0	1	0
3	0	0	0	0	0	0	0
3	0	1	0	0	0	0	0
1	2	0	0	0	0	0	0
3	2	0	0	0	0	0	0
2	0	0	0	0	0	0	0
6	1	0	1	0	0	0	0
6	1	0	1	0	0	0	0
2	2	0	0	0	0	0	0
4	1	0	1	0	0	0	0
6	2	1	0	0	0	0	0
1	0	0	1	0	0	0	0
4	0	0	0	0	0	0	0
2	1	0	0	0	0	0	0
1	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
3	3	0	0	0	0	0	0
3	0	1	0	0	0	1	0
5	1	0	0	0	0	0	0
2	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0
3	0	1	0	0	0	0	0
2	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
3	1	0	0	0	0	0	0
1	0	0	0	0	0	0	0
3	0	0	0	0	0	0	1
2	0	0	0	0	0	0	0
2	1	0	0	0	0	0	0
2	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0

1	0	0	0	0	0	0	0
1	1	0	0	0	0	0	0
0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
2	1	1	0	1	0	0	0
1	1	0	0	0	0	0	0
1	1	0	0	0	1	0	0
3	0	1	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	1	0	0	0	1	0
2	0	0	0	0	0	0	0
1	0	0	0	0	0	1	0
0	0	0	0	0	0	1	0
2	0	0	0	0	0	0	0
1	0	0	0	0	0	1	0
2	1	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
1	1	1	0	0	0	0	0
1	1	0	0	0	0	0	0
0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	1	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	1	0	0	0	0	0	0
0	0	0	0	0	0	0	0

0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 6.716 \quad (5.607, 7.826)$$

$$b = -0.2751 \quad (-0.3107, -0.2396)$$

$$c = 0.04905 \quad (-0.2288, 0.3269)$$

$$d = -0.07806 \quad (-0.2756, 0.1195)$$

goftotal =

sse: 3.0705e-005

rsquare: 0.9999

dfe: 4

adjrsquare: 0.9998

rmse: 0.0028

ctotal =

General model Exp1:

$$ctotal(x) = a \cdot \exp(b \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 2.124 \quad (1.147, 3.101)$$

$$b = -0.1978 \quad (-0.2213, -0.1742)$$

goftotal =

sse: 1.3778e-006
rsquare: 9.9922e-001
dfe: 3
adjrsquare: 9.9896e-001
rmse: 6.7768e-004

Event 86 87 88	Date	Time*	Location*	Summing interval*				
	15-Jan-05	2302	N15W25	Jan 15 2300 to Jan 23 1200				
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	6.966E-05	8.481E-06	6.822E-06	3.291E-06	0.000E+00	0.000E+00	0.000E+00	5.829E-07
2	6.306E-05	3.532E-05	2.030E-05	4.896E-06	4.444E-06	0.000E+00	0.000E+00	5.831E-07
3	3.028E-04	9.131E-05	2.480E-05	3.269E-05	1.382E-05	6.494E-06	1.873E-06	5.582E-07
4	5.892E-04	2.294E-04	1.502E-04	8.097E-05	4.119E-05	1.315E-05	4.039E-06	5.776E-07
5	9.193E-04	4.639E-04	2.803E-04	1.736E-04	8.257E-05	3.298E-05	1.211E-05	0.000E+00
6	1.603E-03	8.260E-04	6.586E-04	3.581E-04	1.680E-04	9.612E-05	1.612E-05	2.851E-06
7	2.567E-03	1.390E-03	8.345E-04	5.469E-04	2.051E-04	7.004E-05	1.655E-05	1.501E-06
8	2.585E-03	1.562E-03	1.095E-03	5.781E-04	2.708E-04	1.143E-04	1.527E-05	1.474E-06
9	3.378E-03	2.018E-03	1.505E-03	8.215E-04	4.046E-04	1.376E-04	2.353E-05	4.582E-06
10	5.528E-03	3.377E-03	2.074E-03	1.266E-03	5.363E-04	1.979E-04	3.611E-05	3.266E-06
11	7.078E-03	4.483E-03	2.642E-03	1.663E-03	6.043E-04	1.871E-04	3.288E-05	1.795E-06
12	1.006E-02	5.829E-03	3.491E-03	1.868E-03	6.701E-04	2.318E-04	4.067E-05	3.693E-06
13	1.008E-02	5.387E-03	3.410E-03	1.810E-03	6.506E-04	2.122E-04	2.413E-05	4.744E-06
14	9.960E-03	6.155E-03	4.073E-03	2.124E-03	7.892E-04	2.142E-04	3.349E-05	1.691E-06
15	1.327E-02	7.846E-03	4.919E-03	2.552E-03	7.734E-04	2.116E-04	3.228E-05	4.053E-06
16	1.998E-02	1.246E-02	7.007E-03	3.710E-03	1.281E-03	3.061E-04	4.390E-05	2.394E-06
17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
18	2.293E-02	1.330E-02	7.675E-03	3.893E-03	1.230E-03	3.084E-04	2.490E-05	2.823E-06
19	2.582E-02	1.472E-02	8.111E-03	3.854E-03	1.140E-03	1.789E-04	4.021E-05	3.189E-06
20	2.449E-02	1.372E-02	7.901E-03	3.390E-03	1.094E-03	1.892E-04	3.167E-05	1.496E-06
21	2.022E-02	1.120E-02	6.301E-03	2.992E-03	7.289E-04	1.900E-04	1.708E-05	1.533E-06
22	1.775E-02	9.816E-03	5.200E-03	2.510E-03	6.874E-04	1.645E-04	2.051E-05	2.662E-06
23	1.642E-02	9.083E-03	4.432E-03	2.099E-03	5.865E-04	1.223E-04	1.162E-05	2.531E-06
24	1.699E-02	8.646E-03	4.605E-03	1.968E-03	5.456E-04	1.577E-04	1.937E-05	2.461E-06
25	2.131E-02	1.009E-02	5.503E-03	2.340E-03	6.176E-04	2.042E-04	1.448E-05	4.454E-06
26	2.020E-02	9.400E-03	5.015E-03	2.383E-03	5.156E-04	1.086E-04	2.285E-05	0.000E+00
27	2.189E-02	1.055E-02	5.009E-03	2.411E-03	5.743E-04	1.378E-04	1.090E-05	0.000E+00
28	2.061E-02	9.367E-03	4.375E-03	2.151E-03	4.876E-04	1.249E-04	1.713E-05	2.979E-06
29	1.934E-02	8.992E-03	4.145E-03	1.832E-03	4.572E-04	1.141E-04	1.312E-05	1.544E-06

30	1.677E-02	7.699E-03	3.846E-03	1.469E-03	4.280E-04	8.470E-05	1.625E-05	4.078E-06
31	1.616E-02	7.645E-03	3.275E-03	1.410E-03	3.815E-04	8.858E-05	3.166E-06	2.614E-06
32	1.537E-02	6.851E-03	3.363E-03	1.422E-03	3.159E-04	5.720E-05	1.570E-05	0.000E+00
33	1.512E-02	6.579E-03	3.154E-03	1.303E-03	3.173E-04	6.448E-05	9.858E-06	1.360E-06
34	1.426E-02	6.202E-03	2.953E-03	1.067E-03	2.853E-04	4.626E-05	8.631E-06	0.000E+00
35	1.562E-02	7.102E-03	3.141E-03	1.141E-03	3.410E-04	5.096E-05	9.347E-06	1.379E-06
36	2.114E-02	8.801E-03	3.622E-03	1.471E-03	3.168E-04	8.688E-05	1.472E-06	0.000E+00
37	2.409E-02	1.035E-02	4.067E-03	1.563E-03	3.411E-04	6.760E-05	1.255E-05	0.000E+00
38	1.176E-02	4.579E-03	2.010E-03	7.912E-04	2.100E-04	5.716E-05	9.564E-06	3.841E-06
39	1.136E-02	6.285E-03	3.884E-03	2.280E-03	9.276E-04	4.088E-04	8.128E-05	1.588E-05
40	2.086E-02	1.507E-02	9.768E-03	6.891E-03	3.493E-03	1.502E-03	2.342E-04	1.489E-05
41	3.477E-02	2.662E-02	1.735E-02	1.106E-02	4.644E-03	1.839E-03	3.352E-04	2.803E-05
42	6.187E-02	5.420E-02	3.002E-02	1.948E-02	8.145E-03	2.751E-03	3.723E-04	9.129E-06
43	8.686E-02	6.340E-02	3.500E-02	2.103E-02	8.296E-03	2.651E-03	5.083E-04	3.851E-05
44	4.988E-02	3.994E-02	2.723E-02	1.492E-02	5.933E-03	1.956E-03	3.360E-04	3.020E-05
45	4.428E-02	3.475E-02	2.264E-02	1.376E-02	4.766E-03	1.671E-03	2.357E-04	0.000E+00
46	5.131E-02	3.997E-02	2.389E-02	1.415E-02	5.411E-03	1.695E-03	2.976E-04	2.285E-05
47	6.632E-02	5.128E-02	3.171E-02	1.693E-02	5.081E-03	1.963E-03	2.333E-04	2.627E-05
48	6.309E-02	4.355E-02	2.666E-02	1.472E-02	5.143E-03	1.791E-03	2.738E-04	2.255E-05
49	5.725E-02	4.596E-02	2.881E-02	1.644E-02	6.061E-03	1.712E-03	3.018E-04	1.057E-05
50	6.847E-02	4.430E-02	2.844E-02	1.507E-02	6.642E-03	1.688E-03	3.085E-04	1.539E-05
51	8.665E-02	5.864E-02	3.372E-02	1.807E-02	6.112E-03	1.874E-03	2.924E-04	1.478E-05
52	7.571E-02	5.030E-02	3.046E-02	1.494E-02	5.159E-03	1.538E-03	2.342E-04	1.172E-05
53	1.175E-01	7.518E-02	4.067E-02	2.217E-02	6.802E-03	2.042E-03	2.417E-04	1.734E-05
54	1.301E-01	7.939E-02	3.725E-02	1.947E-02	5.427E-03	2.056E-03	2.984E-04	8.843E-06
55	1.120E-01	6.396E-02	3.222E-02	1.749E-02	6.538E-03	2.105E-03	2.532E-04	2.222E-05
56	6.338E-02	3.439E-02	2.040E-02	1.073E-02	4.400E-03	1.668E-03	1.853E-04	8.123E-06
57	4.961E-02	3.418E-02	1.897E-02	1.112E-02	3.468E-03	1.162E-03	1.245E-04	0.000E+00
58	4.929E-02	3.061E-02	1.768E-02	9.347E-03	3.082E-03	8.795E-04	1.185E-04	3.804E-06
59	5.227E-02	2.952E-02	1.715E-02	9.036E-03	3.168E-03	8.615E-04	1.099E-04	3.778E-06
60	5.241E-02	3.446E-02	1.911E-02	8.220E-03	2.983E-03	8.134E-04	8.184E-05	3.275E-06
61	4.984E-02	2.759E-02	1.418E-02	7.940E-03	2.610E-03	7.312E-04	6.899E-05	3.959E-06
62	3.256E-02	2.083E-02	1.116E-02	5.985E-03	1.957E-03	5.754E-04	4.996E-05	3.133E-06
63	3.199E-02	1.924E-02	1.183E-02	6.730E-03	2.189E-03	5.132E-04	4.523E-05	0.000E+00
64	3.205E-02	2.072E-02	1.195E-02	6.763E-03	2.222E-03	5.603E-04	7.345E-05	2.318E-06
65	2.954E-02	2.157E-02	1.231E-02	6.681E-03	2.389E-03	5.240E-04	4.967E-05	2.034E-06
66	2.824E-02	1.807E-02	1.201E-02	6.552E-03	1.938E-03	3.911E-04	3.314E-05	2.170E-06
67	2.618E-02	1.731E-02	1.107E-02	6.146E-03	1.865E-03	4.475E-04	3.579E-05	0.000E+00
68	2.526E-02	1.620E-02	1.052E-02	5.669E-03	1.683E-03	3.260E-04	3.928E-05	1.849E-06
69	2.457E-02	1.629E-02	1.059E-02	5.485E-03	1.660E-03	3.385E-04	3.306E-05	1.617E-06

70	2.230E-02	1.663E-02	1.023E-02	5.262E-03	1.564E-03	3.454E-04	2.355E-05	1.589E-06
71	2.160E-02	1.474E-02	1.019E-02	4.892E-03	1.293E-03	2.897E-04	3.468E-05	3.111E-06
72	1.235E-02	8.935E-03	5.387E-03	2.706E-03	8.187E-04	1.251E-04	1.151E-05	0.000E+00
73	6.168E-03	3.547E-03	2.025E-03	9.060E-04	2.451E-04	4.822E-05	5.176E-06	8.721E-07
74	7.925E-03	4.786E-03	2.797E-03	1.238E-03	2.975E-04	6.167E-05	8.601E-06	0.000E+00
75	6.403E-03	3.891E-03	2.249E-03	9.262E-04	2.620E-04	4.658E-05	4.643E-06	0.000E+00
76	4.567E-03	2.324E-03	1.272E-03	5.823E-04	1.208E-04	1.908E-05	4.960E-06	1.771E-06
77	3.708E-03	1.853E-03	9.583E-04	4.052E-04	1.019E-04	1.140E-05	2.671E-06	0.000E+00
78	3.201E-03	1.681E-03	8.746E-04	3.905E-04	1.118E-04	1.593E-05	1.280E-06	7.914E-07
79	3.566E-03	1.818E-03	9.196E-04	4.049E-04	1.162E-04	2.438E-05	6.661E-07	0.000E+00
80	3.971E-03	2.117E-03	1.230E-03	5.334E-04	1.456E-04	3.894E-05	5.169E-06	0.000E+00
81	3.895E-03	1.931E-03	1.160E-03	4.971E-04	1.357E-04	3.183E-05	3.683E-06	0.000E+00
82	3.432E-03	1.761E-03	1.034E-03	4.051E-04	1.350E-04	2.295E-05	3.009E-06	0.000E+00
83	3.350E-03	2.008E-03	1.057E-03	4.813E-04	1.372E-04	3.234E-05	6.711E-06	7.164E-07
84	3.315E-03	1.930E-03	1.079E-03	4.707E-04	1.470E-04	3.306E-05	7.580E-06	7.157E-07
85	3.696E-03	2.224E-03	1.308E-03	6.118E-04	1.620E-04	4.557E-05	1.327E-05	1.334E-06
86	3.473E-03	2.154E-03	1.102E-03	5.216E-04	1.588E-04	3.410E-05	1.108E-05	1.451E-06
87	3.322E-03	2.021E-03	1.217E-03	5.545E-04	1.349E-04	3.651E-05	7.576E-06	1.406E-06
88	3.479E-03	2.079E-03	1.191E-03	6.360E-04	1.708E-04	4.138E-05	5.833E-06	4.340E-06
89	4.217E-03	2.476E-03	1.497E-03	7.881E-04	2.194E-04	7.203E-05	2.164E-05	4.466E-06
90	4.508E-03	2.581E-03	1.528E-03	8.197E-04	2.468E-04	9.568E-05	2.373E-05	8.124E-06
91	4.377E-03	2.530E-03	1.483E-03	7.666E-04	2.678E-04	6.506E-05	1.889E-05	3.725E-06
92	4.134E-03	2.684E-03	1.620E-03	7.764E-04	2.696E-04	9.382E-05	1.935E-05	4.417E-06
93	4.357E-03	2.747E-03	1.668E-03	8.824E-04	2.405E-04	6.900E-05	1.038E-05	2.130E-06
94	4.223E-03	2.825E-03	1.773E-03	9.649E-04	2.687E-04	7.074E-05	1.321E-05	1.432E-06
95	4.002E-03	2.740E-03	1.676E-03	9.325E-04	2.641E-04	6.372E-05	1.243E-05	1.423E-06
96	4.449E-03	3.010E-03	1.973E-03	9.523E-04	3.043E-04	7.514E-05	1.365E-05	0.000E+00
97	4.771E-03	3.030E-03	2.113E-03	9.493E-04	3.289E-04	9.640E-05	1.024E-05	0.000E+00
98	4.806E-03	3.142E-03	2.189E-03	8.758E-04	2.671E-04	5.085E-05	6.893E-06	0.000E+00
99	5.031E-03	3.006E-03	1.946E-03	9.376E-04	3.080E-04	8.343E-05	6.835E-06	0.000E+00
100	3.972E-03	2.590E-03	1.532E-03	7.377E-04	1.790E-04	2.887E-05	7.205E-06	0.000E+00
101	3.471E-03	2.340E-03	1.418E-03	7.080E-04	1.764E-04	3.077E-05	4.121E-06	0.000E+00
102	3.847E-03	2.333E-03	1.319E-03	6.876E-04	2.059E-04	3.573E-05	2.714E-06	1.419E-06
103	3.774E-03	2.093E-03	1.346E-03	6.121E-04	1.758E-04	4.148E-05	4.387E-06	6.566E-07
104	3.025E-03	2.122E-03	1.086E-03	5.739E-04	1.476E-04	3.747E-05	7.941E-06	0.000E+00
105	1.793E-03	1.812E-03	8.567E-04	1.227E-03	8.614E-04	1.021E-03	7.310E-04	5.099E-04
106	4.603E-02	2.868E-02	1.708E-02	1.318E-02	7.797E-03	6.042E-03	2.293E-03	8.517E-04
107	4.768E-02	2.941E-02	1.932E-02	1.220E-02	6.571E-03	3.126E-03	1.406E-03	3.425E-04
108	6.172E-02	3.447E-02	2.155E-02	1.467E-02	7.614E-03	3.634E-03	1.312E-03	2.780E-04
109	6.902E-02	3.456E-02	1.887E-02	1.145E-02	5.988E-03	2.617E-03	8.796E-04	2.308E-04

110	6.480E-02	3.319E-02	2.049E-02	1.056E-02	5.541E-03	2.486E-03	7.173E-04	1.812E-04
111	4.579E-02	2.628E-02	1.661E-02	8.571E-03	4.537E-03	1.994E-03	6.617E-04	1.009E-04
112	3.812E-02	2.150E-02	1.322E-02	7.863E-03	3.615E-03	1.608E-03	5.643E-04	1.273E-04
113	4.651E-02	2.875E-02	1.855E-02	9.505E-03	4.115E-03	1.793E-03	5.165E-04	1.517E-04
114	3.882E-02	2.150E-02	1.409E-02	7.906E-03	3.498E-03	1.448E-03	3.884E-04	9.222E-05
115	2.821E-02	1.809E-02	1.083E-02	6.409E-03	2.468E-03	1.143E-03	2.876E-04	9.529E-05
116	2.279E-02	1.368E-02	9.078E-03	4.951E-03	2.262E-03	9.367E-04	2.600E-04	4.585E-05
117	1.926E-02	1.211E-02	7.593E-03	4.613E-03	1.881E-03	8.577E-04	2.373E-04	6.142E-05
118	1.961E-02	1.153E-02	7.213E-03	4.287E-03	1.787E-03	6.980E-04	1.888E-04	4.445E-05
119	2.040E-02	1.158E-02	7.534E-03	3.878E-03	1.443E-03	6.299E-04	1.714E-04	4.035E-05
120	2.204E-02	1.169E-02	6.909E-03	3.688E-03	1.507E-03	6.051E-04	1.366E-04	3.356E-05
121	1.862E-02	1.015E-02	5.658E-03	3.548E-03	1.281E-03	5.244E-04	1.325E-04	1.307E-05
122	1.755E-02	9.022E-03	5.529E-03	3.216E-03	1.127E-03	4.531E-04	1.307E-04	1.879E-05
123	1.626E-02	8.341E-03	5.416E-03	2.777E-03	9.836E-04	4.613E-04	9.222E-05	2.079E-05
124	1.644E-02	8.894E-03	5.013E-03	2.548E-03	9.730E-04	3.188E-04	9.081E-05	1.388E-05
125	1.484E-02	7.748E-03	4.549E-03	2.486E-03	8.588E-04	2.962E-04	8.173E-05	1.262E-05
126	1.143E-02	6.104E-03	3.731E-03	1.974E-03	6.628E-04	2.848E-04	8.022E-05	1.569E-05
127	1.083E-02	6.196E-03	3.510E-03	1.820E-03	6.980E-04	1.823E-04	5.283E-05	4.481E-06
128	9.702E-03	5.271E-03	3.402E-03	1.628E-03	5.875E-04	2.138E-04	3.453E-05	1.340E-05
129	8.709E-03	5.773E-03	2.945E-03	1.618E-03	5.895E-04	1.618E-04	4.900E-05	6.882E-06
130	8.593E-03	4.475E-03	2.746E-03	1.267E-03	4.339E-04	1.697E-04	2.984E-05	8.212E-06
131	7.132E-03	3.933E-03	2.415E-03	1.176E-03	3.937E-04	1.391E-04	4.440E-05	8.119E-06
132	6.729E-03	3.736E-03	2.260E-03	9.979E-04	4.520E-04	1.436E-04	3.176E-05	2.739E-06
133	6.218E-03	3.360E-03	2.040E-03	1.026E-03	3.546E-04	1.611E-04	3.554E-05	5.313E-06
134	5.808E-03	3.025E-03	1.848E-03	9.457E-04	3.184E-04	1.240E-04	3.700E-05	8.974E-06
135	5.415E-03	2.820E-03	1.711E-03	8.258E-04	2.914E-04	8.893E-05	2.566E-05	3.336E-06
136	5.077E-03	2.819E-03	1.724E-03	8.802E-04	2.879E-04	7.759E-05	1.700E-05	3.797E-06
137	4.893E-03	2.496E-03	1.390E-03	8.865E-04	3.007E-04	1.007E-04	1.651E-05	2.019E-06
138	4.148E-03	2.578E-03	1.289E-03	6.841E-04	2.540E-04	8.419E-05	2.181E-05	9.979E-06
139	2.801E-03	1.503E-03	8.673E-04	4.704E-04	1.402E-04	6.471E-05	1.199E-05	0.000E+00
140	1.739E-03	9.708E-04	4.145E-04	2.031E-04	5.666E-05	2.825E-05	5.815E-06	7.221E-07
141	2.266E-03	9.913E-04	5.281E-04	2.015E-04	5.242E-05	1.871E-05	4.815E-06	0.000E+00
142	2.183E-03	9.051E-04	4.656E-04	2.382E-04	5.399E-05	1.182E-05	3.511E-06	7.214E-07
143	1.540E-03	7.008E-04	4.243E-04	1.806E-04	5.235E-05	1.724E-05	3.856E-06	7.089E-07
144	1.512E-03	6.036E-04	2.916E-04	1.318E-04	3.546E-05	8.494E-06	4.431E-06	0.000E+00
145	1.273E-03	5.145E-04	2.536E-04	1.254E-04	4.695E-05	9.540E-06	3.699E-06	0.000E+00
146	1.132E-03	4.941E-04	1.981E-04	9.511E-05	4.550E-05	9.102E-06	2.090E-06	3.278E-06
147	1.067E-03	4.865E-04	3.165E-04	1.253E-04	2.850E-05	1.025E-05	2.993E-06	0.000E+00
148	9.511E-04	4.354E-04	2.541E-04	1.050E-04	2.076E-05	6.761E-06	3.076E-06	6.149E-07
149	9.830E-04	3.791E-04	2.085E-04	1.090E-04	2.391E-05	1.164E-05	2.810E-06	1.771E-06

150	8.318E-04	4.398E-04	1.650E-04	8.626E-05	2.198E-05	8.894E-06	1.535E-06	0.000E+00
151	8.034E-04	3.886E-04	1.490E-04	7.674E-05	2.284E-05	3.220E-06	1.951E-06	6.000E-07
152	7.129E-04	2.735E-04	1.888E-04	7.178E-05	1.907E-05	3.381E-06	1.510E-06	6.299E-07
153	7.285E-04	3.255E-04	1.936E-04	7.397E-05	1.314E-05	6.439E-06	5.012E-07	1.181E-06
154	6.210E-04	2.954E-04	1.746E-04	8.201E-05	1.957E-05	1.044E-06	9.636E-07	1.242E-06
155	6.901E-04	2.530E-04	1.620E-04	5.581E-05	2.312E-05	8.355E-06	1.938E-06	6.158E-07
156	5.322E-04	2.962E-04	1.048E-04	6.781E-05	2.079E-05	4.243E-06	2.359E-06	0.000E+00
157	5.281E-04	2.988E-04	1.433E-04	6.914E-05	3.105E-05	8.531E-06	2.815E-06	1.185E-06
158	5.677E-04	2.525E-04	1.104E-04	6.679E-05	1.932E-05	6.311E-06	9.707E-07	1.178E-06
159	4.740E-04	2.297E-04	1.455E-04	6.454E-05	1.927E-05	7.346E-06	3.287E-06	6.015E-07
160	4.336E-04	2.452E-04	1.401E-04	5.940E-05	2.620E-05	4.229E-06	1.385E-06	6.021E-07
161	5.201E-04	2.609E-04	1.006E-04	6.375E-05	2.020E-05	1.018E-05	1.351E-06	1.757E-06
162	3.930E-04	2.270E-04	9.368E-05	5.698E-05	1.890E-05	5.060E-06	1.369E-06	1.186E-06
163	2.978E-04	1.594E-04	9.079E-05	4.980E-05	1.665E-05	5.068E-06	3.186E-06	0.000E+00
164	2.848E-04	1.769E-04	1.024E-04	4.293E-05	1.634E-05	1.017E-05	1.379E-06	0.000E+00
165	2.018E-04	1.558E-04	8.271E-05	3.339E-05	1.521E-05	4.687E-06	8.203E-07	1.024E-06
166	2.439E-04	1.038E-04	7.454E-05	2.788E-05	1.868E-05	6.934E-06	8.980E-07	0.000E+00
167	1.889E-04	8.152E-05	8.785E-05	2.447E-05	1.080E-05	2.060E-06	2.281E-06	5.758E-07
168	2.302E-04	8.899E-05	7.733E-05	3.381E-05	9.739E-06	4.114E-06	8.686E-07	0.000E+00
169	1.801E-04	6.517E-05	4.018E-05	2.073E-05	8.521E-06	6.046E-06	1.836E-06	1.621E-06
170	1.390E-04	9.149E-05	5.670E-05	3.064E-05	6.407E-06	3.009E-06	1.752E-06	0.000E+00
171	1.631E-04	7.506E-05	3.329E-05	2.894E-05	1.090E-05	1.924E-06	4.308E-07	1.109E-06
172	1.350E-04	5.654E-05	3.994E-05	2.725E-05	1.180E-05	3.844E-06	4.303E-07	0.000E+00
173	1.377E-04	6.915E-05	5.057E-05	1.598E-05	8.522E-06	2.938E-06	4.298E-07	0.000E+00
174	1.187E-04	6.651E-05	4.700E-05	1.906E-05	7.528E-06	3.826E-06	1.791E-06	5.349E-07
175	1.227E-04	6.684E-05	3.340E-05	2.705E-05	3.236E-06	2.026E-06	8.813E-07	5.660E-07
176	1.218E-04	5.932E-05	3.659E-05	1.462E-05	7.501E-06	1.964E-06	1.333E-06	5.654E-07
177	8.543E-05	6.727E-05	3.993E-05	2.243E-05	1.078E-05	3.864E-06	8.521E-07	0.000E+00
178	1.030E-04	4.727E-05	1.664E-05	1.293E-05	3.160E-06	1.902E-06	4.258E-07	5.321E-07
179	7.305E-05	4.522E-05	3.642E-05	1.427E-05	1.093E-06	7.939E-06	9.014E-07	0.000E+00
180	1.241E-04	4.806E-05	4.677E-05	1.108E-05	5.336E-06	3.850E-06	4.500E-07	0.000E+00
181	7.389E-05	4.992E-05	2.481E-05	1.770E-05	9.839E-06	5.468E-06	0.000E+00	5.251E-07
182	7.507E-05	3.115E-05	3.593E-05	1.096E-05	1.089E-06	1.949E-06	4.238E-07	0.000E+00

Iron

<E>

<E>

<E>

<E>

<E>

<E>

<E>

<E>

Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	6.674E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2	3.384E-06	0.000E+00	1.889E-06	0.000E+00	0.000E+00	0.000E+00	2.449E-07	0.000E+00
3	3.377E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
4	5.214E-06	3.026E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
5	1.103E-05	4.929E-06	3.937E-06	0.000E+00	6.084E-07	0.000E+00	0.000E+00	0.000E+00
6	2.021E-05	1.025E-05	7.913E-06	3.857E-06	1.299E-06	0.000E+00	0.000E+00	0.000E+00
7	8.090E-05	3.383E-05	1.359E-05	6.726E-06	2.314E-06	0.000E+00	0.000E+00	0.000E+00
8	9.141E-05	3.043E-05	1.751E-05	1.148E-06	1.641E-06	0.000E+00	0.000E+00	0.000E+00
9	1.221E-04	5.002E-05	1.759E-05	4.836E-06	7.793E-07	0.000E+00	0.000E+00	0.000E+00
10	1.522E-04	5.633E-05	3.754E-05	1.071E-05	2.371E-06	0.000E+00	0.000E+00	0.000E+00
11	1.961E-04	7.384E-05	2.411E-05	1.160E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
12	3.247E-04	1.019E-04	3.399E-05	9.459E-06	1.769E-06	0.000E+00	0.000E+00	0.000E+00
13	3.096E-04	1.082E-04	5.128E-05	1.284E-05	3.699E-06	0.000E+00	0.000E+00	0.000E+00
14	3.012E-04	8.114E-05	2.153E-05	7.508E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
15	3.647E-04	9.309E-05	3.697E-05	1.637E-05	2.989E-06	0.000E+00	0.000E+00	0.000E+00
16	4.025E-04	8.984E-05	3.588E-05	1.061E-05	2.941E-06	0.000E+00	0.000E+00	0.000E+00
17	6.199E-04	1.771E-04	3.997E-05	2.596E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
18	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
19	6.259E-04	1.695E-04	8.355E-05	6.441E-06	4.301E-06	0.000E+00	0.000E+00	7.657E-07
20	5.900E-04	1.198E-04	5.944E-05	0.000E+00	3.306E-06	1.325E-06	0.000E+00	0.000E+00
21	4.906E-04	1.125E-04	3.274E-05	6.807E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
22	4.178E-04	8.464E-05	2.748E-05	8.223E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
23	3.735E-04	8.856E-05	2.399E-05	3.966E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
24	3.828E-04	5.782E-05	1.210E-05	7.751E-06	2.451E-06	1.193E-06	0.000E+00	0.000E+00
25	2.767E-04	7.277E-05	3.245E-05	1.151E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
26	3.065E-04	9.150E-05	1.009E-05	1.870E-05	0.000E+00	1.504E-06	0.000E+00	0.000E+00
27	2.835E-04	8.042E-05	2.002E-05	4.814E-06	1.546E-06	0.000E+00	0.000E+00	0.000E+00
28	3.488E-04	7.571E-05	0.000E+00	7.936E-06	1.901E-06	0.000E+00	0.000E+00	0.000E+00
29	3.029E-04	5.590E-05	1.126E-05	5.251E-06	1.596E-06	0.000E+00	0.000E+00	0.000E+00
30	2.668E-04	3.985E-05	1.476E-05	6.843E-06	1.509E-06	0.000E+00	0.000E+00	0.000E+00
31	2.608E-04	6.835E-05	1.337E-05	4.149E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
32	2.046E-04	4.912E-05	4.216E-06	2.131E-06	1.348E-06	0.000E+00	0.000E+00	0.000E+00
33	1.968E-04	5.147E-05	4.536E-06	4.448E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
34	1.817E-04	4.773E-05	1.335E-05	2.219E-06	1.429E-06	0.000E+00	0.000E+00	7.012E-07
35	1.916E-04	4.682E-05	1.828E-05	0.000E+00	1.370E-06	0.000E+00	0.000E+00	0.000E+00
36	1.646E-04	3.623E-05	1.415E-05	2.389E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
37	2.938E-04	4.805E-05	1.606E-05	2.654E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
38	3.001E-04	5.580E-05	5.395E-06	4.595E-06	0.000E+00	1.684E-06	0.000E+00	0.000E+00

39	1.399E-04	3.906E-05	9.704E-06	1.002E-05	2.912E-06	4.772E-06	0.000E+00	0.000E+00
40	3.229E-04	1.397E-04	3.835E-05	2.402E-05	1.067E-05	4.794E-06	6.310E-07	7.764E-07
41	8.357E-04	3.473E-04	1.278E-04	4.002E-05	8.512E-06	7.310E-06	0.000E+00	0.000E+00
42	1.418E-03	4.463E-04	1.919E-04	9.193E-05	1.909E-05	1.050E-05	0.000E+00	0.000E+00
43	2.109E-03	4.696E-04	3.465E-04	7.809E-05	2.654E-05	1.109E-05	0.000E+00	0.000E+00
44	1.068E-03	4.629E-04	1.638E-04	1.934E-04	0.000E+00	0.000E+00	4.064E-06	0.000E+00
45	1.638E-03	3.743E-04	2.305E-04	2.149E-05	1.208E-05	0.000E+00	4.961E-06	0.000E+00
46	8.692E-04	4.178E-04	1.923E-04	6.826E-05	4.706E-06	0.000E+00	2.283E-06	0.000E+00
47	1.220E-03	2.366E-04	1.869E-04	3.691E-05	6.479E-06	0.000E+00	0.000E+00	0.000E+00
48	1.569E-03	4.593E-04	8.330E-05	1.476E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
49	1.480E-03	4.010E-04	1.414E-04	3.691E-05	7.109E-06	0.000E+00	0.000E+00	0.000E+00
50	1.740E-03	6.349E-04	8.449E-05	3.256E-05	6.362E-06	8.229E-06	0.000E+00	0.000E+00
51	1.664E-03	4.531E-04	1.885E-04	5.281E-05	9.616E-06	0.000E+00	2.729E-06	0.000E+00
52	2.844E-03	4.320E-04	8.607E-05	2.442E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
53	2.076E-03	2.986E-04	1.929E-04	5.868E-05	5.469E-06	0.000E+00	0.000E+00	0.000E+00
54	3.461E-03	7.591E-04	8.376E-05	3.871E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
55	3.498E-03	1.901E-04	7.841E-05	4.742E-05	8.050E-06	0.000E+00	0.000E+00	0.000E+00
56	3.253E-03	5.054E-04	1.696E-04	1.021E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
57	1.333E-03	2.124E-04	8.292E-05	2.173E-05	4.214E-06	3.993E-06	0.000E+00	0.000E+00
58	9.423E-04	6.498E-04	1.174E-04	5.856E-06	0.000E+00	0.000E+00	1.546E-06	0.000E+00
59	7.191E-04	3.409E-04	4.907E-04	1.815E-05	0.000E+00	3.631E-06	0.000E+00	0.000E+00
60	1.009E-03	1.351E-04	4.084E-05	1.150E-05	3.945E-06	0.000E+00	1.535E-06	0.000E+00
61	9.161E-04	2.103E-04	5.793E-05	6.450E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
62	1.222E-03	1.324E-04	1.344E-05	2.379E-05	3.917E-06	0.000E+00	0.000E+00	0.000E+00
63	4.036E-04	1.229E-04	8.436E-06	1.180E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
64	7.786E-04	1.239E-04	3.405E-05	7.287E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
65	5.348E-04	7.685E-05	3.351E-05	3.751E-06	0.000E+00	2.374E-06	0.000E+00	0.000E+00
66	4.971E-04	1.240E-04	2.464E-05	3.426E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
67	4.238E-04	1.219E-04	7.386E-06	6.089E-06	0.000E+00	2.033E-06	0.000E+00	0.000E+00
68	4.626E-04	6.339E-05	2.271E-05	0.000E+00	2.199E-06	0.000E+00	0.000E+00	0.000E+00
69	4.109E-04	6.677E-05	2.377E-05	1.111E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
70	3.838E-04	8.074E-05	1.099E-05	0.000E+00	1.915E-06	0.000E+00	0.000E+00	0.000E+00
71	3.565E-04	4.484E-05	3.351E-05	5.289E-06	0.000E+00	1.553E-06	0.000E+00	0.000E+00
72	3.577E-04	4.076E-05	5.320E-06	9.344E-06	2.858E-06	0.000E+00	0.000E+00	0.000E+00
73	1.546E-04	3.896E-05	4.853E-06	5.951E-06	0.000E+00	0.000E+00	6.016E-07	0.000E+00
74	6.968E-05	1.215E-05	1.172E-05	1.426E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
75	7.983E-05	2.876E-05	0.000E+00	0.000E+00	1.066E-06	0.000E+00	0.000E+00	0.000E+00
76	3.090E-05	1.818E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
77	2.882E-05	4.784E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.966E-07	0.000E+00
78	2.119E-05	4.457E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

79	2.077E-05	6.458E-06	5.319E-06	0.000E+00	8.650E-07	0.000E+00	0.000E+00	0.000E+00
80	1.839E-05	6.352E-06	0.000E+00	1.201E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
81	2.844E-05	2.166E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
82	2.491E-05	8.372E-06	0.000E+00	1.207E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
83	2.823E-05	1.936E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
84	2.831E-05	1.172E-05	9.764E-06	4.534E-06	7.407E-07	2.812E-06	3.195E-07	0.000E+00
85	2.361E-05	1.360E-05	2.461E-06	5.689E-06	1.567E-06	0.000E+00	0.000E+00	7.630E-07
86	1.007E-04	2.747E-05	1.347E-05	8.389E-06	6.393E-06	1.300E-06	2.823E-07	6.946E-07
87	8.029E-05	2.667E-05	1.181E-05	6.669E-06	3.040E-06	7.019E-07	9.339E-07	3.891E-07
88	7.364E-05	1.892E-05	1.157E-05	4.375E-06	2.265E-06	7.064E-07	6.104E-07	0.000E+00
89	6.275E-05	1.299E-05	1.690E-05	4.593E-06	3.710E-06	6.996E-07	0.000E+00	0.000E+00
90	8.262E-05	3.169E-05	1.410E-05	1.283E-05	8.387E-06	5.757E-06	6.529E-07	4.010E-07
91	8.144E-05	2.318E-05	1.457E-05	2.363E-06	1.524E-06	4.166E-06	6.241E-07	0.000E+00
92	8.534E-05	1.336E-05	4.719E-06	7.989E-06	7.764E-07	2.146E-06	2.981E-07	0.000E+00
93	6.748E-05	1.510E-05	2.138E-05	5.491E-06	7.293E-07	2.005E-06	0.000E+00	0.000E+00
94	8.064E-05	1.138E-05	9.334E-06	4.322E-06	2.236E-06	6.957E-07	3.128E-07	0.000E+00
95	7.328E-05	1.501E-05	2.261E-06	1.143E-06	1.474E-06	0.000E+00	0.000E+00	0.000E+00
96	7.174E-05	2.236E-05	6.826E-06	0.000E+00	1.463E-06	1.341E-06	2.880E-07	0.000E+00
97	8.296E-05	1.693E-05	4.631E-06	1.069E-06	1.477E-06	6.911E-07	0.000E+00	0.000E+00
98	6.317E-05	1.296E-05	1.112E-05	1.068E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
99	8.522E-05	1.670E-05	6.718E-06	1.068E-06	7.357E-07	0.000E+00	0.000E+00	0.000E+00
100	6.349E-05	1.487E-05	2.361E-06	0.000E+00	7.536E-07	0.000E+00	0.000E+00	0.000E+00
101	4.835E-05	9.077E-06	0.000E+00	1.087E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
102	5.925E-05	6.717E-06	0.000E+00	1.983E-06	0.000E+00	6.217E-07	0.000E+00	3.423E-07
103	5.523E-05	1.458E-05	4.495E-06	0.000E+00	0.000E+00	0.000E+00	2.813E-07	0.000E+00
104	4.542E-05	3.542E-06	6.509E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
105	4.129E-05	5.333E-06	0.000E+00	1.012E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
106	1.615E-04	7.564E-04	1.258E-03	1.039E-03	7.436E-04	2.512E-04	1.378E-04	1.372E-05
107	1.076E-02	5.186E-03	3.660E-03	2.044E-03	7.885E-04	3.125E-04	5.011E-05	6.359E-06
108	5.809E-03	3.019E-03	1.412E-03	8.435E-04	5.268E-04	1.225E-04	4.458E-05	0.000E+00
109	7.105E-03	3.242E-03	1.419E-03	9.207E-04	2.444E-04	1.115E-04	1.970E-05	3.812E-06
110	4.956E-03	2.252E-03	1.218E-03	6.018E-04	2.765E-04	1.085E-04	2.824E-05	0.000E+00
111	5.163E-03	2.022E-03	1.010E-03	6.605E-04	1.012E-04	4.941E-05	1.510E-05	0.000E+00
112	4.300E-03	1.742E-03	9.362E-04	3.628E-04	7.154E-05	3.828E-05	1.577E-05	0.000E+00
113	3.945E-03	1.328E-03	8.238E-04	3.698E-04	1.255E-04	2.534E-05	9.218E-06	0.000E+00
114	4.047E-03	1.506E-03	8.001E-04	3.296E-04	1.326E-04	3.793E-05	2.045E-06	0.000E+00
115	3.077E-03	1.411E-03	4.730E-04	2.900E-04	6.419E-05	1.894E-05	3.690E-06	0.000E+00
116	2.517E-03	8.318E-04	4.183E-04	2.512E-04	1.004E-04	9.826E-06	1.050E-05	1.448E-06
117	1.872E-03	7.363E-04	4.023E-04	1.467E-04	5.706E-05	1.643E-05	1.790E-06	0.000E+00
118	1.677E-03	8.040E-04	3.011E-04	2.165E-04	3.465E-05	1.182E-05	2.990E-06	0.000E+00

119	1.435E-03	6.066E-04	2.897E-04	1.435E-04	3.697E-05	1.179E-05	4.583E-06	0.000E+00
120	1.406E-03	6.846E-04	2.330E-04	1.232E-04	2.932E-05	1.331E-05	4.292E-06	1.905E-06
121	1.221E-03	4.543E-04	2.904E-04	7.738E-05	4.920E-05	6.759E-06	2.266E-06	0.000E+00
122	1.164E-03	4.081E-04	1.984E-04	1.132E-04	2.683E-05	1.116E-05	6.841E-07	0.000E+00
123	9.961E-04	2.916E-04	1.560E-04	9.148E-05	2.677E-05	4.279E-06	2.602E-06	0.000E+00
124	9.221E-04	2.678E-04	1.229E-04	6.377E-05	2.291E-05	2.941E-06	1.850E-06	7.957E-07
125	9.596E-04	3.409E-04	1.609E-04	4.564E-05	1.884E-05	4.404E-06	6.762E-07	8.086E-07
126	7.248E-04	2.757E-04	1.617E-04	4.874E-05	1.965E-05	7.421E-06	6.733E-07	0.000E+00
127	5.608E-04	2.027E-04	8.514E-05	5.021E-05	7.788E-06	3.014E-06	1.338E-06	0.000E+00
128	5.400E-04	1.909E-04	1.012E-04	4.153E-05	1.097E-05	1.439E-06	1.292E-06	0.000E+00
129	5.983E-04	1.302E-04	6.830E-05	1.858E-05	1.083E-05	1.431E-06	6.367E-07	0.000E+00
130	4.476E-04	1.493E-04	6.835E-05	5.677E-05	1.607E-05	2.681E-06	6.185E-07	0.000E+00
131	3.606E-04	1.211E-04	4.452E-05	2.162E-05	8.540E-06	5.246E-06	0.000E+00	7.095E-07
132	4.215E-04	1.340E-04	5.704E-05	2.499E-05	8.244E-06	1.296E-06	0.000E+00	0.000E+00
133	2.832E-04	7.734E-05	2.785E-05	2.626E-05	7.171E-06	2.646E-06	0.000E+00	0.000E+00
134	2.810E-04	8.893E-05	4.221E-05	2.242E-05	5.447E-06	2.425E-06	0.000E+00	0.000E+00
135	2.636E-04	8.624E-05	6.162E-05	1.630E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
136	2.241E-04	5.507E-05	4.160E-05	2.283E-05	6.816E-06	0.000E+00	1.341E-06	0.000E+00
137	2.178E-04	8.714E-05	2.371E-05	2.197E-05	7.485E-06	3.522E-06	7.279E-07	1.891E-06
138	1.730E-04	3.466E-05	3.652E-05	1.519E-05	4.680E-06	0.000E+00	0.000E+00	0.000E+00
139	1.512E-04	9.379E-05	5.867E-05	1.855E-05	2.607E-06	0.000E+00	0.000E+00	0.000E+00
140	1.025E-04	2.275E-05	1.709E-05	1.126E-05	0.000E+00	1.936E-06	0.000E+00	0.000E+00
141	5.864E-05	1.386E-05	1.059E-05	8.241E-06	2.232E-06	0.000E+00	3.192E-07	0.000E+00
142	4.109E-05	2.135E-05	4.904E-06	4.694E-06	7.479E-07	0.000E+00	0.000E+00	0.000E+00
143	2.995E-05	7.787E-06	4.531E-06	3.314E-06	1.578E-06	7.221E-07	0.000E+00	0.000E+00
144	5.058E-05	1.084E-05	0.000E+00	3.316E-06	0.000E+00	6.698E-07	0.000E+00	0.000E+00
145	3.184E-05	9.185E-06	4.396E-06	3.241E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
146	1.916E-05	3.395E-06	2.084E-06	2.126E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
147	2.667E-05	6.961E-06	2.161E-06	1.039E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
148	2.221E-05	1.169E-05	6.066E-06	2.049E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
149	2.391E-05	9.789E-06	4.245E-06	1.011E-06	6.789E-07	0.000E+00	0.000E+00	0.000E+00
150	1.206E-05	1.485E-06	1.847E-06	8.847E-07	1.240E-06	0.000E+00	0.000E+00	0.000E+00
151	1.257E-05	3.256E-06	1.956E-06	1.866E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
152	1.266E-05	3.337E-06	1.944E-06	9.886E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
153	8.734E-06	3.216E-06	0.000E+00	9.229E-07	1.299E-06	1.155E-06	0.000E+00	0.000E+00
154	8.883E-06	9.349E-06	2.015E-06	1.890E-06	6.444E-07	5.579E-07	0.000E+00	0.000E+00
155	5.386E-06	4.608E-06	0.000E+00	0.000E+00	6.370E-07	0.000E+00	0.000E+00	0.000E+00
156	1.030E-05	1.084E-05	1.989E-06	2.753E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
157	1.545E-05	1.507E-06	5.823E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
158	1.354E-05	4.799E-06	1.863E-06	9.443E-07	5.924E-07	0.000E+00	2.410E-07	0.000E+00

159	8.281E-06	1.588E-06	3.696E-06	8.850E-07	0.000E+00	0.000E+00	0.000E+00	2.968E-07
160	1.542E-05	1.491E-06	3.786E-06	5.496E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
161	1.672E-05	4.541E-06	3.671E-06	1.806E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
162	1.153E-05	1.563E-06	0.000E+00	0.000E+00	1.230E-06	0.000E+00	0.000E+00	0.000E+00
163	8.411E-06	1.554E-06	1.817E-06	9.236E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
164	8.423E-06	1.450E-06	0.000E+00	8.607E-07	0.000E+00	0.000E+00	2.331E-07	3.051E-07
165	1.001E-05	1.535E-06	1.898E-06	9.086E-07	1.208E-06	0.000E+00	0.000E+00	0.000E+00
166	1.077E-05	0.000E+00	1.760E-06	1.643E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
167	6.609E-06	7.316E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
168	4.824E-06	1.426E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
169	1.161E-05	4.445E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
170	6.476E-06	0.000E+00	0.000E+00	8.921E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
171	3.224E-06	4.415E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
172	4.975E-06	4.409E-06	3.594E-06	2.659E-06	5.551E-07	0.000E+00	0.000E+00	0.000E+00
173	8.179E-06	2.820E-06	0.000E+00	0.000E+00	5.879E-07	0.000E+00	0.000E+00	0.000E+00
174	6.419E-06	1.494E-06	1.739E-06	1.715E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
175	9.601E-06	0.000E+00	1.839E-06	0.000E+00	0.000E+00	5.370E-07	0.000E+00	2.949E-07
176	4.837E-06	0.000E+00	0.000E+00	0.000E+00	1.135E-06	0.000E+00	0.000E+00	0.000E+00
177	1.641E-06	0.000E+00	1.727E-06	8.771E-07	5.832E-07	0.000E+00	2.377E-07	0.000E+00
178	4.825E-06	4.358E-06	3.450E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
179	0.000E+00	1.396E-06	0.000E+00	8.757E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
180	1.634E-06	1.392E-06	1.719E-06	8.229E-07	1.128E-06	5.014E-07	0.000E+00	0.000E+00
181	1.539E-06	0.000E+00	0.000E+00	8.229E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
182	5.918E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
22	3	2	2	0	0	0	1
20	13	6	3	4	0	0	1
92	32	7	19	12	6	4	1
172	76	40	45	34	12	8	1
262	151	73	94	67	29	24	0
405	238	152	172	121	75	28	4
602	372	179	244	138	51	27	2
608	419	237	260	182	83	25	2
788	540	323	365	270	100	38	6
1206	842	415	528	336	134	55	4
1464	1059	505	658	358	121	47	2
1940	1286	619	688	369	139	54	4

1870	1146	586	643	347	124	32	5
2020	1426	760	822	457	135	47	2
2236	1536	778	836	379	116	40	4
1429	1073	485	539	278	72	23	1
0	0	0	0	0	0	0	0
2689	1907	886	957	452	123	22	2
2516	1837	827	843	376	64	31	2
2436	1714	791	743	357	69	26	1
2462	1677	756	757	276	78	16	1
2514	1643	700	705	289	75	21	2
2333	1512	592	584	244	55	12	2
2364	1400	601	535	221	69	19	2
2329	1364	598	531	210	75	12	3
2214	1266	542	540	175	40	19	0
2071	1274	488	490	174	46	8	0
2063	1170	438	455	154	43	13	2
2180	1239	459	424	158	43	11	1
2181	1165	468	372	162	35	15	3
2145	1172	404	362	146	37	3	2
1985	1024	405	355	118	23	14	0
1924	979	377	322	118	26	9	1
1882	945	362	271	109	19	8	0
1927	1021	363	274	122	20	8	1
1728	972	321	276	87	27	1	0
1809	1095	350	283	94	21	9	0
1512	693	246	201	80	23	9	3
1032	609	290	335	209	98	44	8
1063	924	498	735	566	271	96	5
878	876	533	752	487	212	89	6
568	758	390	594	412	165	50	1
561	748	419	591	390	152	64	4
774	1012	591	786	476	178	71	5
881	1044	606	792	428	178	55	0
825	1001	520	674	412	146	60	3
752	936	505	648	312	136	37	3
969	1153	605	776	417	170	58	4
1019	1143	604	832	475	151	57	2
1164	1103	617	860	557	163	64	3
904	1117	571	747	390	141	51	2
1036	1249	624	839	446	153	47	2

410	912	490	787	452	171	43	3
490	799	409	628	275	124	39	1
421	902	453	773	428	165	43	3
552	1171	636	785	449	210	53	2
583	1208	635	860	435	165	40	0
718	1320	646	771	406	130	39	1
759	1308	649	810	426	129	37	1
721	1300	609	688	364	119	27	1
851	1218	581	733	364	115	24	1
1396	1428	657	764	382	125	24	1
1537	1421	721	927	456	119	23	0
1628	1521	725	965	480	134	39	1
1641	1702	814	1012	548	133	28	1
1819	1572	846	1061	473	105	20	1
1868	1600	835	1033	470	124	22	0
2029	1657	873	1057	472	100	27	1
2260	1893	995	1130	515	115	25	1
2103	1981	988	1101	493	118	18	1
2381	1972	1093	1126	443	108	29	2
1709	1438	694	727	325	55	12	0
1203	790	364	337	136	29	7	1
1458	1003	472	433	155	35	11	0
1194	830	386	330	139	27	6	0
924	537	237	224	70	12	7	2
814	466	193	170	64	8	4	0
716	431	180	167	72	11	2	1
809	472	192	175	75	17	1	0
887	540	253	227	93	27	8	0
901	513	247	220	90	23	6	0
819	479	227	185	92	17	5	0
812	556	235	222	95	24	11	1
810	539	243	220	103	25	13	1
969	665	316	305	121	37	24	2
863	613	252	247	112	26	19	2
825	575	278	263	95	28	13	2
867	593	272	303	121	32	10	6
1013	683	331	362	151	54	36	6
1095	717	341	380	172	72	40	11
1078	713	336	360	189	50	32	5
1020	758	368	367	191	72	33	6

1094	790	386	423	172	54	18	3
1063	812	410	463	193	55	23	2
1017	796	391	450	192	50	22	2
1123	868	458	459	219	59	24	0
1219	885	496	462	240	77	18	0
1219	912	510	424	194	40	12	0
1280	873	454	455	225	66	12	0
1029	767	365	364	132	23	13	0
981	756	369	382	143	27	8	0
1002	698	317	343	154	29	5	2
1001	634	328	310	133	34	8	1
755	556	235	261	99	26	14	0
46	49	19	61	67	87	145	80
438	350	177	342	334	286	261	79
624	499	293	405	338	195	191	39
799	574	306	497	409	217	174	32
838	601	269	369	296	148	113	24
894	656	333	407	320	162	106	21
1107	812	423	503	411	205	152	17
1174	878	449	611	419	206	162	29
1148	985	524	632	405	200	129	30
1487	1090	584	749	497	228	135	26
1534	1223	600	783	464	234	132	36
1732	1247	666	771	528	239	150	21
1843	1383	696	886	541	269	166	34
1895	1323	667	826	518	221	133	25
1930	1317	692	744	414	198	120	23
2082	1339	635	715	439	191	97	19
1960	1269	569	744	402	178	101	8
1973	1193	588	714	374	163	105	12
1900	1136	593	634	337	171	76	14
1881	1189	540	571	327	116	74	9
1671	1018	481	544	281	106	65	8
1331	815	401	441	222	104	65	10
1300	853	389	418	241	68	44	3
1171	729	379	377	204	80	29	9
1110	841	345	395	215	64	43	5
1113	662	327	313	161	68	27	6
951	600	296	300	150	58	41	6
865	550	267	245	166	57	28	2

857	529	258	270	139	69	34	4
703	418	205	218	110	47	31	6
607	361	177	177	94	31	20	2
499	315	156	166	81	24	12	2
388	224	102	135	68	25	9	1
255	181	73	82	44	15	10	3
309	182	86	99	41	21	10	0
396	257	88	87	36	19	9	1
547	273	116	93	36	14	8	0
541	256	106	113	38	9	6	1
402	209	101	90	39	14	7	1
399	182	71	67	27	7	8	0
344	159	63	65	36	8	7	0
312	156	50	50	36	8	4	5
299	156	82	67	23	9	6	0
270	141	66	57	17	6	6	1
302	133	59	64	21	11	6	3
241	146	44	48	18	8	3	0
234	130	40	43	19	3	4	1
210	92	51	40	16	3	3	1
217	111	53	42	11	6	1	2
185	101	48	47	17	1	2	2
208	87	45	32	20	8	4	1
162	103	29	39	18	4	5	0
161	104	40	40	27	8	6	2
174	88	31	39	17	6	2	2
146	81	41	38	17	7	7	1
134	87	40	35	23	4	3	1
162	93	29	38	18	10	3	3
123	81	27	34	17	5	3	2
94	58	26	30	15	5	7	0
90	64	30	26	15	10	3	0
69	61	26	22	15	5	2	2
77	38	22	17	17	7	2	0
61	30	26	15	10	2	5	1
74	33	23	21	9	4	2	0
58	24	12	13	8	6	4	3
45	34	17	19	6	3	4	0
53	28	10	18	10	2	1	2
44	21	12	17	11	4	1	0

45	26	15	10	8	3	1	0
39	25	14	12	7	4	4	1
40	25	10	17	3	2	2	1
40	22	11	9	7	2	3	1
28	25	12	14	10	4	2	0
34	18	5	8	3	2	1	1
24	17	11	9	1	8	2	0
41	18	14	7	5	4	1	0
26	20	8	12	10	6	0	1
25	12	11	7	1	2	1	0

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
4	0	0	0	0	0	0	0
2	0	1	0	0	0	1	0
2	0	0	0	0	0	0	0
3	2	0	0	0	0	0	0
6	3	2	0	1	0	0	0
11	6	4	4	2	0	0	0
39	18	6	6	3	0	0	0
41	15	7	1	2	0	0	0
55	25	7	4	1	0	0	0
68	28	15	9	3	0	0	0
82	34	9	9	0	0	0	0
128	45	12	7	2	0	0	0
114	44	17	9	4	0	0	0
108	32	7	5	0	0	0	0
142	40	13	12	3	0	0	0
136	33	11	7	3	0	0	0
84	28	5	7	0	0	0	0
0	0	0	0	0	0	0	0
140	45	18	3	3	0	0	1
116	29	11	0	2	1	0	0
95	28	6	3	0	0	0	0

98	23	6	4	0	0	0	0
101	27	6	2	0	0	0	0
103	18	3	4	2	1	0	0
74	22	8	6	0	0	0	0
64	23	2	8	0	1	0	0
59	20	4	2	1	0	0	0
64	17	0	3	1	0	0	0
57	13	2	2	1	0	0	0
58	10	3	3	1	0	0	0
65	19	3	2	0	0	0	0
52	14	1	1	1	0	0	0
49	14	1	2	0	0	0	0
44	13	3	1	1	0	0	1
48	13	4	0	1	0	0	0
39	10	3	1	0	0	0	0
44	10	3	1	0	0	0	0
44	11	1	2	0	1	0	0
33	11	2	5	2	4	0	0
48	25	5	7	4	3	1	1
74	36	12	9	3	3	0	0
59	33	10	10	6	3	0	0
41	14	7	5	3	1	0	0
16	9	2	5	0	0	1	0
50	21	8	2	2	0	2	0
34	20	8	8	1	0	1	0
40	13	5	4	1	0	0	0
34	15	3	1	0	0	0	0
45	18	3	4	1	0	0	0
64	29	4	3	1	1	0	0
64	20	8	3	2	0	1	0
54	14	3	2	0	0	0	0
53	15	9	6	1	0	0	0
27	13	3	3	0	0	0	0
23	6	2	2	1	0	0	0
26	16	5	1	0	0	0	0
32	16	5	3	1	1	0	0
23	19	8	1	0	0	1	0
24	17	6	3	0	1	0	0
32	12	3	2	1	0	1	0
23	18	4	1	0	0	0	0

30	13	1	4	1	0	0	0
34	16	1	3	0	0	0	0
61	15	4	2	0	0	0	0
51	11	4	1	0	1	0	0
52	19	3	1	0	0	0	0
53	20	1	2	0	1	0	0
65	11	3	0	1	0	0	0
64	13	4	4	0	0	0	0
67	17	2	0	1	0	0	0
65	10	6	2	0	1	0	0
75	10	1	4	2	0	0	0
39	12	1	3	0	0	1	0
26	5	4	1	0	0	0	0
28	11	0	0	1	0	0	0
11	7	0	0	0	0	0	0
11	2	0	0	0	0	1	0
9	2	0	0	0	0	0	0
9	3	2	0	1	0	0	0
8	3	0	1	0	0	0	0
12	1	0	0	0	0	0	0
11	4	0	1	0	0	0	0
13	1	0	0	0	0	0	0
13	6	4	4	1	4	1	0
11	7	1	5	2	0	0	2
50	15	6	8	9	2	1	2
38	14	5	6	4	1	3	1
35	10	5	4	3	1	2	0
30	7	7	4	5	1	0	0
38	16	6	11	11	8	2	1
38	12	6	2	2	6	2	0
40	7	2	7	1	3	1	0
32	8	9	5	1	3	0	0
39	6	4	4	3	1	1	0
35	8	1	1	2	0	0	0
35	12	3	0	2	2	1	0
40	9	2	1	2	1	0	0
31	7	5	1	0	0	0	0
41	9	3	1	1	0	0	0
31	8	1	0	1	0	0	0
24	5	0	1	0	0	0	0

32	4	0	2	0	1	0	1
28	8	2	0	0	0	1	0
23	2	3	0	0	0	0	0
14	3	0	1	0	0	0	0
8	38	53	97	109	41	46	4
187	124	74	117	66	30	11	1
146	97	37	54	45	16	12	0
183	110	42	60	25	13	5	1
117	71	35	35	26	10	6	0
138	69	31	46	12	5	4	0
183	99	48	36	15	8	7	0
230	102	51	54	28	6	5	0
192	99	43	40	26	8	1	0
224	130	36	53	17	5	2	0
255	106	44	57	35	4	9	1
271	123	55	43	25	8	2	0
309	169	51	78	19	7	4	0
264	129	50	52	20	7	6	0
256	145	39	45	16	8	6	2
220	95	49	28	27	4	3	0
233	95	37	45	16	7	1	0
214	71	31	38	17	3	4	0
204	67	25	27	15	2	3	1
210	84	32	19	12	3	1	1
157	67	32	20	12	5	1	0
125	50	17	21	5	2	2	0
124	49	21	18	7	1	2	0
138	33	14	8	7	1	1	0
109	40	15	26	11	2	1	0
89	33	10	10	6	4	0	1
107	38	13	12	6	1	0	0
70	21	6	12	5	2	0	0
74	26	10	11	4	2	0	0
61	22	13	7	0	0	0	0
48	13	8	9	4	0	2	0
41	18	4	8	4	2	1	2
26	6	5	4	2	0	0	0
18	11	6	4	1	0	0	0
21	7	3	4	0	1	0	0
25	6	4	6	3	0	1	0

19	11	2	4	1	0	0	0
14	4	2	3	2	1	0	0
25	6	0	3	0	1	0	0
16	5	2	3	0	0	0	0
10	2	1	2	0	0	0	0
14	4	1	1	0	0	0	0
12	7	3	2	0	0	0	0
13	6	2	1	1	0	0	0
7	1	1	1	2	0	0	0
7	2	1	2	0	0	0	0
7	2	1	1	0	0	0	0
5	2	0	1	2	2	0	0
5	6	1	2	1	1	0	0
3	3	0	0	1	0	0	0
6	7	1	3	0	0	0	0
9	1	3	0	0	0	0	0
8	3	1	1	1	0	1	0
5	1	2	1	0	0	0	1
9	1	2	6	0	0	0	0
10	3	2	2	0	0	0	0
7	1	0	0	2	0	0	0
5	1	1	1	0	0	0	0
5	1	0	1	0	0	1	1
6	1	1	1	2	0	0	0
7	0	1	2	0	0	0	0
4	5	0	0	0	0	0	0
3	1	0	0	0	0	0	0
7	3	0	0	0	0	0	0
4	0	0	1	0	0	0	0
2	3	0	0	0	0	0	0
3	3	2	3	1	0	0	0
5	2	0	0	1	0	0	0
4	1	1	2	0	0	0	0
6	0	1	0	0	1	0	1
3	0	0	0	2	0	0	0
1	0	1	1	1	0	1	0
3	3	2	0	0	0	0	0
0	1	0	1	0	0	0	0
1	1	1	1	2	1	0	0
1	0	0	1	0	0	0	0

4	0	0	0	0	0	0	0
---	---	---	---	---	---	---	---

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a * \exp(b * x) + c * \exp(d * x)$$

Coefficients (with 95% confidence bounds):

$$a = 9.791 \quad (7.715, 11.87)$$

$$b = -0.1488 \quad (-0.1794, -0.1183)$$

$$c = 0.01137 \quad (-0.3464, 0.3692)$$

$$d = -0.00467 \quad (-0.576, 0.5667)$$

goftotal =

sse: 0.0103

rsquare: 0.9984

dfe: 4

adjrsquare: 0.9973

rmse: 0.0506

ctotal =

General model Exp1:

$$ctotal(x) = a * \exp(b * x)$$

Coefficients (with 95% confidence bounds):

$$a = 7.741 \quad (5.038, 10.44)$$

$$b = -0.1363 \quad (-0.1535, -0.1191)$$

goftotal =

sse: 2.7622e-004

rsquare: 9.9881e-001

dfe: 3

adjrsquare: 9.9842e-001

rmse: 9.5954e-003

Curve fit iron:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 2.21 \quad (1.663, 2.756)$$

$$b = -0.2592 \quad (-0.285, -0.2334)$$

$$c = 0.08596 \quad (0.05761, 0.1143)$$

$$d = -0.06881 \quad (-0.07798, -0.05965)$$

goftotal =

$$sse: 1.5012e-007$$

$$rsquare: 9.9998e-001$$

$$dfe: 4$$

$$adjrsquare: 9.9997e-001$$

$$rmse: 1.9373e-004$$

ctotal =

General model Exp1:

$$ctotal(x) = a \cdot \exp(b \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.1116 \quad (0.06879, 0.1545)$$

$$b = -0.0747 \quad (-0.08572, -0.06368)$$

goftotal =

$$sse: 1.0650e-007$$

$$rsquare: 9.9841e-001$$

$$dfe: 3$$

$$adjrsquare: 9.9788e-001$$

$$rmse: 1.8841e-004$$

Event 89	Date	Time*	Location*	Summing interval*				
	13-May-05	1657	N12E11	May 13 1600 to May 17 0000				
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.420E-07	1.073E-06
4	5.970E-06	2.684E-06	3.146E-06	1.517E-06	0.000E+00	0.000E+00	4.174E-07	0.000E+00
5	2.397E-05	5.310E-06	3.206E-06	1.547E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
6	2.130E-05	1.619E-05	3.226E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
7	4.261E-05	8.356E-06	9.986E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
8	4.340E-05	1.629E-05	1.371E-05	0.000E+00	1.051E-06	9.729E-07	4.355E-07	5.767E-07
9	1.063E-04	3.000E-05	6.750E-06	4.854E-06	1.123E-06	0.000E+00	4.344E-07	1.729E-06
10	1.678E-04	2.495E-05	1.373E-05	3.394E-06	0.000E+00	9.879E-07	0.000E+00	0.000E+00
11	3.591E-04	6.095E-05	1.808E-05	1.243E-05	0.000E+00	1.029E-06	9.593E-07	0.000E+00
12	2.070E-04	1.301E-04	3.373E-05	7.862E-06	1.035E-06	0.000E+00	9.062E-07	5.581E-07
13	3.021E-04	9.738E-05	2.097E-05	5.146E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
14	5.246E-04	1.618E-04	5.567E-05	1.089E-05	1.144E-06	1.114E-06	0.000E+00	0.000E+00
15	9.937E-04	2.462E-04	8.843E-05	2.074E-05	1.276E-06	1.107E-06	0.000E+00	0.000E+00
16	1.338E-03	3.401E-04	8.882E-05	2.503E-05	2.534E-06	1.269E-06	1.068E-06	0.000E+00
17	1.578E-03	3.582E-04	1.058E-04	2.016E-05	3.020E-06	1.416E-06	0.000E+00	1.456E-06
18	1.562E-03	3.697E-04	9.405E-05	1.557E-05	4.273E-06	1.202E-06	5.736E-07	0.000E+00
19	2.245E-03	6.096E-04	2.038E-04	2.792E-05	6.311E-06	0.000E+00	0.000E+00	0.000E+00
20	3.588E-03	8.249E-04	2.202E-04	3.081E-05	7.644E-06	0.000E+00	0.000E+00	9.386E-07
21	4.437E-03	9.465E-04	3.112E-04	9.118E-05	5.307E-06	0.000E+00	0.000E+00	0.000E+00
22	6.779E-03	1.630E-03	3.311E-04	6.858E-05	1.294E-05	3.141E-06	0.000E+00	0.000E+00
23	7.284E-03	1.633E-03	4.470E-04	8.810E-05	1.434E-05	0.000E+00	0.000E+00	0.000E+00
24	6.822E-03	1.301E-03	3.915E-04	7.781E-05	6.841E-06	0.000E+00	2.900E-06	0.000E+00
25	6.741E-03	1.434E-03	4.155E-04	7.772E-05	3.808E-06	0.000E+00	0.000E+00	0.000E+00
26	7.311E-03	1.713E-03	3.790E-04	7.969E-05	7.421E-06	0.000E+00	0.000E+00	0.000E+00
27	8.479E-03	1.874E-03	4.062E-04	6.954E-05	9.802E-06	0.000E+00	0.000E+00	0.000E+00
28	6.692E-03	1.769E-03	4.318E-04	5.004E-05	1.430E-05	0.000E+00	0.000E+00	0.000E+00
29	6.434E-03	1.469E-03	3.182E-04	6.547E-05	4.154E-06	0.000E+00	0.000E+00	0.000E+00
30	5.319E-03	1.205E-03	3.546E-04	5.307E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
31	5.325E-03	1.062E-03	2.985E-04	2.627E-05	0.000E+00	0.000E+00	2.218E-06	2.771E-06
32	4.297E-03	1.022E-03	1.726E-04	1.669E-05	0.000E+00	0.000E+00	2.207E-06	0.000E+00
33	1.073E-02	2.827E-03	4.587E-04	4.904E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00

34	2.354E-02	4.212E-03	8.379E-04	2.254E-04	2.894E-05	0.000E+00	0.000E+00	0.000E+00
35	3.906E-02	1.009E-02	1.213E-03	2.647E-04	9.693E-06	0.000E+00	0.000E+00	0.000E+00
36	3.041E-02	6.205E-03	8.758E-04	1.695E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00
37	2.171E-02	4.162E-03	8.681E-04	1.192E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00
38	6.664E-03	1.282E-03	4.323E-04	6.178E-05	1.288E-06	0.000E+00	0.000E+00	0.000E+00
39	1.386E-04	3.074E-05	0.000E+00	1.839E-06	1.305E-06	0.000E+00	5.915E-07	0.000E+00
40	1.572E-04	2.789E-05	1.256E-05	1.969E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
41	1.482E-04	4.055E-05	7.582E-06	4.075E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
42	2.263E-04	3.736E-05	1.202E-05	2.088E-06	1.424E-06	1.496E-06	1.174E-06	0.000E+00
43	1.568E-04	4.409E-05	7.731E-06	3.738E-06	0.000E+00	0.000E+00	0.000E+00	7.150E-07
44	1.279E-04	2.042E-05	3.346E-06	0.000E+00	1.362E-06	0.000E+00	0.000E+00	5.691E-07
45	1.111E-04	3.396E-05	7.400E-06	2.217E-06	1.238E-06	0.000E+00	4.796E-07	0.000E+00
46	1.441E-04	2.787E-05	7.599E-06	1.818E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
47	1.196E-04	8.674E-06	8.074E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
48	9.488E-05	2.741E-05	3.517E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
49	1.240E-04	2.810E-06	4.009E-06	0.000E+00	0.000E+00	0.000E+00	4.579E-07	6.089E-07
50	5.891E-05	2.942E-06	7.373E-06	0.000E+00	1.103E-06	1.250E-06	5.596E-07	0.000E+00
51	6.773E-05	9.120E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
52	8.131E-05	1.245E-05	4.229E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.691E-07
53	8.119E-05	1.521E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
54	7.657E-05	0.000E+00	3.627E-06	0.000E+00	1.091E-06	0.000E+00	1.024E-06	0.000E+00
55	5.679E-05	1.204E-05	0.000E+00	0.000E+00	1.340E-06	0.000E+00	0.000E+00	0.000E+00
56	8.286E-05	2.732E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
57	3.809E-05	1.440E-05	0.000E+00	0.000E+00	0.000E+00	1.038E-06	0.000E+00	0.000E+00
58	3.299E-05	2.704E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.462E-07
59	5.531E-05	1.866E-05	0.000E+00	1.991E-06	1.329E-06	0.000E+00	0.000E+00	0.000E+00
60	6.188E-05	2.221E-05	3.314E-06	1.502E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
61	6.482E-05	1.489E-05	0.000E+00	1.963E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
62	5.767E-05	6.106E-06	6.965E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
63	4.007E-05	8.962E-06	3.331E-06	0.000E+00	1.134E-06	0.000E+00	4.675E-07	0.000E+00
64	3.244E-05	9.341E-06	0.000E+00	1.964E-06	0.000E+00	0.000E+00	9.049E-07	0.000E+00
65	3.571E-05	1.149E-05	0.000E+00	1.681E-06	0.000E+00	0.000E+00	0.000E+00	1.659E-06
66	2.349E-05	8.133E-06	0.000E+00	0.000E+00	0.000E+00	1.039E-06	0.000E+00	0.000E+00
67	2.577E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.634E-07	5.780E-07
68	2.533E-05	2.641E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.781E-07
69	2.387E-05	2.633E-06	0.000E+00	1.904E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
70	1.847E-05	1.138E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
71	2.159E-05	5.456E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
72	9.196E-06	0.000E+00	3.460E-06	0.000E+00	0.000E+00	9.679E-07	0.000E+00	6.474E-07
73	2.215E-05	2.628E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.678E-07	0.000E+00

74	3.502E-05	2.786E-06	0.000E+00	0.000E+00	1.050E-06	0.000E+00	5.211E-07	0.000E+00
75	1.852E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
76	1.759E-05	1.051E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
77	0.000E+00	7.979E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
78	3.178E-06	2.761E-06	0.000E+00	1.666E-06	0.000E+00	0.000E+00	8.586E-07	0.000E+00
79	5.951E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.577E-07	5.352E-07
80	9.092E-06	5.344E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
81	6.091E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.319E-07	0.000E+00
3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.699E-07
4	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
5	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
6	1.640E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
7	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
8	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
9	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.087E-06	0.000E+00	0.000E+00
11	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
12	0.000E+00	0.000E+00	1.923E-06	0.000E+00	0.000E+00	0.000E+00	2.419E-07	0.000E+00
13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.243E-07	0.000E+00
14	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
15	1.782E-06	1.591E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
16	1.906E-06	0.000E+00	0.000E+00	1.050E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
18	2.436E-06	0.000E+00	2.072E-06	0.000E+00	6.594E-07	0.000E+00	0.000E+00	3.579E-07
19	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.379E-07	0.000E+00	0.000E+00
20	7.228E-06	2.033E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
21	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
22	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.391E-06	0.000E+00	0.000E+00	0.000E+00
23	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
24	5.217E-06	0.000E+00	5.992E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
25	4.790E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
26	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
27	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.211E-06	0.000E+00	0.000E+00	0.000E+00

68	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
69	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
70	1.670E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
71	1.671E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
72	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
73	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
74	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
75	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
76	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
77	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
78	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.394E-07	2.786E-07
79	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.534E-07	0.000E+00	0.000E+00	0.000E+00
80	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.385E-07	0.000E+00
81	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	1	2
2	1	1	1	0	0	1	0
8	2	1	1	0	0	0	0
7	6	1	0	0	0	0	0
14	3	3	0	0	0	0	0
14	6	4	0	1	1	1	1
34	11	2	3	1	0	1	3
53	9	4	2	0	1	0	0
108	21	5	7	0	1	2	0
68	49	10	5	1	0	2	1
92	34	6	3	0	0	0	0
154	54	15	6	1	1	0	0
278	79	23	11	1	1	0	0
360	105	22	13	2	1	2	0
381	102	23	9	2	1	0	2
375	102	21	7	3	1	1	0
504	156	42	12	4	0	0	0
637	165	36	10	4	0	0	1
527	128	32	21	2	0	0	0
735	202	33	14	4	1	0	0
727	187	41	17	4	0	0	0

697	153	37	15	2	0	2	0
650	158	37	15	1	0	0	0
643	172	30	14	2	0	0	0
652	164	29	10	2	0	0	0
627	189	37	9	4	0	0	0
548	143	25	11	1	0	0	0
364	94	22	7	0	0	0	0
328	75	17	3	0	0	1	1
269	73	10	2	0	0	1	0
430	141	18	4	0	0	0	0
431	144	27	16	3	0	0	0
329	204	38	18	1	0	0	0
437	182	30	12	0	0	0	0
510	168	31	9	0	0	0	0
347	84	20	6	1	0	0	0
36	9	0	1	1	0	1	0
41	8	3	1	0	0	0	0
41	13	2	2	0	0	0	0
58	11	3	1	1	1	2	0
41	13	2	2	0	0	0	1
38	7	1	0	1	0	0	1
31	11	2	1	1	0	1	0
40	9	2	1	0	0	0	0
34	3	2	0	0	0	0	0
27	9	1	0	0	0	0	0
35	1	1	0	0	0	1	1
17	1	2	0	1	1	1	0
19	3	0	0	0	0	0	0
24	4	1	0	0	0	0	1
23	5	0	0	0	0	0	0
22	0	1	0	1	0	2	0
17	4	0	0	1	0	0	0
24	1	0	0	0	0	0	0
12	5	0	0	0	1	0	0
10	1	0	0	0	0	0	1
16	6	0	1	1	0	0	0
20	8	1	1	0	0	0	0
19	5	0	1	0	0	0	0
17	2	2	0	0	0	0	0
12	3	1	0	1	0	1	0

10	3	0	1	0	0	2	0
11	4	0	1	0	0	0	3
7	3	0	0	0	1	0	0
8	0	0	0	0	0	1	1
8	1	0	0	0	0	0	1
7	1	0	1	0	0	0	0
6	4	0	0	0	0	0	0
7	2	0	0	0	0	0	0
3	0	1	0	0	1	0	1
7	1	0	0	0	0	1	0
11	1	0	0	1	0	1	0
6	0	0	0	0	0	0	0
6	4	0	0	0	0	0	0
0	3	0	0	0	0	0	0
1	1	0	1	0	0	2	0
2	0	0	0	0	0	2	1
3	2	0	0	0	0	0	0
2	0	0	0	0	0	0	0

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	0	0	0	0	0	1	0
0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	2	0	0
0	0	0	0	0	0	0	0
0	0	1	0	0	0	1	0
0	0	0	0	0	0	1	0
0	0	0	0	0	0	0	0
1	1	0	0	0	0	0	0
1	0	0	1	0	0	0	0
0	0	0	0	0	0	0	0
1	0	1	0	1	0	0	1

0	0	0	0	0	0	0	0
0	0	1	0	0	0	1	0
1	0	0	0	1	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	2
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	1	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	1	1
0	0	0	0	1	0	0	0
0	0	0	0	0	0	1	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 9.928 \quad (7.527, 12.33)$$

$$b = -0.4546 \quad (-0.4845, -0.4246)$$

$$c = -0.0007853 \quad (-0.01042, 0.008846)$$

$$d = -0.03387 \quad (-0.4745, 0.4067)$$

goftotal =

sse: 3.3831e-006

rsquare: 0.9999
 dfe: 4
 adjrsquare: 0.9998
 rmse: 9.1967e-004

ctotal =

General model Exp1:
 $ctotal(x) = a * \exp(b * x)$
 Coefficients (with 95% confidence bounds):
 a = 0.1466 (-0.301, 0.5943)
 b = -0.2341 (-0.3919, -0.07619)

goftotal =

sse: 4.3897e-008
 rsquare: 9.8130e-001
 dfe: 3
 adjrsquare: 9.7507e-001
 rmse: 1.2096e-004

Event 90	Date	Time*	Location*	Summing interval*				
	16-Jun-05	2002	N09W87	Jun 16 to Jun 18 1400				
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	2.911E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.050E-06
2	3.096E-06	2.745E-06	0.000E+00	0.000E+00	1.088E-06	2.051E-06	0.000E+00	0.000E+00
3	9.910E-06	2.630E-05	1.829E-05	1.400E-05	4.695E-06	5.393E-06	9.814E-07	5.941E-07
4	4.534E-05	3.938E-05	4.503E-05	3.479E-05	9.721E-06	1.016E-05	5.555E-06	0.000E+00
5	5.202E-05	3.679E-05	4.610E-05	2.195E-05	2.573E-05	6.743E-06	4.517E-06	1.874E-06
6	8.399E-05	7.620E-05	2.711E-05	3.309E-05	2.219E-05	1.137E-05	4.027E-06	6.054E-07
7	1.173E-04	7.449E-05	5.399E-05	4.318E-05	2.245E-05	1.936E-05	2.009E-06	1.241E-06
8	1.114E-04	9.153E-05	3.968E-05	3.395E-05	9.134E-06	1.265E-05	5.171E-06	1.761E-06
9	1.093E-04	9.569E-05	7.307E-05	3.139E-05	1.239E-05	1.252E-05	4.090E-06	1.889E-06
10	1.290E-04	7.315E-05	4.939E-05	4.045E-05	2.313E-05	1.120E-05	1.560E-06	2.508E-06
11	1.214E-04	9.388E-05	6.811E-05	3.259E-05	2.067E-05	9.895E-06	4.993E-06	1.283E-06
12	1.165E-04	8.114E-05	3.741E-05	3.954E-05	1.331E-05	1.109E-05	4.770E-07	6.343E-07
13	9.256E-05	7.525E-05	4.812E-05	1.084E-05	9.618E-06	7.744E-06	4.781E-07	0.000E+00

14	1.246E-04	6.541E-05	3.046E-05	4.079E-05	7.043E-06	4.361E-06	0.000E+00	1.185E-06
15	1.071E-04	4.117E-05	4.396E-05	2.117E-05	1.158E-05	1.044E-06	4.978E-07	0.000E+00
16	1.265E-04	4.416E-05	2.944E-05	2.257E-05	7.055E-06	6.423E-06	1.904E-06	6.155E-07
17	9.974E-05	8.408E-05	2.159E-05	2.438E-05	8.194E-06	3.126E-06	2.382E-06	6.139E-07
18	8.956E-05	4.069E-05	3.959E-05	2.086E-05	9.226E-06	1.084E-06	1.902E-06	0.000E+00
19	1.147E-04	3.133E-05	6.057E-05	2.232E-05	8.096E-06	3.064E-06	0.000E+00	0.000E+00
20	6.154E-05	3.959E-05	2.089E-05	1.512E-05	2.269E-06	3.103E-06	1.417E-06	6.022E-07
21	6.776E-05	3.653E-05	1.736E-05	1.182E-05	1.152E-06	2.065E-06	4.486E-07	0.000E+00
22	4.398E-05	3.397E-05	2.073E-05	3.322E-06	2.151E-06	1.057E-06	9.451E-07	0.000E+00
23	4.397E-05	3.564E-05	1.374E-05	5.104E-06	5.550E-06	1.045E-06	1.404E-06	0.000E+00
24	3.519E-05	1.026E-05	1.554E-05	1.559E-06	6.009E-06	0.000E+00	0.000E+00	0.000E+00
25	2.792E-05	8.193E-06	6.727E-06	6.577E-06	1.114E-06	0.000E+00	0.000E+00	0.000E+00
26	9.164E-06	5.557E-06	1.017E-05	4.795E-06	0.000E+00	2.044E-06	0.000E+00	0.000E+00
27	6.309E-06	1.071E-05	1.334E-05	1.561E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
28	1.833E-05	1.085E-05	1.027E-05	4.756E-06	1.038E-06	2.981E-06	0.000E+00	5.341E-07
29	9.079E-06	1.053E-05	0.000E+00	1.649E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
30	1.204E-05	7.937E-06	6.638E-06	8.051E-06	1.037E-06	0.000E+00	4.275E-07	0.000E+00
31	9.239E-06	7.922E-06	6.439E-06	1.647E-06	1.034E-06	0.000E+00	8.795E-07	0.000E+00
32	1.516E-05	2.744E-06	6.636E-06	0.000E+00	3.294E-06	9.529E-07	9.053E-07	5.655E-07
33	6.089E-06	8.225E-06	3.409E-06	0.000E+00	1.098E-06	0.000E+00	0.000E+00	0.000E+00
34	3.129E-06	1.064E-05	0.000E+00	1.640E-06	0.000E+00	0.000E+00	0.000E+00	5.316E-07
35	1.859E-05	1.047E-05	0.000E+00	1.639E-06	1.094E-06	0.000E+00	0.000E+00	0.000E+00
36	2.949E-06	1.883E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.510E-07	5.315E-07
37	6.071E-06	2.731E-06	0.000E+00	3.086E-06	0.000E+00	0.000E+00	4.506E-07	5.628E-07
38	6.246E-06	5.145E-06	3.397E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.304E-07
39	3.121E-06	1.302E-05	9.598E-06	0.000E+00	0.000E+00	0.000E+00	4.243E-07	0.000E+00
40	1.680E-05	2.399E-06	3.168E-06	0.000E+00	9.600E-07	0.000E+00	0.000E+00	0.000E+00
41	3.117E-06	7.865E-06	3.196E-06	1.634E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
42	9.170E-06	0.000E+00	0.000E+00	1.539E-06	0.000E+00	0.000E+00	8.987E-07	5.614E-07
43	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.089E-06	0.000E+00	4.489E-07	0.000E+00

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2	1.586E-06	1.470E-06	0.000E+00	8.771E-07	0.000E+00	1.131E-06	0.000E+00	2.991E-07
3	6.996E-06	9.482E-06	3.960E-06	4.592E-06	1.852E-06	1.135E-06	0.000E+00	0.000E+00
4	1.635E-05	8.037E-06	1.971E-06	5.971E-06	2.589E-06	1.787E-06	2.570E-07	6.581E-07

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
1	0	0	0	0	0	0	2
1	1	0	0	1	2	0	0
3	9	5	8	4	5	2	1
13	13	12	19	8	9	11	0
15	12	12	12	21	6	9	3
24	25	7	18	18	10	8	1
33	24	14	23	18	17	4	2
34	32	11	20	8	12	11	3
31	31	19	17	10	11	8	3
37	24	13	22	19	10	3	4
35	31	18	18	17	9	10	2
34	27	10	22	11	10	1	1
27	25	13	6	8	7	1	0
37	22	8	23	6	4	0	2
32	14	12	12	10	1	1	0
38	15	8	13	6	6	4	1
30	29	6	14	7	3	5	1
27	14	11	12	8	1	4	0
35	11	17	13	7	3	0	0
19	14	6	9	2	3	3	1
21	13	5	7	1	2	1	0
14	12	6	2	2	1	2	0
14	13	4	3	5	1	3	0
12	4	5	1	6	0	0	0
9	3	2	4	1	0	0	0
3	2	3	3	0	2	0	0
2	4	4	1	0	0	0	0
6	4	3	3	1	3	0	1
3	4	0	1	0	0	0	0
4	3	2	5	1	0	1	0
3	3	2	1	1	0	2	0
5	1	2	0	3	1	2	1
2	3	1	0	1	0	0	0
1	4	0	1	0	0	0	1
6	4	0	1	1	0	0	0
1	7	0	0	0	0	1	1

2	1	0	2	0	0	1	1
2	2	1	0	0	0	0	1
1	5	3	0	0	0	1	0
6	1	1	0	1	0	0	0
1	3	1	1	0	0	0	0
3	0	0	1	0	0	2	1
0	0	0	0	1	0	1	0

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	0	0	0	0	0	0	0
1	1	0	1	0	2	0	1
4	6	2	5	3	2	0	0
9	5	1	6	4	3	1	2
11	7	3	9	4	0	2	0
13	8	4	3	1	1	0	1
13	14	3	6	3	3	1	0
16	4	4	7	5	3	1	0
19	14	4	7	3	0	0	0
12	7	5	6	1	1	2	0
16	9	5	1	0	1	0	1
13	12	6	5	3	1	1	1
12	5	2	1	0	0	0	0
9	6	1	3	0	1	0	0
9	4	2	1	2	0	0	0
10	4	1	3	3	0	0	0
11	4	1	0	0	0	0	0
11	5	0	1	0	0	0	0
9	3	2	1	0	0	0	0
4	2	1	1	0	0	0	0
10	0	2	0	0	0	0	0
8	0	0	1	0	0	0	1
6	0	0	1	0	0	0	0
2	0	0	1	0	0	0	1
2	0	0	0	0	0	1	0
2	2	0	0	0	0	0	0
3	0	0	0	0	0	0	0

1	1	0	0	0	1	0	0
4	0	0	0	0	0	0	0
0	0	1	2	0	0	0	0
1	2	0	0	1	0	0	0
1	0	0	0	0	0	1	0
0	0	0	0	0	0	0	1
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	2	0	0	0	0	0	0
2	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	1	1
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.004868 \quad (0.003983, 0.005754)$$

$$b = -0.1221 \quad (-0.1747, -0.0694)$$

$$c = 9.665e-005 \quad (-0.001141, 0.001334)$$

$$d = -0.0278 \quad (-0.2735, 0.2179)$$

goftotal =

sse: 4.7187e-009

rsquare: 0.9983

dfe: 4

adjrsquare: 0.9970

rmse: 3.4346e-005

ctotal =

General model Exp1:

$$ctotal(x) = a * \exp(b * x)$$

Coefficients (with 95% confidence bounds):

$$a = 0.001904 \text{ (7.641e-005, 0.003732)}$$

$$b = -0.07152 \text{ (-0.1139, -0.02916)}$$

goftotal =

sse: 5.2079e-009

rsquare: 9.6945e-001

dfe: 3

adjrsquare: 9.5927e-001

rmse: 4.1665e-005

Event	91 92 93	Date	Time*	Location*	Summing interval*
		13-Jul-05	1449	N10W80	July 13 1400 to July 20 0000

Oxygen	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	5.830E-06	2.704E-06	0.000E+00	1.527E-06	0.000E+00	0.000E+00	0.000E+00	1.082E-06
2	6.006E-06	1.035E-05	3.362E-06	1.527E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
3	8.925E-06	2.549E-06	9.709E-06	1.527E-06	0.000E+00	9.964E-07	8.663E-07	0.000E+00
4	3.081E-05	7.299E-06	2.443E-05	0.000E+00	1.012E-06	1.809E-06	0.000E+00	0.000E+00
5	7.290E-05	1.575E-05	3.016E-05	4.726E-06	4.243E-06	0.000E+00	0.000E+00	1.128E-06
6	8.325E-05	4.266E-05	6.902E-06	3.321E-06	3.319E-06	9.607E-07	4.286E-07	5.346E-07
7	8.358E-05	5.430E-05	6.551E-06	6.497E-06	2.173E-06	0.000E+00	4.631E-07	0.000E+00
8	1.264E-04	2.782E-05	6.794E-06	4.889E-06	1.067E-06	2.026E-06	0.000E+00	0.000E+00
9	1.334E-04	7.732E-05	1.402E-05	9.884E-06	2.152E-06	9.914E-07	0.000E+00	0.000E+00
10	1.663E-04	6.092E-05	3.774E-05	1.642E-05	8.817E-06	2.030E-06	9.321E-07	0.000E+00
11	3.950E-04	2.154E-04	9.631E-05	7.855E-05	2.005E-05	7.227E-06	2.733E-06	0.000E+00
12	5.703E-04	3.308E-04	1.606E-04	6.050E-05	2.483E-05	1.353E-05	2.820E-06	5.946E-07
13	7.565E-04	3.716E-04	2.457E-04	6.182E-05	3.372E-05	1.371E-05	9.208E-07	1.184E-06
14	1.091E-03	4.571E-04	2.138E-04	8.110E-05	2.806E-05	1.299E-05	9.286E-07	0.000E+00
15	1.085E-03	4.932E-04	3.131E-04	9.712E-05	2.622E-05	5.387E-06	1.939E-06	0.000E+00
16	1.006E-03	3.440E-04	2.061E-04	1.049E-04	3.054E-05	1.430E-05	1.958E-06	5.889E-07

17	9.413E-04	3.176E-04	1.946E-04	1.096E-04	2.120E-05	6.471E-06	1.447E-06	5.858E-07
18	8.244E-04	3.070E-04	1.622E-04	5.405E-05	2.114E-05	8.727E-06	4.657E-07	0.000E+00
19	7.248E-04	2.827E-04	1.070E-04	7.060E-05	2.561E-05	2.046E-06	1.402E-06	0.000E+00
20	6.357E-04	2.065E-04	1.298E-04	3.673E-05	7.585E-06	9.520E-07	0.000E+00	0.000E+00
21	5.663E-04	2.039E-04	1.177E-04	3.226E-05	1.134E-05	3.100E-06	9.374E-07	1.169E-06
22	5.473E-04	1.847E-04	1.093E-04	3.885E-05	1.112E-05	2.082E-06	0.000E+00	0.000E+00
23	5.688E-04	2.481E-04	1.056E-04	3.404E-05	9.368E-06	3.169E-06	0.000E+00	6.013E-07
24	5.024E-04	2.112E-04	1.029E-04	5.875E-05	1.932E-05	3.171E-06	0.000E+00	0.000E+00
25	1.104E-03	4.663E-04	3.048E-04	1.437E-04	4.190E-05	8.639E-06	3.428E-06	1.236E-06
26	1.653E-03	8.522E-04	3.544E-04	1.502E-04	5.054E-05	1.335E-05	2.476E-06	6.353E-07
27	1.668E-03	9.131E-04	4.735E-04	1.697E-04	6.984E-05	2.326E-05	3.039E-06	1.307E-06
28	1.970E-03	9.404E-04	4.719E-04	1.839E-04	5.570E-05	1.900E-05	1.460E-06	0.000E+00
29	2.111E-03	9.555E-04	4.018E-04	2.188E-04	5.937E-05	1.713E-05	1.018E-06	6.554E-07
30	1.927E-03	9.141E-04	4.289E-04	2.010E-04	5.755E-05	1.740E-05	3.665E-06	0.000E+00
31	2.067E-03	8.803E-04	3.559E-04	1.618E-04	5.425E-05	2.520E-05	3.642E-06	0.000E+00
32	3.807E-03	1.645E-03	7.749E-04	2.995E-04	8.413E-05	2.134E-05	2.450E-06	1.557E-06
33	5.011E-03	2.159E-03	1.169E-03	4.410E-04	1.737E-04	2.751E-05	5.808E-06	1.606E-06
34	5.150E-03	2.507E-03	1.208E-03	5.978E-04	1.936E-04	4.323E-05	1.022E-05	7.793E-07
35	6.547E-03	2.968E-03	1.494E-03	6.924E-04	1.895E-04	5.869E-05	1.203E-05	5.829E-06
36	5.939E-03	2.687E-03	1.468E-03	6.820E-04	1.916E-04	6.117E-05	6.443E-06	8.120E-07
37	7.507E-03	3.735E-03	1.997E-03	8.711E-04	2.724E-04	7.170E-05	2.303E-05	1.753E-06
38	8.028E-03	3.941E-03	2.080E-03	7.753E-04	2.481E-04	7.551E-05	1.416E-05	1.646E-06
39	7.429E-03	3.616E-03	1.859E-03	8.185E-04	2.147E-04	5.169E-05	7.299E-06	8.679E-07
40	7.279E-03	3.652E-03	1.720E-03	7.257E-04	2.244E-04	5.789E-05	1.117E-05	8.007E-07
41	6.975E-03	3.408E-03	1.675E-03	8.314E-04	2.466E-04	6.367E-05	1.030E-05	7.757E-07
42	8.496E-03	4.277E-03	2.308E-03	9.999E-04	2.566E-04	7.060E-05	1.183E-05	2.368E-06
43	1.006E-02	4.792E-03	2.462E-03	1.011E-03	2.847E-04	6.877E-05	8.586E-06	3.344E-06
44	8.438E-03	4.135E-03	1.997E-03	8.617E-04	2.603E-04	8.666E-05	1.386E-05	2.416E-06
45	7.740E-03	3.678E-03	1.819E-03	7.611E-04	2.562E-04	6.813E-05	1.299E-05	4.857E-06
46	7.759E-03	3.599E-03	1.823E-03	7.704E-04	2.285E-04	5.302E-05	1.872E-05	1.651E-06
47	7.728E-03	3.813E-03	1.891E-03	8.105E-04	2.539E-04	7.048E-05	1.482E-05	4.943E-06
48	7.452E-03	3.612E-03	2.085E-03	9.447E-04	2.609E-04	7.460E-05	1.617E-05	2.406E-06
49	7.498E-03	3.529E-03	1.991E-03	8.551E-04	2.330E-04	7.330E-05	1.484E-05	3.157E-06
50	7.477E-03	3.494E-03	1.739E-03	7.852E-04	2.365E-04	8.871E-05	1.211E-05	3.108E-06
51	7.354E-03	3.594E-03	1.607E-03	7.580E-04	1.858E-04	5.306E-05	1.325E-05	1.597E-06
52	8.035E-03	3.484E-03	1.703E-03	7.555E-04	2.225E-04	5.577E-05	1.583E-05	2.369E-06
53	7.808E-03	3.823E-03	1.713E-03	7.481E-04	1.922E-04	6.420E-05	5.369E-06	8.314E-07
54	8.471E-03	3.847E-03	1.899E-03	6.586E-04	1.528E-04	3.335E-05	6.804E-06	7.850E-07
55	8.600E-03	3.559E-03	1.568E-03	6.091E-04	1.703E-04	3.911E-05	1.039E-05	1.739E-06
56	5.388E-03	2.293E-03	1.045E-03	4.589E-04	1.082E-04	2.533E-05	3.167E-06	1.471E-06

57	5.801E-03	2.500E-03	1.062E-03	4.501E-04	1.059E-04	2.790E-05	9.007E-06	7.321E-07
58	6.830E-03	2.750E-03	1.307E-03	4.599E-04	8.995E-05	1.985E-05	5.790E-06	1.618E-06
59	5.751E-03	2.322E-03	9.874E-04	4.039E-04	8.989E-05	1.277E-05	1.954E-06	0.000E+00
60	4.701E-03	2.074E-03	8.292E-04	3.521E-04	8.986E-05	1.770E-05	2.408E-06	7.543E-07
61	3.943E-03	1.514E-03	7.830E-04	3.027E-04	6.691E-05	2.570E-05	4.735E-06	2.136E-06
62	4.463E-03	1.723E-03	6.532E-04	2.765E-04	7.627E-05	2.005E-05	2.342E-06	1.476E-06
63	3.768E-03	1.542E-03	6.981E-04	2.614E-04	4.719E-05	1.306E-05	1.752E-06	0.000E+00
64	2.811E-03	1.111E-03	5.137E-04	2.146E-04	6.607E-05	1.132E-05	4.566E-06	0.000E+00
65	3.444E-03	1.506E-03	6.672E-04	2.365E-04	7.198E-05	1.105E-05	2.764E-06	7.257E-07
66	3.203E-03	1.337E-03	5.723E-04	2.189E-04	6.300E-05	6.060E-06	3.861E-06	1.430E-06
67	3.160E-03	1.369E-03	5.415E-04	2.753E-04	5.998E-05	1.479E-05	2.722E-06	0.000E+00
68	3.019E-03	1.217E-03	5.204E-04	1.908E-04	6.354E-05	1.367E-05	4.897E-07	0.000E+00
69	2.510E-03	1.010E-03	4.226E-04	2.025E-04	3.760E-05	9.470E-06	2.687E-06	1.335E-06
70	2.684E-03	9.305E-04	3.238E-04	1.930E-04	4.404E-05	1.444E-05	5.147E-07	0.000E+00
71	2.638E-03	1.139E-03	4.935E-04	1.788E-04	3.175E-05	1.226E-05	1.067E-06	6.664E-07
72	2.508E-03	9.844E-04	4.150E-04	1.506E-04	3.508E-05	5.933E-06	2.093E-06	6.696E-07
73	2.909E-03	9.040E-04	4.112E-04	1.945E-04	3.999E-05	1.111E-05	0.000E+00	0.000E+00
74	2.567E-03	9.211E-04	3.901E-04	1.574E-04	2.356E-05	2.440E-06	5.297E-07	6.619E-07
75	2.026E-03	8.202E-04	4.062E-04	1.170E-04	3.502E-05	5.860E-06	1.058E-06	0.000E+00
76	2.318E-03	8.386E-04	3.556E-04	1.060E-04	3.477E-05	5.895E-06	0.000E+00	0.000E+00
77	1.985E-03	7.682E-04	3.145E-04	1.533E-04	3.152E-05	8.039E-06	5.380E-07	0.000E+00
78	1.956E-03	6.440E-04	2.617E-04	1.245E-04	1.647E-05	5.675E-06	0.000E+00	6.635E-07
79	1.989E-03	7.182E-04	2.600E-04	8.477E-05	2.946E-05	4.669E-06	1.096E-06	0.000E+00
80	1.801E-03	6.568E-04	2.525E-04	7.167E-05	6.365E-06	5.649E-06	5.378E-07	6.321E-07
81	1.698E-03	6.589E-04	2.306E-04	7.553E-05	1.126E-05	5.839E-06	0.000E+00	0.000E+00
82	1.406E-03	4.857E-04	1.909E-04	9.140E-05	1.963E-05	6.745E-06	0.000E+00	6.522E-07
83	1.135E-03	3.352E-04	2.043E-04	4.504E-05	9.671E-06	3.389E-06	5.189E-07	6.046E-07
84	1.178E-03	3.939E-04	1.214E-04	7.597E-05	1.458E-05	7.211E-06	4.466E-07	0.000E+00
85	9.303E-04	2.990E-04	1.352E-04	4.227E-05	4.791E-06	3.299E-06	1.448E-06	6.280E-07
86	7.822E-04	2.777E-04	1.203E-04	2.313E-05	7.031E-06	2.070E-06	0.000E+00	0.000E+00
87	5.815E-04	2.508E-04	9.243E-05	2.043E-05	8.094E-06	2.159E-06	0.000E+00	0.000E+00
88	5.981E-04	2.193E-04	8.102E-05	2.900E-05	5.651E-06	2.156E-06	0.000E+00	6.031E-07
89	6.055E-04	1.650E-04	8.810E-05	2.545E-05	5.708E-06	1.014E-06	1.412E-06	0.000E+00
90	4.252E-04	1.546E-04	5.605E-05	2.505E-05	2.252E-06	0.000E+00	9.274E-07	0.000E+00
91	3.586E-04	1.666E-04	5.205E-05	2.336E-05	5.531E-06	2.112E-06	0.000E+00	5.901E-07
92	3.885E-04	1.190E-04	5.872E-05	2.137E-05	6.697E-06	2.114E-06	0.000E+00	0.000E+00
93	4.204E-04	1.584E-04	3.866E-05	1.165E-05	4.589E-06	0.000E+00	4.475E-07	0.000E+00
94	3.875E-04	1.337E-04	5.864E-05	1.500E-05	4.590E-06	1.057E-06	0.000E+00	5.570E-07
95	3.360E-04	1.091E-04	4.486E-05	2.321E-05	3.428E-06	0.000E+00	0.000E+00	5.872E-07
96	3.049E-04	1.089E-04	6.842E-05	1.653E-05	2.286E-06	1.979E-06	0.000E+00	5.542E-07

97	3.458E-04	1.329E-04	4.496E-05	2.469E-05	1.110E-05	4.029E-06	4.438E-07	0.000E+00
98	2.716E-04	8.332E-05	5.577E-05	2.002E-05	6.655E-06	1.979E-06	4.431E-07	5.531E-07
99	2.525E-04	1.083E-04	4.135E-05	1.661E-05	1.099E-05	4.084E-06	4.694E-07	0.000E+00
100	3.029E-04	1.268E-04	7.388E-05	2.766E-05	1.843E-05	7.730E-06	8.840E-07	5.198E-07
101	3.893E-04	2.007E-04	1.323E-04	3.868E-05	1.666E-05	6.261E-06	1.402E-06	1.193E-06
102	9.616E-04	4.281E-04	1.833E-04	8.072E-05	1.771E-05	7.770E-06	9.564E-07	0.000E+00
103	7.307E-04	3.470E-04	1.967E-04	8.035E-05	1.643E-05	1.045E-06	2.435E-06	0.000E+00
104	6.802E-04	3.024E-04	1.679E-04	5.160E-05	2.194E-05	3.144E-06	4.539E-07	0.000E+00
105	4.802E-04	2.511E-04	1.166E-04	5.645E-05	1.679E-05	5.300E-06	4.566E-07	1.167E-06
106	3.858E-04	2.281E-04	1.301E-04	3.728E-05	9.989E-06	5.282E-06	4.787E-07	5.982E-07
107	4.105E-04	2.161E-04	6.758E-05	3.931E-05	6.634E-06	1.067E-06	1.381E-06	0.000E+00
108	4.815E-04	2.013E-04	5.915E-05	4.071E-05	1.111E-05	2.005E-06	1.854E-06	0.000E+00
109	4.614E-04	2.240E-04	8.388E-05	3.521E-05	1.340E-05	2.071E-06	9.029E-07	1.195E-06
110	5.289E-04	2.127E-04	7.072E-05	1.696E-05	7.830E-06	3.101E-06	0.000E+00	0.000E+00
111	4.777E-04	1.715E-04	8.125E-05	3.553E-05	9.178E-06	0.000E+00	0.000E+00	0.000E+00
112	4.337E-04	1.960E-04	1.055E-04	2.547E-05	7.948E-06	2.079E-06	1.442E-06	5.654E-07
113	4.024E-04	1.515E-04	8.741E-05	2.855E-05	3.331E-06	3.070E-06	4.760E-07	0.000E+00
114	4.335E-04	1.729E-04	5.187E-05	2.669E-05	5.517E-06	2.009E-06	0.000E+00	1.156E-06
115	3.878E-04	1.570E-04	9.022E-05	1.343E-05	6.663E-06	1.064E-06	0.000E+00	0.000E+00
116	3.505E-04	1.506E-04	6.212E-05	2.033E-05	8.314E-06	1.928E-06	0.000E+00	0.000E+00
117	3.571E-04	1.114E-04	6.978E-05	3.007E-05	4.409E-06	1.061E-06	0.000E+00	0.000E+00
118	3.600E-04	1.425E-04	6.981E-05	1.174E-05	5.676E-06	0.000E+00	4.727E-07	5.917E-07
119	3.334E-04	1.079E-04	6.623E-05	2.138E-05	4.529E-06	9.971E-07	1.366E-06	5.917E-07
120	2.964E-04	1.009E-04	3.763E-05	1.823E-05	2.231E-06	9.971E-07	1.420E-06	0.000E+00
121	3.054E-04	1.065E-04	4.116E-05	1.164E-05	2.227E-06	0.000E+00	0.000E+00	0.000E+00
122	2.152E-04	9.162E-05	4.457E-05	1.168E-05	3.296E-06	1.051E-06	0.000E+00	0.000E+00
123	1.830E-04	8.294E-05	4.095E-05	1.670E-05	1.141E-06	2.040E-06	4.433E-07	0.000E+00
124	2.274E-04	9.429E-05	3.444E-05	1.337E-05	3.354E-06	0.000E+00	0.000E+00	5.868E-07
125	2.332E-04	8.871E-05	1.021E-05	1.505E-05	2.212E-06	2.032E-06	0.000E+00	5.856E-07
126	2.179E-04	5.226E-05	2.349E-05	4.906E-06	2.140E-06	9.857E-07	0.000E+00	5.509E-07
127	1.862E-04	1.045E-04	3.138E-05	8.404E-06	4.351E-06	0.000E+00	4.414E-07	0.000E+00
128	2.206E-04	5.276E-05	3.804E-05	6.510E-06	1.066E-06	0.000E+00	0.000E+00	0.000E+00
129	1.214E-04	7.116E-05	1.007E-05	1.002E-05	0.000E+00	9.743E-07	0.000E+00	5.803E-07
130	1.398E-04	5.204E-05	2.684E-05	9.865E-06	1.120E-06	0.000E+00	0.000E+00	0.000E+00
131	9.945E-05	4.627E-05	3.039E-05	3.246E-06	1.114E-06	0.000E+00	0.000E+00	5.424E-07
132	1.202E-04	3.067E-05	2.184E-05	6.125E-06	3.050E-06	8.993E-07	0.000E+00	0.000E+00
133	1.014E-04	3.723E-05	1.320E-05	4.890E-06	2.154E-06	0.000E+00	0.000E+00	0.000E+00
134	1.065E-04	3.277E-05	1.014E-05	4.886E-06	1.109E-06	0.000E+00	8.611E-07	0.000E+00
135	1.083E-04	2.965E-05	9.731E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
136	9.796E-05	3.240E-05	6.682E-06	3.217E-06	4.239E-06	0.000E+00	0.000E+00	0.000E+00

18	2.092E-05	7.995E-06	5.873E-06	9.629E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
19	1.203E-05	4.726E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
20	8.087E-06	2.773E-06	1.815E-06	1.757E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
21	6.703E-06	1.474E-06	5.713E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.149E-07
22	2.031E-05	4.449E-06	1.956E-06	9.357E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
23	1.525E-05	3.166E-06	1.948E-06	1.819E-06	5.851E-07	0.000E+00	0.000E+00	0.000E+00
24	1.386E-05	9.350E-06	0.000E+00	9.457E-07	6.204E-07	5.357E-07	0.000E+00	0.000E+00
25	4.205E-05	1.124E-05	4.040E-06	9.057E-07	1.282E-06	0.000E+00	0.000E+00	0.000E+00
26	5.420E-05	1.316E-05	2.093E-06	1.926E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
27	6.426E-05	1.975E-05	6.089E-06	1.953E-06	0.000E+00	0.000E+00	7.734E-07	0.000E+00
28	6.820E-05	9.961E-06	4.093E-06	9.686E-07	1.298E-06	0.000E+00	0.000E+00	0.000E+00
29	7.985E-05	2.027E-05	8.150E-06	3.904E-06	0.000E+00	5.846E-07	7.951E-07	0.000E+00
30	5.199E-05	1.170E-05	2.201E-06	2.022E-06	1.341E-06	0.000E+00	2.670E-07	0.000E+00
31	5.072E-05	2.223E-05	6.201E-06	8.202E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
32	7.256E-05	9.774E-06	1.985E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
33	9.762E-05	3.361E-05	7.781E-06	3.784E-06	8.121E-07	0.000E+00	3.243E-07	0.000E+00
34	1.273E-04	3.843E-05	1.302E-05	2.437E-06	0.000E+00	8.021E-07	3.572E-07	0.000E+00
35	1.380E-04	4.861E-05	5.321E-06	5.081E-06	8.493E-07	0.000E+00	0.000E+00	0.000E+00
36	1.337E-04	3.533E-05	1.275E-05	1.286E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
37	1.830E-04	3.939E-05	3.029E-05	1.455E-05	1.724E-06	0.000E+00	0.000E+00	0.000E+00
38	1.647E-04	6.298E-05	1.921E-05	7.696E-06	9.143E-07	0.000E+00	0.000E+00	0.000E+00
39	1.683E-04	5.409E-05	1.658E-05	7.610E-06	2.571E-06	0.000E+00	0.000E+00	0.000E+00
40	1.619E-04	3.222E-05	7.864E-06	6.271E-06	1.620E-06	8.050E-07	0.000E+00	8.554E-07
41	1.827E-04	4.619E-05	1.314E-05	4.893E-06	7.907E-07	0.000E+00	0.000E+00	0.000E+00
42	2.326E-04	8.423E-05	2.412E-05	1.011E-05	8.493E-07	7.864E-07	0.000E+00	0.000E+00
43	2.476E-04	4.142E-05	3.251E-05	1.314E-05	1.695E-06	7.964E-07	0.000E+00	0.000E+00
44	2.446E-04	5.776E-05	1.887E-05	9.061E-06	1.760E-06	0.000E+00	0.000E+00	0.000E+00
45	2.677E-04	6.204E-05	2.585E-05	1.261E-05	8.000E-07	7.729E-07	6.629E-07	0.000E+00
46	2.411E-04	6.701E-05	3.916E-05	1.114E-05	4.949E-06	1.501E-06	6.777E-07	0.000E+00
47	2.369E-04	6.821E-05	1.816E-05	2.118E-05	4.961E-06	0.000E+00	0.000E+00	4.270E-07
48	2.613E-04	7.658E-05	1.593E-05	1.255E-05	1.672E-06	1.521E-06	3.499E-07	0.000E+00
49	2.258E-04	5.858E-05	2.621E-05	1.007E-05	1.671E-06	7.829E-07	6.776E-07	0.000E+00
50	2.252E-04	5.767E-05	2.284E-05	4.792E-06	0.000E+00	7.614E-07	0.000E+00	0.000E+00
51	2.339E-04	8.629E-05	4.584E-05	9.820E-06	8.493E-07	0.000E+00	0.000E+00	0.000E+00
52	2.518E-04	7.789E-05	2.537E-05	7.117E-06	1.497E-06	0.000E+00	0.000E+00	3.768E-07
53	2.018E-04	5.367E-05	1.858E-05	3.941E-06	1.691E-06	0.000E+00	0.000E+00	0.000E+00
54	1.706E-04	5.139E-05	2.704E-05	7.839E-06	0.000E+00	0.000E+00	3.659E-07	4.346E-07
55	1.327E-04	3.943E-05	1.997E-05	1.419E-06	9.321E-07	0.000E+00	3.799E-07	0.000E+00
56	1.260E-04	3.611E-05	5.608E-06	4.823E-06	9.000E-07	0.000E+00	0.000E+00	0.000E+00
57	1.355E-04	3.573E-05	3.044E-05	4.846E-06	2.449E-06	0.000E+00	0.000E+00	4.257E-07

58	1.312E-04	3.307E-05	1.804E-05	5.027E-06	7.643E-07	7.003E-07	0.000E+00	0.000E+00
59	9.906E-05	2.642E-05	1.011E-05	3.385E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
60	9.724E-05	1.798E-05	1.226E-05	2.381E-06	1.571E-06	0.000E+00	0.000E+00	0.000E+00
61	9.084E-05	2.637E-05	1.169E-05	0.000E+00	7.164E-07	0.000E+00	0.000E+00	0.000E+00
62	6.938E-05	1.552E-05	1.441E-05	2.229E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
63	6.055E-05	1.871E-05	8.983E-06	5.671E-06	7.793E-07	0.000E+00	0.000E+00	0.000E+00
64	4.775E-05	7.363E-06	6.639E-06	3.172E-06	0.000E+00	6.268E-07	0.000E+00	0.000E+00
65	6.949E-05	1.252E-05	2.153E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
66	6.137E-05	1.460E-05	2.144E-06	1.098E-06	0.000E+00	0.000E+00	2.972E-07	0.000E+00
67	5.391E-05	5.396E-06	2.142E-06	1.049E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
68	7.296E-05	1.345E-05	2.099E-06	9.493E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
69	5.054E-05	1.932E-05	2.089E-06	2.071E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
70	5.630E-05	2.608E-05	0.000E+00	0.000E+00	6.677E-07	0.000E+00	0.000E+00	0.000E+00
71	4.374E-05	1.976E-05	8.764E-06	1.099E-06	0.000E+00	0.000E+00	2.756E-07	0.000E+00
72	5.219E-05	1.227E-05	4.386E-06	1.071E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
73	7.080E-05	8.964E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
74	5.326E-05	5.237E-06	2.145E-06	1.021E-06	7.081E-07	0.000E+00	0.000E+00	0.000E+00
75	4.201E-05	1.241E-05	2.195E-06	0.000E+00	0.000E+00	0.000E+00	2.693E-07	0.000E+00
76	6.223E-05	8.686E-06	2.093E-06	0.000E+00	0.000E+00	6.117E-07	0.000E+00	0.000E+00
77	3.197E-05	5.063E-06	2.186E-06	2.032E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
78	3.729E-05	6.884E-06	2.160E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
79	4.420E-05	1.221E-05	0.000E+00	1.081E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
80	3.406E-05	3.519E-06	2.047E-06	9.807E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
81	2.251E-05	3.414E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
82	1.091E-05	0.000E+00	2.139E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
83	2.881E-05	0.000E+00	1.956E-06	1.009E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
84	2.661E-05	3.007E-06	1.824E-06	9.313E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
85	8.775E-06	1.549E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
86	1.047E-05	3.244E-06	1.869E-06	0.000E+00	5.996E-07	0.000E+00	0.000E+00	0.000E+00
87	1.027E-05	1.494E-06	5.647E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
88	9.993E-06	1.581E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
89	8.533E-06	1.487E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
90	1.336E-05	2.954E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
91	9.696E-06	1.464E-06	1.914E-06	0.000E+00	5.741E-07	0.000E+00	0.000E+00	0.000E+00
92	1.163E-05	3.110E-06	0.000E+00	0.000E+00	5.764E-07	0.000E+00	0.000E+00	0.000E+00
93	3.431E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
94	4.956E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
95	6.546E-06	2.911E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
96	6.738E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.236E-07	0.000E+00	0.000E+00
97	9.961E-06	1.454E-06	0.000E+00	0.000E+00	6.079E-07	0.000E+00	0.000E+00	0.000E+00

138	1.558E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.393E-07	0.000E+00
139	3.299E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
140	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.773E-07
141	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
142	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
143	3.094E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
144	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
145	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.336E-07	0.000E+00	0.000E+00
146	1.637E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
147	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.756E-07
148	1.439E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
149	0.000E+00	1.390E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.918E-07
150	1.631E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
151	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
152	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
153	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
154	0.000E+00	0.000E+00	0.000E+00	8.700E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
2	1	0	1	0	0	0	2
2	4	1	1	0	0	0	0
3	1	3	1	0	1	2	0
11	3	8	0	1	2	0	0
24	6	9	3	4	0	0	2
27	16	2	2	3	1	1	1
27	20	2	4	2	0	1	0
40	10	2	3	1	2	0	0
42	28	4	6	2	1	0	0
53	22	11	10	8	2	2	0
124	77	28	47	18	7	6	0
177	117	46	36	22	13	6	1
231	129	69	36	29	13	2	2
324	155	58	46	24	12	2	0
318	165	84	54	22	5	4	0
296	116	56	59	26	13	4	1
279	108	53	62	18	6	3	1
248	105	45	31	18	8	1	0
220	98	30	41	22	2	3	0

210	78	39	23	7	1	0	0
174	72	33	19	10	3	2	2
169	65	31	23	10	2	0	0
175	87	30	20	8	3	0	1
154	74	29	34	17	3	0	0
329	159	84	82	36	8	7	2
478	282	94	83	42	12	5	1
477	299	125	93	57	21	6	2
559	306	123	100	45	17	3	0
596	310	104	118	48	15	2	1
537	292	110	107	46	15	7	0
570	278	91	85	43	22	7	0
902	446	169	136	57	16	4	2
1125	554	241	188	111	19	9	2
1154	643	250	256	124	30	16	1
1404	729	295	283	116	39	18	7
1343	694	305	294	123	43	10	1
1600	913	392	355	166	47	34	2
1700	956	405	313	150	50	21	2
1615	901	371	339	133	35	11	1
1616	928	350	308	142	40	17	1
1572	878	348	357	159	45	16	1
1869	1077	467	419	162	48	18	3
2181	1187	492	418	176	46	13	4
1856	1039	403	362	164	59	21	3
1720	934	372	324	163	47	20	6
1742	926	377	331	146	37	29	2
1723	975	388	345	162	49	23	6
1664	923	428	402	166	52	25	3
1678	904	410	364	149	51	23	4
1706	912	366	343	155	63	19	4
1657	927	332	325	119	37	21	2
1901	944	371	340	151	41	26	3
1707	955	344	312	120	44	8	1
1804	935	372	269	94	22	10	1
1770	837	296	239	100	25	15	2
1220	592	221	200	70	18	5	2
1319	651	223	195	69	20	14	1
1539	710	271	198	58	14	9	2
1318	608	208	177	59	9	3	0

1127	567	184	161	62	13	4	1
982	431	180	145	48	20	8	3
1080	476	146	128	53	15	4	2
953	444	162	126	34	10	3	0
734	332	123	107	49	9	8	0
891	444	159	117	53	9	5	1
837	400	137	109	47	5	7	2
827	410	130	138	45	12	5	0
869	400	137	105	52	12	1	0
679	312	105	104	29	8	5	2
724	287	80	100	34	12	1	0
695	342	119	90	24	10	2	1
677	304	103	78	27	5	4	1
772	274	100	99	30	9	0	0
684	281	96	80	18	2	1	1
552	256	102	61	27	5	2	0
627	259	88	55	27	5	0	0
548	243	80	81	25	7	1	0
545	205	67	66	13	5	0	1
540	222	65	44	23	4	2	0
498	208	64	38	5	5	1	1
473	210	59	40	9	5	0	0
397	156	50	49	16	6	0	1
326	110	54	25	8	3	1	1
367	140	35	45	13	7	1	0
275	101	37	24	4	3	3	1
236	96	33	13	6	2	0	0
179	88	26	12	7	2	0	0
184	77	23	17	5	2	0	1
186	58	25	15	5	1	3	0
132	55	16	15	2	0	2	0
113	60	15	14	5	2	0	1
122	43	17	13	6	2	0	0
132	57	11	7	4	0	1	0
122	48	17	9	4	1	0	1
106	39	13	14	3	0	0	1
96	39	20	10	2	2	0	1
109	48	13	15	10	4	1	0
86	30	16	12	6	2	1	1
80	39	12	10	10	4	1	0

102	49	23	18	18	8	2	1
122	72	38	23	15	6	3	2
288	147	51	46	15	7	2	0
220	119	54	46	14	1	5	0
206	105	47	30	19	3	1	0
149	89	33	33	15	5	1	2
120	81	37	22	9	5	1	1
127	77	19	23	6	1	3	0
150	72	17	24	10	2	4	0
143	79	24	21	12	2	2	2
164	75	20	10	7	3	0	0
148	61	23	21	8	0	0	0
134	70	30	15	7	2	3	1
125	54	25	17	3	3	1	0
135	62	15	16	5	2	0	2
121	56	26	8	6	1	0	0
117	58	19	13	8	2	0	0
112	40	20	18	4	1	0	0
113	51	20	7	5	0	1	1
105	39	19	13	4	1	3	1
93	36	11	11	2	1	3	0
96	38	12	7	2	0	0	0
68	33	13	7	3	1	0	0
58	30	12	10	1	2	1	0
72	34	10	8	3	0	0	1
74	32	3	9	2	2	0	1
69	19	7	3	2	1	0	1
59	38	9	5	4	0	1	0
70	19	11	4	1	0	0	0
39	26	3	6	0	1	0	1
45	19	8	6	1	0	0	0
32	17	9	2	1	0	0	1
42	12	7	4	3	1	0	0
33	14	4	3	2	0	0	0
35	12	3	3	1	0	2	0
35	11	3	0	0	0	0	0
32	12	2	2	4	0	0	0
23	5	4	1	0	0	0	0
19	11	5	3	1	0	0	0
25	6	4	2	0	0	1	1

24	5	0	1	1	0	1	1
14	3	1	1	1	0	1	0
11	5	1	2	0	0	2	2
21	10	1	0	1	0	0	0
11	4	1	1	0	0	0	0
9	5	2	2	3	0	1	0
12	6	1	1	1	0	2	0
10	7	3	5	0	0	0	0
7	3	1	0	0	0	0	0
7	2	1	0	0	1	0	0
12	4	2	1	2	0	0	1
7	2	0	0	2	0	1	0
4	5	2	0	0	1	1	1
9	3	0	1	1	0	0	1
5	3	2	1	1	0	0	0

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	1	0	0	0	0
0	0	0	0	0	0	0	0
3	2	0	0	0	0	0	0
3	0	0	0	1	0	0	0
2	0	0	0	0	0	0	1
2	1	0	0	1	0	0	0
3	0	0	0	0	0	1	0
1	1	0	0	0	0	0	0
8	5	3	1	0	0	0	1
13	5	3	1	1	0	0	0
19	7	0	1	0	0	1	1
14	5	1	1	0	0	0	0
14	6	0	1	0	0	0	0
10	5	0	0	0	0	0	0
11	4	0	0	0	0	0	0
12	5	3	1	0	0	0	0
7	3	0	0	0	0	0	0

5	2	1	2	0	0	0	0
4	1	3	0	0	0	0	1
12	3	1	1	0	0	0	0
9	2	1	2	1	0	0	0
8	6	0	1	1	1	0	0
24	7	2	1	2	0	0	0
30	8	1	2	0	0	0	0
35	12	3	2	0	0	3	0
37	6	2	1	2	0	0	0
43	12	4	4	0	1	3	0
28	7	1	2	2	0	1	0
27	13	3	8	0	0	0	0
33	5	8	0	0	0	0	0
42	16	3	3	1	0	1	0
54	18	5	2	0	1	1	0
57	22	2	4	1	0	0	0
58	17	5	1	0	0	0	0
75	18	11	11	2	0	0	0
67	28	7	6	1	0	0	0
70	25	6	6	3	0	0	0
69	15	3	5	2	1	0	2
79	22	5	4	1	0	0	0
98	39	9	8	1	1	0	0
102	19	12	10	2	1	0	0
103	27	7	7	2	0	0	0
114	29	10	10	1	1	2	0
104	32	15	9	6	2	2	0
101	32	7	17	6	0	0	1
111	36	6	10	2	2	1	0
97	28	10	8	2	1	2	0
99	28	9	4	0	1	0	0
101	41	18	8	1	0	0	0
114	39	10	6	2	0	0	1
84	25	7	3	2	0	0	0
70	23	10	6	0	0	1	1
52	17	7	1	1	0	1	0
54	17	2	4	1	0	0	0
59	17	12	4	3	0	0	1
57	16	7	4	1	1	0	0
43	13	4	3	0	0	0	0

45	9	5	2	2	0	0	0
43	14	5	0	1	0	0	0
32	8	6	2	0	0	0	0
29	10	4	5	1	0	0	0
24	4	3	3	0	1	0	0
34	7	1	0	0	0	0	0
31	8	1	1	0	0	1	0
27	3	1	1	0	0	0	0
40	8	1	1	0	0	0	0
26	11	1	2	0	0	0	0
29	15	0	0	1	0	0	0
22	11	4	1	0	0	1	0
27	7	2	1	0	0	0	0
36	5	0	0	0	0	0	0
27	3	1	1	1	0	0	0
22	7	1	0	0	0	1	0
32	5	1	0	0	1	0	0
17	3	1	2	0	0	0	0
20	4	1	0	0	0	0	0
23	7	0	1	0	0	0	0
18	2	1	1	0	0	0	0
12	2	0	0	0	0	0	0
6	0	1	0	0	0	0	0
16	0	1	1	0	0	0	0
16	2	1	1	0	0	0	0
5	1	0	0	0	0	0	0
6	2	1	0	1	0	0	0
6	1	3	0	0	0	0	0
6	1	0	0	0	0	0	0
5	1	0	0	0	0	0	0
8	2	0	0	0	0	0	0
6	1	1	0	1	0	0	0
7	2	0	0	1	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	2	0	0	0	0	0	0
4	0	0	0	0	1	0	0
6	1	0	0	1	0	0	0
6	2	2	0	0	0	0	0
8	2	0	3	1	0	0	0

9	5	1	3	0	1	0	0
14	9	2	0	1	0	1	0
26	4	2	1	0	1	1	0
20	8	1	1	0	0	0	0
18	6	2	0	0	0	0	0
10	5	0	1	0	0	0	0
10	2	1	1	0	0	1	0
12	5	0	1	1	0	0	0
6	4	2	0	0	0	0	0
9	1	0	0	0	0	1	0
12	4	0	0	0	0	0	0
9	5	0	1	0	0	0	0
6	2	0	0	1	1	1	0
5	4	0	0	0	0	0	1
9	2	1	0	0	0	0	0
4	1	1	1	0	0	0	0
14	3	0	0	1	0	1	0
6	0	0	0	0	0	1	0
7	1	0	0	0	0	1	0
9	2	0	0	0	0	0	0
3	1	0	0	0	0	0	0
3	1	0	0	0	0	0	0
0	0	0	1	0	0	0	0
1	0	0	0	0	0	0	1
4	0	0	0	0	0	0	0
6	1	0	0	0	1	0	0
2	1	0	0	0	0	0	0
4	0	0	0	0	1	0	0
1	1	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	1	0	0	0	0	0	0
0	0	0	0	0	0	1	0
1	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
0	0	0	0	0	1	0	0
2	0	0	0	0	0	0	1
1	0	0	0	0	0	1	0
2	0	0	0	0	0	0	0

0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	1	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1
1	0	0	0	0	0	0	0
0	1	0	0	0	0	0	1
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	1	0	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a * \exp(b * x) + c * \exp(d * x)$$

Coefficients (with 95% confidence bounds):

$$a = 2.167 \quad (1.875, 2.458)$$

$$b = -0.2487 \quad (-0.2835, -0.2139)$$

$$c = 0.02471 \quad (-0.1021, 0.1515)$$

$$d = -0.07563 \quad (-0.2437, 0.09241)$$

goftotal =

sse: 5.2023e-006

rsquare: 0.9999

dfe: 4

adjrsquare: 0.9998

rmse: 0.0011

ctotal =

General model Exp1:

$$ctotal(x) = a * \exp(b * x)$$

Coefficients (with 95% confidence bounds):

a = 0.7948 (0.4768, 1.113)

b = -0.1802 (-0.2005, -0.1599)

goftotal =

sse: 3.6724e-007

rsquare: 9.9923e-001

dfe: 3

adjrsquare: 9.9897e-001

rmse: 3.4988e-004

Event 94A	Date	Time*	Location*	Summing interval*				
	27-Jul-05	502	NW120	Jul 27 0500 to Aug 4 0000				
Oxygen	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed φ	Listed φ	Listed φ	Listed φ	Listed φ	Listed φ	Listed φ	Listed φ
1	8.958E-06	0.000E+00	1.292E-05	3.068E-06	1.086E-06	0.000E+00	4.217E-07	0.000E+00
2	2.926E-06	2.558E-06	6.755E-06	7.948E-06	3.195E-06	9.993E-07	8.690E-07	0.000E+00
3	8.954E-06	5.269E-06	9.738E-06	3.158E-06	4.217E-06	2.884E-06	0.000E+00	0.000E+00
4	2.927E-06	5.428E-06	6.366E-06	7.761E-06	0.000E+00	1.000E-06	8.434E-07	0.000E+00
5	5.630E-06	2.532E-06	0.000E+00	1.519E-06	1.910E-06	9.333E-07	0.000E+00	5.216E-07
6	2.928E-06	5.277E-06	9.744E-06	0.000E+00	2.048E-06	1.885E-06	4.221E-07	0.000E+00
7	2.925E-06	1.071E-05	9.944E-06	4.601E-06	2.111E-06	9.429E-07	4.476E-07	5.274E-07
8	5.855E-06	1.070E-05	3.182E-06	4.786E-06	6.329E-06	1.000E-06	4.221E-07	0.000E+00
9	8.959E-06	1.070E-05	9.748E-06	6.418E-06	4.158E-06	2.000E-06	4.221E-07	2.109E-06
10	1.774E-05	1.327E-05	1.968E-05	9.296E-06	5.184E-06	1.001E-06	0.000E+00	0.000E+00
11	1.243E-05	5.433E-06	1.293E-05	1.628E-06	3.072E-06	1.001E-06	4.219E-07	0.000E+00
12	2.139E-05	7.836E-06	1.650E-05	9.671E-06	3.196E-06	0.000E+00	0.000E+00	0.000E+00
13	1.224E-05	1.039E-05	1.651E-05	1.264E-05	3.198E-06	3.827E-06	8.441E-07	0.000E+00
14	6.032E-06	1.568E-05	3.243E-05	7.952E-06	3.134E-06	1.001E-06	1.292E-06	1.088E-06
15	2.086E-05	2.111E-05	3.184E-06	6.324E-06	4.284E-06	4.889E-06	4.222E-07	0.000E+00
16	1.207E-05	1.071E-05	6.373E-06	9.583E-06	5.310E-06	1.001E-06	8.960E-07	0.000E+00
17	1.794E-05	5.285E-06	6.569E-06	1.267E-05	3.141E-06	1.945E-06	8.717E-07	0.000E+00
18	1.814E-05	1.858E-05	1.953E-05	6.522E-06	5.316E-06	0.000E+00	4.232E-07	5.287E-07
19	3.354E-05	2.871E-05	2.971E-05	6.339E-06	7.375E-06	1.949E-06	4.489E-07	5.614E-07
20	2.423E-05	3.178E-05	1.976E-05	2.655E-05	4.363E-06	0.000E+00	1.322E-06	0.000E+00
21	5.878E-05	3.446E-05	3.037E-05	1.463E-05	4.072E-06	0.000E+00	0.000E+00	0.000E+00
22	9.404E-05	5.069E-05	2.642E-05	2.535E-05	6.375E-06	2.964E-06	8.499E-07	0.000E+00

23	8.530E-05	5.496E-05	3.267E-05	2.220E-05	5.223E-06	0.000E+00	4.254E-07	5.637E-07
24	7.921E-05	5.285E-05	3.666E-05	2.065E-05	9.539E-06	1.900E-06	8.764E-07	5.315E-07
25	1.121E-04	6.896E-05	5.944E-05	2.244E-05	1.273E-05	3.984E-06	4.259E-07	0.000E+00
26	1.251E-04	8.590E-05	8.022E-05	4.013E-05	5.437E-06	1.014E-06	4.268E-07	5.333E-07
27	1.269E-04	8.832E-05	4.001E-05	1.580E-05	8.476E-06	1.966E-06	8.541E-07	5.333E-07
28	1.377E-04	1.331E-04	4.311E-05	2.096E-05	1.393E-05	4.895E-06	8.816E-07	0.000E+00
29	1.347E-04	1.231E-04	8.981E-05	4.288E-05	1.058E-05	1.014E-06	8.566E-07	5.354E-07
30	1.811E-04	8.588E-05	7.095E-05	4.138E-05	4.155E-06	9.543E-07	4.538E-07	0.000E+00
31	1.654E-04	9.898E-05	5.579E-05	4.485E-05	1.508E-05	1.972E-06	1.340E-06	0.000E+00
32	1.936E-04	9.634E-05	6.342E-05	3.724E-05	1.644E-05	1.983E-06	8.889E-07	0.000E+00
33	2.498E-04	1.451E-04	5.982E-05	3.067E-05	1.500E-05	2.039E-06	4.300E-07	0.000E+00
34	1.970E-04	1.449E-04	9.091E-05	4.821E-05	1.521E-05	6.004E-06	4.306E-07	5.705E-07
35	2.633E-04	1.615E-04	1.111E-04	3.746E-05	1.509E-05	3.006E-06	0.000E+00	0.000E+00
36	2.481E-04	1.547E-04	7.716E-05	3.845E-05	9.670E-06	4.989E-06	0.000E+00	0.000E+00
37	2.795E-04	1.830E-04	7.426E-05	3.813E-05	1.417E-05	9.000E-07	8.554E-07	1.038E-06
38	3.273E-04	1.409E-04	9.072E-05	3.077E-05	1.289E-05	1.024E-06	0.000E+00	0.000E+00
39	2.761E-04	1.603E-04	7.974E-05	3.742E-05	1.079E-05	2.953E-06	0.000E+00	0.000E+00
40	2.064E-04	1.142E-04	6.032E-05	2.914E-05	9.478E-06	3.067E-06	1.345E-06	5.702E-07
41	2.724E-04	2.008E-04	9.124E-05	6.045E-05	1.003E-05	4.084E-06	0.000E+00	0.000E+00
42	4.378E-04	2.969E-04	1.235E-04	6.442E-05	1.653E-05	4.192E-06	4.680E-07	0.000E+00
43	5.867E-04	3.427E-04	1.939E-04	7.559E-05	1.346E-05	4.192E-06	0.000E+00	0.000E+00
44	6.313E-04	3.353E-04	1.669E-04	6.990E-05	3.021E-05	5.111E-06	8.969E-07	0.000E+00
45	9.043E-04	3.415E-04	2.220E-04	8.789E-05	2.992E-05	6.254E-06	4.851E-07	0.000E+00
46	7.341E-04	4.412E-04	2.164E-04	1.011E-04	1.830E-05	8.361E-06	9.153E-07	6.056E-07
47	8.854E-04	4.857E-04	2.171E-04	7.725E-05	3.220E-05	5.514E-06	4.644E-07	5.784E-07
48	9.767E-04	4.687E-04	1.881E-04	6.432E-05	2.496E-05	4.373E-06	0.000E+00	0.000E+00
49	1.099E-03	6.014E-04	2.655E-04	9.328E-05	2.343E-05	1.112E-06	1.466E-06	0.000E+00
50	1.022E-03	5.231E-04	2.531E-04	1.032E-04	2.700E-05	2.152E-06	1.906E-06	6.224E-07
51	1.029E-03	5.506E-04	2.364E-04	1.180E-04	2.248E-05	3.341E-06	1.464E-06	1.211E-06
52	9.243E-04	5.174E-04	2.145E-04	8.424E-05	3.021E-05	2.144E-06	0.000E+00	0.000E+00
53	1.019E-03	4.630E-04	1.761E-04	8.458E-05	2.182E-05	2.061E-06	4.357E-07	0.000E+00
54	1.003E-03	4.472E-04	2.364E-04	8.316E-05	2.124E-05	5.486E-06	0.000E+00	6.305E-07
55	1.195E-03	4.900E-04	2.421E-04	1.011E-04	3.246E-05	2.146E-06	0.000E+00	0.000E+00
56	1.100E-03	5.956E-04	2.359E-04	1.108E-04	2.431E-05	3.396E-06	0.000E+00	0.000E+00
57	1.192E-03	5.382E-04	3.349E-04	1.255E-04	2.313E-05	5.729E-06	0.000E+00	0.000E+00
58	1.204E-03	5.216E-04	3.036E-04	8.367E-05	3.020E-05	3.246E-06	0.000E+00	0.000E+00
59	1.117E-03	5.588E-04	2.812E-04	9.731E-05	2.327E-05	4.379E-06	0.000E+00	6.006E-07
60	1.218E-03	5.479E-04	2.591E-04	9.711E-05	1.963E-05	9.952E-06	4.804E-07	0.000E+00
61	1.316E-03	4.603E-04	2.415E-04	8.450E-05	2.745E-05	4.360E-06	5.098E-07	5.995E-07
62	1.040E-03	4.592E-04	1.705E-04	7.148E-05	2.397E-05	1.134E-06	5.086E-07	5.982E-07

63	1.099E-03	5.091E-04	2.609E-04	8.453E-05	1.192E-05	4.481E-06	1.497E-06	0.000E+00
64	1.045E-03	5.450E-04	2.644E-04	7.202E-05	2.161E-05	4.419E-06	2.459E-06	0.000E+00
65	1.143E-03	4.846E-04	2.353E-04	9.649E-05	1.206E-05	4.349E-06	9.593E-07	0.000E+00
66	1.051E-03	4.916E-04	2.059E-04	1.095E-04	1.911E-05	1.136E-06	5.089E-07	6.368E-07
67	1.069E-03	4.578E-04	2.653E-04	8.768E-05	2.901E-05	2.144E-06	5.081E-07	6.015E-07
68	1.069E-03	5.087E-04	2.497E-04	7.946E-05	1.797E-05	8.962E-06	0.000E+00	0.000E+00
69	1.035E-03	4.833E-04	1.913E-04	9.212E-05	2.344E-05	6.116E-06	4.485E-07	0.000E+00
70	9.840E-04	4.495E-04	2.020E-04	1.146E-04	2.618E-05	5.359E-06	1.019E-06	0.000E+00
71	1.072E-03	4.560E-04	3.038E-04	9.406E-05	2.270E-05	5.445E-06	0.000E+00	0.000E+00
72	1.187E-03	5.670E-04	2.433E-04	1.003E-04	2.739E-05	9.153E-06	2.076E-06	6.543E-07
73	1.440E-03	6.687E-04	3.629E-04	1.075E-04	2.418E-05	6.926E-06	0.000E+00	6.295E-07
74	1.532E-03	7.845E-04	2.858E-04	1.539E-04	2.672E-05	9.537E-06	1.063E-06	0.000E+00
75	1.545E-03	6.303E-04	3.618E-04	1.263E-04	3.144E-05	5.779E-06	1.082E-06	0.000E+00
76	1.640E-03	7.395E-04	3.676E-04	1.384E-04	2.561E-05	3.644E-06	0.000E+00	0.000E+00
77	1.699E-03	7.606E-04	3.657E-04	1.233E-04	2.682E-05	5.936E-06	0.000E+00	0.000E+00
78	1.686E-03	8.500E-04	2.470E-04	9.393E-05	2.543E-05	4.752E-06	5.172E-07	6.837E-07
79	1.950E-03	7.161E-04	4.001E-04	1.302E-04	2.855E-05	2.394E-06	0.000E+00	0.000E+00
80	1.709E-03	7.898E-04	3.201E-04	1.174E-04	2.441E-05	2.338E-06	1.049E-06	6.552E-07
81	1.878E-03	8.482E-04	4.162E-04	1.590E-04	2.278E-05	7.418E-06	0.000E+00	0.000E+00
82	1.916E-03	8.179E-04	3.481E-04	1.456E-04	2.873E-05	2.481E-06	5.649E-07	7.058E-07
83	1.700E-03	6.500E-04	3.573E-04	1.358E-04	2.078E-05	3.481E-06	0.000E+00	1.297E-06
84	1.701E-03	7.858E-04	3.412E-04	1.410E-04	3.265E-05	1.236E-06	1.077E-06	0.000E+00
85	1.609E-03	7.629E-04	3.319E-04	1.116E-04	3.137E-05	4.369E-06	0.000E+00	0.000E+00
86	1.566E-03	6.352E-04	3.186E-04	1.215E-04	1.380E-05	7.039E-06	5.179E-07	1.321E-06
87	1.689E-03	6.776E-04	3.423E-04	1.107E-04	2.069E-05	2.437E-06	5.154E-07	0.000E+00
88	1.560E-03	7.393E-04	2.938E-04	8.418E-05	3.205E-05	3.431E-06	1.603E-06	0.000E+00
89	1.545E-03	6.610E-04	2.913E-04	1.167E-04	2.158E-05	4.692E-06	0.000E+00	6.802E-07
90	1.453E-03	7.470E-04	2.603E-04	8.055E-05	2.287E-05	1.149E-06	0.000E+00	0.000E+00
91	1.445E-03	6.950E-04	3.160E-04	1.164E-04	2.146E-05	4.691E-06	0.000E+00	6.342E-07
92	1.466E-03	6.193E-04	2.962E-04	9.645E-05	2.297E-05	4.674E-06	0.000E+00	6.360E-07
93	1.473E-03	5.787E-04	3.065E-04	9.082E-05	7.605E-06	3.401E-06	0.000E+00	0.000E+00
94	1.400E-03	5.563E-04	2.284E-04	8.363E-05	2.536E-05	4.751E-06	0.000E+00	0.000E+00
95	1.519E-03	4.657E-04	2.891E-04	1.150E-04	2.412E-05	5.926E-06	0.000E+00	6.386E-07
96	1.476E-03	5.196E-04	2.541E-04	1.116E-04	1.409E-05	0.000E+00	0.000E+00	0.000E+00
97	1.383E-03	5.269E-04	2.253E-04	7.389E-05	2.568E-05	2.431E-06	5.428E-07	0.000E+00
98	1.405E-03	6.552E-04	2.921E-04	8.131E-05	1.288E-05	5.866E-06	5.159E-07	1.319E-06
99	1.477E-03	6.606E-04	2.129E-04	5.990E-05	1.559E-05	3.686E-06	0.000E+00	0.000E+00
100	1.742E-03	7.151E-04	3.272E-04	1.102E-04	1.982E-05	3.681E-06	0.000E+00	0.000E+00
101	1.443E-03	5.881E-04	2.769E-04	9.826E-05	1.097E-05	2.307E-06	1.025E-06	0.000E+00
102	1.505E-03	6.089E-04	2.082E-04	8.703E-05	1.682E-05	1.220E-06	5.445E-07	0.000E+00

103	1.491E-03	5.894E-04	3.108E-04	7.615E-05	1.291E-05	2.291E-06	0.000E+00	6.791E-07
104	1.481E-03	5.764E-04	1.869E-04	1.060E-04	2.050E-05	4.606E-06	0.000E+00	0.000E+00
105	1.407E-03	5.373E-04	2.394E-04	7.092E-05	1.811E-05	4.637E-06	5.076E-07	0.000E+00
106	1.330E-03	5.448E-04	2.679E-04	7.633E-05	1.410E-05	1.200E-06	0.000E+00	0.000E+00
107	1.334E-03	5.437E-04	2.626E-04	5.719E-05	1.269E-05	3.521E-06	0.000E+00	0.000E+00
108	1.223E-03	5.025E-04	2.203E-04	7.748E-05	1.873E-05	2.382E-06	1.068E-06	6.674E-07
109	1.306E-03	4.840E-04	1.758E-04	5.443E-05	1.644E-05	0.000E+00	5.022E-07	0.000E+00
110	1.192E-03	4.367E-04	1.318E-04	5.603E-05	1.872E-05	2.304E-06	5.299E-07	6.710E-07
111	1.128E-03	4.610E-04	2.031E-04	5.096E-05	8.883E-06	1.121E-06	0.000E+00	0.000E+00
112	1.148E-03	4.345E-04	1.790E-04	6.157E-05	1.367E-05	5.636E-06	0.000E+00	0.000E+00
113	1.209E-03	4.216E-04	1.558E-04	6.522E-05	1.129E-05	2.290E-06	0.000E+00	0.000E+00
114	1.133E-03	4.584E-04	2.114E-04	5.432E-05	1.501E-05	3.321E-06	1.021E-06	0.000E+00
115	1.192E-03	4.244E-04	1.506E-04	5.744E-05	1.121E-05	1.178E-06	0.000E+00	0.000E+00
116	1.109E-03	4.061E-04	1.893E-04	4.851E-05	1.480E-05	4.628E-06	0.000E+00	0.000E+00
117	1.097E-03	4.257E-04	1.845E-04	5.557E-05	1.502E-05	0.000E+00	4.892E-07	0.000E+00
118	1.096E-03	4.317E-04	1.081E-04	7.225E-05	1.352E-05	1.170E-06	9.875E-07	0.000E+00
119	1.126E-03	3.598E-04	1.479E-04	6.150E-05	6.187E-06	3.468E-06	0.000E+00	0.000E+00
120	1.205E-03	3.968E-04	1.652E-04	3.299E-05	8.431E-06	4.482E-06	0.000E+00	0.000E+00
121	1.022E-03	3.683E-04	1.383E-04	5.906E-05	9.920E-06	0.000E+00	5.241E-07	6.511E-07
122	9.735E-04	4.141E-04	1.418E-04	5.123E-05	8.803E-06	0.000E+00	4.887E-07	0.000E+00
123	9.083E-04	3.737E-04	1.412E-04	4.542E-05	3.701E-06	1.155E-06	0.000E+00	6.109E-07
124	9.024E-04	3.594E-04	1.252E-04	4.956E-05	6.201E-06	0.000E+00	0.000E+00	0.000E+00
125	7.686E-04	3.588E-04	9.929E-05	4.755E-05	8.571E-06	0.000E+00	0.000E+00	0.000E+00
126	8.844E-04	3.371E-04	1.400E-04	4.162E-05	7.301E-06	0.000E+00	0.000E+00	0.000E+00
127	8.514E-04	2.924E-04	8.924E-05	3.094E-05	9.504E-06	1.140E-06	0.000E+00	0.000E+00
128	8.077E-04	2.964E-04	1.123E-04	2.549E-05	8.638E-06	1.086E-06	4.828E-07	0.000E+00
129	8.475E-04	3.195E-04	8.748E-05	1.795E-05	7.308E-06	0.000E+00	0.000E+00	0.000E+00
130	7.794E-04	2.331E-04	7.869E-05	4.854E-05	4.749E-06	2.203E-06	1.472E-06	6.414E-07
131	7.856E-04	2.326E-04	1.086E-04	4.134E-05	7.104E-06	1.133E-06	0.000E+00	1.231E-06
132	7.044E-04	2.728E-04	1.491E-04	3.716E-05	2.384E-06	0.000E+00	5.074E-07	5.978E-07
133	6.277E-04	2.043E-04	1.043E-04	2.207E-05	4.536E-06	0.000E+00	4.457E-07	5.556E-07
134	6.883E-04	2.629E-04	7.492E-05	2.576E-05	4.677E-06	0.000E+00	0.000E+00	1.249E-06
135	6.341E-04	2.425E-04	7.209E-05	3.862E-05	1.244E-06	2.238E-06	4.910E-07	0.000E+00
136	6.075E-04	2.378E-04	8.472E-05	3.326E-05	0.000E+00	0.000E+00	0.000E+00	5.979E-07
137	7.826E-04	2.267E-04	6.375E-05	2.126E-05	3.888E-06	0.000E+00	0.000E+00	6.858E-07
138	7.098E-04	2.769E-04	1.093E-04	3.117E-05	2.601E-06	0.000E+00	0.000E+00	0.000E+00
139	7.266E-04	2.033E-04	9.626E-05	2.713E-05	2.596E-06	1.228E-06	0.000E+00	0.000E+00
140	6.835E-04	1.952E-04	8.648E-05	1.971E-05	4.021E-06	0.000E+00	5.324E-07	0.000E+00
141	6.743E-04	2.902E-04	6.165E-05	2.011E-05	3.916E-06	1.269E-06	0.000E+00	0.000E+00
142	7.496E-04	2.124E-04	9.194E-05	1.432E-05	8.025E-06	0.000E+00	0.000E+00	0.000E+00

143	7.831E-04	1.877E-04	5.874E-05	2.441E-05	2.789E-06	3.751E-06	0.000E+00	0.000E+00
144	6.995E-04	2.625E-04	1.170E-04	1.860E-05	2.799E-06	0.000E+00	0.000E+00	7.012E-07
145	9.243E-04	3.574E-04	1.210E-04	3.525E-05	7.406E-06	1.291E-06	6.334E-07	0.000E+00
146	5.424E-04	2.201E-04	6.420E-05	1.250E-05	4.243E-06	0.000E+00	5.791E-07	6.793E-07
147	5.381E-04	1.304E-04	4.912E-05	1.557E-05	3.958E-06	0.000E+00	5.464E-07	0.000E+00
148	4.371E-04	1.161E-04	2.857E-05	1.343E-05	6.619E-06	2.472E-06	0.000E+00	0.000E+00
149	3.568E-04	1.366E-04	4.369E-05	1.419E-05	2.279E-06	0.000E+00	5.009E-07	5.795E-07
150	3.380E-04	8.873E-05	3.381E-05	1.105E-05	1.198E-06	0.000E+00	5.206E-07	0.000E+00
151	2.600E-04	7.581E-05	4.557E-05	1.269E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
152	2.725E-04	4.541E-05	4.121E-05	1.855E-06	2.416E-06	1.147E-06	0.000E+00	0.000E+00
153	2.253E-04	6.567E-05	1.895E-05	3.571E-06	1.234E-06	0.000E+00	0.000E+00	0.000E+00
154	2.123E-04	9.732E-05	2.549E-05	5.490E-06	3.499E-06	0.000E+00	4.658E-07	1.243E-06
155	1.534E-04	4.725E-05	1.858E-05	6.911E-06	0.000E+00	0.000E+00	0.000E+00	6.238E-07
156	1.359E-04	5.166E-05	1.835E-05	6.979E-06	0.000E+00	0.000E+00	0.000E+00	5.759E-07
157	1.432E-04	6.717E-05	7.274E-06	3.496E-06	3.396E-06	0.000E+00	0.000E+00	0.000E+00
158	1.265E-04	7.057E-05	1.125E-05	5.450E-06	1.136E-06	0.000E+00	0.000E+00	0.000E+00
159	1.435E-04	2.623E-05	1.052E-05	3.486E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
160	1.928E-04	4.983E-05	1.440E-05	7.173E-06	0.000E+00	0.000E+00	0.000E+00	5.787E-07
161	1.876E-04	4.933E-05	1.807E-05	7.073E-06	1.191E-06	0.000E+00	0.000E+00	0.000E+00
162	2.113E-04	5.403E-05	1.482E-05	7.039E-06	0.000E+00	0.000E+00	0.000E+00	5.966E-07
163	1.747E-04	7.535E-05	2.995E-05	8.978E-06	0.000E+00	0.000E+00	0.000E+00	6.029E-07
164	2.171E-04	5.179E-05	2.237E-05	3.546E-06	0.000E+00	0.000E+00	1.005E-06	0.000E+00
165	1.872E-04	7.106E-05	3.910E-05	6.795E-06	1.098E-06	0.000E+00	4.773E-07	6.017E-07
166	1.740E-04	4.851E-05	7.784E-06	7.198E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
167	1.423E-04	4.856E-05	1.097E-05	1.759E-06	1.246E-06	0.000E+00	5.138E-07	0.000E+00
168	1.227E-04	2.999E-05	7.619E-06	5.301E-06	1.224E-06	0.000E+00	0.000E+00	0.000E+00
169	8.840E-05	2.985E-05	2.248E-05	0.000E+00	2.321E-06	0.000E+00	5.067E-07	6.350E-07
170	1.233E-04	2.678E-05	0.000E+00	3.664E-06	1.219E-06	0.000E+00	4.748E-07	6.277E-07
171	7.717E-05	3.255E-05	1.476E-05	3.444E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
172	9.140E-05	3.880E-05	7.402E-06	5.366E-06	1.226E-06	0.000E+00	5.031E-07	0.000E+00
173	8.474E-05	2.895E-05	1.486E-05	3.532E-06	0.000E+00	1.036E-06	0.000E+00	5.900E-07
174	3.156E-05	2.786E-05	3.306E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
175	3.373E-05	1.592E-05	6.559E-06	3.251E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
176	1.241E-05	8.195E-06	3.453E-06	1.586E-06	1.122E-06	0.000E+00	4.306E-07	0.000E+00
177	1.546E-05	8.140E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.701E-07
178	2.135E-05	5.513E-06	0.000E+00	1.651E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
179	1.873E-05	0.000E+00	0.000E+00	1.557E-06	0.000E+00	1.016E-06	4.284E-07	1.070E-06
180	3.144E-05	2.628E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
181	1.152E-05	1.251E-05	0.000E+00	1.551E-06	9.760E-07	0.000E+00	0.000E+00	0.000E+00
182	1.827E-05	1.336E-05	0.000E+00	1.561E-06	0.000E+00	0.000E+00	4.303E-07	0.000E+00

8	6.404E-06	0.000E+00	0.000E+00	0.000E+00	1.663E-06	0.000E+00	0.000E+00	0.000E+00
9	0.000E+00	1.466E-06	0.000E+00	0.000E+00	5.768E-07	0.000E+00	2.350E-07	0.000E+00
10	1.625E-06	1.383E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
11	0.000E+00	1.467E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
12	4.592E-06	1.469E-06	1.708E-06	0.000E+00	0.000E+00	0.000E+00	2.352E-07	0.000E+00
13	0.000E+00	1.383E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
14	0.000E+00	0.000E+00	1.812E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
15	3.248E-06	0.000E+00	0.000E+00	8.679E-07	5.436E-07	0.000E+00	0.000E+00	0.000E+00
16	1.624E-06	0.000E+00	0.000E+00	0.000E+00	5.769E-07	0.000E+00	0.000E+00	0.000E+00
17	1.624E-06	0.000E+00	1.814E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
18	0.000E+00	2.942E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
19	1.628E-06	1.385E-06	1.713E-06	0.000E+00	0.000E+00	5.298E-07	0.000E+00	0.000E+00
20	4.792E-06	0.000E+00	1.713E-06	0.000E+00	5.784E-07	5.299E-07	0.000E+00	0.000E+00
21	3.074E-06	1.389E-06	1.820E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
22	4.303E-06	1.375E-06	0.000E+00	8.133E-07	0.000E+00	4.957E-07	0.000E+00	2.565E-07
23	6.349E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.366E-07	0.000E+00
24	1.543E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
25	4.629E-06	0.000E+00	0.000E+00	8.243E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
26	3.093E-06	1.483E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
27	0.000E+00	1.484E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.245E-07	0.000E+00
28	1.641E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
29	0.000E+00	0.000E+00	1.731E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.772E-07
30	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
31	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
32	0.000E+00	1.489E-06	3.574E-06	0.000E+00	5.531E-07	0.000E+00	0.000E+00	0.000E+00
33	1.564E-06	0.000E+00	1.843E-06	8.350E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
34	4.778E-06	0.000E+00	1.743E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
35	4.686E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
36	1.142E-05	1.499E-06	1.746E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
37	1.658E-06	1.499E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
38	4.473E-06	1.320E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
39	3.323E-06	1.415E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
40	6.449E-06	1.414E-06	3.496E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.796E-07
41	3.211E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.399E-07	0.000E+00
42	4.972E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
43	6.696E-06	1.542E-06	0.000E+00	9.071E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
44	6.888E-06	1.452E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
45	8.501E-06	1.464E-06	1.818E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
46	8.571E-06	1.593E-06	3.934E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
47	1.378E-05	1.591E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

208	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
209	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
210	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
211	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
3	0	4	2	1	0	1	0
1	1	2	5	3	1	2	0
3	2	3	2	4	3	0	0
1	2	2	5	0	1	2	0
2	1	0	1	2	1	0	1
1	2	3	0	2	2	1	0
1	4	3	3	2	1	1	1
2	4	1	3	6	1	1	0
3	4	3	4	4	2	1	4
6	5	6	6	5	1	0	0
4	2	4	1	3	1	1	0
7	3	5	6	3	0	0	0
4	4	5	8	3	4	2	0
2	6	10	5	3	1	3	2
7	8	1	4	4	5	1	0
4	4	2	6	5	1	2	0
6	2	2	8	3	2	2	0
6	7	6	4	5	0	1	1
11	11	9	4	7	2	1	1
8	12	6	17	4	0	3	0
21	14	10	10	4	0	0	0
31	19	8	16	6	3	2	0
28	21	10	14	5	0	1	1
26	20	11	13	9	2	2	1
37	26	18	14	12	4	1	0
41	32	24	25	5	1	1	1
42	33	12	10	8	2	2	1
45	50	13	13	13	5	2	0
44	46	27	27	10	1	2	1
59	32	21	26	4	1	1	0
54	37	17	28	14	2	3	0
63	36	19	23	15	2	2	0
81	54	18	19	14	2	1	0

64	54	27	30	14	6	1	1
86	60	33	23	14	3	0	0
80	58	23	24	9	5	0	0
97	73	24	25	14	1	2	2
106	52	27	19	12	1	0	0
90	59	24	23	10	3	0	0
67	42	18	18	9	3	3	1
88	74	27	37	9	4	0	0
138	108	36	39	15	4	1	0
184	123	56	45	12	4	0	0
197	120	48	42	27	5	2	0
277	119	62	51	26	6	1	0
225	155	61	59	16	8	2	1
267	168	60	45	28	5	1	1
293	161	52	37	21	4	0	0
328	205	73	53	20	1	3	0
306	179	70	59	23	2	4	1
307	187	65	67	19	3	3	2
278	177	59	48	26	2	0	0
327	170	52	52	20	2	1	0
297	151	64	47	18	5	0	1
349	163	65	56	27	2	0	0
315	195	62	61	20	3	0	0
341	177	88	69	19	5	0	0
348	173	81	46	25	3	0	0
322	185	75	54	19	4	0	1
353	181	69	54	16	9	1	0
382	154	65	47	23	4	1	1
304	153	46	40	20	1	1	1
321	170	70	47	10	4	3	0
305	182	71	40	18	4	5	0
333	162	63	54	10	4	2	0
307	165	55	61	16	1	1	1
312	153	71	49	24	2	1	1
312	170	67	44	15	8	0	0
323	173	55	55	21	6	1	0
287	150	54	64	22	5	2	0
312	152	81	52	19	5	0	0
336	184	63	54	22	8	4	1
400	213	93	57	19	6	0	1

420	245	72	81	21	8	2	0
425	198	91	66	25	5	2	0
448	231	92	72	20	3	0	0
463	237	92	64	21	5	0	0
458	264	62	49	20	4	1	1
526	221	99	67	22	2	0	0
458	241	78	60	19	2	2	1
494	256	101	80	17	6	0	0
510	249	85	74	22	2	1	1
458	200	89	70	16	3	0	2
458	241	84	72	25	1	2	0
468	254	89	62	26	4	0	0
427	198	80	63	11	6	1	2
460	211	86	58	16	2	1	0
426	231	74	44	25	3	3	0
425	208	73	61	17	4	0	1
396	233	65	42	18	1	0	0
397	218	80	61	17	4	0	1
404	195	75	51	18	4	0	1
406	183	78	48	6	3	0	0
387	175	58	44	20	4	0	0
416	146	73	60	19	5	0	1
404	163	64	58	11	0	0	0
378	165	57	39	20	2	1	0
382	204	73	42	10	5	1	2
400	204	53	31	12	3	0	0
463	217	80	56	15	3	0	0
416	195	74	54	9	2	2	0
409	190	52	45	13	1	1	0
407	184	78	40	10	2	0	1
403	180	47	55	16	4	0	0
384	168	60	37	14	4	1	0
368	172	68	40	11	1	0	0
370	173	67	30	10	3	0	0
341	159	56	41	15	2	2	1
362	154	45	29	13	0	1	0
333	140	34	30	15	2	1	1
316	148	52	27	7	1	0	0
322	140	46	33	11	5	0	0
341	136	40	35	9	2	0	0

320	148	55	29	12	3	2	0
335	137	39	31	9	1	0	0
313	131	49	26	12	4	0	0
334	148	52	32	13	0	1	0
310	140	28	39	11	1	2	0
316	115	38	33	5	3	0	0
340	129	43	18	7	4	0	0
291	120	36	32	8	0	1	1
277	135	37	28	7	0	1	0
261	122	37	25	3	1	0	1
259	118	33	27	5	0	0	0
220	117	26	26	7	0	0	0
254	111	37	23	6	0	0	0
246	97	24	17	8	1	0	0
233	98	30	14	7	1	1	0
246	106	23	10	6	0	0	0
227	78	21	27	4	2	3	1
230	78	29	23	6	1	0	2
206	91	40	21	2	0	1	1
196	73	30	13	4	0	1	1
199	87	20	14	4	0	0	2
181	79	19	21	1	2	1	0
173	77	22	18	0	0	0	1
213	70	16	11	3	0	0	1
191	85	27	16	2	0	0	0
196	63	24	14	2	1	0	0
181	59	21	10	3	0	1	0
176	87	15	10	3	1	0	0
194	63	22	7	6	0	0	0
201	55	14	12	2	3	0	0
176	75	27	9	2	0	0	1
212	94	25	15	5	1	1	0
136	62	15	6	3	0	1	1
141	39	12	8	3	0	1	0
117	36	7	7	5	2	0	0
106	46	12	8	2	0	1	1
96	29	9	6	1	0	1	0
75	25	12	7	0	0	0	0
79	15	11	1	2	1	0	0
66	22	5	2	1	0	0	0

63	33	7	3	3	0	1	2
46	16	5	4	0	0	0	1
41	18	5	4	0	0	0	1
43	23	2	2	3	0	0	0
38	24	3	3	1	0	0	0
43	9	3	2	0	0	0	0
58	17	4	4	0	0	0	1
56	17	5	4	1	0	0	0
62	18	4	4	0	0	0	1
51	25	8	5	0	0	0	1
62	17	6	2	0	0	2	0
58	25	11	4	1	0	1	1
50	16	2	4	0	0	0	0
41	16	3	1	1	0	1	0
36	10	2	3	1	0	0	0
26	10	6	0	2	0	1	1
36	9	0	2	1	0	1	1
23	11	4	2	0	0	0	0
27	13	2	3	1	0	1	0
25	10	4	2	0	1	0	1
10	10	1	0	0	0	0	0
11	6	2	2	0	0	0	0
4	3	1	1	1	0	1	0
5	3	0	0	0	0	0	1
7	2	0	1	0	0	0	0
6	0	0	1	0	1	1	2
10	1	0	0	0	0	0	0
4	5	0	1	1	0	0	0
6	5	0	1	0	0	1	0
4	1	0	0	0	0	0	0
5	3	0	1	0	0	0	2
5	2	1	1	0	0	0	1
7	1	1	0	2	0	0	0
2	1	1	1	0	0	0	0
5	4	1	0	1	0	0	0
10	2	3	2	1	0	0	0
2	5	1	0	1	0	0	0
8	0	3	0	0	0	0	1
7	2	0	0	0	0	0	0
8	1	1	2	0	0	0	1

12	2	1	0	1	0	0	0
1	3	2	0	1	0	0	0
3	1	0	0	0	0	0	1
6	0	3	1	0	0	0	0
6	0	0	0	0	0	1	0
3	1	1	1	0	0	0	1
5	0	0	1	0	0	0	0
10	0	0	1	0	0	1	0
4	0	0	1	0	0	1	0
5	1	0	1	2	0	1	1
7	2	0	0	0	2	1	1
1	1	0	1	0	0	0	1
6	3	1	0	0	0	0	0
4	2	1	0	0	1	0	0
1	1	0	0	0	0	1	1
5	1	0	0	1	0	1	0
6	3	0	0	0	1	0	0
9	1	1	1	0	1	0	0

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
1	1	0	0	0	0	1	0
0	0	0	0	0	0	0	0
2	0	0	0	1	0	0	0
1	0	0	2	1	0	0	0
0	0	0	1	0	0	0	1
0	1	0	0	0	0	0	0
4	0	0	0	3	0	0	0
0	1	0	0	1	0	1	0
1	1	0	0	0	0	0	0
0	1	0	0	0	0	0	0
3	1	1	0	0	0	1	0
0	1	0	0	0	0	0	0
0	0	1	0	0	0	0	0
2	0	0	1	1	0	0	0
1	0	0	0	1	0	0	0
1	0	1	0	0	0	0	0
0	2	0	0	0	0	0	0
1	1	1	0	0	1	0	0

3	0	1	0	1	1	0	0
2	1	1	0	0	0	0	0
3	1	0	1	0	1	0	1
4	0	0	0	0	0	1	0
1	0	0	0	0	0	0	0
3	0	0	1	0	0	0	0
2	1	0	0	0	0	0	0
0	1	0	0	0	0	1	0
1	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	1	2	0	1	0	0	0
1	0	1	1	0	0	0	0
3	0	1	0	0	0	0	0
3	0	0	0	0	0	0	0
7	1	1	0	0	0	0	0
1	1	0	0	0	0	0	0
3	1	0	0	0	0	0	0
2	1	0	0	0	0	0	0
4	1	2	0	0	0	0	1
2	0	0	0	0	0	1	0
3	0	0	0	0	0	0	0
4	1	0	1	0	0	0	0
4	1	0	0	0	0	0	0
5	1	1	0	0	0	0	0
5	1	2	0	0	0	0	0
8	1	0	0	0	0	0	0
3	0	0	0	0	0	0	0
6	1	2	0	0	0	0	0
6	1	1	0	0	0	0	0
5	1	0	0	0	0	0	0
8	1	0	0	0	0	0	0
2	0	0	0	0	0	1	0
6	0	1	1	0	0	2	0
3	0	0	0	0	0	0	0
4	0	0	0	1	0	0	0
6	2	0	1	0	0	0	0
5	2	1	0	0	0	0	0
9	0	0	0	0	0	0	0

7	2	2	0	1	0	0	0
6	0	0	0	0	0	1	0
4	1	0	1	0	0	0	0
2	1	0	0	0	0	0	1
6	1	1	0	0	0	0	0
4	2	0	0	0	0	0	0
5	1	0	0	0	0	0	0
3	1	0	0	0	0	0	0
7	1	0	0	0	0	0	1
4	1	0	0	0	0	0	0
3	2	0	0	0	0	0	0
4	1	0	0	0	0	0	0
3	0	1	0	0	0	0	0
5	1	0	0	0	0	0	0
4	0	0	0	0	0	0	0
2	1	0	0	0	0	0	0
4	2	1	0	0	1	0	0
8	0	0	0	0	0	0	1
9	1	0	0	0	0	0	0
3	2	0	0	0	0	0	0
4	3	0	0	0	0	0	0
6	1	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	1	0	0	0	0	0
5	1	0	0	0	0	0	0
6	1	0	0	0	0	0	0
9	0	0	0	0	0	1	0
4	0	0	0	0	0	0	0
3	0	0	0	0	1	0	0
1	1	0	0	0	0	0	0
6	0	0	0	0	0	0	0
8	2	0	0	0	0	0	0
6	1	1	0	0	0	0	0
8	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
2	0	0	0	0	0	1	0
5	1	0	0	0	0	0	0
4	0	0	0	0	0	0	0
7	0	0	0	0	0	0	1
5	1	0	0	0	0	0	0

8	0	0	1	0	0	0	0
5	0	0	0	0	0	0	0
4	1	0	1	0	0	0	0
6	0	0	0	0	0	0	0
3	1	0	0	0	0	0	0
1	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0
1	2	0	1	0	0	0	0
2	0	0	0	0	0	0	0
7	1	0	0	0	0	0	0
4	0	1	0	0	0	0	0
5	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
4	1	0	0	0	0	0	0
1	1	0	0	0	0	0	0
2	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
6	0	0	1	0	0	0	0
4	0	0	0	0	0	0	0
2	1	0	0	0	0	0	0
6	0	0	0	0	0	0	0
3	0	0	0	0	0	0	1
2	1	1	0	0	0	1	0
4	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	1	0	1
1	0	0	0	0	0	0	1
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
3	0	0	0	0	1	0	0
0	0	0	0	0	0	0	0
3	1	0	0	0	0	0	0
3	0	0	0	0	0	0	0
1	1	0	0	0	0	0	0

0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	1
0	0	0	0	0	0	0	1
0	1	0	0	0	0	0	0
1	0	0	0	0	0	0	0
5	0	1	1	0	0	0	0
2	0	0	0	0	0	1	0
3	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	1	0
0	0	0	0	0	0	2	0
0	0	0	0	0	0	0	0
0	0	0	0	0	1	1	1
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0
0	0	0	0	1	0	0	0
2	0	0	0	0	0	0	0
0	0	0	1	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	1	1	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	1	0	1	1	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	1	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	1	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	1	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	1	0	0	0	0	0	0
0	0	0	0	0	0	1	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	1	0
1	0	0	0	0	0	1	1
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

a = 1.018 (0.9065, 1.129)
 b = -0.2553 (-0.2715, -0.239)
 c = 0.0008673 (-0.007501, 0.009235)
 d = -0.03335 (-0.3157, 0.249)

goftotal =

sse: 1.0008e-006
 rsquare: 0.9999
 dfe: 4
 adjrsquare: 0.9998
 rmse: 5.0021e-004

ctotal =

General model Exp1:

$ctotal(x) = a * \exp(b * x)$

Coefficients (with 95% confidence bounds):

a = 0.4577 (0.3297, 0.5856)
 b = -0.2091 (-0.2235, -0.1948)

goftotal =

sse: 1.3058e-008
 rsquare: 9.9976e-001
 dfe: 3
 adjrsquare: 9.9968e-001
 rmse: 6.5975e-005

Event 95	Date		Time*	Location*			Summing interval*	
	22-Aug-05		1727	S12W60			Aug 22 1700 Aug 26 0000	
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	1.898E-04	6.354E-05	1.282E-05	3.087E-06	5.247E-06	9.760E-07	0.000E+00	0.000E+00
2	1.585E-04	4.945E-05	3.117E-05	1.141E-05	5.546E-06	0.000E+00	1.376E-06	0.000E+00
3	2.849E-04	1.181E-04	7.976E-05	2.645E-05	1.311E-05	3.026E-06	9.091E-07	5.514E-07
4	1.431E-03	5.946E-04	2.890E-04	9.995E-05	2.212E-05	8.154E-06	3.645E-06	6.359E-07
5	3.549E-03	1.468E-03	3.589E-04	1.983E-04	5.542E-05	1.898E-05	5.515E-06	0.000E+00

6	1.538E-02	6.362E-03	2.611E-03	1.027E-03	2.185E-04	5.671E-05	1.392E-05	1.431E-06
7	2.861E-02	1.120E-02	4.747E-03	1.846E-03	4.841E-04	1.311E-04	1.966E-05	5.999E-06
8	2.662E-02	1.099E-02	5.068E-03	1.955E-03	5.286E-04	1.691E-04	1.920E-05	4.498E-06
9	2.846E-02	1.115E-02	5.353E-03	2.012E-03	5.494E-04	1.536E-04	3.029E-05	0.000E+00
10	2.752E-02	1.138E-02	4.765E-03	1.880E-03	5.338E-04	1.678E-04	1.678E-05	0.000E+00
11	2.895E-02	1.161E-02	5.210E-03	2.194E-03	6.537E-04	1.320E-04	2.726E-05	1.431E-06
12	2.254E-02	9.474E-03	3.969E-03	1.590E-03	4.972E-04	1.033E-04	1.372E-05	1.410E-06
13	2.137E-02	8.764E-03	3.892E-03	1.673E-03	4.447E-04	1.285E-04	2.184E-05	4.107E-06
14	2.670E-02	1.152E-02	5.451E-03	2.240E-03	6.074E-04	1.716E-04	1.388E-05	0.000E+00
15	3.199E-02	1.399E-02	6.137E-03	2.820E-03	7.147E-04	2.088E-04	1.927E-05	1.593E-06
16	2.762E-02	1.176E-02	5.826E-03	2.388E-03	6.367E-04	1.243E-04	9.976E-06	1.611E-06
17	2.791E-02	1.222E-02	5.232E-03	2.189E-03	5.751E-04	1.268E-04	1.430E-05	3.317E-06
18	3.022E-02	1.285E-02	6.098E-03	2.417E-03	5.793E-04	1.814E-04	1.124E-05	0.000E+00
19	2.463E-02	1.107E-02	5.416E-03	1.892E-03	4.921E-04	8.087E-05	1.790E-05	1.559E-06
20	2.062E-02	9.630E-03	3.761E-03	1.753E-03	4.442E-04	1.142E-04	1.622E-05	0.000E+00
21	2.378E-02	1.039E-02	4.633E-03	1.841E-03	4.247E-04	1.341E-04	1.285E-05	5.234E-06
22	2.169E-02	9.045E-03	3.769E-03	1.663E-03	4.308E-04	9.791E-05	1.501E-05	1.599E-06
23	1.902E-02	7.862E-03	3.454E-03	1.326E-03	3.102E-04	9.145E-05	9.783E-06	1.509E-06
24	1.733E-02	6.743E-03	2.893E-03	1.132E-03	3.039E-04	4.920E-05	4.571E-06	1.406E-06
25	1.559E-02	5.898E-03	2.501E-03	8.913E-04	2.216E-04	4.435E-05	2.284E-06	0.000E+00
26	1.341E-02	5.584E-03	2.345E-03	9.533E-04	1.924E-04	4.291E-05	6.389E-06	0.000E+00
27	1.401E-02	5.475E-03	2.026E-03	7.170E-04	1.903E-04	3.293E-05	4.170E-06	0.000E+00
28	1.358E-02	5.032E-03	2.245E-03	7.945E-04	1.627E-04	2.216E-05	3.264E-06	0.000E+00
29	1.458E-02	4.807E-03	2.259E-03	6.484E-04	1.542E-04	4.755E-05	2.289E-06	0.000E+00
30	1.703E-02	5.523E-03	2.177E-03	8.053E-04	1.448E-04	1.622E-05	0.000E+00	0.000E+00
31	1.531E-02	4.590E-03	1.945E-03	6.186E-04	1.142E-04	1.805E-05	1.343E-06	0.000E+00
32	1.286E-02	4.313E-03	1.482E-03	5.455E-04	1.643E-04	1.374E-05	3.841E-06	0.000E+00
33	1.102E-02	3.788E-03	1.516E-03	4.793E-04	1.120E-04	2.672E-05	2.243E-06	0.000E+00
34	1.004E-02	3.159E-03	1.144E-03	3.518E-04	5.940E-05	1.951E-05	0.000E+00	0.000E+00
35	8.593E-03	3.330E-03	1.250E-03	3.317E-04	7.594E-05	2.454E-06	2.741E-06	0.000E+00
36	9.494E-03	3.159E-03	1.228E-03	3.183E-04	4.749E-05	1.862E-05	9.971E-07	1.241E-06
37	9.071E-03	2.815E-03	9.910E-04	3.676E-04	4.811E-05	2.245E-06	1.080E-06	0.000E+00
38	7.680E-03	2.304E-03	7.739E-04	3.164E-04	4.745E-05	0.000E+00	1.041E-06	0.000E+00
39	7.998E-03	2.681E-03	8.154E-04	2.915E-04	2.863E-05	2.824E-06	4.317E-06	1.314E-06
40	1.513E-02	5.242E-03	1.974E-03	6.940E-04	1.708E-04	2.325E-05	4.376E-06	0.000E+00
41	1.526E-02	5.392E-03	1.927E-03	7.188E-04	1.263E-04	1.038E-05	2.168E-06	1.216E-06
42	4.979E-03	1.854E-03	6.467E-04	2.340E-04	4.988E-05	1.063E-05	4.009E-06	0.000E+00
43	4.012E-03	1.412E-03	5.099E-04	1.894E-04	3.591E-05	1.140E-05	7.124E-07	9.750E-07
44	2.775E-03	8.786E-04	3.350E-04	1.533E-04	2.423E-05	5.709E-06	3.899E-06	7.757E-07
45	2.759E-03	1.002E-03	4.243E-04	1.439E-04	3.741E-05	6.021E-06	6.460E-07	0.000E+00

46	3.524E-03	1.208E-03	4.632E-04	1.418E-04	3.254E-05	1.552E-06	7.607E-07	8.564E-07
47	4.949E-03	1.581E-03	5.648E-04	1.910E-04	3.638E-05	8.545E-06	1.576E-06	0.000E+00
48	3.984E-03	1.399E-03	4.508E-04	1.653E-04	4.631E-05	1.629E-05	2.349E-06	8.643E-07
49	3.368E-03	1.107E-03	3.902E-04	1.189E-04	4.162E-05	5.888E-06	0.000E+00	0.000E+00
50	3.231E-03	1.126E-03	3.371E-04	1.137E-04	3.052E-05	6.170E-06	0.000E+00	0.000E+00
51	2.276E-03	8.211E-04	2.555E-04	1.087E-04	2.385E-05	3.979E-06	0.000E+00	1.518E-06
52	2.162E-03	7.127E-04	2.658E-04	7.011E-05	2.363E-05	6.691E-06	5.733E-07	0.000E+00
53	2.198E-03	7.194E-04	3.105E-04	9.789E-05	2.675E-05	6.972E-06	6.416E-07	0.000E+00
54	1.555E-03	5.549E-04	2.031E-04	6.218E-05	1.839E-05	6.633E-06	0.000E+00	7.386E-07
55	1.042E-03	4.146E-04	1.456E-04	6.545E-05	1.042E-05	1.204E-06	5.524E-07	0.000E+00
56	9.731E-04	3.910E-04	8.570E-05	4.288E-05	1.227E-05	0.000E+00	0.000E+00	0.000E+00
57	8.578E-04	2.653E-04	9.591E-05	3.135E-05	1.223E-05	2.279E-06	4.953E-07	6.189E-07
58	7.585E-04	2.680E-04	9.936E-05	4.229E-05	6.011E-06	3.346E-06	0.000E+00	6.115E-07
59	7.285E-04	2.471E-04	1.069E-04	1.967E-05	7.188E-06	3.411E-06	5.036E-07	0.000E+00
60	6.588E-04	1.854E-04	1.131E-04	1.926E-05	5.729E-06	2.168E-06	9.984E-07	5.882E-07
61	6.272E-04	1.811E-04	8.325E-05	4.038E-05	5.889E-06	0.000E+00	0.000E+00	0.000E+00
62	5.214E-04	1.916E-04	9.013E-05	2.574E-05	3.518E-06	0.000E+00	0.000E+00	6.135E-07
63	4.208E-04	1.569E-04	7.507E-05	2.058E-05	5.786E-06	2.064E-06	0.000E+00	0.000E+00
64	4.925E-04	1.562E-04	5.028E-05	1.903E-05	3.386E-06	0.000E+00	0.000E+00	0.000E+00
65	3.920E-04	1.712E-04	3.251E-05	2.064E-05	3.146E-06	0.000E+00	4.199E-07	0.000E+00
66	3.630E-04	1.268E-04	4.924E-05	1.351E-05	3.414E-06	1.008E-06	0.000E+00	5.639E-07
67	3.174E-04	1.010E-04	2.093E-05	8.456E-06	2.247E-06	0.000E+00	0.000E+00	0.000E+00
68	2.779E-04	1.037E-04	5.222E-05	1.675E-05	1.089E-06	9.986E-07	0.000E+00	0.000E+00
69	2.284E-04	9.883E-05	4.116E-05	1.010E-05	2.146E-06	2.114E-06	0.000E+00	0.000E+00
70	1.999E-04	6.252E-05	2.396E-05	9.881E-06	1.127E-06	0.000E+00	4.648E-07	0.000E+00
71	1.696E-04	7.616E-05	2.367E-05	9.727E-06	1.126E-06	0.000E+00	0.000E+00	0.000E+00
72	1.562E-04	7.356E-05	1.664E-05	4.852E-06	1.121E-06	0.000E+00	8.986E-07	0.000E+00
73	1.800E-04	4.654E-05	6.574E-06	4.945E-06	0.000E+00	0.000E+00	4.361E-07	0.000E+00
74	1.393E-04	3.752E-05	2.026E-05	1.134E-05	1.119E-06	0.000E+00	4.599E-07	1.086E-06
75	1.074E-04	3.529E-05	1.693E-05	1.120E-05	2.165E-06	0.000E+00	0.000E+00	0.000E+00
76	1.234E-04	5.688E-05	6.936E-06	1.120E-05	1.115E-06	1.024E-06	4.598E-07	0.000E+00
77	1.144E-04	2.439E-05	6.919E-06	3.237E-06	2.226E-06	9.657E-07	0.000E+00	0.000E+00
78	6.710E-05	3.759E-05	1.342E-05	0.000E+00	1.111E-06	0.000E+00	0.000E+00	5.376E-07
79	8.919E-05	3.224E-05	6.882E-06	3.314E-06	2.214E-06	0.000E+00	4.298E-07	0.000E+00

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	1.331E-05	1.454E-06	1.790E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.876E-07

2	7.657E-06	1.350E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
3	4.898E-06	1.532E-06	5.465E-06	9.071E-07	0.000E+00	5.520E-07	0.000E+00	0.000E+00
4	1.345E-05	2.925E-06	1.816E-06	8.550E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
5	2.816E-05	1.160E-05	4.098E-06	2.933E-06	6.161E-07	1.207E-06	5.346E-07	0.000E+00
6	2.933E-05	7.893E-06	4.966E-06	5.009E-06	8.764E-07	0.000E+00	3.704E-07	0.000E+00
7	7.321E-05	1.166E-05	1.422E-05	4.245E-06	1.229E-06	0.000E+00	0.000E+00	0.000E+00
8	2.134E-04	5.769E-05	1.877E-05	6.678E-06	0.000E+00	0.000E+00	6.054E-07	0.000E+00
9	2.105E-04	6.686E-05	5.049E-05	1.940E-05	1.477E-06	1.281E-06	0.000E+00	0.000E+00
10	2.886E-04	1.139E-04	1.533E-05	2.584E-06	3.538E-06	0.000E+00	0.000E+00	0.000E+00
11	2.734E-04	1.263E-04	4.143E-05	1.016E-05	8.582E-06	0.000E+00	0.000E+00	0.000E+00
12	3.749E-04	9.882E-05	3.876E-05	1.306E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
13	2.608E-04	6.419E-05	2.786E-05	1.578E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
14	2.898E-04	8.873E-05	3.960E-05	6.383E-06	2.806E-06	1.234E-06	0.000E+00	0.000E+00
15	4.547E-04	1.372E-04	3.064E-05	1.396E-05	3.028E-06	0.000E+00	0.000E+00	8.214E-07
16	4.603E-04	1.184E-04	4.658E-05	1.936E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
17	4.103E-04	9.311E-05	2.747E-05	7.509E-06	5.134E-06	0.000E+00	0.000E+00	0.000E+00
18	4.182E-04	1.278E-04	3.079E-05	1.492E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
19	4.497E-04	1.125E-04	4.336E-05	2.840E-06	1.685E-06	0.000E+00	0.000E+00	0.000E+00
20	4.048E-04	1.433E-04	3.650E-05	7.396E-06	1.729E-06	0.000E+00	0.000E+00	0.000E+00
21	4.147E-04	9.342E-05	3.538E-05	2.486E-06	3.334E-06	0.000E+00	0.000E+00	0.000E+00
22	3.548E-04	8.045E-05	2.665E-05	1.261E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00
23	3.168E-04	4.027E-05	5.433E-06	2.306E-06	1.605E-06	1.565E-06	0.000E+00	0.000E+00
24	2.732E-04	4.399E-05	1.977E-05	6.864E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
25	2.059E-04	5.383E-05	1.872E-05	4.289E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
26	2.236E-04	5.046E-05	0.000E+00	2.105E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
27	1.722E-04	3.572E-05	1.316E-05	2.166E-06	1.326E-06	0.000E+00	0.000E+00	6.821E-07
28	1.413E-04	3.752E-05	4.035E-06	0.000E+00	0.000E+00	1.219E-06	0.000E+00	0.000E+00
29	1.555E-04	3.182E-05	8.556E-06	6.102E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
30	1.322E-04	2.906E-05	0.000E+00	4.485E-06	1.406E-06	0.000E+00	0.000E+00	0.000E+00
31	1.105E-04	2.291E-05	6.101E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
32	1.581E-04	2.685E-05	0.000E+00	0.000E+00	0.000E+00	1.671E-06	0.000E+00	0.000E+00
33	9.451E-05	3.675E-05	1.042E-05	4.801E-06	1.739E-06	0.000E+00	0.000E+00	0.000E+00
34	5.034E-05	1.292E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
35	8.154E-05	1.618E-05	4.929E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
36	5.960E-05	8.516E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
37	5.806E-05	1.419E-05	8.419E-06	0.000E+00	0.000E+00	0.000E+00	6.051E-07	0.000E+00
38	4.845E-05	3.351E-06	0.000E+00	4.035E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
39	3.817E-05	3.389E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
40	6.633E-05	1.032E-05	9.287E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
41	1.577E-04	1.766E-05	8.761E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
65	25	4	2	5	1	0	0
50	18	9	7	5	0	3	0
90	43	23	16	12	3	2	1
398	187	74	53	18	7	7	1
817	385	77	87	37	14	9	0
2301	1108	366	296	96	27	14	1
3145	1493	512	416	165	48	16	4
3165	1586	587	475	192	67	17	3
2970	1442	556	441	182	54	24	0
2857	1454	491	406	172	59	13	0
2905	1423	514	455	203	45	20	1
2723	1343	454	378	175	40	12	1
2706	1310	468	417	167	52	20	3
2888	1514	576	493	200	62	11	0
2677	1549	544	538	206	65	14	1
2603	1395	558	477	190	41	7	1
2787	1541	529	467	184	43	11	2
2545	1398	536	448	160	55	8	0
2514	1400	550	403	157	28	14	1
2291	1207	381	387	146	41	13	0
2416	1301	466	390	134	46	10	3
2376	1185	397	367	142	35	12	1
2247	1075	381	303	106	34	8	1
2152	963	334	270	109	19	4	1
2015	877	298	221	82	18	2	0
1801	859	290	245	74	18	6	0
1924	862	257	188	75	14	4	0
1780	757	271	200	61	9	3	0
1820	690	260	155	56	19	2	0
1713	645	208	157	42	5	0	0
1641	568	191	127	35	6	1	0
1461	562	155	118	54	5	3	0
1210	480	153	102	36	9	2	0
1166	420	122	78	20	7	0	0
993	443	134	73	25	1	2	0

1269	483	152	80	18	8	1	1
1276	456	129	99	19	1	1	0
1083	371	100	85	19	0	1	0
1052	405	99	74	11	1	4	1
1795	734	222	160	59	9	4	0
1837	773	223	172	46	4	2	1
900	381	107	81	26	6	5	0
796	321	94	71	20	7	1	1
635	229	70	67	16	4	6	1
618	257	87	61	24	4	1	0
701	275	85	55	19	1	1	1
916	335	96	68	19	5	2	0
770	309	80	61	26	10	3	1
741	279	79	50	26	4	0	0
664	266	64	45	18	4	0	0
538	222	56	49	16	3	0	2
503	192	57	31	15	5	1	0
518	193	68	44	18	5	1	0
382	156	46	29	13	5	0	1
282	128	36	34	8	1	1	0
274	126	22	23	10	0	0	0
243	86	25	17	10	2	1	1
218	88	26	23	5	3	0	1
213	83	29	11	6	3	1	0
196	63	31	11	5	2	2	1
187	62	23	23	5	0	0	0
157	66	25	15	3	0	0	1
128	55	21	12	5	2	0	0
151	55	14	11	3	0	0	0
129	65	10	13	3	0	1	0
113	45	14	8	3	1	0	1
99	36	6	5	2	0	0	0
87	37	15	10	1	1	0	0
72	36	12	6	2	2	0	0
64	23	7	6	1	0	1	0
54	28	7	6	1	0	0	0
50	27	5	3	1	0	2	0
58	17	2	3	0	0	1	0
45	14	6	7	1	0	1	2
35	13	5	7	2	0	0	0

40	21	2	7	1	1	1	0
37	9	2	2	2	1	0	0
22	14	4	0	1	0	0	1
29	12	2	2	2	0	1	0

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
5	1	0	0	0	0	0	0
3	1	3	1	0	1	0	0
8	2	1	1	0	0	0	0
15	7	2	3	1	2	2	0
13	4	2	4	1	0	1	0
21	4	4	2	1	0	0	0
44	14	4	3	0	0	1	0
47	18	11	9	1	1	0	0
58	27	3	1	2	0	0	0
53	30	8	4	5	0	0	0
73	22	7	5	0	0	0	0
60	17	6	7	0	0	0	0
71	25	9	3	2	1	0	0
92	33	6	6	2	0	0	1
73	24	8	7	0	0	0	0
73	20	5	3	3	0	0	0
79	30	6	6	0	0	0	0
73	23	7	1	1	0	0	0
77	33	7	3	1	0	0	0
88	20	6	1	2	0	0	0
69	19	5	5	0	0	0	0
66	10	1	1	1	1	0	0
62	11	4	3	0	0	0	0
49	14	4	2	0	0	0	0
55	14	0	1	0	0	0	0
44	10	3	1	1	0	0	1
37	11	1	0	0	1	0	0
39	9	2	3	0	0	0	0
32	8	0	2	1	0	0	0
21	5	1	0	0	0	0	0
32	6	0	0	0	1	0	0

20	9	2	2	1	0	0	0
11	3	0	0	0	0	0	0
18	4	1	0	0	0	0	0
13	2	0	0	0	0	0	0
15	4	2	0	0	0	1	0
13	1	0	2	0	0	0	0
10	1	0	0	0	0	0	0
17	3	2	0	0	0	0	0
36	5	2	0	0	0	0	0
32	6	2	0	0	0	0	0
16	5	0	0	0	0	0	0
14	4	0	2	0	0	0	1
16	3	1	0	1	0	0	1
10	4	0	0	0	0	0	0
17	5	0	1	0	0	0	0
22	3	0	1	0	1	0	0
17	5	3	0	1	0	0	0
17	2	3	1	0	0	1	0
18	2	1	1	1	0	0	0
7	1	1	1	1	0	0	1
12	3	0	0	0	0	0	0
13	2	1	0	1	0	0	0
11	1	0	0	0	0	0	0
4	2	1	0	0	0	0	0
7	0	0	1	0	0	0	0
7	1	0	0	0	0	0	0
6	1	2	0	0	0	0	0
1	1	1	0	0	0	0	0
2	3	0	0	0	0	0	0
3	1	0	0	0	0	0	0
1	0	0	0	0	0	0	0
3	1	0	0	0	0	0	1
3	0	0	0	0	0	0	0
1	2	1	0	0	0	0	0
1	0	1	0	0	0	0	0
1	0	0	0	1	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	1	0	0	0	0	1	0

2	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	1
1	1	0	0	0	0	0	0
1	0	0	0	0	0	0	0
1	0	0	0	1	0	0	0
2	0	0	0	0	0	0	0
0	0	0	0	0	0	1	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$\begin{aligned} a &= 7.274 \quad (5.791, 8.756) \\ b &= -0.287 \quad (-0.329, -0.245) \\ c &= 0.05303 \quad (-0.2603, 0.3664) \\ d &= -0.08072 \quad (-0.2924, 0.1309) \end{aligned}$$

goftotal =

$$\begin{aligned} \text{sse} &: 3.7427\text{e-}005 \\ \text{rsquare} &: 0.9999 \\ \text{dfe} &: 4 \\ \text{adjrsquare} &: 0.9998 \\ \text{rmse} &: 0.0031 \end{aligned}$$

ctotal =

General model Exp1:

$$ctotal(x) = a \cdot \exp(b \cdot x)$$

Coefficients (with 95% confidence bounds):

$$\begin{aligned} a &= 1.921 \quad (1.237, 2.604) \\ b &= -0.1972 \quad (-0.2154, -0.179) \end{aligned}$$

goftotal =

$$\begin{aligned} \text{sse} &: 6.9513\text{e-}007 \\ \text{rsquare} &: 9.9953\text{e-}001 \end{aligned}$$

dfe: 3
 adjrsquare: 9.9937e-001
 rmse: 4.8136e-004

Event 96	Date	Time*	Location*	Summing interval*				
	7-Sep-05	1740	s06e89	Sep 7 1700 to Sep 13 1900				
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	1.671E-05	4.777E-06	3.149E-06	0.000E+00	0.000E+00	9.320E-07	3.937E-07	4.914E-07
2	1.171E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
3	1.499E-05	2.561E-06	0.000E+00	1.626E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
4	3.005E-05	1.330E-05	3.189E-06	3.164E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
5	1.530E-05	1.887E-05	6.435E-06	6.481E-06	1.094E-06	9.493E-07	4.256E-07	1.100E-06
6	7.364E-05	1.596E-05	1.371E-05	6.411E-06	2.150E-06	2.995E-06	4.305E-07	0.000E+00
7	7.377E-05	3.216E-05	2.988E-05	9.593E-06	7.454E-06	1.930E-06	1.348E-06	5.719E-07
8	1.808E-04	1.302E-04	6.880E-05	2.612E-05	1.127E-05	4.154E-06	1.773E-06	0.000E+00
9	3.190E-04	1.715E-04	9.885E-05	7.479E-05	1.352E-05	8.402E-06	3.638E-06	5.310E-06
10	7.471E-04	3.503E-04	1.523E-04	6.071E-05	2.162E-05	1.197E-05	2.957E-06	2.491E-06
11	1.033E-03	4.275E-04	2.039E-04	5.282E-05	3.977E-05	1.344E-05	9.467E-06	4.987E-06
12	9.880E-04	4.605E-04	2.203E-04	1.211E-04	4.775E-05	2.375E-05	1.714E-05	4.461E-06
13	9.676E-04	4.409E-04	1.994E-04	1.191E-04	3.184E-05	2.389E-05	1.569E-05	1.189E-05
14	8.912E-04	4.210E-04	2.478E-04	1.142E-04	4.831E-05	2.999E-05	1.736E-05	1.153E-05
15	1.085E-03	6.285E-04	2.843E-04	1.525E-04	8.294E-05	4.131E-05	2.974E-05	1.298E-05
16	1.380E-03	6.978E-04	3.774E-04	2.294E-04	8.506E-05	6.370E-05	2.894E-05	1.160E-05
17	1.325E-03	6.686E-04	3.067E-04	1.936E-04	9.879E-05	6.111E-05	2.865E-05	1.746E-05
18	1.638E-03	7.443E-04	5.353E-04	2.266E-04	1.210E-04	8.430E-05	4.718E-05	1.887E-05
19	1.477E-03	8.138E-04	4.033E-04	2.516E-04	1.145E-04	9.058E-05	4.558E-05	1.736E-05
20	1.604E-03	7.151E-04	3.773E-04	2.524E-04	1.180E-04	7.322E-05	4.933E-05	2.752E-05
21	1.705E-03	8.765E-04	3.898E-04	2.466E-04	1.331E-04	7.983E-05	5.634E-05	2.624E-05
22	1.547E-03	7.863E-04	3.861E-04	2.707E-04	1.547E-04	8.760E-05	4.821E-05	2.098E-05
23	1.811E-03	8.435E-04	5.214E-04	2.885E-04	1.780E-04	1.372E-04	7.208E-05	2.767E-05
24	2.889E-03	1.356E-03	8.025E-04	5.353E-04	2.694E-04	1.723E-04	1.212E-04	3.736E-05
25	3.175E-03	1.738E-03	1.022E-03	6.422E-04	4.233E-04	3.038E-04	1.761E-04	5.738E-05
26	3.336E-03	1.865E-03	1.129E-03	7.415E-04	4.514E-04	3.177E-04	1.648E-04	6.512E-05
27	3.371E-03	1.863E-03	1.004E-03	6.606E-04	4.771E-04	2.887E-04	1.952E-04	6.552E-05
28	5.989E-03	2.936E-03	1.551E-03	9.570E-04	5.632E-04	4.132E-04	2.055E-04	6.640E-05
29	8.645E-03	4.755E-03	2.755E-03	1.560E-03	7.900E-04	5.546E-04	2.174E-04	5.879E-05
30	6.410E-03	3.577E-03	2.360E-03	1.483E-03	8.064E-04	5.421E-04	2.572E-04	7.048E-05
31	3.692E-03	2.502E-03	1.560E-03	9.257E-04	5.750E-04	3.519E-04	1.605E-04	5.268E-05

32	3.369E-03	1.948E-03	1.425E-03	9.712E-04	5.428E-04	3.751E-04	1.844E-04	4.549E-05
33	9.074E-03	5.100E-03	3.044E-03	1.765E-03	9.846E-04	6.709E-04	2.685E-04	5.924E-05
34	1.071E-02	6.825E-03	3.882E-03	2.487E-03	1.243E-03	7.374E-04	2.681E-04	7.165E-05
35	1.085E-02	5.829E-03	4.138E-03	2.638E-03	1.291E-03	6.729E-04	3.022E-04	8.167E-05
36	8.205E-03	4.682E-03	3.026E-03	1.904E-03	9.499E-04	6.244E-04	2.336E-04	5.404E-05
37	6.934E-03	4.033E-03	2.523E-03	1.501E-03	7.416E-04	4.685E-04	1.901E-04	3.644E-05
38	7.095E-03	4.092E-03	2.871E-03	1.644E-03	9.073E-04	4.836E-04	1.808E-04	4.442E-05
39	7.968E-03	4.577E-03	2.831E-03	1.730E-03	8.870E-04	5.045E-04	1.834E-04	4.685E-05
40	6.229E-03	3.924E-03	2.603E-03	1.486E-03	7.766E-04	4.377E-04	1.768E-04	2.862E-05
41	5.830E-03	3.417E-03	2.161E-03	1.402E-03	6.529E-04	3.681E-04	1.458E-04	3.931E-05
42	6.508E-03	3.539E-03	2.302E-03	1.402E-03	6.333E-04	3.496E-04	1.452E-04	3.426E-05
43	5.289E-03	3.094E-03	1.976E-03	1.212E-03	5.963E-04	3.264E-04	1.303E-04	2.350E-05
44	6.312E-03	3.569E-03	2.358E-03	1.471E-03	7.546E-04	3.733E-04	1.234E-04	3.184E-05
45	7.745E-03	4.551E-03	3.071E-03	1.803E-03	9.520E-04	4.928E-04	1.903E-04	4.238E-05
46	9.886E-03	6.390E-03	4.503E-03	2.494E-03	1.223E-03	5.904E-04	1.781E-04	6.115E-05
47	1.147E-02	7.796E-03	4.970E-03	3.091E-03	1.483E-03	7.023E-04	2.294E-04	5.397E-05
48	1.423E-02	9.088E-03	6.084E-03	4.056E-03	1.829E-03	7.830E-04	2.340E-04	4.780E-05
49	1.355E-02	8.790E-03	5.903E-03	3.568E-03	1.654E-03	7.385E-04	2.335E-04	5.395E-05
50	1.935E-02	1.154E-02	7.915E-03	4.562E-03	2.144E-03	8.825E-04	2.499E-04	5.249E-05
51	1.846E-02	1.307E-02	7.560E-03	4.586E-03	2.157E-03	9.982E-04	2.590E-04	5.809E-05
52	1.957E-02	1.283E-02	8.737E-03	4.917E-03	2.194E-03	9.351E-04	2.730E-04	5.157E-05
53	2.449E-02	1.486E-02	9.327E-03	5.862E-03	2.482E-03	1.015E-03	2.725E-04	5.668E-05
54	2.618E-02	1.657E-02	1.156E-02	6.573E-03	2.769E-03	1.090E-03	3.003E-04	4.156E-05
55	2.714E-02	1.640E-02	1.075E-02	5.934E-03	2.560E-03	1.023E-03	2.538E-04	3.523E-05
56	2.841E-02	1.917E-02	1.177E-02	6.506E-03	3.000E-03	1.075E-03	3.122E-04	3.540E-05
57	2.555E-02	1.757E-02	1.075E-02	6.481E-03	2.643E-03	1.094E-03	2.407E-04	5.736E-05
58	3.043E-02	1.830E-02	1.212E-02	6.760E-03	2.809E-03	1.130E-03	2.960E-04	3.927E-05
59	4.159E-02	2.544E-02	1.546E-02	8.883E-03	3.243E-03	1.410E-03	3.392E-04	3.373E-05
60	4.271E-02	2.655E-02	1.506E-02	8.017E-03	3.259E-03	1.321E-03	3.085E-04	2.188E-05
61	4.025E-02	2.489E-02	1.524E-02	8.875E-03	3.555E-03	1.216E-03	2.635E-04	2.375E-05
62	4.262E-02	2.525E-02	1.587E-02	8.368E-03	3.266E-03	1.182E-03	2.413E-04	4.108E-05
63	4.899E-02	3.006E-02	1.733E-02	9.486E-03	3.649E-03	1.253E-03	2.232E-04	1.253E-05
64	5.380E-02	2.953E-02	1.706E-02	9.214E-03	3.302E-03	1.104E-03	2.813E-04	1.952E-05
65	5.419E-02	3.597E-02	1.831E-02	1.046E-02	3.458E-03	1.313E-03	3.274E-04	2.438E-05
66	5.886E-02	3.190E-02	1.830E-02	1.010E-02	3.927E-03	1.115E-03	2.737E-04	2.472E-05
67	5.573E-02	3.316E-02	1.893E-02	9.974E-03	3.944E-03	1.226E-03	2.294E-04	2.534E-05
68	5.422E-02	3.082E-02	1.755E-02	9.049E-03	3.457E-03	1.139E-03	2.035E-04	2.446E-05
69	4.956E-02	2.918E-02	1.790E-02	8.391E-03	3.033E-03	9.963E-04	1.658E-04	1.907E-05
70	4.929E-02	2.859E-02	1.642E-02	8.355E-03	2.771E-03	9.429E-04	1.431E-04	1.454E-05
71	5.138E-02	3.156E-02	1.659E-02	8.789E-03	2.883E-03	9.982E-04	1.865E-04	1.427E-05

72	4.961E-02	3.095E-02	1.713E-02	8.320E-03	2.786E-03	9.802E-04	1.318E-04	1.917E-05
73	4.932E-02	3.220E-02	1.867E-02	8.387E-03	3.123E-03	8.669E-04	1.505E-04	1.480E-05
74	5.428E-02	3.045E-02	1.712E-02	8.968E-03	2.731E-03	7.821E-04	1.664E-04	1.459E-05
75	5.370E-02	3.001E-02	1.826E-02	8.865E-03	2.814E-03	8.403E-04	1.714E-04	1.915E-05
76	5.176E-02	3.382E-02	1.631E-02	8.370E-03	2.441E-03	6.572E-04	1.317E-04	1.433E-05
77	5.624E-02	3.213E-02	1.608E-02	7.858E-03	2.627E-03	8.389E-04	1.273E-04	3.404E-05
78	6.626E-02	3.325E-02	1.789E-02	7.855E-03	2.300E-03	8.273E-04	1.396E-04	1.908E-05
79	5.872E-02	3.200E-02	1.801E-02	7.929E-03	2.497E-03	6.517E-04	1.370E-04	1.505E-05
80	5.773E-02	3.659E-02	1.912E-02	8.430E-03	2.625E-03	6.969E-04	7.334E-05	1.423E-05
81	5.951E-02	2.952E-02	1.451E-02	7.106E-03	1.891E-03	5.415E-04	1.197E-04	9.136E-06
82	4.950E-02	4.305E-02	1.300E-02	6.258E-03	1.534E-03	5.178E-04	8.724E-05	5.130E-06
83	5.152E-02	2.643E-02	1.077E-02	5.359E-03	1.290E-03	3.487E-04	6.350E-05	4.826E-06
84	5.124E-02	3.378E-02	1.023E-02	4.835E-03	1.445E-03	3.375E-04	5.593E-05	1.032E-05
85	3.917E-02	2.055E-02	8.025E-03	3.305E-03	9.710E-04	1.965E-04	3.470E-05	4.742E-06
86	2.747E-02	1.438E-02	6.542E-03	2.414E-03	6.841E-04	1.714E-04	2.262E-05	0.000E+00
87	2.472E-02	1.209E-02	5.668E-03	2.292E-03	6.714E-04	1.350E-04	2.252E-05	0.000E+00
88	2.321E-02	1.113E-02	4.712E-03	1.838E-03	4.561E-04	1.621E-04	1.899E-05	0.000E+00
89	2.346E-02	1.084E-02	4.134E-03	1.922E-03	6.117E-04	1.684E-04	1.485E-05	4.571E-06
90	2.533E-02	1.070E-02	4.374E-03	2.012E-03	5.256E-04	1.424E-04	4.141E-05	0.000E+00
91	2.098E-02	1.012E-02	3.566E-03	1.741E-03	3.731E-04	9.112E-05	1.474E-05	4.787E-06
92	1.995E-02	9.596E-03	3.405E-03	1.837E-03	2.779E-04	6.645E-05	1.148E-05	4.792E-06
93	1.792E-02	8.383E-03	3.108E-03	1.184E-03	3.414E-04	1.086E-04	7.416E-06	0.000E+00
94	1.928E-02	7.919E-03	4.144E-03	1.249E-03	3.298E-04	9.113E-05	1.817E-05	0.000E+00
95	1.810E-02	7.965E-03	3.614E-03	1.122E-03	2.052E-04	4.146E-05	1.477E-05	0.000E+00
96	1.689E-02	7.515E-03	3.122E-03	1.376E-03	2.510E-04	1.228E-04	1.876E-05	0.000E+00
97	1.812E-02	7.657E-03	3.100E-03	1.312E-03	3.143E-04	9.972E-05	1.042E-05	0.000E+00
98	1.656E-02	7.109E-03	2.659E-03	1.013E-03	3.454E-04	9.815E-05	1.093E-05	0.000E+00
99	1.428E-02	7.593E-03	2.393E-03	1.162E-03	3.032E-04	3.338E-05	0.000E+00	0.000E+00
100	1.543E-02	5.835E-03	2.264E-03	8.113E-04	2.138E-04	6.417E-05	7.348E-06	0.000E+00
101	1.350E-02	5.672E-03	2.099E-03	9.554E-04	3.461E-04	4.866E-05	1.467E-05	4.449E-06
102	1.291E-02	5.994E-03	2.410E-03	9.742E-04	2.392E-04	1.057E-04	2.555E-05	0.000E+00
103	1.177E-02	5.460E-03	2.231E-03	9.303E-04	2.552E-04	6.490E-05	1.065E-05	0.000E+00
104	1.204E-02	5.136E-03	1.820E-03	9.874E-04	2.483E-04	9.057E-05	3.766E-06	0.000E+00
105	1.079E-02	4.778E-03	1.629E-03	9.658E-04	1.935E-04	4.993E-05	1.837E-05	0.000E+00
106	1.001E-02	4.980E-03	1.808E-03	9.135E-04	2.222E-04	4.991E-05	0.000E+00	0.000E+00
107	1.044E-02	5.082E-03	1.976E-03	8.302E-04	1.765E-04	8.108E-05	3.759E-06	0.000E+00
108	9.407E-03	4.012E-03	1.536E-03	6.801E-04	9.709E-05	6.616E-05	0.000E+00	0.000E+00
109	9.730E-03	4.126E-03	1.950E-03	8.173E-04	1.791E-04	4.051E-05	7.514E-06	0.000E+00
110	7.940E-03	3.227E-03	1.433E-03	6.809E-04	1.606E-04	4.093E-05	2.186E-05	0.000E+00
111	7.485E-03	3.092E-03	1.753E-03	7.118E-04	1.498E-04	1.054E-04	3.745E-06	0.000E+00

112	5.118E-03	2.668E-03	1.400E-03	4.217E-04	1.325E-04	2.411E-05	7.053E-06	4.405E-06
113	4.892E-03	2.576E-03	9.542E-04	4.432E-04	8.169E-05	2.204E-05	6.575E-06	0.000E+00
114	4.533E-03	1.815E-03	6.836E-04	3.300E-04	8.644E-05	1.621E-05	7.254E-06	0.000E+00
115	4.745E-03	2.113E-03	8.097E-04	4.227E-04	8.051E-05	7.857E-06	0.000E+00	0.000E+00
116	3.823E-03	1.912E-03	6.033E-04	3.801E-04	3.623E-05	8.336E-06	0.000E+00	0.000E+00
117	3.317E-03	1.479E-03	9.012E-04	2.880E-04	1.231E-04	1.570E-05	3.515E-06	0.000E+00
118	2.767E-03	1.415E-03	4.622E-04	2.257E-04	3.462E-05	1.619E-05	7.246E-06	0.000E+00
119	1.887E-03	7.840E-04	4.091E-04	2.503E-04	4.468E-05	1.616E-05	3.511E-06	4.389E-06
120	1.250E-03	6.344E-04	3.027E-04	2.096E-04	3.615E-05	0.000E+00	0.000E+00	0.000E+00
121	1.279E-03	6.555E-04	4.598E-04	1.570E-04	9.036E-06	2.448E-05	3.510E-06	0.000E+00
122	8.269E-04	5.263E-04	1.885E-04	9.082E-05	8.514E-06	8.314E-06	0.000E+00	0.000E+00
123	8.771E-04	5.290E-04	1.902E-04	1.658E-04	3.561E-05	2.399E-05	0.000E+00	0.000E+00
124	6.277E-04	2.219E-04	2.431E-04	7.884E-05	0.000E+00	0.000E+00	3.723E-06	0.000E+00
125	7.573E-04	2.960E-04	1.472E-04	1.133E-04	1.604E-05	1.128E-06	6.456E-07	0.000E+00
126	6.342E-04	2.676E-04	1.432E-04	4.341E-05	2.180E-05	6.346E-06	9.575E-07	1.198E-06
127	6.119E-04	2.451E-04	1.504E-04	5.674E-05	1.154E-05	6.508E-06	4.889E-07	0.000E+00
128	5.867E-04	1.989E-04	1.298E-04	4.271E-05	1.031E-05	3.142E-06	0.000E+00	0.000E+00
129	5.300E-04	2.839E-04	1.109E-04	5.495E-05	2.281E-05	6.982E-06	4.291E-07	1.111E-06
130	4.362E-04	2.460E-04	8.533E-05	4.120E-05	1.836E-05	5.298E-06	4.573E-07	0.000E+00
131	4.442E-04	2.374E-04	1.256E-04	2.756E-05	1.612E-05	6.426E-06	1.439E-06	1.152E-06
132	5.798E-04	2.447E-04	1.183E-04	5.869E-05	1.387E-05	6.477E-06	9.762E-07	0.000E+00
133	5.124E-04	2.089E-04	1.170E-04	4.308E-05	9.264E-06	4.296E-06	4.592E-07	6.100E-07
134	4.409E-04	2.576E-04	1.608E-04	3.296E-05	1.256E-05	5.306E-06	4.848E-07	0.000E+00
135	4.549E-04	2.425E-04	8.157E-05	4.660E-05	1.139E-05	5.366E-06	0.000E+00	0.000E+00
136	4.287E-04	2.200E-04	1.137E-04	5.318E-05	1.596E-05	4.211E-06	0.000E+00	0.000E+00
137	3.447E-04	2.041E-04	8.156E-05	3.383E-05	1.247E-05	1.027E-05	9.373E-07	0.000E+00
138	3.813E-04	1.904E-04	8.127E-05	4.038E-05	1.146E-05	5.179E-06	0.000E+00	0.000E+00
139	4.679E-04	1.726E-04	1.261E-04	5.075E-05	1.125E-05	4.101E-06	9.064E-07	6.006E-07
140	4.219E-04	2.198E-04	9.759E-05	3.705E-05	9.109E-06	4.102E-06	1.358E-06	0.000E+00
141	4.402E-04	2.247E-04	9.757E-05	3.363E-05	1.237E-05	3.170E-06	9.341E-07	6.036E-07
142	3.702E-04	2.103E-04	1.343E-04	3.248E-05	1.375E-05	5.071E-06	0.000E+00	0.000E+00
143	4.422E-04	1.918E-04	1.186E-04	3.200E-05	1.349E-05	4.168E-06	1.863E-06	1.164E-06
144	3.959E-04	2.080E-04	9.390E-05	4.176E-05	1.002E-05	4.143E-06	1.349E-06	0.000E+00
145	3.585E-04	1.544E-04	9.478E-05	3.300E-05	1.168E-05	3.915E-06	4.446E-07	5.554E-07
146	3.210E-04	1.956E-04	8.334E-05	3.199E-05	1.244E-05	2.129E-06	0.000E+00	5.611E-07
147	3.135E-04	1.845E-04	6.634E-05	4.001E-05	7.814E-06	2.064E-06	1.400E-06	5.604E-07

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62

	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
4	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
5	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
6	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
7	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.069E-07	0.000E+00	0.000E+00
8	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.146E-06	5.396E-07	0.000E+00	0.000E+00
9	0.000E+00	0.000E+00	1.833E-06	1.719E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
10	0.000E+00	0.000E+00	1.814E-06	9.000E-07	0.000E+00	0.000E+00	2.436E-07	0.000E+00
11	3.575E-06	0.000E+00	2.018E-06	9.564E-07	1.240E-06	0.000E+00	0.000E+00	3.198E-07
12	5.296E-06	0.000E+00	6.049E-06	0.000E+00	1.918E-06	1.765E-06	0.000E+00	0.000E+00
13	5.572E-06	5.123E-06	4.184E-06	8.774E-06	3.201E-06	6.122E-07	2.702E-07	0.000E+00
14	5.629E-06	3.290E-06	0.000E+00	3.930E-06	6.726E-07	3.608E-06	2.789E-07	0.000E+00
15	7.364E-06	3.466E-06	4.084E-06	6.034E-06	2.603E-06	6.310E-07	0.000E+00	0.000E+00
16	1.702E-05	0.000E+00	1.463E-05	5.972E-06	3.437E-06	6.158E-07	5.476E-07	0.000E+00
17	1.173E-05	1.250E-05	9.001E-06	1.260E-05	2.740E-06	1.881E-06	8.537E-07	0.000E+00
18	1.310E-05	1.353E-05	1.268E-05	5.886E-06	3.374E-06	1.814E-06	5.268E-07	3.241E-07
19	3.493E-05	2.209E-05	1.596E-05	1.195E-05	5.743E-06	3.974E-06	2.861E-07	0.000E+00
20	2.222E-05	1.620E-05	1.585E-05	1.191E-05	5.077E-06	0.000E+00	8.691E-07	0.000E+00
21	3.256E-05	2.226E-05	2.314E-05	1.411E-05	6.417E-06	1.320E-06	5.936E-07	0.000E+00
22	3.055E-05	1.289E-05	3.231E-05	1.782E-05	1.098E-05	2.739E-06	3.073E-07	3.796E-07
23	4.508E-05	3.836E-05	4.136E-05	1.640E-05	5.151E-06	4.499E-06	9.068E-07	3.557E-07
24	4.008E-05	4.245E-05	3.927E-05	2.945E-05	9.123E-06	4.911E-06	0.000E+00	0.000E+00
25	7.090E-05	6.040E-05	4.751E-05	3.511E-05	8.683E-06	4.974E-06	6.616E-07	4.190E-07
26	8.866E-05	1.126E-04	6.558E-05	3.817E-05	1.496E-05	4.614E-06	9.978E-07	0.000E+00
27	1.455E-04	1.203E-04	9.145E-05	6.646E-05	2.075E-05	7.659E-06	1.693E-06	4.352E-07
28	1.574E-04	1.452E-04	8.460E-05	7.460E-05	2.660E-05	3.853E-06	2.011E-06	3.987E-07
29	1.464E-04	1.005E-04	1.104E-04	5.431E-05	2.182E-05	6.412E-06	2.193E-06	5.445E-07
30	1.757E-04	1.495E-04	1.275E-04	6.331E-05	1.232E-05	4.801E-06	1.269E-06	0.000E+00
31	2.194E-04	1.590E-04	9.778E-05	5.643E-05	2.321E-05	6.671E-06	1.535E-06	0.000E+00
32	2.099E-04	1.614E-04	6.211E-05	7.803E-05	1.922E-05	8.828E-06	1.569E-06	0.000E+00
33	1.932E-04	1.264E-04	8.830E-05	6.424E-05	1.373E-05	7.401E-06	1.075E-06	0.000E+00
34	3.116E-04	1.805E-04	1.100E-04	8.415E-05	3.472E-05	5.088E-06	2.040E-06	0.000E+00
35	3.896E-04	2.003E-04	1.493E-04	7.766E-05	2.419E-05	1.663E-05	1.038E-06	0.000E+00
36	4.141E-04	2.121E-04	1.447E-04	9.395E-05	2.580E-05	8.581E-06	2.436E-06	5.874E-07
37	3.391E-04	1.915E-04	1.587E-04	5.781E-05	2.310E-05	7.421E-06	1.430E-06	0.000E+00
38	2.709E-04	1.131E-04	1.051E-04	3.122E-05	2.110E-05	7.239E-06	8.782E-07	0.000E+00
39	2.238E-04	1.344E-04	5.066E-05	3.583E-05	1.749E-05	6.606E-06	1.475E-06	0.000E+00

40	2.317E-04	1.345E-04	7.803E-05	6.764E-05	1.619E-05	2.281E-06	0.000E+00	0.000E+00
41	2.428E-04	1.490E-04	6.247E-05	4.391E-05	1.105E-05	2.969E-06	4.312E-07	0.000E+00
42	1.935E-04	8.492E-05	9.144E-05	3.085E-05	8.866E-06	4.084E-06	8.723E-07	5.779E-07
43	1.521E-04	1.210E-04	5.314E-05	2.547E-05	7.247E-06	2.081E-06	9.446E-07	0.000E+00
44	1.917E-04	7.167E-05	4.538E-05	3.420E-05	8.988E-06	3.193E-06	1.377E-06	0.000E+00
45	1.863E-04	7.758E-05	4.635E-05	3.982E-05	4.759E-06	3.491E-06	9.769E-07	0.000E+00
46	2.344E-04	1.064E-04	4.314E-05	2.621E-05	1.793E-05	2.536E-06	1.219E-06	0.000E+00
47	2.569E-04	1.552E-04	7.675E-05	4.310E-05	7.689E-06	2.774E-06	6.484E-07	0.000E+00
48	3.612E-04	2.107E-04	9.323E-05	3.729E-05	1.241E-05	4.124E-06	0.000E+00	0.000E+00
49	5.146E-04	1.761E-04	1.018E-04	5.841E-05	2.093E-05	2.879E-06	0.000E+00	0.000E+00
50	4.639E-04	2.293E-04	1.074E-04	5.622E-05	5.786E-06	7.081E-06	5.820E-07	0.000E+00
51	4.589E-04	2.092E-04	1.374E-04	5.885E-05	1.165E-05	5.176E-06	0.000E+00	0.000E+00
52	4.790E-04	2.089E-04	1.191E-04	5.308E-05	2.142E-05	7.272E-06	1.615E-06	0.000E+00
53	5.068E-04	2.462E-04	9.732E-05	6.067E-05	1.797E-05	7.453E-06	0.000E+00	0.000E+00
54	6.911E-04	2.126E-04	1.304E-04	5.846E-05	1.709E-05	0.000E+00	0.000E+00	0.000E+00
55	6.483E-04	2.974E-04	1.028E-04	7.525E-05	2.220E-06	6.291E-06	9.279E-07	0.000E+00
56	6.182E-04	3.235E-04	1.395E-04	5.429E-05	1.964E-05	4.202E-06	9.757E-07	0.000E+00
57	6.410E-04	3.003E-04	1.369E-04	7.474E-05	7.384E-06	0.000E+00	0.000E+00	0.000E+00
58	5.582E-04	3.312E-04	5.792E-05	6.873E-05	2.269E-05	6.171E-06	9.979E-07	0.000E+00
59	6.458E-04	3.984E-04	1.488E-04	7.449E-05	2.394E-06	2.162E-06	3.354E-06	0.000E+00
60	1.102E-03	3.467E-04	1.500E-04	7.482E-05	1.890E-05	5.705E-06	0.000E+00	0.000E+00
61	7.181E-04	3.486E-04	1.250E-04	3.506E-05	2.343E-05	2.365E-06	0.000E+00	0.000E+00
62	8.983E-04	3.011E-04	1.101E-04	5.688E-05	2.771E-05	2.579E-06	1.246E-06	1.488E-06
63	9.513E-04	3.609E-04	1.319E-04	7.976E-05	6.086E-06	2.845E-06	1.360E-06	0.000E+00
64	5.876E-04	2.758E-04	2.128E-04	4.080E-05	6.902E-06	3.334E-06	0.000E+00	0.000E+00
65	4.928E-04	2.928E-04	1.215E-04	8.493E-05	1.033E-05	3.209E-06	0.000E+00	0.000E+00
66	6.979E-04	3.504E-04	2.668E-04	5.002E-05	1.713E-05	0.000E+00	0.000E+00	0.000E+00
67	1.624E-03	2.832E-04	1.159E-04	3.677E-05	9.746E-06	4.683E-06	0.000E+00	0.000E+00
68	1.559E-03	3.345E-04	2.940E-04	2.174E-05	1.858E-05	0.000E+00	2.014E-06	0.000E+00
69	8.083E-04	2.193E-04	1.249E-04	4.447E-05	4.854E-06	4.672E-06	1.955E-06	0.000E+00
70	8.594E-04	1.473E-04	1.613E-04	6.640E-05	4.828E-06	0.000E+00	0.000E+00	0.000E+00
71	9.836E-04	2.609E-04	1.454E-04	2.938E-05	4.736E-06	4.399E-06	0.000E+00	0.000E+00
72	6.690E-04	1.630E-04	1.799E-04	6.871E-05	5.083E-06	0.000E+00	1.953E-06	0.000E+00
73	9.902E-04	1.578E-04	1.162E-04	3.115E-05	2.519E-05	0.000E+00	0.000E+00	0.000E+00
74	4.457E-04	2.795E-04	1.787E-04	2.993E-05	1.002E-05	0.000E+00	1.957E-06	0.000E+00
75	8.555E-04	1.768E-04	6.689E-05	1.494E-05	4.994E-06	4.411E-06	0.000E+00	0.000E+00
76	4.434E-04	3.203E-04	6.857E-05	7.578E-05	5.082E-06	0.000E+00	0.000E+00	0.000E+00
77	7.098E-04	1.501E-04	1.333E-04	1.502E-05	1.016E-05	0.000E+00	0.000E+00	0.000E+00
78	4.141E-04	2.302E-04	1.704E-05	2.240E-05	0.000E+00	4.427E-06	0.000E+00	0.000E+00
79	5.146E-04	1.086E-04	5.084E-05	2.282E-05	0.000E+00	4.447E-06	0.000E+00	0.000E+00

120	3.900E-05	1.221E-05	2.930E-05	0.000E+00	0.000E+00	4.399E-06	0.000E+00	0.000E+00
121	3.898E-05	0.000E+00	1.421E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
122	2.624E-05	0.000E+00	0.000E+00	6.805E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
123	1.350E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
124	1.351E-05	1.150E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
125	5.322E-05	1.220E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
126	2.712E-05	2.116E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
127	5.051E-06	3.140E-06	0.000E+00	0.000E+00	5.984E-07	0.000E+00	0.000E+00	0.000E+00
128	1.036E-05	6.221E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
129	1.031E-05	3.108E-06	0.000E+00	9.493E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
130	1.118E-05	4.393E-06	0.000E+00	8.807E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
131	5.276E-06	3.091E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
132	1.375E-05	4.713E-06	0.000E+00	8.936E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
133	6.979E-06	1.603E-06	0.000E+00	0.000E+00	5.932E-07	0.000E+00	0.000E+00	0.000E+00
134	8.543E-06	1.504E-06	0.000E+00	9.443E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
135	1.213E-05	1.597E-06	1.969E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
136	3.428E-06	1.502E-06	0.000E+00	0.000E+00	0.000E+00	5.420E-07	0.000E+00	0.000E+00
137	1.163E-05	1.589E-06	1.969E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
138	1.194E-05	1.584E-06	1.843E-06	9.371E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
139	6.766E-06	4.723E-06	3.663E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
140	5.017E-06	4.625E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.926E-07
141	1.363E-05	1.483E-06	1.941E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
142	1.740E-06	0.000E+00	1.957E-06	0.000E+00	5.859E-07	0.000E+00	0.000E+00	2.948E-07
143	1.651E-06	1.576E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
144	5.007E-06	4.624E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
145	6.526E-06	0.000E+00	1.822E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
146	1.613E-06	0.000E+00	0.000E+00	8.620E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00
147	6.611E-06	2.941E-06	0.000E+00	1.794E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
6	2	1	0	0	1	1	1
4	0	0	0	0	0	0	0
5	1	0	1	0	0	0	0
10	5	1	2	0	0	0	0
5	7	2	4	1	1	1	2
24	6	4	4	2	3	1	0
24	12	9	6	7	2	3	1
57	47	20	16	10	4	4	0

98	61	28	44	12	8	8	9
220	118	41	34	18	11	6	4
296	140	54	29	33	12	19	8
283	151	58	66	39	21	34	7
276	144	52	65	26	21	31	19
250	135	64	61	39	26	34	18
298	197	72	80	65	35	57	20
365	211	91	116	64	52	53	17
369	214	79	103	79	53	55	27
421	219	126	111	89	67	84	27
383	241	96	124	85	73	82	25
410	209	89	123	86	58	87	39
430	252	90	119	96	62	99	37
396	231	91	132	113	70	86	30
446	238	117	136	124	105	123	38
681	366	174	240	182	127	199	49
709	444	210	273	271	210	273	71
742	476	231	315	286	220	254	80
755	479	207	282	307	201	305	82
971	543	231	295	262	210	233	59
1559	980	457	537	409	311	272	59
1325	851	449	589	481	351	373	82
862	668	335	413	385	256	260	69
705	470	279	390	332	248	271	54
1509	963	467	560	473	350	314	56
1558	1142	523	696	522	337	273	58
1704	1047	597	792	581	329	330	71
1321	861	449	585	437	311	262	48
1158	769	387	479	354	242	220	34
1065	702	396	470	389	225	189	37
1202	791	393	499	383	237	193	39
1048	755	403	477	373	229	206	27
964	646	331	442	308	190	167	36
1010	631	329	415	282	168	156	30
867	581	298	380	279	166	148	21
957	620	331	427	326	177	131	27
1040	700	379	465	368	206	179	32
1193	892	503	581	426	224	150	41
1359	1066	546	707	508	261	190	36
1555	1195	643	899	606	283	188	31

1657	1255	680	856	592	289	205	38
1685	1261	696	853	602	271	172	29
1545	1382	646	832	586	298	173	31
1591	1331	731	874	587	273	178	27
1632	1339	678	961	614	272	163	27
1568	1381	785	1014	638	279	172	19
1643	1337	714	873	568	248	137	15
1500	1380	707	909	628	248	161	15
1450	1365	676	973	598	273	135	26
1542	1279	697	927	583	252	151	16
1370	1353	690	936	514	252	135	11
1323	1358	659	865	534	237	124	7
1284	1313	686	969	593	221	108	8
1288	1314	688	909	533	212	97	13
1109	1363	698	980	576	217	86	4
1059	1527	714	889	498	187	107	6
957	1435	715	908	483	200	111	6
895	1241	611	755	435	144	77	6
906	1259	649	756	435	159	66	6
928	1129	580	627	362	132	53	5
873	1062	552	601	328	118	44	4
915	1051	531	574	295	110	37	3
847	1105	522	603	299	112	48	3
823	1107	537	568	284	113	34	4
800	1030	583	578	322	101	39	3
700	1063	523	624	282	91	43	3
641	1075	536	594	296	97	44	4
750	1084	507	569	256	76	34	3
664	1070	503	549	275	97	33	7
654	1085	514	517	238	96	36	4
562	1017	471	531	258	75	35	3
502	1003	439	543	252	80	19	3
411	928	405	497	202	65	32	2
361	786	348	379	152	58	22	1
447	746	300	362	131	39	16	1
439	727	274	328	146	38	14	2
754	658	248	217	103	23	9	1
634	557	216	174	74	20	6	0
652	484	190	166	73	16	6	0
675	462	162	134	50	19	5	0

702	454	142	141	67	20	4	1
794	456	152	147	58	17	11	0
719	442	126	128	41	11	4	1
735	425	121	136	31	8	3	1
684	374	112	88	38	13	2	0
734	353	148	93	37	11	5	0
699	357	130	84	23	5	4	0
654	337	112	103	28	15	5	0
757	368	120	105	38	13	3	0
645	319	96	76	39	12	3	0
556	341	86	87	34	4	0	0
603	262	82	61	24	8	2	0
530	255	76	72	39	6	4	1
506	270	87	73	27	13	7	0
464	245	81	70	29	8	3	0
475	232	66	74	28	11	1	0
426	216	59	73	22	6	5	0
395	225	66	69	25	6	0	0
411	230	72	63	20	10	1	0
372	181	56	51	11	8	0	0
383	187	71	62	20	5	2	0
315	146	52	51	18	5	6	0
297	140	64	54	17	13	1	0
203	121	51	32	15	3	2	1
207	125	37	36	10	3	2	0
180	82	25	25	10	2	2	0
189	96	30	32	9	1	0	0
152	87	22	29	4	1	0	0
132	67	33	22	14	2	1	0
110	65	17	17	4	2	2	0
75	36	15	19	5	2	1	1
50	29	11	16	4	0	0	0
51	30	17	12	1	3	1	0
33	24	7	7	1	1	0	0
35	24	7	13	4	3	0	0
25	10	9	6	0	0	1	0
110	46	20	25	7	1	1	0
192	92	40	25	19	6	2	2
185	85	42	33	10	6	1	0
179	69	36	25	9	3	0	0

173	106	33	34	21	7	1	2
133	86	24	24	16	5	1	0
135	83	35	16	14	6	3	2
176	85	33	34	12	6	2	0
156	73	33	25	8	4	1	1
135	90	45	19	11	5	1	0
139	85	23	27	10	5	0	0
131	77	32	31	14	4	0	0
106	72	23	20	11	10	2	0
118	67	23	24	10	5	0	0
145	61	36	30	10	4	2	1
131	78	28	22	8	4	3	0
136	80	28	20	11	3	2	1
114	74	38	19	12	5	0	0
137	68	34	19	12	4	4	2
123	74	27	25	9	4	3	0
120	59	29	21	11	4	1	1
100	70	24	19	11	2	0	1
98	66	19	24	7	2	3	1

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	1	0	0
0	0	0	0	2	1	0	0
0	0	1	2	0	0	0	0
0	0	1	1	0	0	1	0
2	0	1	1	2	0	0	1
3	0	3	0	3	3	0	0
3	3	2	9	5	1	1	0
3	2	0	4	1	6	1	0
4	2	2	6	4	1	0	0
9	0	7	6	5	1	2	0
6	7	4	12	4	3	3	0

7	8	6	6	5	3	2	1
17	12	7	11	8	6	1	0
11	9	7	11	7	0	3	0
16	12	10	13	9	2	2	0
15	7	14	16	15	4	1	1
22	21	18	15	7	7	3	1
19	22	17	26	12	7	0	0
32	30	19	30	11	7	2	1
38	53	25	31	18	6	3	0
62	57	35	53	25	10	5	1
68	69	33	60	32	5	6	1
46	35	31	32	19	6	5	1
60	57	39	41	12	5	3	0
87	71	35	42	26	8	4	0
94	80	25	65	24	12	5	0
79	57	33	49	16	9	3	0
101	65	32	50	31	5	5	0
109	62	38	41	19	14	2	0
124	71	39	53	22	8	5	1
105	65	44	33	20	7	3	0
86	40	30	19	19	7	2	0
64	43	13	19	14	6	3	0
67	43	20	37	13	2	0	0
78	53	18	26	10	3	1	0
61	30	26	18	8	4	2	1
45	40	14	14	6	2	2	0
60	25	13	20	8	3	3	0
54	25	12	22	4	3	2	0
61	32	10	13	13	2	2	0
59	40	16	19	5	2	1	0
82	53	19	16	8	3	0	0
107	43	20	24	13	2	0	0
107	61	23	25	4	5	1	0
77	42	22	21	6	3	0	0
76	40	19	18	11	4	2	0
78	47	15	20	9	4	0	0
87	35	17	18	8	0	0	0
75	45	13	21	1	3	1	0
71	47	18	15	8	2	1	0
65	41	15	20	3	0	0	0

62	45	7	20	10	3	1	0
65	49	16	19	1	1	3	0
56	35	13	16	6	2	0	0
46	30	11	7	7	1	0	0
56	31	9	13	9	1	1	1
58	29	11	16	2	1	1	0
30	26	17	8	2	1	0	0
22	29	10	16	3	1	0	0
28	27	19	8	5	0	0	0
36	22	7	5	2	1	0	0
35	28	11	3	4	0	1	0
32	17	8	6	1	1	1	0
34	11	10	9	1	0	0	0
28	20	9	4	1	1	0	0
22	12	11	9	1	0	1	0
37	12	7	4	5	0	0	0
16	21	6	4	2	0	1	0
25	13	4	2	1	1	0	0
12	23	4	10	1	0	0	0
22	11	8	2	2	0	0	0
12	17	1	3	0	1	0	0
11	8	3	3	0	1	0	0
15	10	5	4	1	1	0	0
10	7	1	2	0	0	1	0
8	10	3	2	0	1	0	0
9	5	5	2	0	0	0	0
3	10	0	5	2	2	0	0
3	9	2	3	1	0	0	0
26	11	6	3	1	0	0	0
23	6	3	1	0	0	0	0
39	6	2	3	0	0	0	0
33	12	4	2	3	0	0	0
27	6	1	2	0	0	0	0
25	10	1	0	0	0	0	0
20	7	2	2	0	0	0	0
26	6	2	1	0	0	0	0
24	2	4	0	0	0	0	0
16	5	0	3	0	0	0	0
15	5	0	4	0	0	0	0
22	4	0	0	0	0	0	0

9	8	1	1	1	0	0	0
17	3	1	1	0	0	0	0
15	2	1	0	0	0	0	0
9	3	0	1	0	1	0	0
11	1	2	2	0	0	0	0
9	1	0	0	1	0	0	0
6	5	0	2	0	0	0	0
6	1	1	0	1	0	0	0
16	3	0	0	0	0	0	0
6	3	0	1	0	0	0	0
5	2	1	2	0	0	0	0
8	3	5	0	0	0	0	0
7	0	1	0	0	0	0	0
10	3	0	1	1	0	0	0
5	2	1	1	0	0	0	0
6	1	0	0	1	0	0	0
6	1	1	0	0	0	0	0
3	5	0	1	0	0	0	0
2	0	1	0	0	0	0	0
4	1	0	1	0	0	0	0
3	2	0	0	0	0	0	0
5	0	0	0	0	0	0	0
3	1	2	0	0	1	0	0
3	0	1	0	0	0	0	0
2	0	0	1	0	0	0	0
1	0	0	0	0	0	0	0
1	1	0	0	0	0	0	0
4	1	0	0	0	0	0	0
9	1	0	0	0	0	0	0
3	2	0	0	1	0	0	0
6	4	0	0	0	0	0	0
6	2	0	1	0	0	0	0
7	3	0	1	0	0	0	0
3	2	0	0	0	0	0	0
8	3	0	1	0	0	0	0
4	1	0	0	1	0	0	0
5	1	0	1	0	0	0	0
7	1	1	0	0	0	0	0
2	1	0	0	0	1	0	0
7	1	1	0	0	0	0	0

7	1	1	1	0	0	0	0
4	3	2	0	0	0	0	0
3	3	0	0	0	0	0	1
8	1	1	0	0	0	0	0
1	0	1	0	1	0	0	1
1	1	0	0	0	0	0	0
3	3	0	0	0	0	0	0
4	0	1	0	0	0	0	0
1	0	0	1	0	0	0	0
4	2	0	2	0	0	0	0
4	1	0	0	0	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a * \exp(b * x) + c * \exp(d * x)$$

Coefficients (with 95% confidence bounds):

$$a = 8.845 \quad (6.347, 11.34)$$

$$b = -0.1761 \quad (-0.2233, -0.129)$$

$$c = 0.03855 \quad (-0.5045, 0.5816)$$

$$d = -0.02186 \quad (-0.3418, 0.2981)$$

goftotal =

sse: 0.0057

rsquare: 0.9983

dfe: 4

adjrsquare: 0.9970

rmse: 0.0378

self 20 TO 40:

ctotal =

General model Exp1:

$$ctotal(x) = a * \exp(b * x)$$

Coefficients (with 95% confidence bounds):

$$a = 4.471 \quad (2.292, 6.65)$$

$$b = -0.1367 \quad (-0.1607, -0.1127)$$

goftotal =

sse: 1.7557e-004
 rsquare: 9.9768e-001
 dfe: 3
 adjrsquare: 9.9691e-001
 rmse: 7.6500e-003

curve fit iron:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

a = 0.2862 (0.1283, 0.4442)
 b = -0.1709 (-0.2332, -0.1085)
 c = 0.004889 (-0.01595, 0.02573)
 d = -0.03453 (-0.1239, 0.05485)

goftotal =

sse: 1.0760e-006
 rsquare: 0.9988
 dfe: 4
 adjrsquare: 0.9979
 rmse: 5.1866e-004

ctotal =

General model Exp1:

$$ctotal(x) = a \cdot \exp(b \cdot x)$$

Coefficients (with 95% confidence bounds):

a = 0.06077 (0.01443, 0.1071)
 b = -0.091 (-0.1134, -0.06858)

goftotal =

sse: 2.7029e-008
 rsquare: 9.9625e-001

dfe: 3
 adjrsquare: 9.9500e-001
 rmse: 9.4918e-005

Event 97	Date		Time*	Location*	Summing interval*			
	13-Sep-05		2004	S09E10	Sep 13 1900 to Sep 16 2300			
<u>Oxygen</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	8.71 ± 0.12	11.9 ± 0.11	15.0 ± 0.081	19.0 ± 0.18	25.7 ± 0.28	34.8 ± 0.30	50.8 ± 1.14	76.2 ± 0.82
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	3.013E-04	1.563E-04	6.579E-05	4.529E-05	1.559E-05	4.238E-06	1.342E-06	0.000E+00
2	3.298E-04	1.646E-04	6.659E-05	5.497E-05	1.013E-05	5.105E-06	9.194E-07	0.000E+00
3	2.629E-04	1.435E-04	5.927E-05	2.170E-05	7.745E-06	4.036E-06	0.000E+00	0.000E+00
4	3.824E-04	1.721E-04	1.051E-04	3.005E-05	1.242E-05	4.119E-06	1.822E-06	0.000E+00
5	7.988E-04	3.742E-04	1.395E-04	4.985E-05	2.605E-05	0.000E+00	1.504E-06	0.000E+00
6	1.750E-03	8.430E-04	3.006E-04	1.444E-04	3.263E-05	7.840E-06	1.670E-06	0.000E+00
7	4.259E-03	1.700E-03	6.983E-04	2.463E-04	5.000E-05	1.184E-05	3.693E-06	0.000E+00
8	6.275E-03	2.271E-03	9.994E-04	3.295E-04	7.701E-05	3.667E-06	7.571E-07	0.000E+00
9	7.848E-03	3.309E-03	1.250E-03	5.073E-04	6.450E-05	1.913E-05	1.732E-06	0.000E+00
10	1.162E-02	4.402E-03	1.786E-03	5.847E-04	9.416E-05	1.812E-05	0.000E+00	0.000E+00
11	9.342E-03	3.741E-03	1.388E-03	4.308E-04	8.651E-05	1.166E-05	0.000E+00	0.000E+00
12	8.440E-03	3.458E-03	1.445E-03	4.285E-04	7.296E-05	1.295E-05	2.521E-06	1.029E-06
13	8.706E-03	3.572E-03	1.439E-03	5.370E-04	7.692E-05	9.335E-06	0.000E+00	0.000E+00
14	9.804E-03	3.756E-03	1.497E-03	4.774E-04	6.935E-05	8.935E-06	8.307E-07	0.000E+00
15	9.101E-03	3.663E-03	1.643E-03	4.641E-04	8.370E-05	7.509E-06	1.600E-06	1.021E-06
16	8.262E-03	3.329E-03	1.227E-03	4.022E-04	5.995E-05	1.126E-05	7.843E-07	0.000E+00
17	1.040E-02	4.352E-03	1.734E-03	5.139E-04	7.844E-05	9.434E-06	9.014E-07	0.000E+00
18	1.337E-02	5.164E-03	2.120E-03	5.326E-04	7.128E-05	9.126E-06	1.983E-06	0.000E+00
19	1.604E-02	6.340E-03	2.511E-03	6.406E-04	9.071E-05	4.778E-06	1.039E-06	0.000E+00
20	1.540E-02	5.432E-03	2.126E-03	5.203E-04	4.989E-05	4.664E-06	1.098E-06	0.000E+00
21	1.328E-02	4.922E-03	1.729E-03	4.907E-04	7.695E-05	9.059E-06	1.069E-06	0.000E+00
22	1.169E-02	4.271E-03	1.559E-03	4.241E-04	4.082E-05	6.376E-06	1.009E-06	0.000E+00
23	1.158E-02	3.970E-03	1.398E-03	3.537E-04	3.689E-05	1.588E-05	9.864E-07	0.000E+00
24	8.720E-03	2.920E-03	1.225E-03	2.775E-04	3.232E-05	0.000E+00	1.930E-06	0.000E+00
25	7.726E-03	2.665E-03	8.952E-04	2.107E-04	4.217E-05	8.206E-06	9.550E-07	0.000E+00
26	8.365E-03	2.830E-03	9.158E-04	2.349E-04	3.636E-05	2.326E-06	0.000E+00	0.000E+00
27	8.500E-03	2.858E-03	8.423E-04	2.437E-04	2.438E-05	4.610E-06	0.000E+00	0.000E+00
28	6.707E-03	2.429E-03	6.833E-04	1.755E-04	4.494E-05	1.415E-05	9.307E-07	1.155E-06
29	7.566E-03	2.491E-03	6.936E-04	1.929E-04	2.422E-05	1.920E-06	0.000E+00	0.000E+00
30	9.033E-03	2.901E-03	6.847E-04	2.949E-04	4.282E-05	1.748E-05	0.000E+00	0.000E+00
31	9.062E-03	2.628E-03	8.366E-04	2.199E-04	1.450E-05	2.326E-06	0.000E+00	0.000E+00

32	9.453E-03	2.582E-03	6.766E-04	2.000E-04	3.749E-05	1.401E-05	0.000E+00	0.000E+00
33	1.130E-02	3.354E-03	9.763E-04	2.765E-04	3.098E-05	1.132E-05	3.710E-06	0.000E+00
34	1.228E-02	3.924E-03	1.053E-03	2.307E-04	2.259E-05	9.269E-06	1.254E-06	0.000E+00
35	1.335E-02	4.183E-03	1.107E-03	2.806E-04	4.061E-05	3.316E-06	0.000E+00	0.000E+00
36	1.165E-02	3.575E-03	1.020E-03	1.953E-04	3.135E-05	1.954E-05	0.000E+00	1.758E-06
37	9.588E-03	2.847E-03	8.428E-04	1.817E-04	4.623E-05	3.212E-06	1.355E-06	0.000E+00
38	7.565E-03	2.015E-03	6.748E-04	1.832E-04	1.426E-05	1.068E-05	1.163E-06	1.529E-06
39	4.209E-03	1.077E-03	3.022E-04	8.875E-05	2.059E-05	6.686E-06	0.000E+00	0.000E+00
40	2.627E-03	5.864E-04	1.854E-04	4.917E-05	1.261E-05	3.854E-06	0.000E+00	0.000E+00
41	2.245E-03	7.331E-04	2.005E-04	5.789E-05	8.302E-06	0.000E+00	0.000E+00	1.020E-06
42	2.572E-03	6.619E-04	2.722E-04	4.788E-05	5.904E-06	1.814E-06	0.000E+00	0.000E+00
43	1.687E-03	4.780E-04	1.716E-04	3.349E-05	5.610E-06	5.225E-06	1.556E-06	0.000E+00
44	1.023E-03	2.845E-04	5.332E-05	3.432E-05	5.194E-06	0.000E+00	0.000E+00	0.000E+00
45	8.259E-04	1.797E-04	6.552E-05	3.200E-05	3.306E-06	2.940E-06	0.000E+00	0.000E+00
46	6.600E-04	2.266E-04	5.848E-05	3.034E-05	1.130E-05	0.000E+00	6.195E-07	0.000E+00
47	5.553E-04	1.807E-04	5.829E-05	1.279E-05	4.079E-06	1.261E-06	0.000E+00	0.000E+00
48	4.382E-04	1.756E-04	6.300E-05	1.399E-05	1.098E-05	1.279E-06	0.000E+00	0.000E+00
49	4.035E-04	1.277E-04	6.295E-05	2.155E-05	4.084E-06	5.031E-06	0.000E+00	0.000E+00
50	4.254E-04	1.147E-04	5.037E-05	2.604E-05	5.459E-06	0.000E+00	0.000E+00	6.688E-07
51	3.756E-04	1.604E-04	7.445E-05	2.205E-05	1.300E-06	2.439E-06	0.000E+00	0.000E+00
52	3.857E-04	1.292E-04	1.647E-05	1.165E-05	5.175E-06	3.661E-06	0.000E+00	0.000E+00
53	3.449E-04	1.199E-04	3.914E-05	1.725E-05	6.445E-06	2.314E-06	1.046E-06	0.000E+00
54	2.365E-04	7.677E-05	4.291E-05	2.026E-05	0.000E+00	1.106E-06	0.000E+00	0.000E+00
55	2.331E-04	8.181E-05	5.312E-05	1.271E-05	1.254E-06	4.479E-06	0.000E+00	6.444E-07
56	1.840E-04	8.855E-05	2.307E-05	1.456E-05	2.349E-06	1.144E-06	0.000E+00	0.000E+00
57	2.132E-04	1.045E-04	4.170E-05	1.093E-05	2.414E-06	2.291E-06	0.000E+00	0.000E+00
58	2.020E-04	9.222E-05	1.833E-05	8.810E-06	0.000E+00	2.114E-06	5.015E-07	0.000E+00
59	1.824E-04	5.840E-05	4.406E-05	1.419E-05	2.423E-06	0.000E+00	5.005E-07	0.000E+00
60	1.406E-04	7.923E-05	3.236E-05	7.200E-06	4.621E-06	1.059E-06	0.000E+00	6.164E-07
61	1.560E-04	4.471E-05	3.730E-05	1.420E-05	3.496E-06	1.060E-06	0.000E+00	0.000E+00
62	1.870E-04	6.241E-05	3.661E-05	1.641E-05	3.292E-06	0.000E+00	0.000E+00	0.000E+00
63	1.287E-04	8.879E-05	2.862E-05	1.211E-05	5.702E-06	1.089E-06	1.900E-06	0.000E+00
64	1.635E-04	8.553E-05	1.402E-05	1.910E-05	4.512E-06	0.000E+00	0.000E+00	0.000E+00
65	1.436E-04	8.571E-05	2.114E-05	8.627E-06	5.683E-06	1.086E-06	0.000E+00	0.000E+00
66	1.566E-04	8.011E-05	2.882E-05	1.878E-05	4.636E-06	0.000E+00	4.841E-07	0.000E+00
67	1.663E-04	5.156E-05	3.879E-05	3.406E-06	0.000E+00	3.177E-06	4.829E-07	0.000E+00
68	1.293E-04	5.343E-05	1.716E-05	2.023E-05	1.103E-06	0.000E+00	0.000E+00	0.000E+00
69	1.884E-04	4.279E-05	2.053E-05	1.010E-05	6.750E-06	1.077E-06	4.819E-07	0.000E+00
70	1.849E-04	6.218E-05	3.846E-05	2.018E-05	2.268E-06	0.000E+00	4.535E-07	0.000E+00
71	1.359E-04	8.250E-05	2.478E-05	2.055E-05	3.429E-06	3.094E-06	4.801E-07	0.000E+00

72	1.647E-04	5.323E-05	2.781E-05	1.553E-05	2.254E-06	1.009E-06	9.000E-07	0.000E+00
73	1.341E-04	5.082E-05	1.394E-05	8.248E-06	2.245E-06	0.000E+00	0.000E+00	0.000E+00
74	9.942E-05	6.391E-05	2.107E-05	6.804E-06	3.384E-06	0.000E+00	4.472E-07	0.000E+00
75	5.801E-05	6.185E-05	1.387E-05	8.604E-06	2.298E-06	1.058E-06	4.732E-07	0.000E+00
76	8.310E-05	3.380E-05	3.765E-05	9.923E-06	2.232E-06	1.992E-06	0.000E+00	5.574E-07

<u>Iron</u>	<E>	<E>	<E>	<E>	<E>	<E>	<E>	<E>
Time	13.3 ± 0.27	19.3 ± 0.24	25.1 ± 0.17	32.5 ± 0.37	45.1 ± 0.58	62.3 ± 0.59	92.7 ± 2.27	141. ± 1.62
	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ	Listed ϕ
1	6.706E-06	1.560E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2	8.313E-06	1.557E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
3	4.854E-06	1.553E-06	1.806E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.888E-07
4	4.936E-06	1.544E-06	1.910E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
5	4.977E-06	1.563E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
6	7.323E-06	3.191E-06	0.000E+00	0.000E+00	5.987E-07	0.000E+00	0.000E+00	0.000E+00
7	1.104E-05	3.904E-06	4.521E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
8	1.357E-05	2.635E-06	2.825E-06	1.412E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
9	2.943E-05	5.383E-06	0.000E+00	1.521E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
10	3.656E-05	8.186E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.829E-07
11	4.366E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
12	4.249E-05	8.573E-06	3.284E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.206E-07
13	2.985E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
14	2.702E-05	1.898E-05	3.273E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
15	3.167E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.113E-07	0.000E+00	0.000E+00
16	3.360E-05	5.418E-06	0.000E+00	3.297E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
17	3.823E-05	8.185E-06	3.187E-06	0.000E+00	0.000E+00	1.011E-06	0.000E+00	0.000E+00
18	3.181E-05	2.861E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
19	4.523E-05	3.332E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
20	3.128E-05	3.379E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
21	2.780E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
22	2.340E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
23	1.777E-05	0.000E+00	4.181E-06	1.956E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
24	2.916E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
25	2.049E-05	6.181E-06	0.000E+00	0.000E+00	0.000E+00	1.150E-06	0.000E+00	0.000E+00
26	1.008E-05	0.000E+00	3.806E-06	0.000E+00	0.000E+00	1.065E-06	0.000E+00	0.000E+00
27	1.414E-05	0.000E+00	3.992E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
28	1.401E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
29	3.164E-06	2.872E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
30	2.644E-05	3.077E-06	0.000E+00	1.738E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00

71	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
72	3.379E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
73	1.633E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
74	3.260E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.500E-07	2.908E-07
75	1.622E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
76	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hourly Iron Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
94	56	19	27	14	4	3	0
103	59	19	33	9	5	2	0
83	52	17	13	7	4	0	0
119	61	30	18	11	4	4	0
224	120	36	27	21	0	3	0
422	234	68	67	22	6	3	0
840	384	127	92	28	7	5	0
1116	463	164	112	39	2	1	0
1334	643	195	164	31	10	2	0
1683	733	238	162	39	8	0	0
1552	712	213	137	41	6	0	0
1459	684	230	142	36	7	3	1
1504	707	229	177	38	5	0	0
1776	778	250	166	36	5	1	0
1560	719	259	151	41	4	2	1
1435	664	197	134	30	6	1	0
1704	819	262	162	37	5	1	0
1891	837	276	145	29	4	2	0
2163	981	313	166	35	2	1	0
2022	816	256	131	19	2	1	0
1866	788	222	131	31	4	1	0
1698	710	208	118	17	3	1	0
1648	647	183	96	15	7	1	0
1314	502	170	80	14	0	2	0
1210	479	129	63	19	4	1	0
1221	473	123	65	15	1	0	0
1237	475	113	67	10	2	0	0
1080	446	101	54	21	7	1	1
1191	450	100	58	11	1	0	0
1350	496	94	84	18	8	0	0
1294	429	110	60	6	1	0	0

1277	399	84	52	14	6	0	0
1329	450	106	62	10	4	3	0
1302	476	102	47	7	3	1	0
1270	458	97	51	11	1	0	0
1155	407	93	37	9	6	0	1
1031	352	84	37	14	1	1	0
914	278	75	42	5	4	1	1
636	186	42	26	9	3	0	0
448	114	29	16	6	2	0	0
388	145	32	19	4	0	0	1
450	133	44	16	3	1	0	0
313	102	29	12	3	3	2	0
205	65	10	13	3	0	0	0
175	44	13	13	2	2	0	0
163	64	13	14	8	0	1	0
136	51	13	6	3	1	0	0
113	52	15	7	8	1	0	0
105	38	15	11	3	4	0	0
111	34	12	13	4	0	0	1
99	48	18	11	1	2	0	0
102	39	4	6	4	3	0	0
95	38	10	9	5	2	2	0
67	25	11	11	0	1	0	0
67	27	14	7	1	4	0	1
53	29	6	8	2	1	0	0
62	35	11	6	2	2	0	0
60	31	5	5	0	2	1	0
54	20	12	8	2	0	1	0
42	27	9	4	4	1	0	1
46	15	10	8	3	1	0	0
60	23	11	10	3	0	0	0
39	31	8	7	5	1	4	0
50	30	4	11	4	0	0	0
44	30	6	5	5	1	0	0
48	28	8	11	4	0	1	0
51	18	11	2	0	3	1	0
40	19	5	12	1	0	0	0
58	15	6	6	6	1	1	0
57	22	11	12	2	0	1	0
42	29	7	12	3	3	1	0

51	19	8	9	2	1	2	0
42	18	4	5	2	0	0	0
31	23	6	4	3	0	1	0
18	22	4	5	2	1	1	0
26	12	11	6	2	2	0	1

Hourly Oxygen Counts							
Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8
5	1	0	0	0	0	0	0
3	1	1	0	0	0	0	1
3	1	1	0	0	0	0	0
3	1	0	0	0	0	0	0
4	2	0	0	1	0	0	0
5	2	2	0	0	0	0	0
5	1	1	1	0	0	0	0
10	2	0	1	0	0	0	0
12	3	0	0	0	0	0	1
12	0	0	0	0	0	0	0
14	3	1	0	0	0	0	1
10	0	0	0	0	0	0	0
9	7	1	0	0	0	0	0
11	0	0	0	0	1	0	0
11	2	0	2	0	0	0	0
13	3	1	0	0	1	0	0
10	1	0	0	0	0	0	0
12	1	0	0	0	0	0	0
8	1	0	0	0	0	0	0
7	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0
5	0	1	1	0	0	0	0
8	0	0	0	0	0	0	0
6	2	0	0	0	1	0	0
3	0	1	0	0	1	0	0
4	0	1	0	0	0	0	0
4	0	0	0	0	0	0	0
1	1	0	0	0	0	0	0
8	1	0	1	0	0	0	0
6	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0

1	1	0	0	0	0	0	0
2	1	0	0	0	0	0	0
1	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
5	1	0	0	0	0	0	0
1	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
1	1	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	1	0	0	1	0	0	0
1	0	0	0	1	0	0	0
0	1	0	0	0	0	0	0
0	0	0	2	0	0	0	0
1	0	0	0	0	0	0	0
0	0	1	0	0	0	0	0
0	2	0	0	0	0	0	1
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
1	1	0	0	0	0	0	0
3	0	1	0	0	0	0	0
2	1	0	1	0	1	0	0
1	2	0	0	0	0	0	0
1	0	0	0	0	1	0	0
1	0	0	0	0	0	0	1
1	1	0	0	0	1	0	0
4	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
0	1	0	0	0	0	0	0
1	0	1	0	0	0	0	0
1	2	0	0	0	0	0	0
2	0	1	0	0	0	0	0
1	0	1	2	0	0	0	0
1	0	0	0	1	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0

1	0	0	0	0	0	0	0
2	0	0	0	0	0	1	1
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	1	0	0	0	0	0	0

Curve fit oxygen:

ctotal =

General model Exp2:

$$ctotal(x) = a \cdot \exp(b \cdot x) + c \cdot \exp(d \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 5.139 \quad (-158.8, 169.1)$$

$$b = -0.2842 \quad (-1.416, 0.8474)$$

$$c = -1.122 \quad (-168.6, 166.4)$$

$$d = -0.2361 \quad (-2.928, 2.456)$$

goftotal =

$$sse: 8.8947e-006$$

$$rsquare: 0.9999$$

$$dfe: 4$$

$$adjrsquare: 0.9998$$

$$rmse: 0.0015$$

ctotal =

General model Exp1:

$$ctotal(x) = a \cdot \exp(b \cdot x)$$

Coefficients (with 95% confidence bounds):

$$a = 1.794 \quad (0.8108, 2.778)$$

$$b = -0.265 \quad (-0.2935, -0.2365)$$

goftotal =

$$sse: 4.2916e-008$$

$$rsquare: 9.9958e-001$$

$$dfe: 3$$

$$adjrsquare: 9.9943e-001$$

VITA

Marcus Evan Hill spent nine years in the Navy Nuclear Power program and he has spent the last three years serving as a Radiation Health Officer in the Navy's Medical Service Corps. He received his Bachelor of Science degree in nuclear engineering technology from Thomas Edison State College in 2003. He entered the Masters of Science Program in health physics at Texas A&M University in September of 2007. He received a master's degree in Health Physics in May of 2009.

Mr. Hill may be reached at, 129 Zachary, Mail Stop 3133, College Station, TX 77843. His email is ahill195@tamu.edu.