University of Alberta

Supercritical Fluid Extraction (SFE) of Metals from Soil

by

Nadia Savoie ©

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ABSTRACT

Supercritical fluid extraction (SFE) is a promising new technology to remediate metal contaminated soils. In this research, supercritical carbon dioxide (SC CO_2) was used to extract copper from two spiked soils using thenoyltrifluoroacetone (tta) as the chelating agent. First, the solubility of copper thenoyltrifluoroacetonate ($Cu(tta)_2$) was measured to be 1.4×10^{-6} mole fraction at 10.34 MPa and 40°C. Extraction experiments were then conducted at several conditions of pressure, temperature and moisture content. For sand, the optimal conditions were determined to be at 10.34 MPa, 40°C and 5% water content, which yielded an extraction of copper of 54%. For silt, the highest extraction of copper was determined to be 25% at 10.34MPa, 40°C and 5% moisture. An analysis performed on sand and silt samples indicated that several other metals may have been present in the two soils and a notable amount of copper was present in the silt before spiking.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1 INTRODUCTION

1.1 PROBLEM STATEMENT

There is increasing concern over the presence of contaminated sites around the world. This contaminated land is the result of years of industrial development and activity. The number of contaminated sites in the United States alone is estimated in the hundred of thousands (U.S. EPA, 1997a; Meyer et al. 1995). In Canada, the number is uncertain and may possibly be in the tens of thousands (NRTEE, 1997). Not only do contaminants have immediate effects on soil and groundwater, they may significantly pose a threat to human health and the environment.

Metals are extensively present at most Superfund sites (U.S. EPA, 1997b). For the sites that have signed Records of Decision (ROD), which indicate what type of cleanup alternatives will be used to cleanup the site, metals are the only contaminant in 16% of the cases and in combination with volatile or semi-volatile organic compounds in 49% of the cases (U.S. EPA, 1997b).

Pollution of soil can disturb the delicate balance of physical, chemical and biological processes that is necessary for the maintenance of soil fertility or may inhibit microbial enzyme activity, which could reduce the diversity of soil flora and fauna. Metals may be transferred to man by consumption of contaminated plants or indirectly by consumption of grazing animal's meat or milk. When soils are polluted by metals, there is a possibility of transfer of heavy metals to surface and ground waters, and inhibition of microbial enzyme activity and reduction of the diversity of soil flora and fauna populations (Allen et al. 1995). To minimize the impacts, it is necessary to remediate these contaminated soils. The soil remediation industry is growing at a worldwide level (McIlvaine, 1998) and research is necessary to improve the technologies that exist.

Some soil remediation technologies that exist are incineration, thermal desorption, soil vapor extraction, mechanical separation, containment systems, reactive walls/barriers, electroreclamation/electrokinetics, and excavation and disposal (United Nations, 2000). These are considered to be physical methods. Some chemical methods are soil washing/flushing, solidification/stabilization, dehalogenation, solvent extraction and chemical reduction/oxidation. Biological methods are bioremediation, phytoremediation, natural attention, landfarming and bioreactors. Some of these techniques are still at the developing stage. Other technologies that have yet to be commercialized but are promising are polymer adsorption, solar detoxification/photolysis, plasma arc, vitrification and the Lasagna process™ (United Nations, 2000). All of these technologies have advantages and disadvantages and only some of them can be applied to metal contaminated soils. More research is needed to develop more effective technologies to treat metal contaminated soils (U.S. EPA, 1997a).

Supercritical fluid extraction (SFE) is a promising new technology that may be used to remediate contaminated sites. SFE is a process in which a substance at its supercritical state is used as a solvent for extraction. A supercritical fluid (SF) exists when a substance is above its critical pressure (P_c) and critical temperature (T_c) (Brunner, 1994). The supercritical fluid region is shown in Figure 1.1. In the supercritical phase, the substance exists as a single fluid phase, with some characteristics intermediate between those of gases and liquids, and some particular properties of its own (Hedrick, 1992). The physical properties (density, viscosity, diffusivity) of a substance at supercritical state become intermediate of those of liquid and gas phases. The densities of SFs are liquid-like while the diffusivities and viscosities are gas-like (McHugh and Krukonis, 1994).

Conventional solvents are being used less frequently because of disposal and emission problems, and in some cases can be replaced by processes using SFs. The most popular SF is carbon dioxide (CO_2). CO_2 is non-flammable, non-toxic, non-reactive and does not leave any residue (Laitinen et al., 1994). It is also relatively inexpensive and has a moderate critical point of 31°C and 7.38 MPa. Because it is non-polar, pure supercritical CO_2 (SC CO_2) is a good solvent for hydrocarbons and non-polar compounds (Laitinen et al., 1994). The addition of modifiers like water and methanol can increase the polarity of SC CO_2, which increases its solvent ability for slightly polar species (Phelps et al., 1996). Metals can also be extracted with SC CO_2. In the past, this was not considered viable because metals typically exist as ionic species in soils. Because of the nonpolarity of SC CO_2, the solvent-ion interactions are weak and direct extraction of the metals is not very effective (Tueur et al., 1997). However, the charge neutralization required to dissolve metals in SC CO_2 can be achieved by adding a chelating agent to form a metal complex.

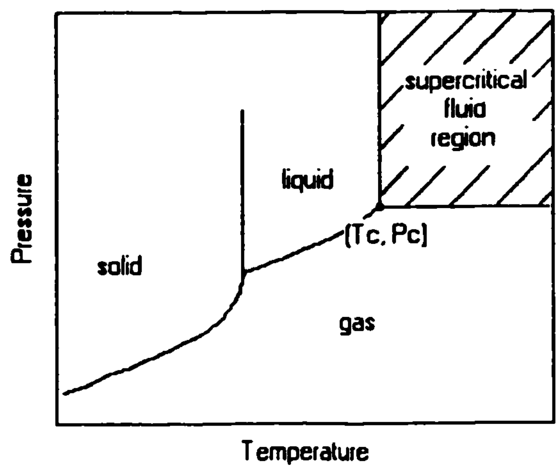


Figure 1.1 Pressure-temperature phase diagram (not to scale)

Research is being done to enhance the knowledge about the extraction of metals from soil using SFE. The solubility of some chelating agents that can be used to extract metals as well as the solubilities of the metal complexes formed with these ligands have been measured (Saito et al., 1990; M'Hamdi et al, 1991; Laitz et al., 1991; Wai et al., 1993; Lin and Wai, 1994; Wang and Marshall, 1994; Lagalante, 1995; Lin et al., 1995b; Wang et al., 1995; Cross et al., 1996; Wai et al, 1996a; Wai et al., 1996b; Ashraf-

Khorassani et al., 1997a; Glennon et al., 1997; Smart et al, 1997a; Wai and Wang, 1997; Meguro et al., 1998; Ashraf-Khorassani et Taylor, 1999; Guigard et al., 1999; Ozel et al., 2000; Wai and Waller, 2000; Roggeman et al., 2001; Stroich, 2001) . Some extraction efficiencies of metals from soil have also been measured (Lin et al., 1993; Lin and Wai, 1994; Lin et al., 1995a; Ashraf-Khorassani and Taylor, 1999; Kersch et al., 2000; Ozel et al., 2000; Wai and Waller, 2000; Liu et al., 2001; Mincher et al, 2001). However, more research in the field of SFE of metals is needed.

1.2 OBJECTIVES

The objectives of this research were:

- develop the setup used by Stroich (2001) to be able to extract metals from soil using SC CO_2;
- measure the solubility of a metal chelate, copper thenoyltrifluoroacetonate ($Cu(tta)_2$), using the SFE setup;
- compare solubilities measured with SFE system to solubilities measured by Guigard (1999) and Stroich (2001) using the piezoelectric quartz crystal microbalance method;
- measure the extraction efficiency of copper from different soils using thenoyltrifluoroacetone (tta) as the chelating agent.

The first objective was achieved by adding to the setup used by Stroich (2001) to measure solubilities with piezoelectric quartz crystal microbalance method. A different pressure vessel was used and other parts were added downstream of the vessel.

Thenoyltrifluoroacetone was chosen as the chelating agent to extract copper from soil based on previous research conducted by Guigard (1999) and Stroich (2001). Thenoyltrifluoroacetone was chosen as the ligand because of the limited solubility in SC

CO_2 (Stroich, 1999), the relatively high extraction efficiencies obtained while using tta in SC CO_2 (Wai et al., 1996b), and the stability of β-diketones in SC CO_2 compared to the low stability of dithiocarbamate reagents in water (Wai and Wang, 1997). In the research conducted by Guigard (1999) and Stroich (2001), the solubility of $Cu(tta)_2$ was measured at different pressures and temperatures. Here, the solubility of $Cu(tta)_2$ was measured at one condition of pressure and temperature using the SFE system developed. The solubility was then compared to the solubilities measured by Guigard (1999) and Stroich (2001).

Once the solubility measurement of Guigard (1999) and Stroich (2001) was confirmed with the system designed in this research, the efficiency of extracting copper from two soils was measured. Different temperature and pressure conditions and different moisture contents were tested.

Chapter 2 of this work presents a literature review related to the SFE of metals. First, a detailed review of soil remediation technologies used for treating soils contaminated by organics and by metals is given. Then, the use of SFE for soil remediation will be discussed. The literature review will then be followed by Chapter 3, which presents the methodology used for the solubility and extraction experiments, and their analysis. The results and discussion of this research will then be presented in Chapter 4. Finally, the conclusions and recommendations presented in Chapter 5 will summarize the work presented in the thesis.

CHAPTER 2 LITERATURE REVIEW

This chapter will first give an overview of the technologies that are used for soil remediation. The use of SFE as a soil remediation technology will then be discussed. A summary of the solubility data for the chelating agents used in metal extraction as well as the solubilities of the metal chelates formed will then be presented. Finally, a review of the extraction efficiencies for metal extraction using SFE will be given.

2.1 SOIL REMEDIATION TECHNOLOGIES

This section presents an overview of the well-established major *in-situ* and *ex-situ* soil remediation technologies currently in use as described in United Nations (2001). Additional information is also available in Kendall (1991), Martin and Bardos (1996), Hester and Harrison (1997), Otten et al. (1997), Suthersan (1997), U.S. EPA (1997b), Van Deuren et al. (1997), Riser-Roberts (1998), Charrois et al. (1999) and Yong (2001).

Most of the remediation techniques can be applied to a specific type of soil contamination. For many soils that are polluted with several types of contaminants i.e. a "cocktail" of hydrocarbons and heavy metals, or pesticides and fuel spills, more than one technology may be necessary to reduce the concentrations of contaminants to acceptable levels (United Nations, 2001). Here, the soil remediation technologies will be presented as *ex-situ* and *in-situ* technologies. These two categories are then divided into technologies used for organic contamination and inorganic contamination. Overall, more technologies exist to treat soils contaminated by organic compounds than metals, which indicates a greater need for research in this field.

2.1.1 In-situ technologies (United Nations, 2001)

In-situ soil remediation technologies offer a treatment directly on site without excavation. This saves the cost of excavating the soil and transporting it to a treatment site and minimizes the chance of human and environmental exposure during the excavation, transportation and treatment. However, it may be difficult to treat the contaminated site because of the heterogeneity of the soil or substrate and of the contaminant distribution. Proper knowledge of the site and its contamination are necessary to choose and apply an *in-situ* remediation technique. The on site conditions may also cause problems. The *in-situ* soil remediation technologies will be presented in the organic and/or inorganic contamination section depending on the type of pollutants that can be treated using the described technology.

2.1.1.1 Organic contamination

Soil vapor extraction (SVE)

In this method, extraction wells are used to apply a vacuum and create a pressure gradient in the unsaturated or vadose zone. Halogenated and non-halogenated volatile organics as well as fuel hydrocarbons can be removed with this technique. Vapors are collected and processed by different equipment. Only volatile compounds, i.e. possessing a Henry's law constant > 0.01, can be removed effectively. In the saturated zone, the water table needs to be artificially lowered for the process to be possible and the amount of time required depends greatly on the subsurface permeability.

This technique requires little equipment monitoring, is well known and has been used extensively. There are potential sources of contaminant emissions such as a direct atmospheric discharge or an inadvertent release of contaminants by the treatment system (Kendall, 1991). The technology can achieve minimum residual concentrations between 5 and 50 mg/kg.

A heat source, such as hot air or steam injection, may be added to help increase the volatilization the organic contaminants and help in their removal. This may be helpful in the removal of semi-volatile organics. This technique can be denoted as "Thermally-enhanced soil vapor extraction". This addition of heat source increases the cost of the extraction compared to conventional SVE, but should reduce the amount of time required. This technique is only effective in the vadose zone and excessive moisture in the soil can inhibit the removal of the contaminants. This method may also be used *ex-situ*.

Contaminant systems/reactive walls/barriers

Containment systems and barriers are physical systems, such as interlocking sheet piling, a frozen solid wall, or an injected media that hardens. These barriers usually block the water flow and migration path, which prevents the pollutant from spreading beyond the site. A mixture of bentonite and soil is often used to create a wall where the water can pass through but the contaminant is held back by surface absorption.

This system is rapidly installed, reliable and requires very little maintenance. However, the subsurface flow needs to be very well understood and monitoring is necessary to ensure that the contaminant is stopped from spreading from the original site. This method does not remediate the site; it only contains and therefore prevents a spread of the contamination.

Soil flushing

This technique is similar to soil washing (*ex-situ*). It is applicable to a wide range of contaminants including halogenated and non-halogenated volatile organics, inorganics and radionuclides. The contaminants are flushed through the soil with water that may contain required additives. The contaminated water is collected and treated as needed. This technique requires a very good knowledge of the groundwater flow to avoid irretrievably flushing contaminants into the groundwater. Treating soils with a low permeability is difficult. The minimum achievable residual concentration for this method is 50 mg/kg.

This method may be a very rapid and effective way to clean-up newly deposited contaminants as in the case of an accident spill. Some disadvantages of soil flushing include inadequate treatment because of subsurface channeling and a possible post-treatment of the soil to remove the additives needed to release the bound contaminants.

Bioremediation

This technique is currently the subject of considerable research and examination. Bioremediation involves the stimulation of naturally occurring or introduced populations of microorganisms to break down contaminants. Nutrients or oxygen are added and/or other amendments are made by aqueous solution or gas/air injection. The extraction of added liquids is often necessary because they contain pollutants. This technique can be used when contamination is caused by compounds that are readily biodegradable such as halogenated or non-haloganated volatile and semi-volatile organics, and fuel hydrocarbons.

Minimum achievable pollutant concentrations are between 5 and 50 mg/kg. The site needs to be well characterized and the groundwater flow patterns must be well understood to ensure that the contaminants that may be transported by the flow can be extracted. The remediation of the soil may not be acceptable because of subsurface heterogeneities, because the naturally occurring or introduced microbial flora may not effectively degrade all the contaminants or because high levels of contamination may have left the soil infertile. Also, it is possible that some contaminants may be degraded to toxic by-products (Kendal, 1991).

Phytoremediation

In phytoremediation, plants are used to remove, stabilize or destroy contaminants. Different mechanisms may be involved. Near the plant roots, organics may be remediated at an accelerated rate. Plants may metabolize certain organics or transport them above ground where transpiration or chemical alteration occurs. The metals are accumulated in the roots or above ground in the stems and leaves.

The operating costs and characteristics of this emerging technology have not yet been fully demonstrated. The minimum achievable concentration of this technique would be between 5 and 50 mg/kg. This technique is simple and basic agricultural practices may be sufficient to apply it. However, this method would only clean the soil to a limited depth, may be more effective for specific contaminants, and may only be economical for lower concentrations of contamination. The plant residues may be classified as hazardous waste.

Natural attenuation

Natural attenuation relies on the ability of the environment to rid itself of soil contamination with bioactivity. Natural attenuation is only possible for non-halogenated organics and fuels since these are easily biodegradable. The dynamics of the site and the remediation need to be well understood by the remediator. The decontamination is then monitored until the process is complete.

This method can achieve minimum residual concentration levels of 5 to 50 mg/kg, is reliable and does not require any maintenance. Extensive site characterization and monitoring are required. This process may take a long period of time and in some cases the naturally occurring decontamination processes may never reduce the contamination to the required level.

Vitrification

In the vitrification process, soil is subjected to a high temperature that will cause it to melt and form a glass when cooled. This method can be applied *in-situ* or *ex-situ*. Graphite electrodes are placed into the contaminated encased area at sufficiently close spacing and are energized. The resulting high electrical resistive heating causes the soil to melt to a molten pool. This method is applicable to organics, inorganics and radionuclides. The organic contaminants are destroyed but the inorganics are trapped in matrix, which immobilizes them. The disadvantages of the method are that after vitrification, soil can no longer be used for agricultural purposes and in the case of *in-situ* vitrification, the future use of the site may be limited.

2.1.1.2 Inorganic contamination

Containment systems/reactive walls/barriers

This technology may also be used for sites contaminated by inorganics such as metals. The method is the same as described in Section 2.1.1.1. This technology does not remediate the site; it simply attempts to contain and control the spread of contamination.

Electroreclamation or electrokinetics

In this technique, electrodes are placed into the soil on each side of the contaminated zone. When a direct current electric field is applied, the contaminants are attracted to the anode or cathode depending on their charge. Many mechanisms may then be used to remove the contaminants: precipitation, adhesion to the electrode surface or excavation with processing in an *ex-situ* treatment facility. A fluid containing additives to help release soil bound contaminants may be circulated through the site to help mobilize the contaminants.

This technique is still at the developmental stage, which makes its reliability still unknown. Minimum residual concentration levels that can be achieved with this technique are 5 to 50 mg/kg. The contaminated site needs to be characterized before remediation in order to identify heterogeneities in the treated zone. This method can potentially remove high metal concentrations *in-situ* and can remove many metal species simultaneously. Some disadvantages are that soil acidification may result, the process involves complex chemistry and may require treatability tests before full-scale remediation, and oxidation/reduction reactions may form undesirable products. This technique can also be used for polar organic contaminants.

Soil flushing

Soil flushing can also be used to remediate soils contaminated with inorganics and radionuclides. The technique is explained in Section 2.1.1.1.

Stabilization/solidification

Solidification implies that the contaminants are physically bound or enclosed within a stabilized mass. For stabilization, the mobility of contaminants is reduced by the reactions between stabilizing agents and the contaminants. Frequently, cement is mixed with the contaminated soil to form a durable mass with low leaching rates. This solidification process is more difficult to apply *in-situ* than *ex-situ*. In stabilization processes, the chemical reaction that occurs yields less mobile compounds containing the contaminant or binds the contaminant to the substrate. This method may be a quick and inexpensive way to prevent spreading of contaminants. However, an eventual clean up of the site may be more difficult after stabilization/solidification has been applied.

This technology is reliable, relatively inexpensive to treat soils contaminated with inorganics and simple to apply. This technology does not remediate the site, it only decreases the mobility of the contaminants. Compatibility of the process with the pollutants and the environment may need to be determined. This technique can be used in some cases to treat organic contamination.

Vitrification

This solidification technique can also be used to treat inorganics such as metals. The inorganic contaminants are not destroyed; they are trapped in the matrix, which immobilizes them. Vitrification may be best suited for difficult to treat wastes such as mixtures of organics and metals (U.S. EPA, 1997b).

Phytoremediation

Heavy metals and radionuclides can also be removed or stabilized by plants. The phytoremediation of metals from soil can be classified into two types: phytoextraction and phytostabilization (U.S. EPA, 1997b). This technique has already been explained in the previous section.

2.1.2 Ex-situ technologies (United Nations, 2001)

The use of *ex-situ* technologies requires the removal of the contaminated soil to treat it away from the site. Some disadvantages of *ex-situ* processes are the cost of removal and transport, the disruption of the geological state of the site and the exposure of the transport personnel to the contaminants. However, the off-site treatment of the soil may allow the use of more sophisticated techniques, which can be more effective, rapid and safer to groundwater and residents of the area. Generally, the techniques are effective for either organic or inorganic contaminants. The *ex-situ* soil remediation techniques will be presented under these two categories.

2.1.2.1 Organic contamination

Incineration

Organic wastes are volatilized and combusted at high temperatures (850-1200°C). Four incinerator types are rotary kiln, liquid injection, fluidized bed and infrared. This technique can be used for different organic wastes including chlorinated wastes. It is a well-known treatment technology. However, pre-treatment may be required to remove heavy metals because they may possibly remain in the solid residue or leave with the flue gases, or can react with chlorine present in the waste to form undesirable volatile or toxic compounds.

Thermal desorption

Hazardous wastes are heated to moderate–high temperatures (100-550°C) to volatilize the water and organic contaminants in the waste. The ashes are collected and treated separately. Wastes treated at lower temperatures may decrease the energy used but may require a secondary treatment to completely volatilize organics into benign substances. Semi-volatile halogenated and non-halogenated organics are the target contaminants of this technology but other organics may also be extracted.

This technique is less costly than incineration and can treat many pollutants, but heavy metals remain in the solid residue and may form toxic by-products during treatment.

Soil vapor extraction (SVE)

The excavated soil is placed into a chamber and a vacuum is applied to collect the volatile halogenated and non-halogenated organic compounds. Vapors are collected and treated downstream.

With this technique, minimum residual concentrations of 5 to 50 mg/kg can be achieved. This process is simple because is requires no external heating. Pollutants may be recovered. High levels of organic matter inhibit the volatilization of organics. This procedure may not work well on some soil types and may not completely remove non- or semi-volatile organics.

Excavation and disposal

In this case, the soil is excavated, transported and disposed of in a landfill. There may be a possibility of pre-treatment requirements in some cases. The working conditions and required precautions are usually well established for each type of contaminant. However, this method may be costly, does not remediate the soil, and the excavated contaminated soil may need to be replaced by clean soil.

Soil washing

The soil is placed into a water system where the absorbed contaminants are separated from the soil (similar to soil flushing). This technique can be used for halogenated and non-halogenated semi-volatile organics, fuel hydrocarbons and inorganics. To aid in the process of desorbing contaminants, high pressure water can be used. Wash water can also be augmented with an acidic or basic leaching agent, surfactant, or chelating agent to help remove organics or heavy metals. The use of agents may decrease costs but may require the use of post-treatment additives to neutralize the effect in the soil.

This technique is well established and versatile. It can achieve minimum concentrations of 5 to 50mg/kg. However, it may not always be effective depending on the soil type and works best with coarse particles or sandy soils. Finer particles typically have higher concentrations of contaminants and are more difficult to remove from the washing solution. When a number of contaminants are present, more than a single wash may be required. The wash water will require treatment prior to disposal.

Dehalogenation

This method can be used for halogenated semi-volatile organics and pesticides. This process consists of dehalogenating those aromatic compounds in a batch reactor. To achieve this, an alkaline polyethylene glycol like potassium polyethylene glycolate (KPEG) is usually added to the soil inside the reactor. Mixing and heating then promotes the reaction between the soil and KPEG to remove the halogens and make the contaminants less toxic.

This method can achieve minimum contaminant concentrations below 5 mg/kg. It is one of the few techniques that can eliminate PCBs and can treat heavily contaminated soils. However, it is not usually cost-effective for large volumes of waste.

Solvent extraction

In an extractor, a solvent or acid is mixed with the contaminated soil. In the process, the contaminants are transferred to the solvent, which is then treated to remove the contaminants. In some cases, the solvent can be reused. The contaminants that can be treated are semi-volatile halogenated and non-halogenated organics, fuels, pesticides and some organically bound heavy metals. It is possible that traces of the solvent will remain in the soil. It is necessary to consider this in the choice of the solvent and in the proposed use of the treated soil.

This technique can achieve minimum concentrations of 5 to 50 mg/kg, can treat high concentrations of pollutants and can be used for a wide variety of contaminants. However, this technique may not be as effective on high molecular weight organics or hydrophilic molecules. Some solvents will be ineffective for some soil types or for excessive moisture contents.

Landfarming

This technique is used to treat soils contaminated with non-halogenated volatile organics and fuel hydrocarbons but not all compounds in these groups will respond to this type of treatment. It is a biodegradation process where the soil is excavated and spread over an area and periodically turned to improve aeration. This process increases the rate of natural decomposition by promoting greater contact of the soil microorganisms with oxygen. The soil turning is necessary to avoid heterogeneous degradation, which often occurs with *in-situ* bioremediation.

Many factors control the rate of biodegradation including soil type, ambient conditions like rainfall and temperature, and concentrations, species of pollutants and microorganisms present. This technique has been used for many years by the petroleum industry. It is necessary to collect runoff that may require treatment. Liners are often used to control the leachate from the soil. Tilling the soil may help the naturally-occurring biological processes.

This method can typically achieve minimum contaminant concentrations of 5 to 50 mg/kg and some pollutants can be completely removed. Landfarming is simple, inexpensive, requires no process control or skilled personnel. However, this technique requires a great amount of time and space, is only effective for a limited number of contaminants, and is not effective for inorganics and heavy metals.

Bioreactors

Bioreactors work on the principle of stimulating the biological degradation rate by optimizing factors such as temperature, pollutant concentration and degree of aeration and other factors such as nutrient concentration. Naturally occurring microorganisms effectively adapt to different processes and environmental conditions to breakdown pollutants. This technique is used especially for non-halogenated volatile organics and fuel hydrocarbons. In the process, the contaminated soil is mixed with water and additives and placed into a batch reactor vessel. The conditions, and oxygen and nutrient content are monitored and modified as needed until the remediation is complete. The water is then removed and reused, discarded or treated. Aerobic conditions are used to target specific contaminants while anaerobic conditions are applied to halogenated hydrocarbons for dehalogenation prior to breakdown of the hydrocarbon.

The minimum achievable residual contaminant concentration is 5 to 50 mg/kg. This method is widely available, can be particularly effective on contaminated clays and is rapid compared to other bioremediation methods. However, the process control is much more complex than other bioremediation techniques. The method is also very dependent on the type and chemical properties of the soil, and is very ineffective for heavy metals. The cost of this method depends on the post–treatment of water and soil, the pre-treatment preparations, and the gas collection and handling system.

Vitrification

The vitrification process can also be used *ex-situ*. This process was discussed in Section 2.1.1.1.

2.1.2.2 Inorganic contamination

Excavation and disposal

Excavation and disposal can also be used for inorganic contamination. As explained in Section 2.1.2.1, this technique does not remediate the soil.

Soil washing

Soil washing may also be used to remove heavy metals. Chelating agents may need to be added to the wash water. This technique is discussed in the Section 2.1.2.1.

Solidification/stabilization

The solidification/stabilization process is typically the same as explained in the *in-situ* section. However, it should be noted that is easier to apply *ex-situ*.

Vitrification

Vitrification can be applied *ex-situ* to treat soils contaminated by inorganics. This process is discussed in Section 2.1.1.1 and 2.1.1.2.

Solvent extraction

Solvent extraction was explained in detail in the *ex-situ* organic section. This technique can also be successfully used to remove organically bound heavy metals.

Chemical reduction/oxidation

The technique of chemical reduction/oxidation is used to make hazardous contaminants non-hazardous or less toxic by making them more stable, less mobile and/or inert. Ozone, hydrogen peroxide, hypochlorites, chlorine, and chlorine dioxide are the most commonly used reducing/oxidizing agents. The technique may be more effective if these reagents are combined or if they are combined with ultraviolet oxidation. The process is mostly used for inorganics but may also be effective against non-halogenated volatile and semi-volatile organic compounds, fuel hydrocarbons and pesticides.

This method can reduce the contaminant concentration to 5 to 50 mg/kg. It is a well-established technology that has been used in chemical processes such as disinfection and cyanide removal. This process may not be cost-effective when contaminant concentrations are high because excessive amounts of oxidizing agents are required. If excessive oil or grease are present, they may need to be removed because they compete with contaminants during the chemical reactions. For certain contaminants or process conditions, the decontamination may be incomplete or result in the formation of intermediate contaminants.

2.1.3 Novel techniques (United Nations, 2001)

Some new techniques that are promising but are still at the research level are presented here.

Polymer adsorption

In this technology, water-soluble polymers functionalized with groups having a strong affinity for heavy metals are used to treat contaminated soils. By passing the polymer solutions through the soil, the metals can be stripped from the soil and bound to the polymer. Because of its design, the polymer will not be adsorbed when passing through the soil and can be treated *ex-situ* to release the metals. The metal can then be collected and the polymer recycled. Some characteristics of the polymer that give it the ability to remove heavy metals from contaminated soils are water solubility, metal binding ability, high molecular weight and compact structures of the polymer. This technology may also be applied to groundwater and wastewater treatment. This technology is effective at removing toxic heavy metals such as Pb, Cr and Cd. The sorbent polymer may be damaged by oxidants present in water.

Solar detoxification (Phytolysis)

This technology may be used to destroy a wide range of hazardous organic chemicals in soil and/or water by photocatalytic oxidation or direct thermal decomposition. Vacuum extraction is first used to remove the contaminants from the soil. After being condensed, the contaminants are mixed with a semiconductor catalyst such as titanium oxide and passed through a reactor that is illuminated by sunlight or exposed to ultraviolet radiation from electric lamps. When the catalyst is activated by light, a reactive species known as hydroxyl radicals is generated. The contaminants are decomposed by these powerful oxidizers (radicals) to form non-toxic by–products such as water, carbon dioxide and inorganic salts.

In the United States, a solar enhanced thermal process for solar detoxification of organic contaminants from solid and liquid wastes has been developed. This technology can remove explosives, pesticides, dyes, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), solvents, some heavy metals, furans, dioxins, polychlorinated biphenyls (PCBs) and other contaminants.

With this method, toxic compounds are not only removed but completely destroyed. Even though few full scale applications or cost estimates exist, the savings in fuel usage and low air emissions may make it competitive. The effectiveness of the process may be limited by biological or physical fouling with suspended solids or precipitates.

Plasma arc

In this technique, high temperature (10,000°C or even higher) pyrolysis is used. Pyrolysis results from the discharge of a large electric current in an inert gas to convert hazardous chemicals like PCBs, pesticides, CFCs and halon gases into safe and harmless products. The hazardous substance first breaks down, within the superheated cloud of gas or plasma, into its atomic constituents. The atomic form is then converted into a harmless substance by subsequent treatment.

This technology effectively and safely destroys PCBs, dioxins, furans and pesticides. However, a separate process such as solvent extraction or thermal desorption is required to remove contaminants from bulk solid media. Metals hinder the process and need to be separated for the treatment to be effective.

Lasagna process™

An industrial consortium consisting of private and governmental institutions developed the Lasagna process as an *in-situ* technology to remediate soils contaminated with soluble organic compounds. This technology uses electro-osmosis, biodegradation and physicochemical treatment processes to treat soil. The contaminants in soil pore water are moved to treatment zones by electrokinetics. When the electrodes are energized by direct current, the soil is warmed and the water and soluble contaminants move into or through the treatment layers. In the treatment layers that contain reagents, the soluble contaminants are decomposed or adsorbed for immobilization. The immobilized contaminants can then be removed and disposed of. The water that accumulates at the cathode (high pH) can be recycled back to the anode (low pH) for acid-base neutralization. The electrode polarity can also be reversed periodically to reverse electro-osmosis flow and neutralize pH.

Supercritical fluid extraction (SFE)

Supercritical fluid extraction is a promising new technology that may be used to remediate contaminated soils (Phelps et al., 1996, Brennecke, 1996). It may be considered as a solvent extraction process that uses a much more environmentally friendly solvent, carbon dioxide. When a fluid such as carbon dioxide is at its supercritical state, it becomes like a solvent and can dissolve non-polar compounds. The use of this technique for soil remediation is further discussed in the following section.

2.2 SUPERCRITICAL FLUID EXTRACTION FOR SOIL REMEDIATION

Supercritical fluid extraction (SFE) is a technique where a substance above its critical pressure and temperature solubilizes compounds and removes them from a matrix. A simple adjustment of temperature or pressure allows a fine-tuning of the solvating power of the supercritical fluid (SF) (Engelhardt et al., 1991, Ramchandran et al., 1992; Akgerman, 1993, Laitinen et al., 1994, Tomasko et al.; 1995). Selectivity for different compounds is possible because their solubility changes with the temperature and pressure of the SF (Tomasko et al., 1995, Phelps et al., 1996). In other words, small changes in a system's pressure and temperature can greatly alter a SF's density and its ability to dissolve compounds (Dooley et al., 1987). For extraction needs, the solvating power of the solvent has to be high. In opposition, to separate the solute and the solvent, the solvating power should basically be non-existent (Akgerman, 1993).

SFE can be used as a soil remediation technique for soils contaminated with organics and/or inorganics. To accomplish this, the matrix to be cleaned is placed in a closed environment where it is exposed to a fluid at its supercritical state. Once equilibrium is reached and the solute (or contaminant) is dissolved in the SF, the SF containing the solute is allowed to flow out of the closed environment. The pressure is then reduced to atmospheric pressure. This decrease in pressure causes the solvent to lose its solvating power and therefore the dissolved contaminant "falls out" of solution. The dissolved contaminant can then be collected in another solvent when the fluid is no longer at its supercritical state and does not possess solvent properties any longer.

The most common supercritical fluid is carbon dioxide (CO_2). CO_2 has a very technically convenient critical temperature and critical pressure of 31°C and 7.4 MPa (Laitinen et al., 1994). Some of the advantages of using carbon dioxide are that it is non-flammable, non-toxic, non-reactive, leaves no solvent residue in soil and is relatively inexpensive (Montero et al., 1997). Pure SC CO_2 is a non-polar solvent, which indicates that it is a good solvent for hydrocarbons and non-polar compounds (Laitinen et al., 1994). However, to increase the solubility of non-polar compounds in SC CO_2, a polar co-solvent, termed as entrainer or modifier, can be added to the CO_2 (Levy et al., 1992). The most efficient and acceptable co-solvents in the industry are water and short chain alcohols. It is also possible to extract metals from soil using SC CO_2. Because of the polar nature of metal species and the use of a non-polar solvent, this practice was not considered viable in the past. The solvent-ion interactions are weak and direct extraction of the metals is not very effective (Tueur et al., 1997). However, the charge neutralization required to dissolve metals in SC CO_2 can be achieved by adding a chelating agent to form a relatively non-polar metal complex.

Because of changes in environmental regulations, there is a need for alternatives to typical solvent processes that are used in industrial processes and in soil remediation (Phelps et al., 1996). SFE is an interesting much more environmentally friendly technique than typical solvent extractions for soil remediation especially with the use of SC CO_2. There are many advantages of using SFE over conventional solvent extraction techniques. There is a reduction in the solvent usage and waste generation. SFE also maintains high sample throughput and yields solute recoveries comparable to other solvent techniques (Wai et al., 1996b). Solvent processes may require more time to remediate soil compared to SFE because of poor mass transfer of conventional solvent extraction (Phelps et al., 1996). Other advantages of SFE are fewer solvent degradation problems, ease of solvent recovery and elimination of residual solvents in the soil (Akgerman, 1993, Smart et al., 1998; David et al., 1998). Also, by using SFE, an extraction can be optimized for a specific compound by simply changing the pressure and temperature of the extraction (Hawthorne, 1990). Because the SF has zero surface tension, the fluid can effectively penetrate the pore structure of a solid matrix (Akgerman, 1993; Erkey et al., 1993).

The many advantages of the SFE need to be associated with other particularities of applying the technique such as the soil type and the type of contaminant to be removed from the soil. The effect of soil type in SFE will be discussed in Section 2.2.1 followed by sections relating to the research done regarding the extraction of organic contaminants and metal species from soil using SC CO_2. The factors that influence the extraction of these organic and inorganic contaminants will also be discussed.

2.2.1 Soil type

The soil type greatly influences the extraction of pollutants from contaminated soil using SFE. Soil is a complex matrix that contains inorganic material, which can be classified as sand, silt and clay, and organic components (Laitinen et al., 1994). Soils can be classified as sand, silt or clay based on the particle size distribution. Organic contaminants may be more difficult to remove from soils containing more organic material because of the strong bonds that form between the organic pollutants and the organic matter in the soil. Clays that have high Al^{3+} and Fe^{3+} contents may absorb organic acids and bases, and highly polar non-ionics (Dooley et al, 1987). Soil extraction results may also be affected by other soil parameters such as pH, moisture, particle size, surface area and porosity. A soil with higher pH can slow down the extraction of acidic compounds (Liu et al., 1991). Moisture content in the soil will affect the extraction by influencing the sorption of the pollutants in the soil, the equilibrium distribution of the solute between the solid and fluid phases and the rate of the extraction (Laitinen et al., 1994). In general, the smaller the particle size, the larger the surface area and adsorption capacity will be. This will decrease the efficiency of the extraction because the desorption of the contaminant from the matrix will be more difficult. According to Cai (1990), extraction efficiencies of PCBs and pesticides from clays are lower because of the small particle size and high adsorption capacity. In another study by Burk et al. (1990), the particle size had no effect on the extent or rate of the extraction of fluoroanthene from sand. Also, only a small increase in extraction efficiency was observed by Cai (1990) when sand particle size was increased.

2.2.2 Removal of organics

Most non-polar compounds can be removed from contaminated soil using SFE because of the non-polar nature of SC CO_2. In the past, only organic non-polar or volatile contaminants were expected to be effectively removed by SFE with carbon dioxide (Laitinen et al., 1994). SC CO_2 can dissolve hydrocarbons, polyaromatic hydrocarbons (PAHs), chlorinated hydrocarbons (PCBs and dioxins), phenols, chlorinated phenols, and many pesticides and herbicides. When polar co-solvents, such as water and short-chain alcohols (methanol, ethanol, etc.), are added to SC CO_2, the solubility of polar contaminants, like chlorophenols and certain pesticides, is enhanced (Laitinen et al., 1994).

The removal of these organic species can be affected by soil type as explained in Section 2.2.1, by the addition of a modifier or entrainer, by pressure and temperature changes and by moisture content. For each type of organic contaminants presented here, the effect of an entrainer or modifier, temperature and pressure, and moisture will be discussed briefly.

2.2.2.1 Polycyclic aromatic hydrocarbons

Polycyclic aromatic hydrocarbons (PAHs) are neutral, non-polar organic molecules that are produced when fossil fuel combustion is incomplete and in the processing of petroleum products. One of the major constituents of creosote oils (used as wood preserving agents) are PAHs.

SFE with pure CO_2 can almost completely remove low molecular weight PAHs from landfill soil (McNair and Frazier, 1991), coal tar contaminated soil (Wright et al., 1989), railroad bed soil (Hawthorne et al., 1992) and petroleum waste sludge (Hawthorne et al., 1992). Three-, four- and five- ring PAH recoveries are comparable to or higher than that achieved by Soxhlet extraction with toluene (Wenclawiak et al., 1992). Increasing molecular size and decreasing vapor pressure decrease the recoveries (Wright et al, 1989; Hawthorne et al., 1992). Recoveries of different PAHs in pure SC CO_2 were measured to be between 31 and 96% (McNair and Frazier, 1991; Hawthorne et al., 1992; Lopez-Avila et al.). Pure CO_2 yielded similar PAH recoveries from contaminated soil to results obtained by Soxhlet, pressurized liquid extraction (PLE) and subcritical water (Hawthorne et al., 2000).

Modifier

The addition of a polar entrainer has been shown to decrease the adsorption of PAHs onto soil and increase the extraction efficiency (Andrews et al., 1990). Addition of methanol to the SC CO_2 can increase recoveries of PAHs to higher than 90% (Hawthorne et al., 1987, Lopez-Avila and Dodhiwala, 1990; Yu et al., 1990; Levy et al., 1992; Monserrate and Olesik, 1996) compared to low recoveries (40%) when no entrainer is used. Good recoveries of PAHs from spiked lignite were obtained with methanol/CO_2 supercritical mixtures (Kenny and Olesik, 1996).

Pressure and temperature

PAH recoveries are favored by higher pressure up to 35 MPa (Burk and Kruus, 1990; Yu et al., 1990; Lagenfeld et al., 1993). A significant increase in temperature may have little effect or an important effect depending on the nature and the character of the soil and the interaction between the soil and the contaminant (Lagenfeld et al., 1993). According to Hawthorne et al. (1992), Kenny and Olesik (1996), Lagenfeld et al. (1995), Lagenfeld et al. (1993) and Yang et al. (1995), increasing the temperature to 200°C compared to lower temperatures increased the extraction of PAHs from soil, bitumous fly ash, marine sediments, urban air particulate and diesel soot. Aliphatic and aromatic hydrocarbons in shale were recovered more efficiently at 350°C than at lower temperatures (Furton et al., 1994).

Moisture

When water is used as an entrainer, the desorption of PAHs from soil is strongly favored (Andrews et al., 1990, Kothandaraman et al., 1992). An addition of water up to 10wt% increases the extraction recoveries (Lopez-Avila and Dodhiwala, 1990), but when more water is added, a decrease in the recovery is observed (Agkerman and Yeo, 1993). When water is present, the soil will absorb the water and release the PAHs (Laitinen et al., 1994). The PAHs can then be dissolved by the relatively non-polar SC CO_2. When too much water is present, the CO_2 becomes saturated with water and is then a poor solvent for non-polar PAHs. Once the poor solubility of PAHs in SC CO_2 becomes the controlling factor because of the presence of water, the recovery decreases (Laitinen et al., 1994).

Schleussinger et al. (1996) have shown that the addition of water, either in a continuous or discontinuous manner, increases the extraction efficiency of PAHs from spiked silt and contaminated soil by altering the adsorption phenomena. The extraction seems to be limited by adsorption and not by diffusion effects. Also, water decreases the extraction rate because an additional phase is formed. However, water increases the accessibility of the contaminant, which allows a faster transport out of the soil (Schleussinger et al., 1996).

2.2.2.2 PCBs and pesticides

Polychlorinated biphenyls (PCBs) possess two chlorinated phenyl rings. Their uses in the past have been as flame retardants, polymer plasticizers, hydraulic fluids, adhesives, inks, lubricants, wax extenders, dedusting agents, cutting oils and dielectric fluids for capacitors and transformers, and as pesticide extenders (Cai, 1990).

Recoveries of PCBs using pure CO_2 from spiked and natural subsoils, peat, sediment and sand have been measured to be above 90% (Brady et al., 1987; David et al., 1992; van der Verde et al., 1992). However, for sewage sludge, river sediments and other soils, the recoveries measured were between 39 and 80% (Burk and Kruus, 1990, Cai, 1990, David et al., 1992, Hawthorne et al., 1992, Levy et al., 1992). The higher organic content soils and the PCBs seem to bind strongly together. Chen et al. (1997) have removed more than 86% PCBs from contaminated river sediment samples.

Recoveries of DDT vary greatly between studies, ranging from 70% from topsoils and subsoils (Brady et al., 1987; Dooley et al, 1987a; 1987b; 1990), to above 90% from sand (Lopez-Avila and Dodhiwala, 1990; van der Verde et al., 1992) and very low results from spiked soil (Liu, 1991). Some recoveries of over 75% have been reported for organochlorine pesticides (Lopez-Avila and Dodhiwala, 1990) while other results have yielded very low recoveries of pesticides (Burk and Kruus, 1990; Liu, 1991, Lopez-Avila and Dodhiwala, 1990). However, some specific compounds such as atrazine, alachlor, bentazon, permethrin and S-triazine herbicides have been recovered from sand and river sediments with pure CO_2 with efficiencies above 90% (Hunter and Bradley, Janda et al., 1989). High organic matter affects the recovery of pesticides from soil (Dean et al., 1996).

Modifier

When a small amount of entrainer, such as methanol (3-10% w/w), is added, the extraction of PCBs, DDT, organochlorine and organophosphorous pesticides from soil is improved (Brady et al., 1987; Dooley et al., 1987a; 1987b; 1990; Lopez-Avila and Dodhiwala, 1990; Levy et al., 1992; Snyder et al., 1992; Agkerman and Yeo, 1993; Wuchner et al., 1993;).

In the recovery of phenoxyacid herbicides from fortified house dust, results below 40% were obtained with pure CO_2 (Reighard and Olesik, 1996b). However, when 10 or 20% (w/w) methanol was added, the recoveries were measured to be between 83 to 95%. The use of modifiers becomes critical when polar organophosphorous pesticides and herbicides are extracted (Dean et al., 1996). When excess modifier is added, the soil–pesticide interactions are not as strong, which increases the recovery of pesticides.

Pressure and temperature

The recovery of PCBs and pesticides increases with increasing pressure and density (Cai, 1990; Ashraf, 1992). When density ceases to increase so does the recovery.

Several behaviors have been observed when the temperature is increased (David et al., 1992; Hawthorne et al.1992; Langenfeld et al., 1993). It seems that the absorption of DDT and other pesticides in soil decreases with increasing temperature. However, this is only the case at high temperatures if the decreased absorption is not offset by a decrease in fluid density and subsequently a decrease in solvating power (Dooley et al., 1987b, Ashraf et al., 1992).

In the extraction of phenoxyacid herbicibes, the recovery results of dicamba and 2-(2,4,5-trichlorophenoxy)propionic acid (2,4,5-TP) were comparable at four different temperature conditions (25, 50, 100 and 150°C). However, 2,4-dichlorophenoxyacetic acid (2,4-D) and 2,4,5-trichlorophenoxyacetic acid (2,4,5-T) yielded better results at 100 and 150°C (Reighard and Olesik, 1997). This may be explained by the carboxylic acid side chains in 2,4-D and 2,4,5-T, which are less hindered by other substituents and the compounds may be more strongly absorbed to the matrix than dicamba and 2,4,5-TP. Compounds 2,4-D and 2,4,5-T require a high solvent strength extraction with methanol modified CO_2 and elevated temperatures to be efficiently desorbed and extracted.

Moisture

One study noted that a moisture content of 20% decreases the extraction rate of PCBs and DDT from soil but does not affect the final recovery (Brady et al., 1987).

2.2.2.3 Phenols

Wood preservation procedures in sawmills have utilized a mixture of tri-, tetra- and penta-chlorinated phenols. The result of this use and spills have contaminated many sites in Scandinavia, Russia and North America (Laitinen et al., 1994).

When using pure CO_2, low recoveries of phenols and chlorophenols (4 to 78%) from soils have been reported by many authors (Burk and Kruus, 1990; Lopez-Avila and

Dodhiwala, 1990; Hess et al., 1991; Liu, 1991). However, 90% recoveries of pentachlorophenol in landfill soil have been obtained by McNair and Frazier (1989).

Modifier

In general, when a polar modifier, such as methanol or DMSO, is added to the SC CO_2, the extraction efficiency increases to above 80% (Hess, 1990; Liu, 1991). However, dry soils and soils with some moisture may react differently to the addition of a modifier (Roop et al., 1989; Hess, 1990). Hess (1990) reported that the addition of methanol increased the recovery of phenols from dry soil but decreased the recovery from soil containing 10% moisture.

Higher extraction yields of phenolics and nitroaromatics from fortified house dust and river sediment were obtained when using methanol modified SC CO_2 rather than pure SC CO_2 (Reighard and Olesik, 1996, Yuan and Olesik, 1996). According to Reighard and Olesik (1996), the best average extraction yields were obtained using a 32.1/7.9/60.0 mol% methanol/H_2O/CO_2 mixture as the extraction solvent.

Pressure and temperature

According to Hess (1990), an increase in pressure and temperature does not seem to affect the recovery of phenol from dry soil. Lower temperatures and pressures can be used only if the decreased solubility does not become the limiting factor.

Moisture

Percent recoveries of phenols from soil containing 10% (w/w) water were measured at nearly 90% by Hess et al., (1991) and Hess (1990). The mechanisms that may contribute to an increase in recovery when moisture is added compared to a dry soil are: (i) water may occupy the adsorption sites in the soil, which releases the phenol; (ii) the supercritical phase becomes more hydrophilic with the presence of water and therefore phenol solubility increases; or (iii) some phenol may dissolve in the water phase (Laitinen et al., 1994). In another study, Roop et al. (1989) observed no effect with 10% (w/w) water. When the water content becomes higher than 10%, the recoveries decrease (Hess, 1990; Barna et al.).

In the extraction of phenolic and nitroaromatic compounds from sediment, the best extraction condition was obtained with 10% water content in the sediment using 10/90 mol% methanol/CO_2 mixture as the extraction solvent (Yuan and Olesik, 1996).

2.2.2.4 Dioxins

Polychlorinated dibenzodioxins (PCDD, dioxins) and polychlorinated dibenzofurans (PCDF) are by-products formed in the manufacture of chlorinated, aromatic compounds (Laitinen et al., 1994). They may be present in the form of minor impurities in wood preserving products.

Using pure SC CO_2, dioxins have been quantitatively extracted from soils. Measured recoveries of dioxins from spiked sand or sediment ranges between 48 and 87% (Onuska and Terry, 1989; DeRoos and Bicking, 1990).

Modifier

Quantitative results for extractions of dioxins from spiked soil and sediment have been measured when a small amount of methanol is added to the carbon dioxide (Onuska and Terry, 1989; von Holst et al., 1992).

Pressure and temperature

Lagenfeld et al. (1995) observed higher recoveries of PCDDs from fly ash measured at 200°C than at 120 or 40°C.

Moisture

According to Onuska and Terry (1989), moisture contents of 20% will slow down the rate of extraction of dioxins from dry soil. However, the residual concentrations remain the same.

2.2.3 Removal of metals

In the past, the use of SC CO_2 to remove metal species from soils was not considered viable (Laitinen et al., 1994). Since CO_2 is not a polar molecule, the solvent-ion interactions are weak and direct extraction of metals by SC CO_2 is not very effective (Tueur et al., 1997). To be able to remove a metal from its matrix, a complexing agent that is soluble in SC CO_2 is added to the SF or to the matrix. This complexing or chelating agent can provide charge neutralization for the metals and form a metal complex that can be dissolved in the SF (Phelps et al., 1996).

Chelating metals with organic ligands results in a metal chelate that is soluble in SC CO_2 (Lin et al., 1995a). The effectiveness of the chelating agent plays a great role on the success of the SFE (Wai and Wang, 1997). Some characteristics that the chelating agent should posses are (i) reasonable solubility in SC CO_2, (ii) form stable and extractable chelates with metal ions and (iii) for larger scale applications, be commercially available and inexpensive. Some chelating agents such as dithiocarbamates, β-diketones, organophosphorous reagents, macrocyclic compounds, fluorinated surfactants and others have been studied for the SFE of metals (Laintz et al, 1991; 1992a; 1992b; Wai et al., 1993; Lin et al, 1993; 1994; Lin and Wai, 1994; Wang and Marshall, 1994; Lin et al., 1995a; 1995b; Toews et al., 1995; Wai, 1995;Wang et al., 1995; Wai et al., 1996; Wai and Wang, 1996; Wallen et al., 1997).

The SFE of metals seems to be controlled by the following parameters: solubility and stability of chelating agents, solubility of metal chelates, water and pH, temperature and pressure, chemical form of metal species, and matrix. To have a better understanding of these factors and to discuss them, a summary of solubility and extraction data will be presented in the following sections.

2.2.3.1 Solubility data

To design an efficient SFE process, it is necessary to determine and model the solubility of the solute (Bruno, 1991). Knowledge about the solubility permits the optimization of the operating conditions for the extraction of a similar solute. The solubility measurement techniques that have been used are dynamic, static, spectroscopic and quartz crystal microbalance.

For dynamic solubility measurements, the supercritical fluid (SF) continuously flows through the flow cell to dissolve the compound (Asraf-Khorassani et al., 1997b). The solubility is then measured based on the weight of the solute dissolved in the exact volume of fluid or from the slope of the linear portion of the extraction curve. More information about this technique can be found in Bruno (1991), McHugh and Krukonis (1994) and Ashraf-Khorassani et al. (1997b).

For static solubility measurements, the pressure vessel is loaded with a known amount of solute and SF (Ashraf-Khorassani et al., 1997b). Equilibrium between the solute and the SF is achieved by recirculation or diffusion within a closed circuit. The analysis is then carried out using spectroscopic methods. More information about this technique may be found in Bruno (1991), Inomata et al. (1993), Brunner (1994), McHugh and Krukonis (1994), Rice et al. (1995), Bush and Eckert(1997) and Ashraf-Khorassani et al. (1997b).

In spectroscopic techniques, spectroscopy is the main feature of the solubility measurement (Bruno, 1991). In dynamic and static techniques, spectroscopic detection may be used as a tool but is not the main feature in the determination of solubility. Bush and Eckert (1997) and Bartle et al. (1991) discuss some of the limitations of this technique including the need for extensive calibration to determine the variation of the molar absorption with SF density, and difficulties created by the variations of band shape with the SF pressure and absorption of the solute on the cell windows.

The piezoelectric quartz crystal microbalance technique is a relatively new technique for the measurement of solubilities in SFs (Guigard et al., 2001). The frequency of the crystal on which a mass of the solute is loaded is monitored. Because the frequency is proportional to the mass of solute on the crystal, the initial and final frequency readings can be used to calculate the solubility of the solute.

2.2.3.1.1 Solubility of chelating agents

Some of the dithiocarbamates, β-diketones and organophosphorous reagents used as chelating agents in the SFE of metals are presented in Table 2.1.

The solubility of the chelating agent is important in the process of its selection (Liu et al., 1993). It is necessary that the chelating agent possess a reasonable solubility to ensure that enough of it is present to react with the metal that will be extracted (Smart et al., 1997a). Table 2.2 gives a summary of the chelating agents for which the solubilities have been measured by different authors.

Table 2.1 Some chelating agents used in the SFE of metals (Guigard, 1999)

Type	Formula	R groups	Abbreviation	Name
dithiocarbamates	R_2NCS_2	R = $-CH_2CF_3$	FDDC	bis(trifluoroethyl)dithiocarbamate
		R = $-C_2H_5$	DDC	diethyldithiocarbamate
		R = $-C_3H_7$	P3DC	dipropyldithiocarbamate
		R = $-C_4H_9$	BDC	dibutyldithiocarbamate
		R = $-C_5H_{11}$	P5DC	dipentyldithiocarbamate
		R = $-C_6H_{13}$	HDC	dihexyldithiocarbamate
		R = $-CH_2(CH_2)_2CH_2$	PDC	pyrollidinedithiocarbamate
β-diketones	$R_aC_2O_2CH_2R_b$	R_a, R_b = $-CH_3$	ACAC	acetylacetone
		R_a = $-CF_3$, R_b= $-CH_3$	TFA	trifluoroacetylacetone
		R_a, R_b =$-CF_3$	HFA	hexafluoroacetylacetone
		R_a = thienyl, R_b=$-CF_3$	TTA	thenoyltrifluoroacetone
		R_a = $-C(CH_3)_3$, R_b =C_3H_7	FOD	heptafluorobutanoylpivaroylmethane
organophosphorous reagents	$R_aR_bR_cPO$	R_a,R_b,R_c =n-C_4H_9-O-	TBP	tributylphosphate
		R_a,R_b,R_c =n-C_4H_9	TBPO	tributylphosphine oxide
		R_a,R_b,R_c =n-C_8H_{17}	TOPO	trioctylphosphine oxide
		R_a,R_b,R_c =C_6H_5	TPPO	triphenylphosphine oxide
		R_a,R_b = CH_3-$(CH_2)_3$-$CH(CH_2CH_3)$-CH_2- R_c= OH	D2EHPA	di(2-ethylhexyl)phosphoric acid
		R_a,R_b = $(CH_3)_3C$-CH_2-$CH(CH_3)$-CH_2- R_c =OH	Cyanex 272	bis(2,4,4-trimethylpentyl)phosphinic acid
	$R_aR_bR_cPS$	R_a,R_b =$(CH_3)_3C$-CH_2-$CH(CH_3)$-CH_2- R_3 =SH	Cyanex 301	bis(2,4,4-trimethylpentyl)dithiophosphonic acid
		R_a,R_b =$(CH_3)_3C$-CH_2-$CH(CH_3)$-CH_2- R_3 =SH	Cyanex 302	bis(2,4,4-trimethylpentyl)monophosphonic acid

Table 2.2 Solubility summary of chelating agents used for SFE of metals

Chelating agents	Pressure (MPa)	Temperature (°C)	Reference
TBP, DIPPA, D2EHPA, CMP, CMPO	20.3	60	Meguro et al. (1998)
MHFBHA, HFBHA, MPFOHA, PFOHA	20.3	60	Glennon et al. (1997)
Cyanex 302	10.1-28.4	60	Smart et al. (1997a)
acac, tta	13.2	60	Wai and Wang (1997)
Et_2NH_2DDC, NaDDC, APDC	20.3	60	Wai et al. (1996b)
TBP, TBPO, TOPO, TPPO	15.2-20.3	40-60	Lin et al. (1995b)
crown 1,crown 2,crown 3	20.3	60	Wang et al. (1995)
tetrabutylammonium BDC, DDC, NaDDC, APDC	17.2	45	Wang and Marshall (1994)
NaDDC, FDDC	10.1	50	Laintz et al. (1991)

DIDPA = Diisodecylphosphoric acid
CMP = Dihexyl(*N,N*-diethylcarbamoyl)methylphosphanate
CMPO = Octyl(phenyl)(*N,N*-diisobutylcarbamoyl)-methylphosphine oxide
MHFBHA = N-Methylheptafluorobutyrichydroxamic acid
HFBHA = heptafluorobutyrichydroxamic acid
MPFOHA = methylperfluorooctanohydroxamic acid
PFOHA = N-perfluorooctanohydroxamic acid
Et_2NH_2DDC = diethylammonium diethyldithiocarbamate

2.2.3.1.2 Solubility of metal complexes

Solubility data of metal complexes are important to determine the optimum operating conditions to be used to extract metals with specific chelating agents. The most common chelating agents used are dithiocarbamates and β-diketones. Tables 2.3 and 2.4 present a summary of solubilities of dithiocarbamate and β-diketone metal complexes measured by several authors. Solubilities of metal chelates formed by other chelating agents such as organophosphorous reagents, macrocyclic ligands and hydroxamic acids have also been measured (Cowey et al., 1995; Lin et al. 1995b; Wang,1995; Smart et al., 1997; Glennon et al., 1997; Meguro et al., 1998; Elshani et al., 2000), but will not be further discussed here.

Table 2.3 Solubilities of dithiocarbamate complexes

Complex	Pressure (MPa)	Temperature (°C)	Solubility (mol/L)	Author
$Bi(DDC)_3$	10.1-15.2	50	$1.3 - 9.0 \times 10^{-6}$	Laintz et al. (1991)
$Bi(FDDC)_3$	10.1-15.2	50	$<1 \times 10^{-7}$ – 7.3×10^{-4}	
$Co(DDC)_2$	10.1	50	2.4×10^{-6}	
$Co(FDDC)_2$	10.1	50	8.0×10^{-4}	
$Cu(BDC)_2$	10.1-23.3	60	$1.3\text{-}72 \times 10^{-5}$	Wai et al. (1996a)
$Cu(DDC)_2$	10.1-23.3	60	$1.4 - 11 \times 10^{-6}$	
$Cu(DDC)_2$	11.7-38.0	35-55	[a]$2\text{-}14 \times 10^{-7}$	Cross et al. (1996)
$Cu(DDC)_2$	10.1	50	1.1×10^{-6}	Laintz et al. (1991)
$Cu(FDDC)_2$	10.1	50	9.1×10^{-4}	
$Cu(FDDC)_2$	10.1-23.3	60	$9.1\text{-}40 \times 10^{-4}$	Wai et al. (1996a)
$Cu(HDC)_2$	10.1-23.3	60	$2.1\text{-}28 \times 10^{-4}$	
$Cu(P3DC)_2$	10.1-23.3	60	$6.3\text{-}120 \times 10^{-6}$	
$Cu(P5DC)_2$	10.1-23.3	60	$9.0\text{-}180 \times 10^{-5}$	
$Cu(PDC)_2$	10.1-23.3	60	$4.1\text{-}40 \times 10^{-7}$	
$Hg(BDC)_2$	10.1-23.3	60	$5.6\text{-}56 \times 10^{-5}$	
$Hg(DDC)_2$	10.1-40.4	60	2.5×10^{-3}	Ashraf-Khorassani and Taylor (1999)
$Hg(DDC)_2$	15.2	50	8.2×10^{-6}	Wai et al. (1993)
$Hg(DDC)_2$*	15.2	50	3.0×10^{-5}	
$Hg(FDDC)_2$	10.1-23.3	60	$3\text{-}14 \times 10^{-3}$	Wai et al. (1996a)
$Hg(FDDC)_2$	10.1-40.4	60	$4.6\text{-}14 \times 10^{-3}$	Ashraf-Khorassani and Taylor (1999)
$Hg(FDDC)_2$	15.2	50	5.0×10^{-3}	Wai et al. (1993)
$Hg(FDDC)_2$*	15.2	50	1.2×10^{-2}	
$Hg(HDC)_2$	10.1-23.3	60	$1.6\text{-}38 \times 10^{-5}$	Wai et al. (1996a)
$Hg(P3DC)_2$	10.1-23.3	60	$1.2\text{-}23 \times 10^{-5}$	
$Hg(P5DC)_2$	10.1-23.3	60	$1.0\text{-}20 \times 10^{-4}$	
$Hg(PDC)_2$	10.1-23.3	60	$3.5\text{-}34 \times 10^{-7}$	
$Na(DDC)_2$	10.1	50	1.5×10^{-4}	Laintz et al. (1991)
$Na(FDDC)_2$	10.1	50	4.7×10^{-3}	
$Ni(DDC)_2$	10.1	50	8.5×10^{-7}	
$Ni(FDDC)_2$	10.1	50	7.2×10^{-4}	
$Pb(DDC)_2$	15.2	50	1.2×10^{-6}	Wai et al. (1996b)
$Pb(PDC)_2$	15.2	50	5.1×10^{-7}	
$Pb(FDDC)_2$	15.2	50	2.3×10^{-4}	

Table 2.3 (Continued)

Complex	Pressure (MPa)	Temperature (°C)	Solubility (mol/L)	Author
$Zn(BDC)_2$	10.1-23.3	60	$8.2\text{-}69 \times 10^{-5}$	Wai et al.(1996a)
$Zn(DDC)_2$	10.1-23.3	60	$1.1\text{-}24 \times 10^{-6}$	
$Zn(FDDC)_2$	10.1-23.3	60	$9.5\text{-}90 \times 10^{-4}$	
$Zn(HDC)_2$	10.1-23.3	60	$3.2\text{-}58 \times 10^{-4}$	
$Zn(P3DC)_2$	10.1-23.3	60	$7.9\text{-}150 \times 10^{-4}$	
$Zn(P5DC)_2$	10.1-23.3	60	$1.6\text{-}32 \times 10^{-4}$	
$Zn(PDC)_2$	10.1-23.3	60	$3.2\text{-}90 \times 10^{-7}$	

[a] mol/mol
* with % methanol in SC CO_2
FDDC = bis-trifluoroethyldithiocarbamate
BDC = dibutyldithiocarbamate
DDC = diethyldithiocarbamate
HDC = dihexyldithiocarbamate
P5DC = dipentyldithiocarbmate
P3DC = diprpyldithiocarbamate
PDC = pyrrolidinedithiocarbamate

Table 2.4 Solubilities of metal β-diketone complexes

Complex	Pressure (MPa)	Temperature (°C)	Solubility [a](mol/L), [b](mol/mol) or [c]mg/L	Author
$Ba(hfa)_2$	12-22	150-170	[b]$1.3\text{-}24 \times 10^{-5}$	M'Hamdi et al. (1991)
$Co(acac)_2$	40.4	20-100	[b]$4.1\text{-}40 \times 10^{-9}$	Ozel et al. (2000)
$Co(acac)_2$	10.1-40.4	60	[b]$2.6\text{-}40 \times 10^{-9}$	
$Co(acac)_2$*	40.4	100	[b]4.0×10^{-8}	
$Co(hfa)_2$	40.4	100	[b]27×10^{-8}	
$Co(hfa)_2$*	40.4	100	[b]59×10^{-8}	
$Co(acac)_3$	29.4	60	[c]0.62	Saito et al. (1990)
$Co(acac)_2 \cdot 2H_2O$	29.4	60	[c]0.25	
$Cu(acac)_2$	29.4	60	[c]0.21	
$Cu(tta)_2$	9.65	40-45	[b]$8.4\text{-}3.4 \times 10^{-7}$	Stroich (2001)
$Cu(tta)_2$	10.34	40-45	[b]$18\text{-}3.8 \times 10^{-7}$	
$Cu(tta)_2$	10.3	40	[b]3.4×10^{-5}	Guigard (1999)
$Cu(tta)_2$	9.65	45	[b]6.8×10^{-7}	
$Cu(acac)_2$	10.3	40	[b]1.1×10^{-5}	

Table 2.4 (Continued)

Complex	Pressure (MPa)	Temperature (°C)	Solubility [a](mol/L), [b](mol/mol) or [c]mg/L	Author
$Cu(acac)_2$	9.65	45	[b]3.0 x 10^{-6}	Guigard (1999)
$Cu(acac)_2$	12-22	150-170	[b]6.2-160 x 10^{-6}	M'Hamdi et al. (1991)
$Cu(hfa)_2$	20.2-40.4	60	[a]8.7-8.5 x 10^{-2}	Ashraf-Khorassani et al. (1997a)
$Cu(acac)_2$	10.3-34.5	40	[b]7.5-23 x 10^{-6}	Lagalante et al. (1995)
$Cu(tfa)_2$	10.3-34.5	40	[b]30-59 x 10^{-5}	
$Cu(hfa)_2$	10.3-31.0	40	[b]23-57 x 10^{-4}	
$Cu(dmhd)_2$	13.8-34.5	40	[b]3.7-36 x 10^{-5}	
$Cu(dibm)_2$	10.3-34.5	40	[b]9.2-88 x 10^{-5}	
$Cu(tfbzm)_2$	13.8-34.5	40	[b]0.7-4.3 x 10^{-5}	
$Cr(acac)_3$	10.3-34.5	40	[b]1.7-19 x 10^{-5}	
$Cr(acac\text{-}Br)_3$	10.3-24.1	40	[b]5.0-15 x 10^{-6}	
$Cr(acac)_3$	11.8-30.1	35-55	[b]5.1-26 x 10^{-6}	Cross et al. (1996)
$Cr(hfa)_3$	20.2-40.4	60	[a]>8.0-8.2 x 10^{-2}	Ashraf-Khorassani et al. (1997a)
$Cr(acac)_3$	20.2-40.4	60	[a]2.0-3.5 x 10^{-3}	
$Eu(fod)_3$	15.2	60	[a]7.9 x 10^{-2}	Lin and Wai (1994)
$La(fod)_3$	15.2	60	[a]5.5 x 10^{-2}	
$Fe(acac)_3$	9.0-27.6	40	[b]3.1-32 x 10^{-5}	Roggeman et al. (2001)
$Fe(acac)_3$	9.0	60	[b]0.9-58 x 10^{-5}	
$Fe(acac)_3$ †	9.0	60	[b]4.3-13 x 10^{-3}	
$Ga(acac)_3$	29.4	60	[c]3.01	Saito et al. (1990)
$In(acac)_3$	29.4	60	[c]2.63	
$Li(acac)_3$	29.4	60	[c]0.01	
$Mn(acac)_2$	29.4	60	[c]1.26	
$Mn(acac)_2 \cdot 2H_2O$	29.4	60	[c]0.40	
$Ni(hfa)_2$	20.2-40.4	60	[a]8.0-9.9 x 10^{-3}	Ashraf-Khorassani et al. (1997a)
$UO_2(tta) \cdot TBP$	10.1-~35	40	[a]<1.0-17 x 10^{-3}	Wai and Waller (2000)
$UO_2(tta) \cdot TEP$	10.1-~35	40	[a]<1.0-6.0 x 10^{-3}	
$UO_2(tta) \cdot TOPO$	10.1-~35	40	[a]<1.0-4.0 x 10^{-3}	
$UO_2(tta) \cdot TBPO$	10.1-~35	40	[a]<1.0 x 10^{-3}	
$UO_2(tta) \cdot H_2O$			not visible on graph	

Table 2.4 (Continued)

Complex	Pressure (MPa)	Temperature (°C)	Solubility [a](mol/L), [b](mol/mol) or [c]mg/L	Author
Y(acac)$_3$	12-22	150-170	[b]$4.7-34 \times 10^{-6}$	M'Hamdi et al. (1991)
Y(hfa)$_3$	12-22	150-170	[b]$3.1-9.3 \times 10^{-4}$	
Zn(acac)$_2$	29.4	60	[c]1.01	Saito et al. (1990)

* with % methanol in SC CO_2
† 3% chloroform modified CO_2

acac	= acetylaacetone
bzac	= 1-phenylpentane-1,3-dione or benzoylacetone
dmhd, dibm	= 1,1-dimethylhexane-3,5-dione, 2,6-dimethylheptane-3,5-dione
fod	= 2,2-dimethyl-6,6,7,7,8,8,8-heptafluoro-3,5-octanedione
hfa	= hexafluoroacetylacetone
tfa	= trifluoroacetylacetone
tfbzm	= 1,1,1-trifluoro-4-phenylbutane-2,4-dione
thd, tod	= 2,2,6,6-tetramethylheptane-3,5-dione, 2,2,7-trimethyloctane-3,5-dione
tta	= thenoyltrifluoroacetone

2.2.4 Metal extraction data using SFE

Tables 2.5, 2.6, 2.7 2.8 and 2.9 provide summaries of the percent recoveries or percent extraction of metal complexes from soil, sludge and fly ash using dithiocarbamate, β-diketone and other ligands.

Table 2.5 Percent recoveries or percent extraction of dithiocarbamate metal complexes from soil

Chelating agent	Experimental conditions			% recovery or % extraction of (% s.d.)					Author
	Pressure (MPa)	Temperature (°C)	Soil type	Cu	Co	Cd	Pd	Hg	
A(PDC) ‡	10.1-25.3	45	sand			13-19	19-43	23-26	[1]
A(PDC)* ‡	10.1-25.3	45	sand			33-53	53-64	45-57	
Et_2NH_2(DDC) ‡	10.1-25.3	45	sand			59-68	71-81	77-92	
Et_2NH_2(DDC)* ‡	10.1-25.3	45	sand			84	88-89	93	
$Hg(DDC)_2$†	20.3-40.5	40	sand					60-90 (9-4)	[2]
$Hg(DDC)_2$ †*	20.3	40	sand					93 (3)	
$Hg(DDC)_2$ †	20.3-40.5	40	soil					17-28 (11-13)	
$Hg(DDC)_2$ †*	20.3	40	soil					70 (3)	
$Hg(DDC)_2$†	20.3-40.5	40	fly ash					8-16 (36)	
$Hg(DDC)_2$ †*	20.3	40	fly ash					34 (14)	
$Hg(DDC)_2$ †	20.3-40.5	40	sludge					34-43 (28-36)	
$Hg(DDC)_2$ †*	20.3	40	sludge					59 (29)	

Table 2.5 (Continued)

Chelating agent	Experimental conditions			% recovery or % extraction of (% s.d.)						Author
	Pressure (MPa)	Temperature (°C)	Soil type	Cu	Co	Zn	Cd	Pd	Hg	
$Hg(FDDC)_2$ †*	20.3	40	sand						96 (2)	
$Hg(FDDC)_2$ †	20.3-40.5	40	soil						92-93 (2-1)	
$Hg(FDDC)_2$ †*	20.3	40	soil						84 (5)	
$Hg(FDDC)_2$†	20.3-40.5	40	fly ash						99-104 (6)	
$Hg(FDDC)_2$ †*	20.3	40	fly ash						112 (1)	
$Hg(FDDC)_2$ †	20.3-40.5	40	sludge						70-82 (21-14)	
$Hg(FDDC)_2$ †*	20.3	40	sludge						99 (10)	
Li(FDDC)	40.5	80	sand						90 (17)	
Li(FDDC)	40.5	80	soil						89 (10)	
Li(FDDC)	40.5	80	fly ash						102 (26)	
Li(FDDC)	40.5	80	sludge						57 (7)	
Li(FDDC) ‡	10.1-25.3	45	sand				91-92	83-91	93-94	[1]
Li(FDDC)* ‡	10.1-25.3	45	sand				91-97	90-96	92-98	
Li(FDDC)	20.3	40	sand	69 (27)	55 (70)	63 (65)	65 (41)			[3]

Table 2.5 (Continued)

Chelating agent	Experimental conditions			% recovery or % extraction of (%s.d.)						Author
	Pressure (MPa)	Temperature (°C)	Soil type	Cu	Co	Zn	Cd	Pd	Hg	
Li(FDDC)*	20.3	40	sand	68 (20)	77 (35)	84 (30)	72 (23)			
Na(DDC)	40.5	80	sand						90 (17)	[2]
Na(DDC)	40.5	80	soil						51	
Na(DDC)	40.5	80	fly ash						32 (27)	
Na(DDC)	40.5	80	sludge						18 (12)	
Na(DDC) ‡	10.1-25.3	45	sand				36-82	42-86	58-94	[1]
Na(DDC)* ‡	10.1-25.3	45	sand				53-90	84-91	87-97	
Na(DDC)* ‡	10.1-25.3	45	soil				52-87		83-89	

* with %methanol in SC CO_2
† pre-formed metal complex
‡ water added to sample
[1] Wai et al. (1996b)
[2] Ashraf-Khorassani and Taylor (1999)
[3] Liu et al. (1993)
[4] Wai (1995)
DDC = bis(diethyl)dithiocarbamate
FDDC = bis(trifluoro)diethyldithiocarbamate
PDC = pyrrolidinedithiocarbamate

Table 2.6 Percent recoveries or percent extraction of β-diketone metal complexes from soil

Chelating agent	Experimental conditions			% recovery or % extraction of (%s.d.)					Author
	Pressure (MPa)	Temperature (°C)	Soil type	(UO_2)	Th	La	Eu	Lu	
tta‡	15.2	60	sand			40 (8)	51 (6)	65 (6)	[1],[4]
tta+ TBP‡	15.2	60	sand			91 (3)	92 (4)	95 (4)	
tta‡	15.2	60	sand	72 (6)	74 (7)				[2], [4]
tta+TBP‡	15.2	60	sand	94 (5)	93 (5)				
hfa+TBP‡	15.2	60	soil A	91 (4)					
tta+TBP‡	15.2	60	soil A	82 (6)					
hfa+TBP‡	15.2	60	soil B	89 (5)					
tta+TBP‡	15.2	60	soil B	77 (5)					
hfa +TBP‡	15.2	60	soil A	91 (5)					[3]
hfa+TOPO‡	15.2	60	soil A	95 (6)					
hfa +TBP‡	15.2	60	soil B	89 (6)					
hfa+TOPO‡	15.2	60	soil B	98 (5)					
hfa +TBP‡	15.2	60	soil			80 (4)	88(4)	92 (5)	
hfa+TOPO‡	15.2	60	soil			84 (5)	95 (5)	99 (5)	

Table 2.6 (Continued)

Chelating agent	Experimental conditions			% recovery or % extraction of (% s.d.)					Author
	Pressure (MPa)	Temperature (°C)	Soil type	(UO_2)	Th	La	Eu	Lu	
tta+TBP$^{\Delta}$	20.2	80	sand	94					[5]
tta+TBP$^{\Delta}$	20.2	80	soil	82					
tta+TBP$^{\Delta}$	20.2	80	tailings	80					

‡ water added to sample
$^{\Delta}$ pretreated with neat CO_2 for PCB extraction
[1] Lin and Wai (1994)
[2] Lin et al. (1994)
[3] Lin et al. (1995a)
[4] Wai (1995)
[5] Wai and Waller (2000)
hfa = hexafluoroacetylacetone
tta = thenoyltrifluoroacetone
TBP = tributyl phosphate
TOPO = tri-*n*-octylphosphine oxide

Table 2.7 Percent recoveries or percent extraction of β-diketone metal complexes from soil

Chelating agent	Experimental conditions: Pressure (MPa)	Temperature (°C)	Soil type	% recovery or % extraction of (% s.d.): Cu	Ni	Cr	Zn	Cd	Pb	Hg	Author
tfa	10.1-25.3	45	sand					59-71	69-68	67-84	[1]
tfa*	10.1-25.3	45	sand					89-93	84-70	87-94	
tta	10.1-25.3	45	sand					23-63	56-72	50-74	
tta*	10.1-25.3	45	sand					80-95	78-84	89-94	
hfa	10.1-25.3	45	sand					70-65	70-66	65-70	
hfa*	10.1-25.3	45	sand					75-96	84-76	93-78	
hfa*	10.1-25.3	45	soil					41-54		66-77	
hfa‡△	40.4	60	[a]soil	18 (20)	12 (13)	12 (16)	30 (8)		28 (8)		[2]
bzac†	25	60	[b]earth	57							[3]
bzac*†	25	60	[b]earth	73 (2)							
bzac†[c]	25	60	[b]earth	90 (2)							

* with % methanol in SC CO_2
† pre-formed Cu(bzac) spiked onto sample
‡ water added to sample
△ pretreated with pure SC CO_2 for PAH extraction
[a] contaminated soil
[b] Diatomaceoue earth

[c] pretreated with Triton X-100
[1] Wai et al. (1996b)
[2] Ozel et al. (2000)
[3] Liu et al. (2001)
hfa = hexafluoroacetylacetone
tta = thenoyltrifluoroaceton

Table 2.8 Percent extraction of plutonium and americium from soil using β-diketone ligands

Chelating agent	Experimental conditions			% recovery or % extraction of (% s.d.)		Author
	Pressure (MPa)	Temperature (°C)	Soil type	Pu(IV)	Am(III)	
tta+TBP	20.0	65	soil	17 (22)	32 (15)	[1]
tta+TBP[a]	20.0	65	soil	30 (8)	54 (3)	
tta+TBP[b]	20.0	65	soil	69 (8)	88 (7)	
tta+TBP[c]	20.0	65	soil	45 (8)	59 (7)	
tta+TBP[d]	20.0	65	soil	66	68	

[a] pretreated with ligand/ethanol slurry
[b] ligand concentration increased x 10
[c] ethanol modified SC CO_2
[d] triple ethanol modified extraction
[1] Mincher et al. (2001)
tta = thenoyltrifluoroaceton
TBP = tributyl phosphate

Table 2.9 Percent extraction of metals from soil using different ligands

Chelating agent	Experimental conditions			% extraction of (% s.d.)						Author
	Pressure (MPa)	Temperature (°C)	Soil type	Pb	Zn	Cd	Cu	Cr	Hg	
crown 3	20.2	60	sand						7 (29)	[1], [2]
crown 3‡	20.2	60	sand						33 (6)	
crown 3*	20.2	60	sand						78 (4)	
crown 3‡*	20.2	60	sand						95 (3)	
Cyanex 302	16	45	sand	11	50	41	46		98	[3]
Aliquat 336	16	45	sand	6	7	40	<1		98	
D2EHPA	16	45	sand	1	41	2	12		96	
DiOPA	16	45	sand	<1	62	<1	13		86	
none	16	45	sand	<1	<1	4	3	<1	34	
Cyanex 302	8-20	45	sand	2-21	5-55	6-49	8-55			
Cyanex 302‡$^{5\%}$	16	45	sand	64	79	95	99			
Cyanex 302‡$^{10\%}$	16	45	sand	69	76	>99	99			
Cyanex 302‡$^{15\%}$	16	45	sand	68	69	98	98			

Table 2.9 (Continued)

Chelating agent	Experimental conditions			% extraction of (% s.d.)						Author
	Pressure (MPa)	Temperature (°C)	Soil type	Pb	Zn	Cd	Cu	Cr	Hg	
Cyanex 302‡[25%]	16	45	sand	27	48	48	51			
Cyanex 302*	16	45	sand	87		99	99	52		

‡ water added to sample
* with % methanol in SC CO_2
[1] Wang et al.(1995)
[2] Wai (1995)
[3] Kersch et al. (2000)

crown 3 = bistriazolo-crown 3
Cyanex 302 = bis(2,4,4-trimethylpentyl)monothiophosphinic acid
Aliquat 336 = methyltrioctylammonium chloride
D2EHPA = bis(2-ethylhexyl)phosphoric acid
DiOPA = diiosooctylphosphinic acid

Many authors have extracted metals from filter paper using different chelating agents (Lin et al, 1993; Wai et al., 1993; Lin et al., 1994; Lin and Wai, 1994; Wai et al, 1996b; Burford, et al., 1999; Arancibia et al., 2000; Foy and Pacey, 2000b). Ozel et al. (1997) have extracted spiked cobalt from the surface of stainless steel using two β-diketones, acac and hfa, to ensure that a mass balance could be obtained before and after the SFE. The results of these studies are not reported in the tables presented here.

In general, as indicated in Tables 2.5, 2.7 and 2.9, the extraction efficiencies are higher when using SC CO_2 modified with methanol as compared to pure SC CO_2 (Wang et al., 1995; Wai, 1995; Wai et al., 1996b; Kersch et al., 2000). Also, fluorination of the chelating agent increases the solubility of the metal chelate and the extraction efficiency (Liu et al., 1993; Lin et al, 1995a; Wai et al., 1996b). Also, in many studies presented in Tables 2.5, 2.6, 2.7 and 2.9, water is added to the sample to increase the extraction efficiency of the metal (Lin et al., 1994; Lin and Wai, 1994; Lin et al., 1995a; Wai, 1995; Wai et al., 1996b; Kersch, 2000; Ozel et al., 2000).

Synergistic extraction is an alternative to improve the SFE of metals (Lin et al, 1995a). As indicated in Tables 2.6 and 2.8, it is possible to use a mixture of ligand with TBP (tributyl phosphate) to increase the extraction efficiency (Lin et al., 1994; Lin and Wai, 1994; Wai, 1995). According to Lin and Wai (1994), TBP used with β-diketones to extract lanthanides with SC CO_2 yields a strong synergistic effect. In the extraction of lanthanides from sand, the results with TBP and β-diketone mixtures are 92-98% compared to 40-65% with the β-diketones alone. The synergistic effect is dependent on the structure and fluorine substitution in the β-diketone. In soil, a combination of TBP+hfa is more effective than TBP+tta or TBP+fod for the extraction of lanthanides in SC CO_2. The positive synergistic extraction with TBP is negligible when using a β-diketone without fluorine substitution as is the case for acetylacetone (acac) (Lin and Wai, 1994).

Lin et al. (1995a) showed that a stronger Lewis base than TBP, TOPO (tri-*n*-octylphosphine oxide), has a stronger synergistic extraction ability than TBP when mixed with hfa or tta for the extraction of lanthanides and uranyl ions from soil.

Mincher et al. (2001) have determined that it is possible to extract substantial amounts americium (Am) and plutonium (Pu) from soil with ethanol modified SC CO_2 using a mixture of thenoyltrifluoroacetone (tta) and tributyl phosphate (TBP) as the ligand. As much as 69% of Pu and 88% of Am was removed from the soil. However, not all fractions of the actinides may be as equally accessible by the ligands. For Pu and Am, the fractions absorbed by sesquiodes or precipitated as carbonates may be available while the fraction that is hydrolyzed or penetrated into the clay mineral matrix may not be. Because tta is not selective for Am or Pu, and complexes many other metals, the use of a more selective ligand may increase the extraction efficiency (Mincher et al., 2001).

To increase the extraction efficiency of copper from Diatomaceoue earth, Liu et al. (2001) soaked the sample in a liquid phase medium containing a non-ionic surfactant Triton-X (cyclohexane, 1-butanol) and heated the solution before extraction by SC CO_2. The surfactant and polar preformed metal chelates interacted with each other and formed reverse micelles. The reverse micelle encapsulation of the polar metal chelates weakened the interaction between the chelates and the solid matrix. The formation of reverse micelles serves the function of desorption and solubilization (Liu et al., 2001). This is a new way to increase the extraction of Cu^{2+}. The use of Triton X-100 is also studied by Cui et al. (1999).

Smart et al. (1997a) assessed the feasibility of using organophosphorous reagents to extract heavy metals with SC CO_2. Cyanex 302, Cyanex 301 and D2EHTPA were able to extract a large amount of metals from a variety of matrices and from samples of high acidity. Kelex is selective for the extraction of Cu^{2+} using SC CO_2. The results also indicate that only leachable toxic metals can be extracted with SFE (Smart et al., 1997a). Kersch et al. (2000) also concluded that only the leachable metals could be removed from fly ash using Cyanex 302, D2EHTPA, NaDDC and Cyanex 932 with SC CO_2.

In the following section, the factors controlling the SFE of metals are discussed.

2.2.5 Factors controlling SFE

Metals can be extracted from soil using SFE if a chelating agent, which will form a neutral metal complex with the metal ion, is added. The efficiency of the metal extraction using the *in-situ* chelation technique depends on the following factors: stability and solubility of the ligand in SC CO_2, solubility of the metal chelate in SC CO_2, moisture content and pH of the matrix, temperature and pressure, chemical form of metal species and matrix type (Wai and Wang, 1997). These factors are discussed in the following sections.

2.2.5.1 Solubility and stability of chelating agents

As discussed previously, some ligands that are used in the SFE of metals are dithiocarbamates, β-diketones, organophosphorous reagents and macrocyclic ligands.

In the case of dithiocarbamates, fluorination can enhance the solubility of a free ligand in SC CO_2. For example, Laintz et al. (1991) indicated that NaDDC has a solubility of 1.5×10^{-4}M at 50°C and 10.1 MPa compared to a solubility of 4.7×10^{-4} M for NaFDDC at the same conditions. An increase in pressure can increase the solubility of dithiocarbamates significantly. Alkylammonium salts such as Et_2NH_2DDC, have high solubilities in SC CO_2, which may be up to one order of magnitude higher than a sodium salt. Also, when the alkyl chain length of alkylammonium dithiocarbamate salts is increased, the solubility in SC CO_2 is increased (Wang and Marshall, 1994).

The formation of a metal complex depends on the formation constants and the concentration of the ligand (Wai and Wang, 1997). Because metal dithiocarbamate chelates typically have high formation constants, the reaction between the metal and the ligand will take place as long as the chelating agent is present in sufficient amounts (Wai et al. 1996b; Wai and Wang, 1997). The solubility of the metal chelate in the SF seems to be more important than the solubility of the chelating agent. However, dithiocarbamates are very unstable in water especially in acidic solutions (Wai and Wang, 1997). The pH of a matrix containing some water will be approximately 3 in the presence of SC CO_2 because of the formation and dissociation of carbonic acid in water (Toews et al., 1995). Because of the tendency of dithiocarbamate reagents to decompose in acidic solutions, an excess amount of chelating agent is added to ensure good metal extraction efficiencies in SFE.

For the case of β-diketones, little information is available about their solubility. Solubility of acac is 4 x 10^{-4} mole fraction at 600°C and 13.2 MPa, while the solubility of tta is 2.3 x 10^{-2} mole fraction (Wai and Wang, 1997). To form neutral complexes with metals, β-diketones react through the enolate anions. Under high temperatures and pressures, the fluorinated β-diketones (hfa and tta) are almost exclusively in the enol form (Wallen et al. 1997). Under normal SFE conditions, free β-diketones are assumed to be stable in SC CO_2 (Wai and Wang, 1997).

Organophosphorous reagents form coordinatively solvated salts with lanthanides and actinides (Wai and Wang, 1997). When aromatic substituent groups like phenyl are present, the solubility in SC CO_2 is decreased (Smart et al., 1997). For example, at 45°C and 20.3 MPa, the solubility of TOPO is 6.6 x 10^{-2} M while the solubility of the phenyl substituted phosphine oxide, TPPO, is 7.7 x 10^{-3} M. The solubility of Cyanex 302 increases rapidly with pressure (Smart et al., 1997). When a ligand is highly soluble at high pressure, there is a possibility of deposition within the system during depressurization, which may cause restrictor plugging during dynamic flushing. Therefore, when a chelating agent such as Cyanex 302 is used for metal extraction, the solubility of the ligand should not be exceeded in designing a dynamic extraction process (Wai and Wang, 1997). Phosphorous containing reagents appear to be stable in SC CO_2.

When using macrocyclic polyethers (crown ethers), stable complexes are formed with the metal ions based primarily on the ionic radius-cavity size compatibility concept (Wai and Wang, 1997). The solubility of the macrocyclic ligand can be significantly increased by substitution of a *tert*-butyl group at the benzene ring. The solubility of crown ethers also increases by about one order of magnitude when 5 mol% methanol modified CO_2 is used (Wang et al. 1995).

In general, fluorine–substituted ligands have the highest solubilities (Laintz et al, 1991; 1992a; Lin et al. 1995a;). Their use may however be limited by their high cost (Wai and Wang, 1997). Aliphatic substituted hydrocarbon based ligands have solubilities approaching those of fluorine substituted systems and may be potentially used in larger scale applications (Wang and Marshall, 1994). *tert*-Butyl substitution increases the solubility of ligands. However, phenyl substituted ligands show low solubilities and are not likely to be used in SFE applications (Lin et al. 1995b).

2.2.5.2 Solubility of metal chelates

Solubility measurements of metal chelates are important to determine the optimum conditions to extract metals with a specific chelating agent.

Fluorination of dithiocarbamates, such as DDC to FDDC, enhances the solubility of resulting metal complexes in SC CO_2 (Laintz et al., 1991; 1992a; Wai et al. 1993). The solubility of the metal complexes formed when using dithiocarbamates as the chelating agent can be increased by increasing the chain length of the R group, e.g. substituting the two ethyl groups in DDC with two butyl groups (Wang and Marshall, 1994). However, long chain dithiocarbamate ligands are difficult to synthesize (Wai and Wang, 1997). It is also possible that smaller ligands like FDDC may be more efficient in the SFE of some metals because it may be easier for them to diffuse into the matrix, to form the complex and to migrate out of the solid phase. Modifying the CO_2 with methanol may also increase the solubility of metal chelates such as $Hg(FDDC)_2$ (Wai et al., 1993).

Increasing the pressure of the SC CO_2 at a given temperature may also increase the solubility of the metal chelate significantly (Laintz et al., 1991).

Fluorination increases the solubility of metal β-diketone complexes (M'Hamdi et al., 1991; Lin et al., 1993; Lin et al., 1994; Lin and Wai, 1994; Ashraf-Khorassani et al., 1997a; Ozel et al., 2000). Because fluorinated β-diketones typically form very soluble metal complexes in SC CO_2, they are considered effective especially for the SFE of f-block elements (Wai, 1995; Lin and Wai; 1994; Lin et al. 1993). M'Hamdi et al. (1991) and Ashraf-Khorassani et al. (1997a) have shown much greater solubilities when using hfa instead of acac in the complexation of yttrium and chromium. Saito et al (1990) indicated that elements with a higher oxidation state show an enhanced solubility. The solubilities of $Co(acac)_2$ and $Co(hfa)_2$ in SC CO_2 measured by Ozel et al. (2000) indicate that fluorination of the ligand increases the solubility of the metal complex and that using methanol modified SC CO_2 also increases the solubility of the metal complexes.

The solubilities of copper(II) and chromium(III) β-diketonates measured in SC CO_2 by Lagalante et al. (1995) indicate that the solubility in SC CO_2 is strongly affected by the hydrocarbon or fluorocarbon shell surrounding the central metal atom. It seems that substituting trifluoromethyl for methyl groups as substituents increases solubility but substituting phenyl groups decreases solubility (Lagalante et al., 1995). Also, substitution of *tert*-butyl for methyl groups increases the solubility. The solubility of $Fe(acac)_3$ in SC CO_2 and chloroform modified SC CO_2 was measured by Roggeman et al. (2001). The results indicated that 3 mol% of chloroform in the SC CO_2 increased the solubility and suggested that the increase in solubility is not only attributable to the bulk density increase but to the enrichment of the chloroform in the solvation sphere around the solute (Roggeman et al., 2001).

When organophosphorous reagents such as Cyanex are used for metal (Cu^{2+}) extraction in SC CO_2, the solubility of the metal chelate increases with pressure (Wai and Wang, 1997).

Results obtained by Wai et al. (1996b) indicate that the role of the solubility of the chelating agent in the SF may not be as important as the solubility of the metal chelate, as long as a sufficient amount of chelating agent is present in the fluid phase. Also, fluorination of the chelating agent increases the solubility of the metal chelate, which in turn increases the extraction efficiency for the metal ions.

Wai and Waller (2000) indicated that the solubility of metal complexes in SC CO_s can be significantly increased by fluorination of the ligand, replacement of the coordinated water molecules with a lipophilic Lewis base and formation of ion pairs with a fluorinated counteranion. When sequentially extracting PCB and uranyl from soil with tta and SC CO_2 and selectively extracting alkali metal and alkaline earth metal ions from aqueous solution with crown ethers and SC CO_2, it was shown that TBP, a stronger Lewis base, can apparently replace the polar H_2O molecule in the uranyl tta, which makes the TBP adduct complex readily soluble in $SCCO_2$. Also, instead of fluorinating the ligands to increase the solubility of the metal complexes, it is possible to it is possible to use crown ethers to extract crown ether-metal complexes as ions pairs into SC CO_2 using fluorinated counteranions (Wai and Waller, 2000). An increase in the solubility of UO_2(tta)· X (where X=TBP, TEP, TOPO, TBPO, H_2O) was also observed when the pressure was increased.

2.2.5.3 Water and pH

When a small amount of water is added to a matrix such as filter paper, sand, soil or wood, the extraction efficiency of metals using *in-situ* chelation increases significantly (Wang et al., 1995; Wai and Wang, 1997; Kersch et al, 2000). In a study by Kersch et al. (2000), the highest extraction efficiencies of Pb, Zn, Cd and Cu from sand were obtained at water concentrations in the range of 5-10%. The water probably facilitates the metal chelation and may serve as a modifier by blocking active sites of the matrix, which reduces the adsorption of the metal by the active polar sites of the matrix (Knipe et al., 1991).

When water is in equilibrium with CO_2 under SFE conditions, the pH of water is approximately 3 because of the formation and dissociation of carbonic acid (Toews et al., 1995). These are favorable conditions for the extraction of metals using dithiocarbamate reagents, β-diketones, triazolocrown ethers, Cyanex reagents and organophosphorous reagents to extract metal complexes (Lin et al., 1995; Wai and Wang, 1997).

2.2.5.4 Temperature and pressure

In general, when the pressure is increased, the density increases, which enhances the solubility of ligands and metal chelates, and therefore increases the extraction efficiency (Laintz et al., 1991; Wai et al, 1993; Wai and Wang, 1996b).

The temperature also has an effect on the analyte volatility, extraction kinetics and SF density. However, the effect on the extraction efficiency can be different because an increase in analyte volatility and extraction kinetics can be countered by the decreased density (Wai and Wang, 1997).

The use of high temperatures may be advantageous in the use of one type of chelating agent and disadvantageous for another. At high temperatures (100°C), the extraction efficiency may decrease when using hfa as the chelating agent because it may be thermally labile and partially decompose during extractions (Ozel et al., 2000). However, in a study by Ozel et al. (2000), the use of high temperature (100°C) increased the solubility of the metal complex $Co(acac)_2$.

Liu et al. (2001) showed that in the extraction of Cu^{2+}, an increase in pressure results in an increase of density, which is beneficial to the extraction. However, as the density tends to reach its maximum (25 MPa), the solubility of the metal chelate appeared to approach a limit. Also, as the pressure became higher, the flow out of the restrictor increased which favored the loss of metal chelate by volatilization and formation of aerosols. When the temperature is increased, three types of functions compete. Higher temperatures increase the heat motion of solutes on the active sites of the matrix, which helps the solute to overcome the adsorbing energy of the matrix and desorb from the active sites of the matrix. An increase in the vapor pressure associated with an increase in temperature helps the solute dissolve more easily in SC CO_2. However, the decrease in density caused by the increase in temperature decreases the solubilizing ability of the SC CO_2 and in turn the solubility of the metal chelate in SC CO_2.

2.2.5.5 Chemical form of metal species

Because metals can exist as organometallic compounds, ionic species, and inorganic compounds such as oxides or sulfides, SFE of metals is more difficult than that of organic compounds (Wai and Wang, 1997). Since organometallic compounds, e.g. methylmercuric chloride (CH_3HgCl) and dimethyl mercury [$(CH_3)_2Hg$], may be soluble in a SF, a ligand may not be necessary to extract them. This indicates that a sequential extraction could be used to first extract organometallic compounds and then the inorganic compounds by adding a chelating agent (Wai et al., 1993).

2.2.5.6 Matrix

The matrix is very important in the SFE of metals and of organics (Wai and Wang, 1997). When metal ions are spiked onto sand, high extraction efficiencies are usually achieved with *in-situ* chelation SFE. However, the extraction efficiencies from spiked real soil samples may not be as high. The complexation of metals with added ligands may be hindered by the active sites and natural ligands present in the soil that can bind strongly to metal ions. Because some metals in a real soil sample may be highly insoluble, it may be difficult or impossible to extract them with SFE (Smart et al., 1997a). This fraction of metals that cannot be extracted with SFE can be referred to as unleachable metals. SFE can be used to evaluate the amount of leachable metals from solid matrices (Smart et al., 1997a).

2.3 SUMMARY

It is important that research be done to develop new soil remediation techniques especially for metal contaminated soil. Some *in-situ* and *ex-situ* soil remediation techniques that are presently used to remediate soils contaminated by organic and/or inorganic compounds are incineration, thermal desorption, soil vapor extraction, mechanical separation, containment systems, reactive walls/barriers, electroreclamation/electrokinetics, excavation and disposal, soil washing/flushing, solidification/stabilization, dehalogenation, solvent extraction, chemical reduction/oxidation, bioremediation, phytoremediation, natural attenuation, landfarming and bioreactors. Supercritical fluid extraction (SFE) is a promising new technology that may be used to remediate metal contaminated soils.

In SFE, a fluid above its supercritical temperature and pressure is used to solubilize compounds and remove them from a matrix. The most common supercritical fluid (SF) is carbon dioxide (CO_2). Non-polar organic compounds can be removed from soil with SFE because of the non-polar nature of SC CO_2. The factors that may affect the SFE of organic contaminants from soil are (i) the addition of a modifier, (ii) pressure and temperature changes, (iii) moisture content and (iv) soil type.

The removal of inorganic contaminants from soil with SFE is more complex than the removal of organic species. Because CO_2 is non-polar, the solvent-ion interactions are weak and direct extraction of metals by SC CO_2 is not very effective (Tueur et al., 1997). When a chelating agent that is soluble in SC CO_2 is added to the SF or to the matrix, charge neutralization for the metals is provided by the chelating agent and a metal complex that can be dissolved in SC CO_2 is formed (Phelps et al., 1996).

Many authors have extracted metals from soils, fly ash and sludge using several types of chelating agents (Liu et al., 1993; Lin et al., 1994; Lin and Wai, 1994; Lin et al., 1995a; Wai, 1995; Wang et al., 1995; Wai et al., 1996b; Ashraf-Khorassani and Taylor, 1999; Kersch et al., 2000; Ozel et al., 2000; Wai and Waller, 2000; Liu et al., 2001;

Mincher et al., 2001). Several factors influence the extraction of metals from soil: (i) stability and solubility of the chelating agent in SC CO_2, (ii) solubility of the metal chelate in SC CO_2, (iii) water content and pH of the matrix, (iv) temperature and pressure, (v) chemical form of metal species and (vi) matrix type (Wai and Wang, 1997).

The most popular chelating agents are dithiocarbamates and β-diketones. In general, fluorination increases the solubility of chelating agents and of the metal chelates that they form in SC CO_2 (Wai and Wang, 1997). The addition of water increases the extraction efficiency of metals from soil with *in-situ* chelation and SFE. An increase in pressure generally increases the solubility of chelating agents and metal chelates in SC CO_2 and therefore results in an increase in the extraction of metals from soil (Wai and Wang, 1997). However, the temperature may have different effects depending on the situation. SFE of metals with *in-situ* chelation is more difficult for real soil samples than for sand.

CHAPTER 3 MATERIALS AND METHODS

The following chapter outlines the materials and methods used to measure the solubility of copper thenoyltrifluoroacetonate ($Cu(tta)_2$) in SC CO_2 and to evaluate the extraction of copper from soil using supercritical fluid extraction with thenoyltrifluoroacetone (tta) as a chelating agent.

3.1 MATERIALS

The following section presents the chemicals and other materials used for this research.

3.1.1 Soil

Two soils were used for the extractions. The first soil used was a sand. It was obtained from the Geotechnical Group at the University of Alberta. The sand was Sil 1 (60-100) of effective size 0.15 mm purchased from Sil Silica Inc. (Edmonton, AB). The Sil Silica Inc. particle size analysis for this sand is as shown in Table 3.1.

The second soil was Devon silt. This soil was also obtained from the Geotechnical Group at the University of Alberta. The particle size analysis obtained from the Geotechnical Group is given in Tables 3.2 and 3.3.

Table 3.1 Sieve analysis for sand

Metric sieve	U.S. mesh no.	Percent retained
8.000	5/16"	
6.350	1/4"	
4.750	4	
2.960	8	
2.000	10	
1.180	16	
0.850	20	
0.600	30	0
0.425	40	0-1
0.300	50	4-14
0.250	60	15-36
0.180	80	35-50
0.150	100	5-15
0.106	140	5-15
0.075	200	0-2
0.053	270	
0.045	325	
pan	pan	

Table 3.2 Sieve analysis for Devon silt

Metric sieve	U.S. mesh no.	Percent retained
0.150	100	0
0.075	200	14

Table 3.3 Hydrometer analysis for Devon silt

Particle diameter (mm)	Percent finer
0.0560	60
0.0200	33
0.0064	20
0.0020	17
0.0010	16

3.1.2 Chemicals

To perform the extraction experiments, it was necessary to spike the soil with copper, add a chelating agent that would form a soluble complex with the metal and measure the solubility of the metal complex.

The soil was spiked with copper nitrate trihydrate (99%, Fisher Scientific, ACROS Organics, Nepean, Ontario). The chelating agent used to form a metal complex with the copper was thenoyltrifluoroacetone (99%, Fisher Scientific, ACROS Organics, Nepean, Ontario). Copper thenoyltrifluoroacetonate ($Cu(tta)_2$) was not available commercially. It was therefore prepared in the laboratory as explained in Section 3.2.1. The molecular weight and chemical formula of these chemicals are given in Table 3.4.

Table 3.4 Molecular weight and chemical formulae of tta, $Cu(NO_3)_2 \cdot 3H_2O$ and $Cu(tta)_2$

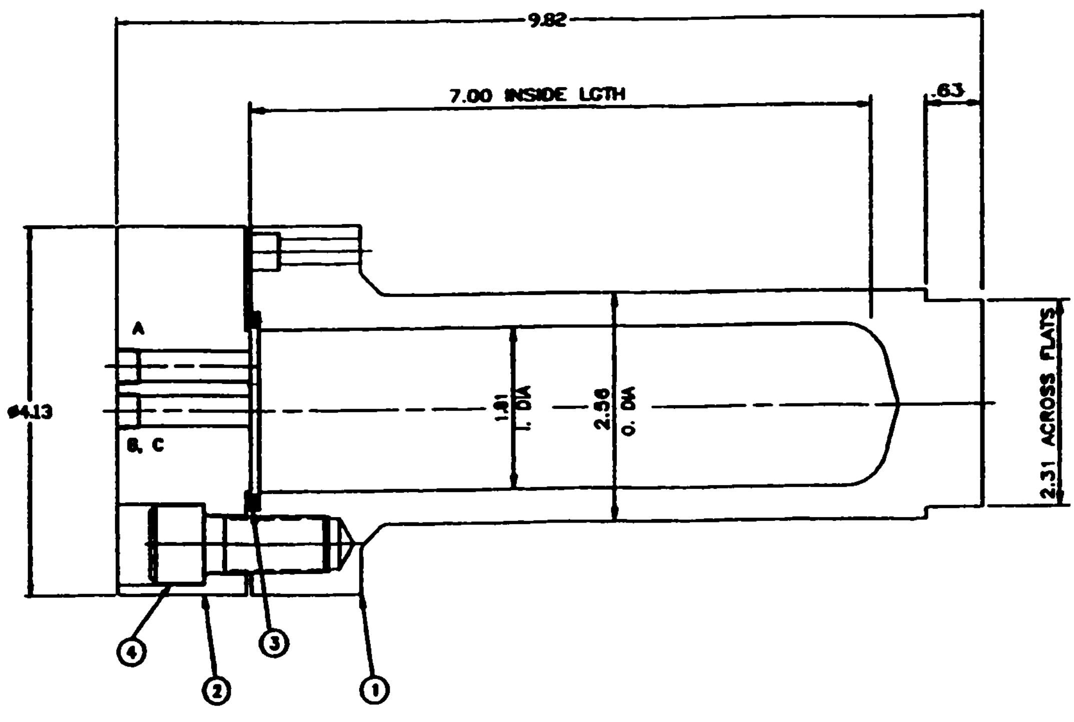
chemical	molecular weight	formulae
thenoyltrifluoroacetone	222.18	$C_8H_5F_3O_2S$
copper(II)nitrate trihydrate	241.60	$Cu(NO_3)_2 \cdot 3H_20$
copper(II) thenoyltrifluoroacetonate	505.90	$Cu(C_8H_4F_3O_2S)_2$ or $C_{16}H_8F_6O_4S_2Cu$

Liquid solvents such as methylene chloride (HPLC grade, Fisher Scientific, Nepean, Ontario) and methanol (HPLC grade, Fisher Scientific, Nepean, Ontario) were used to clean the vessel. Methanol was also pumped into the SFE system to avoid plugging of the metering valve.

Nitric acid (Trace metal grade, Fisher Scientific, Nepean, Ontario), hydrochloric acid (Trace metal grade, Fisher Scientific, Nepean, Ontario) and hydrogen peroxide (30%, Fisher Scientific, Nepean, Ontario) were used for the acid digestions that are described in Section 3.2.6.

3.1.3 Pressure vessel

A diagram of the 316 stainless steel 300 cm^3 bolted closure vessel is shown in Figure 3.1. The cover is also schematically presented in Figure 3.2. The vessel was purchased from Autoclave Engineers (Division of Snap-tite, Erie, Pennsylvania).



LEGEND

1 - BODY
2 - COVER
3 - GASKET
4 - HEX SOCKET CAP SCREW 5/8 -18 X 1.75LG

* DIMENSIONS ARE IN INCHES

Figure 3.1 Pressure vessel (Autoclave Engineers, 2001)

The stainless steel vessel consists of the body, cover, seal ring (gasket) and socket head cap screws. There are three 1/8"NPT openings on the cover: inlet, outlet and thermistor probe. These are designated as A, B and C, respectively, on Figure 3.1 and 3.2. A 1/16" to 1/8"NPT bored through stainless steel male connector was placed at the inlet. This bored through fitting allowed the 1/16"OD (0.05 mm ID) stainless steel tubing to continue to the bottom of the vessel. This configuration ensured that there was no "short circuiting" of the supercritical fluid entering the vessel i.e. that the supercritical fluid would flow through all of the vessel and not only the upper part. At the outlet, a 1/16" to 1/8"NPT stainless steel male connector was placed to which a 1/16"OD (0.05 mm ID) stainless steel tubing was attached. A 1/8" to 1/8"NPT bored through male connector was required at the third opening to place the 1/8"OD YSI 406 thermistor probe (Labcor Technical Sales, Inc., Concord, Ontario) inside the vessel. To prevent leaks from occurring, Teflon tape was placed onto the threading of the male connectors before tightening them into the cover openings.

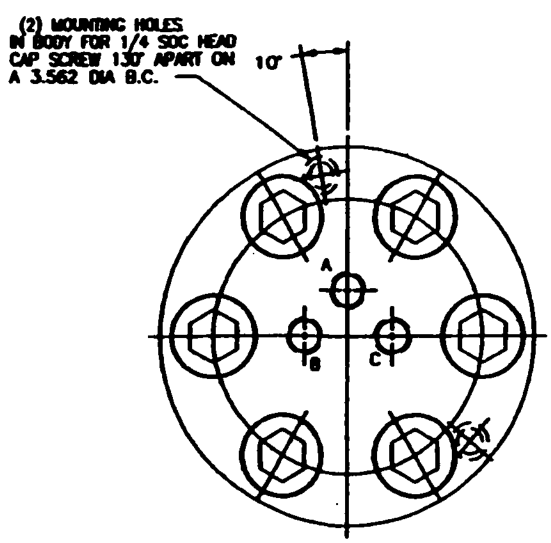


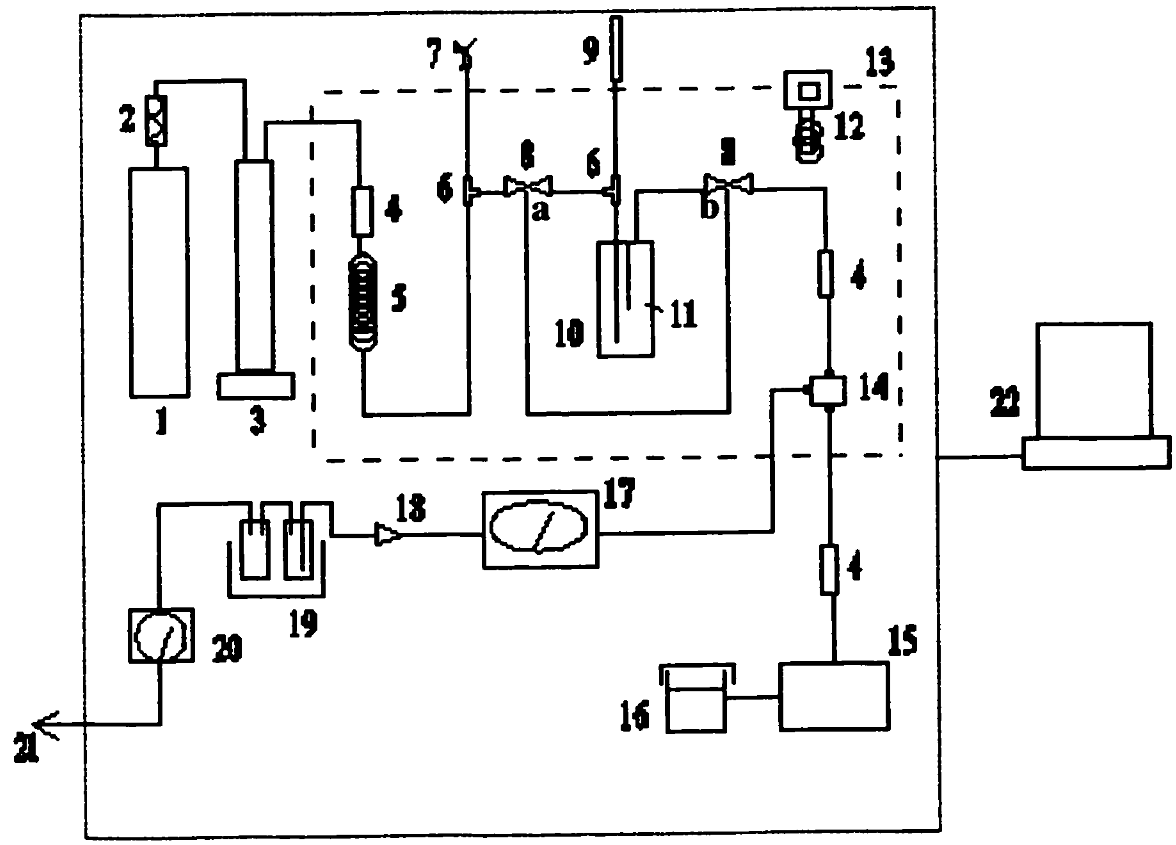
Figure 3.2 Pressure vessel cover (Autoclave Engineers, 2001)

To assemble the vessel, the manufacturer's suggestions were followed whenever possible. The seal ring was first put into place. The cover was then placed on top while ensuring that the opening for the screws on the cover and the vessel body were properly aligned. Before the bolts were threaded down snug into the body using an allen wrench, both the bolts and threading were covered by a lubricant. In this case, Jet-Lube MP-50 Moly-Paste (Jet-Lube of Canada Ltd., Edmonton, Alberta) was used. At this point, the screws were tightened in the following sequence using a torque wrench: tighten in a star pattern at a torque of 10 ft-lb_f; repeat; at the same torque, change the pattern and tighten each bolt adjacent to the other (clockwise or counter-clockwise); repeat these steps at 20, 30 and 40 ft-lb_f. This pattern was followed to ensure even loading on the gasket. Because of small leaks that occurred during the extractions, the torque was increased to a sequence of 13, 23, 33, 43 ft-lb_f.

3.1.4 SFE system

A diagram of the SFE system is shown in Figure 3.3. The main components in the system as well as their supplier and pressure rating, if applicable, are given in Table 3.5.

CO_2 was supplied to the system by a CO_2 cylinder with a pressure of approximately 1.2 MPa. After flowing through a filter, the CO_2 was pressurized using an ISCO 500D series continuous flow syringe pump. Because of operational problems, for most of the experiments, only one of the pumps was used in independent mode. These pumps were equipped with temperature control jackets. A refrigerated circulating water bath was used to cool the pump heads by circulating water at a temperature of 7.5°C through the jackets. Once the CO_2 left the pump, it flowed through 1/16"OD stainless steel tubing to a check valve and then a heating coil. The system was then equipped with a pressure relief valve set at 14.5 MPa to ensure that the pressure never exceeded this value. The three-way ball valve allowed the operator of the system to let the CO_2 either flow into the extraction vessel or into a line that bypassed the vessel. The pressure transducer monitors the pressure inside the vessel. The system to this point was identical to that used by Stroich (2001). The tubing inner diameter varied from 0.5 mm to 1 mm. From the low dead volume tee that allows the insertion of the pressure transducer into the system, the 1/16"OD (0.05 mm) tubing led to the bottom of the extraction vessel.



Legend

1 Carbon dioxide cylinder
2 Filter
3 Continuous syringe pump
4 Check valve
5 Heating coil
6 Tee
7 Pressure relief valve
8 3-way ball valves, a and b
9 Pressure transducer
10 Extraction vessel
11 Thermistor probe
12 Heating circulator
13 Plexiglass bath
14 PEEK Mixing tee
15 HPLC pump
16 Methanol
17 UV/VIS detector
18 Metering valve
19 Solvent trap in ice bath
20 Mass flowmeter/totalizer
21 Vent to fumehood
22 Data acquisition

Figure 3.3 Diagram of SFE system

Table 3.5 SFE system components

Component	Supplier	Pressure rating (MPa)
CO_2 cylinder	Praxair Canada, Inc. (Edmonton, Alberta)	
Filter (0.5 micron and 10 micron)	Edmonton Valve and Fitting (Edmonton, Alberta), HOKE	
Syringe pump (ISCO 500D)	Canberra Packard (Mississsauga, Ontario)	
Pressure relief valve (SS-4R3A)	Edmonton Valve and Fitting (Edmonton, Alberta)	41.4
Check valves (Nupro)	Edmonton Valve and Fitting (Edmonton Alberta)	41.4
Ball valves (Whitey)	Edmonton Valve and Fitting (Edmonton, Alberta)	17.2
Pressure transducer (PX 502)	Omega (Laval, Quebec)	20.7
Vessel (300 cm^3, bolted closure)	Autoclave Engineers (Division of Snap-tite, Erie, Pennsylvania)	37.2
Thermistor probe (YSI 406)	Labcor Technical Sales, Inc. (Concord, Ontario)	
Heating circulator (HAAKE D1)		
PEEK Mixing tee	Fisher Scientific (Nepean, Ontario)	48.2
305 Gilson Piston pump	Mandel Scientific Company Ltd. (Guelph, Ontario)	
155 Gilson UV/VIS detector	Mandel Scientific Company Ltd. (Guelph, Ontario)	
Metering valve (Nupro)	Edmonton Valve and Fitting (Edmonton, Alberta)	13.8
Aalborg mass flowmeter/totalizer (GFM17)	Labcor Technical Sales, Inc. (Concord, Ontario)	
Connectors, tees, etc.	Edmonton Valve and Fitting (Edmonton, Alberta)	
Stainless steel tubing (1/16"OD, 0.05 mm and 1 mm ID)	Fisher Scientific (Nepean, Ontario), Supelco (Oakville, Ontario)	

Once the CO_2 flowed out of the vessel, it reached the second three-way ball valve, which ended the separation between the main line and the bypass line. Immediately following the three-way valve was a check valve, which stopped any backflow. The methanol was then added to the system with a piston pump. Mixing of methanol and SC CO_2 stream was accomplished using a PEEK mixing tee. Methanol was used to solubilize the metal complex as it falls out of solution during depressurization through a heated metering valve. As explained by Cross et al. (1996), the mixture of supercritical fluid and organic solvent will help in avoiding solid precipitation and plugging at the metering valve. All of the components of the system from the first check valve to the mixing tee were placed in a heated water bath to maintain a constant temperature. After the methanol was added, the mixture flowed through an on-line UV/VIS detector where the absorbance was measured. Once the fluid flowed through the UV/VIS detector's high pressure flow cell, it passed through a heated metering valve to depressurize the CO_2 stream. After flowing through the metering valve, the metal chelate was collected in the first of two solvent traps placed in an ice bath. The second trap ensured that no metal complex was lost. Downstream of the metering valve, the 1/16″ tubing inner diameter was changed from 0.5mm to 1mm to minimize flow restriction. The last component of the system is a mass flowmeter/totalizer after which the CO_2 is vented out into the fumehood.

All data acquisition was done by computer. LabVIEW 5.1 (National Instruments) was used to design the program for data acquisition. LabVIEW compiled information such as pump pressure and flow, pressure transducer pressure, vessel temperature as measured by the thermistor probe, readings from the UV/VIS detector and mass flowmeter. More details are given in Section 3.2.3.

3.2 METHODOLOGY

The following sections describe the methods used in the laboratory to prepare the chemicals, conduct the experiments and analyze the results.

3.2.1 Preparation of copper thenoyltrifluoroacetonate ($Cu(tta)_2$)

$Cu(tta)_2$ was not available commercially. It was therefore prepared according to the method used by Bertrand and Kaplan (1966) and Reid and Calvin (1950). The procedure can be described as follows:

- place a known amount of copper nitrate trihydrate ($Cu(NO_3)_2 \cdot 3H_2O$) into a clean volumetric flask;
- add approximately 200 mL of deionized water;
- add a known amount of thenoyltrifluoroacetone (tta) to the solution;
- place the volumetric flask on a hot plate/stirrer and mix the solution with a stir bar;
- heat to 50°C;
- once no yellow is visible and a green flocculant-type solid is present, remove solution from hot plate/stirrer and cool;
- filter and let dry.

Melting point and infrared (IR) analyses were performed on the compound to ensure the formation of $Cu(tta)_2$. A Gallan Kamp Melting Point Apparatus situated in the Chemistry Department at the University of Alberta was used to perform the melting point analysis. An infrared spectrophotometer situated at the Spectral Services Lab in the Department of Chemistry at the University of Alberta was used for the IR analysis. The analyses and results are discussed in Sections 4.1.1 and 4.1.2.

3.2.2 Solubility experiments

Three solubility experiments were condoncted to calculate the solubility of $Cu(tta)_2$ in SC CO_2 at 10.3MPa and 40°C. The results obtained here would be compared to the results obtained by Guigard (1999) and Stroich (2001) using the piezoelectric quartz crystal microbalance method. The experiments can be described as follows:

- place approximately 0.03 g of $Cu(tta)_2$ in the clean vessel;
- shut vessel;
- place vessel in heated water bath and hook up to SFE system;
- pressurize and heat system to desired conditions;
- allow vessel and contents to sit at desired temperature and pressure for ninety minutes, sufficient time for the system to reach equilibrium;
- open valve downstream from vessel;
- collect $Cu(tta)_2$ in methanol solvent trap and quantify;
- calculate the solubility.

The first part of the experiment consisted of a static time where the vessel containing $Cu(tta)_2$ was left to equilibrate at the desired pressure and temperature. After equilibrium is reached, the SC CO_2 stream containing $Cu(tta)_2$ was allowed to flow out of the vessel to collect the solute and calculate the solubility. The dissolution of $Cu(tta)_2$ in SC CO_2 occurs during the static time and then SC CO_2 is forced out of the vessel during the dynamic part of the experiment.

Before closing the vessel, approximately 250 ml of glass beads (4 mm, Fisher Scientific) were added to the vessel to reduce the volume. Once the vessel was incorporated into the system, the data acquisition began. National Instruments' LabVIEW 5.1 was used to monitor the pump pressure, vessel pressure, vessel temperature, on-line UV-VIS detector signal, pump flow and flow through the mass flowmeter.

The system was first pressurized with the valve 8a in Figure 3.3 shut. Once the pressure was stable and the temperature in the water bath was as desired, the valve was opened to the vessel.

To ensure that the system had reached equilibrium, the static part of the experiment was 90 min. This time was chosen to be longer than typical static times stated in the literature, which usually are no longer than 40 min (Lagalante et al., 1995; Wai et al., 1996a; Wai, 1999; Ozel et al., 2000; Takeshita et al., 2000; Roggeman et al., 2001). This static time can be optimized by doing several runs with different static extraction times and comparing the results. This was not possible during the scope of this work because of time limitations. The dynamic section began when the valve 8b was opened. The SC CO_2 was allowed to flow through the vessel for 40-90 min at 2 to 3.5 mL/min, which was measured at the pump. The traps were changed at approximately every 15 min. During the dynamic part of the experiment, methanol is added to the supercritical fluid to reduce the chances of plugging the metering valve with $Cu(tta)_2$. The methanol flow was set to 0.75 mL/min. After the supercritical mixture passed through the heated metering valve, the $Cu(tta)_2$ was collected in a methanol solvent trap. The concentration of the solution was then quantified using a Novaspec II spectrophotometer. Finally, the solubility was calculated for the conditions (10.3MPa, 40°C) of the experiment. After each experiment, the tubing downstream of the vessel was cleaned with methanol to ensure that no $Cu(tta)_2$ remained in the system.

3.2.3 LabVIEW

National Instruments LabVIEW 5.1 was used for data acquisition. LabVIEW is software that can be used for data acquisition and control, data analysis, and data presentation. Here, LabVIEW was used for data acquisition. This software uses a graphical programming development environment based on the G programming language (National Instruments, 2002). Figure 3.4 shows the LabVIEW screen of the program used in this work. Roy Gitzell, civil electronics technician at the University of Alberta, developed the program used in this work. Data can be saved at different time intervals and can be averaged. It is possible to average only one type of data. For example, if it is only required to average the pressure data, it is possible to do this. In Figure 3.4, it is possible to see the average set box. Each number in the first box designates one of the types of data being saved that can be averaged and the second box indicates the number of values to be averaged. The average value is then saved in the data file. The number sequence that corresponds to each variable is given in Table 3.6.

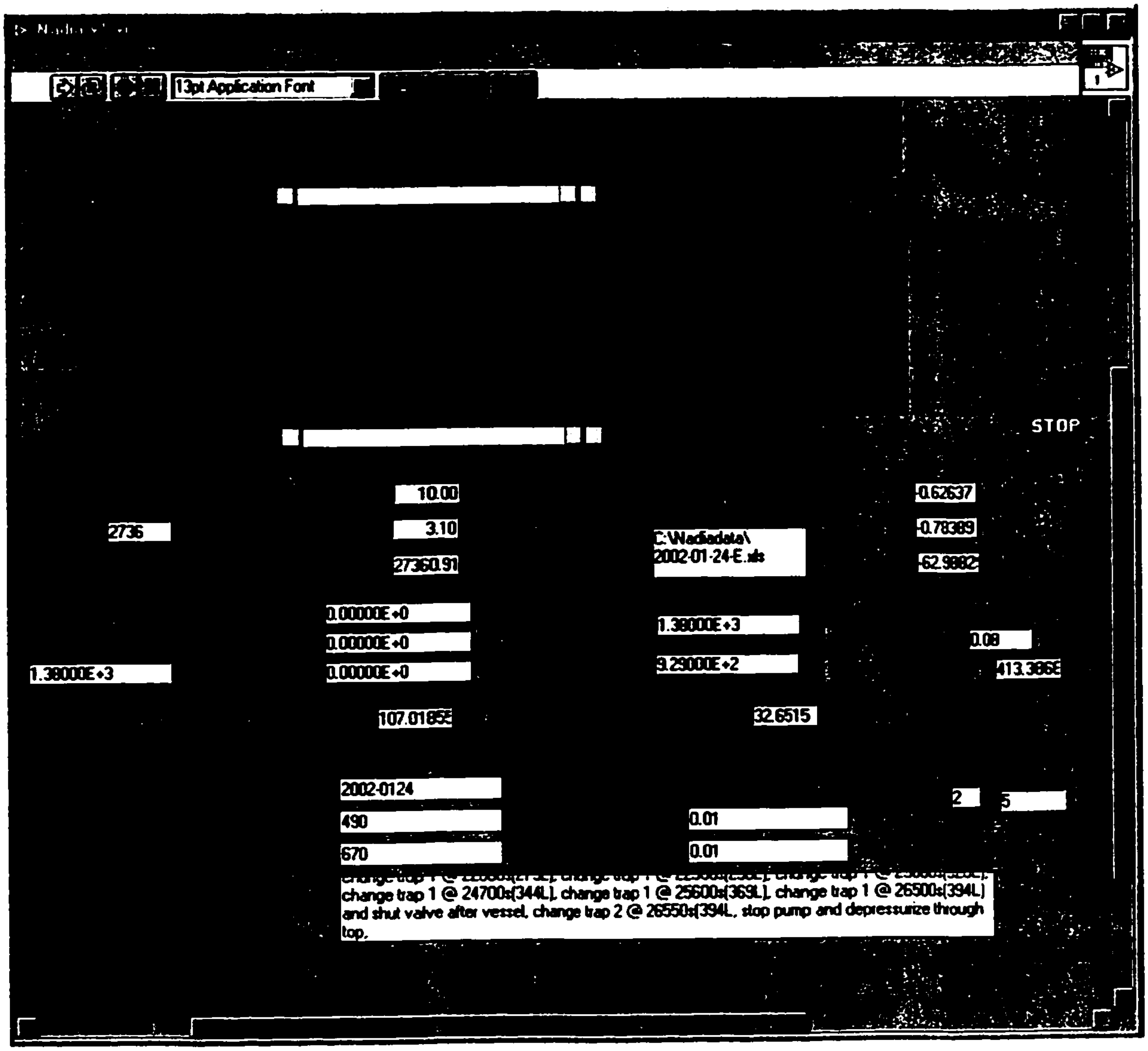


Figure 3.4 LabVIEW screen of Nadia v1.vi

Table 3.6 Variables corresponding to LabVIEW averaging numbers

Number(s)	Variable(s)
0, 1	Pump pressure, flow
2	Transducer pressure
3	Vessel temperature
4, 5, 6	UV channels
7	Flow
8	Total flow

Comments can also be added. These comments and the data are saved to an Excel file. The Excel file columns contain the data in the following order: scan number or reading number, time (s), pump pressure (psi), pump flow (mL/min), transducer pressure (psi), vessel temperature (°C), UV channel 1 (AU), UV channel 2(AU), UV channel 3, mass flowmeter flow (L/min), total flow (L), pump A flow (mL/min), pump B flow (mL/min), pump A pressure (psi) and pump B pressure (psi).

3.2.4 Extractions

Once the solubility of the substance or compound is known, it is possible to estimate the time needed to extract a known amount of this compound from a certain matrix. Extraction experiments were conducted at the conditions presented in Table 3.7. Three experiments were conducted at each condition of temperature, pressure and moisture content.

Table 3.7 Extraction experimental conditions

Soil	Pressure (MPa)	Temperature (°C)	Moisture content (% w/w)
sand	10.34	40	0
	10.34	40	5
	10.34	40	10
	9.65	40	0
silt	10.34	40	0
	10.34	40	5

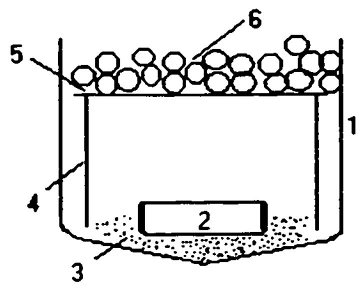
The extractions were conducted as follows:

- spike the soil or matrix with $Cu(NO_3)_2$ to approximately 57 mg Cu^{2+}/kg soil;
- place approximately 7g of spiked soil in the vessel;

- add an excess amount of approximately 0.13g of thenoyltrifluoroacetone (tta) and close the vessel;
- place vessel in heated water bath and hook up to SFE system;
- pressurize and heat system to desired conditions;
- open valve downstream of vessel and collect $Cu(tta)_2$ in methanol solvent trap;
- analyze "before" and "after" extraction soil samples for total copper;
- calculate the extraction efficiency.

The procedure for the extractions was similar to that used for the solubility experiments. Before beginning, three samples of spiked soils were placed in vials to be analyzed as before samples. The moisture content of the soil was also measured as explained in Section 3.2.4.2. The spiked soil was placed in the vessel. The mass of soil added was chosen at 7g because this amount of soil could be displaced by the stir bar placed inside the vessel. Preliminary mixing tests were conducted to determine this amount of soil. To be able to extract the copper, it is necessary to form a complex that is soluble in the SC CO_2. In this case, tta was added to the vessel in excess (by a factor of at least 30) to react with the copper. Figure 3.5 shows how it was possible to use glass beads to reduce the volume of the vessel and place a stir bar at the bottom of the vessel for mixing purposes. A piece of tubing was used as an open-ended cylindrical base. The stir bar, soil and tta were placed inside the cylinder. A piece of stainless steel mesh was then placed on top of the base to support the glass beads. A static extraction of 90 min was followed by a 30 min dynamic extraction. This sequence of static and dynamic times was repeated to ensure that if the solubility limit was reached, all the $Cu(tta)_2$ had a chance to flow out of the vessel. Methanol was added downstream of the vessel at 0.75 mL/min to the SC CO_2 containing $Cu(tta)_2$ which pushed out of the vessel by a pump flow of 2-2.5mL/min. The solvent traps were analyzed to verify the mass balance.

Soil samples were analyzed for copper. This first required the soil samples to be digested and then the diluted filtrate solution was analyzed for copper using atomic absorption spectrometry. The extraction efficiency was then calculated based on the copper present before and after extraction. The tubing downstream of the vessel was cleaned after each experiment to ensure that no residual $Cu(tta)_2$ was left in the system. The results of the extraction experiments are discussed in Section 4.3.



Legend

1	Interior wall of vessel	4	Open-ended cylinder
2	Stir bar	5	Mesh
3	Soil and tta	6	Glass beads

Figure 3.5 Schematic of stir bar arrangement inside of vessel (not to scale)

3.2.4.1 Water content

Prior to each experiment, the water content of the soil was measured as follows (Bowles, 1992):

- weigh a small beaker;
- place approximately 20 g of soil in beaker;
- weigh beaker and soil;
- place beaker and soil in oven at 110°C ± 5°C overnight;
- let cool to room temperature in a dessicator and weigh.

3.2.5 Spectrophotometer

A spectrophotometer was used to determine the concentration of $Cu(tta)_2$ in the methanol traps. The spectrophotometer operates on the principle of colorimetric analysis i.e. the determination of the concentration of a substance in solution by measuring the relative absorption of light compared to a solution of known concentration (Jeffery et al., 1989). When a source of radiation is used to extend into the ultraviolet region of the spectrum, it is referred to as UV spectrophotometric analysis.

The Beer-Lambert Law is the fundamental equation of colorimetry and spectrophotometry (Jeffery et al., 1989). It can be written as follows:

$$A = \varepsilon c l \qquad (3.1)$$

where A is the absorbance, ε is the molar absorption coefficient, c is the concentration of the solution to be analyzed and l is the thickness of the medium.

By using a series of standards of known concentration, it is possible to plot the absorbance A versus the concentration c. Based on equation 3.1, this plot will yield a linear relationship (for dilute solutions) that passes through (0,0) and can be used as the calibration curve for solutions of unknown concentration only if matched cells or the same cell is used.

The methanol solvent trap analysis was carried out using a HELLMA quartz glass cell (10mm light path, 200-2500 nm, Fisher Scientific, Nepean, Ontario) and a Pharmacia Biotech Novaspec II spectrophotometer (Pharcia Biotech, Cambridge, England) at a wavelength of 420 nm or 430 nm. The procedure for developing the calibration curve and analyzing the samples are as follows:

Calibration:

- prepare at least five standard solutions of $Cu(tta)_2$ in methanol with concentrations ranging from 1.0 to 75 x 10^{-5} g/mL
- read the absorbance of each solution;
- plot the calibration curve;

Samples:

- measure the volume of solution in the vial;
- read the absorbance of the solution;
- determine the concentration of $Cu(tta)_2$ using the calibration curve;
- calculate the mass of $Cu(tta)_2$ in the vial.

Each reading was taken three times. This analysis was used to calculate the solubility or for mass balance purposes.

3.2.6 Acid digestions of soil

To analyze samples for total copper using flame atomic absorption spectrometry (FLAA), it is necessary to prepare the sample according to EPA Standard Method 3050B (U.S. EPA, 2001), acid digestion of sediments, sludges, and soils. In this procedure, samples are digested in nitric acid and hydrogen peroxide followed by a dilution in hydrochloric acid.

It is possible to introduce positive or negative errors in the determination of trace metals if the containers have not been properly treated before hand. The containers may contribute contaminants through leaching or surface desorption or deplete concentrations through adsorption (U.S. EPA, 2001). To minimize the possibility of contamination, all glassware used was cleaned using the following sequence: wash with detergent, then rinse with tap water, 1:1 nitric acid, tap water, 1:1 hydrochloric acid, tap and finally reagent water. In this case, deionized water was used for the first rinse and ultra pure water for the following rinse. The 1:1 nitric acid and 1:1 hydrochloric acid simply denote a 1:1 ratio of water and acid. This washing procedure can be used on borosilicate glass, linear polyethylene, polypropylene, or Teflon (U.S. EPA, 2001).

The materials used for the digestions are listed in Section 3.1.4. In the digestion procedure, ultra pure water was used instead of DI water. The following procedure was used for the digestions (U.S.EPA, 2001):

- place a known mass (either 1 or 2 g) of air dry soil into a clean Erlenmeyer flask containing a few glass beads;
- add 10 mL of 1:1 nitric acid (HNO_3);
- place erlenmeyer flask on hot plate and reflux for 10 min with watch glass in place;
- remove from heat and let cool for approximately 10 min;
- add 5 mL of concentrated HNO_3 to the mixture;
- return to heat source and reflux for 30 min with watch glass in place (note: if brown fumes occur, it may be necessary to repeat this step);
- remove watch glass and reduce volume to approximately 5 mL ;
- remove from heat and let cool for about 15 min;
- add 2 mL of deionized (DI) water and 3 mL of hydrogen peroxide (H_2O_2);
- place on heat source with watch glass in place;
- once bubbling is reduced, add 1 mL aliquots of H_2O_2 until bubbling subsides (add to a maximum of 10 mL only);
- remove watch glass and reduce volume to 5 mL;
- add 10 mL of concentrated hydrochloric acid (HCl);
- reflux for 15 min with watch glass in place;
- let cool and filter;
- transfer filtrate to a 100 mL volumetric flask and bring to volume with DI water.

All of these steps were carried out in a fumehood. For each set of digestions, a blank and a blank soil sample were included. Whenever moisture was added to the soil, the sample was air dried before digestion. Once these steps were completed, the samples were ready to be analyzed by FLAA.

3.2.7 Flame atomic absorption spectrometry (FLAA)

Flame atomic absorption spectrometry was used to determine the total amount of copper present in the soil samples. Untreated samples as well as treated samples (i.e. samples after extraction) were analyzed to determine the extraction efficiency obtained with SFE.

To determine the total amount of copper in soil, an acetylene-air flame with the appropriate resonance line can be used (Jeffery et al., 1989). In this case, a Perkin-Elmer 2380 Atomic Absorption Spectrophotometer (Perkin Elmer, Norwalk, Connecticut) was used with an acetylene-air flame and at a wavelength of 325 nm, which is the wavelength of the main resonance line of copper according to Jeffery et al. (1989).

Once the acid digestion of the soil samples was complete and copper standards were made using Copper Reference Solution 1.000ppm ± 1% (Fisher Scientific, Nepean, Ontario), the following procedure was used to determine the total copper in each sample:

Startup:

- turn on acetylene and air at sources;
- turn on fuel flow switch and knob to air on instrument;
- adjust flame (fuel flow rate approx. 10-15 and air flow rate approx. 40-45);
- ignite flame and ensure that "gooseneck" on drain is full;
- turn on main power switch on instrument;
- turn signal switch to "lamp";
- adjust lamp energy to 8 (for copper) using lamp dial;
- turn signal switch to "setup";
- adjust gain to below EE on the readout;
- turn signal switch to "absorbance";

- push t, 1, 0, AVE to set the instrument to average ten readings;
- ensure instrument is on HOLD position.

Samples:

- to take a reading, suction tube is placed in the solution;
- auto zero instrument using DI water or water used to make standards;
- take reading of standards and samples by pushing the "READING" button;
- take three consecutive readings for each sample (removing suction tube after each reading);

Note: DI water readings should be taken after every 6 to 10 samples to be able to correct for the drift of the instrument. This may not be necessary if the solution concentrations are high.

Shut down:

- shut off acetylene at source;
- turn fuel flow switch off;
- aspirate DI water;
- turn air off on instrument and at source;
- set signal switch to "lamp" and adjust to 0;
- shut off main power.

The calibration curve is plotted in the same manner as was explained in Section 3.2.5 and the concentration of each sample is calculated. Once the concentration of each sample is calculated, it is possible to calculate the extraction efficiency. The results are shown and discussed in Section 4.3.6.

CHAPTER 4 RESULTS AND DISCUSSION

The following chapter describes the results of the experiments conducted in this study. The results from the preparation and identification of $Cu(tta)_2$, the solubility experiments, the extractions, the acid digestion, the atomic absorption spectrometry as well as the solvent trap analysis are discussed.

4.1 PREPARATION AND IDENTIFICATION OF $CU(TTA)_2$

Section 3.2.1 describes the method used to prepare $Cu(tta)_2$. The yield obtained in the laboratory (April 11, 2001) is as described in Table 4.1. Enough $Cu(tta)_2$ was produced to be used for the solubility experiments and the calibration standard preparation.

Table 4.1 $Cu(tta)_2$ yield

$Cu(NO_3)_2 \cdot 3\,H_2O$ (moles)	tta (moles)	$Cu(tta)_2$ (moles)	yield (%)
0.02983	0.05966	0.02783	93.30

To ensure that the precipitate obtained was $Cu(tta)_2$, melting point and IR analyses were performed.

4.1.1 Melting point analysis

The melting point analysis was performed using Gallan Kamp Melting Point Apparatus situated in the Chemistry Department at the University of Alberta. Another graduate student (Olusegun Odusanya) performed the melting point analysis.

The melting point determination gives reliable information about the purity and the identity of a compound (Browne, 2001). The measured melting point range corresponds to the range of temperature at which the liquid first appears to the temperature where the last piece of solid disappears. The range of temperature within which the melting occurs can determine the purity of the compound. A narrow range (1-2°C) indicates that the solid is pure while a large range (3-10°C) generally characterizes an impure solid. An impure compound's melting point is generally lower than that of the pure compound. The melting range of a pure solid can be affected by factors such as quantity of material, crystal size, rate of heating and type of equipment. Melting points found in the literature are used to determine the identity of a compound. Literature melting points reported as a single number represent the upper end of the range. These values can be found in either the CRC Handbook or the Aldrich Chemical Company catalog (Browne, 2001). The literature melting point for $Cu(tta)_2$ varies from 237°C (Akaiwa et al., 1970) to 242-243°C (Berg and Truemper, 1960).

The thermometer used in the melting point apparatus was calibrated using four compounds with known melting points or melting point standards. The four compounds used with their theoretical and measured melting point (m.p.) are given in Table 4.2.

Table 4.2 Melting point thermometer calibration information

Compound	Theoretical m.p. (°C)	Measured m.p. (°C)
Acetanilide	113-115	113-114
Adipic acid	150-152	150-152
p-Hydroxybenzoic acid	215-217	210-212
Caffeine	234-237	231-233

The calibration curve is shown in Figure 4.1. The measured melting point average is plotted against the theoretical melting point. The measured melting point for the $Cu(tta)_2$ is 237-238°C. Because the measured value for $Cu(tta)_2$ is slightly outside the range of the calibration curve, a linear trend line is plotted from which the melting point for $Cu(tta)_2$ is determined. The melting point for $Cu(tta)_2$ is 241.5-242.6°C. This falls within the theoretical range and identifies the compound as $Cu(tta)_2$. Also, the range is narrow, which indicates that the solid is pure.

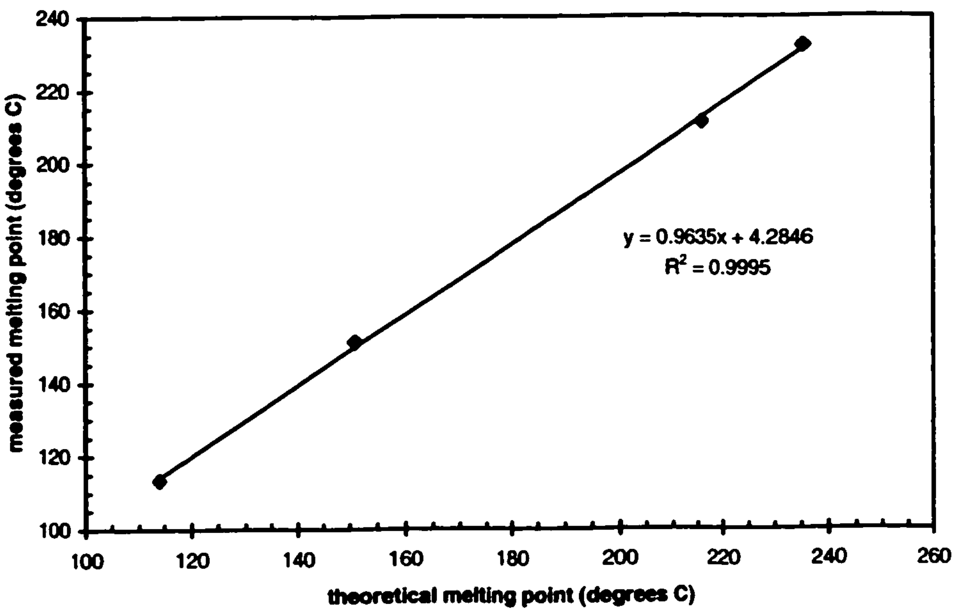


Figure 4.1 Melting point thermometer calibration curve

4.1.2 Infrared analysis

An infrared analysis was also done. The infrared spectra come from the different modes of vibration and rotation of a molecule (Jeffery et al., 1989). Two atoms held by a chemical bond in a molecule are the main participants in the vibration for many of the normal modes of vibration of the molecule. The frequencies of the vibrations depend mainly on the masses of the atoms and the force constant of their bond. Other atoms attached to these two atoms may also slightly affect the frequencies. It is possible to identify a compound and establish the structure of an unknown substance because the vibrational modes characterize the groups in the molecule (Jeffery et al., 1989). Some of the group infrared absorption bands of $Cu(tta)_2$ are given in Table 4.3.

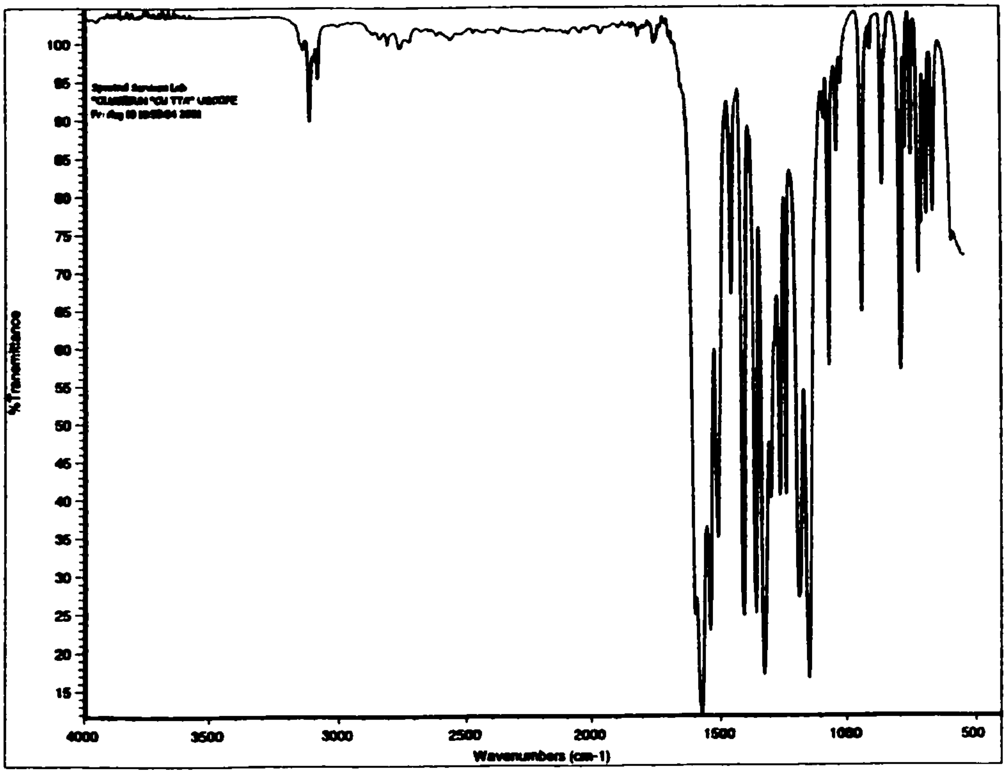
Table 4.3 Approximate positions of some infrared absorption bands (Jeffery et al., 1989)

Group	Wavenumber (cm^{-1})	Wavelength (μm)
C–H (aromatic)	3000-3100	3.23-3.33
C–O	1000-1050	9.52-10.00
C=O (ketone)	1705-1725	5.80-5.86
C–C	750-1100	9.09-13.33
C=C	1620-1670	5.99-6.17

Pure compounds can be identified using infrared absorption spectra (Jeffery et al., 1989). IR can also be used to detect and identify impurities. A compound's infrared absorption spectrum can be regarded as its "finger-print" (Jeffery et al., 1989).

The spectra for $Cu(tta)_2$ were performed with an infrared spectrophotometer at the Spectral Services Lab in the Chemistry Department at the University of Alberta by James Hoyle. The spectra for $Cu(tta)_2$ prepared and used in this work are shown Figure 4.2.

The $Cu(tta)_2$ spectra show the characteristic peaks observed by Ohwada (1967), Shepard and Thornton (1971), Akaiwa et al. (1972) and Lecomte et al. (1988). According to Ohwada (1967), the peaks at approximately at 1600, 1540 and 1320 cm^{-1} can be attributed to the C=O---M, C=C and C–O–M vibrations respectively. This also identifies the compound as $Cu(tta)_2$.



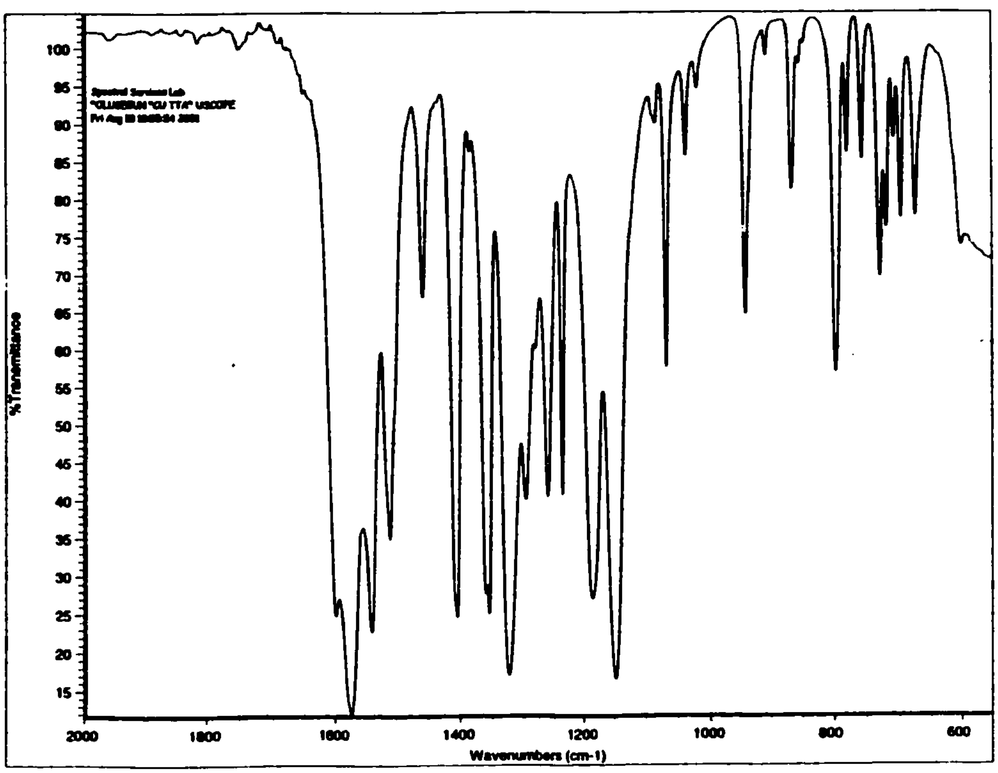


Figure 4.2 IR spectra of $Cu(tta)_2$

4.2 SOLUBILITY EXPERIMENTS

Solubility experiments were conducted to determine the solubility of $Cu(tta)_2$ in SC CO_2 using the same experimental setup as was used for the extractions. Also, it was necessary to determine if it was possible to achieve similar solubility results as were obtained by Guigard (1999) and Stroich (2001) using the piezoelectric quartz crystal microbalance method.

The SFE system used to conduct solubility and extraction experiments was developed by adding to the setup used by Stroich (2001). A larger pressure vessel than the one utilized by Stroich (2001) is used. An on-line UV/VIS detector to monitor the absorbance of the solvent stream, a piston pump to introduce methanol into the system and prevent plugging at the metering valve, a metering valve and a flowmeter were added to the setup. This setup can be used for SFE experiments involving inorganics or organics with minor changes such as removing the UV/VIS detector and the piston pump when attempting to extract diesel from a sample.

Several experiments were conducted before similar results to the piezoelectric quartz crystal microbalance method were obtained. Some changes had to be made to the experiments before the final setup and procedure were determined. The metering valve needed to be heated to prevent freezing, which caused the flow to be unstable. Also, a stir bar was used to include mixing in the experiments. Glass beads were added to the vessel to decrease the volume of the extraction vessel. The volume of the vessel for solubility experiments with approximately 225 mL of glass beads is approximately 145 mL. This calculation is given in Appendix A1.

Solubility experiments were done at 10.34 MPa and 40°C. Three experiments were done at this condition. A sample spreadsheet can be found in Appendix A2.

4.2.1 Pressure data

The pressure data were collected from the ISCO pumps and from the pressure transducer that measured the pressure inside the vessel. Figure 4.3 shows a sample of the pressure data collected.

During the solubility experiments, the pumps operated in continuous constant pressure mode. In this mode, the flow varies to maintain the pressure in the system. The pump pressure at the beginning of the plot is 4.4 MPa. This pressure indicates the pressure at the CO_2 cylinder. The pressure transducer pressure when the vessel is completely depressurized indicates 0.7 to 1.2 MPa. This indicates that the pressure transducer readings are about 1 MPa higher than the true value. The pump is pressurized to 10.34 MPa at approximately 500 s. The pump pressure quickly rises from 4.4 to 10.34 MPa. This pressure then remains stable until the pump is stopped. Valve 8a in Figure 3.3 is opened at approximately 2000 s. The vessel gradually pressurizes to about 11 to 11.6 MPa. This is in agreement with the 0.7 to 1.2 MPa positive difference observed at the beginning when the vessel is depressurized. The pressure in the vessel basically remains stable until the end of the experiment when the vessel is depressurized. The slight variability observed in the transducer reading may be caused by the transducer itself especially if these values were not being averaged by LabVIEW. It may also be due to slight changes in the water bath temperature that may cause the pressure reading to increase or to decrease. When the vessel was completely depressurized, the transducer reading went down to the initial reading of the run. However, the reading from the pump only decreased to approximately 9.5 MPa because valve 8a is shut before depressurizing the vessel. Because of this valve, the pumps were not depressurized when the vessel was.

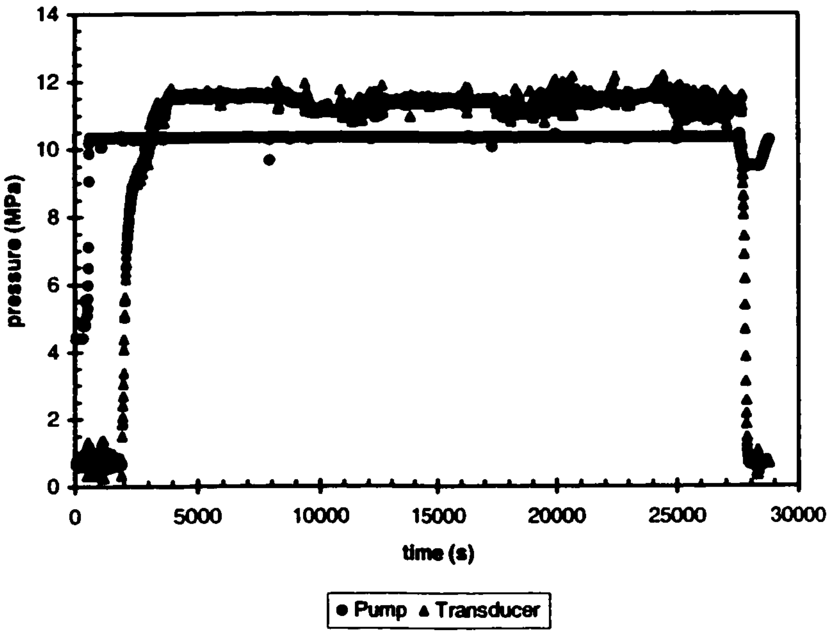


Figure 4.3 Sample pressure data from solubility experiment (2001-07-17)

4.2.2 Flow data

Flow data were collected from the ISCO pump and from the mass flowmeter. The pump measures the carbon dioxide flow at the experimental pressure while the carbon dioxide is flowing through the mass flowmeter at atmospheric pressure. The pump head was cooled at 7.5°C and the flowmeter was at room temperature. Figures 4.4 and 4.5 graphically present the flow data from the pump.

In Figure 4.4, it is difficult to see the flow trend of the experiment. The only visible trend is the pump refilling and pressurizing. In continuous constant pressure mode, every time the volume of carbon dioxide in one pump becomes low, the other pump begins pumping and keeps the system at the desired pressure. The first pump then has a chance to refill and repressurize. The pump refills at a flow rate of approximately

200 mL/min (negative on the chart) and then repressurizes with a flow up to 200 mL/min. This can be seen clearly in Figure 4.4.

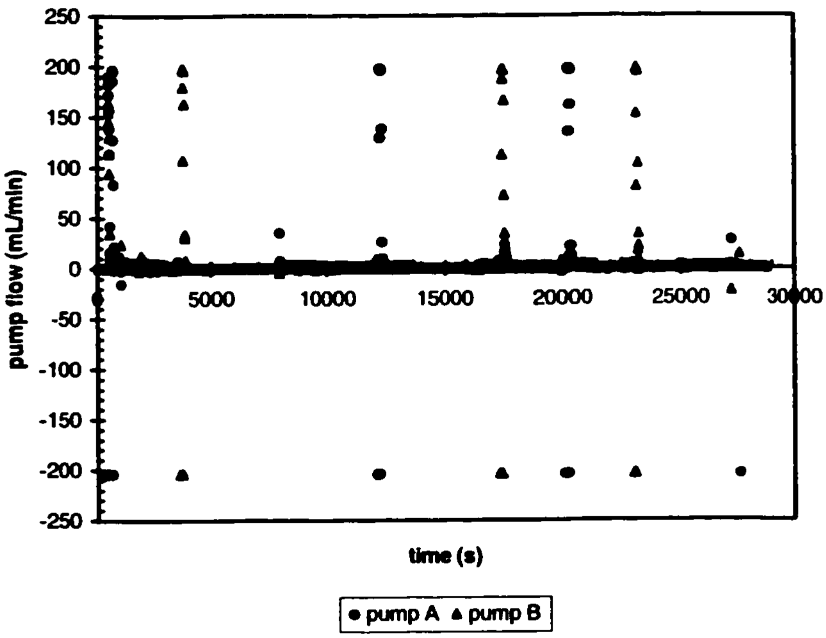


Figure 4.4 Sample pump flow data full scale (2001-07-17)

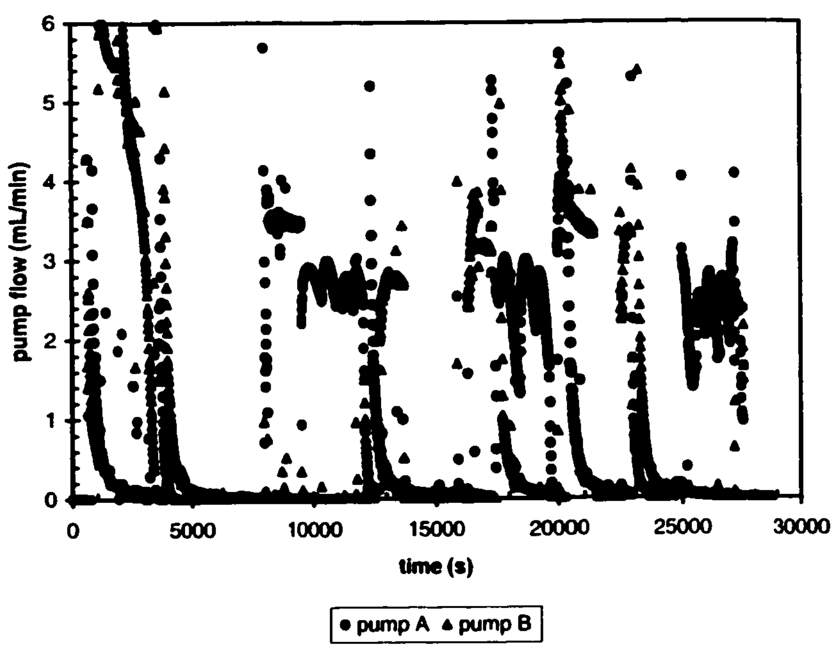


Figure 4.5 Sample pump flow data reduced scale (2001-07-17)

In Figure 4.5, it is possible to observe the flow when the pump isn't refilling or repressurizing. Once the vessel is pressurized, the static time begins. At 7900 s to approximately 9000 s, the SC CO_2 is flowing through the bypass to zero the UV/VIS detector with a flow of about 3.5 mL/min. At 9500 s, the valve after the vessel is opened and the dynamic section of the experiment begins. The flow is kept between 2 and 3.5 mL/min. It is possible to see that pump B takes over at approximately 14000 s because the flow from pump A decreases and then increases to repressurize while the flow from pump B increases to about 3 mL/min. This trend continues until the end of the experiment where the flow from both pumps drops to zero when they are stopped.

Figure 4.6 represents sample flow data from the mass flowmeter. It should be noted that the mass flowmeter zero drifted to 0.010 L/min. The mass flowmeter data typically look similar to the pump flow data whenever the carbon dioxide is allowed to flow out of the system. However, when the solvent trap is changed approximately every 15 min, the flow through the mass flowmeter drops to zero.

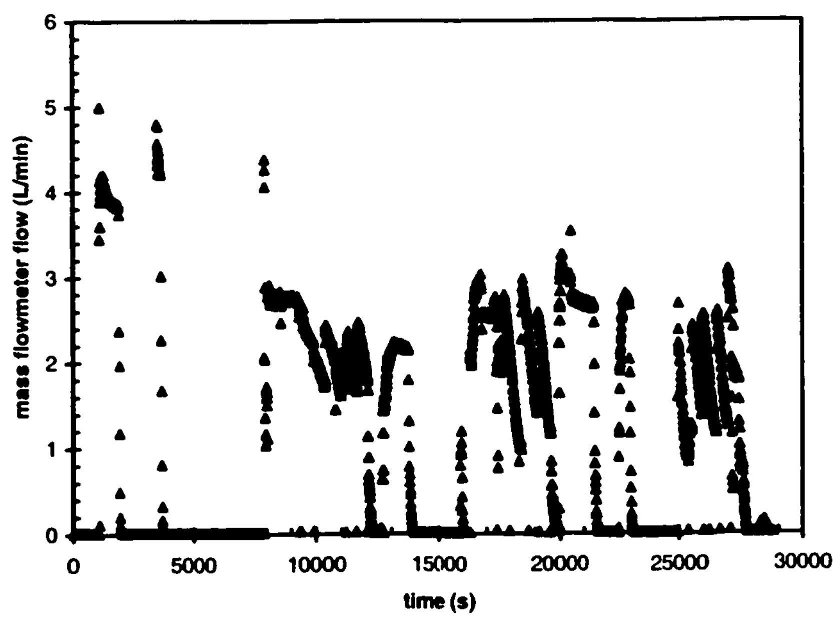


Figure 4.6 Sample mass flowmeter flow data (2001-07-17)

4.2.3 Temperature data

The temperature inside the vessel was monitored with a thermistor probe inserted into the vessel. Figures 4.7 and 4.8 present temperature data that were recorded during a solubility experiment.

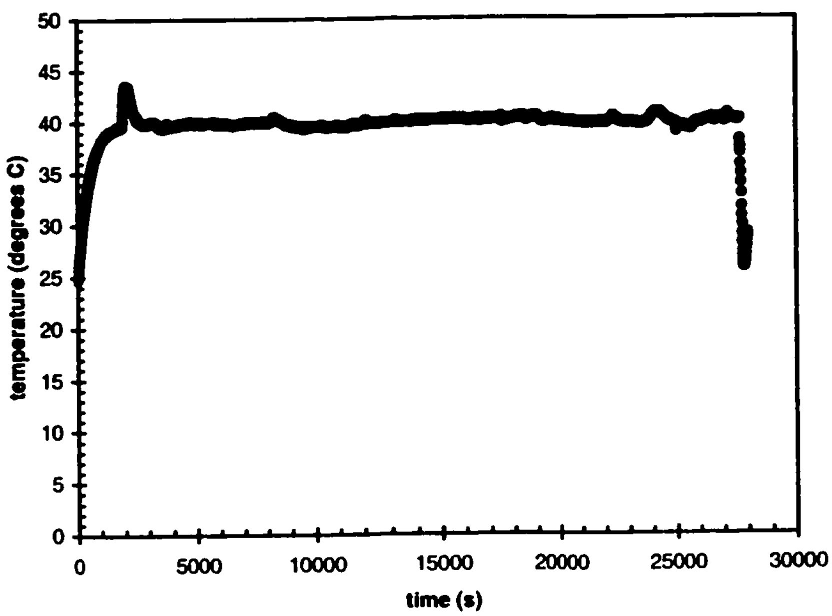


Figure 4.7 Sample temperature data (2001-07-17)

The temperature inside the vessel was typically the same as the temperature inside the water bath. The water bath temperature, which was measured with a thermometer, was kept within±0.5°C of the desired temperature whenever possible. If a leak is present however the temperature inside the vessel has a tendency to be at least two degrees lower than the water bath temperature.

During depressurization, the temperature inside the vessel becomes higher than the water bath temperature. This increase in temperature is due to the sudden increase in pressure in the vessel. This trend was observed during the solubility experiments. After peaking approximately 4°C higher than desired, the temperature slowly decreased and stabilized to the water bath temperature. Temperature data from a solubility experiment in Figure 4.8 shows this trend. At approximately 2000 s, the vessel is pressurized and the temperature in the vessel goes up to about 44°C even though the temperature in the water bath is at 40°C.

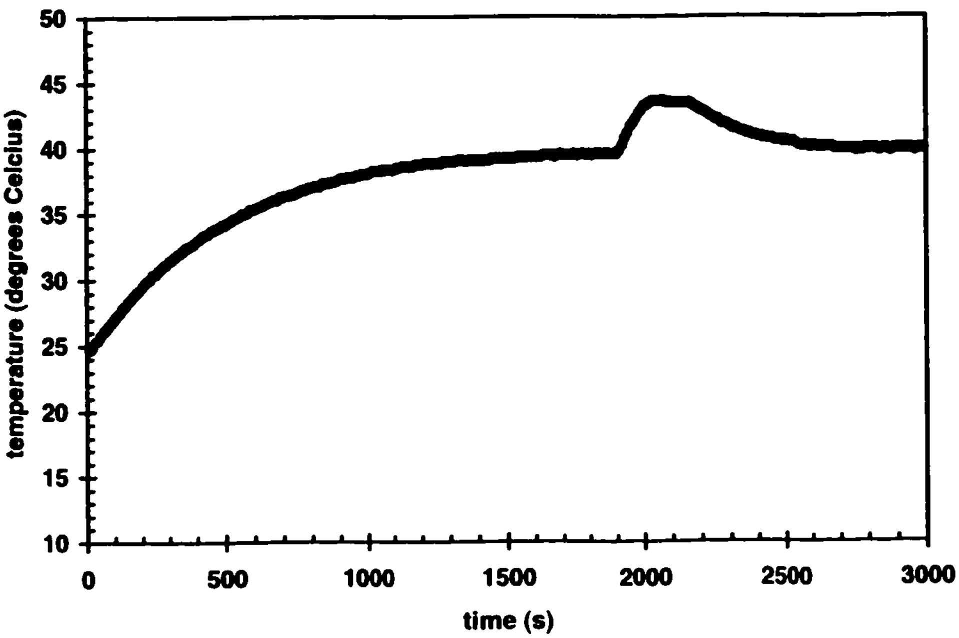


Figure 4.8 Temperature data during vessel pressurization (2001-07-17)

4.2.4 On-line UV/VIS data

The absorbance measured by the on-line UV/VIS detector was recorded to possibly create a calibration curve with the concentrations determined by the solvent trap data. Theoretically, this seems possible but is very difficult to do in this case because of the low concentrations and the drift of the instrument.

Several scans were done to determine at which wavelength the UV/VIS detector absorbance wavelengths should be set during the solubility and extraction experiments. The scan data was collected by LabVIEW and saved to an Excel file. The following scans were done: $Cu(tta)_2$ in SC CO_2, $Cu(tta)_2$ in SC CO_2 and methanol, tta in SC CO_2 and methanol and $Cu(tta)_2$ in hexane. The scan in hexane was executed because hexane has approximately the same polarity as CO_2, produces negligible solvochromatic shifts and exhibits similar extinction coefficients as SC CO_2 (Lagalante et al.,1995). The scans done in SC CO_2 had to be done with UV/VIS detector on-line in the SFE system and the hexane scan was performed manually using a syringe to push the solution through the flow cell of the UV/VIS detector. Figures 4.9, 4.10, 4.11 and 4.12 represent the scans in the order mentioned above.

The three scans of $Cu(tta)_2$ are very similar with peaks at approximately 190 nm to 200 nm, 340nm and a relatively small peak at 670nm. When SC CO_2 and hexane are the solvents, the peaks at approximately 200 nm are similar i.e. approximately one third of the peak at 340 nm. However, when the solvent is a combination of SC CO_2 and methanol, the first peak is as high as the peak at 340 nm. This is probably due to the methanol.

The tta scan in SC CO_2 and methanol shows that tta is visible at the same wavelengths as $Cu(tta)_2$. However, the peak at 670 nm visible in the $Cu(tta)_2$ scan is basically non-existant in the tta scan. Also, the peak at 200 nm is visible because of the presence of methanol. Between 250 nm and 360 nm, the reading seems to have reached its maximum. It is possible that this occurred because of the concentration of the solution or the multiplying factor that was present when the data were saved to the Excel file. This can probably be corrected by making changes to the LabVIEW program used. If more scans are to be done, it would be interesting to modify LabVIEW and eliminate the unknown multiplying factor. This could avoid reaching a maximum reading of absorbance when scans are conducted in the future.

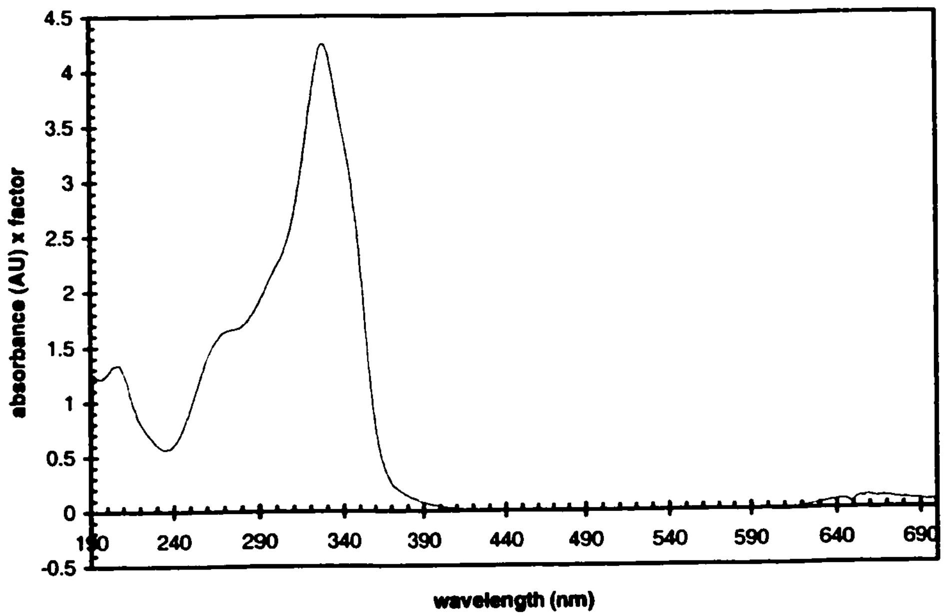


Figure 4.9 Scan of $Cu(tta)_2$ in SC CO_2

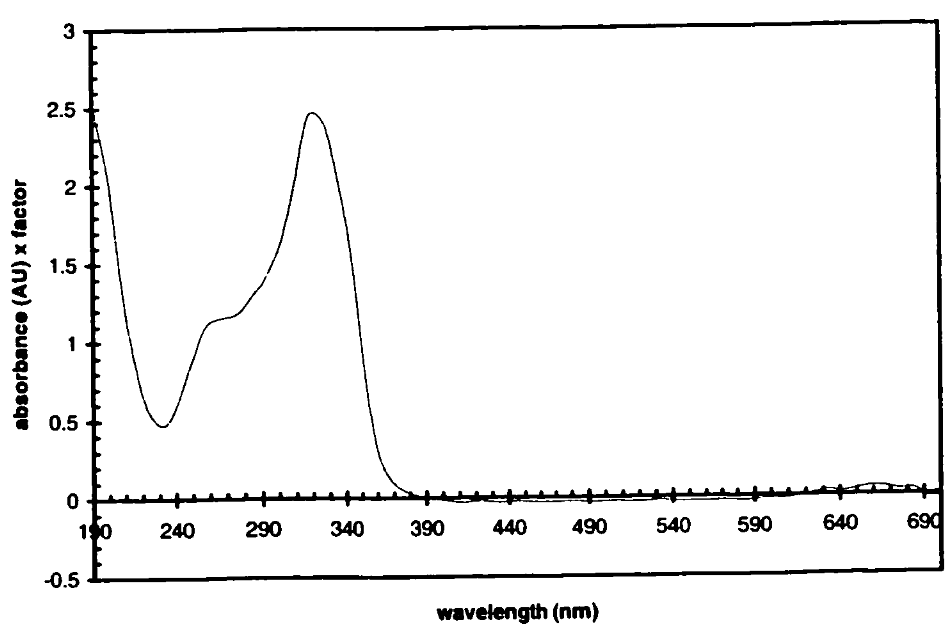


Figure 4.10 Scan of $Cu(tta)_2$ in SC CO_2 and methanol

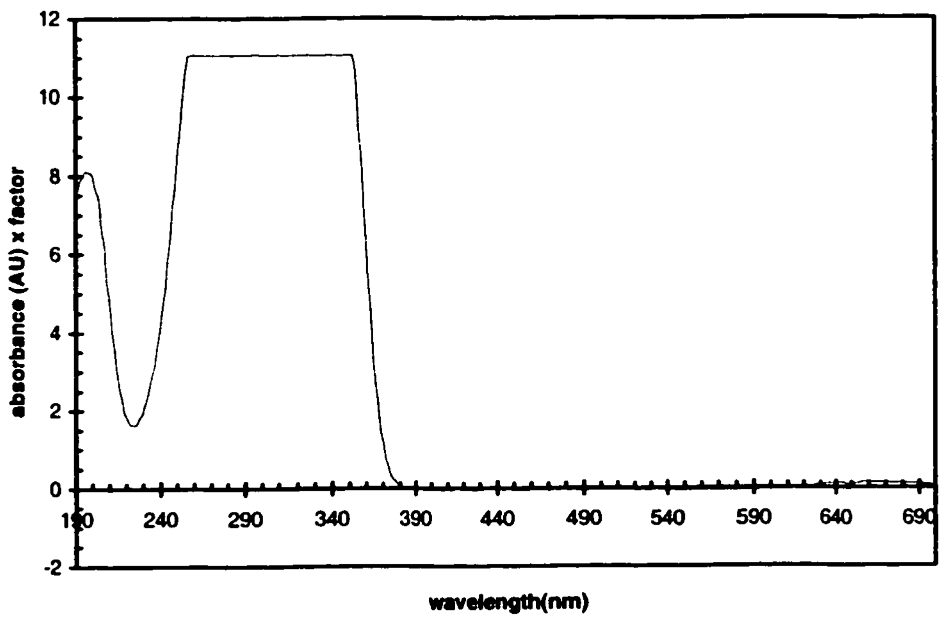


Figure 4.11 Scan of tta in SC CO_2 and methanol

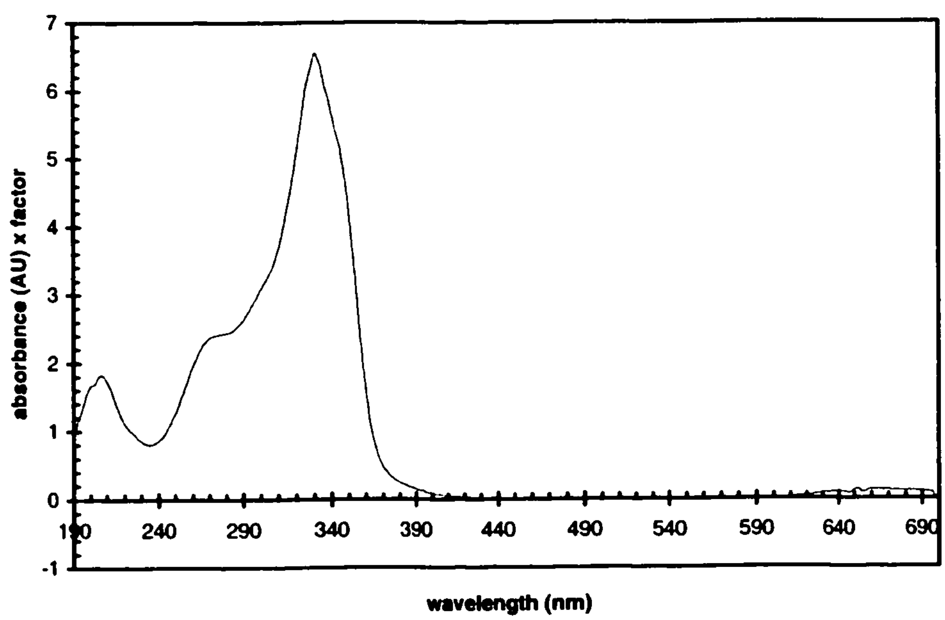


Figure 4.12 Scan of $Cu(tta)_2$ in hexane

The scans help in determining the wavelength at which the UV/VIS detector should be set. For the solubility experiments, where only $Cu(tta)_2$ is present, wavelengths 1 and 2 are set at 320 nm and 670 nm. However, for the extraction experiments where $Cu(tta)_2$ and tta are possibly present, the UV/VIS detector is set at 670 nm because tta is not visible at this wavelength and at a second wavelength at which $Cu(tta)_2$ is not visible but another compound may be detected. The second wavelength chosen for the extractions is 490 nm because neither $Cu(tta)_2$ nor tta seem to be detected at this wavelength.

On-line UV/VIS data were collected during the solubility experiments. Figure 4.13 shows a sample on-line UV/VIS data recording at a wavelength of 320 nm. The sections of interest in this graph are the dynamic sections of the experiment where the $Cu(tta)_2$ dissolved into the SC CO_2 is flowing out of the vessel. In Figure 4.13, the dynamic sections are indicated by 1, 2 and 3. The UV/VIS detector is zeroed at approximately 9750 s. This is noticeable because the absorbance reading is zero at this time. The first dynamic part of the experiment is between 9900 s and 12020 s. On the graph, it is possible to see that the reading reaches a peak at the beginning of this time interval and gradually decreases. Typically the same can be observed between 17400 s and 19570 s, and 24970 s and 27100 s. The peak is highest for the first dynamic section and then decreases in the two subsequent dynamic sections. This probably occurs because solubility limit was achieved during the first dynamic section.

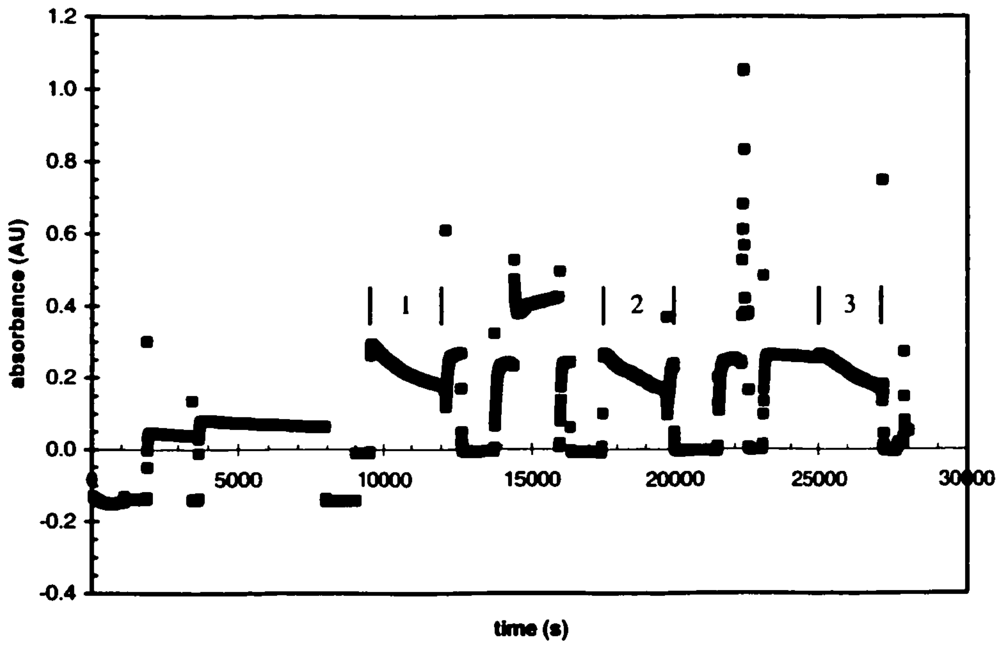


Figure 4.13 On-line UV/VIS data at 320nm (2001-07-17)

4.2.5 Solvent trap data

The solution in the solvent solvent traps is analyzed to determine the concentration of $Cu(tta)_2$ in the solvent traps to (i) calibrate the on-line UV/VIS detector, and (ii) determine the mass of $Cu(tta)_2$ collected in the traps and conduct a mass balance.

After each solubility experiment, the concentration of $Cu(tta)_2$ in each solvent trap was determined using a spectrophotometer. Sample calculations for the concentration, the raw data, the calibration curve used to determine the concentrations and scans performed to determine the wavelength are shown in Appendix A3.

4.2.5.1 Calibration of on-line UV/VIS detector

With the concentration of each of the solvent traps calculated and the absorbance reading at 320 nm recorded by LabVIEW, it is possible to plot a calibration curve of the absorbance versus the concentration. Figure 4.14 graphically presents the on-line absorbance at 320nm versus the concentration in the methanol solvent traps. Because the solvent traps are changed approximately every 15 min, which gives an average concentration over these 15 min, it is necessary to calculate an average absorbance over the same time period. The absorbance data versus the concentration of $Cu(tta)_2$ are plotted using the first dynamic section of the solubility experiment (9900 s to 12020 s) done on August 17, 2001. The raw data from this experiment are presented in Appendix A2.

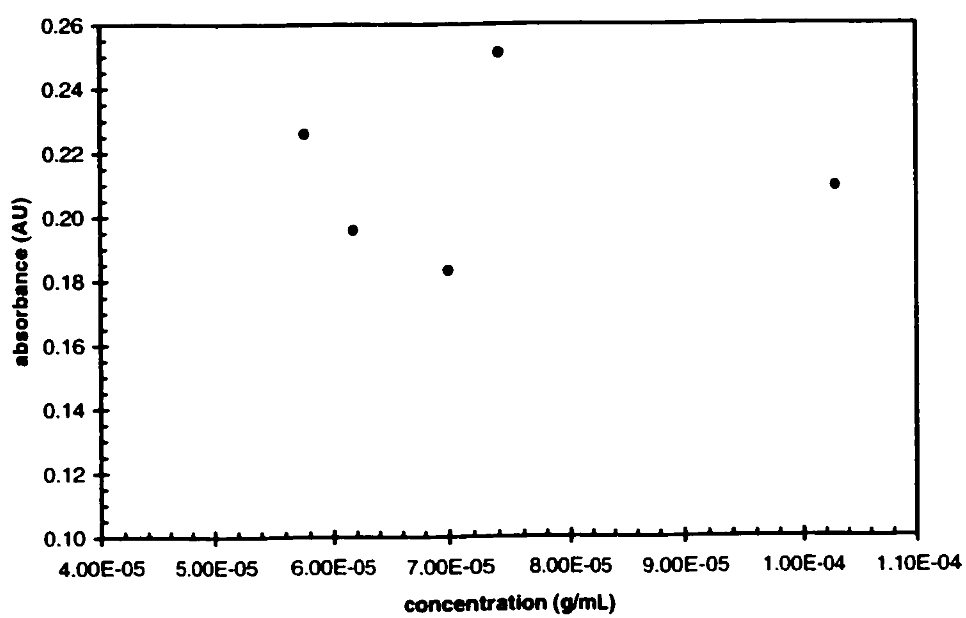


Figure 4.14 Plot of absorbance at 320 nm versus $Cu(tta)_2$ concentrations

As can be seen in Figure 4.14, this graph cannot be used as linear calibration curve because the points are scattered. There are many factors that may contribute to

Figure 4.14 not yielding an expected linear trend. It is possible that there is an offset in the concentrations measured in the traps and the absorbance measured by the on-line UV/VIS. If this is the case, the average absorbance reading of the first 15minutes does not necessarily correspond to the $Cu(tta)_2$ collected in the solvent trap during the first 15 minutes. Also, there is a possibility that some $Cu(tta)_2$ may not have flowed out into the solvent trap but rather it stayed somewhere in the system. The difficulty in plotting a calibration curve with this method may explain why calibration curves are sometimes plotted by using hexane standards as was done by Lagalante et al. (1995) to measure the solubility of copper β-diketonate complexes in SC CO_2. Because of the low concentrations present in the solvent trap solutions, the use of a flow cell with 5cm pathlength may give better results.

4.2.5.2 Mass balance results

Even though obtaining a calibration curve for the on-line UV/VIS detector with the present data is not possible, the amount of $Cu(tta)_2$ collected in the traps can be determined by multiplying the volume in the traps by the concentration. These values are shown with the raw data in Appendix A3. From these $Cu(tta)_2$ masses, the mass balances for the three solubility experiments were calculated to ensure that all of the $Cu(tta)_2$ placed inside the vessel could be accounted for. The mass balance results are presented in Table 4.4.

The mass balance was calculated for each run. These mass balance calculations are close to 100%. The standard deviation for the mass balance results is 11.7%. However, the second and third mass balances are above 100%. This may indicate that there was some residual $Cu(tta)_2$ in the system after the first run that was collected during the second run. The instrument drift of the on-line UV/VIS detector or manipulation errors during the solvent trap analysis may have resulted in the average 110% mass balance. Because of the low concentrations of $Cu(tta)_2$ in the methanol solvent traps, it may be beneficial to use a cell with a longer pathlength (i.e. 5 cm). More experiments may be necessary to make more accurate calculations.

Table 4.4 Mass balance results for solubility experiments at 10.34 MPa and 40°C

Date	Mass balance (%)
2001-07-06	95.6
2001-07-13	119.4
2001-07-17	116.7
average	110.6
s.d.	11.7%

4.2.6 Solubility data

Knowing the concentration of $Cu(tta)_2$ in the solvent traps and the mass of carbon dioxide flowing through the solvent trap, it is possible to calculate the solubility of $Cu(tta)_2$ in SC CO_2. Sample calculations are shown in Appendix A4. Table 4.5 gives a summary of the solubilities, the standard deviations and the mass balances calculated for the solubility experiments done at 10.34 MPa and 40°C.

The average solubility of $Cu(tta)_2$ in SC CO_2 at 10.34 MPa and 40°C is 1.41×10^{-6} mole fraction. The standard deviation is 35.4%. The solubility results from this research can be compared to the solubility results obtained by Guigard (1999) and Stroich (2001). Table 4.6 gives a summary of the results obtained for $Cu(tta)_2$ solubilities in SC CO_2.

The solubility measured in this research at 10.34 MPa and 40°C is slightly lower than the solubilities measured by Stroich (2001) and Guigard (1999). However, the percent standard deviation for the same conditions is lower in this study than the percent standard deviations obtained by Stroich (2001) and Guigard (1999). To determine if the results are statistically different, two statistical tests are performed on the data collected at

10.34 MPa and 40°C as was done by Stroich (2001). The results from the statistical analysis are shown in Appendix A5.

Table 4.5 Summary of solubility experiments at 10.34 MPa and 40°C

Date	Solubility (mol/mol)	Mass balance (%)
2001-07-06	1.76×10^{-6}	95.6
2001-07-13	8.38×10^{-7}	119.4
2001-07-17	1.63×10^{-6}	116.7
average	1.41×10^{-6}	110.6
s.d.	35.4%	11.7%

Table 4.6 Summary of solubility data for $Cu(tta)_2$ in SC CO_2

Conditions	Solubilities (mol/mol) (s.d. (%))		
	Current research	Stroich (2001)	Guigard (1999)
10.34MPa, 40°C	1.41×10^{-6} (35.4%)	1.81×10^{-6} (49.3%)	3.20×10^{-6} (55.5%)
10.34MPa, 45°C		3.75×10^{-7} (41.6%)	
9.65MPa, 40°C		8.36×10^{-7} (8.4%)	
9.65MPa, 45°C		3.37×10^{-7} (44.2%)	8.58×10^{-7} (78.9%)

The results of these two analyses confirm that the variances and means of the current research and those of Guigard (1999) and Stroich (2001) are statistically equal within a 95% confidence interval. The statistical tests were done separately by first comparing Guigard's (1999) results and the current work and then comparing Stroich's (2001) results to the current research. It was assumed that if solubility measurements would have been done at different conditions as was done by Guigard (1999) and Stroich

(2001), the results would follow the same trend. According to the results, the highest solubility measurement of $Cu(tta)_2$ in SC CO_2 is at 10.34 MPa and 40°C. However, the high variability in the results may indicate that the results for each condition are not significantly different.

Decreasing the flowrate at which the dynamic sections of the solubility experiments were conducted in this study may increase the solubility measurements. In this study, the pump flow during the dynamic sections of the solubility experiments was approximately 3 mL/min. M'Hamdi et al. (1991) used a flow of 2 mL/min and Ozel et al. (2000) used a flow of 0.95 mL/min. With lower flows than 0.95 mL/min, restrictor plugging was observed by Ozel et al. (2000). It is suggested that if any further solubility measurements are conducted with the experimental setup of this study, lower dynamic flowrates should be tested.

Because of the difficulties encountered in the measurements of solubility using the SFE setup presented here, it may be simpler to use the piezoelectric quartz crystal microbalance method to determine solubilities of metals. The difficulties in collecting the $Cu(tta)_2$ to determine the solubility and the possible residual $Cu(tta)_2$ in the lines that may affect the solubility measurements could be avoided if the piezoelectric quartz crystal technique is used. Also, the solubility would not depend on the chosen dynamic flowrate as may be the case for thc setup used here.

4.3 EXTRACTIONS

Extraction experiments were conducted at 10.34 MPa and 40°C, and 9.65 MPa and 40°C using the same experimental setup as was used for the solubility experiments. The solubility measurements obtained by Stroich (2001) and Guigard (1999) indicated that the optimal conditions for extractions and solubility measurements of $Cu(tta)_2$ are at SC CO_2 densities above 0.5407 g/cm^3. Because the solubility results obtained in this study are similar to those obtained by Stroich (2001) and Guigard (1999), the conditions were chosen as 10.34 MPa and 40°C, and 9.65 MPa and 40°C, which correspond, respectively, to SC CO_2 densities of 0.6519 and 0.5948 g/cm^3.

Before the extractions and after the extraction experiments were completed, soil samples were analyzed for copper content using atomic absorption spectrometry. It was first necessary to digest the soil samples. Using the measurements, it was possible to calculate the extraction efficiency and determine how much copper was extracted from the soil.

The solvent traps were analyzed for the extractions, as was done for the solubility experiments, to be able to calculate a mass balance of copper in the system. The following sections describe the results obtained for the extraction experiments. A sample Excel data file collected during an extraction experiment is given in Appendix B1.

4.3.1 Pressure data

As for the solubility experiments, the pressure data were collected from the pump and the pressure transducer, which measured the pressure inside the vessel. Due to operational difficulties, for the extractions, only one pump was used. Figure 4.15 shows a sample of the pressure data collected during an extraction.

Pressure data presented here resembles that of the solubility experiments. Here, only one pump was used: pump A was operated in independent mode. As was observed for the solubility experiments, the pump pressure at the beginning corresponds to the CO_2 cylinder pressure and the transducer pressure for a depressurized system corresponds to 0.7 to 1.2 MPa. The offset explains why the transducer reading is approximately 1 MPa higher than the pump pressure. Because the system runs on only one pump, the operator needs to insure that the pump is never empty because this would cause the pump to stop. This could affect the pressure in the system. In Figure 4.15, it is possible to see that once the pressure in the vessel is constant, the pump is stopped and refilled (at approximately 4500s). While the pump refills, its pressure becomes the same as the cylinder pressure.

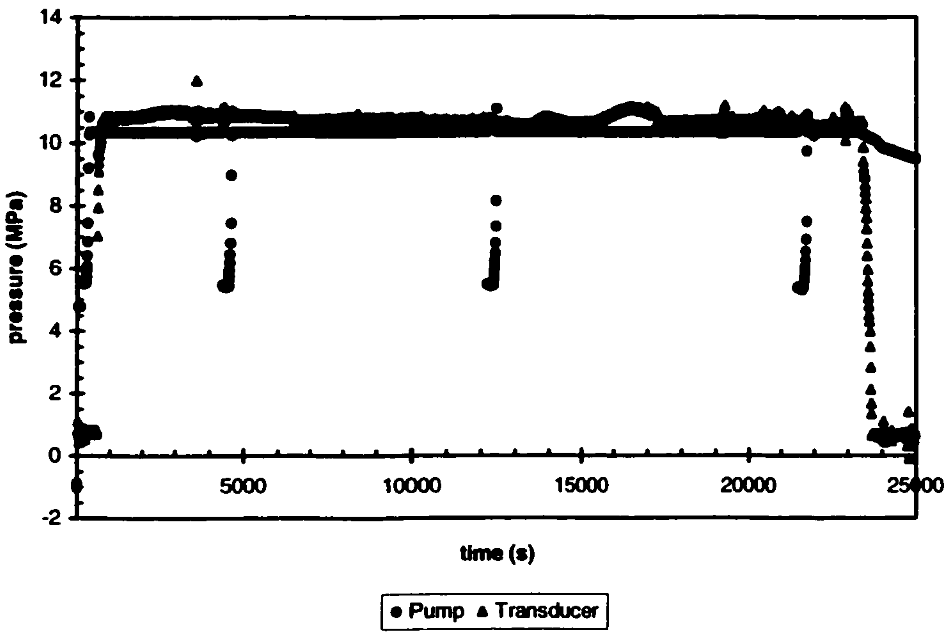


Figure 4.15 Sample pressure data from extraction experiment (2001-11-27)

In the case where the pressure and volume of CO_2 in the CO_2 cylinder become low, it becomes impossible to run an experiment in independent mode. Once the pump is pressurized to approximately 10.34 MPa, there is not enough CO_2 to run a dynamic extraction for 90 min with a SC CO_2 flow of 2 mL/min.

4.3.2 Flow data

Flow data were collected from one pump and from the mass flowmeter as was done for the solubility experiments. Figure 4.16 shows the flow data collected from the pump and the flowmeter during an extraction experiment.

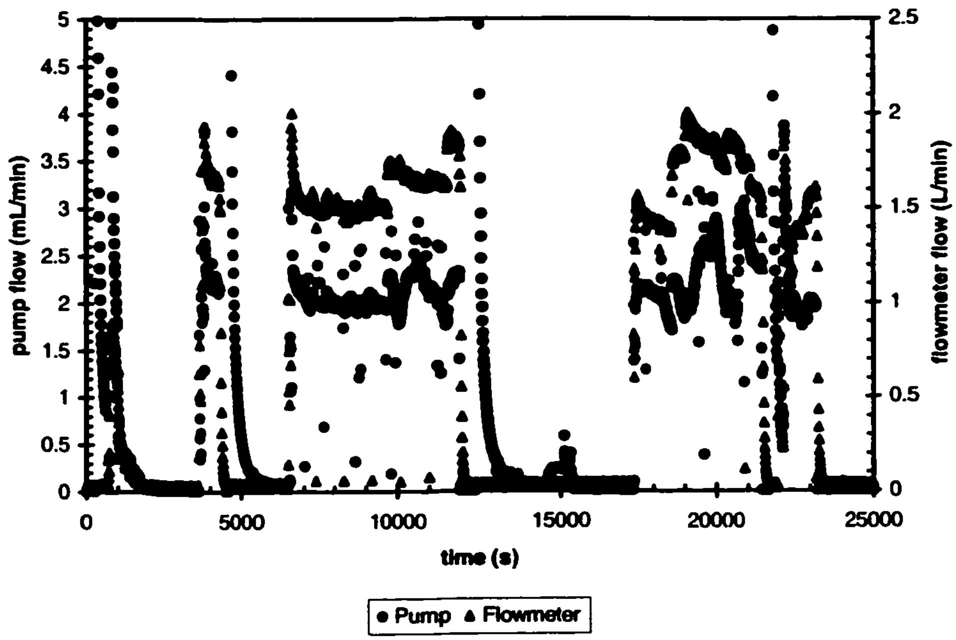


Figure 4.16 Sample flow data from extraction experiment (2001-11-27)

From Figure 4.16, it can be seen that the pump and mass flowmeter flow follow the same trend. The values are not the same because, at the pump, the flow is measured at pump pressure and at the flowmeter, the flow is measured at atmospheric pressure. The pump was cooled to 7.5°C and the flowmeter was at room temperature.

4.3.3 Temperature data

The temperature inside the vessel was also monitored with the thermistor probe during the extraction experiments. A thermometer was used to monitor the water bath temperature. Figure 4.17 presents temperature data collected during an extraction experiment.

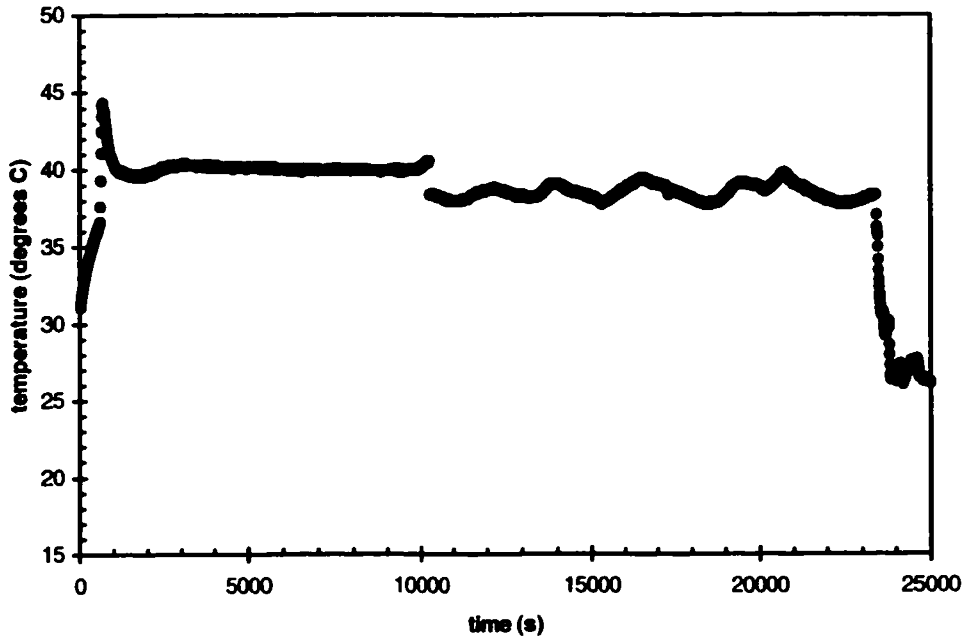


Figure 4.17 Sample temperature data from extraction experiment (2001-11-27)

Typically, the temperature inside the vessel is the same as the water bath temperature. When the vessel is pressurized, the temperature rises about 4°C higher than the water bath temperature as was explained in section 4.2.3. The water bath temperature for the extraction experiment shown in Figure 4.17 was kept at 40°C. When the vessel was pressurized, the temperature in the vessel reached its peak of approximately 44°C at 1000 s.

As discussed in section 4.2.3, if there is a leak, the temperature in the vessel will be lower than that in the water bath. In the case of the extraction presented in Figure 4.17, after 10000 s, the temperature was approximately 2°C lower than the water bath temperature. This indicates that there is a small leak. Some $Cu(tta)_2$ dissolved in SC CO_2 may have been released from the vessel through the leak but this will not affect the extraction results because the extraction results are based on the amount of copper remaining in the soil The extraction was completed because even though the temperature was a bit lower than desired, it remained fairly constant at approximately 38°C.

4.3.4 UV/VIS data

The on-line UV/VIS data were collected during the extraction experiments to identify whether $Cu(tta)_2$ was being extracted from the vessel. If $Cu(tta)_2$ were being extracted, a signal should have been observed at a wavelength of 670 nm. Also, $Cu(tta)_2$ should not be seen at 490 nm according to the scans shown in section 4.2.4.

From Figure 4.18, it can be seen that the same trend is observed for absorbances at a wavelength of 670 nm and 490 nm. This should not be the case if only $Cu(tta)_2$ is present in the SC CO_2 stream because it should only appear at 670 nm and not at 490 nm. The on-line UV/VIS detector is zeroed at approximately 4000 s. The first dynamic extraction can be observed between 6500 s and 11900 s. The absorbance becomes very close to zero because the same flow, pressure and temperature as when the UV/VIS detector was zeroed are observed and it is assumed that very low concentrations of $Cu(tta)_2$ are present in the SC CO_2. If only $Cu(tta)_2$ was present in the stream, the two absorbance wavelengths should not be the same. However, at such low concentrations and absorbance signals, it is difficult to know if the trend is caused by a compound present in the SC CO_2 stream, by instrument drift or even by a variation in the flow.

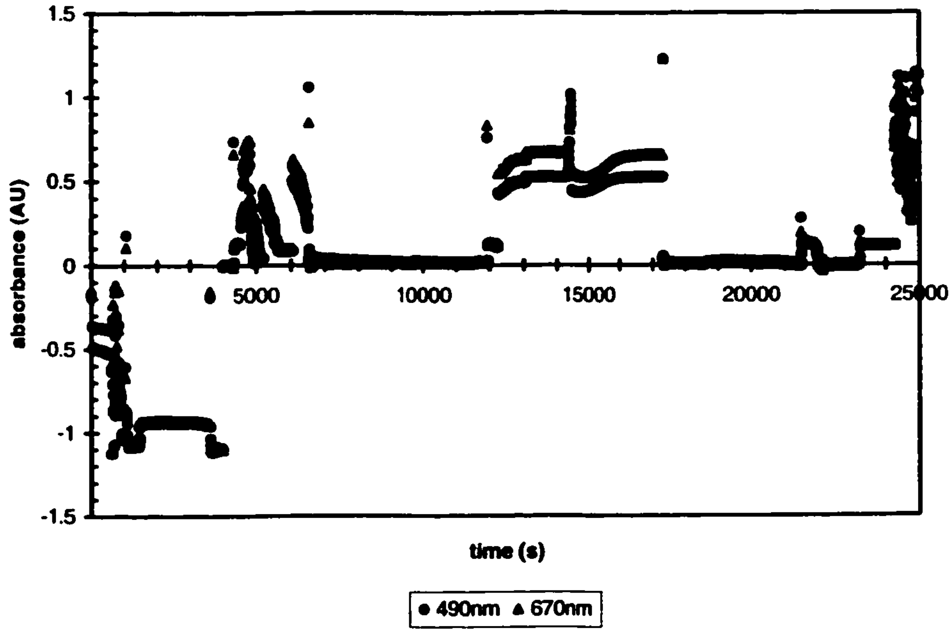


Figure 4.18 Sample UV/VIS detector data for extraction experiment (2001-11-27)

An on-line UV/VIS detector may be an interesting tool if the concentrations present in the stream were higher. However, in this work its use may have been limited.

4.3.5 Digestions and atomic absorption

Once the extractions were complete, the soil was removed from the vessel and placed in a vial for future analysis. The soil was dried when water had been previously added and digested according to EPA SW-846 Method 3050B. The samples were analyzed for copper using an atomic absorption spectrometer. The results obtained for the sand and the silt were compared to an analysis done by an outside laboratory. Table 4.7 gives a comparison of the copper concentrations determined in our laboratory and at Enviro-Test Laboratories (Division of ETL Chemspec Analytical Limited, Edmonton, Alberta). Enviro-Test Labs first prepared the samples using an acid digestion (microwave) according to EPA SW-846 Method 3051 and then analyzed the samples for copper using Inductively Coupled Plasma (ICP-OES). Some of the values in Table 4.7 are averages of 2 or 3 samples and others are individual sample results. The complete data set including calibration curves for the atomic absorption spectrophotometer is given in Appendix B2. For the analyses done in this part of the research, 1g soil samples were used during the digestions. Because readings from a DI water sample were not taken after the instrument was zeroed, it was impossible to correct the sand sample atomic absorption readings for the zero drift of the instrument. However, the silt sample readings were corrected for zero drift.

Table 4.7 Comparison of copper concentration results from current research and Enviro-Test Laboratories

Soil, date and type	Spiked concentration (before samples only) (mg Cu^{2+}/kg soil)	Measured concentration (mg Cu^{2+}/kg soil)	
		Enviro-Test	Current research
sand, 2001-08-26, blank		2	8
sand, 2001-08-26, before	57	56	63
sand, 2001-08-26, after		49	48
sand, 2001-08-30, blank		1	13
sand, 2001-08-30, before	57	51	50
sand, 2001-08-30, after		54	37
sand, 2001-08-31, blank			0
sand, 2001-08-31, before	57	53	43
sand, 2001-08-31, after		50	38
silt, 2001-09-02, blank			19
silt, 2001-09-02, before	56	60	56
silt, 2001-09-02, after		66	57
silt, 2001-09-03, blank			11
silt, 2001-09-03, before	56	66	57
silt, 2001-09-03, after		70	55
silt, 2001-09-04, blank		36	22
silt, 2001-09-04, before	56		64
silt, 2001-09-04, after			46

For the sand, the results from Enviro-Test and our research were similar. For the run done on 2001-08-31, the results from the current research seem slightly lower than from Enviro-Test. The drift of the instrument, which was not accounted for, may explain this. Also, the blank samples analyzed in the current research are slightly higher than the Enviro-Test results. This difference may also be explained by the instrument drift. Overall, the blank sand does not seem to contain large amounts of copper with respect to the spiked samples

The Enviro-Test silt results seem slightly higher than the current research results. The result from Enviro-Test was from a single analysis for each sample and may not be as representative as the results obtained from three samples in the current research. According to the results from both analyses, it seems like there is some copper in the blank silt samples.

Overall, it appears that the method used in the current research is reliable and gives similar results to an outside lab. A third analysis was done by Norwest Labs (Agri-Food & Environmental Group, Edmonton, Alberta) on blank sand and silt samples. The methods used were a microwave assisted digestion (EPA SW-846 Method 3051) and ICP Method 3120 B (APHA, Standard Methods for the Examination of Water and Wastewater). These results showed that the sand contained 1 mg Cu^{2+}/kg soil and the silt contained 17 mg Cu^{2+}/kg soil. These results seem to be in accordance with the results from Enviro-Test and the current research. This once again confirms that the current research results are reliable.

After some analyses were done and results seemed to be lower than the spiked concentrations, the possibility of low atomic absorption reading being a factor in the concentration results needed to be investigated. At this point, sand samples were spiked at different concentrations and acid digestions were done on 1 and 2 g samples to determine which mass of soil seemed to give better results. These digestions also provided an indication of the concentrations that could be detected by the atomic absorption spectrometer. Table 4.8 gives a summary of the comparison of the 1 and 2 g sample results. The results were corrected for zero drift. The standard deviations were calculated and are indicated in parentheses. The complete data set is given in Appendix B2 (2001-11-05 section).

Comparing the results from the 1 and 2 g soil samples used for the digestions, it seems that the 2g samples yield better results. The concentrations are closer to the spiked concentrations and the standard deviations are generally lower. Also, for the 1 g samples, there is basically no difference in the SS-1 and SS-2 results. This seems to indicate that the difference between a sample that has a concentration of 10 mg Cu^{2+}/kg soil and a sample with a concentration of 20 mg Cu^{2+}/kg soil cannot be detected i.e. that it would be difficult to measure concentrations below 20 mg Cu^{2+}/kg soil. From these results, it was concluded that 2 g samples should be used for the acid digestions instead of 1 g samples.

Table 4.8 Comparison of results using 1 and 2 g samples in acid digestion

Sample	Spiked concentration (mg Cu^{2+}/kg soil)	Concentration (mg Cu^{2+}/kg soil)	
		1 g (s.d.)	2 g (s.d.)
SS-1	11.5	19.4 (5.7)	16.1(0.8)
SS-2	19.3	18.3 (4.2)	23.2(2.1)
SS-3	30	35.6 (3.2)	31.6(4.2)
SS-4	38.8	47.9 (4.9)	35.5(1.9)

The digestion and atomic absorption results for all the samples can be found in Appendix B2. These results will be summarized and discussed in the following sections.

4.3.6 Extraction efficiency

Once the concentration of copper in every soil sample is determined, it is possible to calculate the extraction efficiency of copper from soil for each extraction experiment. The extraction efficiency is calculated as follows:

$$EE\ (\%) = \frac{C_B - C_A}{C_B} \times 100 \qquad (4.1)$$

where EE is the extraction efficiency, C_B is the concentration of copper in the soil before the extraction and C_A is the copper concentration in the soil after the extraction.

A sample calculation is given in Appendix B3. Table 4.9 gives a summary of the average extraction efficiency for each experiment. The concentrations have all been corrected for the atomic absorption spectrometer drift except for sand at 10.34 MPa and 40°C with 0% water content. The concentrations are averages of the three SFE experiments done at each condition. For each experiment, the soil was spiked at approximately 57 $mgCu^{2+}/kg$ soil. In the condition column,"w" indicates moisture or water content. A complete summary of the results can be found in Appendix B4.

Table 4.9 Average extraction efficiency of copper using SFE

Soil	Condition	Concentration before ($mg\ Cu^{2+}/kgsoil$) (s.d. (%))	Concentration after ($mg\ Cu^{2+}/kgsoil$) (s.d. (%))	Extraction efficiency (%) (s.d.. (%))
sand	10.34MPa, 40°C, 0%w	51.8 (19.5)	41.1 (14.6)	20.1 (38.8)
	10.34MPa, 40°C, 5%w	42.3 (6.1)	19.5 (39.5)	53.8 (32.9)
	10.34MPa, 40°C, 10%w	34.0 (28.5)	20.4 (23.0)	36.9 (53.7)
	9.65MPa, 40°C, 0%w	39.8 (0.5)	34.8 (10.9)	12.5 (77.6)
silt	10.34MPa, 40°C, 0%w	59.4 (6.7)	47.4 (19.6)	20.5 (88.3)
	10.34MPa, 40°C, 5%w	65.8 (5.9)	49.6 (7.9)	24.5 (24.0)

As was discussed in section 4.2.6, the highest solubility for $Cu(tta)_2$ was expected at 10.34 MPa and 40°C. This high solubility should lead to a high extraction efficiency. From Table 4.9, it is possible to see that the extraction efficiency of copper from sand seems higher at 10.34 MPa than 9.65 MPa, which is in accordance with what was expected. Also, three different water contents were tested at 10.34 MPa and 40°C. The extraction efficiency increased when water was added. For 5% water content, the extraction efficiency increased from 20% for a dry soil to 54%, and at 10% moisture content, the extraction efficiency was decreased to 37%. The best result obtained in this study seems to be with 5% moisture content. However, it is possible that the optimal extraction efficiency is situated between 0 and 5% or between 5 and 10%. To determine the optimal water content, more extraction experiments should be done with moisture contents of 6, 7, 8 and 9%. The behavior between 5 and 10% moisture content would be better understood. It may also be interesting to test water contents above 10% to get an indication whether or not the extraction efficiency will continue decreasing at higher moisture contents. Because of the high variabilities observed here, it is possible that there is no statistical difference between the results obtained at different conditions.

For the silt, it was assumed that the optimal extraction efficiency would be at 10.34 MPa and 40°C so no experiments were done at 9.65 MPa. Also, only dry silt and silt with moisture content of 5% were tested. For 5% moisture content compared to a dry soil, the extraction efficiency only increased from 20% to 24%, compared to a 34% increase for the sand. This indicates that adding water to the soil sample may be more effective for sand or that the optimal extraction of copper from silt using tta as chelating agent may be obtained at higher moisture contents than 5%.

The extraction efficiency for a dry soil was typically the same for both the sand and the silt. However, when water was added, the extraction efficiency of copper became much higher for the sand than the silt. According to Wai and Wang (1997), when a small amount of water is added to a solid matrix such as filter paper, sand, soil or wood, the extraction efficiency of metals with a chelating agent should significantly increase. The water may facilitate the reaction between the metal and the chelating agent. As explained by Knipe et al. (1991), water may be acting as a modifier, which means that it is blocking the active sites of the matrix and reducing the adsorption of the metal by the active sites of the polar matrix. It seems that in this case, the water addition in silt did not really increase the extraction significantly. The amount of water added to the silt may not have been the optimal amount. More extractions at different moisture contents would be necessary to determine the optimal moisture content. Also, because of high variabilities observed here it is possible that the results are not statistically different.

Typically, high extraction efficiencies of metals can be achieved when they are spiked onto a matrix such as sand (Wai and Wang, 1997). However, if a real soil is spiked with a metal, it may be more difficult to extract because of the active sites and natural ligands found in the soil that may bind strongly to metal ions and have a negative effect on their reaction with the chelating agent. Possibly, this is what was observed here for the silt when water was added.

According to section 4.3.5, the silt may contain approximately 20 mg Cu^{2+}/kg soil. This native portion may be more difficult to extract because these metal ions may be present in highly insoluble form such as oxides or sulfides (Wai and Wang, 1997). The extraction of this portion of metals depends on the chelating ability of the tta and the accessibility of the compound sites. The portion of metals that cannot be extracted are considered as unleachable metals. For the fraction of metals already present in the silt, SFE can only evaluate the leachable metals present (Smart et al., 1997). This may have had an effect on the extraction efficiency of copper from the silt samples in this research because native copper present in the silt may be more difficult to extract. Also, the extraction efficiency calculations were based on the total copper present in the soil before extraction as measured by atomic absorption. This total copper therefore includes copper initially present in the soil that may be difficult to extract.

The percent standard deviations for the extraction efficiency are quite high ranging from 24 to 88%. This indicates a great amount of variability between the three runs performed for each condition. Because of this variability, the results obtained at different conditions may not be statistically different. The mixing may have an influence on this variability because the stir bar may not keep turning during all three experiments. This inconsistent degree of mixing may influence the reaction between the copper and the tta, and the solubility of the $Cu(tta)_2$. Also the flow of SC CO_2 may not have been exactly the same for each run even though this was desired. Also, the extraction efficiency calculation depends on the before and after extraction samples, the digestions and the atomic absorption spectrometry. There may have been variability in the samples and error may have been introduced during the digestions and the atomic absorption.

In general, according to Tables 2.7 to 2.11, the percent standard deviations observed in the literature are lower than those observed here. However, when Liu et al. (1993) extracted Cu, Co, Zn and Cd from sand with LiFDDC as the ligand, the percent standard deviations were high (up to 70% for pure SC CO_2 and up to 35 % for methanol-modified SC CO_2). The extraction efficiencies were between 55 and 69% for pure SC CO_2 and between 68 and 84% with methanol-modified SC CO_2. Only two of the percent standard deviations of this study are above 70%.

To improve the relative standard deviations of this study, it is possible that better mixing is needed or that the method of analysis for copper in soil needs to be improved. A pressure vessel with built-in mixing would ensure that similar mixing conditions are present in all the experiments and would possibly increase the extraction efficiency. Also, improving the digestion and atomic absorption spectrometry results may have an influence on the variability.

To increase the extraction efficiencies achieved by this study, the use of a mixture of TBP and tta could be investigated. A mixture of TBP and another chelating agent as a method of increasing extraction efficiencies has been successful in other studies (Lin et al, 1994, Lin and Wai, 1994; Wai, 1995).

Higher pressures should be tested to determine if an increase in the extraction efficiency of copper would be observed. It would also be interesting to determine the extraction efficiency of copper with different chelating agents to determine which chelating agents are more effective in extracting this metal.

4.3.7 Solvent trap analysis

The methanol solvent traps situated after the metering valve in the SFE system were used to collect the $Cu(tta)_2$. Typically, if only $Cu(tta)_2$ is present in the solvent stream, the methanol solution in the traps should be a light green color. If some tta is present, the solution would have more of a yellow tint.

During the extraction experiments, the solvent traps were mostly light orange to bright orange color. Even though this occurred, the solvent traps were analyzed at 420 nm using the $Cu(tta)_2$ in methanol calibration curve. These results were used to calculate the mass balance for each of the SFE experiments. Table 4.10 gives a summary of the results obtained for the extraction experiments including the mass balance. Appendix B4 gives the complete absorbance data obtained from the solvent trap analysis and a complete summary of the data before and after correction for atomic absorption instrument drift. In the condition column, "w" indicates moisture or water content. Extractions were also conducted with tta and blank sand. However, the samples were not analyzed for copper. The solvent traps seemed to be light yellow. When the tint of the solution is very faint, it is difficult to see if the color is yellow, green or orange. It is difficult to make any conclusions for this experiment conducted with blank sand and tta.

From Table 4.10, it is possible to see that the mass balance results are much greater than 100%. The mass balances are 3 to 80 times larger than they should be. This indicates that the orange color was visible at a wavelength of 420 nm. The mass balance results are much higher than they should be and indicate that possibly another metal is present in methanol solvent trap. According to Berg and Truemper (1960) and Satake et al. (1980), tri-(2-thenoyltrifluoroacetonato)-iron(III) is red. If iron was present in the sand and silt, it is possible that it formed this metal β-diketone with the tta present in the vessel during the SFE experiments. To determine if iron or other metals were present in the sand and silt, a sample of each soil was sent to Norwest Labs (Agri-Food & Environmental Group, Edmonton, Alberta) as was stated in section 4.3.5. Table 4.11 gives a summary of the metals (strong acid extractable) analysis.

Table 4.10 Summary of extraction experiment results

Soil	Condition	Date	Extraction efficiency (%)	Mass balance (%)
sand	10.34MPa, 40°C, 0%w	2001-08-26	23.6	267
		2001-08-30	25.5	623
		2001-08-31	11.1	660
sand	10.34MPa, 40°C, 5%w	2001-10-29	40.6	5000
		2001-10-30	47.0	3220
		2001-10-31	73.9	2470
sand	10.34MPa, 40°C, 10%w	2001-11-27	35.5	8340
		2001-11-29	57.5	3220
		2001-11-29	17.8	2470
sand	9.65MPa, 40°C, 0%w	2001-10-12	2.22	915
		2001-10-14	21.4	1130
		2001-10-15	14.0	930
silt	10.34MPa, 40°C, 0%w	2001-09-02	0	965
		2001-09-03	34.4	664
		2001-09-04	27.0	726
sand	10.34MPa, 40°C, 5%w	2002-01-24	22.0	4320
		2002-01-28	20.23	2650
		2002-01-29	31.25	2670

The analysis indicates that a considerable amount of iron is found in the sand and the silt, 2000 mg/kg and 19400 mg/kg respectively. Other metals such as aluminum, calcium, magnesium, phosphorous and silicon are also detected at concentrations above 100 mg/kg in the sand. In the silt, high concentrations (>100 mg/kg) of aluminum, barium, calcium, magnesium, manganese, phosphorous, potassium, silicon, sodium, and titanium are present. This indicates that other metal complexes may have been formed with the tta. Thus, there is a possibility that $Cu(tta)_2$ was not the only metal β-diketone present in the SC CO_2 stream flowing out of the vessel. Because the solvent traps were of orange color and precipitate in the methanol evaporated solvent trap was red, it is suspected that iron was also being extracted from the soil. This may have affected the copper extraction results because the latter may not have been the only metal forming a complex with tta and being dissolved in the SC CO_2. As indicated by Mincher et al. (2001), tta is not selective and complexes many metals. The use of a more selective chelating agent may increase the extraction efficiency of copper from the soil.

Table 4.11 Metals analysis for sand and silt

Metal	Concentration (mg/kg)		Detection limit
	sand	silt	
Mercury	<0.01	0.235	0.01
Aluminum	1030	13300	0.8
Antimony	<0.3	0.9	0.5
Arsenic	1.3	7.17	0.5
Barium	16.5	147	0.02
Beryllium	0.06	0.56	0.05
Bismuth	<0.4	<0.4	0.7
Cadmium	0.04	1.65	0.05
Calcium	543	6480	20
Chromium	1.85	18.5	0.08
Cobalt	0.92	7.12	0.07
Copper	0.87	16.9	0.1
Iron	2000	19400	0.3
Lead	1.34	9.64	0.2
Lithium	1.11	15.0	0.1
Magnesium	324	4060	5
Manganese	34.1	280	0.02
Molybdenum	<0.05	0.23	0.1
Nickel	2.49	25.3	0.1
Phosphorus	132	551	3
Potassium	<200	1500	40
Selenium	<0.2	0.8	0.4
Silicon	162	295	0.4
Silver	<0.05	<0.05	0.1
Sodium	<20	120	40
Strontium	4.97	23.9	0.01
Thallium	<0.2	<0.2	0.4
Tin	1.6	0.2	0.3
Titanium	33.0	150	0.04
Vanadium	4.02	32.0	0.05
Zinc	5.16	52.3	0.06

CHAPTER 5 CONCLUSIONS AND RECOMMENDATIONS

This section will first present a summary of the results obtained during this research. Recommendations will then be made to possibly improve the success of future research.

5.1 CONCLUSIONS

SFE system

The SFE system used in this research was developed by adding to the setup developed by Stroich (1999). The setup was used to measure the solubility of Cu(tta)2 in SC CO_2 and to extract copper from two soils. This setup can be used to do most lab scale SFE experiments whether it is for the extraction of organic or inorganic species.

Solubility results

The solubility of $Cu(tta)_2$ in SC CO_2 was measured to be 1.41×10^{-6} mol/mol (35.4% s.d.) at 10.34 MPa and 40°C using the experimental setup presented here. This result is comparable to the solubilities measured at these conditions by Guigard (1999) and Stroich (2001) using the piezoelectric quartz crystal microbalance method. Solubility experiments were only performed at this condition assuming that results similar to Guigard (1999) and Stroich (2001) would be obtained at other conditions. It was assumed that the optimal conditions for the extractions would be above 0.5407 g/cm^3 as was discussed by Stroich (2001). Extraction experiments were only performed at conditions where the density would be above 0.5407 g/cm^3.

Extraction results

Once the solubility runs were completed, SFE experiments were conducted to extract copper from spiked sand and silt using tta as the chelating agent. For sand, two conditions of temperature and pressure were tested, 10.34 MPa and 9.65 MPa, both at 40°C. Three different water contents were tested; dry soil, 5% water and 10% water. The optimal condition seems to be at 10.34 MPa, 40°C and 5% water content, which yielded an extraction of copper of 54%. For the silt, experiments were only done at 10.34 Mpa and 40°C. Two moisture contents were tested, 0% and 5%. The best extraction condition seemed to be with 5% moisture yielding a 25% extraction of copper. However, because of the high variability in the results, it is possible that there is no statistical difference in the results obtained at different conditions.

The addition of water seemed to have a greater influence on the extraction from sand than from the silt. For the sand, the extraction efficiency was increased from 20% to 54% when adding 5% moisture to the soil. For the silt, the extraction was only increased by 4%. The silt contained approximately 20 mg Cu^{2+}/kg soil before spiking.

An analysis for metals was done on both soils, and indicated that a notable amount of aluminum, calcium, iron, magnesium, phosphorous and silicon were present in the sand and in the silt. The presence of these metals in measurable quantities indicates that there is a possibility that not only copper was extracted from the soil. Because the methanol solution in the solvent traps became orange in color during the extractions, it is suspected that iron was extracted as well as copper. Copper thenoyltrifluoroacetonate is typically green in color and tris-(2-thenoyltrifluoroacetonato)-iron(III) is red.

The extraction efficiency of copper from two different soils using thenoyltrifluoroacetone as the chelating agent was measured in this research. This research indicates the types of results that can be achieved using SFE as a soil remediation technique. Conditions can be better optimized with more experiments until acceptable extraction efficiencies can be obtained.

5.2 RECOMMENDATIONS

Some recommendations are made for future work that may be associated to this research:

Setup

- A pressure vessel with built-in mixing might be much more effective than a stir bar in ensuring that similar conditions are present in all experiments. The stir bar used in this case may have been spinning through the whole experiment for the first run and not at all for the second run. This may have caused variability in the results.

Solubility

- Because of difficulties in collecting $Cu(tta)_2$ to determine the solubility and the possible residual $Cu(tta)_2$ in the system that may affect the measurements, it may be simpler to do solubility measurements using a technique such as the piezoelectric quartz crystal microbalance method and applying the results to the setup used here.

- If solubility measurements are done using this setup, the use of lower pump flow rates could be tested and may possibly yield better solubility results.

Extractions

- The extraction efficiency at more water contents should be measured to be able to determine optimal water content.

- A combination of tributyl phosphate (TBP) and a chelating agent should be tested to possibly observe a synergistic extraction of the metal in question which may yield better extraction efficiencies than that observed here.

- More extractions using tta or other chelating agents with different experimental conditions of pressure and temperature should be conducted to determine and compare extraction efficiencies.

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APPENDIX A

APPPENDIX A1

Appendix A1 Sample calculation of vessel volume

Determination of volume of glass beads

The volume is calculated by first placing the glass beads in a beaker and adding water. Then the volume of water is substracted from the volume of beads and water to determine the volume of beads.

$$V_b = V_{b+w} - V_w \qquad (A.1)$$

where V_b is the actual volume of glass beads, V_{b+w} is the total volume of glass beads and water and V_w is the volume of water.

For approximately 250 mL glass beads, if the volume of glass beads and water is 400 mL and the volume of water is 220 mL, the actual volume of glass beads is

$$V_{b,250} = 400 \text{ mL} - 220 \text{ mL}$$

$$V_{b,250} = 180 \text{ mL}$$

For approximately 250 mL glass beads, the actual volume of glass beads is 180 mL and for approximately 200 mL, the actual volume of glass beads is 130 mL.

Determination of volume available for carbon dioxide

If the volume of the stir bar and the tubing inside the vessel are estimated at 10 mL and the volume of glass beads is approximately 155 mL, the volume available for the carbon dioxide is given by

$$V_{CO2} = V_T - V_O \qquad (A.2)$$

where V_{CO2} is the volume available for CO_2, V_T is the total volume of the vessel and V_O is the volume occupied by the glass beads stir bar and tubing.

$$V_{CO2} = 300 \text{ mL} - (155 \text{ mL}+10 \text{ mL})$$
$$V_{CO2} = 135 \text{ mL}$$

The volume inside the vessel available for carbon dioxide is approximately 135 mL.

APPENDIX A2

Appendix A2 Sample spreadsheet of solubility experiment data

Cu(tta)2invesselwithbeads4.xls

Date: 2001-07-17

Wavelength 1: 670nm
Wavelength 2: 320nm

Sensitivity 1: 0.01AUFS
Sensitivity 2: 0.01AUFS

Comments: 1500psi, 40°C, 0.0269g $Cu(tta)_2$, about 225mL glass beads in vessel pump A and B still switched on back of controller, pump B first, bypass flow up to 250mL, start pressurizing vessel with pump b @ 1900s (53L), bypass B again @ 3450s (54L), back to vessel with pump A @ 3700s (70L), vessel pressurized @ 3900s (70L) (pressure seems a bit high 1650psi), small leak at first 3 way valve (line to vessel), bypass to zero UV @ 7900s (70L), try to get flow of 3.5ML/min with methanol @ 0.75mL/min, zero UV @ 9000s (121L?), change trap 2 @ 9350s (135L), change trap @ 9400s (136L), open vessel @ 9500s (140L), change trap 1 @ 10340s (170L), change trap 1 @ 10760s (185L), change trap 1 @ 11180s (197L), change trap 1 @ 11600s (211L), change trap 1 @12020s (226L), shut valve after vessel @ 12070s (228L), shut valve before vessel, change trap 2 @ 12150s (229L), bypass pump B, stopped bypass to go eat, change trap 1 @ 16150s (268L), change trap 2 @ 16250s (268L), open bypass again, change trap 1 @ 17400s (314L), open vessel @ 17470s(316L), change trap 1 @ 18730s (385L), change trap 1 @ 19150s (371L), change trap 1 @ 19570s(384L), shut valve after vessel, bypass flow of pump B, change trap 1 @ 24820s (477L), change trap 1 @ 25390s (487L) (seems like more green in trap, forgot to turn on heating tape when opened vessel), change trap 1 @ 26000s (504L), change trap 1 @ 26230s (512L), change trap 1 @ 26650s (524L), change trap 1 @ 27070s (537L), shut valve after vessel @ 27100s (538L), bypass flow for a little, stop @ 27550s(549L), let methanol flow, depressurize vessel through top, stop methanol @ 28200s (550L).

Scan#	Time (s)	Pump P (psi)	Pump F (mL/min)	Transd. P (psi)	Temp. (°C)	UV1 (AU)	UV2 (AU)	UV3	F (L/min)	Total F (L)	Pump F A (mL/min)	Pump F B (mL/min)	Pump P A (psi)	Pump P B (psi)
0	10.60	638.00	0.00	115.63	24.68	-0.00312	-0.12847	0.03594	0.010	0.002	0.00	0.00	638.00	746.00
1	20.22	638.00	0.00	108.60	24.90	-0.00396	-0.12900	0.04150	0.012	0.004	0.00	0.00	638.00	746.00
2	31.04	638.00	0.00	102.67	25.28	-0.00376	-0.12954	0.04282	0.012	0.006	0.00	0.00	638.00	746.00
3	40.65	638.00	0.00	100.59	25.43	-0.00352	-0.13032	0.04038	0.010	0.007	0.00	0.00	638.00	746.00
4	50.21	638.00	0.00	110.77	25.73	-0.00454	-0.13184	0.03906	0.012	0.009	0.00	0.00	638.00	746.00
5	61.03	638.00	0.00	113.96	26.03	-0.00366	-0.13247	0.03179	0.012	0.011	0.00	0.00	638.00	746.00
6	70.64	638.00	0.00	103.62	26.27	-0.00454	-0.13364	0.03740	0.012	0.013	0.00	0.00	638.00	746.00
7	80.19	638.00	0.00	116.94	26.50	-0.00542	-0.13345	0.03940	0.012	0.015	0.00	0.00	638.00	746.00
8	91.01	638.00	0.00	111.97	26.81	-0.00425	-0.13472	0.03657	0.012	0.018	0.00	0.00	638.00	746.00
9	100.63	638.00	0.00	104.52	27.05	-0.00498	-0.13564	0.04214	0.012	0.020	0.00	0.00	638.00	746.00
10	110.18	638.00	0.00	119.03	27.29	-0.00464	-0.13589	0.03506	0.010	0.021	0.00	0.00	638.00	746.00
11	121.00	638.00	0.00	106.26	27.53	-0.00503	-0.13569	0.03809	0.012	0.023	0.00	0.00	638.00	747.00
12	130.62	638.00	0.00	105.21	27.86	-0.00518	-0.13706	0.03804	0.012	0.025	0.00	0.00	638.00	747.00
13	140.23	638.00	0.00	108.15	28.02	-0.00547	-0.13745	0.03838	0.010	0.027	0.00	0.00	638.00	747.00
14	150.99	638.00	0.00	85.66	28.35	-0.00527	-0.13813	0.03447	0.012	0.029	0.00	0.00	638.00	747.00
15	160.61	638.00	0.00	113.42	28.52	-0.00571	-0.13818	0.03481	0.012	0.031	0.00	0.00	638.00	747.00
16	170.22	638.00	0.00	112.49	28.77	-0.00571	-0.13857	0.03682	0.012	0.033	0.00	0.00	638.00	747.00
17	180.98	638.00	0.00	117.00	29.02	-0.00605	-0.13970	0.04023	0.012	0.035	0.00	0.00	638.00	747.00
18	190.59	638.00	0.00	105.85	29.19	-0.00552	-0.13960	0.03745	0.012	0.037	0.00	0.00	638.00	747.00
19	200.21	638.00	0.00	108.19	29.45	-0.00581	-0.14097	0.03877	0.012	0.039	0.00	0.00	638.00	747.00
20	210.97	639.00	0.00	97.41	29.71	-0.00537	-0.13979	0.03984	0.012	0.041	0.00	0.00	639.00	748.00
21	220.58	639.00	0.00	108.72	29.89	-0.00645	-0.14199	0.04136	0.012	0.043	0.00	0.00	639.00	748.00
22	230.20	639.00	0.00	125.08	30.06	-0.00640	-0.14067	0.03896	0.012	0.045	0.00	0.00	639.00	748.00
23	241.02	639.00	0.00	120.09	30.33	-0.00635	-0.14253	0.03687	0.012	0.047	0.00	0.00	639.00	748.00
24	250.57	639.00	0.00	128.61	30.42	-0.00576	-0.14272	0.03223	0.010	0.049	0.00	0.00	639.00	748.00
25	260.19	639.00	0.00	116.88	30.69	-0.00562	-0.14302	0.03550	0.012	0.051	0.00	0.00	639.00	748.00
26	271.01	639.00	0.00	112.50	30.87	-0.00649	-0.14292	0.03687	0.012	0.053	0.00	0.00	639.00	748.00
27	280.56	639.00	0.00	106.18	31.05	-0.00708	-0.14385	0.03652	0.010	0.055	0.00	0.00	639.00	749.00
28	290.17	639.00	0.00	101.54	31.14	-0.00679	-0.14395	0.04082	0.012	0.057	0.00	0.00	639.00	749.00

29	300.99	639.00	0.00	110.75	31.42	-0.00605	-0.14409	0.03364	0.012	0.059	0.00	0.00	639.00	749.00
30	310.61	639.00	0.00	107.58	31.51	-0.00640	-0.14473	0.03853	0.012	0.061	0.00	0.00	639.00	749.00
31	320.16	639.00	0.00	110.72	31.70	-0.00596	-0.14473	0.03628	0.012	0.063	0.00	0.00	639.00	749.00
32	330.98	640.00	0.00	99.64	31.89	-0.00645	-0.14438	0.03569	0.012	0.065	0.00	0.00	640.00	749.00
33	340.60	701.00	0.00	115.62	31.98	-0.00679	-0.14585	0.03652	0.010	0.066	0.00	0.00	701.00	813.00
34	350.15	692.00	-203.55	111.60	32.17	-0.00635	-0.14580	0.03491	0.012	0.068	-204.13	0.00	693.00	812.00
35	360.97	696.00	-204.05	101.18	32.36	-0.00684	-0.14663	0.03467	0.010	0.070	-204.05	0.00	696.00	812.00
36	370.59	697.00	-203.61	122.24	32.46	-0.00664	-0.14585	0.03828	0.010	0.072	-204.07	0.00	697.00	811.00
37	380.20	697.00	-204.06	103.53	32.55	-0.00767	-0.14731	0.03735	0.010	0.073	-204.08	0.00	697.00	810.00
38	390.96	697.00	-203.67	107.09	32.75	-0.00747	-0.14810	0.03643	0.010	0.075	-204.06	0.00	697.00	809.00
39	400.57	697.00	-204.09	112.17	32.94	-0.00610	-0.14717	0.03535	0.010	0.077	-204.05	0.00	697.00	808.00
40	410.19	696.00	-204.09	157.25	33.04	-0.00688	-0.14697	0.03857	0.012	0.079	-204.06	0.00	696.00	807.00
41	420.95	695.00	-204.05	140.70	33.24	-0.00713	-0.14722	0.03896	0.012	0.081	-204.04	0.00	695.00	806.00
42	430.56	699.00	0.00	123.31	33.34	-0.00757	-0.14697	0.03545	0.012	0.083	0.00	0.00	699.00	808.00
43	440.18	798.00	-204.05	108.41	33.44	-0.00718	-0.14717	0.04106	0.012	0.085	0.00	-204.06	696.00	799.00
44	450.94	802.00	-204.08	116.77	33.64	-0.00820	-0.14839	0.03887	0.010	0.086	0.00	-203.69	696.00	802.00
45	460.55	803.00	-204.09	111.29	33.74	-0.00811	-0.14727	0.03877	0.010	0.088	0.00	-204.09	695.00	803.00
46	470.17	803.00	-204.06	116.85	33.84	-0.00679	-0.14810	0.03657	0.012	0.090	0.00	-204.07	694.00	803.00
47	480.93	803.00	-204.13	149.73	33.94	-0.00762	-0.14819	0.03354	0.010	0.092	0.00	-204.07	693.00	803.00
48	490.54	803.00	-204.08	160.31	34.14	-0.00757	-0.14873	0.03413	0.012	0.094	0.00	-204.09	693.00	803.00
49	500.15	806.00	0.00	45.41	34.14	-0.00815	-0.14780	0.03325	0.012	0.096	0.00	0.00	698.00	808.00
50	510.98	737.00	356.17	129.50	34.35	-0.00747	-0.14946	0.03784	0.010	0.097	190.53	163.89	741.00	848.00
51	520.53	769.00	339.39	142.39	34.45	-0.00835	-0.14873	0.03921	0.012	0.099	182.21	155.33	774.00	883.00
52	530.14	809.00	319.42	192.01	34.56	-0.00728	-0.14922	0.04062	0.012	0.101	172.26	144.98	816.00	925.00
53	540.96	868.00	290.25	88.87	34.66	-0.00752	-0.15054	0.03237	0.010	0.103	156.89	130.15	877.00	984.00
54	550.52	941.00	256.37	112.09	34.76	-0.00708	-0.14990	0.03911	0.010	0.105	138.56	114.04	953.00	1050.00
55	560.13	1033.00	217.99	113.63	34.97	-0.00767	-0.15112	0.03657	0.012	0.107	114.06	94.04	1060.00	1130.00
56	570.95	1315.00	87.41	105.86	34.97	-0.00684	-0.14937	0.03853	0.010	0.108	42.15	34.97	1344.00	1372.00
57	580.57	1432.00	31.53	88.32	35.08	-0.00835	-0.15098	0.04067	0.012	0.110	16.34	12.84	1439.00	1452.00
58	590.12	1477.00	30.41	107.16	35.29	-0.00669	-0.15024	0.03491	0.010	0.112	15.37	15.23	1479.00	1500.00
59	600.94	1489.00	10.53	110.18	35.29	-0.00771	-0.15103	0.03633	0.012	0.114	6.34	6.34	1470.00	1510.00

60	610.55	1500.00	7.98	114.67	35.40	-0.00859	-0.15073	0.03643	0.010	0.116	4.28	4.28	1474.00	1521.00
61	620.11	1500.00	9.19	103.36	35.51	-0.00864	-0.15098	0.03892	0.010	0.117	3.49	3.50	1475.00	1527.00
62	630.93	1500.00	7.29	95.77	35.61	-0.00815	-0.15059	0.03833	0.010	0.119	1.06	1.68	1468.00	1526.00
63	640.54	1500.00	-204.46	107.10	35.72	-0.00747	-0.15044	0.03662	0.012	0.121	-203.87	1.40	717.00	1494.00
64	650.16	1500.00	-200.70	103.53	35.83	-0.00742	-0.15005	0.03350	0.012	0.123	-204.07	2.60	710.00	1500.00
65	660.92	1500.00	-201.57	107.55	35.94	-0.00786	-0.15010	0.03672	0.012	0.125	-203.77	2.53	707.00	1500.00
66	670.53	1500.00	-201.71	169.28	36.05	-0.00728	-0.15112	0.03413	0.012	0.127	-204.09	2.33	706.00	1500.00
67	680.15	1500.00	-201.97	67.76	36.05	-0.00762	-0.15073	0.03955	0.012	0.129	-204.07	2.14	705.00	1500.00
68	690.91	1500.00	-202.10	101.03	36.27	-0.00801	-0.15015	0.03213	0.010	0.131	0.00	1.98	707.00	1500.00
69	700.52	1500.00	123.55	120.68	36.27	-0.00830	-0.15083	0.03296	0.010	0.132	128.13	1.85	725.00	1500.00
70	710.13	1500.00	182.60	86.34	36.38	-0.00854	-0.14985	0.03638	0.012	0.134	186.39	1.75	785.00	1500.00
71	720.90	1500.00	198.55	100.89	36.38	-0.00830	-0.15020	0.03813	0.012	0.136	196.92	1.60	885.00	1500.00
72	730.51	1500.00	197.50	135.69	36.49	-0.00869	-0.15083	0.03882	0.010	0.138	195.52	1.51	992.00	1500.00
73	740.12	1500.00	96.74	46.67	36.49	-0.00767	-0.14961	0.03584	0.010	0.140	83.74	1.39	1096.00	1500.00
74	750.89	1500.00	-3.64	71.78	36.60	-0.00845	-0.15000	0.03530	0.012	0.142	-1.49	1.26	1000.00	1500.00
75	760.50	1500.00	18.20	123.25	36.71	-0.00850	-0.15127	0.03511	0.010	0.143	19.15	1.18	983.00	1500.00
76	770.11	1500.00	26.21	146.67	36.83	-0.00859	-0.14966	0.04023	0.010	0.145	21.97	1.10	1007.00	1500.00
77	780.93	1500.00	9.91	130.86	36.83	-0.00835	-0.15063	0.03335	0.012	0.147	9.33	1.03	1000.00	1500.00
78	790.49	1500.00	7.11	116.96	36.94	-0.00840	-0.15000	0.03604	0.012	0.149	6.06	1.00	1000.00	1500.00
79	800.10	1500.00	5.31	103.08	36.94	-0.00830	-0.14854	0.03706	0.012	0.151	4.15	0.95	1000.00	1500.00
80	810.92	1500.00	4.75	85.75	37.05	-0.00674	-0.14893	0.03833	0.010	0.153	3.66	0.94	1000.00	1500.00
81	820.48	1500.00	4.07	86.14	37.05	-0.00815	-0.14814	0.03799	0.015	0.155	3.08	0.93	1000.00	1500.00
82	830.09	1500.00	3.66	91.39	37.05	-0.00859	-0.14829	0.03350	0.010	0.157	2.72	0.91	1000.00	1500.00
83	840.91	1500.00	3.23	100.48	37.28	-0.00757	-0.14893	0.03301	0.012	0.159	2.35	0.89	1000.00	1500.00
84	850.52	1500.00	3.04	96.77	37.28	-0.00757	-0.14785	0.03970	0.012	0.161	2.15	0.86	1000.00	1500.00
85	860.08	1500.00	2.82	91.60	37.28	-0.00791	-0.14819	0.03701	0.012	0.163	1.98	0.84	1000.00	1500.00
86	870.90	1500.00	2.64	101.36	37.40	-0.00840	-0.14751	0.03320	0.010	0.164	1.80	0.83	1000.00	1500.00
87	880.51	1500.00	2.51	115.01	37.40	-0.00815	-0.14834	0.03545	0.010	0.166	1.67	0.81	1000.00	1500.00
88	890.07	1500.00	2.38	112.94	37.51	-0.00820	-0.14775	0.03481	0.010	0.168	1.57	0.79	1000.00	1500.00
89	900.89	1500.00	2.32	99.31	37.63	-0.00835	-0.14819	0.03618	0.010	0.169	1.54	0.76	1000.00	1500.00
90	910.50	1500.00	2.21	105.12	37.63	-0.00776	-0.14746	0.03623	0.012	0.171	1.45	0.75	1000.00	1500.00

91	920.12	1500.00	2.10	127.55	37.63	-0.00757	-0.14712	0.04023	0.012	0.173	1.36	0.73	1000.00	1500.00
92	930.88	1500.00	2.50	96.91	37.74	-0.00786	-0.14746	0.03765	0.012	0.175	1.79	0.75	1000.00	1500.00
93	940.49	1500.00	1.88	119.26	37.74	-0.00850	-0.14687	0.03389	0.010	0.177	1.24	0.70	1000.00	1500.00
94	950.10	1500.00	1.91	117.09	37.74	-0.00767	-0.14731	0.03374	0.012	0.179	1.21	0.68	1000.00	1500.00
95	960.87	1500.00	1.81	89.45	37.86	-0.00854	-0.14756	0.03672	0.010	0.181	1.15	0.66	1000.00	1500.00
96	970.48	1500.00	1.74	77.96	37.86	-0.00801	-0.14771	0.03589	0.012	0.183	1.09	0.63	1000.00	1500.00
97	980.09	1500.00	1.68	116.15	37.98	-0.00708	-0.14712	0.03140	0.010	0.184	1.06	0.63	1000.00	1500.00
98	990.86	1500.00	1.65	108.32	37.98	-0.00791	-0.14668	0.03682	0.012	0.186	1.02	0.60	1000.00	1500.00
99	1000.47	1500.00	1.55	111.92	37.98	-0.00820	-0.14687	0.03394	0.010	0.188	0.95	0.60	1000.00	1500.00
100	1010.08	1500.00	1.52	54.30	38.10	-0.00850	-0.14702	0.03711	0.010	0.190	0.93	0.58	1000.00	1500.00
101	1020.85	1500.00	1.46	67.08	38.21	-0.00820	-0.14565	0.03765	0.012	0.192	0.93	0.54	1000.00	1500.00
102	1030.46	1500.00	1.41	80.57	38.21	-0.00757	-0.14648	0.03516	0.010	0.193	0.85	0.53	1000.00	1500.00
103	1040.07	1500.00	1.37	47.80	38.21	-0.00850	-0.14692	0.03677	0.010	0.195	0.83	0.53	1000.00	1500.00
104	1050.89	1500.00	1.33	138.59	38.21	-0.00762	-0.14561	0.03853	0.010	0.197	0.79	0.51	1000.00	1500.00
105	1060.45	1500.00	1.23	128.51	38.33	-0.00767	-0.14604	0.03652	0.012	0.199	0.73	0.48	1000.00	1500.00
106	1070.06	1500.00	1.20	69.72	38.33	-0.00762	-0.14590	0.03247	0.012	0.201	0.72	0.47	1000.00	1500.00
107	1080.88	1500.00	1.15	89.72	38.33	-0.00791	-0.14590	0.03823	0.010	0.202	0.72	0.44	1000.00	1500.00
108	1090.44	1459.00	1.75	110.00	38.33	-0.00786	-0.14629	0.03652	0.110	0.221	-15.37	23.83	975.00	1440.00
109	1100.05	1500.00	12.36	85.60	38.33	0.01406	-0.12983	0.03643	4.998	1.053	-1.87	11.73	997.00	1500.00
110	1110.87	1500.00	6.35	116.71	38.45	0.00781	-0.13398	0.03301	3.450	1.628	0.88	5.18	1000.00	1500.00
111	1120.48	1500.00	8.00	184.11	38.45	0.00371	-0.13687	0.03550	3.599	2.228	1.50	6.93	991.00	1500.00
112	1130.04	1500.00	5.24	109.82	38.57	0.00186	-0.13887	0.03467	3.894	2.877	-0.62	5.86	999.00	1500.00
113	1140.86	1500.00	6.74	101.16	38.57	0.00220	-0.13809	0.03789	4.136	3.566	0.61	6.12	999.00	1500.00
114	1150.47	1500.00	6.72	199.02	38.57	0.00361	-0.13813	0.03818	4.045	4.241	0.55	6.13	1000.00	1500.00
115	1160.03	1500.00	6.64	135.11	38.57	0.00244	-0.13809	0.03706	3.970	4.902	0.61	6.00	1000.00	1500.00
116	1170.85	1500.00	6.47	36.36	38.57	0.00225	-0.13916	0.03647	3.931	5.557	0.56	5.91	1000.00	1500.00
117	1180.46	1500.00	6.89	115.21	38.69	0.00220	-0.13843	0.03540	4.189	6.256	0.59	6.27	1000.00	1500.00
118	1190.07	1500.00	6.71	114.89	38.69	0.00264	-0.13926	0.04131	4.121	6.943	0.50	6.22	1000.00	1500.00
119	1200.95	1500.00	6.67	144.46	38.69	0.00308	-0.13823	0.03677	4.077	7.622	0.50	6.14	1000.00	1500.00
120	1210.56	1500.00	6.60	84.56	38.81	0.00205	-0.13872	0.03975	4.053	8.298	0.53	6.10	1000.00	1500.00
121	1220.12	1500.00	6.56	94.60	38.81	0.00269	-0.13906	0.03687	4.041	8.971	0.49	6.04	1000.00	1500.00

122	1230.94	1500.00	6.42	88.89	38.81	0.00269	-0.13813	0.03813	4.001	9.638	0.46	5.98	1000.00	1500.00
123	1240.55	1500.00	6.41	107.88	38.81	0.00298	-0.13848	0.03652	3.992	10.303	0.45	5.96	1000.00	1500.00
124	1250.16	1500.00	6.34	120.30	38.81	0.00254	-0.13848	0.03838	3.972	10.965	0.42	5.91	1000.00	1500.00
125	1260.93	1500.00	6.30	126.85	38.81	0.00288	-0.13896	0.03330	4.199	11.665	0.35	6.00	1000.00	1500.00
126	1270.54	1500.00	6.58	115.55	38.81	0.00225	-0.13940	0.03667	4.155	12.358	0.44	6.16	1000.00	1500.00
127	1280.15	1500.00	6.55	88.53	38.94	0.00308	-0.13838	0.03384	4.126	13.045	0.38	6.13	1000.00	1500.00
128	1291.03	1500.00	6.50	123.77	38.94	0.00361	-0.13906	0.03008	4.141	13.735	0.43	6.11	1000.00	1500.00
129	1300.64	1500.00	6.48	128.18	38.94	0.00220	-0.13784	0.03462	4.119	14.422	0.39	6.07	1000.00	1500.00
130	1310.25	1500.00	6.44	79.76	38.94	0.00166	-0.13760	0.03936	4.099	15.105	0.37	6.05	1000.00	1500.00
131	1321.02	1500.00	6.39	108.12	38.94	0.00303	-0.13818	0.03774	4.099	15.788	0.39	6.00	1000.00	1500.00
132	1330.63	1500.00	6.36	123.65	39.06	0.00225	-0.13828	0.03223	4.072	16.467	0.36	6.01	1000.00	1500.00
133	1340.24	1500.00	6.37	107.21	39.06	0.00254	-0.13838	0.03379	4.065	17.144	0.35	5.98	1000.00	1500.00
134	1351.01	1500.00	6.31	92.16	39.06	0.00244	-0.13833	0.03506	4.065	17.822	0.36	5.93	1000.00	1500.00
135	1360.62	1500.00	6.23	130.32	38.94	0.00366	-0.13867	0.03579	4.043	18.496	0.33	5.90	1000.00	1500.00
136	1370.23	1500.00	8.52	149.09	39.06	0.00352	-0.13691	0.04121	4.004	19.163	2.35	6.82	1002.00	1500.00
137	1380.99	1500.00	6.21	146.55	39.06	0.00332	-0.13809	0.03452	4.033	19.835	0.36	5.91	1000.00	1500.00
138	1390.61	1500.00	6.14	112.81	39.06	0.00342	-0.13770	0.03081	3.994	20.501	0.33	5.83	1000.00	1500.00
139	1400.22	1500.00	6.15	103.82	39.06	0.00303	-0.13838	0.03779	3.989	21.166	0.33	5.81	1000.00	1500.00
140	1411.04	1500.00	6.11	134.78	39.06	0.00317	-0.13828	0.03301	3.994	21.831	0.30	5.81	1000.00	1500.00
141	1420.60	1500.00	6.07	98.15	39.06	0.00288	-0.13730	0.03384	3.948	22.489	0.32	5.78	1000.00	1500.00
142	1430.21	1500.00	6.02	102.24	39.06	0.00200	-0.13872	0.03716	3.967	23.151	0.29	5.74	1000.00	1500.00
143	1441.03	1500.00	6.03	122.77	39.06	0.00288	-0.13809	0.03809	3.955	23.810	0.30	5.73	1000.00	1500.00
144	1450.59	1500.00	6.03	114.06	39.18	0.00249	-0.13750	0.03560	3.936	24.466	0.32	5.74	1000.00	1500.00
145	1460.20	1500.00	6.03	99.71	39.18	0.00288	-0.13838	0.03574	3.918	25.119	0.26	5.68	1000.00	1500.00
146	1471.02	1500.00	5.98	111.62	39.18	0.00400	-0.13691	0.03193	3.943	25.776	0.26	5.71	1000.00	1500.00
147	1480.63	1500.00	6.00	88.19	39.18	0.00400	-0.13833	0.03647	3.936	26.432	0.26	5.72	1000.00	1500.00
148	1490.19	1500.00	5.99	100.13	39.18	0.00308	-0.13867	0.03516	3.916	27.085	0.30	5.68	1000.00	1500.00
149	1501.01	1500.00	5.98	105.04	39.18	0.00137	-0.13911	0.04316	3.936	27.740	0.30	5.70	1000.00	1500.00
150	1510.62	1500.00	5.87	116.27	39.18	0.00273	-0.13818	0.03882	3.926	28.395	0.21	5.66	1000.00	1500.00
151	1520.18	1500.00	6.00	112.38	39.18	0.00288	-0.13823	0.03838	3.940	29.052	0.37	5.68	1000.00	1500.00
152	1531.00	1500.00	5.85	94.44	39.18	0.00278	-0.13872	0.03833	3.918	29.705	0.19	5.67	1000.00	1500.00

153	1540.61	1500.00	5.89	138.96	39.30	0.00264	-0.13726	0.03267	3.906	30.356	0.25	5.62	1000.00	1500.00
154	1550.22	1500.00	5.89	95.48	39.30	0.00342	-0.13774	0.03721	3.931	31.011	0.25	5.63	1000.00	1500.00
155	1560.99	1500.00	5.85	92.36	39.30	0.00342	-0.13867	0.03687	3.887	31.659	0.23	5.62	1000.00	1500.00
156	1570.60	1500.00	5.89	112.20	39.30	0.00308	-0.13750	0.03062	3.896	32.308	0.24	5.64	1000.00	1500.00
157	1580.21	1500.00	5.84	90.19	39.30	0.00312	-0.13784	0.03652	3.904	32.959	0.23	5.63	1000.00	1500.00
158	1590.98	1500.00	5.81	113.36	39.30	0.00273	-0.13784	0.03730	3.901	33.609	0.22	5.58	1000.00	1500.00
159	1600.59	1500.00	5.84	99.96	39.30	0.00288	-0.13853	0.03564	3.892	34.257	0.23	5.62	1000.00	1500.00
160	1610.20	1500.00	5.83	104.00	39.30	0.00298	-0.13882	0.03452	3.887	34.905	0.22	5.59	1000.00	1500.00
161	1620.96	1500.00	5.79	96.16	39.30	0.00366	-0.13794	0.03760	3.882	35.552	0.21	5.60	1000.00	1500.00
162	1630.58	1500.00	5.78	105.75	39.43	0.00415	-0.13740	0.03354	3.889	36.200	0.21	5.57	1000.00	1500.00
163	1640.19	1500.00	5.78	119.59	39.43	0.00254	-0.13833	0.03701	3.892	36.849	0.21	5.58	1000.00	1500.00
164	1650.95	1500.00	5.77	106.08	39.43	0.00352	-0.13701	0.03423	3.879	37.496	0.20	5.56	1000.00	1500.00
165	1660.57	1500.00	5.77	101.12	39.43	0.00264	-0.13789	0.03433	3.896	38.145	0.21	5.56	1000.00	1500.00
166	1670.18	1500.00	5.73	102.13	39.30	0.00347	-0.13760	0.03623	3.889	38.793	0.19	5.55	1000.00	1500.00
167	1681.00	1500.00	5.73	105.96	39.43	0.00317	-0.13857	0.03457	3.879	39.440	0.20	5.55	1000.00	1500.00
168	1690.55	1500.00	5.74	118.38	39.55	0.00278	-0.13784	0.03789	3.862	40.083	0.20	5.54	1000.00	1500.00
169	1700.17	1500.00	5.71	115.59	39.43	0.00239	-0.13716	0.03555	3.848	40.725	0.19	5.55	1000.00	1500.00
170	1710.99	1500.00	5.73	101.06	39.43	0.00229	-0.13696	0.03589	3.882	41.372	0.19	5.54	1000.00	1500.00
171	1720.54	1500.00	5.71	89.17	39.43	0.00273	-0.13794	0.03584	3.867	42.016	0.19	5.50	1000.00	1500.00
172	1730.16	1500.00	5.72	108.89	39.43	0.00254	-0.13843	0.03633	3.870	42.661	0.18	5.52	1000.00	1500.00
173	1740.98	1500.00	5.71	109.64	39.55	0.00288	-0.13721	0.03467	3.862	43.305	0.18	5.51	1000.00	1500.00
174	1750.59	1500.00	5.70	124.66	39.43	0.00396	-0.13750	0.03711	3.860	43.948	0.18	5.51	1000.00	1500.00
175	1760.15	1500.00	5.70	115.38	39.43	0.00273	-0.13643	0.03257	3.857	44.591	0.18	5.51	1000.00	1500.00
176	1770.97	1500.00	5.69	101.94	39.55	0.00371	-0.13740	0.03628	3.857	45.234	0.17	5.51	1000.00	1500.00
177	1780.58	1500.00	5.69	118.01	39.55	0.00249	-0.13755	0.03584	3.865	45.878	0.18	5.49	1000.00	1500.00
178	1790.13	1500.00	5.69	108.24	39.43	0.00288	-0.13765	0.03706	3.867	46.523	0.18	5.49	1000.00	1500.00
179	1800.96	1500.00	5.67	99.15	39.55	0.00259	-0.13755	0.03594	3.855	47.165	0.17	5.50	1000.00	1500.00
180	1810.57	1500.00	5.66	101.51	39.43	0.00273	-0.13765	0.04058	3.855	47.808	0.17	5.48	1000.00	1500.00
181	1820.18	1500.00	5.65	102.87	39.55	0.00293	-0.13750	0.03203	3.831	48.446	0.17	5.50	1000.00	1500.00
182	1830.94	1500.00	5.64	106.44	39.55	0.00317	-0.13857	0.03857	3.850	49.088	0.16	5.49	1000.00	1500.00
183	1840.56	1500.00	5.65	119.26	39.55	0.00356	-0.13740	0.03657	3.835	49.727	0.16	5.46	1000.00	1500.00

184	1850.17	1500.00	5.63	96.11	39.55	0.00298	-0.13691	0.03457	3.821	50.364	0.17	5.45	1000.00	1500.00
185	1860.93	1500.00	5.64	105.61	39.55	0.00337	-0.13726	0.03545	3.828	51.002	0.16	5.50	1000.00	1500.00
186	1870.55	1500.00	5.65	95.05	39.55	0.00239	-0.13721	0.03149	3.838	51.641	0.16	5.48	1000.00	1500.00
187	1880.16	1500.00	5.63	117.18	39.55	0.00312	-0.13726	0.03955	3.853	52.284	0.16	5.48	1000.00	1500.00
188	1890.92	1507.00	3.89	47.83	39.55	0.00371	-0.13735	0.03481	3.738	52.906	1.87	-2.33	1005.00	1500.00
189	1900.54	1500.00	-0.15	107.78	39.55	0.00937	-0.13306	0.03643	2.373	53.302	-0.01	-0.08	999.00	1483.00
190	1910.15	1500.00	7.45	215.67	39.80	0.36890	0.30142	0.04028	1.970	53.630	0.02	6.34	998.00	1500.00
191	1920.91	1500.00	6.78	269.42	40.18	0.09971	-0.04971	0.04009	1.184	53.828	-0.54	6.21	1000.00	1500.00
192	1930.52	1500.00	5.91	278.07	40.70	0.13320	-0.00127	0.18892	0.496	53.910	0.13	5.79	1000.00	1500.00
193	1940.14	1500.00	5.68	298.08	41.09	0.15254	0.02813	0.07505	0.205	53.945	0.15	5.52	1000.00	1500.00
194	1950.96	1500.00	5.47	349.60	41.63	0.15957	0.03633	0.06841	0.107	53.962	0.15	5.30	1000.00	1500.00
195	1960.51	1500.00	5.32	390.55	41.90	0.16338	0.04062	0.06255	0.071	53.974	0.15	5.14	1000.00	1500.00
196	1970.13	1487.00	9.02	441.09	42.17	0.16680	0.04287	0.06528	0.051	53.983	-1.67	12.95	992.00	1492.00
197	1980.95	1500.00	11.27	488.11	42.59	0.16748	0.04404	0.06641	0.037	53.989	0.18	11.05	1000.00	1500.00
198	1990.50	1500.00	10.77	589.34	42.87	0.16885	0.04482	0.06597	0.029	53.994	0.21	10.52	1000.00	1500.00
199	2000.12	1500.00	10.33	634.06	43.15	0.16987	0.04526	0.06880	0.024	53.998	0.15	10.15	1000.00	1500.00
200	2010.94	1500.00	9.93	730.78	43.29	0.16958	0.04624	0.06294	0.022	54.001	0.14	9.75	1000.00	1500.00
201	2020.55	1500.00	9.58	739.92	43.44	0.17153	0.04683	0.06069	0.017	54.004	0.14	9.40	1000.00	1500.00
202	2030.10	1500.00	9.27	802.49	43.58	0.17202	0.04731	0.06567	0.015	54.007	0.15	9.10	1000.00	1500.00
203	2040.92	1500.00	8.89	801.34	43.58	0.17231	0.04751	0.06562	0.017	54.010	0.14	8.72	1000.00	1500.00
204	2050.54	1500.00	8.65	814.75	43.58	0.17217	0.04688	0.06514	0.015	54.012	0.15	8.46	1000.00	1500.00
205	2060.09	1500.00	8.35	890.59	43.58	0.17251	0.04707	0.06606	0.015	54.014	0.14	8.19	1000.00	1500.00
206	2070.91	1500.00	8.08	923.06	43.58	0.17222	0.04712	0.06367	0.012	54.017	0.14	7.91	1000.00	1500.00
207	2080.53	1500.00	12.48	953.99	43.44	0.17266	0.04707	0.06558	0.012	54.019	2.09	9.19	993.00	1500.00
208	2090.14	1500.00	7.79	963.22	43.44	0.17285	0.04673	0.06123	0.012	54.021	0.20	7.54	1000.00	1500.00
209	2100.90	1500.00	7.47	997.20	43.44	0.17266	0.04766	0.06113	0.012	54.023	0.16	7.29	1000.00	1500.00
210	2110.52	1500.00	7.29	1026.86	43.44	0.17329	0.04648	0.06235	0.012	54.025	0.13	7.13	1000.00	1500.00
211	2120.13	1500.00	7.14	1041.14	43.44	0.17397	0.04761	0.05962	0.012	54.027	0.13	7.00	1000.00	1500.00
212	2130.89	1500.00	6.98	1060.30	43.44	0.17300	0.04688	0.06548	0.012	54.029	0.13	6.83	1000.00	1500.00
213	2140.50	1500.00	6.81	1081.07	43.44	0.17432	0.04673	0.06528	0.012	54.031	0.12	6.68	1000.00	1500.00
214	2150.12	1500.00	6.71	1090.99	43.44	0.17383	0.04683	0.05815	0.012	54.033	0.13	6.57	1000.00	1500.00

215	2160.88	1500.00	6.54	1106.42	43.44	0.17290	0.04717	0.06147	0.012	54.035	0.12	6.42	1000.00	1500.00
216	2170.49	1500.00	6.42	1116.69	43.29	0.17368	0.04619	0.06367	0.010	54.036	0.12	6.29	1000.00	1500.00
217	2180.11	1500.00	6.31	1136.84	43.15	0.17334	0.04692	0.06245	0.012	54.038	0.11	6.18	1000.00	1500.00
218	2190.98	1500.00	6.18	1149.50	43.01	0.17373	0.04717	0.06860	0.010	54.040	0.11	6.06	1000.00	1500.00
219	2200.59	1500.00	6.09	1167.89	42.87	0.17437	0.04634	0.06260	0.012	54.042	0.11	5.97	1000.00	1500.00
220	2210.31	1500.00	6.00	1169.32	42.73	0.17354	0.04619	0.06758	0.012	54.044	0.11	5.88	1000.00	1500.00
221	2221.08	1500.00	5.88	1192.62	42.59	0.17363	0.04697	0.06465	0.012	54.046	0.11	5.78	1000.00	1500.00
222	2230.69	1500.00	5.82	1205.56	42.45	0.17354	0.04624	0.06416	0.012	54.048	0.10	5.70	1000.00	1500.00
223	2240.30	1500.00	5.72	1207.24	42.31	0.17441	0.04634	0.06494	0.010	54.050	0.10	5.62	1000.00	1500.00
224	2251.07	1500.00	5.66	1213.94	42.17	0.17437	0.04634	0.06382	0.012	54.052	0.10	5.55	1000.00	1500.00
225	2260.68	1500.00	5.60	1231.63	42.17	0.17393	0.04565	0.06592	0.010	54.054	0.10	5.48	1000.00	1500.00
226	2270.29	1500.00	5.53	1235.48	41.90	0.17397	0.04565	0.06729	0.012	54.056	0.10	5.42	1000.00	1500.00
227	2281.06	1500.00	5.44	1242.32	41.90	0.17427	0.04512	0.06748	0.012	54.058	0.10	5.34	1000.00	1500.00
228	2290.67	1500.00	5.39	1265.47	41.76	0.17422	0.04551	0.06714	0.015	54.060	0.10	5.28	1000.00	1500.00
229	2300.28	1500.00	5.34	1260.20	41.63	0.17344	0.04575	0.06460	0.012	54.062	0.10	5.24	1000.00	1500.00
230	2311.10	1500.00	5.28	1272.83	41.49	0.17388	0.04531	0.06504	0.012	54.064	0.09	5.17	1000.00	1500.00
231	2320.66	1500.00	5.22	1260.76	41.49	0.17388	0.04536	0.06523	0.012	54.066	0.09	5.13	1000.00	1500.00
232	2330.27	1500.00	5.18	1276.06	41.36	0.17358	0.04565	0.06392	0.010	54.068	0.09	5.07	1000.00	1500.00
233	2341.09	1500.00	5.13	1277.94	41.22	0.17432	0.04556	0.06250	0.012	54.070	0.10	5.04	1000.00	1500.00
234	2350.65	1500.00	5.08	1286.15	41.22	0.17432	0.04541	0.06528	0.012	54.072	0.09	4.98	1000.00	1500.00
235	2360.26	1500.00	5.04	1295.70	41.09	0.17329	0.04492	0.06284	0.012	54.074	0.09	4.94	1000.00	1500.00
236	2371.08	1500.00	5.01	1310.02	41.09	0.17358	0.04570	0.06704	0.012	54.076	0.10	4.90	1000.00	1500.00
237	2380.69	1491.00	0.54	1303.36	40.96	0.17363	0.04521	0.06758	0.012	54.078	-2.27	4.50	995.00	1489.00
238	2390.25	1500.00	6.14	1303.86	40.96	0.17339	0.04580	0.06445	0.010	54.080	-0.71	4.93	1000.00	1500.00
239	2401.07	1500.00	4.87	1309.60	40.83	0.17368	0.04453	0.06729	0.012	54.082	0.10	4.79	1000.00	1500.00
240	2410.68	1500.00	4.91	1311.33	40.83	0.17354	0.04404	0.06421	0.010	54.083	0.12	4.76	1000.00	1500.00
241	2420.24	1500.00	4.82	1314.08	40.70	0.17354	0.04468	0.06465	0.012	54.085	0.09	4.73	1000.00	1500.00
242	2431.17	1500.00	4.79	1314.08	40.70	0.17285	0.04419	0.05928	0.012	54.087	0.08	4.70	1000.00	1500.00
243	2440.78	1500.00	4.76	1318.09	40.70	0.17310	0.04541	0.06533	0.012	54.089	0.09	4.67	1000.00	1500.00
244	2450.34	1500.00	4.73	1322.21	40.70	0.17305	0.04434	0.06133	0.012	54.091	0.09	4.64	1000.00	1500.00
245	2461.16	1500.00	4.70	1324.33	40.57	0.17393	0.04336	0.06567	0.012	54.093	0.09	4.62	1000.00	1500.00

246	2470.77	1500.00	4.69	1336.54	40.57	0.17344	0.04473	0.06162	0.010	54.095	0.09	4.61	1000.00	1500.00
247	2480.33	1500.00	4.66	1340.23	40.57	0.17422	0.04346	0.06362	0.012	54.097	0.07	4.58	1000.00	1500.00
248	2491.15	1500.00	4.64	1338.97	40.44	0.17368	0.04351	0.06831	0.012	54.099	0.08	4.55	1000.00	1500.00
249	2500.76	1500.00	4.60	1346.91	40.57	0.17412	0.04463	0.06475	0.012	54.101	0.08	4.52	1000.00	1500.00
250	2510.37	1500.00	4.60	1347.48	40.44	0.17329	0.04390	0.06636	0.012	54.103	0.08	4.52	1000.00	1500.00
251	2521.14	1500.00	4.57	1343.24	40.44	0.17349	0.04424	0.06050	0.012	54.105	0.08	4.49	1000.00	1500.00
252	2530.75	1500.00	4.54	1348.88	40.44	0.17329	0.04380	0.06509	0.010	54.107	0.08	4.46	1000.00	1500.00
253	2540.36	1500.00	4.53	1318.79	40.31	0.17344	0.04409	0.06431	0.010	54.108	0.08	4.43	1000.00	1500.00
254	2551.13	1500.00	6.05	1303.99	40.18	0.17319	0.04282	0.06235	0.012	54.110	1.44	4.81	1001.00	1500.00
255	2560.74	1500.00	4.41	1356.33	40.18	0.17373	0.04404	0.06831	0.012	54.113	-0.02	4.41	1000.00	1500.00
256	2570.35	1500.00	4.50	1374.54	40.18	0.17261	0.04346	0.06514	0.010	54.114	0.13	4.39	1000.00	1500.00
257	2581.12	1500.00	4.49	1369.71	40.18	0.17354	0.04258	0.06929	0.010	54.116	0.11	4.38	1000.00	1500.00
258	2590.73	1500.00	4.44	1350.47	40.06	0.17344	0.04321	0.06499	0.012	54.118	0.09	4.36	1000.00	1500.00
259	2600.34	1500.00	4.43	1360.95	40.06	0.17334	0.04390	0.06758	0.012	54.120	0.08	4.35	1000.00	1500.00
260	2610.01	1500.00	4.41	1372.39	40.18	0.17334	0.04399	0.06416	0.010	54.121	0.08	4.34	1000.00	1500.00
261	2620.83	1500.00	4.40	1377.79	40.06	0.17422	0.04316	0.06421	0.012	54.124	0.08	4.31	1000.00	1500.00
262	2630.44	1500.00	4.37	1373.60	40.06	0.17295	0.04307	0.06772	0.012	54.126	0.08	4.30	1000.00	1500.00
263	2640.05	1500.00	4.36	1375.32	40.06	0.17354	0.04248	0.06724	0.012	54.128	0.08	4.28	1000.00	1500.00
264	2650.82	1500.00	4.33	1370.55	40.06	0.17305	0.04419	0.06592	0.010	54.129	-1.34	1.67	1000.00	1491.00
265	2660.43	1500.00	5.33	1375.54	40.06	0.17300	0.04351	0.06597	0.012	54.131	0.85	4.39	1000.00	1500.00
266	2670.04	1500.00	4.23	1371.22	40.06	0.17334	0.04297	0.06582	0.012	54.133	-0.02	4.25	1000.00	1500.00
267	2680.81	1500.00	4.37	1379.76	39.93	0.17300	0.04302	0.07129	0.010	54.135	0.13	4.23	1000.00	1500.00
268	2690.42	1500.00	4.27	1319.13	39.93	0.17397	0.04224	0.06592	0.012	54.137	0.08	4.21	1000.00	1500.00
269	2700.03	1491.00	1.23	1395.64	39.93	0.17407	0.04238	0.06890	0.010	54.139	-1.97	4.72	993.00	1493.00
270	2710.80	1500.00	4.66	1393.63	39.93	0.17319	0.04321	0.06167	0.010	54.140	0.99	5.03	999.00	1500.00
271	2720.41	1500.00	4.34	1388.18	39.93	0.17344	0.04248	0.06367	0.010	54.142	0.10	4.17	1000.00	1500.00
272	2730.02	1500.00	4.18	1384.84	39.93	0.17319	0.04307	0.06567	0.010	54.143	0.05	4.16	1000.00	1500.00
273	2740.84	1500.00	4.25	1376.59	39.93	0.17266	0.04336	0.06582	0.012	54.145	0.12	4.11	1000.00	1500.00
274	2750.40	1500.00	4.19	1347.99	39.93	0.17300	0.04263	0.06313	0.012	54.148	0.08	4.11	1000.00	1500.00
275	2760.01	1500.00	4.17	1393.30	39.80	0.17290	0.04282	0.06567	0.012	54.150	0.07	4.09	1000.00	1500.00
276	2770.83	1500.00	4.14	1376.61	39.93	0.17295	0.04194	0.06987	0.010	54.151	0.07	4.07	1000.00	1500.00

277	2780.39	1500.00	4.13	1422.72	39.80	0.17368	0.04253	0.06147	0.010	54.153	0.07	4.04	1000.00	1500.00
278	2790.00	1500.00	4.10	1393.39	39.93	0.17319	0.04287	0.06748	0.012	54.155	0.07	4.02	1000.00	1500.00
279	2800.82	1500.00	4.09	1397.46	39.93	0.17344	0.04263	0.07041	0.010	54.156	0.07	4.01	1000.00	1500.00
280	2810.43	1500.00	4.06	1412.40	39.93	0.17339	0.04297	0.06333	0.010	54.158	0.07	4.00	1000.00	1500.00
281	2821.20	1500.00	4.04	1416.36	39.93	0.17300	0.04229	0.06450	0.012	54.160	0.07	3.98	1000.00	1500.00
282	2830.81	1500.00	4.02	1398.34	39.93	0.17368	0.04160	0.06660	0.010	54.162	0.07	3.96	1000.00	1500.00
283	2840.42	1500.00	4.00	1396.23	39.80	0.17271	0.04312	0.06382	0.010	54.163	0.07	3.93	1000.00	1500.00
284	2851.19	1500.00	3.99	1389.61	39.93	0.17324	0.04233	0.06567	0.012	54.165	0.06	3.92	1000.00	1500.00
285	2860.80	1500.00	3.97	1468.57	39.93	0.17314	0.04111	0.07100	0.010	54.167	0.07	3.91	1000.00	1500.00
286	2870.41	1500.00	3.94	1414.15	39.93	0.17339	0.04189	0.06558	0.012	54.169	0.06	3.86	1000.00	1500.00
287	2880.02	1500.00	3.92	1397.19	39.80	0.17402	0.04272	0.06763	0.012	54.171	0.07	3.85	1000.00	1500.00
288	2890.79	1500.00	3.90	1417.59	39.93	0.17334	0.04106	0.06279	0.010	54.173	0.06	3.83	1000.00	1500.00
289	2900.40	1500.00	3.88	1442.16	39.93	0.17319	0.04258	0.06592	0.012	54.175	0.06	3.79	1000.00	1500.00
290	2910.01	1494.00	3.44	1422.30	39.93	0.17158	0.04243	0.06743	0.010	54.176	0.10	4.64	997.00	1500.00
291	2920.78	1500.00	3.98	1410.86	39.93	0.17295	0.04155	0.06572	0.012	54.178	0.10	3.77	1000.00	1500.00
292	2930.39	1500.00	3.76	1479.19	39.93	0.17300	0.04116	0.06440	0.010	54.180	0.04	3.73	1000.00	1500.00
293	2940.00	1500.00	3.80	1504.78	39.93	0.17334	0.04170	0.07007	0.010	54.182	0.09	3.71	1000.00	1500.00
294	2950.77	1500.00	3.76	1441.94	39.93	0.17339	0.04233	0.06851	0.012	54.184	0.07	3.68	1000.00	1500.00
295	2960.38	1500.00	3.72	1439.16	39.80	0.17334	0.04136	0.06807	0.012	54.186	0.06	3.66	1000.00	1500.00
296	2971.20	1500.00	3.66	1444.61	39.93	0.17192	0.04263	0.06787	0.010	54.187	0.06	3.62	1000.00	1500.00
297	2980.75	1500.00	3.64	1432.47	39.93	0.17246	0.04150	0.06890	0.012	54.189	0.06	3.58	1000.00	1500.00
298	2990.37	1500.00	3.61	1388.30	39.93	0.17202	0.04126	0.06943	0.010	54.191	0.06	3.55	1000.00	1500.00
299	3001.19	1500.00	3.58	1468.59	39.93	0.17300	0.04185	0.06484	0.010	54.193	0.06	3.49	1000.00	1500.00
300	3010.80	1500.00	3.55	1438.01	39.93	0.17188	0.04209	0.06650	0.010	54.194	0.06	3.49	1000.00	1500.00
301	3020.36	1500.00	3.51	1462.52	39.93	0.17207	0.04028	0.06636	0.012	54.196	0.06	3.43	1000.00	1500.00
302	3031.18	1500.00	3.49	1471.87	39.93	0.17295	0.04155	0.06812	0.012	54.198	0.07	3.41	1000.00	1500.00
303	3040.79	1500.00	3.42	1455.45	39.93	0.17314	0.04170	0.06636	0.010	54.200	0.06	3.38	1000.00	1500.00
304	3050.35	1500.00	3.41	1471.54	39.93	0.17285	0.04092	0.06533	0.012	54.202	0.07	3.33	1000.00	1500.00
305	3061.17	1500.00	3.34	1490.94	39.93	0.17261	0.04150	0.06592	0.012	54.204	0.06	3.29	1000.00	1500.00
306	3070.78	1500.00	3.32	1473.54	39.93	0.17261	0.04116	0.06587	0.010	54.206	0.07	3.24	1000.00	1500.00
307	3080.39	1500.00	3.28	1497.60	40.06	0.17280	0.04116	0.06826	0.010	54.207	0.07	3.20	1000.00	1500.00

308	3091.16	1493.00	0.90	1562.60	39.93	0.17295	0.04023	0.06523	0.010	54.209	-0.89	3.64	995.00	1500.00
309	3100.77	1500.00	3.77	1495.53	40.06	0.17227	0.04053	0.06558	0.010	54.211	-0.56	3.17	1000.00	1500.00
310	3110.38	1500.00	3.03	1527.55	40.06	0.17207	0.04199	0.06787	0.010	54.212	0.00	3.04	1000.00	1500.00
311	3121.14	1500.00	3.12	1502.10	40.06	0.17261	0.04067	0.06724	0.012	54.214	0.10	3.00	1000.00	1500.00
312	3130.76	1500.00	3.01	1508.77	40.06	0.17246	0.03975	0.06616	0.010	54.216	0.07	2.94	1000.00	1500.00
313	3140.37	1500.00	2.95	1503.48	40.06	0.17251	0.04038	0.06929	0.012	54.218	0.06	2.88	1000.00	1500.00
314	3151.13	1500.00	2.87	1521.06	40.06	0.17300	0.04077	0.06558	0.010	54.220	0.06	2.80	1000.00	1500.00
315	3160.75	1500.00	2.79	1489.98	40.06	0.17251	0.04048	0.06606	0.010	54.221	0.06	2.73	1000.00	1500.00
316	3170.36	1500.00	2.74	1524.22	39.93	0.17314	0.04092	0.06650	0.010	54.223	0.06	2.67	1000.00	1500.00
317	3181.12	1500.00	2.64	1592.07	40.06	0.17212	0.04087	0.07144	0.010	54.224	0.06	2.57	1000.00	1500.00
318	3190.73	1500.00	3.54	1549.69	40.06	0.17339	0.04043	0.06860	0.012	54.226	0.77	2.71	1000.00	1500.00
319	3200.35	1500.00	2.55	1582.43	40.06	0.17246	0.04048	0.07139	0.010	54.228	0.06	2.41	1000.00	1500.00
320	3211.17	1500.00	2.44	1540.98	40.06	0.17222	0.04067	0.06797	0.010	54.230	0.07	2.35	1000.00	1500.00
321	3220.72	1500.00	2.31	1604.17	40.06	0.17300	0.04033	0.06646	0.010	54.231	0.06	2.24	1000.00	1500.00
322	3230.34	1500.00	2.24	1578.32	40.06	0.17153	0.03984	0.06777	0.012	54.233	0.06	2.17	1000.00	1500.00
323	3241.16	1500.00	2.14	1555.72	39.93	0.17227	0.04019	0.06631	0.010	54.235	0.06	2.06	1000.00	1500.00
324	3250.71	1500.00	-0.35	1569.79	40.06	0.17241	0.04038	0.06440	0.010	54.237	-0.98	1.65	996.00	1500.00
325	3260.33	1500.00	2.21	1575.80	39.93	0.17202	0.04072	0.06992	0.010	54.238	0.29	1.91	1000.00	1500.00
326	3271.15	1500.00	1.81	1597.49	39.93	0.17236	0.04053	0.07290	0.012	54.240	0.05	1.74	1000.00	1500.00
327	3280.76	1500.00	1.74	1558.15	39.93	0.17231	0.04004	0.06387	0.012	54.242	0.05	1.66	1000.00	1500.00
328	3290.31	1500.00	1.61	1564.52	39.93	0.17178	0.04028	0.06880	0.010	54.244	0.05	1.54	1000.00	1500.00
329	3301.14	1500.00	1.52	1583.58	39.93	0.17227	0.03950	0.06670	0.012	54.246	0.05	1.45	1000.00	1500.00
330	3310.75	1500.00	1.40	1583.34	39.93	0.17256	0.03994	0.07051	0.010	54.248	0.05	1.34	1000.00	1500.00
331	3320.30	1500.00	1.30	1600.44	39.93	0.17217	0.04067	0.06880	0.010	54.249	0.05	1.25	1000.00	1500.00
332	3331.12	1500.00	1.19	1631.24	39.93	0.17280	0.03931	0.06338	0.012	54.251	0.05	1.13	1000.00	1500.00
333	3340.74	1500.00	1.10	1614.28	39.80	0.17217	0.04038	0.06992	0.015	54.254	0.05	1.04	1000.00	1500.00
334	3350.35	1500.00	0.98	1603.56	39.80	0.17217	0.03999	0.06836	0.010	54.255	0.05	0.93	1000.00	1500.00
335	3361.11	1500.00	0.93	1616.16	39.80	0.17256	0.03999	0.06973	0.012	54.257	0.04	0.86	1000.00	1500.00
336	3370.73	1500.00	0.83	1597.97	39.80	0.17148	0.04004	0.06528	0.010	54.259	0.05	0.77	1000.00	1500.00
337	3380.34	1500.00	0.75	1594.07	39.80	0.17266	0.03936	0.06899	0.010	54.261	0.05	0.69	1000.00	1500.00
338	3391.10	1500.00	0.68	1623.10	39.80	0.17285	0.03887	0.06729	0.010	54.262	0.04	0.63	1000.00	1500.00

339	3400.72	1500.00	0.59	1615.25	39.80	0.17202	0.03950	0.06938	0.012	54.264	0.04	0.54	1000.00	1500.00
340	3410.33	1500.00	0.58	1651.47	39.68	0.17271	0.04014	0.07021	0.012	54.266	0.04	0.53	1000.00	1500.00
341	3421.09	1500.00	0.49	1630.21	39.68	0.17192	0.03901	0.06924	0.010	54.268	0.04	0.45	1000.00	1500.00
342	3430.70	1500.00	0.48	1618.60	39.55	0.17261	0.04004	0.06616	0.010	54.270	0.04	0.44	1000.00	1500.00
343	3440.32	1500.00	0.42	1633.07	39.68	0.17183	0.03931	0.07090	0.012	54.272	0.04	0.38	1000.00	1500.00
344	3451.08	1500.00	0.29	1614.78	39.55	0.17290	0.03867	0.06353	0.012	54.274	0.06	0.13	1000.00	1500.00
345	3460.69	1500.00	20.00	1596.87	39.55	0.05288	0.13696	0.03491	4.797	55.073	1.83	2.74	1001.00	1486.00
346	3470.31	1500.00	8.97	1595.92	39.55	0.00298	-0.13726	0.03486	4.797	55.873	-1.16	6.63	1001.00	1500.00
347	3481.13	1500.00	6.63	1615.61	39.55	0.00093	-0.13994	0.03750	4.575	56.635	0.06	6.60	1000.00	1500.00
348	3490.68	1500.00	6.53	1603.05	39.55	0.00068	-0.14063	0.03584	4.395	57.368	0.13	6.33	1000.00	1500.00
349	3500.30	1500.00	6.23	1614.64	39.43	-0.00005	-0.14072	0.03315	4.319	58.088	0.07	6.14	1000.00	1500.00
350	3511.12	1500.00	6.05	1611.23	39.43	0.00039	-0.14175	0.03872	4.221	58.791	0.06	5.98	1000.00	1500.00
351	3520.67	1500.00	6.71	1610.53	39.43	0.00044	-0.14097	0.03989	4.778	59.587	0.08	6.66	1000.00	1500.00
352	3530.28	1500.00	6.57	1608.19	39.43	0.00068	-0.14087	0.03403	4.546	60.345	0.05	6.50	1000.00	1500.00
353	3541.10	1500.00	6.45	1615.44	39.43	0.00054	-0.13999	0.03818	4.495	61.094	0.04	6.39	1000.00	1500.00
354	3550.72	1500.00	6.39	1595.09	39.43	0.00107	-0.14028	0.03638	4.475	61.840	0.04	6.34	1000.00	1500.00
355	3560.27	1500.00	6.30	1606.51	39.43	0.00044	-0.14092	0.03511	4.414	62.576	0.03	6.26	1000.00	1500.00
356	3571.09	1500.00	6.23	1604.82	39.43	-0.00034	-0.14087	0.02983	4.382	63.306	0.04	6.20	1000.00	1500.00
357	3580.71	1500.00	6.17	1606.12	39.43	-0.00024	-0.14009	0.03262	4.334	64.028	0.03	6.12	1000.00	1500.00
358	3590.26	1500.00	6.12	1618.12	39.43	0.00059	-0.14063	0.03701	4.285	64.742	0.03	6.08	1000.00	1500.00
359	3601.08	1500.00	6.05	1621.86	39.43	0.00098	-0.14019	0.03721	4.246	65.450	0.03	6.05	1000.00	1500.00
360	3610.70	1500.00	6.05	1605.12	39.43	0.00049	-0.14072	0.03550	4.258	66.160	0.03	6.00	1000.00	1500.00
361	3620.31	1500.00	5.99	1611.53	39.43	0.00044	-0.14131	0.03926	4.214	66.862	0.03	5.99	1000.00	1500.00
362	3631.07	1500.00	5.98	1601.13	39.43	0.00063	-0.14038	0.03071	4.209	67.563	0.03	5.94	1000.00	1500.00
363	3640.68	1506.00	20.51	1615.13	39.43	0.00015	-0.14038	0.03784	4.216	68.266	6.63	6.65	1447.00	1509.00
364	3650.30	1494.00	1.80	1607.50	39.55	0.00093	-0.14004	0.03496	3.020	68.770	1.97	1.97	1462.00	1523.00
365	3661.06	1500.00	3.14	1565.25	39.43	0.00420	-0.13623	0.03223	2.271	69.148	1.50	1.50	1468.00	1529.00
366	3670.67	1505.00	-201.38	1630.40	39.43	0.18369	0.02969	0.09585	1.685	69.429	-0.55	-204.06	1500.00	723.00
367	3680.29	1500.00	-201.49	1598.33	39.43	0.12363	-0.00947	0.36738	0.818	69.565	2.41	-203.56	1500.00	722.00
368	3691.05	1500.00	-202.43	1605.15	39.55	0.15908	0.04297	0.06128	0.330	69.620	1.64	-204.06	1500.00	725.00
369	3700.66	1500.00	-202.64	1615.04	39.55	0.17417	0.06196	0.05337	0.164	69.647	2.17	-203.59	1500.00	726.00

370	3710.28	1500.00	-199.59	1621.14	39.68	0.18047	0.07080	0.05513	0.098	69.663	4.30	-204.05	1500.00	726.00
371	3721.04	1500.00	-200.53	1643.23	39.80	0.18501	0.07588	0.05537	0.063	69.674	3.53	-204.07	1500.00	725.00
372	3730.65	1500.00	-200.87	1645.49	39.80	0.18784	0.07954	0.04800	0.046	69.682	3.18	-204.07	1500.00	725.00
373	3740.26	1500.00	-201.23	1636.29	39.80	0.18955	0.08013	0.05547	0.037	69.688	2.80	-204.07	1500.00	725.00
374	3751.08	1500.00	-201.59	1657.07	39.80	0.18970	0.08086	0.05522	0.032	69.693	2.48	-204.07	1500.00	724.00
375	3760.64	1500.00	-201.80	1655.18	39.80	0.19077	0.07944	0.05122	0.027	69.698	2.20	-204.05	1500.00	724.00
376	3770.25	1500.00	-202.08	1666.61	39.93	0.19160	0.08105	0.04937	0.020	69.701	1.95	-204.05	1500.00	723.00
377	3781.07	1500.00	1.71	1675.29	39.80	0.19175	0.08223	0.05498	0.020	69.704	1.67	0.00	1500.00	726.00
378	3790.63	1500.00	97.67	1673.15	39.80	0.19214	0.08252	0.05151	0.015	69.707	1.50	107.52	1500.00	727.00
379	3800.24	1500.00	169.46	1682.88	39.80	0.19326	0.08281	0.05176	0.015	69.709	1.30	179.54	1500.00	729.00
380	3811.06	1500.00	199.00	1672.37	39.80	0.19209	0.08184	0.04980	0.022	69.713	1.11	197.88	1500.00	761.00
381	3820.68	1500.00	198.07	1685.00	39.80	0.19346	0.08271	0.05156	0.015	69.715	0.98	197.26	1500.00	788.00
382	3830.23	1500.00	198.28	1685.31	39.80	0.19351	0.08257	0.05063	0.015	69.718	0.84	197.41	1500.00	823.00
383	3841.05	1500.00	197.68	1677.98	39.68	0.19355	0.08271	0.04800	0.012	69.720	0.76	196.93	1500.00	877.00
384	3850.66	1500.00	197.12	1681.55	39.68	0.19297	0.08184	0.05615	0.012	69.722	0.65	196.09	1500.00	951.00
385	3860.22	1500.00	178.78	1688.66	39.68	0.19365	0.08267	0.05396	0.012	69.724	0.62	163.10	1500.00	1040.00
386	3871.04	1500.00	44.71	1684.32	39.68	0.19360	0.08169	0.05020	0.012	69.726	0.53	34.18	1500.00	1071.00
387	3880.65	1500.00	0.22	1678.29	39.68	0.19287	0.08125	0.05039	0.012	69.728	0.50	3.91	1500.00	984.00
388	3890.27	1500.00	29.35	1673.80	39.68	0.19380	0.08169	0.05005	0.010	69.729	0.43	31.20	1500.00	986.00
389	3901.03	1500.00	12.38	1681.90	39.68	0.19438	0.08115	0.05356	0.012	69.731	0.40	8.53	1500.00	1000.00
390	3910.64	1500.00	5.82	1675.97	39.55	0.19375	0.08052	0.04941	0.012	69.733	0.36	6.18	1500.00	1000.00
391	3920.26	1500.00	5.77	1684.25	39.68	0.19365	0.08120	0.05630	0.010	69.735	0.34	5.14	1500.00	1000.00
392	3931.02	1500.00	4.66	1684.66	39.68	0.19351	0.08184	0.04937	0.012	69.737	0.14	4.42	1500.00	999.00
393	3940.63	1500.00	4.09	1691.32	39.68	0.19429	0.08125	0.05532	0.010	69.739	0.18	3.81	1500.00	999.00
394	3950.24	1500.00	3.61	1713.23	39.68	0.19497	0.08174	0.05522	0.012	69.741	0.21	3.31	1500.00	999.00
395	3961.01	1500.00	3.25	1669.32	39.68	0.19463	0.08174	0.05293	0.012	69.743	0.25	2.98	1500.00	999.00
396	3970.62	1500.00	2.96	1679.50	39.55	0.19468	0.08091	0.05742	0.012	69.745	0.25	2.67	1500.00	999.00
397	3980.23	1500.00	2.73	1675.54	39.55	0.19409	0.08174	0.05073	0.012	69.747	0.22	2.46	1500.00	999.00
398	3991.05	1500.00	2.45	1670.62	39.68	0.19482	0.08184	0.05732	0.012	69.749	0.20	2.24	1500.00	999.00
399	4000.61	1500.00	2.29	1682.94	39.68	0.19463	0.08179	0.04854	0.012	69.751	0.18	2.10	1500.00	999.00
400	4010.22	1500.00	2.10	1680.99	39.68	0.19448	0.08242	0.05239	0.012	69.753	0.17	1.92	1500.00	999.00

401	4021.04	1500.00	1.95	1675.41	39.68	0.19507	0.08193	0.05557	0.012	69.755	0.17	1.76	1500.00	999.00
402	4030.60	1500.00	1.86	1676.48	39.68	0.19502	0.08145	0.05532	0.010	69.757	0.15	1.70	1500.00	999.00
403	4040.21	1500.00	1.73	1682.39	39.68	0.19507	0.08145	0.04995	0.012	69.759	0.13	1.58	1500.00	999.00
404	4051.03	1500.00	1.63	1678.34	39.68	0.19492	0.08213	0.04961	0.012	69.761	0.11	1.50	1500.00	999.00
405	4060.59	1500.00	1.52	1686.88	39.68	0.19487	0.08037	0.05112	0.012	69.763	0.10	1.41	1500.00	999.00
406	4070.20	1500.00	1.44	1685.64	39.68	0.19414	0.08096	0.05234	0.012	69.765	0.09	1.33	1500.00	999.00
407	4081.02	1500.00	1.36	1681.58	39.68	0.19463	0.08125	0.05171	0.012	69.767	0.09	1.27	1500.00	999.00
408	4090.63	1500.00	1.29	1676.06	39.68	0.19526	0.08091	0.05103	0.012	69.769	0.08	1.22	1500.00	1000.00
409	4100.19	1500.00	1.24	1679.26	39.68	0.19473	0.08066	0.05317	0.012	69.771	0.08	1.10	1500.00	1000.00
410	4111.01	1500.00	1.15	1673.64	39.68	0.19429	0.08130	0.05181	0.010	69.773	0.04	1.11	1500.00	1000.00
411	4120.62	1500.00	1.09	1671.96	39.68	0.19458	0.08062	0.05313	0.010	69.774	0.05	1.05	1500.00	1000.00
412	4130.18	1500.00	1.06	1675.86	39.68	0.19546	0.08110	0.05361	0.010	69.776	0.05	1.00	1500.00	999.00
413	4141.00	1500.00	1.00	1677.87	39.80	0.19448	0.08091	0.04932	0.010	69.777	0.04	0.95	1500.00	1000.00
414	4150.61	1500.00	0.95	1674.35	39.68	0.19482	0.08052	0.04634	0.010	69.779	0.04	0.90	1500.00	1000.00
415	4160.22	1500.00	0.94	1682.38	39.68	0.19404	0.08062	0.05200	0.012	69.781	0.05	0.85	1500.00	1000.00
416	4170.99	1500.00	0.85	1683.07	39.68	0.19424	0.07939	0.05127	0.010	69.783	0.03	0.82	1500.00	1000.00
417	4180.60	1500.00	0.82	1679.35	39.80	0.19468	0.08008	0.05078	0.012	69.785	0.03	0.80	1500.00	1000.00
418	4190.21	1500.00	0.81	1683.06	39.68	0.19487	0.08027	0.05303	0.010	69.786	0.02	0.76	1500.00	1000.00
419	4200.98	1500.00	0.77	1680.15	39.80	0.19517	0.08071	0.05659	0.010	69.788	0.02	0.74	1500.00	1000.00
420	4210.59	1500.00	0.73	1672.58	39.80	0.19468	0.08052	0.05195	0.012	69.790	0.02	0.71	1500.00	1000.00
421	4220.20	1500.00	0.71	1685.40	39.68	0.19434	0.08027	0.05303	0.010	69.792	0.02	0.68	1500.00	1000.00
422	4230.97	1500.00	0.66	1685.87	39.80	0.19492	0.07998	0.05293	0.012	69.794	0.01	0.65	1500.00	1000.00
423	4240.69	1500.00	0.65	1680.70	39.80	0.19419	0.07935	0.04971	0.010	69.795	0.02	0.61	1500.00	1000.00
424	4250.30	1500.00	0.62	1680.26	39.80	0.19448	0.08003	0.05337	0.010	69.797	0.02	0.60	1500.00	1000.00
425	4261.07	1500.00	0.59	1682.05	39.80	0.19517	0.07954	0.05337	0.010	69.799	0.00	0.60	1500.00	1000.00
426	4270.68	1500.00	0.58	1682.19	39.80	0.19482	0.07949	0.05742	0.010	69.800	0.02	0.56	1500.00	1000.00
427	4280.29	1500.00	0.56	1682.91	39.80	0.19463	0.07998	0.05347	0.012	69.802	0.00	0.55	1500.00	1000.00
428	4291.06	1500.00	0.54	1673.13	39.80	0.19409	0.07959	0.05176	0.012	69.804	0.00	0.53	1500.00	1000.00
429	4300.67	1500.00	0.51	1685.02	39.93	0.19443	0.07993	0.05547	0.010	69.806	0.00	0.51	1500.00	1000.00
430	4310.28	1500.00	0.51	1681.05	39.80	0.19360	0.07939	0.05146	0.012	69.808	0.01	0.49	1500.00	1000.00
431	4321.10	1500.00	0.48	1679.11	39.80	0.19453	0.07920	0.05728	0.012	69.810	0.00	0.48	1500.00	1000.00

432	4330.66	1500.00	0.47	1680.43	39.93	0.19478	0.07920	0.05259	0.012	69.812	0.01	0.47	1500.00	1000.00
433	4340.27	1500.00	0.19	1675.26	39.80	0.19526	0.07881	0.05176	0.010	69.814	-0.02	0.30	1500.00	1000.00
434	4351.09	1500.00	0.49	1682.02	39.80	0.19434	0.07886	0.04644	0.012	69.816	0.02	0.47	1500.00	1000.00
435	4360.65	1500.00	0.44	1668.34	39.80	0.19434	0.07891	0.05332	0.012	69.818	0.00	0.43	1500.00	1000.00
436	4370.26	1500.00	0.43	1672.73	39.80	0.19424	0.07905	0.05015	0.012	69.820	0.00	0.43	1500.00	1000.00
437	4381.08	1500.00	0.42	1678.80	39.93	0.19482	0.07881	0.05508	0.012	69.822	0.00	0.40	1500.00	1000.00
438	4390.69	1500.00	0.39	1679.82	39.80	0.19414	0.07939	0.05264	0.010	69.823	0.00	0.41	1500.00	1000.00
439	4400.25	1500.00	0.39	1680.65	39.93	0.19404	0.07876	0.05449	0.012	69.825	0.00	0.38	1500.00	1000.00
440	4411.07	1500.00	0.38	1678.54	39.80	0.19385	0.07856	0.05249	0.012	69.828	0.00	0.37	1500.00	1000.00
441	4420.68	1500.00	0.36	1674.66	39.80	0.19443	0.07808	0.05078	0.012	69.830	0.00	0.37	1500.00	1000.00
442	4430.24	1500.00	0.40	1681.12	39.93	0.19438	0.07837	0.05566	0.012	69.832	0.00	0.36	1500.00	1000.00
443	4441.06	1500.00	0.35	1677.77	39.93	0.19409	0.07871	0.05405	0.012	69.834	0.00	0.35	1500.00	1000.00
444	4450.67	1500.00	0.34	1679.94	39.93	0.19453	0.07778	0.04912	0.012	69.836	0.00	0.34	1500.00	1000.00
445	4460.28	1500.00	0.34	1676.66	39.93	0.19434	0.07725	0.04644	0.012	69.838	0.00	0.33	1500.00	1000.00
446	4471.05	1500.00	0.34	1675.99	39.93	0.19487	0.07778	0.05322	0.010	69.839	0.00	0.36	1500.00	1000.00
447	4480.66	1500.00	0.30	1678.63	39.93	0.19497	0.07759	0.05464	0.010	69.841	0.00	0.31	1500.00	1000.00
448	4490.27	1500.00	0.32	1675.02	39.93	0.19395	0.07871	0.05400	0.010	69.843	0.00	0.32	1500.00	1000.00
449	4501.04	1500.00	0.30	1679.49	39.93	0.19375	0.07827	0.05132	0.012	69.845	0.00	0.30	1500.00	1000.00
450	4510.65	1500.00	0.30	1676.55	39.93	0.19458	0.07759	0.05264	0.010	69.846	0.00	0.29	1500.00	1000.00
451	4520.26	1500.00	0.29	1687.64	39.93	0.19414	0.07749	0.05586	0.010	69.848	0.00	0.29	1500.00	1000.00
452	4531.03	1500.00	0.28	1678.01	39.93	0.19390	0.07793	0.05190	0.010	69.849	0.00	0.28	1500.00	1000.00
453	4540.64	1500.00	0.31	1684.35	39.80	0.19531	0.07725	0.05405	0.012	69.852	0.00	0.29	1500.00	1001.00
454	4550.25	1500.00	0.28	1680.79	39.93	0.19375	0.07729	0.05229	0.010	69.853	0.00	0.27	1500.00	1001.00
455	4561.02	1500.00	0.23	1677.29	39.93	0.19360	0.07842	0.05146	0.010	69.855	0.00	0.20	1500.00	1001.00
456	4570.63	1500.00	0.24	1678.10	39.93	0.19429	0.07769	0.05337	0.012	69.857	0.00	0.25	1500.00	1001.00
457	4580.24	1500.00	0.25	1675.22	39.93	0.19385	0.07744	0.05132	0.012	69.859	0.00	0.25	1500.00	1001.00
458	4591.06	1500.00	0.33	1680.19	39.93	0.19395	0.07749	0.05322	0.010	69.860	0.00	0.37	1500.00	1001.00
459	4600.62	1500.00	0.20	1683.96	39.93	0.19414	0.07715	0.05186	0.010	69.862	0.00	0.20	1500.00	1001.00
460	4610.23	1500.00	0.25	1679.14	39.93	0.19375	0.07744	0.05635	0.012	69.864	0.00	0.25	1500.00	1001.00
461	4621.05	1500.00	0.24	1682.90	39.80	0.19424	0.07783	0.05518	0.010	69.866	0.00	0.23	1500.00	1001.00
462	4630.61	1500.00	0.24	1679.66	39.93	0.19336	0.07700	0.05444	0.010	69.867	0.00	0.24	1500.00	1001.00

463	4640.22	1500.00	0.23	1675.72	39.93	0.19438	0.07720	0.05503	0.012	69.869	0.00	0.23	1500.00	1001.00
464	4651.04	1500.00	0.22	1682.60	39.93	0.19365	0.07715	0.05498	0.012	69.871	0.00	0.22	1500.00	1001.00
465	4660.65	1500.00	0.23	1684.64	40.06	0.19346	0.07632	0.05054	0.012	69.873	0.00	0.24	1500.00	1001.00
466	4670.21	1500.00	0.22	1688.90	40.06	0.19346	0.07700	0.05337	0.010	69.875	0.00	0.22	1500.00	1001.00
467	4681.03	1500.00	0.32	1679.95	39.93	0.19341	0.07720	0.05771	0.012	69.877	0.00	0.30	1500.00	1002.00
468	4690.64	1500.00	0.18	1687.90	39.93	0.19414	0.07720	0.05342	0.012	69.879	0.00	0.19	1500.00	1001.00
469	4700.20	1500.00	0.20	1678.62	40.06	0.19360	0.07749	0.05151	0.012	69.881	0.00	0.20	1500.00	1001.00
470	4711.02	1500.00	0.20	1680.72	40.06	0.19360	0.07705	0.05293	0.010	69.883	0.00	0.20	1500.00	1001.00
471	4720.63	1500.00	0.19	1688.01	39.93	0.19336	0.07734	0.05630	0.012	69.885	0.00	0.19	1500.00	1001.00
472	4730.19	1500.00	0.19	1681.07	39.93	0.19414	0.07671	0.04868	0.012	69.887	0.00	0.19	1500.00	1001.00
473	4741.01	1500.00	0.19	1683.59	40.06	0.19395	0.07686	0.05649	0.012	69.889	0.00	0.18	1500.00	1001.00
474	4750.62	1500.00	0.17	1688.16	40.06	0.19390	0.07607	0.05713	0.010	69.891	0.00	0.17	1500.00	1001.00
475	4760.23	1500.00	0.18	1683.92	39.93	0.19385	0.07622	0.05229	0.010	69.892	0.00	0.18	1500.00	1001.00
476	4771.00	1500.00	0.16	1678.03	39.93	0.19390	0.07642	0.05239	0.012	69.894	0.00	0.17	1500.00	1001.00
477	4780.61	1500.00	0.17	1681.28	40.06	0.19419	0.07583	0.04956	0.012	69.896	0.00	0.18	1500.00	1001.00
478	4790.22	1500.00	0.16	1679.75	39.93	0.19380	0.07671	0.05400	0.010	69.898	0.00	0.16	1500.00	1000.00
479	4800.99	1500.00	0.16	1679.22	40.06	0.19355	0.07588	0.05825	0.010	69.900	0.00	0.15	1500.00	1000.00
480	4810.60	1500.00	0.15	1674.59	40.06	0.19351	0.07661	0.05288	0.012	69.902	0.00	0.15	1500.00	1000.00
481	4820.21	1500.00	0.16	1678.34	39.93	0.19438	0.07607	0.05420	0.012	69.904	-0.07	-0.41	1500.00	1000.00
482	4830.97	1500.00	0.15	1672.52	40.06	0.19385	0.07593	0.05298	0.012	69.906	0.00	0.16	1500.00	1000.00
483	4840.59	1500.00	0.16	1684.27	39.93	0.19331	0.07598	0.05186	0.010	69.907	0.01	0.16	1500.00	1000.00
484	4850.20	1500.00	0.18	1688.89	40.06	0.19380	0.07524	0.05400	0.010	69.909	0.04	0.14	1500.00	1000.00
485	4861.02	1500.00	0.21	1681.44	39.93	0.19453	0.07559	0.05835	0.012	69.911	0.05	0.16	1500.00	1000.00
486	4870.58	1500.00	0.19	1686.32	39.93	0.19434	0.07578	0.05288	0.010	69.913	0.04	0.15	1500.00	1000.00
487	4880.19	1500.00	0.19	1667.23	39.93	0.19346	0.07549	0.05630	0.010	69.914	0.04	0.15	1500.00	1000.00
488	4891.01	1500.00	0.19	1686.89	39.93	0.19341	0.07539	0.05327	0.012	69.916	0.05	0.15	1500.00	999.00
489	4900.57	1500.00	0.20	1673.56	39.93	0.19277	0.07583	0.05547	0.010	69.918	0.05	0.15	1500.00	999.00
490	4910.18	1500.00	0.19	1682.73	39.80	0.19287	0.07573	0.05342	0.012	69.920	0.04	0.15	1500.00	1000.00
491	4921.00	1500.00	0.19	1690.37	39.93	0.19365	0.07520	0.05298	0.010	69.922	0.05	0.14	1500.00	1000.00
492	4930.61	1500.00	0.18	1677.59	39.93	0.19312	0.07529	0.05254	0.010	69.923	0.04	0.14	1500.00	1000.00
493	4940.17	1500.00	0.18	1679.37	39.93	0.19355	0.07603	0.04619	0.010	69.925	0.04	0.14	1500.00	1000.00

494	4950.99	1500.00	0.18	1680.48	39.93	0.19355	0.07456	0.05645	0.010	69.926	0.04	0.14	1500.00	1000.00
495	4960.60	1500.00	0.18	1679.29	39.93	0.19360	0.07471	0.05264	0.010	69.928	0.05	0.14	1500.00	1000.00
496	4970.16	1500.00	0.18	1676.50	39.93	0.19346	0.07598	0.05278	0.010	69.930	0.04	0.14	1500.00	1000.00
497	4980.98	1500.00	0.18	1675.18	39.93	0.19395	0.07510	0.04937	0.010	69.931	0.05	0.14	1500.00	1000.00
498	4990.59	1500.00	0.18	1677.35	39.93	0.19321	0.07534	0.05054	0.012	69.933	0.04	0.14	1500.00	1000.00
499	5000.20	1500.00	0.17	1680.33	39.93	0.19282	0.07505	0.05142	0.012	69.935	0.04	0.13	1500.00	1000.00
500	5010.97	1500.00	0.18	1686.13	39.93	0.19277	0.07441	0.05332	0.010	69.937	0.04	0.13	1500.00	1000.00
501	5020.58	1500.00	0.16	1672.54	39.93	0.19385	0.07495	0.05508	0.010	69.939	0.04	0.13	1500.00	1000.00
502	5030.19	1500.00	0.17	1681.80	39.93	0.19292	0.07466	0.05439	0.010	69.940	0.04	0.13	1500.00	1000.00
503	5040.96	1500.00	0.18	1672.31	39.93	0.19263	0.07412	0.05654	0.012	69.942	0.05	0.13	1500.00	1000.00
504	5050.57	1500.00	0.17	1677.87	39.93	0.19272	0.07559	0.05254	0.010	69.944	0.04	0.13	1500.00	1000.00
505	5060.18	1500.00	0.17	1675.86	39.93	0.19307	0.07446	0.05649	0.012	69.946	0.04	0.13	1500.00	1000.00
506	5070.94	1500.00	0.16	1681.80	39.93	0.19331	0.07466	0.05376	0.010	69.948	0.03	0.13	1500.00	1000.00
507	5080.56	1500.00	0.14	1673.70	39.93	0.19302	0.07500	0.05664	0.010	69.949	0.01	0.12	1500.00	1000.00
508	5090.17	1500.00	0.15	1675.39	39.93	0.19331	0.07466	0.05527	0.010	69.951	0.02	0.12	1500.00	1000.00
509	5100.93	1500.00	0.14	1674.86	39.93	0.19282	0.07383	0.05796	0.012	69.953	0.02	0.12	1500.00	1000.00
510	5110.55	1500.00	0.14	1674.07	40.06	0.19312	0.07432	0.05688	0.010	69.954	0.04	0.11	1500.00	1000.00
511	5120.16	1500.00	0.17	1675.74	39.93	0.19243	0.07490	0.05396	0.010	69.956	0.04	0.12	1500.00	1000.00
512	5130.98	1500.00	0.16	1677.64	40.06	0.19263	0.07417	0.05581	0.010	69.958	0.04	0.12	1500.00	1000.00
513	5140.54	1500.00	0.15	1680.92	39.93	0.19258	0.07422	0.05483	0.010	69.959	0.03	0.12	1500.00	1000.00
514	5150.15	1500.00	0.14	1672.22	39.93	0.19341	0.07422	0.05454	0.012	69.961	0.03	0.12	1500.00	1000.00
515	5160.97	1500.00	0.14	1680.46	39.93	0.19258	0.07466	0.05342	0.012	69.963	0.03	0.11	1500.00	1000.00
516	5170.52	1500.00	0.14	1682.00	40.06	0.19165	0.07407	0.05220	0.012	69.965	0.04	0.11	1500.00	1000.00
517	5180.14	1500.00	0.13	1666.96	39.80	0.19292	0.07397	0.05190	0.012	69.967	0.03	0.11	1500.00	1000.00
518	5190.96	1500.00	0.14	1685.88	39.93	0.19238	0.07471	0.05586	0.010	69.969	0.03	0.11	1500.00	1000.00
519	5200.57	1500.00	0.14	1685.54	39.93	0.19272	0.07334	0.05439	0.010	69.971	0.03	0.11	1500.00	1000.00
520	5210.13	1500.00	0.12	1678.68	39.93	0.19258	0.07485	0.05513	0.010	69.972	0.02	0.10	1500.00	1000.00
521	5220.95	1500.00	0.14	1678.06	39.93	0.19287	0.07349	0.05542	0.012	69.974	0.04	0.10	1500.00	1000.00
522	5230.56	1500.00	0.13	1680.23	39.80	0.19297	0.07407	0.05703	0.012	69.976	0.04	0.10	1500.00	1000.00
523	5240.11	1500.00	0.13	1675.28	39.93	0.19316	0.07412	0.05278	0.010	69.978	0.02	0.10	1500.00	1000.00
524	5250.94	1500.00	0.13	1678.48	39.93	0.19268	0.07412	0.05298	0.010	69.980	0.03	0.10	1500.00	1000.00

525	5260.55	1500.00	0.12	1680.43	39.93	0.19263	0.07393	0.05879	0.012	69.982	0.03	0.10	1500.00	1000.00
526	5270.16	1500.00	0.11	1679.15	39.93	0.19272	0.07407	0.05225	0.012	69.984	0.01	0.10	1500.00	1000.00
527	5280.92	1500.00	0.13	1683.06	39.93	0.19204	0.07412	0.05371	0.010	69.985	0.03	0.09	1500.00	1000.00
528	5290.54	1500.00	0.11	1674.73	39.93	0.19253	0.07378	0.05229	0.010	69.987	0.01	0.10	1500.00	1000.00
529	5300.15	1500.00	0.11	1670.49	39.93	0.19302	0.07402	0.05532	0.012	69.989	0.02	0.09	1500.00	1000.00
530	5310.91	1500.00	0.11	1679.10	39.93	0.19277	0.07427	0.05654	0.012	69.991	0.02	0.09	1500.00	1000.00
531	5320.53	1500.00	0.10	1682.72	39.80	0.19185	0.07349	0.05952	0.012	69.993	0.01	0.09	1500.00	1000.00
532	5330.14	1500.00	0.10	1689.59	39.93	0.19263	0.07261	0.05439	0.010	69.995	0.01	0.09	1500.00	1000.00
533	5340.90	1500.00	0.10	1676.14	39.93	0.19233	0.07344	0.05898	0.010	69.996	0.02	0.09	1500.00	1000.00
534	5350.52	1500.00	0.11	1676.84	39.80	0.19155	0.07373	0.05693	0.010	69.998	0.03	0.09	1500.00	1000.00
535	5360.13	1500.00	0.12	1678.57	39.93	0.19238	0.07368	0.05649	0.010	70.000	0.03	0.09	1500.00	1000.00
536	5370.89	1500.00	0.10	1680.35	39.93	0.19229	0.07280	0.05479	0.012	70.002	0.01	0.09	1500.00	1000.00
537	5380.61	1500.00	0.09	1664.92	39.93	0.19233	0.07329	0.05811	0.010	70.003	0.01	0.09	1500.00	1000.00
538	5390.23	1500.00	0.10	1701.72	39.93	0.19312	0.07256	0.05796	0.012	70.005	0.03	0.08	1500.00	1000.00
539	5400.99	1500.00	0.11	1680.59	39.93	0.19194	0.07231	0.05771	0.010	70.007	0.02	0.09	1500.00	1000.00
540	5410.60	1500.00	0.10	1673.33	39.93	0.19258	0.07344	0.05640	0.010	70.009	0.02	0.09	1500.00	1000.00
541	5420.22	1500.00	0.10	1666.71	39.93	0.19233	0.07305	0.05327	0.012	70.011	0.01	0.09	1500.00	1000.00
542	5430.98	1500.00	0.10	1678.81	39.93	0.19287	0.07363	0.05806	0.012	70.013	0.01	0.08	1500.00	1000.00
543	5440.59	1500.00	0.10	1688.45	39.93	0.19248	0.07251	0.05830	0.010	70.014	0.02	0.09	1500.00	1000.00
544	5450.20	1500.00	0.09	1682.08	39.93	0.19238	0.07300	0.05669	0.010	70.016	0.01	0.08	1500.00	1000.00
545	5461.03	1500.00	0.10	1671.53	39.93	0.19253	0.07285	0.05376	0.010	70.017	0.02	0.08	1500.00	1000.00
546	5470.58	1500.00	0.09	1684.15	39.93	0.19175	0.07300	0.05400	0.010	70.019	0.02	0.07	1500.00	1000.00
547	5480.19	1500.00	0.10	1681.21	39.93	0.19204	0.07334	0.05664	0.010	70.021	0.02	0.08	1500.00	1000.00
548	5491.01	1500.00	0.10	1678.05	39.93	0.19224	0.07251	0.05122	0.010	70.022	0.02	0.08	1500.00	1000.00
549	5500.63	1500.00	0.09	1678.92	39.93	0.19199	0.07285	0.05396	0.010	70.024	0.01	0.08	1500.00	1000.00
550	5510.18	1500.00	0.08	1670.56	39.93	0.19150	0.07202	0.05649	0.012	70.026	0.01	0.07	1500.00	1000.00
551	5521.00	1500.00	0.09	1672.41	39.93	0.19258	0.07227	0.05840	0.012	70.028	0.02	0.07	1500.00	1000.00
552	5530.62	1500.00	0.08	1674.23	39.93	0.19204	0.07261	0.05508	0.010	70.030	0.01	0.07	1500.00	1000.00
553	5540.28	1500.00	0.09	1669.80	39.93	0.19268	0.07236	0.05537	0.010	70.031	0.01	0.07	1500.00	1000.00
554	5551.10	1500.00	0.08	1675.24	39.93	0.19141	0.07192	0.05859	0.010	70.033	0.01	0.07	1500.00	1000.00
555	5560.72	1500.00	0.08	1674.07	39.93	0.19253	0.07354	0.05347	0.010	70.035	0.01	0.07	1500.00	1000.00

556	5570.27	1500.00	0.08	1679.68	39.93	0.19258	0.07256	0.05625	0.010	70.036	0.01	0.07	1500.00	1000.00
557	5581.09	1500.00	0.08	1687.12	39.93	0.19131	0.07285	0.05054	0.012	70.038	0.01	0.07	1500.00	1000.00
558	5590.70	1500.00	0.08	1676.85	39.93	0.19204	0.07251	0.05425	0.010	70.040	0.02	0.07	1500.00	1000.00
559	5600.26	1500.00	0.08	1679.04	39.93	0.19189	0.07212	0.05532	0.012	70.042	0.02	0.07	1500.00	1000.00
560	5611.08	1500.00	0.07	1677.13	39.93	0.19180	0.07275	0.05254	0.010	70.044	0.00	0.06	1500.00	1000.00
561	5620.69	1500.00	0.06	1682.77	39.93	0.19224	0.07163	0.05737	0.010	70.045	0.00	0.06	1500.00	1000.00
562	5630.31	1500.00	0.08	1675.56	39.93	0.19121	0.07251	0.05703	0.010	70.047	0.01	0.07	1500.00	1000.00
563	5641.07	1500.00	0.07	1678.73	39.93	0.19131	0.07227	0.05854	0.012	70.049	0.01	0.06	1500.00	1000.00
564	5650.68	1500.00	0.06	1677.88	39.93	0.19097	0.07129	0.05371	0.010	70.050	0.00	0.06	1500.00	1000.00
565	5660.29	1500.00	0.06	1671.16	39.93	0.19067	0.07090	0.05806	0.012	70.052	0.00	0.06	1500.00	1000.00
566	5671.06	1500.00	0.06	1684.97	40.06	0.19165	0.07173	0.05625	0.010	70.054	0.00	0.06	1500.00	1000.00
567	5680.67	1500.00	0.07	1672.62	39.93	0.19180	0.07192	0.05391	0.010	70.056	0.00	0.06	1500.00	1000.00
568	5690.28	1500.00	0.07	1675.42	39.93	0.19150	0.07173	0.05420	0.010	70.057	0.00	0.07	1500.00	1000.00
569	5701.05	1500.00	0.05	1672.98	39.93	0.19102	0.07104	0.05972	0.012	70.059	0.00	0.05	1500.00	1000.00
570	5710.66	1500.00	0.06	1677.79	39.93	0.19136	0.07114	0.05767	0.010	70.061	0.00	0.06	1500.00	1000.00
571	5720.27	1500.00	0.06	1681.04	39.93	0.19175	0.07173	0.05317	0.012	70.063	0.00	0.06	1500.00	1000.00
572	5731.04	1500.00	0.01	1683.47	39.93	0.19219	0.07100	0.05464	0.012	70.065	0.00	0.00	1500.00	1000.00
573	5740.65	1500.00	0.04	1679.33	39.93	0.19194	0.07134	0.05176	0.012	70.067	0.02	0.05	1500.00	1000.00
574	5750.26	1500.00	0.10	1688.16	39.93	0.19209	0.07119	0.05479	0.012	70.069	0.00	0.08	1500.00	1000.00
575	5761.08	1500.00	0.06	1678.54	39.93	0.19106	0.07187	0.05825	0.010	70.071	0.00	0.05	1500.00	1000.00
576	5770.64	1500.00	0.06	1683.43	39.80	0.19053	0.07119	0.05532	0.010	70.072	0.00	0.06	1500.00	1000.00
577	5780.25	1500.00	0.06	1684.52	39.93	0.19185	0.07173	0.05972	0.012	70.074	0.00	0.05	1500.00	1000.00
578	5791.07	1500.00	0.09	1677.97	39.93	0.19097	0.07007	0.05176	0.010	70.076	0.03	0.05	1500.00	1000.00
579	5800.63	1500.00	0.06	1682.03	39.93	0.19204	0.07119	0.05483	0.012	70.078	0.01	0.05	1500.00	1000.00
580	5810.24	1500.00	0.05	1676.09	39.93	0.19092	0.07051	0.05278	0.010	70.080	0.00	0.05	1500.00	1000.00
581	5821.06	1500.00	0.05	1674.84	39.93	0.19102	0.07104	0.05547	0.012	70.082	0.00	0.05	1500.00	1000.00
582	5830.67	1500.00	0.05	1686.38	39.93	0.19160	0.07007	0.05288	0.010	70.083	0.00	0.05	1500.00	1000.00
583	5840.23	1500.00	0.05	1677.17	40.06	0.19131	0.07070	0.05376	0.010	70.085	0.00	0.05	1500.00	1000.00
584	5851.05	1500.00	0.05	1679.83	39.93	0.19087	0.07031	0.05469	0.010	70.087	0.00	0.05	1500.00	1000.00
585	5860.66	1500.00	0.05	1678.02	39.93	0.19155	0.07090	0.05957	0.012	70.089	0.00	0.05	1500.00	1000.00
586	5870.22	1500.00	0.06	1678.77	39.93	0.19087	0.07021	0.05298	0.010	70.090	0.01	0.05	1500.00	1000.00

587	5881.04	1500.00	0.06	1682.82	39.93	0.19189	0.07124	0.05586	0.012	70.092	0.02	0.05	1500.00	1000.00
588	5890.65	1500.00	0.07	1683.62	39.93	0.19067	0.07070	0.05483	0.010	70.094	0.01	0.05	1500.00	1000.00
589	5900.26	1500.00	0.05	1700.38	39.93	0.19092	0.07100	0.05420	0.012	70.096	0.00	0.05	1500.00	1000.00
590	5911.03	1500.00	0.05	1639.43	39.93	0.19126	0.07031	0.05532	0.010	70.098	0.00	0.05	1500.00	1000.00
591	5920.64	1500.00	0.08	1685.40	39.93	0.19097	0.07075	0.05591	0.010	70.099	0.04	0.04	1500.00	1000.00
592	5930.25	1500.00	0.11	1698.40	39.80	0.19199	0.06968	0.05781	0.012	70.101	0.07	0.04	1500.00	999.00
593	5941.02	1500.00	0.12	1685.90	39.93	0.19170	0.06968	0.05225	0.010	70.103	0.07	0.04	1500.00	999.00
594	5950.63	1500.00	0.12	1662.40	39.93	0.19097	0.07012	0.05542	0.010	70.105	0.08	0.05	1500.00	1000.00
595	5960.24	1500.00	0.12	1679.72	39.93	0.19116	0.07012	0.05645	0.012	70.107	0.06	0.05	1500.00	1000.00
596	5971.01	1500.00	0.11	1673.19	39.93	0.19019	0.07007	0.05923	0.012	70.109	0.06	0.05	1500.00	999.00
597	5980.62	1500.00	0.12	1675.61	39.93	0.19038	0.06973	0.05459	0.012	70.111	0.06	0.05	1500.00	999.00
598	5990.23	1500.00	0.11	1690.43	39.93	0.19102	0.06948	0.05347	0.012	70.113	0.06	0.05	1500.00	1000.00
599	6001.00	1500.00	0.12	1685.55	39.93	0.19150	0.06934	0.05449	0.012	70.115	0.06	0.05	1500.00	1000.00
600	6010.61	1500.00	0.11	1665.51	39.80	0.19111	0.07021	0.05806	0.012	70.117	0.06	0.05	1500.00	1000.00
601	6020.22	1500.00	0.12	1685.70	39.93	0.19082	0.07100	0.05840	0.010	70.118	0.07	0.05	1500.00	1000.00
602	6031.04	1500.00	0.11	1680.96	39.93	0.19087	0.07002	0.05518	0.010	70.120	0.06	0.05	1500.00	1000.00
603	6040.60	1500.00	0.11	1676.56	39.93	0.19141	0.07114	0.05059	0.012	70.122	0.07	0.05	1500.00	1000.00
604	6050.21	1500.00	0.10	1691.94	39.93	0.19072	0.06958	0.05142	0.010	70.124	0.05	0.05	1500.00	1000.00
605	6061.03	1500.00	0.10	1679.61	39.93	0.18994	0.07021	0.05464	0.010	70.125	0.06	0.05	1500.00	999.00
606	6070.59	1500.00	0.10	1681.92	39.80	0.19067	0.06978	0.05332	0.010	70.127	0.05	0.05	1500.00	999.00
607	6080.20	1500.00	0.09	1675.20	39.80	0.19077	0.06992	0.05249	0.012	70.129	0.04	0.04	1500.00	1000.00
608	6091.02	1500.00	0.08	1686.17	39.93	0.19028	0.06968	0.05376	0.010	70.131	0.04	0.04	1500.00	1000.00
609	6100.63	1500.00	0.08	1680.98	39.80	0.19028	0.06973	0.05874	0.010	70.132	0.04	0.04	1500.00	1000.00
610	6110.19	1500.00	0.08	1676.25	39.80	0.19058	0.07051	0.05547	0.010	70.134	0.04	0.04	1500.00	1000.00
611	6121.01	1500.00	0.08	1670.79	39.80	0.19111	0.07061	0.05552	0.012	70.136	0.04	0.04	1500.00	1000.00
612	6130.62	1500.00	0.11	1676.36	39.80	0.19063	0.07002	0.05693	0.010	70.138	0.06	0.04	1500.00	1000.00
613	6140.18	1500.00	0.08	1679.84	39.80	0.19077	0.06987	0.05522	0.012	70.140	0.04	0.04	1500.00	1000.00
614	6151.00	1500.00	0.07	1683.06	39.80	0.18960	0.06934	0.05059	0.010	70.141	0.04	0.03	1500.00	1000.00
615	6160.61	1500.00	0.07	1679.10	39.80	0.19131	0.06895	0.05151	0.010	70.143	0.04	0.03	1500.00	1000.00
616	6170.22	1500.00	0.08	1684.46	39.80	0.19053	0.06987	0.05488	0.010	70.144	0.04	0.03	1500.00	1000.00
617	6180.99	1500.00	0.07	1676.22	39.80	0.19048	0.06875	0.05747	0.010	70.146	0.03	0.03	1500.00	1000.00

618	6190.60	1500.00	0.06	1682.39	39.80	0.19028	0.06943	0.05703	0.012	70.148	0.03	0.03	1762.00	1000.00
619	6200.21	1500.00	0.03	1679.16	39.80	0.19048	0.06963	0.05859	0.010	70.150	0.02	-0.01	1500.00	1000.00
620	6210.98	1500.00	0.04	1683.93	39.80	0.19058	0.06909	0.05659	0.010	70.151	0.04	0.00	1500.00	1000.00
621	6220.59	1500.00	0.04	1689.01	39.80	0.19067	0.06934	0.05498	0.010	70.153	0.04	0.00	1500.00	1000.00
622	6230.20	1500.00	0.04	1680.80	39.80	0.19063	0.06914	0.05664	0.010	70.155	0.03	0.03	1500.00	1000.00
623	6240.97	1500.00	0.10	1678.54	39.80	0.19072	0.06914	0.06084	0.010	70.156	0.01	0.09	1500.00	1000.00
624	6250.58	1500.00	0.05	1678.94	39.80	0.18999	0.06968	0.05566	0.012	70.158	0.01	0.04	1500.00	1000.00
625	6260.19	1500.00	0.06	1681.90	39.80	0.18945	0.06895	0.05669	0.012	70.160	0.03	0.03	1500.00	1000.00
626	6270.96	1500.00	0.06	1679.27	39.93	0.19028	0.06880	0.05649	0.010	70.162	0.04	0.02	1500.00	1000.00
627	6280.57	1500.00	0.07	1681.33	39.80	0.19121	0.06929	0.05562	0.010	70.164	0.04	0.03	1500.00	1000.00
628	6290.18	1500.00	0.06	1680.93	39.80	0.18970	0.06948	0.05596	0.010	70.165	0.02	0.03	1500.00	1000.00
629	6301.00	1500.00	0.02	1676.93	39.93	0.19009	0.07007	0.05806	0.012	70.167	0.02	0.00	1500.00	1000.00
630	6310.56	1500.00	0.06	1679.39	39.80	0.18984	0.06938	0.05645	0.010	70.169	0.03	0.03	1500.00	1000.00
631	6320.17	1500.00	0.06	1683.72	39.80	0.18979	0.06963	0.05664	0.010	70.170	0.03	0.03	1500.00	1000.00
632	6330.99	1500.00	0.05	1681.59	39.80	0.18960	0.06899	0.05381	0.012	70.172	0.03	0.03	1500.00	1000.00
633	6340.55	1500.00	0.06	1677.01	39.80	0.19058	0.06885	0.05493	0.012	70.175	0.03	0.03	1500.00	1000.00
634	6350.16	1500.00	0.04	1675.45	39.80	0.18940	0.06831	0.05552	0.012	70.177	0.01	0.03	1500.00	1000.00
635	6360.98	1500.00	0.04	1676.08	39.80	0.19014	0.06865	0.05420	0.010	70.178	0.01	0.03	1500.00	1000.00
636	6370.59	1500.00	0.05	1683.54	39.80	0.19004	0.06968	0.05786	0.012	70.180	0.02	0.03	1500.00	1000.00
637	6380.15	1500.00	0.06	1677.72	39.80	0.18999	0.06846	0.05356	0.010	70.182	0.03	0.03	1500.00	1000.00
638	6390.97	1500.00	0.05	1675.45	39.80	0.18970	0.06831	0.05576	0.010	70.183	0.02	0.03	1500.00	1000.00
639	6400.58	1500.00	0.04	1677.72	39.80	0.18965	0.06812	0.05269	0.012	70.185	0.02	0.03	1500.00	1000.00
640	6410.14	1500.00	0.05	1682.49	39.80	0.19019	0.06899	0.05327	0.012	70.188	0.02	0.03	1500.00	1000.00
641	6420.96	1500.00	0.05	1679.24	39.80	0.18979	0.06953	0.05439	0.010	70.189	0.02	0.03	1500.00	1000.00
642	6430.57	1500.00	0.05	1683.54	39.80	0.18950	0.06914	0.05547	0.012	70.191	0.03	0.02	1500.00	1000.00
643	6440.18	1500.00	0.03	1679.31	39.80	0.19082	0.06841	0.05483	0.010	70.193	0.01	0.03	1500.00	1000.00
644	6450.95	1500.00	0.05	1681.76	39.80	0.18994	0.06772	0.05605	0.012	70.195	0.03	0.02	1500.00	1000.00
645	6460.56	1500.00	0.04	1673.78	39.80	0.18950	0.06880	0.05596	0.010	70.196	0.02	0.03	1500.00	1000.00
646	6470.17	1500.00	0.04	1681.17	39.80	0.18965	0.06865	0.04976	0.012	70.199	0.00	0.03	1500.00	1000.00
647	6480.94	1500.00	0.04	1676.98	39.80	0.18970	0.06792	0.05537	0.010	70.200	0.01	0.03	1500.00	1000.00
648	6490.55	1500.00	0.04	1673.48	39.68	0.18984	0.06777	0.05371	0.012	70.202	0.01	0.03	1500.00	1000.00

649	6500.27	1500.00	0.04	1681.79	39.80	0.18887	0.06855	0.05674	0.010	70.204	0.01	0.02	1500.00	1000.00
650	6511.04	1500.00	0.05	1678.65	39.80	0.18887	0.06802	0.05615	0.010	70.205	0.02	0.03	1500.00	1000.00
651	6520.65	1500.00	0.03	1680.75	39.80	0.19009	0.06880	0.05454	0.010	70.207	0.01	0.03	1500.00	1000.00
652	6530.26	1500.00	0.03	1680.37	39.80	0.18945	0.06865	0.05508	0.010	70.209	0.00	0.02	1500.00	1000.00
653	6541.03	1500.00	0.03	1678.35	39.80	0.18989	0.06836	0.05044	0.010	70.210	0.00	0.03	1500.00	1000.00
654	6550.64	1500.00	0.04	1678.61	39.80	0.18887	0.06821	0.05044	0.010	70.212	0.02	0.02	1500.00	1000.00
655	6560.25	1500.00	0.02	1678.09	39.80	0.19033	0.06816	0.05991	0.012	70.214	0.00	0.02	1500.00	1000.00
656	6571.01	1500.00	0.04	1684.90	39.80	0.18979	0.06846	0.05586	0.010	70.216	0.02	0.02	1500.00	1000.00
657	6580.63	1500.00	0.03	1677.09	39.80	0.18970	0.06802	0.05947	0.012	70.218	0.01	0.02	1500.00	1000.00
658	6590.24	1500.00	0.04	1678.59	39.68	0.19019	0.06821	0.05161	0.010	70.219	0.02	0.02	1500.00	1000.00
659	6601.06	1500.00	0.03	1671.82	39.80	0.18965	0.06763	0.05728	0.010	70.221	0.01	0.02	1500.00	1000.00
660	6610.62	1500.00	0.05	1680.36	39.80	0.18960	0.06802	0.06016	0.012	70.223	0.03	0.03	1500.00	1000.00
661	6620.23	1500.00	0.03	1675.39	39.80	0.19038	0.06753	0.05518	0.012	70.225	0.00	0.02	1500.00	1000.00
662	6631.05	1500.00	0.03	1678.18	39.80	0.18950	0.06821	0.05410	0.012	70.227	0.01	0.02	1500.00	1000.00
663	6640.61	1500.00	0.04	1676.97	39.80	0.18955	0.06729	0.05229	0.010	70.229	0.01	0.02	1500.00	1000.00
664	6650.22	1500.00	0.03	1676.91	39.80	0.18892	0.06729	0.05674	0.010	70.230	0.01	0.02	1500.00	1000.00
665	6661.04	1500.00	0.02	1676.82	39.80	0.18950	0.06792	0.06055	0.010	70.232	0.00	0.02	1500.00	1000.00
666	6670.65	1500.00	0.02	1678.53	39.80	0.18936	0.06826	0.06079	0.012	70.234	0.00	0.02	1500.00	1000.00
667	6680.21	1500.00	0.03	1680.06	39.80	0.18901	0.06748	0.05674	0.012	70.236	0.00	0.02	1500.00	1000.00
668	6691.03	1500.00	0.02	1672.27	39.80	0.18931	0.06782	0.05356	0.012	70.238	0.00	0.02	1500.00	1000.00
669	6700.64	1500.00	0.03	1668.35	39.80	0.18911	0.06768	0.05688	0.010	70.240	0.00	0.02	1500.00	1000.00
670	6710.20	1500.00	0.02	1676.56	39.80	0.18921	0.06753	0.05635	0.012	70.242	0.00	0.02	1500.00	1000.00
671	6721.02	1500.00	0.02	1679.69	39.80	0.18960	0.06753	0.05483	0.010	70.243	0.00	0.02	1500.00	1000.00
672	6730.63	1500.00	0.02	1677.60	39.80	0.18882	0.06738	0.05342	0.012	70.245	0.00	0.02	1500.00	1000.00
673	6740.19	1500.00	0.03	1683.10	39.80	0.18916	0.06724	0.05405	0.010	70.247	0.00	0.03	1500.00	1000.00
674	6751.01	1500.00	0.03	1683.62	39.80	0.18950	0.06738	0.05596	0.010	70.249	0.00	0.02	1500.00	1000.00
675	6760.62	1500.00	0.02	1677.81	39.80	0.18960	0.06680	0.05151	0.012	70.251	0.00	0.03	1500.00	1000.00
676	6770.23	1500.00	0.02	1677.95	39.80	0.18916	0.06646	0.05459	0.012	70.253	0.00	0.02	1500.00	1000.00
677	6780.99	1500.00	0.02	1679.37	39.80	0.18906	0.06680	0.05664	0.012	70.255	0.00	0.02	1500.00	1000.00
678	6790.61	1500.00	0.02	1678.72	39.80	0.18843	0.06782	0.05498	0.010	70.256	0.00	0.02	1500.00	1000.00
679	6800.22	1500.00	0.02	1675.92	39.80	0.18936	0.06689	0.06362	0.010	70.258	0.00	0.02	1500.00	1000.00

680	6810.98	1500.00	0.02	1683.46	39.80	0.18940	0.06641	0.06011	0.012	70.260	0.00	0.02	1500.00	1000.00
681	6820.60	1500.00	0.02	1680.98	39.80	0.18940	0.06738	0.05444	0.012	70.262	0.00	0.02	1500.00	1000.00
682	6830.21	1500.00	0.01	1680.11	39.80	0.18799	0.06626	0.05649	0.010	70.264	0.00	0.02	1500.00	1000.00
683	6840.97	1500.00	0.02	1675.15	39.80	0.18984	0.06777	0.05469	0.010	70.265	0.00	0.02	1500.00	1000.00
684	6850.59	1500.00	0.02	1677.19	39.80	0.18872	0.06743	0.05195	0.010	70.267	0.00	0.02	1500.00	1000.00
685	6860.20	1500.00	0.02	1685.17	39.80	0.18921	0.06694	0.05547	0.010	70.268	0.00	0.02	1500.00	1000.00
686	6871.02	1500.00	0.02	1676.06	39.80	0.18936	0.06680	0.05586	0.010	70.270	0.00	0.02	1500.00	1000.00
687	6880.57	1500.00	0.02	1681.01	39.93	0.18882	0.06680	0.05645	0.010	70.272	0.00	0.02	1500.00	1000.00
688	6890.19	1500.00	0.02	1675.58	39.80	0.18896	0.06689	0.05205	0.010	70.273	0.00	0.02	1500.00	1000.00
689	6901.01	1500.00	0.03	1676.56	39.80	0.18901	0.06646	0.05493	0.012	70.275	0.00	0.03	1500.00	1000.00
690	6910.56	1500.00	0.01	1672.34	39.80	0.18887	0.06636	0.05215	0.012	70.277	-0.01	0.02	1500.00	1000.00
691	6920.18	1500.00	0.03	1681.95	39.80	0.18813	0.06709	0.05796	0.012	70.279	0.00	0.04	1500.00	1000.00
692	6931.00	1500.00	0.03	1682.77	39.80	0.18901	0.06646	0.05825	0.012	70.282	0.00	0.03	1500.00	1001.00
693	6940.55	1500.00	0.02	1678.89	39.93	0.18916	0.06670	0.05625	0.012	70.284	0.00	0.03	1500.00	1001.00
694	6950.17	1500.00	0.04	1682.43	39.93	0.18955	0.06689	0.05200	0.010	70.285	0.00	0.04	1500.00	1001.00
695	6960.99	1500.00	0.04	1682.17	39.93	0.18843	0.06621	0.05947	0.010	70.287	0.00	0.04	1500.00	1001.00
696	6970.60	1500.00	0.04	1680.69	39.93	0.18926	0.06665	0.05522	0.012	70.289	0.00	0.05	1500.00	1002.00
697	6980.15	1500.00	0.04	1678.86	39.93	0.18896	0.06606	0.05503	0.012	70.291	0.00	0.04	1500.00	1002.00
698	6990.97	1500.00	-0.02	1679.37	39.93	0.18877	0.06602	0.05713	0.010	70.293	-0.04	0.04	1500.00	1002.00
699	7000.59	1500.00	0.03	1676.82	39.80	0.18906	0.06572	0.05728	0.010	70.294	0.00	0.03	1500.00	1002.00
700	7010.20	1500.00	-0.03	1684.95	39.93	0.18921	0.06558	0.05254	0.010	70.296	-0.04	0.04	1500.00	1002.00
701	7020.96	1500.00	0.03	1682.81	39.93	0.18848	0.06567	0.05771	0.010	70.297	0.00	0.03	1500.00	1002.00
702	7030.58	1500.00	0.03	1683.06	39.80	0.18843	0.06562	0.05713	0.010	70.299	0.00	0.03	1500.00	1002.00
703	7040.19	1500.00	0.03	1680.06	39.93	0.18882	0.06641	0.05342	0.012	70.301	0.00	0.03	1500.00	1002.00
704	7050.95	1500.00	0.03	1689.31	39.93	0.18896	0.06660	0.05259	0.010	70.303	0.00	0.03	1500.00	1002.00
705	7060.57	1500.00	0.04	1679.59	39.93	0.18813	0.06636	0.05234	0.010	70.304	0.00	0.04	1500.00	1002.00
706	7070.18	1500.00	0.03	1682.27	39.93	0.18896	0.06548	0.05786	0.010	70.306	0.00	0.03	1500.00	1002.00
707	7080.94	1500.00	0.03	1685.45	39.93	0.18970	0.06592	0.05732	0.010	70.308	0.00	0.03	1500.00	1002.00
708	7090.55	1500.00	0.03	1675.70	39.93	0.18818	0.06523	0.05708	0.012	70.310	0.00	0.03	1500.00	1002.00
709	7100.17	1500.00	0.03	1675.02	39.93	0.18906	0.06587	0.05884	0.012	70.312	0.00	0.03	1500.00	1003.00
710	7110.93	1500.00	0.03	1672.65	39.93	0.18838	0.06641	0.05708	0.010	70.313	0.00	0.03	1500.00	1003.00

711	7120.54	1500.00	0.02	1678.59	39.93	0.18911	0.06538	0.05410	0.012	70.315	-0.01	0.03	1500.00	1003.00
712	7130.16	1500.00	0.03	1686.85	39.93	0.18916	0.06597	0.05645	0.010	70.317	0.00	0.03	1500.00	1003.00
713	7140.98	1500.00	0.02	1689.33	39.93	0.18843	0.06509	0.05410	0.010	70.319	0.00	0.03	1500.00	1003.00
714	7150.53	1500.00	0.02	1682.18	40.06	0.18862	0.06577	0.06167	0.010	70.320	0.00	0.03	1500.00	1003.00
715	7160.15	1500.00	-0.06	1674.91	39.93	0.18945	0.06616	0.05620	0.010	70.322	-0.06	0.02	1500.00	1003.00
716	7170.97	1500.00	0.01	1683.87	39.93	0.18784	0.06553	0.06138	0.012	70.324	-0.01	0.03	1500.00	1003.00
717	7180.52	1500.00	0.02	1680.67	39.93	0.18789	0.06562	0.05562	0.012	70.326	0.00	0.02	1500.00	1003.00
718	7190.13	1500.00	0.02	1684.39	39.93	0.18926	0.06562	0.06055	0.012	70.328	0.00	0.02	1500.00	1003.00
719	7200.96	1500.00	0.02	1682.99	39.93	0.18838	0.06528	0.05435	0.012	70.330	0.00	0.02	1500.00	1003.00
720	7210.57	1500.00	0.02	1682.98	39.93	0.18901	0.06528	0.05337	0.010	70.332	-0.01	0.03	1500.00	1003.00
721	7220.12	1500.00	-0.01	1686.07	39.93	0.18823	0.06577	0.05479	0.012	70.334	-0.03	0.02	1500.00	1003.00
722	7230.94	1500.00	0.02	1682.16	39.93	0.18916	0.06484	0.05508	0.010	70.335	0.00	0.02	1500.00	1003.00
723	7240.56	1500.00	0.02	1674.18	40.06	0.18872	0.06562	0.05698	0.010	70.337	0.00	0.02	1500.00	1002.00
724	7250.11	1500.00	0.02	1685.57	39.93	0.18813	0.06509	0.05474	0.010	70.338	0.00	0.02	1500.00	1002.00
725	7260.93	1500.00	0.02	1675.81	39.93	0.18921	0.06494	0.05693	0.010	70.340	0.00	0.02	1500.00	1002.00
726	7270.55	1500.00	0.02	1676.66	39.93	0.18916	0.06572	0.06021	0.010	70.342	0.00	0.02	1500.00	1002.00
727	7280.10	1500.00	0.02	1679.13	39.93	0.18853	0.06543	0.05557	0.010	70.343	0.00	0.02	1500.00	1002.00
728	7290.92	1500.00	0.02	1677.05	39.93	0.18843	0.06606	0.05498	0.012	70.345	0.00	0.02	1500.00	1002.00
729	7300.53	1500.00	-0.05	1689.58	39.93	0.18936	0.06499	0.05669	0.012	70.347	-0.03	0.00	1500.00	1002.00
730	7310.15	1500.00	0.04	1675.73	39.93	0.18936	0.06514	0.05869	0.012	70.349	0.00	0.03	1500.00	1002.00
731	7320.91	1500.00	0.02	1678.18	40.06	0.18896	0.06606	0.05244	0.012	70.351	0.00	0.02	1500.00	1002.00
732	7330.52	1500.00	0.02	1678.82	39.93	0.18799	0.06455	0.05791	0.012	70.354	0.00	0.02	1500.00	1002.00
733	7340.14	1500.00	0.02	1685.25	39.93	0.18872	0.06548	0.05864	0.012	70.356	0.00	0.02	1500.00	1002.00
734	7350.90	1500.00	0.02	1680.36	39.93	0.18916	0.06519	0.05552	0.010	70.357	0.00	0.02	1500.00	1002.00
735	7360.51	1500.00	0.02	1691.25	39.93	0.18882	0.06460	0.05615	0.012	70.359	0.00	0.02	1500.00	1002.00
736	7370.13	1500.00	0.01	1681.48	40.06	0.18818	0.06479	0.05566	0.012	70.361	0.00	0.01	1500.00	1002.00
737	7380.89	1500.00	0.00	1686.55	39.93	0.18784	0.06436	0.05498	0.010	70.363	0.00	0.01	1500.00	1002.00
738	7390.50	1500.00	0.02	1675.28	39.93	0.18799	0.06519	0.05649	0.012	70.365	0.00	0.02	1500.00	1002.00
739	7400.11	1500.00	0.02	1678.06	39.93	0.18877	0.06440	0.05854	0.012	70.367	0.00	0.02	1500.00	1002.00
740	7410.94	1500.00	0.02	1680.12	39.93	0.18823	0.06582	0.05308	0.012	70.369	0.00	0.02	1500.00	1002.00
741	7420.49	1500.00	0.01	1681.19	39.93	0.18853	0.06382	0.05264	0.010	70.371	0.00	0.01	1500.00	1001.00

742	7430.10	1500.00	0.02	1680.35	39.93	0.18765	0.06450	0.05654	0.012	70.373	0.00	0.01	1500.00	1001.00
743	7440.92	1500.00	0.00	1679.64	39.93	0.18770	0.06514	0.05889	0.012	70.375	0.00	0.01	1500.00	1001.00
744	7450.48	1500.00	0.01	1675.57	39.93	0.18799	0.06499	0.05811	0.010	70.376	0.00	0.01	1500.00	1001.00
745	7460.09	1500.00	0.01	1676.35	39.93	0.18833	0.06489	0.05767	0.010	70.378	0.00	0.00	1500.00	1001.00
746	7470.91	1500.00	0.01	1681.39	39.93	0.18853	0.06479	0.05850	0.012	70.380	0.00	0.01	1500.00	1001.00
747	7480.53	1500.00	0.02	1676.36	39.93	0.18857	0.06475	0.05449	0.012	70.382	0.00	0.01	1500.00	1001.00
748	7490.08	1500.00	0.02	1675.06	39.93	0.18804	0.06431	0.05576	0.010	70.384	0.00	0.01	1500.00	1001.00
749	7500.90	1500.00	0.02	1686.57	40.06	0.18789	0.06519	0.05752	0.010	70.385	0.00	0.02	1500.00	1001.00
750	7510.52	1500.00	0.01	1674.59	39.93	0.18813	0.06475	0.05884	0.012	70.387	0.00	0.01	1500.00	1001.00
751	7520.07	1500.00	0.02	1675.68	40.06	0.18823	0.06450	0.05347	0.010	70.389	0.00	0.01	1500.00	1001.00
752	7530.89	1500.00	0.01	1673.89	39.93	0.18774	0.06475	0.05898	0.010	70.391	0.00	0.01	1500.00	1001.00
753	7540.50	1500.00	0.01	1687.94	40.06	0.18770	0.06597	0.05625	0.010	70.392	0.00	0.02	1500.00	1001.00
754	7550.12	1500.00	0.01	1672.64	39.93	0.18745	0.06445	0.05435	0.010	70.394	0.00	0.01	1500.00	1001.00
755	7560.88	1500.00	0.01	1684.17	39.93	0.18892	0.06450	0.05962	0.012	70.396	0.00	0.01	1500.00	1001.00
756	7570.49	1500.00	0.01	1677.90	39.93	0.18862	0.06499	0.06113	0.012	70.398	0.00	0.01	1500.00	1001.00
757	7580.11	1500.00	0.01	1679.06	39.93	0.18813	0.06504	0.05874	0.012	70.400	0.00	0.02	1500.00	1001.00
758	7590.87	1500.00	0.01	1685.83	39.93	0.18779	0.06445	0.05371	0.012	70.402	0.00	0.01	1500.00	1001.00
759	7600.48	1500.00	0.01	1676.55	40.06	0.18828	0.06445	0.05479	0.012	70.404	0.00	0.01	1500.00	1001.00
760	7610.10	1500.00	0.01	1676.38	40.06	0.18770	0.06460	0.05986	0.010	70.406	0.00	0.01	1500.00	1001.00
761	7620.86	1500.00	0.02	1680.44	39.93	0.18774	0.06509	0.05493	0.010	70.407	0.00	0.01	1500.00	1001.00
762	7630.47	1500.00	0.00	1673.51	39.93	0.18813	0.06401	0.06147	0.012	70.409	0.00	0.00	1500.00	1001.00
763	7640.08	1500.00	0.01	1684.67	39.93	0.18872	0.06479	0.05728	0.010	70.411	0.00	0.01	1500.00	1000.00
764	7650.85	1500.00	0.01	1674.60	39.93	0.18696	0.06475	0.05937	0.012	70.413	0.00	0.01	1500.00	1000.00
765	7660.46	1500.00	-0.03	1683.51	39.93	0.18740	0.06426	0.05576	0.012	70.415	-0.02	0.00	1500.00	1000.00
766	7670.07	1500.00	0.02	1677.78	39.93	0.18765	0.06436	0.05420	0.010	70.417	0.00	0.01	1500.00	1000.00
767	7680.89	1500.00	0.01	1676.63	39.93	0.18882	0.06396	0.05425	0.012	70.419	0.00	0.00	1500.00	1000.00
768	7690.45	1500.00	0.01	1685.93	39.93	0.18779	0.06382	0.05703	0.010	70.420	0.00	0.01	1500.00	1000.00
769	7700.06	1500.00	0.01	1683.43	39.93	0.18730	0.06426	0.05518	0.010	70.422	0.00	0.01	1500.00	1000.00
770	7710.88	1500.00	0.01	1674.97	40.06	0.18765	0.06396	0.05908	0.012	70.424	0.00	0.02	1500.00	1000.00
771	7720.44	1500.00	0.01	1680.66	39.93	0.18887	0.06401	0.05752	0.010	70.426	0.00	0.01	1500.00	1000.00
772	7730.05	1500.00	0.01	1672.34	40.06	0.18818	0.06396	0.05444	0.012	70.428	0.00	0.01	1500.00	1000.00

773	7740.87	1500.00	0.00	1672.31	39.93	0.18774	0.06401	0.05933	0.012	70.430	0.00	0.01	1500.00	1000.00
774	7750.48	1500.00	0.00	1678.87	40.06	0.18677	0.06343	0.05972	0.012	70.432	0.00	0.00	1500.00	1000.00
775	7760.04	1500.00	0.01	1685.17	39.93	0.18755	0.06406	0.05601	0.010	70.433	0.00	0.00	1500.00	1000.00
776	7770.86	1500.00	0.01	1680.06	40.06	0.18828	0.06426	0.05728	0.010	70.435	0.00	0.01	1500.00	1000.00
777	7780.47	1500.00	0.00	1671.47	40.06	0.18677	0.06284	0.06270	0.010	70.437	0.00	0.00	1500.00	1000.00
778	7790.03	1500.00	0.01	1671.85	39.93	0.18862	0.06519	0.06040	0.012	70.439	0.00	0.01	1500.00	1000.00
779	7800.85	1500.00	0.01	1683.93	39.93	0.18779	0.06436	0.05732	0.012	70.441	0.00	0.01	1500.00	1000.00
780	7810.46	1500.00	0.01	1676.03	40.06	0.18721	0.06440	0.05918	0.012	70.443	0.00	0.01	1500.00	1000.00
781	7820.08	1500.00	0.01	1691.68	40.06	0.18755	0.06499	0.05171	0.010	70.444	0.00	0.01	1500.00	1000.00
782	7830.84	1500.00	0.01	1687.60	40.06	0.18823	0.06377	0.05293	0.012	70.446	0.00	0.01	1500.00	1000.00
783	7840.45	1500.00	0.00	1674.96	40.06	0.18818	0.06514	0.05850	0.010	70.448	0.00	0.00	1500.00	1000.00
784	7850.06	1500.00	0.00	1672.34	39.93	0.18784	0.06465	0.06152	0.010	70.450	0.00	0.00	1500.00	1000.00
785	7860.83	1500.00	0.00	1678.36	39.93	0.18770	0.06382	0.05894	0.010	70.451	0.00	0.00	1500.00	1000.00
786	7870.44	1500.00	0.00	1681.37	39.93	0.18818	0.06426	0.05625	0.012	70.453	0.00	0.00	1500.00	1000.00
787	7880.05	1500.00	0.00	1685.62	40.06	0.18770	0.06387	0.05630	0.012	70.455	0.00	0.00	1500.00	1000.00
788	7890.82	1500.00	0.01	1678.24	40.06	0.18677	0.06387	0.05728	0.010	70.457	0.00	0.00	1500.00	1000.00
789	7900.43	1500.00	0.00	1668.89	39.93	0.18730	0.06367	0.05601	0.010	70.459	0.00	0.00	1500.00	1000.00
790	7910.04	1402.00	20.77	1677.48	40.06	0.18662	0.06328	0.05347	2.063	70.802	35.27	-4.50	1446.00	935.00
791	7920.81	1491.00	6.46	1688.47	39.93	0.00439	-0.13525	0.03745	4.380	71.532	7.47	0.08	1494.00	994.00
792	7930.42	1500.00	5.18	1678.34	39.93	-0.00078	-0.14087	0.03657	4.255	72.242	0.71	-0.76	1492.00	1000.00
793	7940.03	1500.00	8.28	1684.47	39.93	-0.00137	-0.14233	0.03579	4.060	72.918	5.69	0.97	1500.00	1001.00
794	7950.85	1500.00	3.60	1681.79	39.93	-0.00073	-0.14277	0.03608	2.886	73.399	4.14	-0.43	1500.00	998.00
795	7960.41	1500.00	3.07	1678.09	39.93	-0.00225	-0.14292	0.03579	2.041	73.739	2.98	0.08	1500.00	999.00
796	7970.02	1500.00	1.53	1677.08	39.93	-0.00332	-0.14360	0.03384	1.357	73.966	1.79	0.08	1500.00	1000.00
797	7980.84	1500.00	1.60	1672.72	39.93	-0.00347	-0.14331	0.03682	1.162	74.159	1.61	0.00	1500.00	1000.00
798	7990.40	1500.00	1.43	1683.40	39.93	-0.00293	-0.14482	0.03867	1.035	74.332	1.41	0.00	1500.00	1000.00
799	8000.01	1500.00	1.71	1676.77	39.93	-0.00376	-0.14507	0.03818	1.719	74.618	2.72	-0.63	1500.00	997.00
800	8010.83	1500.00	2.45	1679.31	39.93	-0.00371	-0.14512	0.03818	1.685	74.899	2.33	0.09	1500.00	1000.00
801	8020.44	1500.00	2.15	1679.05	39.93	-0.00376	-0.14468	0.03208	1.594	75.165	2.14	0.00	1500.00	1000.00
802	8030.00	1500.00	1.95	1680.28	39.93	-0.00420	-0.14404	0.03594	1.594	75.430	1.95	0.00	1500.00	999.00
803	8040.82	1500.00	1.99	1675.58	39.93	-0.00352	-0.14404	0.03574	1.648	75.705	1.76	0.07	1500.00	1000.00

804	8050.43	1500.00	1.66	1677.13	39.93	-0.00337	-0.14399	0.03203	1.504	75.956	1.65	0.00	1500.00	1000.00
805	8061.20	1500.00	1.18	1678.31	39.93	-0.00444	-0.14561	0.03457	1.113	76.141	1.09	0.00	1500.00	1000.00
806	8070.81	1500.00	5.51	1686.13	39.93	-0.00410	-0.14448	0.03613	2.769	76.603	3.90	0.76	1500.00	1000.00
807	8080.42	1500.00	3.82	1685.07	40.06	-0.00371	-0.14399	0.03584	2.783	77.067	3.73	0.04	1500.00	1000.00
808	8090.03	1500.00	3.77	1680.21	40.06	-0.00249	-0.14453	0.04185	2.842	77.540	3.77	0.00	1500.00	1000.00
809	8100.80	1500.00	3.83	1682.62	40.06	-0.00254	-0.14277	0.03237	2.871	78.019	3.83	0.00	1500.00	1000.00
810	8110.41	1500.00	3.75	1687.35	40.06	-0.00215	-0.14341	0.03564	2.832	78.491	3.77	0.00	1500.00	1000.00
811	8120.02	1500.00	3.86	1687.37	40.06	-0.00225	-0.14316	0.03535	2.881	78.971	3.80	0.03	1500.00	1000.00
812	8130.79	1500.00	3.79	1685.99	40.06	-0.00381	-0.14316	0.03135	2.830	79.442	3.77	0.01	1500.00	1000.00
813	8140.40	1500.00	3.77	1691.44	40.18	-0.00312	-0.14277	0.03584	2.839	79.916	3.74	0.01	1500.00	1000.00
814	8150.01	1500.00	3.78	1684.88	40.18	-0.00298	-0.14434	0.03535	2.908	80.400	3.81	0.01	1500.00	1000.00
815	8160.78	1500.00	3.49	1683.79	40.06	-0.00347	-0.14346	0.03389	2.722	80.854	3.50	0.01	1500.00	999.00
816	8170.39	1500.00	3.52	1681.73	40.18	-0.00244	-0.14351	0.03408	2.717	81.307	3.52	0.00	1500.00	1000.00
817	8180.00	1500.00	3.56	1693.68	40.18	-0.00278	-0.14380	0.03447	2.739	81.763	3.52	0.01	1500.00	1000.00
818	8190.77	1500.00	3.47	1686.97	40.18	-0.00195	-0.14326	0.03330	2.686	82.211	3.45	0.00	1500.00	999.00
819	8200.38	1500.00	3.50	1695.65	40.18	-0.00288	-0.14370	0.03286	2.700	82.661	3.46	0.01	1500.00	1000.00
820	8211.20	1500.00	3.52	1692.78	40.31	-0.00278	-0.14248	0.03560	2.727	83.116	3.51	0.01	1500.00	1000.00
821	8220.81	1500.00	3.48	1691.97	40.31	-0.00210	-0.14312	0.04023	2.690	83.564	3.45	0.01	1500.00	1000.00
822	8230.37	1500.00	3.56	1738.80	40.31	-0.00249	-0.14321	0.03403	2.705	84.015	3.56	0.01	1500.00	1000.00
823	8241.19	1500.00	3.49	1705.27	40.31	-0.00244	-0.14370	0.03770	2.683	84.462	3.47	0.01	1500.00	1000.00
824	8250.80	1500.00	3.44	1703.29	40.44	-0.00254	-0.14287	0.03564	2.681	84.909	3.48	0.01	1500.00	1000.00
825	8260.36	1500.00	3.51	1676.79	40.31	-0.00234	-0.14375	0.03779	2.742	85.366	3.57	0.01	1500.00	999.00
826	8271.18	1500.00	3.37	1669.27	40.44	-0.00186	-0.14268	0.03462	2.695	85.815	3.41	0.01	1500.00	1000.00
827	8280.79	1500.00	3.53	1622.75	40.31	-0.00210	-0.14307	0.03599	2.690	86.263	3.55	0.00	1500.00	999.00
828	8290.40	1500.00	3.53	1709.61	40.44	-0.00210	-0.14326	0.03677	2.749	86.722	3.58	0.00	1500.00	1000.00
829	8301.17	1500.00	3.40	1686.71	40.44	-0.00210	-0.14219	0.03130	2.683	87.169	3.43	0.00	1500.00	1000.00
830	8310.78	1500.00	3.54	1692.78	40.44	-0.00234	-0.14263	0.03535	2.700	87.619	3.52	0.01	1500.00	1000.00
831	8320.39	1500.00	3.60	1634.82	40.44	-0.00210	-0.14263	0.03916	2.712	88.071	3.48	0.06	1500.00	1000.00
832	8331.16	1500.00	3.46	1689.75	40.44	-0.00312	-0.14272	0.03574	2.695	88.520	3.46	0.02	1500.00	1000.00
833	8340.88	1500.00	3.52	1699.64	40.44	-0.00244	-0.14272	0.03633	2.717	88.973	3.49	0.03	1500.00	1000.00
834	8350.49	1500.00	3.53	1695.45	40.31	-0.00234	-0.14351	0.03242	2.705	89.424	3.51	0.04	1500.00	1000.00

835	8360.05	1500.00	3.45	1705.15	40.31	-0.00273	-0.14414	0.03384	2.698	89.873	3.44	0.03	1500.00	1000.00
836	8370.87	1500.00	3.45	1702.21	40.31	-0.00200	-0.14268	0.03760	2.715	90.326	3.47	0.02	1500.00	1000.00
837	8380.48	1500.00	3.44	1692.38	40.31	-0.00249	-0.14395	0.03564	2.708	90.777	3.45	0.02	1500.00	1000.00
838	8390.04	1500.00	3.49	1690.17	40.31	-0.00273	-0.14355	0.03711	2.703	91.228	3.42	0.03	1500.00	1000.00
839	8400.86	1500.00	3.48	1689.04	40.31	-0.00283	-0.14316	0.03540	2.764	91.688	3.41	0.04	1500.00	1000.00
840	8410.47	1500.00	3.43	1691.82	40.18	-0.00234	-0.14370	0.03726	2.678	92.135	3.40	0.02	1500.00	999.00
841	8420.08	1500.00	3.51	1686.23	40.31	-0.00308	-0.14360	0.03589	2.695	92.584	3.47	0.03	1500.00	1000.00
842	8430.85	1500.00	3.50	1695.30	40.31	-0.00244	-0.14268	0.03599	2.800	93.050	3.39	0.05	1500.00	1000.00
843	8440.46	1500.00	3.39	1685.92	40.18	-0.00220	-0.14360	0.03447	2.673	93.496	3.40	0.01	1500.00	1000.00
844	8450.07	1500.00	3.44	1682.56	40.31	-0.00186	-0.14375	0.03843	2.720	93.949	3.46	0.01	1500.00	1000.00
845	8460.84	1500.00	3.49	1687.95	40.18	-0.00151	-0.14321	0.03291	2.703	94.400	3.47	0.03	1500.00	1000.00
846	8470.45	1500.00	3.39	1690.75	40.18	-0.00210	-0.14297	0.03604	2.671	94.845	3.38	0.01	1500.00	1000.00
847	8480.06	1500.00	3.40	1686.73	40.18	-0.00220	-0.14312	0.03599	2.727	95.299	3.40	0.02	1500.00	1000.00
848	8490.83	1500.00	3.38	1687.30	40.18	-0.00254	-0.14297	0.03643	2.666	95.744	3.42	0.01	1500.00	1000.00
849	8500.44	1500.00	3.38	1684.28	40.18	-0.00225	-0.14307	0.03740	2.688	96.192	3.38	0.00	1500.00	1000.00
850	8510.05	1500.00	3.40	1683.18	40.18	-0.00117	-0.14258	0.03799	2.803	96.659	3.34	0.02	1500.00	999.00
851	8520.87	1500.00	3.38	1691.25	40.18	-0.00161	-0.14243	0.03125	2.673	97.104	3.41	0.00	1500.00	999.00
852	8530.43	1500.00	3.46	1692.21	40.06	-0.00215	-0.14238	0.03389	2.695	97.554	3.44	0.00	1500.00	1000.00
853	8540.04	1500.00	3.55	1687.75	40.06	-0.00137	-0.14336	0.03467	2.773	98.016	3.52	0.02	1500.00	1000.00
854	8550.86	1500.00	3.48	1689.08	40.06	-0.00210	-0.14312	0.03408	2.742	98.473	3.48	0.00	1500.00	1000.00
855	8560.42	1500.00	3.57	1679.69	40.06	-0.00225	-0.14321	0.03364	2.783	98.937	3.60	0.01	1500.00	1000.00
856	8570.03	1500.00	3.60	1679.24	40.18	-0.00142	-0.14282	0.03687	2.825	99.407	3.61	0.00	1500.00	1000.00
857	8580.85	1500.00	3.55	1689.42	40.06	-0.00195	-0.14268	0.03315	2.795	99.873	3.54	0.00	1500.00	1000.00
858	8590.41	1500.00	3.55	1681.84	40.06	-0.00195	-0.14312	0.03672	2.834	100.346	3.58	0.01	1500.00	1000.00
859	8600.02	1500.00	3.54	1674.88	40.06	-0.00132	-0.14292	0.03657	2.830	100.817	3.58	0.00	1500.00	1000.00
860	8610.84	1500.00	3.22	1676.94	40.06	-0.00166	-0.14263	0.03535	2.463	101.228	3.08	0.03	1500.00	1000.00
861	8620.45	1500.00	3.09	1690.81	40.06	-0.00229	-0.14272	0.03433	2.668	101.673	3.15	0.00	1500.00	999.00
862	8630.01	1500.00	3.46	1693.28	40.06	-0.00112	-0.14307	0.03589	2.722	102.126	3.44	0.00	1500.00	1000.00
863	8640.83	1500.00	3.50	1687.39	39.93	-0.00254	-0.14351	0.03389	2.751	102.585	3.50	0.00	1500.00	1000.00
864	8650.44	1500.00	3.49	1667.61	40.06	-0.00146	-0.14204	0.03677	2.764	103.046	3.46	0.00	1500.00	1000.00
865	8660.00	1500.00	3.46	1683.53	40.06	-0.00225	-0.14277	0.03223	2.725	103.500	3.44	0.00	1500.00	1000.00

866	8670.82	1500.00	3.49	1691.70	39.93	-0.00049	-0.14263	0.03706	2.749	103.958	3.47	0.00	1500.00	1000.00
867	8680.43	1500.00	4.78	1667.99	39.93	-0.00176	-0.14316	0.03413	2.717	104.411	4.02	0.35	1500.00	1001.00
868	8690.04	1500.00	3.51	1677.14	39.93	-0.00176	-0.14258	0.03506	2.734	104.866	3.45	0.00	1500.00	1000.00
869	8700.81	1500.00	3.50	1682.93	39.93	-0.00146	-0.14287	0.03232	2.769	105.328	3.54	0.00	1500.00	1000.00
870	8710.42	1500.00	3.45	1674.55	39.93	-0.00156	-0.14268	0.03765	2.756	105.787	3.47	0.00	1500.00	1000.00
871	8720.03	1500.00	3.45	1680.41	39.93	-0.00176	-0.14316	0.03555	2.737	106.243	3.47	0.00	1500.00	1000.00
872	8730.79	1500.00	3.47	1676.89	39.93	-0.00122	-0.14341	0.03662	2.781	106.707	3.50	0.00	1500.00	1000.00
873	8740.41	1500.00	3.44	1665.79	39.93	-0.00137	-0.14238	0.03477	2.717	107.160	3.43	0.00	1500.00	999.00
874	8750.02	1493.00	1.18	1686.65	39.93	-0.00146	-0.14248	0.03716	2.722	107.613	3.56	-1.39	1493.00	993.00
875	8760.78	1500.00	3.72	1673.88	39.80	-0.00146	-0.14214	0.03730	2.759	108.073	3.45	0.14	1500.00	999.00
876	8770.40	1500.00	3.47	1662.86	39.80	-0.00146	-0.14253	0.03779	2.722	108.527	3.45	0.00	1500.00	1000.00
877	8780.01	1500.00	3.55	1683.28	39.80	-0.00156	-0.14258	0.03662	2.747	108.985	3.52	0.00	1500.00	1000.00
878	8790.83	1500.00	3.51	1669.28	39.80	-0.00059	-0.14321	0.03535	2.727	109.439	3.51	0.00	1500.00	1000.00
879	8800.39	1500.00	3.49	1671.00	39.80	-0.00098	-0.14194	0.03696	2.727	109.894	3.48	0.00	1500.00	1000.00
880	8810.00	1500.00	3.48	1654.78	39.68	-0.00122	-0.14243	0.03569	2.778	110.357	3.53	0.00	1500.00	1000.00
881	8820.82	1500.00	3.51	1667.09	39.80	-0.00156	-0.14248	0.03682	2.734	110.812	3.51	0.00	1500.00	1000.00
882	8830.37	1500.00	3.44	1665.58	39.80	-0.00117	-0.14277	0.03950	2.742	111.269	3.47	0.00	1500.00	1000.00
883	8841.20	1500.00	3.51	1665.82	39.80	-0.00088	-0.14268	0.03984	2.788	111.734	3.54	0.00	1500.00	1000.00
884	8850.81	1500.00	3.45	1671.89	39.80	-0.00127	-0.14180	0.03179	2.737	112.190	3.45	0.00	1500.00	1000.00
885	8860.42	1500.00	4.41	1678.43	39.80	-0.00068	-0.14160	0.03828	2.737	112.646	3.92	0.52	1500.00	1001.00
886	8871.18	1500.00	3.48	1660.32	39.80	-0.00088	-0.14224	0.03813	2.778	113.109	3.47	-0.01	1500.00	1000.00
887	8880.80	1500.00	3.47	1655.07	39.80	-0.00049	-0.14312	0.03350	2.720	113.563	3.47	0.00	1500.00	1000.00
888	8890.41	1500.00	3.51	1665.82	39.80	-0.00122	-0.14136	0.03589	2.742	114.020	3.46	0.00	1500.00	1000.00
889	8901.17	1500.00	3.52	1669.70	39.80	-0.00068	-0.14229	0.03491	2.720	114.473	3.50	0.00	1500.00	1000.00
890	8910.79	1500.00	3.44	1654.16	39.68	-0.00098	-0.14263	0.03452	2.729	114.928	3.45	0.00	1500.00	1000.00
891	8920.40	1500.00	3.53	1671.42	39.68	-0.00137	-0.14292	0.03633	2.778	115.391	3.54	0.00	1500.00	1000.00
892	8930.01	1500.00	3.42	1657.12	39.68	-0.00073	-0.14175	0.03730	2.749	115.849	3.46	0.00	1500.00	1000.00
893	8940.77	1500.00	3.48	1661.26	39.68	-0.00137	-0.14209	0.03647	2.729	116.304	3.46	0.00	1500.00	1000.00
894	8950.39	1500.00	3.47	1663.33	39.68	-0.00107	-0.14189	0.03579	2.781	116.767	3.49	0.00	1500.00	1000.00
895	8960.00	1500.00	3.43	1652.48	39.68	-0.00068	-0.14219	0.03560	2.710	117.219	3.44	0.00	1500.00	999.00
896	8970.76	1500.00	3.47	1667.99	39.80	-0.00117	-0.14243	0.03955	2.742	117.676	3.48	0.00	1500.00	1000.00

897	8980.38	1500.00	3.50	1662.96	39.68	-0.00059	-0.14189	0.03926	2.744	118.133	3.47	0.00	1500.00	1000.00
898	8991.20	1500.00	3.46	1658.17	39.68	-0.00103	-0.14263	0.03755	2.715	118.586	3.45	0.00	1500.00	1000.00
899	9000.75	1500.00	3.51	1664.83	39.55	-0.00088	-0.14214	0.03623	2.727	119.040	3.46	0.00	1500.00	1000.00
900	9010.37	1500.00	3.48	1661.41	39.68	-0.00801	-0.00947	0.03843	2.715	119.493	3.50	0.00	1500.00	1000.00
901	9021.19	1500.00	3.46	1651.80	39.68	-0.00937	-0.00918	0.03311	2.727	119.947	3.46	0.00	1500.00	1000.00
902	9030.74	1500.00	3.52	1658.54	39.55	-0.00898	-0.00937	0.03569	2.749	120.406	3.49	0.00	1500.00	1000.00
903	9040.35	1500.00	3.46	1661.93	39.68	-0.00903	-0.00967	0.04253	2.744	120.863	3.49	0.00	1500.00	1000.00
904	9051.18	1500.00	3.47	1669.46	39.68	-0.01001	-0.01084	0.03174	2.732	121.318	3.44	0.00	1500.00	1000.00
905	9060.79	1500.00	3.49	1655.57	39.68	-0.00928	-0.01001	0.03779	2.793	121.784	3.52	0.00	1500.00	1000.00
906	9070.34	1500.00	3.43	1653.64	39.68	-0.00962	-0.00947	0.03174	2.720	122.237	3.43	0.00	1500.00	999.00
907	9081.16	1500.00	3.45	1665.21	39.55	-0.00918	-0.00918	0.03931	2.742	122.694	3.47	0.00	1500.00	1000.00
908	9090.78	1500.00	3.50	1656.15	39.68	-0.00923	-0.00864	0.03799	2.764	123.155	3.48	0.00	1500.00	1000.00
909	9100.33	1500.00	3.44	1658.43	39.55	-0.00854	-0.00986	0.03594	2.722	123.608	3.44	0.00	1500.00	1000.00
910	9111.15	1500.00	3.46	1660.90	39.55	-0.00879	-0.00962	0.03760	2.732	124.064	3.44	0.00	1500.00	1000.00
911	9120.77	1500.00	3.48	1661.64	39.55	-0.00854	-0.01050	0.03760	2.722	124.517	3.50	0.00	1500.00	1000.00
912	9130.38	1500.00	3.44	1654.97	39.68	-0.00815	-0.01040	0.03809	2.725	124.971	3.42	0.00	1500.00	1000.00
913	9141.14	1500.00	3.52	1661.61	39.55	-0.00874	-0.01025	0.04189	2.749	125.430	3.47	0.00	1500.00	1000.00
914	9150.76	1500.00	3.46	1667.20	39.55	-0.00889	-0.00991	0.03677	2.720	125.883	3.47	0.00	1500.00	1000.00
915	9160.37	1500.00	3.49	1658.32	39.55	-0.00791	-0.00991	0.04126	2.732	126.338	3.47	0.00	1500.00	1000.00
916	9171.13	1500.00	3.47	1651.47	39.55	-0.00894	-0.00933	0.03945	2.761	126.798	3.50	0.00	1500.00	1000.00
917	9180.74	1500.00	3.45	1666.61	39.68	-0.00796	-0.00928	0.03716	2.732	127.254	3.46	0.00	1500.00	1000.00
918	9190.36	1500.00	3.46	1655.46	39.55	-0.00825	-0.00933	0.03696	2.732	127.709	3.46	0.00	1500.00	1000.00
919	9201.12	1500.00	3.48	1662.47	39.55	-0.00894	-0.00977	0.04097	2.764	128.170	3.48	0.00	1500.00	1000.00
920	9210.73	1500.00	3.42	1653.06	39.55	-0.00850	-0.00942	0.03809	2.717	128.623	3.45	0.00	1500.00	1000.00
921	9220.35	1500.00	3.48	1653.49	39.55	-0.00825	-0.00957	0.04082	2.732	129.078	3.46	0.00	1500.00	1000.00
922	9231.11	1500.00	3.49	1659.80	39.55	-0.00835	-0.01021	0.04175	2.712	129.530	3.49	0.00	1500.00	1000.00
923	9240.72	1500.00	3.46	1661.60	39.55	-0.00781	-0.00913	0.03740	2.720	129.983	3.45	0.00	1500.00	1000.00
924	9250.34	1500.00	3.49	1654.48	39.55	-0.00830	-0.00986	0.03979	2.766	130.444	3.47	0.00	1500.00	1000.00
925	9261.16	1500.00	3.48	1654.88	39.55	-0.00859	-0.00937	0.03950	2.710	130.896	3.49	0.00	1500.00	1000.00
926	9270.71	1500.00	3.42	1660.32	39.55	-0.00864	-0.00972	0.04126	2.720	131.349	3.45	0.00	1500.00	1000.00
927	9280.32	1500.00	3.47	1654.17	39.55	-0.00835	-0.00996	0.03779	2.771	131.811	3.47	0.00	1500.00	1000.00

928	9291.14	1500.00	3.42	1661.08	39.43	-0.00854	-0.00972	0.04014	2.739	132.268	3.48	0.00	1500.00	1000.00
929	9300.70	1500.00	3.46	1655.48	39.55	-0.00850	-0.00952	0.03535	2.722	132.721	3.47	0.00	1500.00	1000.00
930	9310.31	1500.00	3.46	1663.24	39.55	-0.00845	-0.00942	0.03540	2.756	133.181	3.44	0.00	1500.00	1000.00
931	9321.13	1500.00	3.43	1657.62	39.55	-0.00811	-0.00913	0.03657	2.703	133.631	3.42	0.00	1500.00	999.00
932	9330.75	1500.00	3.50	1654.49	39.43	-0.00913	-0.00957	0.03853	2.729	134.086	3.43	0.00	1500.00	1000.00
933	9340.30	1500.00	3.47	1658.01	39.55	-0.00820	-0.01025	0.03618	2.698	134.536	3.48	0.00	1500.00	1000.00
934	9351.12	1500.00	3.43	1651.65	39.55	-0.00869	-0.01045	0.03135	0.032	134.541	3.42	0.00	1500.00	1000.00
935	9360.74	1500.00	3.51	1649.20	39.55	-0.00845	-0.00874	0.03994	2.534	134.963	3.50	0.00	1500.00	1000.00
936	9370.29	1500.00	3.45	1654.56	39.55	-0.00801	-0.00918	0.04009	2.634	135.402	3.45	0.00	1500.00	999.00
937	9381.11	1500.00	3.45	1656.98	39.55	-0.00791	-0.00962	0.03848	2.600	135.836	3.43	0.00	1500.00	1000.00
938	9390.72	1500.00	3.45	1730.34	39.55	-0.00850	-0.00859	0.03813	2.664	136.280	3.46	0.00	1500.00	1000.00
939	9400.34	1500.00	3.43	1637.75	39.43	-0.00762	-0.00874	0.03755	2.593	136.712	3.42	0.00	1500.00	999.00
940	9411.10	1500.00	3.43	1642.48	39.43	-0.00815	-0.00977	0.03809	0.039	136.718	3.46	0.00	1500.00	1000.00
941	9420.71	1500.00	3.48	1622.57	39.55	-0.00840	-0.00923	0.03647	2.676	137.164	3.47	0.00	1500.00	1000.00
942	9430.33	1500.00	3.44	1612.95	39.55	-0.00825	-0.00903	0.03638	2.625	137.602	3.44	0.00	1500.00	1000.00
943	9441.09	1500.00	3.48	1658.12	39.55	-0.00771	-0.00815	0.03530	2.634	138.041	3.44	0.00	1500.00	1000.00
944	9450.81	1500.00	3.47	1652.68	39.55	-0.00835	-0.00913	0.03667	2.629	138.479	3.46	0.00	1500.00	1000.00
945	9460.43	1500.00	3.47	1688.72	39.55	-0.00796	-0.00903	0.03965	2.637	138.918	3.44	0.00	1500.00	1000.00
946	9471.19	1500.00	3.50	1666.63	39.55	-0.00776	-0.00947	0.03955	2.649	139.360	3.44	0.00	1500.00	1000.00
947	9480.80	1500.00	3.47	1641.85	39.55	-0.00840	-0.00825	0.03838	2.632	139.799	3.49	0.00	1500.00	1000.00
948	9490.41	1500.00	3.46	1696.94	39.55	-0.00767	-0.00952	0.03550	2.642	140.239	3.44	0.00	1500.00	1000.00
949	9501.18	1500.00	-2.14	1649.83	39.43	-0.00776	-0.00933	0.03745	2.419	140.642	0.93	-1.26	1494.00	1000.00
950	9510.79	1500.00	2.60	1634.81	39.43	-0.00103	-0.00503	0.04355	2.549	141.067	2.21	0.35	1500.00	1000.00
951	9520.40	1500.00	2.25	1650.14	39.30	0.00225	0.26230	-0.14312	2.493	141.482	2.27	0.00	1500.00	1000.00
952	9530.02	1500.00	2.40	1642.70	39.43	0.00273	0.28682	-0.16084	2.476	141.895	2.38	0.03	1500.00	1000.00
953	9540.78	1500.00	2.50	1654.67	39.30	0.00234	0.29204	-0.16875	2.432	142.300	2.48	0.03	1500.00	1000.00
954	9550.39	1500.00	2.56	1654.42	39.30	0.00176	0.29312	-0.16924	2.444	142.707	2.53	0.02	1500.00	1000.00
955	9560.00	1494.00	0.74	1643.08	39.43	0.00332	0.29419	-0.17075	2.415	143.110	2.73	-0.56	1500.00	995.00
956	9570.77	1500.00	2.84	1641.46	39.43	0.00205	0.29463	-0.16606	2.410	143.511	2.69	0.11	1500.00	1000.00
957	9580.38	1500.00	2.70	1666.26	39.43	0.00254	0.29316	-0.16914	2.456	143.921	2.66	0.03	1500.00	1000.00
958	9591.20	1500.00	2.75	1615.11	39.30	0.00303	0.29263	-0.16377	2.397	144.320	2.72	0.03	1500.00	1000.00

959	9600.76	1500.00	2.74	1623.47	39.43	0.00200	0.29199	-0.16445	2.388	144.718	2.72	0.02	1500.00	1000.00
960	9610.37	1500.00	2.76	1626.38	39.43	0.00234	0.29063	-0.15698	2.439	145.125	2.76	0.02	1500.00	1000.00
961	9621.19	1500.00	2.79	1623.44	39.55	0.00249	0.29033	-0.16499	2.385	145.522	2.78	0.02	1500.00	1000.00
962	9630.75	1500.00	2.81	1633.49	39.55	0.00225	0.28770	-0.16230	2.375	145.918	2.78	0.02	1500.00	1000.00
963	9640.36	1500.00	2.84	1625.27	39.43	0.00259	0.28774	-0.16270	2.371	146.313	2.82	0.02	1500.00	1000.00
964	9651.18	1500.00	2.83	1620.65	39.43	0.00298	0.28716	-0.16274	2.341	146.704	2.81	0.01	1500.00	1000.00
965	9660.79	1500.00	2.86	1607.63	39.43	0.00293	0.28652	-0.16152	2.349	147.095	2.85	0.02	1500.00	1000.00
966	9670.35	1500.00	2.84	1614.64	39.43	0.00210	0.28574	-0.16484	2.332	147.484	2.84	0.01	1500.00	1000.00
967	9681.17	1500.00	2.85	1624.66	39.43	0.00317	0.28594	-0.15547	2.344	147.874	2.84	0.02	1500.00	1000.00
968	9690.78	1500.00	2.86	1614.61	39.55	0.00283	0.28389	-0.15498	2.378	148.271	2.86	0.02	1500.00	1000.00
969	9700.34	1500.00	2.85	1618.66	39.43	0.00210	0.28325	-0.15757	2.336	148.660	2.86	0.01	1500.00	1000.00
970	9711.16	1500.00	2.87	1618.61	39.55	0.00166	0.28262	-0.15869	2.319	149.047	2.84	0.01	1500.00	1000.00
971	9720.77	1500.00	2.87	1613.89	39.55	0.00249	0.28169	-0.15552	2.363	149.440	2.87	0.01	1500.00	1000.00
972	9730.38	1500.00	2.90	1613.35	39.55	0.00259	0.28081	-0.15713	2.319	149.827	2.89	0.01	1500.00	1000.00
973	9741.15	1500.00	2.88	1632.82	39.55	0.00146	0.27925	-0.15493	2.317	150.213	2.87	0.01	1500.00	1000.00
974	9750.76	1500.00	2.89	1614.50	39.43	0.00200	0.27856	-0.15952	2.327	150.601	2.88	0.01	1500.00	1000.00
975	9760.43	1500.00	2.89	1616.18	39.55	0.00264	0.27778	-0.15308	2.290	150.983	2.88	0.01	1500.00	1000.00
976	9770.04	1500.00	2.88	1609.76	39.55	0.00200	0.27686	-0.15225	2.314	151.368	2.90	0.01	1500.00	1000.00
977	9780.86	1500.00	2.90	1616.06	39.55	0.00303	0.27612	-0.16006	2.292	151.750	2.91	0.01	1500.00	1000.00
978	9790.47	1500.00	2.90	1606.00	39.43	0.00181	0.27549	-0.15439	2.285	152.131	2.90	0.01	1500.00	1000.00
979	9800.03	1500.00	2.90	1619.24	39.43	0.00303	0.27451	-0.15508	2.324	152.519	2.89	0.01	1500.00	1000.00
980	9810.85	1500.00	2.91	1616.70	39.43	0.00215	0.27344	-0.14995	2.261	152.895	2.91	0.01	1500.00	1000.00
981	9820.46	1500.00	2.90	1611.23	39.55	0.00122	0.27339	-0.15425	2.275	153.275	2.88	0.01	1500.00	1000.00
982	9830.02	1500.00	2.91	1615.36	39.55	0.00210	0.27227	-0.15273	2.302	153.658	2.88	0.01	1500.00	1000.00
983	9840.84	1500.00	2.90	1607.58	39.55	0.00244	0.27148	-0.15278	2.292	154.040	2.90	0.00	1500.00	1000.00
984	9850.45	1500.00	2.90	1625.38	39.55	0.00215	0.27007	-0.14854	2.268	154.418	2.88	0.01	1500.00	1000.00
985	9860.06	1500.00	2.91	1614.96	39.55	0.00181	0.26938	-0.15278	2.266	154.796	2.90	0.01	1500.00	1000.00
986	9870.83	1500.00	2.90	1608.86	39.55	0.00200	0.26807	-0.15684	2.244	155.170	2.88	0.00	1500.00	1000.00
987	9880.44	1500.00	2.90	1610.71	39.55	0.00190	0.26719	-0.14849	2.278	155.550	2.88	0.00	1500.00	1000.00
988	9890.05	1500.00	2.91	1611.91	39.55	0.00327	0.26724	-0.15083	2.241	155.923	2.90	0.01	1500.00	1000.00
989	9900.82	1500.00	2.89	1614.21	39.55	0.00200	0.26592	-0.15044	2.227	156.294	2.88	0.01	1500.00	1000.00

990	9910.43	1500.00	2.89	1615.99	39.55	0.00269	0.26587	-0.15093	2.258	156.671	2.90	0.00	1500.00	1000.00
991	9920.04	1500.00	2.89	1620.74	39.55	0.00200	0.26514	-0.15229	0.034	156.676	2.89	0.01	1500.00	1000.00
992	9930.81	1500.00	2.88	1621.61	39.55	0.00220	0.26362	-0.15308	2.019	157.013	2.89	0.00	1500.00	1000.00
993	9940.42	1500.00	2.86	1614.27	39.55	0.00220	0.26465	-0.14727	2.163	157.373	2.87	0.01	1500.00	1000.00
994	9950.03	1500.00	2.88	1614.88	39.55	0.00117	0.26318	-0.15264	2.097	157.723	2.89	0.01	1500.00	1000.00
995	9960.85	1500.00	2.86	1613.43	39.55	0.00215	0.26206	-0.14927	2.114	158.075	2.86	0.00	1500.00	1000.00
996	9970.41	1500.00	2.86	1621.27	39.55	0.00181	0.26094	-0.15244	2.107	158.426	2.88	0.01	1500.00	1000.00
997	9980.02	1500.00	2.86	1616.04	39.55	0.00181	0.26035	-0.15132	2.080	158.773	2.86	0.01	1500.00	1000.00
998	9990.84	1500.00	2.85	1624.51	39.55	0.00225	0.25903	-0.15278	2.097	159.123	2.85	0.01	1500.00	1000.00
999	10000.40	1500.00	2.86	1615.21	39.55	0.00161	0.25923	-0.15068	2.058	159.466	2.86	0.00	1500.00	1000.00
1000	10010.01	1500.00	2.84	1610.76	39.55	0.00259	0.25879	-0.14687	2.063	159.809	2.85	0.00	1500.00	1000.00
1001	10020.83	1500.00	2.84	1616.67	39.55	0.00181	0.25742	-0.14609	2.092	160.158	2.85	0.00	1500.00	1000.00
1002	10030.39	1500.00	2.83	1621.04	39.55	0.00210	0.25781	-0.14819	2.053	160.500	2.84	0.00	1500.00	1000.00
1003	10040.00	1500.00	2.83	1625.89	39.55	0.00181	0.25620	-0.15020	2.048	160.842	2.83	0.00	1500.00	1000.00
1004	10050.82	1500.00	2.83	1623.84	39.55	0.00127	0.25571	-0.14863	2.061	161.185	2.82	0.01	1500.00	1000.00
1005	10060.43	1500.00	2.84	1617.79	39.55	0.00186	0.25479	-0.15083	2.034	161.524	2.82	0.01	1500.00	1000.00
1006	10071.20	1500.00	2.81	1617.61	39.55	0.00234	0.25396	-0.15479	2.021	161.861	2.80	0.01	1500.00	1000.00
1007	10080.81	1500.00	2.81	1627.97	39.55	0.00181	0.25391	-0.14326	2.007	162.196	2.80	0.00	1500.00	1000.00
1008	10090.42	1500.00	2.79	1622.63	39.55	0.00103	0.25332	-0.15161	1.990	162.527	2.79	0.00	1500.00	1000.00
1009	10100.03	1500.00	2.81	1634.97	39.55	0.00127	0.25205	-0.14907	2.002	162.861	2.78	0.01	1500.00	1000.00
1010	10110.91	1500.00	2.79	1616.86	39.55	0.00093	0.25176	-0.15049	1.973	163.190	2.78	0.00	1500.00	1000.00
1011	10120.52	1500.00	2.76	1618.47	39.55	0.00142	0.25078	-0.14590	1.970	163.518	2.75	0.01	1500.00	1000.00
1012	10130.08	1500.00	2.76	1618.74	39.55	0.00190	0.25063	-0.14624	1.997	163.851	2.76	0.01	1500.00	1000.00
1013	10140.90	1500.00	2.74	1622.34	39.55	0.00063	0.24976	-0.14844	1.951	164.176	2.73	0.01	1500.00	1000.00
1014	10150.51	1500.00	2.74	1619.94	39.55	0.00190	0.24917	-0.14673	1.953	164.501	2.73	0.01	1500.00	1000.00
1015	10160.12	1500.00	2.73	1614.11	39.55	0.00176	0.24854	-0.14731	1.965	164.829	2.72	0.00	1500.00	1000.00
1016	10170.89	1500.00	2.73	1615.29	39.55	0.00073	0.24766	-0.15127	1.956	165.155	2.73	0.01	1500.00	1000.00
1017	10180.50	1500.00	2.71	1619.92	39.55	0.00137	0.24717	-0.15034	1.929	165.476	2.70	0.00	1500.00	1000.00
1018	10190.11	1500.00	2.70	1624.59	39.55	0.00195	0.24795	-0.15029	1.924	165.797	2.71	0.00	1500.00	1000.00
1019	10200.88	1500.00	2.70	1633.78	39.55	0.00166	0.24702	-0.14917	1.895	166.113	2.68	0.01	1500.00	1000.00
1020	10210.49	1500.00	2.69	1610.03	39.68	0.00146	0.24590	-0.14536	1.909	166.431	2.68	0.01	1500.00	1000.00

1021	10220.10	1500.00	2.66	1619.30	39.68	0.00161	0.24473	-0.14946	1.868	166.742	2.65	0.00	1500.00	1000.00
1022	10230.86	1500.00	2.67	1621.86	39.55	0.00039	0.24487	-0.14722	1.873	167.054	2.68	0.01	1500.00	1000.00
1023	10240.48	1500.00	2.65	1611.72	39.55	0.00146	0.24463	-0.14521	1.897	167.370	2.64	0.00	1500.00	1000.00
1024	10250.09	1500.00	2.64	1640.31	39.55	0.00142	0.24331	-0.14941	1.855	167.680	2.64	0.00	1500.00	1000.00
1025	10260.85	1500.00	2.65	1631.82	39.55	0.00103	0.24258	-0.14966	1.843	167.987	2.64	0.00	1500.00	1000.00
1026	10270.47	1500.00	2.60	1635.68	39.68	0.00088	0.24272	-0.14380	1.863	168.297	2.60	0.00	1500.00	1000.00
1027	10280.08	1500.00	2.61	1623.09	39.68	0.00098	0.24219	-0.15078	1.829	168.602	2.60	0.00	1500.00	1000.00
1028	10290.90	1500.00	2.59	1630.78	39.68	0.00044	0.24194	-0.14756	1.819	168.905	2.59	0.00	1500.00	1000.00
1029	10300.46	1500.00	2.59	1626.11	39.68	0.00107	0.24150	-0.14751	1.851	169.214	2.58	0.00	1500.00	1000.00
1030	10310.07	1500.00	2.56	1640.83	39.55	0.00181	0.24048	-0.14834	1.814	169.516	2.55	0.00	1500.00	1000.00
1031	10320.89	1500.00	2.56	1618.75	39.68	0.00034	0.24048	-0.14707	1.804	169.817	2.57	0.00	1500.00	1000.00
1032	10330.44	1500.00	2.55	1633.12	39.55	0.00137	0.24028	-0.14697	1.782	170.114	2.56	0.00	1500.00	1000.00
1033	10340.06	1500.00	2.54	1617.52	39.68	0.00137	0.23867	-0.14590	1.816	170.417	2.55	0.00	1500.00	1000.00
1034	10350.88	1500.00	0.74	1633.71	39.55	0.00142	0.23877	-0.14897	1.750	170.708	2.81	-0.65	1500.00	996.00
1035	10360.49	1500.00	2.77	1631.70	39.68	0.00063	0.23794	-0.14653	1.719	170.995	2.58	0.16	1500.00	1000.00
1036	10370.05	1500.00	2.53	1640.92	39.68	0.00132	0.23667	-0.15249	1.758	171.288	2.53	0.00	1500.00	1000.00
1037	10380.87	1500.00	2.50	1626.86	39.55	0.00039	0.23755	-0.14795	1.790	171.586	2.50	0.00	1500.00	1000.00
1038	10390.48	1500.00	2.51	1636.12	39.55	0.00034	0.23579	-0.14912	2.236	171.959	2.51	0.00	1500.00	1000.00
1039	10400.04	1500.00	2.58	1625.42	39.55	0.00137	0.23521	-0.14346	2.371	172.354	2.58	0.00	1500.00	1000.00
1040	10410.86	1500.00	2.66	1632.90	39.43	0.00093	0.23447	-0.13833	2.437	172.760	2.67	0.00	1500.00	1000.00
1041	10420.47	1500.00	2.73	1629.01	39.55	0.00186	0.23379	-0.13696	2.361	173.153	2.72	0.00	1500.00	1000.00
1042	10430.08	1500.00	2.76	1623.53	39.55	0.00176	0.23306	-0.13433	2.378	173.550	2.76	0.01	1500.00	1000.00
1043	10440.85	1500.00	2.82	1615.57	39.55	0.00088	0.23145	-0.13291	2.417	173.953	2.83	0.00	1500.00	1000.00
1044	10450.46	1500.00	2.84	1618.12	39.55	0.00190	0.23218	-0.13838	2.354	174.345	2.84	0.00	1500.00	1000.00
1045	10460.07	1500.00	2.86	1619.96	39.55	0.00122	0.23057	-0.13257	2.368	174.739	2.85	0.00	1500.00	1000.00
1046	10470.83	1500.00	2.90	1613.76	39.43	0.00146	0.22974	-0.13291	2.329	175.128	2.89	0.00	1500.00	1000.00
1047	10480.45	1500.00	2.91	1615.95	39.55	0.00181	0.22920	-0.13447	2.341	175.518	2.91	0.00	1500.00	1000.00
1048	10490.06	1500.00	2.90	1611.16	39.55	0.00137	0.22847	-0.12437	2.361	175.911	2.92	0.00	1500.00	1000.00
1049	10500.82	1500.00	2.94	1610.97	39.43	0.00176	0.22837	-0.12886	2.341	176.302	2.94	0.00	1500.00	1000.00
1050	10510.44	1500.00	2.94	1614.41	39.55	0.00146	0.22910	-0.12817	2.327	176.689	2.94	0.00	1500.00	1000.00
1051	10520.05	1500.00	2.95	1610.52	39.43	0.00171	0.22769	-0.12583	2.327	177.077	2.96	0.00	1500.00	1000.00

1052	10530.87	1500.00	2.94	1610.18	39.55	0.00171	0.22764	-0.12969	2.300	177.460	2.95	0.00	1500.00	1000.00
1053	10540.43	1500.00	2.96	1612.15	39.55	0.00176	0.22612	-0.13267	2.310	177.845	2.96	0.00	1500.00	1000.00
1054	10550.04	1500.00	2.97	1610.95	39.55	0.00107	0.22495	-0.13027	2.283	178.226	2.96	0.00	1500.00	1000.00
1055	10560.86	1500.00	2.97	1609.35	39.55	0.00112	0.22500	-0.12524	2.280	178.606	2.96	0.00	1500.00	1000.00
1056	10570.41	1500.00	2.98	1616.08	39.55	0.00200	0.22476	-0.12759	2.297	178.989	2.99	0.00	1500.00	1000.00
1057	10580.03	1500.00	2.96	1612.79	39.55	0.00142	0.22441	-0.12393	2.263	179.366	2.97	0.00	1500.00	1000.00
1058	10590.85	1500.00	2.97	1610.05	39.55	0.00112	0.22305	-0.12866	2.256	179.742	2.98	0.00	1500.00	1000.00
1059	10600.40	1500.00	2.97	1610.83	39.43	0.00176	0.22349	-0.12515	2.266	180.120	2.97	0.00	1500.00	1000.00
1060	10610.02	1500.00	2.97	1608.68	39.55	0.00166	0.22183	-0.12817	2.234	180.492	2.98	0.00	1500.00	1000.00
1061	10620.84	1500.00	2.96	1607.79	39.55	0.00059	0.22271	-0.12583	2.222	180.862	2.95	0.00	1500.00	1000.00
1062	10630.45	1500.00	2.99	1615.72	39.55	0.00112	0.22100	-0.12627	2.209	181.230	2.99	0.00	1500.00	1000.00
1063	10640.00	1500.00	2.96	1611.71	39.55	0.00171	0.22095	-0.12622	2.183	181.594	2.95	0.00	1500.00	1000.00
1064	10650.83	1500.00	2.95	1616.64	39.55	0.00049	0.22036	-0.12837	2.188	181.959	2.94	0.00	1500.00	1000.00
1065	10660.44	1500.00	2.95	1615.60	39.55	0.00078	0.21973	-0.12783	2.151	182.317	2.95	0.00	1500.00	1000.00
1066	10671.20	1500.00	2.94	1612.53	39.55	0.00117	0.21919	-0.12495	2.146	182.675	2.95	0.00	1500.00	1000.00
1067	10680.81	1500.00	2.95	1609.15	39.55	0.00078	0.21865	-0.12417	2.166	183.036	2.95	0.00	1500.00	1000.00
1068	10690.43	1500.00	2.92	1614.51	39.55	0.00107	0.21846	-0.12642	2.117	183.389	2.92	0.00	1500.00	1000.00
1069	10700.04	1500.00	2.94	1611.98	39.55	0.00181	0.21768	-0.12485	2.126	183.743	2.94	0.00	1500.00	1000.00
1070	10710.80	1500.00	2.91	1615.35	39.55	0.00107	0.21797	-0.12930	2.136	184.099	2.91	0.00	1500.00	1000.00
1071	10720.42	1500.00	2.92	1616.47	39.55	0.00093	0.21807	-0.12783	2.102	184.449	2.92	0.00	1500.00	1000.00
1072	10730.03	1500.00	2.91	1614.97	39.55	0.00107	0.21665	-0.12197	2.097	184.799	2.91	0.00	1500.00	1000.00
1073	10740.79	1500.00	2.88	1615.70	39.55	0.00142	0.21572	-0.12373	2.092	185.148	2.89	0.00	1500.00	1000.00
1074	10750.41	1500.00	2.87	1616.48	39.55	0.00083	0.21563	-0.12515	2.065	185.492	2.87	0.00	1500.00	1000.00
1075	10760.02	1500.00	2.86	1619.00	39.55	0.00151	0.21563	-0.12568	2.026	185.830	2.84	0.00	1500.00	1000.00
1076	10770.78	1500.00	2.83	1616.50	39.55	-0.00005	0.21484	-0.12168	1.453	186.072	2.84	-0.03	1500.00	1000.00
1077	10780.39	1500.00	2.82	1622.81	39.55	0.00142	0.21445	-0.12729	2.034	186.411	2.83	-0.01	1500.00	1000.00
1078	10790.01	1500.00	2.81	1614.35	39.55	0.00127	0.21465	-0.12773	2.014	186.746	2.81	-0.01	1500.00	1000.00
1079	10800.77	1500.00	2.80	1615.28	39.55	0.00112	0.21289	-0.12900	1.943	187.070	2.80	0.00	1500.00	1000.00
1080	10810.38	1500.00	2.76	1623.38	39.55	0.00098	0.21313	-0.12959	1.951	187.395	2.78	-0.02	1500.00	1000.00
1081	10820.00	1500.00	2.73	1623.52	39.55	0.00078	0.21274	-0.12466	1.941	187.719	2.75	-0.01	1500.00	1000.00
1082	10830.82	1500.00	2.75	1631.79	39.55	0.00024	0.21348	-0.13271	1.912	188.037	2.75	-0.01	1500.00	1000.00

1083	10840.37	1500.00	2.73	1629.39	39.55	0.00039	0.21182	-0.12749	1.882	188.351	2.74	-0.01	1500.00	1000.00
1084	10851.19	1500.00	2.72	1644.96	39.55	0.00005	0.21157	-0.13140	1.873	188.663	2.72	0.00	1500.00	1000.00
1085	10860.81	1500.00	2.67	1637.16	39.55	0.00059	0.21167	-0.13306	1.843	188.970	2.69	-0.01	1500.00	1000.00
1086	10870.36	1500.00	2.67	1703.84	39.55	0.00088	0.21084	-0.13369	1.851	189.279	2.68	-0.01	1500.00	1000.00
1087	10881.18	1500.00	2.67	1642.99	39.55	-0.00010	0.21089	-0.13286	1.802	189.579	2.66	-0.02	1500.00	1000.00
1088	10890.79	1500.00	2.64	1604.67	39.68	-0.00029	0.21011	-0.12886	1.799	189.879	2.64	-0.01	1500.00	1000.00
1089	10900.41	1500.00	2.61	1662.52	39.55	0.00029	0.21040	-0.12764	1.819	190.182	2.61	0.00	1500.00	1000.00
1090	10911.17	1500.00	2.58	1630.96	39.68	-0.00005	0.20947	-0.13496	1.750	190.474	2.58	-0.01	1500.00	1000.00
1091	10920.78	1500.00	2.59	1633.29	39.55	0.00024	0.20918	-0.13081	1.750	190.766	2.58	-0.02	1500.00	1000.00
1092	10930.40	1500.00	2.57	1626.21	39.55	0.00171	0.21040	-0.13428	1.750	191.057	2.56	0.00	1500.00	1000.00
1093	10941.16	1500.00	2.54	1653.81	39.68	-0.00020	0.20889	-0.13647	1.721	191.344	2.55	-0.01	1500.00	1000.00
1094	10950.77	1500.00	2.49	1613.20	39.55	-0.00083	0.20830	-0.13018	1.699	191.627	2.52	-0.02	1500.00	1000.00
1095	10960.39	1500.00	2.50	1587.21	39.55	-0.00034	0.20864	-0.13511	1.677	191.907	2.52	-0.02	1500.00	1000.00
1096	10970.00	1500.00	2.45	1633.73	39.68	0.00020	0.20820	-0.13213	1.660	192.184	2.46	-0.01	1500.00	1000.00
1097	10980.76	1500.00	2.45	1635.22	39.55	-0.00005	0.20786	-0.13296	1.670	192.462	2.45	-0.01	1500.00	1000.00
1098	10990.37	1500.00	2.42	1607.79	39.55	0.00054	0.20732	-0.12847	1.616	192.731	2.43	-0.01	1500.00	1000.00
1099	11001.19	1500.00	2.42	1628.89	39.55	0.00015	0.20698	-0.13521	2.051	193.073	2.45	-0.01	1500.00	1000.00
1100	11010.75	1500.00	2.48	1647.70	39.55	-0.00020	0.20601	-0.13315	2.112	193.425	2.50	-0.02	1500.00	1000.00
1101	11020.36	1500.00	2.54	1629.87	39.43	-0.00044	0.20576	-0.13066	2.104	193.776	2.56	-0.02	1500.00	1000.00
1102	11031.18	1500.00	2.56	1622.52	39.43	0.00054	0.20518	-0.12314	2.107	194.127	2.57	-0.01	1500.00	1000.00
1103	11040.74	1500.00	2.61	1634.29	39.43	0.00093	0.20518	-0.12080	2.117	194.480	2.62	-0.01	1500.00	1000.00
1104	11050.35	1500.00	2.61	1628.61	39.43	0.00029	0.20400	-0.12227	2.090	194.828	2.61	0.00	1500.00	1000.00
1105	11061.17	1500.00	2.63	1630.88	39.55	0.00010	0.20425	-0.12329	2.056	195.171	2.64	0.00	1500.00	1000.00
1106	11070.73	1500.00	2.62	1620.48	39.43	0.00078	0.20342	-0.12266	2.085	195.518	2.63	-0.01	1500.00	1000.00
1107	11080.34	1500.00	2.64	1616.79	39.55	0.00112	0.20391	-0.11792	2.014	195.854	2.65	0.00	1500.00	1000.00
1108	11091.16	1500.00	2.62	1623.16	39.43	0.00142	0.20205	-0.11997	1.997	196.187	2.63	0.00	1500.00	1000.00
1109	11100.77	1500.00	2.64	1619.75	39.55	0.00132	0.20278	-0.11973	2.017	196.523	2.65	0.00	1500.00	1000.00
1110	11110.33	1500.00	2.61	1624.75	39.55	0.00073	0.20156	-0.12178	1.973	196.852	2.61	0.00	1500.00	1000.00
1111	11121.15	1500.00	2.64	1617.49	39.43	0.00059	0.20244	-0.12241	1.963	197.179	2.63	0.00	1500.00	1000.00
1112	11130.76	1500.00	2.62	1636.95	39.55	0.00083	0.20186	-0.12168	1.926	197.500	2.63	0.00	1500.00	1000.00
1113	11140.32	1500.00	2.61	1635.40	39.55	0.00054	0.20239	-0.12915	1.921	197.820	2.61	0.00	1500.00	1000.00

1114	11151.14	1500.00	2.60	1622.76	39.55	0.00063	0.20161	-0.12178	1.926	198.141	2.59	0.00	1500.00	1000.00
1115	11160.75	1500.00	2.58	1624.69	39.55	0.00054	0.20181	-0.12402	1.882	198.455	2.58	0.00	1500.00	1000.00
1116	11170.37	1500.00	2.57	1634.03	39.55	0.00127	0.20122	-0.12173	1.851	198.763	2.58	0.00	1500.00	1000.00
1117	11181.13	1500.00	2.53	1627.75	39.55	-0.00005	0.20083	-0.12695	0.022	198.767	2.52	0.00	1500.00	1000.00
1118	11190.74	1500.00	2.52	1643.40	39.55	0.00093	0.20083	-0.12187	1.707	199.051	2.52	0.00	1500.00	1000.00
1119	11200.35	1500.00	2.51	1635.16	39.55	0.00088	0.20078	-0.12930	1.775	199.347	2.50	0.00	1500.00	1000.00
1120	11211.12	1500.00	2.50	1606.28	39.55	0.00020	0.20093	-0.12183	1.794	199.646	2.48	0.00	1500.00	1000.00
1121	11220.73	1500.00	2.44	1621.68	39.55	-0.00024	0.19985	-0.12070	1.746	199.937	2.44	0.00	1500.00	1000.00
1122	11230.34	1500.00	2.47	1627.05	39.55	0.00039	0.19956	-0.12524	1.750	200.229	2.46	0.00	1500.00	1000.00
1123	11241.11	1500.00	2.40	1599.16	39.55	0.00010	0.19966	-0.12070	1.692	200.511	2.40	0.00	1500.00	1000.00
1124	11250.72	1500.00	2.45	1627.63	39.55	0.00005	0.19893	-0.12295	2.246	200.885	2.46	0.00	1500.00	1000.00
1125	11260.33	1500.00	2.52	1643.03	39.55	0.00049	0.19912	-0.12261	2.354	201.278	2.53	0.00	1500.00	1000.00
1126	11271.15	1500.00	2.59	1625.51	39.55	0.00063	0.19761	-0.11987	2.317	201.664	2.59	0.02	1500.00	1000.00
1127	11280.71	1500.00	2.65	1633.00	39.55	0.00122	0.19702	-0.11377	2.310	202.049	2.63	0.05	1500.00	1000.00
1128	11290.32	1500.00	2.71	1625.71	39.43	0.00059	0.19751	-0.12007	2.363	202.442	2.67	0.04	1500.00	1000.00
1129	11300.04	1500.00	2.72	1623.45	39.55	0.00054	0.19619	-0.11353	2.290	202.824	2.69	0.03	1500.00	1000.00
1130	11310.81	1500.00	2.76	1622.36	39.55	0.00039	0.19751	-0.11411	2.295	203.207	2.74	0.02	1500.00	1000.00
1131	11320.42	1500.00	2.76	1620.41	39.55	0.00059	0.19673	-0.11611	2.319	203.593	2.73	0.02	1500.00	1000.00
1132	11330.03	1500.00	2.76	1621.71	39.55	0.00127	0.19648	-0.11680	2.268	203.971	2.76	0.02	1500.00	1000.00
1133	11340.80	1500.00	2.80	1610.01	39.43	0.00054	0.19644	-0.11929	2.266	204.349	2.79	0.01	1500.00	1000.00
1134	11350.41	1500.00	2.80	1620.60	39.55	0.00127	0.19448	-0.11333	2.234	204.721	2.78	0.01	1500.00	1000.00
1135	11360.02	1500.00	2.79	1567.43	39.55	0.00083	0.19468	-0.11143	2.229	205.093	2.79	0.01	1500.00	1000.00
1136	11370.79	1500.00	2.79	1622.23	39.55	0.00098	0.19434	-0.11421	2.251	205.468	2.78	0.00	1500.00	1000.00
1137	11380.40	1500.00	2.80	1590.43	39.55	0.00117	0.19453	-0.11680	2.217	205.837	2.79	0.00	1500.00	1000.00
1138	11390.01	1500.00	2.79	1619.71	39.55	0.00210	0.19419	-0.11626	2.188	206.202	2.78	0.00	1500.00	1000.00
1139	11400.83	1500.00	2.80	1628.73	39.55	0.00015	0.19453	-0.11504	2.192	206.567	2.80	0.00	1500.00	1000.00
1140	11410.39	1500.00	2.76	1620.28	39.55	0.00190	0.19321	-0.10962	2.144	206.925	2.78	0.00	1500.00	1000.00
1141	11420.00	1500.00	2.78	1619.32	39.55	0.00039	0.19336	-0.12070	2.144	207.282	2.78	0.00	1500.00	1000.00
1142	11430.82	1500.00	2.78	1620.52	39.68	0.00034	0.19355	-0.11631	2.117	207.635	2.76	0.00	1500.00	1000.00
1143	11440.38	1500.00	2.77	1619.67	39.68	0.00166	0.19355	-0.11494	2.100	207.984	2.77	0.00	1500.00	1000.00
1144	11451.20	1500.00	2.76	1617.31	39.68	0.00005	0.19160	-0.11211	2.090	208.333	2.74	0.00	1500.00	1000.00

1145	11460.81	1500.00	2.74	1629.77	39.68	0.00044	0.19233	-0.11558	2.039	208.673	2.72	0.00	1500.00	1000.00
1146	11470.42	1500.00	2.73	1615.90	39.55	0.00039	0.19248	-0.11758	2.041	209.013	2.74	0.00	1500.00	1000.00
1147	11481.19	1500.00	2.72	1624.68	39.68	0.00068	0.19160	-0.11445	2.053	209.355	2.74	0.00	1500.00	1000.00
1148	11490.80	1500.00	2.71	1616.92	39.68	0.00132	0.19199	-0.11421	2.004	209.689	2.70	0.00	1500.00	1000.00
1149	11500.41	1500.00	2.70	1620.26	39.68	0.00024	0.19141	-0.11167	1.982	210.019	2.69	0.00	1500.00	1000.00
1150	11511.18	1500.00	2.68	1626.45	39.80	0.00176	0.19097	-0.11426	1.975	210.349	2.66	0.00	1500.00	1000.00
1151	11520.79	1500.00	2.66	1623.93	39.68	0.00068	0.19087	-0.11729	1.936	210.671	2.66	0.00	1500.00	1000.00
1152	11530.40	1500.00	2.63	1627.44	39.68	0.00024	0.19072	-0.11543	1.926	210.992	2.63	0.00	1500.00	1000.00
1153	11541.17	1500.00	2.63	1614.89	39.68	0.00039	0.19053	-0.11475	1.887	211.307	2.62	0.00	1500.00	1000.00
1154	11550.78	1500.00	2.59	1620.55	39.68	0.00088	0.19019	-0.11763	1.877	211.620	2.58	0.00	1500.00	1000.00
1155	11560.39	1500.00	2.60	1625.36	39.68	0.00088	0.19004	-0.11860	1.887	211.934	2.58	0.00	1500.00	1000.00
1156	11570.00	1500.00	2.56	1628.72	39.68	0.00024	0.18916	-0.11646	1.821	212.238	2.57	0.00	1500.00	1000.00
1157	11580.77	1500.00	2.55	1628.00	39.68	0.00024	0.18950	-0.12090	1.809	212.539	2.56	0.00	1500.00	1000.00
1158	11590.38	1500.00	2.51	1622.27	39.68	0.00054	0.18901	-0.11875	1.824	212.843	2.52	0.00	1500.00	1000.00
1159	11601.20	1500.00	2.49	1616.17	39.68	-0.00029	0.18882	-0.12100	0.027	212.848	2.49	0.00	1500.00	1000.00
1160	11610.76	1500.00	2.46	1634.07	39.80	0.00078	0.18828	-0.11650	1.807	213.149	2.45	0.00	1500.00	1000.00
1161	11620.37	1500.00	2.47	1638.29	39.80	-0.00010	0.18765	-0.11675	1.746	213.440	2.47	0.00	1500.00	1000.00
1162	11631.19	1500.00	2.43	1638.46	39.68	0.00010	0.18789	-0.11704	1.731	213.728	2.40	0.00	1500.00	1000.00
1163	11640.75	1500.00	2.42	1625.48	39.80	0.00005	0.18779	-0.11538	1.704	214.012	2.42	0.00	1500.00	1000.00
1164	11650.36	1500.00	2.37	1670.54	39.80	-0.00054	0.18765	-0.12090	1.660	214.289	2.37	0.00	1500.00	1000.00
1165	11661.18	1500.00	2.36	1640.20	39.80	0.00024	0.18813	-0.12041	2.183	214.653	2.38	0.00	1500.00	1000.00
1166	11670.79	1500.00	2.43	1630.85	39.68	0.00044	0.18750	-0.11587	2.402	215.053	2.45	0.00	1500.00	1000.00
1167	11680.35	1500.00	2.55	1622.58	39.68	0.00039	0.18726	-0.11006	2.419	215.456	2.57	0.00	1500.00	1000.00
1168	11691.17	1500.00	2.63	1631.99	39.68	0.00122	0.18560	-0.11011	2.432	215.862	2.61	0.00	1500.00	1000.00
1169	11700.78	1500.00	2.68	1626.12	39.68	0.00034	0.18599	-0.10938	2.463	216.272	2.69	0.00	1500.00	1000.00
1170	11710.34	1500.00	2.71	1629.74	39.68	0.00083	0.18545	-0.10400	2.434	216.678	2.72	0.00	1500.00	1000.00
1171	11721.16	1500.00	2.76	1614.50	39.68	0.00127	0.18599	-0.10605	2.422	217.082	2.78	0.00	1500.00	1000.00
1172	11730.77	1500.00	2.79	1615.27	39.68	0.00112	0.18481	-0.10923	2.449	217.490	2.79	0.00	1500.00	1000.00
1173	11740.38	1500.00	2.81	1647.79	39.68	0.00005	0.18467	-0.11006	2.380	217.886	2.82	0.00	1500.00	1000.00
1174	11751.15	1500.00	3.74	1660.97	39.68	0.00112	0.18447	-0.10854	2.380	218.283	2.98	0.96	1500.00	1000.00
1175	11760.76	1500.00	2.97	1619.79	39.55	0.00073	0.18403	-0.10186	2.400	218.683	2.86	0.06	1500.00	1000.00

1176	11770.37	1500.00	2.84	1573.50	39.68	0.00103	0.18442	-0.10532	2.341	219.073	2.85	0.00	1500.00	1000.00
1177	11781.14	1500.00	2.87	1603.30	39.68	0.00107	0.18384	-0.10366	2.336	219.463	2.86	0.00	1500.00	1000.00
1178	11790.75	1500.00	2.85	1613.12	39.68	0.00029	0.18408	-0.10630	2.314	219.848	2.87	0.00	1500.00	1000.00
1179	11800.36	1500.00	2.86	1646.58	39.68	0.00098	0.18296	-0.10503	2.297	220.231	2.85	0.00	1500.00	1000.00
1180	11811.13	1500.00	4.38	1612.57	39.68	0.00103	0.18340	-0.10449	2.300	220.615	3.03	0.25	1500.00	1000.00
1181	11820.74	1500.00	2.92	1613.25	39.68	0.00083	0.18228	-0.10830	2.273	220.993	2.89	0.02	1500.00	1000.00
1182	11830.35	1500.00	2.86	1613.47	39.68	0.00103	0.18301	-0.10503	2.249	221.368	2.85	0.00	1500.00	1000.00
1183	11841.12	1500.00	2.85	1619.99	39.68	0.00034	0.18267	-0.10762	2.256	221.744	2.86	0.00	1500.00	1000.00
1184	11850.73	1500.00	2.85	1615.43	39.68	0.00068	0.18291	-0.10444	2.212	222.113	2.83	0.00	1500.00	1000.00
1185	11860.34	1500.00	2.83	1610.63	39.80	0.00073	0.18203	-0.10752	2.207	222.481	2.84	0.00	1500.00	1000.00
1186	11871.16	1500.00	2.83	1617.82	39.80	0.00088	0.18154	-0.10596	2.180	222.844	2.82	0.00	1500.00	1000.00
1187	11880.72	1500.00	2.83	1614.21	39.80	0.00088	0.18184	-0.10825	2.153	223.203	2.83	0.00	1500.00	1000.00
1188	11890.33	1500.00	2.80	1617.83	39.80	0.00039	0.18193	-0.10518	2.163	223.563	2.81	0.00	1500.00	1000.00
1189	11901.15	1500.00	2.81	1623.18	39.68	0.00049	0.18081	-0.10225	2.104	223.914	2.81	0.00	1500.00	1000.00
1190	11910.71	1500.00	2.78	1621.58	39.80	0.00015	0.18120	-0.10234	2.104	224.265	2.78	0.00	1500.00	1000.00
1191	11920.32	1500.00	2.78	1616.55	39.80	0.00122	0.18066	-0.10806	2.122	224.619	2.79	0.00	1500.00	1000.00
1192	11931.14	1500.00	2.76	1616.14	39.80	0.00049	0.18096	-0.10483	2.056	224.961	2.76	0.00	1500.00	1000.00
1193	11940.75	1500.00	2.75	1622.65	39.80	0.00063	0.18130	-0.11250	2.065	225.305	2.75	0.00	1500.00	1000.00
1194	11950.31	1500.00	2.72	1616.92	39.80	0.00024	0.18008	-0.10767	2.056	225.648	2.71	0.00	1500.00	1000.00
1195	11961.13	1500.00	2.73	1613.40	39.80	0.00103	0.17983	-0.10713	2.041	225.988	2.72	0.00	1500.00	1000.00
1196	11970.85	1500.00	2.69	1640.63	39.80	0.00005	0.17949	-0.10068	2.004	226.322	2.69	0.00	1500.00	1000.00
1197	11980.41	1500.00	2.68	1622.62	39.80	-0.00034	0.17949	-0.10596	1.973	226.651	2.67	0.00	1500.00	1000.00
1198	11990.02	1500.00	2.65	1608.90	39.80	0.00015	0.17886	-0.10425	1.958	226.977	2.63	0.00	1500.00	1000.00
1199	12000.84	1500.00	2.65	1623.38	39.80	0.00000	0.17915	-0.10244	1.960	227.304	2.64	0.00	1500.00	1000.00
1200	12010.40	1500.00	2.59	1661.41	39.80	0.00039	0.17817	-0.10742	1.904	227.621	2.60	0.00	1500.00	1000.00
1201	12020.01	1500.00	2.58	1682.98	39.80	-0.00044	0.17778	-0.10527	0.027	227.626	2.57	0.00	1500.00	1000.00
1202	12030.83	1500.00	2.54	1636.22	39.80	0.00020	0.17930	-0.10327	1.907	227.944	2.54	0.00	1500.00	1000.00
1203	12040.39	1500.00	2.55	1634.98	39.93	0.00000	0.17778	-0.10483	1.855	228.253	2.55	0.00	1500.00	1000.00
1204	12050.00	1500.00	2.51	1619.34	39.80	0.00059	0.17822	-0.10566	1.821	228.557	2.50	0.00	1500.00	1000.00
1205	12060.82	1500.00	2.48	1628.41	39.93	0.00020	0.17842	-0.10825	1.841	228.863	2.48	0.00	1500.00	1000.00
1206	12070.43	1500.00	2.45	1640.55	39.93	0.00044	0.17715	-0.11250	1.785	229.161	2.44	0.00	1500.00	1000.00

1207	12081.19	1500.00	2.28	1647.14	39.93	0.00142	0.17705	-0.08804	1.677	229.440	2.22	0.00	1500.00	1000.00
1208	12090.81	1500.00	1.95	1650.84	40.18	0.01040	0.17363	-0.04014	1.133	229.629	1.89	0.02	1500.00	1000.00
1209	12100.42	1500.00	14.95	1672.79	40.06	0.01294	0.17026	-0.03276	0.889	229.777	1.62	9.09	1505.00	1467.00
1210	12111.18	1500.00	3.16	1693.39	40.18	0.01753	0.16748	-0.01577	0.691	229.892	1.50	1.50	1573.00	1426.00
1211	12120.80	1500.00	1.86	1655.27	40.18	0.39629	0.61050	0.03052	0.620	229.996	0.90	0.90	1599.00	1400.00
1212	12130.41	1494.00	-202.36	1629.92	39.93	0.22725	0.18486	0.04053	0.564	230.090	-204.15	1.56	701.00	1500.00
1213	12140.02	1500.00	-202.77	1603.91	40.06	0.09360	0.11948	0.03618	0.520	230.176	-204.08	1.21	695.00	1500.00
1214	12150.79	1500.00	-203.02	1659.22	39.93	0.10884	0.14038	0.03984	0.491	230.258	-204.05	1.00	698.00	1500.00
1215	12160.40	1500.00	-203.16	1666.29	39.93	0.12002	0.15220	0.03965	0.422	230.329	-204.03	0.87	698.00	1500.00
1216	12170.01	1500.00	-202.86	1642.18	39.93	0.12959	0.16543	0.04307	0.303	230.379	-204.08	0.77	698.00	1500.00
1217	12180.77	1500.00	-203.33	1650.96	39.93	0.13818	0.17573	0.03975	0.291	230.427	-204.09	0.69	698.00	1500.00
1218	12190.39	1500.00	-203.01	1612.97	39.80	0.14946	0.19038	0.03184	0.239	230.467	-204.05	0.63	698.00	1500.00
1219	12200.00	1500.00	-203.47	1655.14	39.93	0.16138	0.20498	0.03384	0.176	230.497	-204.01	0.57	697.00	1500.00
1220	12210.76	1500.00	-203.09	1653.44	39.93	0.16846	0.21455	0.03521	0.139	230.520	-204.03	0.51	696.00	1500.00
1221	12220.49	1500.00	-203.56	1646.73	39.93	0.17695	0.22568	0.03706	0.171	230.548	-204.07	0.45	696.00	1500.00
1222	12230.10	1500.00	-203.64	1650.38	39.93	0.18022	0.23013	0.03564	0.081	230.562	-203.57	0.39	695.00	1500.00
1223	12240.86	1500.00	-203.72	1655.24	39.93	0.18794	0.24102	0.03213	0.078	230.575	0.00	0.34	697.00	1500.00
1224	12250.48	1500.00	122.39	1647.14	39.93	0.18799	0.24111	0.03730	0.059	230.585	129.47	0.28	699.00	1500.00
1225	12260.09	1500.00	191.23	1653.12	39.93	0.19072	0.24629	0.03174	0.049	230.593	198.10	0.20	716.00	1500.00
1226	12270.85	1500.00	198.45	1627.97	39.93	0.19722	0.25342	0.03384	0.046	230.600	197.88	0.16	742.00	1500.00
1227	12280.46	1500.00	198.00	1651.68	39.93	0.19644	0.25146	0.03550	0.117	230.620	197.88	0.11	770.00	1500.00
1228	12290.08	1500.00	197.55	1653.09	39.93	0.19697	0.25200	0.03794	0.022	230.624	197.49	0.05	807.00	1500.00
1229	12300.90	1500.00	196.94	1695.61	39.93	0.20103	0.25996	0.02876	0.022	230.627	196.93	0.01	870.00	1500.00
1230	12310.45	1500.00	196.22	1656.44	39.93	0.20381	0.26079	0.03994	0.037	230.633	196.09	0.00	957.00	1500.00
1231	12320.07	1500.00	162.81	1673.55	39.93	0.20356	0.25903	0.03892	0.029	230.638	138.45	0.00	1094.00	1500.00
1232	12330.89	1500.00	13.18	1588.80	39.93	0.20239	0.25791	0.03818	0.029	230.643	9.32	-0.06	1034.00	1500.00
1233	12340.44	1500.00	23.29	1647.62	39.93	0.20381	0.26016	0.03667	0.017	230.646	26.48	-0.15	980.00	1500.00
1234	12350.06	1500.00	7.49	1634.19	39.93	0.20537	0.26328	0.03594	0.024	230.650	9.90	-0.16	995.00	1500.00
1235	12360.88	1500.00	7.68	1650.66	39.93	0.20566	0.26279	0.03711	0.015	230.653	8.58	-0.20	1003.00	1500.00
1236	12370.49	1500.00	5.79	1658.55	39.80	0.20522	0.26191	0.04150	0.012	230.655	6.43	-0.17	1003.00	1500.00
1237	12380.04	1500.00	5.26	1630.55	39.93	0.20381	0.26099	0.03354	0.012	230.657	5.20	-0.17	1002.00	1500.00

1238	12390.86	1500.00	4.31	1642.67	39.93	0.20498	0.26113	0.04229	0.015	230.659	4.35	-0.14	1003.00	1500.00
1239	12400.48	1500.00	3.68	1645.38	39.93	0.20518	0.26060	0.03599	0.010	230.661	3.76	-0.12	1003.00	1500.00
1240	12410.03	1500.00	3.26	1609.21	39.93	0.20483	0.26221	0.04146	0.010	230.662	3.31	-0.08	1003.00	1500.00
1241	12420.85	1500.00	2.93	1642.09	39.93	0.20552	0.26196	0.03252	0.012	230.664	2.96	-0.06	1002.00	1500.00
1242	12430.47	1500.00	2.69	1640.14	39.93	0.20674	0.26206	0.03516	0.010	230.666	2.69	-0.02	1003.00	1500.00
1243	12440.08	1500.00	2.46	1644.65	39.93	0.20688	0.26284	0.03403	0.012	230.668	2.45	0.00	1003.00	1500.00
1244	12450.84	1500.00	2.19	1640.93	39.93	0.20718	0.26396	0.03594	0.010	230.670	2.19	0.00	1002.00	1500.00
1245	12460.46	1500.00	2.03	1683.64	39.93	0.20742	0.26567	0.03794	0.010	230.671	1.98	0.00	1001.00	1500.00
1246	12470.07	1500.00	1.83	1666.53	39.93	0.20830	0.26499	0.03486	0.010	230.673	1.81	0.00	1000.00	1500.00
1247	12480.83	1500.00	1.84	1648.92	39.93	0.20874	0.26499	0.04102	0.015	230.675	1.71	0.15	999.00	1500.00
1248	12490.44	1500.00	1.80	1597.20	39.93	0.20928	0.26528	0.03691	0.010	230.677	1.66	0.10	999.00	1500.00
1249	12500.06	1500.00	1.68	1649.42	39.93	0.20898	0.26548	0.03667	0.010	230.679	1.58	0.09	999.00	1500.00
1250	12510.82	1500.00	1.58	1629.95	39.80	0.21001	0.26670	0.03979	0.022	230.682	1.49	0.09	999.00	1500.00
1251	12520.43	1500.00	1.53	1617.65	39.93	0.20884	0.26694	0.04121	0.010	230.684	1.42	0.11	999.00	1500.00
1252	12530.05	1500.00	1.45	1644.57	39.93	0.20981	0.26714	0.03467	0.010	230.685	1.34	0.12	999.00	1500.00
1253	12540.81	1500.00	1.36	1663.46	39.93	0.21069	0.26709	0.04170	0.010	230.687	1.25	0.12	999.00	1500.00
1254	12550.42	1500.00	1.34	1659.63	39.93	0.20938	0.26826	0.03813	0.010	230.689	1.20	0.13	999.00	1500.00
1255	12560.04	1500.00	1.27	1676.66	39.93	0.21035	0.26816	0.03472	0.017	230.692	1.14	0.13	999.00	1500.00
1256	12570.86	1500.00	1.22	1659.61	39.93	0.21147	0.26768	0.03916	0.010	230.693	1.09	0.13	999.00	1500.00
1257	12580.41	1500.00	1.16	1656.25	39.80	0.21147	0.26919	0.03442	0.010	230.695	1.01	0.13	999.00	1500.00
1258	12590.02	1500.00	1.12	1630.58	39.93	0.21108	0.26919	0.03711	0.027	230.699	0.99	0.13	999.00	1500.00
1259	12600.85	1500.00	1.07	1724.00	39.93	0.21196	0.26978	0.04180	0.068	230.711	0.93	0.13	999.00	1500.00
1260	12610.40	1500.00	1.03	1644.08	39.93	0.21094	0.26836	0.03467	0.010	230.712	0.91	0.13	999.00	1500.00
1261	12620.01	1500.00	1.00	1619.71	39.93	0.21138	0.26914	0.03945	0.010	230.714	0.85	0.12	999.00	1500.00
1262	12630.83	1500.00	0.95	1633.80	39.93	0.21123	0.26895	0.03086	0.012	230.716	0.82	0.13	999.00	1500.00
1263	12640.45	1500.00	0.92	1639.67	39.93	0.21157	0.26748	0.03892	0.012	230.718	0.78	0.13	999.00	1500.00
1264	12650.00	1500.00	0.89	1632.40	39.93	0.21108	0.26758	0.03638	0.010	230.720	0.77	0.12	999.00	1500.00
1265	12660.82	1500.00	4.98	1656.45	39.93	0.11772	0.16982	0.03237	0.022	230.723	2.42	0.67	995.00	1500.00
1266	12670.44	1500.00	4.61	1605.10	39.93	0.00156	0.04966	-0.00908	0.635	230.829	0.68	2.22	1001.00	1500.00
1267	12681.20	1500.00	2.98	1647.53	39.93	-0.00444	0.02197	-0.00503	0.737	230.952	0.76	2.18	1000.00	1500.00
1268	12690.81	1500.00	0.21	1660.61	39.93	-0.00679	0.00713	-0.00273	1.174	231.148	0.13	0.94	997.00	1500.00

1269	12700.42	1500.00	2.29	1645.53	39.93	-0.00654	0.00508	-0.00459	1.433	231.387	-0.20	2.07	1000.00	1500.00
1270	12710.04	1500.00	2.64	1665.98	39.93	-0.00854	-0.00049	0.00122	1.460	231.630	0.62	1.98	1000.00	1500.00
1271	12720.80	1500.00	2.70	1659.16	39.93	-0.00835	-0.00303	0.00776	1.545	231.888	0.62	2.02	1000.00	1500.00
1272	12730.41	1500.00	2.55	1646.83	39.93	-0.00679	-0.00249	0.01162	1.494	232.137	0.50	2.07	1000.00	1500.00
1273	12740.03	1500.00	2.62	1652.80	39.93	-0.00811	-0.00356	0.01533	1.509	232.388	0.55	2.06	1000.00	1500.00
1274	12750.79	1500.00	2.67	1650.26	39.93	-0.00732	-0.00400	0.01724	1.614	232.657	0.60	2.06	1000.00	1500.00
1275	12760.40	1500.00	2.54	1649.87	39.93	-0.00801	-0.00527	0.01934	1.592	232.922	0.48	2.09	1000.00	1500.00
1276	12770.02	1500.00	2.56	1639.92	39.93	-0.00801	-0.00522	0.01821	1.597	233.188	0.43	2.18	1000.00	1500.00
1277	12780.78	1500.00	2.71	1648.28	39.93	-0.00811	-0.00522	0.01426	1.624	233.459	0.51	2.21	1000.00	1500.00
1278	12790.39	1500.00	0.92	1646.32	39.93	-0.00811	-0.00537	0.02036	1.638	233.732	-0.80	1.62	995.00	1500.00
1279	12800.00	1500.00	3.26	1649.75	39.93	-0.00801	-0.00518	0.01655	1.709	234.017	0.82	2.28	999.00	1500.00
1280	12810.77	1500.00	2.73	1648.45	39.93	-0.00835	-0.00581	0.02002	1.741	234.307	0.41	2.37	1000.00	1500.00
1281	12820.38	1500.00	2.80	1661.47	39.93	-0.00776	-0.00645	0.02354	1.792	234.606	0.46	2.30	1000.00	1500.00
1282	12831.20	1500.00	2.82	1643.04	39.93	-0.00781	-0.00610	0.02549	1.863	234.916	0.36	2.39	999.00	1500.00
1283	12840.81	1500.00	2.81	1650.72	39.93	-0.00732	-0.00562	0.02554	1.875	235.229	0.28	2.54	1000.00	1500.00
1284	12850.37	1500.00	3.00	1654.14	39.93	-0.00659	-0.00586	0.02612	1.941	235.552	0.45	2.55	1000.00	1500.00
1285	12861.19	1500.00	2.88	1645.80	39.93	-0.00767	-0.00518	0.02520	2.083	235.899	0.32	2.49	999.00	1500.00
1286	12870.80	1500.00	3.03	1653.79	39.93	-0.00762	-0.00503	0.02949	1.982	236.230	0.45	2.60	999.00	1500.00
1287	12880.36	1500.00	2.90	1644.68	39.93	-0.00732	-0.00527	0.03057	1.997	236.562	0.32	2.66	1000.00	1500.00
1288	12891.18	1500.00	2.99	1650.92	39.93	-0.00684	-0.00566	0.02959	2.053	236.905	0.43	2.56	1000.00	1500.00
1289	12900.79	1500.00	2.89	1652.50	39.93	-0.00708	-0.00474	0.03286	2.019	237.241	0.35	2.60	1000.00	1500.00
1290	12910.41	1500.00	2.81	1654.71	39.93	-0.00767	-0.00498	0.02856	2.039	237.581	0.18	2.62	999.00	1500.00
1291	12921.17	1500.00	2.99	1656.36	39.93	-0.00620	-0.00488	0.03145	2.041	237.921	0.35	2.66	1000.00	1500.00
1292	12930.78	1500.00	2.86	1651.75	39.93	-0.00640	-0.00552	0.03174	2.046	238.262	0.23	2.59	1000.00	1500.00
1293	12940.39	1500.00	3.00	1651.52	39.93	-0.00645	-0.00591	0.03242	2.097	238.612	0.40	2.57	999.00	1500.00
1294	12951.16	1500.00	2.96	1647.83	39.93	-0.00615	-0.00571	0.03408	2.065	238.956	0.22	2.71	1000.00	1500.00
1295	12960.77	1500.00	3.00	1647.15	39.93	-0.00610	-0.00518	0.03867	2.083	239.303	0.33	2.69	1000.00	1500.00
1296	12970.38	1500.00	2.95	1658.24	39.93	-0.00669	-0.00415	0.02471	2.168	239.664	0.26	2.64	1000.00	1500.00
1297	12980.00	1500.00	3.09	1645.33	39.93	-0.00601	-0.00439	0.02905	2.100	240.014	0.38	2.70	1000.00	1500.00
1298	12990.76	1500.00	3.00	1655.58	39.93	-0.00640	-0.00513	0.03232	2.117	240.367	0.25	2.78	1000.00	1500.00
1299	13000.37	1500.00	2.99	1652.43	39.93	-0.00625	-0.00508	0.02793	2.126	240.721	0.22	2.78	1000.00	1500.00

1300	13011.14	1500.00	2.96	1642.81	39.93	-0.00713	-0.00503	0.02661	2.139	241.078	0.25	2.72	1000.00	1500.00
1301	13020.75	1500.00	3.06	1647.25	39.93	-0.00654	-0.00610	0.03286	2.158	241.437	0.31	2.77	1000.00	1500.00
1302	13030.47	1500.00	3.02	1653.35	39.93	-0.00649	-0.00620	0.03394	2.139	241.794	0.21	2.83	1000.00	1500.00
1303	13040.08	1500.00	3.15	1648.44	39.93	-0.00684	-0.00439	0.03193	2.158	242.154	0.28	2.78	1000.00	1500.00
1304	13050.85	1500.00	2.97	1649.26	39.93	-0.00713	-0.00474	0.02847	2.209	242.522	0.23	2.74	1000.00	1500.00
1305	13060.46	1500.00	3.01	1648.80	39.93	-0.00630	-0.00557	0.03623	2.173	242.884	0.21	2.85	1000.00	1500.00
1306	13070.07	1500.00	3.07	1654.15	39.93	-0.00684	-0.00562	0.03120	2.175	243.247	0.26	2.81	1000.00	1500.00
1307	13080.84	1500.00	3.06	1651.83	39.93	-0.00601	-0.00493	0.03491	2.236	243.619	0.27	2.75	1000.00	1500.00
1308	13090.45	1500.00	2.95	1651.11	39.93	-0.00674	-0.00527	0.02983	2.173	243.981	0.17	2.79	1000.00	1500.00
1309	13100.06	1500.00	3.00	1649.66	39.93	-0.00654	-0.00508	0.03325	2.185	244.346	0.22	2.79	1000.00	1500.00
1310	13110.83	1500.00	3.06	1658.25	39.93	-0.00679	-0.00508	0.03193	2.214	244.715	0.24	2.80	1000.00	1500.00
1311	13120.44	1500.00	3.01	1658.64	39.93	-0.00581	-0.00552	0.03022	2.188	245.079	0.23	2.78	1000.00	1500.00
1312	13130.05	1500.00	2.99	1650.79	39.93	-0.00625	-0.00459	0.02925	2.207	245.447	0.21	2.83	1000.00	1500.00
1313	13140.93	1500.00	3.04	1651.19	40.06	-0.00679	-0.00459	0.03320	2.180	245.810	0.21	2.86	1000.00	1500.00
1314	13150.54	1500.00	3.01	1654.39	39.93	-0.00615	-0.00454	0.02817	2.197	246.177	0.22	2.81	1000.00	1500.00
1315	13160.15	1500.00	3.01	1649.53	40.06	-0.00625	-0.00444	0.03232	2.227	246.548	0.21	2.75	1000.00	1500.00
1316	13170.92	1500.00	2.98	1658.59	39.93	-0.00630	-0.00552	0.02725	2.200	246.914	0.19	2.82	1000.00	1500.00
1317	13180.53	1500.00	3.00	1647.65	39.93	-0.00586	-0.00518	0.03101	2.192	247.280	0.20	2.75	999.00	1500.00
1318	13190.14	1500.00	3.04	1656.38	40.18	-0.00703	-0.00483	0.02925	2.231	247.652	0.23	2.79	1000.00	1500.00
1319	13200.96	1500.00	2.92	1657.77	39.93	-0.00542	-0.00469	0.03535	2.180	248.015	0.19	2.76	999.00	1500.00
1320	13210.52	1500.00	3.00	1652.48	40.06	-0.00659	-0.00464	0.03384	2.192	248.380	0.20	2.79	1000.00	1500.00
1321	13220.13	1500.00	3.01	1648.83	40.06	-0.00566	-0.00425	0.03809	2.185	248.745	0.20	2.82	1000.00	1500.00
1322	13230.95	1500.00	2.99	1661.65	39.93	-0.00601	-0.00581	0.02861	2.190	249.110	0.19	2.79	1000.00	1500.00
1323	13240.51	1500.00	2.93	1657.38	40.06	-0.00713	-0.00474	0.02847	2.205	249.477	0.18	2.81	1000.00	1500.00
1324	13250.12	1500.00	2.91	1657.15	39.93	-0.00684	-0.00498	0.03169	2.188	249.842	0.17	2.78	999.00	1500.00
1325	13260.94	1500.00	2.95	1652.76	40.06	-0.00640	-0.00498	0.03452	2.192	250.207	0.18	2.76	1000.00	1500.00
1326	13270.55	1500.00	2.93	1655.46	39.93	-0.00620	-0.00430	0.02837	2.209	250.575	0.17	2.78	1000.00	1500.00
1327	13280.11	1500.00	2.93	1662.32	40.06	-0.00605	-0.00430	0.02798	2.197	250.941	0.15	2.78	1000.00	1500.00
1328	13290.93	1500.00	2.95	1655.70	39.93	-0.00571	-0.00435	0.03291	2.192	251.307	0.17	2.75	1000.00	1500.00
1329	13300.54	1500.00	3.00	1647.84	40.06	-0.00659	-0.00547	0.02769	2.205	251.674	0.19	2.75	1000.00	1500.00
1330	13310.10	1500.00	2.89	1651.92	40.06	-0.00703	-0.00532	0.02754	2.185	252.038	0.16	2.74	1000.00	1500.00

1331	13320.92	1500.00	2.97	1651.11	40.06	-0.00630	-0.00479	0.03276	2.185	252.403	0.17	2.79	1000.00	1500.00
1332	13330.53	1500.00	2.96	1650.73	40.06	-0.00664	-0.00522	0.03018	2.183	252.766	0.20	2.80	1000.00	1500.00
1333	13340.14	1500.00	2.91	1651.77	40.06	-0.00601	-0.00508	0.03740	2.185	253.131	0.16	2.74	1000.00	1500.00
1334	13350.91	1500.00	2.95	1656.10	40.06	-0.00649	-0.00474	0.03350	2.202	253.498	0.16	2.79	1000.00	1500.00
1335	13360.52	1500.00	2.93	1652.58	40.06	-0.00664	-0.00430	0.03096	2.180	253.861	0.15	2.79	1000.00	1500.00
1336	13370.13	1500.00	2.90	1653.50	40.06	-0.00522	-0.00479	0.03384	2.185	254.225	0.15	2.74	1000.00	1500.00
1337	13380.90	1500.00	2.88	1649.06	40.06	-0.00625	-0.00449	0.03198	2.214	254.594	0.15	2.71	999.00	1500.00
1338	13390.51	1500.00	2.91	1657.39	40.06	-0.00713	-0.00454	0.02524	2.192	254.960	0.14	2.79	1000.00	1500.00
1339	13400.12	1500.00	2.92	1658.99	40.06	-0.00615	-0.00552	0.02915	2.180	255.323	0.15	2.72	1000.00	1500.00
1340	13411.00	1500.00	4.22	1656.20	40.06	-0.00532	-0.00518	0.03403	2.192	255.688	1.10	3.12	1001.00	1500.00
1341	13420.61	1500.00	2.84	1646.32	39.93	-0.00591	-0.00425	0.03379	2.168	256.050	0.08	2.72	999.00	1500.00
1342	13430.22	1500.00	2.93	1649.54	40.06	-0.00576	-0.00479	0.03198	2.185	256.414	0.15	2.78	1000.00	1500.00
1343	13440.99	1500.00	2.93	1655.75	40.06	-0.00605	-0.00464	0.03296	2.178	256.777	0.17	2.74	1000.00	1500.00
1344	13450.60	1500.00	2.87	1649.90	40.06	-0.00591	-0.00386	0.02954	2.178	257.140	0.14	2.73	1000.00	1500.00
1345	13460.21	1500.00	2.84	1655.14	40.06	-0.00615	-0.00415	0.03042	2.214	257.509	0.13	2.75	1000.00	1500.00
1346	13470.97	1500.00	2.89	1656.95	40.06	-0.00698	-0.00493	0.03320	2.153	257.868	0.13	2.81	1000.00	1500.00
1347	13480.59	1500.00	2.85	1646.94	40.06	-0.00620	-0.00391	0.03223	2.178	258.231	0.13	2.74	1000.00	1500.00
1348	13490.20	1500.00	2.87	1665.54	40.06	-0.00747	-0.00415	0.03022	2.192	258.596	0.13	2.73	1000.00	1500.00
1349	13500.96	1500.00	2.85	1652.53	40.06	-0.00601	-0.00435	0.03062	2.180	258.959	0.13	2.75	1000.00	1500.00
1350	13510.58	1500.00	2.90	1657.90	40.06	-0.00571	-0.00356	0.03633	2.180	259.323	0.14	2.70	1000.00	1500.00
1351	13520.19	1500.00	2.89	1656.32	40.06	-0.00581	-0.00444	0.03257	2.175	259.685	0.15	2.71	1000.00	1500.00
1352	13531.01	1500.00	2.84	1653.43	40.06	-0.00615	-0.00439	0.03105	2.163	260.046	0.13	2.75	999.00	1500.00
1353	13540.57	1500.00	2.88	1656.99	40.06	-0.00586	-0.00410	0.02983	2.175	260.408	0.13	2.73	1000.00	1500.00
1354	13550.18	1500.00	2.86	1651.67	40.06	-0.00713	-0.00454	0.02612	2.151	260.767	0.14	2.75	1000.00	1500.00
1355	13561.00	1500.00	2.86	1652.14	40.06	-0.00537	-0.00522	0.02817	2.166	261.128	0.13	2.74	1000.00	1500.00
1356	13570.55	1500.00	2.82	1654.90	40.06	-0.00610	-0.00483	0.02725	2.192	261.493	0.11	2.74	1000.00	1500.00
1357	13580.17	1500.00	2.90	1654.30	40.06	-0.00581	-0.00435	0.03560	2.158	261.853	0.13	2.78	1000.00	1500.00
1358	13590.99	1500.00	2.83	1650.35	40.06	-0.00566	-0.00430	0.02842	2.173	262.215	0.13	2.74	1000.00	1500.00
1359	13600.60	1500.00	2.85	1656.04	40.06	-0.00674	-0.00420	0.02925	2.192	262.580	0.12	2.74	1000.00	1500.00
1360	13610.27	1500.00	2.83	1657.25	40.06	-0.00620	-0.00435	0.03018	2.180	262.944	0.11	2.74	1000.00	1500.00
1361	13621.09	1500.00	2.89	1674.61	40.06	-0.00557	-0.00435	0.03335	2.168	263.305	0.12	2.75	1000.00	1500.00

1362	13630.70	1500.00	2.87	1651.95	40.06	-0.00635	-0.00425	0.03193	2.183	263.669	0.14	2.69	1000.00	1500.00
1363	13640.26	1500.00	2.90	1637.18	40.06	-0.00596	-0.00454	0.02783	2.146	264.027	1.00	3.43	998.00	1500.00
1364	13651.08	1500.00	2.85	1658.65	40.06	-0.00601	-0.00459	0.02930	2.168	264.388	0.05	2.72	1000.00	1500.00
1365	13660.69	1500.00	2.91	1653.27	40.06	-0.00591	-0.00435	0.03945	2.153	264.747	0.20	2.70	1000.00	1500.00
1366	13670.24	1500.00	2.80	1661.84	40.06	-0.00640	-0.00503	0.02920	2.153	265.106	0.12	2.69	1000.00	1500.00
1367	13681.06	1500.00	2.80	1661.14	40.06	-0.00698	-0.00562	0.02939	2.163	265.466	0.12	2.73	1000.00	1500.00
1368	13690.68	1500.00	2.83	1653.31	40.06	-0.00562	-0.00322	0.03623	2.139	265.823	0.11	2.73	1000.00	1500.00
1369	13700.23	1500.00	2.79	1657.70	40.06	-0.00542	-0.00464	0.03091	2.146	266.180	0.15	0.51	996.00	1500.00
1370	13711.05	1500.00	3.47	1668.56	40.06	-0.00615	-0.00415	0.03081	2.166	266.541	-0.09	2.71	1003.00	1500.00
1371	13720.67	1500.00	-0.08	1657.01	40.06	-0.00518	-0.00396	0.03589	1.797	266.841	-0.01	-0.08	1001.00	1500.00
1372	13730.28	1500.00	0.23	1659.22	40.06	-0.00107	-0.00107	0.03345	1.318	267.060	0.22	0.00	1002.00	1500.00
1373	13741.04	1500.00	0.18	1655.51	40.06	0.00166	0.00488	0.03105	1.018	267.230	0.17	0.00	1003.00	1500.00
1374	13750.66	1500.00	0.08	1658.81	40.06	0.35303	0.32275	0.03530	0.784	267.361	0.13	-0.04	1003.00	1500.00
1375	13760.27	1500.00	0.10	1656.39	40.06	0.07012	0.06680	0.03926	0.696	267.477	0.13	-0.02	1003.00	1500.00
1376	13771.03	1500.00	0.12	1655.16	39.93	0.08467	0.09028	0.04292	0.603	267.577	0.13	-0.01	1003.00	1500.00
1377	13780.64	1500.00	0.10	1671.49	39.93	0.10039	0.11064	0.04126	0.505	267.661	0.12	-0.02	1003.00	1500.00
1378	13790.26	1500.00	0.12	1643.82	40.06	0.11006	0.12480	0.03550	0.464	267.739	0.12	-0.01	1003.00	1500.00
1379	13801.02	1500.00	0.10	1645.44	40.06	0.12632	0.14502	0.03872	0.349	267.797	0.11	0.00	1003.00	1500.00
1380	13810.63	1500.00	0.11	1665.94	40.06	0.13975	0.16279	0.03989	0.269	267.842	0.11	-0.03	1002.00	1500.00
1381	13820.25	1500.00	0.11	1588.64	40.06	0.15181	0.17817	0.04077	0.222	267.879	0.11	0.00	1002.00	1500.00
1382	13831.07	1500.00	0.12	1665.97	40.06	0.15991	0.18975	0.03877	0.171	267.907	0.12	-0.01	1003.00	1500.00
1383	13840.62	1500.00	0.10	1664.12	40.06	0.16714	0.19854	0.03735	0.139	267.930	0.10	0.00	1002.00	1500.00
1384	13850.24	1500.00	0.10	1659.04	40.06	0.17183	0.20576	0.03594	0.098	267.947	0.11	-0.01	1003.00	1500.00
1385	13861.06	1500.00	0.10	1681.18	40.06	0.17578	0.21152	0.03550	0.078	267.960	0.10	0.00	1002.00	1500.00
1386	13870.61	1500.00	0.09	1659.83	40.06	0.17969	0.21631	0.03462	0.066	267.971	0.09	0.00	1002.00	1500.00
1387	13880.22	1500.00	0.10	1656.84	40.18	0.18179	0.21929	0.03857	0.063	267.981	0.10	-0.04	1002.00	1500.00
1388	13891.04	1500.00	0.08	1652.49	40.06	0.18252	0.22144	0.03950	0.046	267.989	0.08	0.00	1002.00	1500.00
1389	13900.66	1500.00	0.11	1662.44	40.06	0.18628	0.22554	0.03730	0.034	267.995	0.11	0.00	1002.00	1500.00
1390	13910.21	1500.00	0.09	1650.52	40.06	0.18823	0.22886	0.03540	0.042	268.002	0.09	0.00	1002.00	1500.00
1391	13921.03	1500.00	0.11	1659.02	40.06	0.18867	0.22783	0.03711	0.042	268.009	0.10	0.00	1002.00	1500.00
1392	13930.65	1500.00	0.09	1657.63	40.06	0.18862	0.22832	0.03955	0.024	268.013	0.09	0.00	1002.00	1500.00

1393	13940.20	1500.00	0.10	1656.33	40.06	0.19097	0.23135	0.04170	0.017	268.015	0.10	0.00	1002.00	1500.00
1394	13951.02	1500.00	0.10	1657.63	40.06	0.19263	0.23428	0.03716	0.022	268.019	0.10	0.00	1002.00	1500.00
1395	13960.64	1500.00	0.09	1655.02	40.06	0.19292	0.23345	0.03828	0.027	268.024	0.09	0.00	1002.00	1500.00
1396	13970.25	1500.00	0.10	1659.01	40.06	0.19219	0.23364	0.03882	0.022	268.027	0.09	0.00	1002.00	1500.00
1397	13981.01	1500.00	0.09	1647.36	40.18	0.19351	0.23359	0.03789	0.017	268.030	0.08	0.00	1002.00	1500.00
1398	13990.62	1500.00	0.09	1643.20	40.18	0.19517	0.23647	0.03545	0.015	268.033	0.08	0.00	1002.00	1500.00
1399	14000.24	1500.00	0.08	1675.00	40.18	0.19565	0.23638	0.03823	0.015	268.035	0.08	0.00	1002.00	1500.00
1400	14011.00	1500.00	0.09	1655.59	40.06	0.19585	0.23560	0.04092	0.017	268.038	0.09	0.00	1002.00	1500.00
1401	14020.61	1500.00	0.06	1656.70	40.06	0.19448	0.23569	0.03892	0.017	268.041	0.07	0.00	1002.00	1500.00
1402	14030.23	1500.00	0.09	1655.45	40.06	0.19443	0.23501	0.03633	0.012	268.043	0.09	0.00	1002.00	1500.00
1403	14040.99	1500.00	0.08	1656.66	40.18	0.19429	0.23613	0.03877	0.012	268.045	0.07	0.00	1002.00	1500.00
1404	14050.60	1500.00	0.09	1654.21	40.06	0.19580	0.23687	0.03818	0.015	268.047	0.09	0.00	1002.00	1500.00
1405	14060.22	1500.00	0.07	1652.73	40.06	0.19580	0.23779	0.03970	0.012	268.049	0.07	0.00	1002.00	1500.00
1406	14070.98	1500.00	0.08	1654.87	40.18	0.19624	0.23740	0.03867	0.012	268.051	0.08	0.00	1002.00	1500.00
1407	14080.59	1500.00	0.07	1663.42	40.06	0.19673	0.23867	0.03965	0.012	268.053	0.06	0.00	1002.00	1500.00
1408	14090.20	1500.00	0.07	1652.35	40.06	0.19639	0.23921	0.03525	0.012	268.055	0.08	0.00	1002.00	1500.00
1409	14101.03	1500.00	0.09	1671.90	40.18	0.19741	0.23940	0.04121	0.010	268.057	0.08	0.00	1002.00	1500.00
1410	14110.58	1500.00	0.07	1646.94	40.18	0.19727	0.23940	0.04009	0.012	268.059	0.07	0.00	1002.00	1500.00
1411	14120.19	1500.00	0.08	1658.17	40.06	0.19761	0.23940	0.03369	0.015	268.061	0.08	0.00	1002.00	1500.00
1412	14131.01	1500.00	0.07	1655.80	40.18	0.19727	0.24062	0.03618	0.012	268.063	0.07	0.00	1002.00	1500.00
1413	14140.57	1500.00	0.08	1664.98	40.06	0.19893	0.24077	0.03799	0.012	268.066	0.07	0.00	1002.00	1500.00
1414	14150.18	1500.00	0.01	1657.79	40.18	0.19834	0.24102	0.03721	0.012	268.068	0.01	-0.01	1001.00	1500.00
1415	14161.00	1500.00	0.08	1657.64	40.18	0.19873	0.24141	0.03657	0.012	268.070	0.08	0.00	1001.00	1500.00
1416	14170.62	1500.00	0.06	1663.40	40.06	0.19912	0.24160	0.03657	0.015	268.072	0.06	0.00	1001.00	1500.00
1417	14180.17	1500.00	0.07	1659.84	40.18	0.19873	0.24229	0.04194	0.012	268.074	0.07	0.00	1001.00	1500.00
1418	14190.99	1500.00	0.07	1660.11	40.06	0.19878	0.24199	0.03975	0.015	268.077	0.07	0.00	1001.00	1500.00
1419	14200.60	1500.00	0.06	1661.26	40.18	0.19966	0.24233	0.03867	0.012	268.079	0.07	0.00	1001.00	1500.00
1420	14210.16	1500.00	0.07	1647.80	40.18	0.19927	0.24268	0.03242	0.010	268.080	0.07	0.00	1001.00	1500.00
1421	14220.98	1500.00	0.07	1660.81	40.18	0.19893	0.24287	0.03462	0.012	268.082	0.07	0.00	1001.00	1500.00
1422	14230.59	1500.00	0.07	1652.71	40.18	0.19897	0.24185	0.03706	0.012	268.084	0.08	0.00	1001.00	1500.00
1423	14240.21	1500.00	0.06	1652.63	40.18	0.19902	0.24111	0.03477	0.012	268.086	0.06	0.00	1000.00	1500.00

1424	14250.97	1500.00	0.09	1661.36	40.06	0.19839	0.24033	0.03667	0.012	268.088	0.06	0.00	1000.00	1500.00
1425	14260.58	1500.00	0.06	1662.60	40.18	0.19771	0.23965	0.03501	0.012	268.090	0.06	0.00	1000.00	1500.00
1426	14270.20	1500.00	0.07	1659.79	40.18	0.19824	0.23901	0.03784	0.012	268.092	0.07	0.00	1000.00	1500.00
1427	14280.96	1500.00	0.07	1658.12	40.18	0.19707	0.23726	0.03408	0.010	268.094	0.07	0.00	1000.00	1500.00
1428	14290.57	1500.00	0.06	1664.30	40.18	0.19639	0.23745	0.04146	0.012	268.096	0.06	0.00	999.00	1500.00
1429	14300.18	1500.00	0.05	1663.03	40.18	0.19624	0.23647	0.03921	0.010	268.098	0.03	0.04	1000.00	1500.00
1430	14310.95	1500.00	0.11	1668.80	40.06	0.19580	0.23628	0.04053	0.012	268.100	0.08	0.02	1000.00	1500.00
1431	14320.56	1500.00	0.07	1653.11	40.18	0.19546	0.23638	0.03540	0.010	268.101	0.07	0.00	1000.00	1500.00
1432	14330.17	1500.00	0.09	1673.37	40.18	0.19541	0.23540	0.03320	0.012	268.103	0.06	0.03	1000.00	1500.00
1433	14340.94	1500.00	0.16	1659.02	40.06	0.19521	0.23462	0.03828	0.012	268.106	0.07	0.06	1000.00	1500.00
1434	14350.55	1500.00	0.07	1652.81	40.18	0.19434	0.23345	0.03398	0.012	268.108	0.05	0.03	1000.00	1500.00
1435	14360.16	1500.00	0.07	1660.24	40.18	0.19526	0.23384	0.03979	0.010	268.109	0.07	0.00	1000.00	1500.00
1436	14370.98	1500.00	0.09	1663.67	40.06	0.19458	0.23345	0.04004	0.010	268.111	0.06	0.04	1000.00	1500.00
1437	14380.54	1500.00	0.07	1669.63	40.18	0.19463	0.23262	0.04121	0.010	268.112	0.08	0.00	1000.00	1500.00
1438	14390.15	1500.00	0.06	1674.69	40.18	0.50464	0.52612	0.03887	0.012	268.114	0.06	0.00	1000.00	1500.00
1439	14400.97	1500.00	0.07	1663.96	40.18	0.01172	0.47358	-0.16543	0.010	268.116	0.07	0.01	1000.00	1500.00
1440	14410.53	1500.00	0.07	1653.44	40.06	0.01064	0.45337	-0.15947	0.010	268.118	0.06	0.00	1000.00	1500.00
1441	14420.14	1500.00	0.08	1655.72	40.18	0.00981	0.44106	-0.15454	0.012	268.120	0.06	0.02	1000.00	1500.00
1442	14430.96	1500.00	0.06	1667.48	40.18	0.00894	0.41787	-0.16035	0.012	268.122	0.06	0.00	1000.00	1500.00
1443	14440.57	1500.00	0.06	1658.90	40.18	0.00996	0.41411	-0.15166	0.012	268.124	0.05	0.01	1000.00	1500.00
1444	14450.13	1500.00	0.07	1655.82	40.18	0.00898	0.40708	-0.15532	0.012	268.126	0.07	0.00	1000.00	1500.00
1445	14460.95	1500.00	-0.03	1665.89	40.18	0.00879	0.39702	-0.15718	0.012	268.128	0.04	-0.03	1000.00	1500.00
1446	14470.56	1500.00	0.08	1657.60	40.18	0.00859	0.39556	-0.15337	0.010	268.130	0.07	0.01	1000.00	1500.00
1447	14480.12	1500.00	0.07	1658.53	40.18	0.00786	0.39033	-0.15249	0.010	268.131	0.06	0.02	1000.00	1500.00
1448	14490.94	1500.00	0.07	1658.93	40.06	0.00786	0.38696	-0.15308	0.012	268.133	0.06	0.01	1000.00	1500.00
1449	14500.55	1500.00	0.06	1643.04	40.18	0.00723	0.38472	-0.15439	0.012	268.135	0.06	0.00	1000.00	1500.00
1450	14510.17	1500.00	0.05	1661.92	40.18	0.00806	0.38027	-0.15586	0.012	268.137	0.05	0.00	1000.00	1500.00
1451	14520.93	1500.00	0.06	1670.70	40.18	0.00747	0.38130	-0.15132	0.012	268.139	0.06	0.00	1000.00	1500.00
1452	14530.54	1500.00	0.08	1667.06	40.18	0.00815	0.38262	-0.15405	0.010	268.141	0.06	0.02	1000.00	1500.00
1453	14540.15	1500.00	0.06	1655.43	40.18	0.00791	0.37832	-0.15078	0.012	268.143	0.06	0.00	1000.00	1500.00
1454	14550.92	1500.00	0.08	1643.50	40.18	0.00791	0.38071	-0.14858	0.010	268.145	0.07	0.01	1000.00	1500.00

1455	14560.53	1500.00	0.06	1655.67	40.18	0.00840	0.38135	-0.15244	0.012	268.147	0.06	0.00	1000.00	1500.00
1456	14570.14	1500.00	0.06	1671.40	40.18	0.00747	0.37910	-0.15083	0.012	268.149	0.04	0.03	1000.00	1500.00
1457	14580.91	1500.00	0.06	1655.99	40.18	0.00859	0.38071	-0.14814	0.010	268.150	0.07	0.00	1000.00	1500.00
1458	14590.52	1500.00	0.06	1675.46	40.18	0.00815	0.38105	-0.14644	0.010	268.152	0.06	0.00	1000.00	1500.00
1459	14600.13	1500.00	0.05	1658.15	40.18	0.00786	0.38052	-0.14829	0.010	268.154	0.05	0.00	1000.00	1500.00
1460	14610.90	1500.00	0.06	1664.98	40.18	0.00791	0.38359	-0.15010	0.010	268.155	0.06	0.00	1000.00	1500.00
1461	14620.51	1500.00	0.08	1657.08	40.18	0.00796	0.38257	-0.14687	0.012	268.157	0.05	0.01	1000.00	1500.00
1462	14630.12	1500.00	0.05	1662.80	40.18	0.00879	0.38447	-0.14575	0.010	268.159	0.05	0.00	1000.00	1500.00
1463	14640.94	1500.00	0.06	1667.23	40.18	0.00825	0.38613	-0.15190	0.010	268.160	0.05	0.01	1000.00	1500.00
1464	14650.50	1500.00	0.06	1647.96	40.18	0.00859	0.38433	-0.14961	0.010	268.162	0.05	0.00	1000.00	1500.00
1465	14660.11	1500.00	0.06	1675.75	40.18	0.00854	0.38662	-0.14771	0.012	268.164	0.05	0.02	1000.00	1500.00
1466	14670.93	1500.00	0.06	1632.47	40.18	0.00864	0.38862	-0.14507	0.010	268.166	0.06	0.01	1000.00	1500.00
1467	14680.49	1500.00	0.05	1672.08	40.18	0.00903	0.38799	-0.14824	0.012	268.168	0.05	0.00	1000.00	1500.00
1468	14690.10	1500.00	0.06	1664.31	40.18	0.00923	0.39092	-0.15083	0.012	268.170	0.05	0.02	1000.00	1500.00
1469	14700.92	1500.00	0.05	1652.83	40.18	0.00913	0.39077	-0.14780	0.012	268.172	0.05	0.00	1000.00	1500.00
1470	14710.53	1500.00	0.08	1654.04	40.18	0.00869	0.39087	-0.14956	0.010	268.173	0.07	0.01	1000.00	1500.00
1471	14720.09	1500.00	0.05	1662.39	40.18	0.00850	0.39336	-0.14580	0.012	268.176	0.05	0.00	1000.00	1500.00
1472	14730.91	1500.00	0.07	1662.32	40.18	0.00903	0.39204	-0.14106	0.010	268.177	0.05	0.02	1000.00	1500.00
1473	14740.52	1500.00	0.05	1643.87	40.18	0.00884	0.39243	-0.15010	0.010	268.179	0.06	0.00	1000.00	1500.00
1474	14750.08	1500.00	0.05	1654.16	40.18	0.00913	0.39526	-0.14141	0.012	268.181	0.05	0.01	1000.00	1500.00
1475	14760.90	1500.00	0.06	1663.50	40.18	0.00894	0.39292	-0.14658	0.012	268.183	0.05	0.01	1000.00	1500.00
1476	14770.51	1500.00	0.06	1653.92	40.18	0.00947	0.39561	-0.13799	0.012	268.185	0.06	0.00	1000.00	1500.00
1477	14780.12	1500.00	0.05	1665.14	40.18	0.00908	0.39736	-0.14658	0.012	268.187	0.04	0.02	1000.00	1500.00
1478	14790.89	1500.00	0.05	1660.53	40.18	0.00889	0.39639	-0.14434	0.010	268.189	0.05	0.00	1000.00	1500.00
1479	14800.50	1500.00	0.06	1658.13	40.18	0.00894	0.39888	-0.14771	0.010	268.190	0.05	0.00	1000.00	1500.00
1480	14810.11	1500.00	0.05	1656.41	40.18	0.00957	0.39941	-0.14312	0.012	268.192	0.06	0.00	1000.00	1500.00
1481	14820.88	1500.00	0.05	1663.04	40.18	0.00977	0.40049	-0.14067	0.012	268.194	0.04	0.02	1000.00	1500.00
1482	14830.49	1500.00	0.05	1662.40	40.18	0.00918	0.40210	-0.14194	0.010	268.196	0.04	0.01	1000.00	1500.00
1483	14840.10	1500.00	0.05	1669.21	40.18	0.01021	0.40059	-0.14575	0.012	268.198	0.05	0.00	1000.00	1500.00
1484	14850.87	1500.00	0.05	1666.23	40.18	0.01069	0.40161	-0.14370	0.012	268.200	0.05	0.00	1000.00	1500.00
1485	14860.48	1500.00	0.06	1658.13	40.18	0.01016	0.40239	-0.14336	0.010	268.202	0.05	0.01	1000.00	1500.00

1486	14870.09	1500.00	0.05	1659.56	40.18	0.01006	0.40127	-0.13975	0.010	268.203	0.05	0.02	1000.00	1500.00
1487	14880.86	1500.00	0.04	1654.19	40.18	0.01006	0.40239	-0.14170	0.012	268.205	0.05	0.00	1000.00	1500.00
1488	14890.47	1500.00	0.05	1663.53	40.18	0.01152	0.40493	-0.14419	0.010	268.207	0.04	0.02	1000.00	1500.00
1489	14900.08	1500.00	0.05	1658.67	40.18	0.00972	0.40195	-0.14424	0.010	268.208	0.04	0.00	1000.00	1500.00
1490	14910.90	1500.00	0.04	1662.11	40.18	0.01123	0.40386	-0.14097	0.012	268.211	0.04	0.01	1000.00	1500.00
1491	14920.46	1500.00	0.05	1670.57	40.18	0.01030	0.40454	-0.13877	0.010	268.212	0.05	0.00	1000.00	1500.00
1492	14930.07	1500.00	-0.54	1666.65	40.18	0.00991	0.40391	-0.14399	0.010	268.214	0.10	-0.03	1000.00	1500.00
1493	14940.89	1500.00	0.03	1659.26	40.18	0.00937	0.40493	-0.14199	0.010	268.215	0.00	0.03	1000.00	1500.00
1494	14950.45	1500.00	0.07	1657.35	40.18	0.01069	0.40444	-0.14253	0.012	268.217	0.06	0.01	1000.00	1500.00
1495	14960.06	1500.00	0.06	1652.88	40.18	0.01040	0.40493	-0.14512	0.010	268.219	0.04	0.01	1000.00	1500.00
1496	14970.88	1500.00	0.06	1662.71	40.18	0.01021	0.40640	-0.14072	0.010	268.221	0.04	0.01	1000.00	1500.00
1497	14980.49	1500.00	0.05	1660.46	40.31	0.01025	0.40332	-0.14297	0.012	268.223	0.04	0.02	1000.00	1500.00
1498	14990.05	1500.00	0.05	1662.78	40.18	0.01064	0.40591	-0.13789	0.010	268.224	0.04	0.00	1000.00	1500.00
1499	15000.87	1500.00	0.06	1651.08	40.18	0.01045	0.40596	-0.13813	0.012	268.226	0.06	0.00	1000.00	1500.00
1500	15010.48	1500.00	0.05	1665.32	40.18	0.00986	0.40488	-0.14131	0.010	268.228	0.05	0.00	1000.00	1500.00
1501	15020.04	1500.00	0.04	1659.92	40.18	0.01040	0.40684	-0.13921	0.012	268.230	0.04	0.00	1000.00	1500.00
1502	15030.86	1500.00	0.06	1655.14	40.31	0.00991	0.40640	-0.14209	0.012	268.232	0.04	0.01	1000.00	1500.00
1503	15040.47	1500.00	0.04	1668.38	40.31	0.00942	0.40649	-0.13730	0.012	268.234	0.04	0.00	1000.00	1500.00
1504	15050.08	1500.00	0.05	1660.57	40.18	0.00967	0.40615	-0.14326	0.012	268.236	0.04	0.02	1000.00	1500.00
1505	15060.85	1500.00	0.05	1657.85	40.31	0.01064	0.40518	-0.13979	0.012	268.238	0.05	0.00	1000.00	1500.00
1506	15070.46	1500.00	0.05	1659.12	40.18	0.01030	0.40688	-0.14390	0.010	268.240	0.05	0.00	1000.00	1500.00
1507	15080.07	1500.00	0.05	1644.45	40.18	0.00991	0.40698	-0.13843	0.010	268.241	0.04	0.01	1000.00	1500.00
1508	15090.84	1500.00	0.05	1659.45	40.18	0.01025	0.40698	-0.14082	0.012	268.243	0.04	0.01	1000.00	1500.00
1509	15100.45	1500.00	0.05	1659.06	40.18	0.00986	0.40825	-0.14185	0.010	268.245	0.04	0.00	1000.00	1500.00
1510	15110.06	1500.00	0.05	1665.96	40.18	0.01094	0.40869	-0.14058	0.012	268.247	0.04	0.01	1000.00	1500.00
1511	15120.83	1500.00	-0.72	1657.14	40.31	0.01021	0.40752	-0.14204	0.010	268.249	0.17	-0.03	1000.00	1500.00
1512	15130.44	1500.00	0.03	1661.26	40.18	0.01006	0.40835	-0.14082	0.010	268.250	0.00	0.02	1000.00	1500.00
1513	15140.05	1500.00	0.02	1664.29	40.18	0.01079	0.40889	-0.14346	0.010	268.252	0.00	0.01	1000.00	1500.00
1514	15150.82	1500.00	0.09	1664.89	40.18	0.01084	0.40796	-0.14131	0.010	268.254	0.08	0.02	1000.00	1500.00
1515	15160.43	1500.00	0.06	1663.89	40.18	0.01055	0.40957	-0.13960	0.012	268.256	0.04	0.02	1000.00	1500.00
1516	15170.04	1500.00	0.05	1656.42	40.18	0.01069	0.40864	-0.13872	0.012	268.258	0.04	0.01	1000.00	1500.00

1517	15180.86	1500.00	0.05	1658.82	40.18	0.01040	0.40830	-0.13853	0.012	268.260	0.04	0.01	1000.00	1500.00
1518	15190.42	1500.00	0.06	1664.06	40.18	0.01118	0.40879	-0.14038	0.010	268.261	0.04	0.01	1000.00	1500.00
1519	15200.03	1500.00	0.04	1661.31	40.18	0.01094	0.40796	-0.13979	0.010	268.263	0.04	0.00	1000.00	1500.00
1520	15210.85	1500.00	0.06	1659.55	40.18	0.01084	0.40884	-0.14268	0.010	268.265	0.04	0.02	1000.00	1500.00
1521	15220.41	1500.00	0.05	1658.18	40.18	0.01055	0.41069	-0.14048	0.010	268.266	0.04	0.01	1000.00	1500.00
1522	15230.02	1500.00	0.05	1665.32	40.18	0.01113	0.40879	-0.13687	0.010	268.268	0.04	0.02	1000.00	1500.00
1523	15240.84	1500.00	0.05	1661.53	40.31	0.00928	0.40981	-0.13896	0.012	268.270	0.04	0.01	1000.00	1500.00
1524	15250.45	1500.00	0.05	1669.38	40.18	0.01084	0.41030	-0.13799	0.010	268.271	0.05	0.00	1000.00	1500.00
1525	15260.01	1500.00	0.04	1653.28	40.18	0.01055	0.40884	-0.14043	0.010	268.273	0.04	0.00	1000.00	1500.00
1526	15270.83	1500.00	0.05	1659.11	40.18	0.01006	0.41084	-0.13984	0.010	268.275	0.05	0.00	1000.00	1500.00
1527	15280.44	1500.00	0.05	1648.51	40.31	0.01187	0.41050	-0.13989	0.010	268.276	0.04	0.01	1000.00	1500.00
1528	15290.00	1500.00	0.05	1661.30	40.18	0.01030	0.41147	-0.14102	0.010	268.278	0.04	0.01	1000.00	1500.00
1529	15300.82	1500.00	0.05	1658.36	40.31	0.01074	0.41089	-0.13711	0.012	268.280	0.04	0.02	1000.00	1500.00
1530	15310.43	1500.00	0.05	1661.24	40.31	0.01016	0.40986	-0.14229	0.010	268.282	0.04	0.00	1000.00	1500.00
1531	15320.04	1500.00	0.06	1668.31	40.31	0.01040	0.41143	-0.13784	0.010	268.283	0.05	0.01	1000.00	1500.00
1532	15330.81	1500.00	0.04	1654.32	40.18	0.01006	0.41245	-0.14014	0.010	268.285	0.04	0.01	1000.00	1500.00
1533	15340.42	1500.00	0.05	1664.76	40.18	0.01094	0.41108	-0.13892	0.010	268.286	0.04	0.01	1000.00	1500.00
1534	15350.03	1500.00	0.05	1658.67	40.18	0.01030	0.41279	-0.13662	0.010	268.288	0.04	0.01	1000.00	1500.00
1535	15360.80	1500.00	0.05	1665.79	40.31	0.01128	0.41309	-0.13491	0.012	268.290	0.04	0.02	1000.00	1500.00
1536	15370.41	1500.00	0.06	1670.25	40.18	0.01069	0.41196	-0.14351	0.010	268.292	0.04	0.02	1000.00	1500.00
1537	15380.02	1500.00	0.06	1662.71	40.18	0.01104	0.41372	-0.13721	0.012	268.294	0.07	-0.03	1000.00	1500.00
1538	15390.79	1500.00	0.06	1651.67	40.18	0.01138	0.41309	-0.14302	0.012	268.296	0.05	0.00	1000.00	1500.00
1539	15400.51	1500.00	0.06	1664.52	40.31	0.01025	0.41245	-0.13628	0.012	268.298	0.04	0.01	1000.00	1500.00
1540	15410.12	1500.00	0.04	1666.05	40.31	0.01099	0.41431	-0.13545	0.010	268.300	0.04	0.00	1000.00	1500.00
1541	15420.88	1500.00	0.05	1658.45	40.18	0.01035	0.41299	-0.13384	0.010	268.301	0.04	0.01	1000.00	1500.00
1542	15430.50	1500.00	0.04	1652.90	40.18	0.01045	0.41411	-0.13813	0.012	268.303	0.04	0.00	1000.00	1500.00
1543	15440.11	1500.00	0.04	1666.36	40.31	0.01079	0.41558	-0.13862	0.012	268.305	0.04	0.01	1000.00	1500.00
1544	15450.87	1500.00	0.05	1660.97	40.18	0.01084	0.41372	-0.14111	0.010	268.307	0.04	0.01	1000.00	1500.00
1545	15460.49	1500.00	0.05	1662.06	40.31	0.01035	0.41509	-0.13940	0.012	268.309	0.04	0.01	1000.00	1500.00
1546	15470.10	1500.00	0.04	1657.65	40.18	0.01128	0.41543	-0.13823	0.010	268.310	0.03	0.02	1000.00	1500.00
1547	15480.92	1500.00	0.04	1663.47	40.18	0.01084	0.41440	-0.13813	0.010	268.312	0.04	0.00	1000.00	1500.00

1548	15490.48	1500.00	0.05	1662.67	40.18	0.01055	0.41646	-0.14224	0.010	268.314	0.03	0.01	1000.00	1500.00
1549	15500.09	1500.00	0.05	1659.33	40.31	0.01104	0.41514	-0.13853	0.012	268.316	0.04	0.02	1000.00	1500.00
1550	15510.91	1500.00	0.04	1657.18	40.18	0.01167	0.41606	-0.13550	0.012	268.318	0.04	0.00	1000.00	1500.00
1551	15520.46	1500.00	0.06	1661.01	40.18	0.01196	0.41626	-0.13384	0.010	268.319	0.03	0.02	1000.00	1500.00
1552	15530.08	1500.00	0.04	1661.45	40.18	0.01055	0.41621	-0.13945	0.010	268.321	-0.03	0.01	1000.00	1500.00
1553	15540.90	1500.00	0.05	1670.02	40.18	0.01099	0.41636	-0.13896	0.010	268.323	0.04	0.01	1000.00	1500.00
1554	15550.45	1500.00	0.05	1652.83	40.31	0.01060	0.41763	-0.14121	0.010	268.324	0.04	0.00	1000.00	1500.00
1555	15560.07	1500.00	0.05	1663.34	40.18	0.01128	0.41577	-0.13628	0.012	268.326	0.04	0.00	1000.00	1500.00
1556	15570.89	1500.00	0.04	1656.25	40.18	0.01113	0.41733	-0.13696	0.012	268.328	0.01	0.03	1000.00	1500.00
1557	15580.50	1500.00	0.06	1665.17	40.18	0.01138	0.41675	-0.13740	0.012	268.330	0.04	0.01	1000.00	1500.00
1558	15590.06	1500.00	0.05	1660.27	40.18	0.01094	0.41626	-0.13979	0.010	268.332	0.04	0.02	1000.00	1500.00
1559	15600.88	1500.00	0.04	1659.57	40.18	0.01079	0.41768	-0.13682	0.012	268.334	0.04	0.00	1000.00	1500.00
1560	15610.49	1500.00	0.05	1659.39	40.31	0.01099	0.41660	-0.14116	0.010	268.336	0.03	0.02	1000.00	1500.00
1561	15620.04	1500.00	0.05	1655.92	40.18	0.01104	0.41689	-0.14028	0.012	268.338	0.04	0.01	1000.00	1500.00
1562	15630.86	1500.00	0.05	1658.55	40.18	0.01084	0.41772	-0.13691	0.010	268.339	0.04	0.02	1000.00	1500.00
1563	15640.48	1500.00	0.05	1663.06	40.31	0.01172	0.41719	-0.13809	0.010	268.341	0.04	0.00	1000.00	1500.00
1564	15650.09	1500.00	-0.05	1665.41	40.31	0.01084	0.41797	-0.13887	0.010	268.343	-0.02	0.04	999.00	1500.00
1565	15660.85	1500.00	0.04	1662.98	40.31	0.01133	0.41821	-0.13633	0.012	268.345	0.00	0.03	1000.00	1500.00
1566	15670.47	1500.00	0.01	1659.47	40.31	0.01064	0.41797	-0.13481	0.010	268.346	0.00	0.01	1000.00	1500.00
1567	15680.08	1500.00	0.08	1657.73	40.31	0.01084	0.41909	-0.13931	0.010	268.348	0.08	0.02	1000.00	1500.00
1568	15690.84	1500.00	0.10	1663.24	40.18	0.01172	0.41880	-0.13604	0.012	268.350	0.08	0.02	1000.00	1500.00
1569	15700.46	1500.00	0.05	1653.39	40.18	0.01177	0.41880	-0.13730	0.010	268.352	0.03	0.02	1000.00	1500.00
1570	15710.07	1500.00	0.05	1660.34	40.31	0.01167	0.41890	-0.13950	0.012	268.354	0.03	0.01	1000.00	1500.00
1571	15720.83	1500.00	0.03	1659.19	40.18	0.01157	0.41953	-0.13735	0.010	268.355	0.03	0.00	1000.00	1500.00
1572	15730.44	1500.00	0.05	1661.78	40.31	0.01055	0.42056	-0.13447	0.012	268.357	0.04	0.01	1000.00	1500.00
1573	15740.06	1500.00	0.05	1662.40	40.31	0.01167	0.42080	-0.13350	0.012	268.359	0.03	0.01	1000.00	1500.00
1574	15750.88	1500.00	0.05	1663.35	40.31	0.01123	0.41943	-0.14111	0.012	268.361	0.03	0.01	1000.00	1500.00
1575	15760.43	1500.00	0.04	1663.71	40.18	0.01118	0.42051	-0.13784	0.012	268.363	0.03	0.00	1000.00	1500.00
1576	15770.05	1500.00	0.06	1657.20	40.18	0.01118	0.42217	-0.13667	0.012	268.365	0.00	0.07	999.00	1500.00
1577	15780.87	1500.00	0.07	1666.14	40.31	0.01182	0.42021	-0.13467	0.012	268.367	0.04	0.02	1000.00	1500.00
1578	15790.42	1500.00	0.05	1658.15	40.31	0.01177	0.42144	-0.13735	0.010	268.369	0.03	0.03	1000.00	1500.00

1579	15800.04	1500.00	0.05	1663.04	40.18	0.01177	0.42129	-0.13706	0.010	268.371	0.04	0.01	1000.00	1500.00
1580	15810.86	1500.00	0.04	1656.79	40.18	0.01177	0.42124	-0.13081	0.010	268.372	0.03	0.01	1000.00	1500.00
1581	15820.47	1500.00	0.05	1661.92	40.18	0.01177	0.42241	-0.13462	0.012	268.374	0.04	0.01	1000.00	1500.00
1582	15830.02	1500.00	0.04	1657.62	40.31	0.01089	0.42144	-0.13477	0.012	268.376	0.04	0.00	1000.00	1500.00
1583	15840.84	1500.00	0.05	1648.55	40.18	0.01064	0.42188	-0.13569	0.010	268.378	0.04	0.01	1000.00	1500.00
1584	15850.46	1500.00	0.05	1660.36	40.31	0.01157	0.42305	-0.14043	0.012	268.380	0.04	0.01	1000.00	1500.00
1585	15860.01	1500.00	0.04	1661.31	40.18	0.01167	0.42202	-0.14009	0.010	268.382	0.03	0.01	1000.00	1500.00
1586	15870.83	1500.00	0.04	1657.69	40.31	0.01128	0.42275	-0.13701	0.012	268.384	0.03	0.02	1000.00	1500.00
1587	15880.45	1500.00	0.06	1662.64	40.18	0.01221	0.42422	-0.13418	0.012	268.386	0.03	0.02	1000.00	1500.00
1588	15890.00	1500.00	0.05	1668.29	40.18	0.01104	0.42344	-0.13721	0.010	268.387	0.04	0.02	1000.00	1500.00
1589	15900.82	1500.00	0.06	1659.21	40.31	0.01265	0.42417	-0.13721	0.012	268.389	0.04	0.02	1000.00	1500.00
1590	15910.44	1500.00	8.47	1661.24	40.18	0.16299	0.42432	0.02749	0.012	268.391	2.54	1.70	998.00	1500.00
1591	15920.05	1500.00	4.31	1652.63	40.31	0.00601	0.00830	0.03433	0.332	268.447	0.49	3.99	1001.00	1500.00
1592	15930.81	1500.00	-0.37	1671.54	40.31	0.00493	0.00688	0.03838	0.801	268.580	-0.39	0.06	999.00	1500.00
1593	15940.42	1500.00	0.22	1676.72	40.18	0.00840	0.01182	0.03794	0.928	268.735	0.18	0.00	1000.00	1500.00
1594	15950.04	1500.00	0.07	1648.45	40.18	0.01084	0.01753	0.03584	0.974	268.897	0.06	0.00	1000.00	1500.00
1595	15960.80	1500.00	0.05	1664.03	40.18	0.52192	0.49429	0.03882	1.194	269.096	0.06	0.00	1001.00	1500.00
1596	15970.41	1500.00	0.06	1672.12	40.18	0.08037	0.07964	0.03804	1.064	269.274	0.06	0.00	1001.00	1500.00
1597	15980.03	1500.00	0.04	1654.66	40.18	0.10205	0.10840	0.03936	0.935	269.429	0.04	0.00	1001.00	1500.00
1598	15990.79	1500.00	0.06	1650.11	40.18	0.12422	0.13906	0.03716	0.659	269.539	0.05	0.00	1001.00	1500.00
1599	16000.40	1500.00	0.03	1677.00	40.18	0.14980	0.17451	0.03555	0.432	269.611	0.03	0.00	1001.00	1500.00
1600	16010.02	1500.00	0.04	1644.28	40.18	0.16895	0.19902	0.04082	0.276	269.657	0.04	0.00	1000.00	1500.00
1601	16020.84	1500.00	0.03	1660.66	40.18	0.18184	0.21704	0.04219	0.171	269.686	0.02	0.00	1000.00	1500.00
1602	16030.39	1500.00	0.04	1665.74	40.18	0.18896	0.22646	0.03154	0.107	269.704	0.04	0.00	1000.00	1500.00
1603	16040.00	1500.00	0.03	1648.88	40.18	0.19390	0.23149	0.03740	0.071	269.716	0.03	0.01	1000.00	1500.00
1604	16050.83	1500.00	0.06	1660.25	40.18	0.19604	0.23452	0.04067	0.051	269.724	0.04	0.01	1000.00	1500.00
1605	16060.38	1500.00	0.07	1667.21	40.18	0.19834	0.23828	0.03511	0.037	269.730	0.05	0.03	1000.00	1500.00
1606	16071.20	1500.00	0.08	1662.92	40.18	0.19893	0.23809	0.03452	0.024	269.734	0.05	0.03	1000.00	1500.00
1607	16080.81	1500.00	0.07	1664.11	40.18	0.19912	0.23896	0.03325	0.022	269.738	0.04	0.03	1000.00	1500.00
1608	16090.43	1500.00	0.08	1658.09	40.18	0.20015	0.23867	0.03555	0.017	269.741	0.05	0.02	1000.00	1500.00
1609	16101.19	1500.00	0.04	1660.14	40.06	0.20054	0.23975	0.03760	0.015	269.743	0.04	0.00	1000.00	1500.00

1610	16110.80	1500.00	0.06	1654.62	40.18	0.20171	0.24111	0.03696	0.012	269.745	0.04	0.02	1000.00	1500.00
1611	16120.42	1500.00	0.06	1652.60	40.18	0.20151	0.24175	0.03496	0.012	269.747	0.04	0.01	1000.00	1500.00
1612	16131.18	1500.00	0.05	1658.25	40.18	0.20264	0.24180	0.03989	0.012	269.749	0.04	0.01	1000.00	1500.00
1613	16140.79	1500.00	0.05	1660.88	40.18	0.20220	0.24204	0.03496	0.010	269.751	0.04	0.00	1000.00	1500.00
1614	16150.41	1500.00	0.05	1648.93	40.18	0.20234	0.24258	0.03545	0.010	269.753	0.04	0.01	1000.00	1500.00
1615	16160.02	1500.00	0.06	1660.35	40.18	0.20234	0.24165	0.03628	0.010	269.754	0.04	0.01	1000.00	1500.00
1616	16170.78	1500.00	0.05	1654.98	40.06	0.20210	0.24229	0.03740	0.027	269.759	0.04	0.01	1000.00	1500.00
1617	16180.39	1500.00	0.06	1656.15	40.18	0.20244	0.24272	0.03750	0.012	269.761	0.04	0.02	1000.00	1500.00
1618	16190.01	1500.00	0.05	1649.37	40.18	0.20322	0.24180	0.03950	0.015	269.763	0.05	0.00	1000.00	1500.00
1619	16200.77	1500.00	0.06	1650.33	40.06	0.20298	0.24238	0.03560	0.017	269.766	0.04	0.02	1000.00	1500.00
1620	16210.38	1500.00	0.05	1647.76	40.18	0.20273	0.24248	0.03574	0.015	269.768	0.05	0.00	1000.00	1500.00
1621	16220.00	1500.00	0.06	1714.88	40.18	0.20366	0.24331	0.04121	0.012	269.770	0.03	0.03	1000.00	1500.00
1622	16230.76	1500.00	0.07	1654.08	40.18	0.20332	0.24346	0.03589	0.012	269.773	0.05	0.02	1000.00	1500.00
1623	16240.37	1500.00	0.06	1673.67	40.18	0.20313	0.24380	0.03882	0.012	269.775	0.05	0.02	1000.00	1500.00
1624	16251.19	1500.00	0.06	1659.23	40.18	0.20264	0.24365	0.03887	0.012	269.777	0.05	0.01	1000.00	1500.00
1625	16260.75	1500.00	0.07	1632.77	40.18	0.20400	0.24399	0.04058	0.017	269.779	0.05	0.01	1000.00	1500.00
1626	16270.36	1500.00	0.07	1606.21	40.18	0.20396	0.24375	0.04062	0.010	269.781	0.05	0.02	1000.00	1500.00
1627	16281.18	1500.00	0.07	1658.24	40.18	0.20410	0.24370	0.03989	0.012	269.783	0.05	0.01	1000.00	1500.00
1628	16290.79	1500.00	0.08	1672.62	40.18	0.20396	0.24336	0.03398	0.012	269.785	0.12	-0.05	1000.00	1500.00
1629	16300.35	1500.00	0.05	1672.52	40.18	0.20410	0.24404	0.03765	0.012	269.787	0.02	0.04	1000.00	1500.00
1630	16311.17	1500.00	0.08	1649.56	40.18	0.20435	0.24482	0.03628	0.010	269.789	0.05	0.03	1000.00	1500.00
1631	16320.78	1500.00	0.06	1652.59	40.18	0.20313	0.24395	0.03452	0.012	269.791	0.05	0.01	1000.00	1500.00
1632	16330.34	1507.00	8.62	1712.30	40.18	0.06147	0.06172	0.04009	2.090	270.139	1.58	-1.02	1008.00	1500.00
1633	16341.16	1500.00	3.64	1651.88	40.18	-0.00049	-0.00112	0.03945	2.146	270.497	-0.45	2.45	1001.00	1500.00
1634	16350.77	1500.00	2.55	1657.46	40.18	-0.00649	-0.00547	0.03857	2.056	270.839	-0.01	2.59	1000.00	1500.00
1635	16360.39	1500.00	2.58	1660.32	40.18	-0.00645	-0.00659	0.03696	2.034	271.178	0.08	2.54	1000.00	1500.00
1636	16371.15	1500.00	2.47	1661.30	40.18	-0.00757	-0.00747	0.03491	1.968	271.506	0.05	2.41	999.00	1500.00
1637	16380.76	1500.00	2.54	1658.69	40.18	-0.00762	-0.00801	0.03706	2.014	271.842	0.07	2.41	1000.00	1500.00
1638	16390.37	1500.00	2.46	1652.82	40.31	-0.00723	-0.00850	0.04136	1.978	272.172	0.05	2.43	999.00	1500.00
1639	16401.14	1500.00	2.67	1656.87	40.18	-0.00698	-0.00767	0.03887	2.109	272.523	0.08	2.56	1000.00	1500.00
1640	16410.75	1500.00	2.70	1659.34	40.31	-0.00713	-0.00850	0.04150	2.190	272.888	0.06	2.65	1000.00	1500.00

1641	16420.36	1500.00	2.68	1661.43	40.18	-0.00742	-0.00786	0.03813	2.183	273.252	0.03	2.66	1000.00	1500.00
1642	16430.03	1500.00	2.80	1659.68	40.18	-0.00679	-0.00801	0.04072	2.246	273.626	0.05	2.75	1000.00	1500.00
1643	16440.85	1500.00	2.86	1656.89	40.18	-0.00620	-0.00781	0.03833	2.297	274.009	0.04	2.86	1000.00	1500.00
1644	16450.46	1500.00	2.93	1658.52	40.18	-0.00635	-0.00791	0.04194	2.356	274.402	0.04	2.87	1000.00	1500.00
1645	16460.02	1500.00	3.02	1653.66	40.18	-0.00542	-0.00854	0.04038	2.437	274.808	0.04	3.05	1000.00	1500.00
1646	16470.84	1500.00	3.13	1661.97	40.18	-0.00728	-0.00723	0.03906	2.517	275.228	0.03	3.15	1000.00	1500.00
1647	16480.45	1500.00	3.15	1655.13	40.18	-0.00581	-0.00674	0.04224	2.544	275.652	0.03	3.12	1000.00	1500.00
1648	16490.06	1500.00	3.26	1656.59	40.18	-0.00601	-0.00728	0.03525	2.739	276.108	0.03	3.23	999.00	1500.00
1649	16500.94	1500.00	3.29	1656.13	40.18	-0.00562	-0.00698	0.03687	2.649	276.550	0.03	3.31	999.00	1500.00
1650	16510.55	1500.00	3.43	1656.00	40.18	-0.00630	-0.00610	0.03604	2.756	277.009	0.02	3.39	1000.00	1500.00
1651	16520.11	1500.00	3.49	1659.60	40.18	-0.00562	-0.00698	0.04155	2.847	277.483	0.04	3.41	999.00	1500.00
1652	16530.93	1500.00	3.49	1658.24	40.18	-0.00615	-0.00669	0.04092	2.793	277.949	0.03	3.46	1000.00	1500.00
1653	16540.54	1494.00	0.47	1662.13	40.31	-0.00537	-0.00674	0.03818	2.852	278.424	-1.64	2.80	992.00	1492.00
1654	16550.15	1500.00	4.30	1662.42	40.18	-0.00586	-0.00713	0.03833	2.896	278.907	-0.38	3.71	1000.00	1500.00
1655	16560.92	1500.00	3.46	1658.71	40.06	-0.00586	-0.00664	0.03926	2.786	279.371	0.00	3.47	1000.00	1500.00
1656	16570.53	1500.00	3.49	1656.59	40.18	-0.00508	-0.00601	0.04165	2.798	279.837	0.03	3.54	1000.00	1500.00
1657	16580.14	1500.00	4.86	1659.93	40.18	-0.00562	-0.00737	0.04209	2.820	280.307	0.59	3.83	1001.00	1500.00
1658	16590.91	1500.00	3.51	1657.70	40.18	-0.00503	-0.00645	0.04199	2.849	280.782	-0.02	3.52	1000.00	1500.00
1659	16600.52	1500.00	3.54	1656.72	40.18	-0.00601	-0.00654	0.03643	2.888	281.263	0.01	3.56	1000.00	1500.00
1660	16610.13	1500.00	3.61	1657.74	40.18	-0.00527	-0.00688	0.04146	2.822	281.734	0.06	3.54	999.00	1500.00
1661	16620.90	1500.00	3.65	1659.58	40.18	-0.00586	-0.00620	0.04097	2.881	282.214	0.04	3.59	1000.00	1500.00
1662	16630.51	1500.00	3.69	1655.02	40.18	-0.00479	-0.00605	0.03887	2.964	282.708	0.04	3.61	1000.00	1500.00
1663	16640.12	1500.00	3.65	1650.54	40.18	-0.00513	-0.00591	0.03813	2.891	283.190	0.02	3.64	1000.00	1500.00
1664	16650.94	1500.00	3.70	1658.89	40.06	-0.00605	-0.00649	0.04233	2.920	283.676	0.02	3.67	1000.00	1500.00
1665	16660.50	1500.00	3.71	1655.36	40.18	-0.00562	-0.00557	0.03921	2.905	284.161	0.03	3.68	1000.00	1500.00
1666	16670.11	1500.00	3.68	1656.10	40.18	-0.00610	-0.00601	0.03745	2.917	284.647	0.02	3.66	1000.00	1500.00
1667	16680.93	1500.00	3.71	1652.33	40.18	-0.00542	-0.00635	0.03979	2.932	285.136	0.02	3.73	1000.00	1500.00
1668	16690.49	1500.00	3.71	1654.46	40.18	-0.00479	-0.00513	0.03701	2.925	285.623	0.03	3.69	1000.00	1500.00
1669	16700.10	1500.00	3.72	1655.87	40.18	-0.00522	-0.00674	0.03936	2.917	286.109	0.03	3.70	1000.00	1500.00
1670	16710.92	1500.00	3.69	1657.76	40.18	-0.00498	-0.00586	0.03765	2.966	286.604	0.02	3.72	1000.00	1500.00
1671	16720.53	1500.00	3.71	1650.52	40.18	-0.00483	-0.00659	0.04385	2.900	287.087	0.02	3.68	999.00	1500.00

1672	16730.09	1500.00	3.75	1653.67	40.18	-0.00488	-0.00610	0.03896	2.913	287.572	0.02	3.70	1000.00	1500.00
1673	16740.91	1500.00	3.68	1664.75	40.18	-0.00464	-0.00654	0.03955	2.952	288.064	0.02	3.67	1000.00	1500.00
1674	16750.52	1500.00	3.73	1654.01	40.18	-0.00513	-0.00762	0.03887	2.891	288.546	0.03	3.70	1000.00	1500.00
1675	16760.08	1500.00	3.88	1661.27	40.18	-0.00552	-0.00708	0.03740	3.022	289.050	0.02	3.85	1000.00	1500.00
1676	16770.90	1500.00	3.67	1657.53	40.18	-0.00552	-0.00625	0.03735	2.869	289.528	0.03	3.59	1000.00	1500.00
1677	16780.51	1500.00	3.65	1654.95	40.18	-0.00547	-0.00630	0.03608	2.856	290.004	0.02	3.62	1000.00	1500.00
1678	16790.07	1500.00	3.64	1651.85	40.18	-0.00566	-0.00615	0.04097	2.896	290.487	0.02	3.67	1000.00	1500.00
1679	16800.89	1500.00	3.10	1660.71	40.18	-0.00498	-0.00625	0.03911	2.380	290.883	0.05	2.91	999.00	1500.00
1680	16810.50	1500.00	3.19	1662.11	40.18	-0.00566	-0.00630	0.03535	2.539	291.307	0.00	3.16	1000.00	1500.00
1681	16820.11	1500.00	3.18	1657.92	40.31	-0.00493	-0.00645	0.04292	2.578	291.736	0.03	3.19	1000.00	1500.00
1682	16830.88	1500.00	3.17	1658.03	40.18	-0.00522	-0.00562	0.03179	2.537	292.159	0.02	3.20	1000.00	1500.00
1683	16840.49	1500.00	3.21	1658.96	40.31	-0.00635	-0.00659	0.03564	2.556	292.585	0.02	3.17	1000.00	1500.00
1684	16850.10	1500.00	3.21	1660.07	40.18	-0.00513	-0.00669	0.04189	2.544	293.009	0.02	3.18	1000.00	1500.00
1685	16860.87	1500.00	3.17	1654.23	40.18	-0.00518	-0.00610	0.04102	2.517	293.429	0.02	3.14	1000.00	1500.00
1686	16870.48	1500.00	3.25	1664.11	40.18	-0.00581	-0.00581	0.04170	2.529	293.850	0.02	3.19	1000.00	1500.00
1687	16880.09	1500.00	3.19	1653.03	40.18	-0.00557	-0.00625	0.04248	2.520	294.270	0.02	3.18	1000.00	1500.00
1688	16890.86	1500.00	3.19	1658.35	40.18	-0.00547	-0.00664	0.03535	2.524	294.691	0.02	3.17	1000.00	1500.00
1689	16900.47	1500.00	3.23	1662.43	40.18	-0.00522	-0.00732	0.04087	2.585	295.122	0.03	3.20	1000.00	1500.00
1690	16910.08	1500.00	3.18	1648.94	40.18	-0.00586	-0.00723	0.03740	2.551	295.547	0.03	3.16	1000.00	1500.00
1691	16920.90	1500.00	3.19	1655.83	40.18	-0.00581	-0.00557	0.04043	2.532	295.969	0.02	3.17	1000.00	1500.00
1692	16930.46	1500.00	3.19	1657.23	40.18	-0.00547	-0.00674	0.03608	2.573	296.398	0.02	3.19	1000.00	1500.00
1693	16940.07	1500.00	3.19	1658.02	40.18	-0.00542	-0.00601	0.03789	2.522	296.818	0.02	3.16	999.00	1500.00
1694	16950.89	1500.00	3.18	1661.57	40.18	-0.00586	-0.00635	0.03955	2.534	297.240	0.02	3.16	1000.00	1500.00
1695	16960.45	1500.00	3.23	1659.04	40.18	-0.00542	-0.00645	0.04102	2.539	297.664	0.03	3.18	1000.00	1500.00
1696	16970.06	1500.00	3.16	1655.54	40.18	-0.00542	-0.00659	0.04331	2.517	298.083	0.02	3.16	1000.00	1500.00
1697	16980.88	1500.00	3.23	1655.51	40.18	-0.00605	-0.00635	0.03979	2.544	298.507	0.02	3.20	1000.00	1500.00
1698	16990.49	1500.00	3.19	1662.31	40.18	-0.00493	-0.00601	0.03765	2.515	298.926	0.03	3.19	1000.00	1500.00
1699	17000.05	1500.00	3.21	1655.14	40.31	-0.00566	-0.00640	0.03877	2.534	299.349	0.02	3.17	1000.00	1500.00
1700	17010.87	1500.00	3.23	1660.97	40.18	-0.00537	-0.00669	0.04033	2.571	299.777	0.03	3.21	1000.00	1500.00
1701	17020.48	1500.00	3.18	1653.97	40.18	-0.00488	-0.00664	0.03706	2.537	300.200	0.03	3.17	1000.00	1500.00
1702	17030.04	1500.00	3.19	1666.68	40.18	-0.00542	-0.00698	0.03535	2.532	300.622	0.02	3.17	1000.00	1500.00

1703	17040.86	1500.00	3.19	1654.89	40.31	-0.00513	-0.00576	0.04126	2.578	301.051	0.02	3.21	1000.00	1500.00
1704	17050.47	1500.00	3.17	1663.47	40.18	-0.00459	-0.00625	0.03848	2.515	301.471	0.02	3.16	999.00	1500.00
1705	17060.03	1500.00	3.23	1656.17	40.18	-0.00591	-0.00659	0.03838	2.549	301.895	0.02	3.18	1000.00	1500.00
1706	17070.85	1500.00	3.20	1659.31	40.18	-0.00449	-0.00610	0.03760	2.546	302.320	0.03	3.16	1000.00	1500.00
1707	17080.46	1500.00	3.16	1651.15	40.18	-0.00581	-0.00625	0.03745	2.522	302.740	0.02	3.13	1000.00	1500.00
1708	17090.07	1500.00	3.24	1659.45	40.31	-0.00498	-0.00581	0.03926	2.554	303.166	0.02	3.21	1000.00	1500.00
1709	17100.84	1500.00	3.19	1653.59	40.18	-0.00454	-0.00591	0.04248	2.520	303.586	0.02	3.19	1000.00	1500.00
1710	17110.45	1500.00	3.17	1661.55	40.18	-0.00542	-0.00698	0.03701	2.522	304.006	0.02	3.15	1000.00	1500.00
1711	17120.06	1500.00	3.18	1655.69	40.18	-0.00620	-0.00625	0.03638	2.578	304.436	0.01	3.19	1000.00	1500.00
1712	17130.83	1500.00	3.17	1655.50	40.18	-0.00503	-0.00728	0.04004	2.534	304.858	0.03	3.14	999.00	1500.00
1713	17140.44	1500.00	3.18	1657.73	40.31	-0.00391	-0.00571	0.03892	2.532	305.280	0.02	3.14	1000.00	1500.00
1714	17150.05	1500.00	3.19	1665.13	40.18	-0.00508	-0.00596	0.04302	2.554	305.706	0.02	3.18	1000.00	1500.00
1715	17160.81	1500.00	3.15	1662.58	40.18	-0.00601	-0.00586	0.03560	2.532	306.128	0.02	3.16	1000.00	1500.00
1716	17170.43	1500.00	3.19	1650.15	40.18	-0.00503	-0.00605	0.04165	2.539	306.551	0.02	3.17	1000.00	1500.00
1717	17180.15	1500.00	3.19	1659.89	40.31	-0.00410	-0.00688	0.03765	2.520	306.971	0.00	3.16	1000.00	1500.00
1718	17190.91	1500.00	3.13	1651.12	40.31	-0.00586	-0.00615	0.04326	2.515	307.390	0.00	3.13	1000.00	1500.00
1719	17200.53	1500.00	3.21	1651.31	40.31	-0.00669	-0.00723	0.03486	2.546	307.814	0.01	3.19	1000.00	1500.00
1720	17210.14	1500.00	3.15	1664.46	40.18	-0.00566	-0.00684	0.04243	2.507	308.232	0.02	3.17	1000.00	1500.00
1721	17220.90	1500.00	3.19	1654.81	40.18	-0.00469	-0.00552	0.03921	2.522	308.652	0.02	3.13	1000.00	1500.00
1722	17230.51	1500.00	3.18	1655.72	40.18	-0.00503	-0.00679	0.03945	2.581	309.082	0.01	3.18	1000.00	1500.00
1723	17240.13	1500.00	3.14	1656.08	40.18	-0.00449	-0.00640	0.04092	2.546	309.507	0.02	3.14	1000.00	1500.00
1724	17250.95	1500.00	3.17	1662.17	40.31	-0.00498	-0.00552	0.04253	2.539	309.930	0.02	3.12	1000.00	1500.00
1725	17260.50	1500.00	3.17	1653.28	40.18	-0.00503	-0.00586	0.04028	2.566	310.358	0.01	3.16	1000.00	1500.00
1726	17270.12	1500.00	3.12	1655.54	40.18	-0.00615	-0.00640	0.03364	2.512	310.776	0.01	3.10	999.00	1500.00
1727	17280.94	1500.00	3.19	1654.79	40.31	-0.00508	-0.00571	0.03984	2.512	311.195	0.01	3.15	1000.00	1500.00
1728	17290.49	1500.00	3.17	1651.57	40.18	-0.00488	-0.00620	0.04336	2.524	311.616	0.03	3.12	1000.00	1500.00
1729	17300.11	1500.00	3.17	1655.43	40.18	-0.00493	-0.00532	0.03745	2.500	312.033	0.02	3.12	1000.00	1500.00
1730	17310.93	1460.00	12.71	1652.06	40.18	-0.00537	-0.00645	0.04336	2.537	312.455	7.57	7.56	1414.00	1536.00
1731	17320.54	1493.00	6.94	1657.44	40.18	-0.00474	-0.00635	0.03818	2.603	312.889	3.42	3.42	1434.00	1556.00
1732	17330.09	1500.00	5.80	1653.59	40.31	-0.00562	-0.00684	0.04248	2.615	313.325	2.84	2.84	1439.00	1559.00
1733	17340.92	1500.00	-201.09	1659.56	40.18	-0.00605	-0.00723	0.03711	2.727	313.779	5.14	-204.05	1493.00	808.00

1734	17350.53	1500.00	-198.06	1659.49	40.18	-0.00674	-0.00786	0.04106	2.712	314.231	5.26	-204.05	1500.00	810.00
1735	17360.08	1500.00	-199.20	1654.89	40.31	-0.00703	-0.00771	0.03721	2.722	314.685	4.78	-204.06	1500.00	812.00
1736	17370.90	1500.00	-199.00	1661.25	40.18	-0.00723	-0.00737	0.03384	2.764	315.146	4.61	-204.07	1500.00	813.00
1737	17380.52	1500.00	-199.68	1664.68	40.18	-0.00752	-0.00762	0.03853	2.610	315.581	4.34	-204.07	1500.00	812.00
1738	17390.13	1500.00	-200.02	1667.30	40.18	-0.00728	-0.00771	0.03760	2.502	315.998	3.97	-203.61	1500.00	812.00
1739	17400.89	1500.00	-200.19	1666.41	40.31	-0.00649	-0.00815	0.03530	2.502	316.415	3.84	-204.05	1500.00	812.00
1740	17410.51	1500.00	-200.28	1654.86	40.31	-0.00659	-0.00811	0.03540	0.042	316.422	3.74	-203.62	1500.00	811.00
1741	17420.12	1500.00	-200.29	1650.06	40.31	-0.00698	-0.00820	0.03916	1.897	316.738	3.75	-204.09	1500.00	811.00
1742	17430.88	1500.00	-200.44	1667.18	40.31	-0.00708	-0.00781	0.04087	2.412	317.140	-0.22	-204.07	1500.00	810.00
1743	17440.50	1500.00	-203.40	1662.55	40.18	0.00190	-0.00122	0.04502	2.007	317.474	0.62	-204.07	1500.00	809.00
1744	17450.11	1500.00	0.37	1658.76	40.18	0.00679	0.00259	0.04351	1.467	317.719	0.39	0.00	1500.00	812.00
1745	17460.87	1500.00	106.90	1665.51	40.31	0.01084	0.00879	0.04473	0.913	317.871	1.66	112.80	1500.00	813.00
1746	17470.48	1500.00	178.50	1663.74	40.44	0.12817	0.10161	0.04663	0.769	317.999	1.28	187.40	1500.00	821.00
1747	17480.10	1500.00	200.05	1628.15	40.06	0.05581	0.10117	0.02622	1.973	318.328	2.74	197.17	1500.00	847.00
1748	17490.92	1500.00	199.57	1636.27	39.93	0.00503	0.26001	-0.11670	2.214	318.697	2.63	196.94	1500.00	877.00
1749	17500.47	1500.00	199.07	1633.31	39.93	0.00312	0.26421	-0.13447	2.161	319.057	2.62	196.72	1500.00	911.00
1750	17510.09	1500.00	198.64	1636.00	40.18	0.00312	0.26626	-0.13481	2.090	319.405	2.59	195.98	1500.00	959.00
1751	17520.91	1500.00	181.84	1603.66	40.18	0.00371	0.26753	-0.14180	2.053	319.748	2.58	166.64	1500.00	1030.00
1752	17530.46	1500.00	89.69	1636.91	40.18	0.00234	0.26733	-0.14556	2.083	320.095	2.59	72.68	1500.00	1045.00
1753	17540.07	1500.00	15.85	1643.56	40.18	0.00210	0.26836	-0.15005	2.012	320.430	2.55	8.73	1500.00	1007.00
1754	17550.90	1500.00	19.77	1639.96	40.18	0.00293	0.26729	-0.14937	2.004	320.764	2.54	19.55	1500.00	982.00
1755	17560.45	1500.00	36.57	1634.03	40.31	0.00225	0.26616	-0.14707	2.034	321.103	2.54	35.05	1500.00	993.00
1756	17570.06	1500.00	30.54	1646.85	40.18	0.00234	0.26509	-0.14346	1.968	321.431	2.50	27.36	1500.00	1000.00
1757	17580.88	1500.00	25.15	1633.20	40.18	0.00269	0.26499	-0.14727	1.946	321.755	2.48	22.19	1500.00	1000.00
1758	17590.50	1500.00	21.79	1637.72	40.18	0.00308	0.26431	-0.14473	1.931	322.077	2.48	18.71	1500.00	1000.00
1759	17600.05	1500.00	18.94	1643.48	40.31	0.00171	0.26323	-0.14282	1.880	322.391	2.45	16.09	1500.00	1000.00
1760	17610.87	1500.00	16.18	1633.20	40.18	0.00186	0.26479	-0.14585	2.178	322.754	2.45	13.55	1500.00	1000.00
1761	17620.49	1500.00	14.91	1638.71	40.18	0.00220	0.26289	-0.14058	2.253	323.129	2.51	12.20	1500.00	1000.00
1762	17630.04	1500.00	13.52	1630.33	40.18	0.00298	0.26152	-0.13965	2.229	323.501	2.51	10.85	1500.00	1000.00
1763	17640.86	1500.00	12.06	1630.59	40.06	0.00229	0.26182	-0.13823	2.219	323.870	2.54	10.11	1500.00	1000.00
1764	17650.48	1500.00	12.15	1638.21	40.18	0.00337	0.26055	-0.14072	2.158	324.230	2.57	9.21	1500.00	1000.00

1765	17660.09	1500.00	9.95	1622.67	40.18	0.00254	0.26113	-0.13823	2.144	324.587	2.56	7.60	1500.00	1000.00
1766	17670.85	1500.00	9.39	1630.57	40.18	0.00254	0.25962	-0.13843	2.144	324.945	2.56	6.81	1500.00	1000.00
1767	17680.46	1500.00	8.85	1632.36	40.18	0.00249	0.25981	-0.13901	2.073	325.290	2.55	6.12	1500.00	1000.00
1768	17690.08	1500.00	7.63	1620.42	40.18	0.00234	0.25874	-0.13770	2.036	325.630	2.55	4.98	1500.00	1000.00
1769	17700.84	1500.00	6.56	1621.92	40.18	0.00308	0.25771	-0.13525	2.012	325.965	2.54	3.88	1500.00	1000.00
1770	17710.45	1500.00	5.55	1641.04	40.18	0.00171	0.25747	-0.14565	2.644	326.405	2.56	2.89	1500.00	1000.00
1771	17720.07	1500.00	5.00	1641.85	40.18	0.00259	0.25596	-0.13848	2.751	326.864	2.66	2.27	1500.00	1000.00
1772	17730.83	1500.00	4.57	1616.49	40.18	0.00347	0.25420	-0.12734	2.791	327.329	2.75	1.75	1500.00	1000.00
1773	17740.44	1500.00	4.14	1608.21	40.06	0.00386	0.25342	-0.12788	2.722	327.783	2.81	1.29	1500.00	1000.00
1774	17750.06	1500.00	3.93	1623.56	40.18	0.00381	0.25283	-0.12461	2.725	328.237	2.85	1.04	1500.00	1000.00
1775	17760.82	1500.00	3.89	1657.84	40.18	0.00430	0.25132	-0.12310	2.695	328.686	2.88	1.01	1500.00	1000.00
1776	17770.43	1500.00	3.90	1614.61	40.18	0.00371	0.25020	-0.12114	2.659	329.129	2.92	0.98	1500.00	1000.00
1777	17780.04	1500.00	3.88	1620.28	40.18	0.00410	0.24951	-0.12217	2.688	329.577	2.95	0.93	1500.00	1000.00
1778	17790.86	1500.00	3.90	1614.08	40.18	0.00381	0.24883	-0.12227	2.605	330.011	2.98	0.91	1500.00	1000.00
1779	17800.42	1500.00	3.83	1589.53	40.18	0.00391	0.24756	-0.12007	2.588	330.443	2.99	0.84	1500.00	1000.00
1780	17810.03	1500.00	3.87	1612.68	40.18	0.00347	0.24697	-0.12319	2.600	330.876	2.99	0.84	1500.00	1000.00
1781	17820.85	1500.00	3.79	1619.74	40.18	0.00303	0.24536	-0.12598	2.561	331.303	2.99	0.79	1500.00	1000.00
1782	17830.41	1500.00	3.80	1605.76	40.18	0.00342	0.24521	-0.12080	2.522	331.723	3.01	0.78	1500.00	1000.00
1783	17840.02	1500.00	3.79	1604.94	40.18	0.00322	0.24531	-0.12031	2.502	332.140	3.03	0.73	1500.00	1000.00
1784	17850.84	1500.00	3.73	1605.36	40.18	0.00322	0.24346	-0.12305	2.459	332.550	2.99	0.74	1500.00	1000.00
1785	17860.46	1500.00	3.67	1612.77	40.18	0.00229	0.24307	-0.12563	2.454	332.959	3.00	0.69	1500.00	1000.00
1786	17870.01	1500.00	3.69	1612.52	40.18	0.00288	0.24277	-0.12495	2.393	333.358	3.01	0.70	1500.00	1000.00
1787	17880.83	1500.00	3.64	1586.21	40.31	0.00264	0.24087	-0.12090	2.380	333.755	2.98	0.66	1500.00	1000.00
1788	17890.44	1500.00	3.62	1620.12	40.18	0.00151	0.23921	-0.11704	2.397	334.154	2.99	0.63	1500.00	1000.00
1789	17900.00	1500.00	3.59	1620.60	40.18	0.00215	0.23911	-0.12109	2.339	334.544	2.98	0.62	1500.00	1000.00
1790	17910.82	1500.00	3.57	1608.54	40.31	0.00278	0.23872	-0.12153	2.305	334.928	2.96	0.59	1500.00	1000.00
1791	17920.43	1500.00	3.53	1608.58	40.18	0.00381	0.23931	-0.12178	2.305	335.312	2.95	0.57	1500.00	1000.00
1792	17930.05	1500.00	3.49	1659.83	40.31	0.00234	0.23813	-0.12251	2.224	335.683	2.93	0.55	1500.00	1000.00
1793	17940.81	1500.00	3.47	1614.40	40.18	0.00234	0.23735	-0.12300	2.217	336.052	2.90	0.55	1500.00	1000.00
1794	17950.42	1500.00	3.40	1615.27	40.31	0.00229	0.23623	-0.12861	0.037	336.058	2.89	0.52	1500.00	1000.00
1795	17960.04	1500.00	3.40	1605.19	40.31	0.00244	0.23516	-0.12334	2.168	336.420	2.86	0.50	1500.00	1000.00

1796	17970.80	1500.00	3.33	1618.66	40.31	0.00278	0.23486	-0.11504	2.134	336.775	2.83	0.50	1500.00	1000.00
1797	17980.41	1500.00	3.31	1615.63	40.31	0.00229	0.23403	-0.12061	2.063	337.119	2.83	0.46	1500.00	1000.00
1798	17990.02	1500.00	3.29	1614.59	40.31	0.00293	0.23335	-0.12837	2.046	337.460	2.79	0.47	1500.00	1000.00
1799	18000.79	1500.00	3.24	1626.18	40.31	0.00317	0.23242	-0.12290	2.063	337.804	2.77	0.46	1500.00	1000.00
1800	18010.40	1500.00	3.21	1622.23	40.31	0.00225	0.23223	-0.12344	1.987	338.135	2.74	0.44	1500.00	1000.00
1801	18020.01	1500.00	3.16	1623.02	40.31	0.00254	0.23213	-0.12827	1.958	338.462	2.72	0.44	1500.00	1000.00
1802	18030.83	1500.00	3.10	1619.12	40.31	0.00229	0.23096	-0.12666	1.960	338.788	0.49	-0.19	1500.00	995.00
1803	18040.39	1500.00	3.66	1625.53	40.31	0.00244	0.23101	-0.12549	1.897	339.105	2.76	0.91	1500.00	1000.00
1804	18050.00	1500.00	3.07	1617.55	40.31	0.00161	0.23003	-0.12925	1.885	339.419	2.63	0.42	1500.00	1000.00
1805	18060.82	1500.00	2.97	1633.52	40.31	0.00200	0.22900	-0.12480	1.821	339.722	2.60	0.39	1500.00	1000.00
1806	18070.38	1500.00	1.07	1626.76	40.31	0.00220	0.22886	-0.12651	1.790	340.020	2.81	-0.20	1500.00	996.00
1807	18081.20	1500.00	3.15	1641.28	40.31	0.00166	0.22759	-0.13071	1.794	340.320	2.55	0.46	1500.00	1000.00
1808	18090.81	1500.00	2.87	1629.94	40.31	0.00181	0.22783	-0.12866	1.689	340.601	2.50	0.35	1500.00	1000.00
1809	18100.37	1500.00	2.84	1606.52	40.31	0.00132	0.22690	-0.13022	1.682	340.881	2.46	0.36	1500.00	1000.00
1810	18111.19	1500.00	2.78	1569.51	40.44	0.00039	0.22593	-0.13511	1.707	341.166	2.41	0.38	1500.00	1000.00
1811	18120.80	1500.00	2.75	1618.76	40.44	0.00176	0.22598	-0.13237	1.624	341.436	2.39	0.36	1500.00	1000.00
1812	18130.41	1500.00	2.68	1626.33	40.44	0.00078	0.22573	-0.13032	1.604	341.704	2.35	0.36	1500.00	1000.00
1813	18141.18	1500.00	2.61	1640.38	40.44	0.00146	0.22656	-0.13027	1.558	341.963	2.31	0.31	1500.00	1000.00
1814	18150.79	1500.00	2.60	1626.16	40.31	-0.00010	0.22456	-0.13223	1.558	342.223	2.28	0.32	1500.00	1000.00
1815	18160.51	1500.00	2.54	1651.06	40.44	0.00117	0.22437	-0.13311	1.538	342.479	2.21	0.31	1500.00	1000.00
1816	18170.07	1500.00	2.52	1619.43	40.44	0.00039	0.22383	-0.13291	1.479	342.726	2.20	0.32	1500.00	1000.00
1817	18180.89	1500.00	2.45	1640.88	40.44	0.00073	0.22295	-0.13154	1.445	342.967	2.14	0.31	1500.00	1000.00
1818	18190.50	1500.00	2.41	1642.94	40.44	0.00093	0.22358	-0.13291	1.440	343.207	2.11	0.32	1500.00	1000.00
1819	18200.06	1500.00	2.34	1596.09	40.44	0.00127	0.22275	-0.13857	1.379	343.437	2.06	0.27	1500.00	1000.00
1820	18210.88	1500.00	2.23	1666.75	40.44	0.00049	0.22197	-0.13789	1.350	343.662	2.02	0.23	1500.00	1000.00
1821	18220.49	1500.00	2.33	1659.68	40.31	0.00112	0.22222	-0.13555	1.367	343.890	1.99	0.39	1500.00	1000.00
1822	18230.10	1500.00	2.22	1655.82	40.44	0.00137	0.22178	-0.13916	1.318	344.109	1.95	0.28	1500.00	1000.00
1823	18240.87	1500.00	2.16	1652.63	40.44	0.00107	0.22197	-0.13750	1.299	344.326	1.90	0.19	1500.00	1000.00
1824	18250.48	1500.00	0.43	1664.24	40.44	0.00103	0.22124	-0.14170	1.279	344.539	1.47	0.14	1500.00	996.00
1825	18260.09	1500.00	2.35	1635.92	40.44	0.00117	0.22065	-0.13521	1.240	344.746	1.89	0.44	1500.00	1000.00
1826	18270.86	1500.00	1.97	1651.31	40.44	0.00049	0.22109	-0.13691	1.265	344.957	1.78	0.18	1500.00	1000.00

1827	18280.47	1500.00	2.01	1635.98	40.44	0.00122	0.22085	-0.13794	1.201	345.157	1.76	0.24	1500.00	1000.00
1828	18290.08	1500.00	1.95	1657.46	40.44	0.00098	0.21973	-0.14165	1.169	345.352	1.72	0.24	1500.00	1000.00
1829	18300.85	1500.00	1.92	1709.16	40.31	0.00034	0.21919	-0.13574	1.184	345.549	1.68	0.24	1500.00	1000.00
1830	18310.46	1500.00	1.90	1639.77	40.44	0.00063	0.22026	-0.13730	1.128	345.737	1.66	0.23	1500.00	1000.00
1831	18320.07	1500.00	1.83	1653.59	40.31	0.00010	0.21924	-0.13496	1.130	345.925	1.60	0.23	1500.00	1000.00
1832	18330.84	1500.00	1.81	1652.47	40.44	0.00093	0.21841	-0.13804	0.845	346.066	1.59	0.23	1500.00	1000.00
1833	18340.45	1500.00	1.80	1651.16	40.31	0.00117	0.21821	-0.14038	1.082	346.246	1.56	0.23	1500.00	1000.00
1834	18350.06	1500.00	1.75	1601.67	40.31	0.00049	0.21797	-0.13350	1.099	346.430	1.53	0.22	1500.00	1000.00
1835	18360.88	1500.00	1.73	1660.64	40.44	0.00068	0.21699	-0.13604	1.055	346.605	1.52	0.22	1500.00	1000.00
1836	18370.44	1500.00	1.71	1657.93	40.31	0.00024	0.21719	-0.13418	1.011	346.774	1.49	0.22	1500.00	1000.00
1837	18380.05	1500.00	1.67	1651.95	40.31	0.00083	0.21626	-0.13267	1.101	346.957	1.44	0.21	1500.00	1000.00
1838	18390.87	1500.00	1.64	1674.01	40.31	0.00107	0.21802	-0.13008	1.055	347.133	1.43	0.21	1500.00	1000.00
1839	18400.43	1500.00	1.61	1664.49	40.44	0.00088	0.21646	-0.13232	1.025	347.304	1.41	0.20	1500.00	1000.00
1840	18410.04	1500.00	1.62	1658.75	40.31	0.00103	0.21646	-0.12764	1.069	347.482	1.39	0.20	1500.00	1000.00
1841	18420.86	1500.00	1.58	1672.54	40.44	0.00093	0.21699	-0.12881	0.986	347.647	1.37	0.20	1500.00	1000.00
1842	18430.47	1500.00	1.54	1671.22	40.44	0.00117	0.21621	-0.12583	0.979	347.810	1.34	0.20	1500.00	1000.00
1843	18440.14	1500.00	1.52	1678.96	40.31	0.00073	0.21646	-0.13066	0.986	347.974	1.32	0.19	1500.00	1000.00
1844	18450.96	1500.00	1.67	1663.56	40.31	0.00122	0.21582	-0.12793	2.263	348.351	1.51	0.19	1500.00	1000.00
1845	18460.57	1500.00	2.09	1640.31	40.18	0.00264	0.21597	-0.11416	2.585	348.782	1.84	0.25	1500.00	1000.00
1846	18470.13	1500.00	2.16	1611.09	40.18	0.00283	0.21494	-0.10640	2.698	349.232	2.00	0.20	1500.00	1000.00
1847	18481.06	1500.00	2.34	1640.26	40.18	0.00269	0.21299	-0.10791	2.864	349.709	2.21	0.18	1500.00	1000.00
1848	18490.62	1500.00	2.50	1640.34	40.18	0.00259	0.21235	-0.11421	2.881	350.189	2.36	0.18	1500.00	1000.00
1849	18500.23	1500.00	2.62	1631.67	40.18	0.00210	0.21152	-0.10928	2.976	350.685	2.45	0.18	1500.00	1000.00
1850	18511.05	1500.00	2.71	1631.34	40.06	0.00308	0.21182	-0.10557	2.861	351.162	2.55	0.17	1500.00	1000.00
1851	18520.66	1500.00	2.77	1620.74	40.06	0.00225	0.20981	-0.10459	2.874	351.641	2.61	0.18	1500.00	1000.00
1852	18530.22	1500.00	2.83	1620.97	40.06	0.00337	0.21021	-0.10967	2.893	352.123	2.67	0.17	1500.00	1000.00
1853	18541.04	1500.00	2.89	1607.57	40.18	0.00352	0.21001	-0.10132	2.827	352.595	2.72	0.16	1500.00	1000.00
1854	18550.65	1500.00	2.94	1610.18	40.18	0.00352	0.21001	-0.10098	2.832	353.067	2.76	0.17	1500.00	1000.00
1855	18560.21	1500.00	2.96	1612.08	40.18	0.00327	0.20908	-0.10679	2.776	353.529	2.81	0.16	1500.00	1000.00
1856	18571.03	1500.00	3.00	1618.32	40.18	0.00376	0.20918	-0.09810	2.773	353.991	2.83	0.16	1500.00	1000.00
1857	18580.64	1500.00	3.02	1610.08	40.18	0.00371	0.20771	-0.10020	2.783	354.455	2.87	0.16	1500.00	1000.00

1858	18590.20	1500.00	3.06	1610.72	40.18	0.00342	0.20688	-0.10532	2.737	354.911	2.89	0.15	1500.00	1000.00
1859	18601.02	1500.00	3.08	1618.38	40.18	0.00298	0.20859	-0.09956	2.703	355.362	2.92	0.15	1500.00	1000.00
1860	18610.63	1500.00	3.08	1615.64	40.31	0.00303	0.20820	-0.09844	2.732	355.817	2.94	0.15	1500.00	1000.00
1861	18620.24	1500.00	3.08	1615.31	40.31	0.00361	0.20762	-0.10391	2.656	356.260	2.95	0.15	1500.00	1000.00
1862	18631.01	1500.00	3.11	1601.29	40.31	0.00298	0.20645	-0.10181	2.646	356.701	2.96	0.15	1500.00	1000.00
1863	18640.62	1500.00	3.12	1602.73	40.18	0.00269	0.20679	-0.10107	2.632	357.140	2.98	0.15	1500.00	1000.00
1864	18650.23	1500.00	3.13	1611.74	40.31	0.00278	0.20654	-0.10342	2.595	357.572	2.99	0.14	1500.00	1000.00
1865	18660.99	1500.00	3.13	1613.70	40.31	0.00386	0.20586	-0.09907	2.590	358.004	3.00	0.14	1500.00	1000.00
1866	18670.61	1500.00	3.14	1614.69	40.31	0.00278	0.20381	-0.09883	2.551	358.429	3.00	0.14	1500.00	1000.00
1867	18680.22	1500.00	3.14	1610.07	40.31	0.00234	0.20464	-0.09941	2.532	358.851	3.00	0.14	1500.00	1000.00
1868	18690.98	1500.00	3.16	1626.30	40.31	0.00200	0.20400	-0.09980	2.539	359.274	3.01	0.13	1500.00	1000.00
1869	18700.60	1500.00	3.14	1605.08	40.31	0.00298	0.20425	-0.09907	2.498	359.691	3.00	0.13	1500.00	1000.00
1870	18710.21	1500.00	3.14	1614.48	40.31	0.00220	0.20313	-0.09663	2.483	360.104	3.01	0.14	1500.00	1000.00
1871	18721.03	1500.00	3.13	1600.64	40.31	0.00322	0.20205	-0.09873	2.473	360.517	3.00	0.13	1500.00	1000.00
1872	18730.69	1500.00	3.13	1605.18	40.31	0.00303	0.20117	-0.10005	0.034	360.522	3.00	0.13	1500.00	1000.00
1873	18740.31	1500.00	3.12	1610.26	40.31	0.00303	0.20103	-0.09971	2.444	360.930	3.01	0.13	1500.00	1000.00
1874	18751.07	1500.00	3.13	1612.22	40.31	0.00317	0.20029	-0.10044	2.356	361.322	2.98	0.13	1500.00	1000.00
1875	18760.68	1500.00	3.12	1613.97	40.31	0.00303	0.20034	-0.09912	2.319	361.709	2.98	0.13	1500.00	1000.00
1876	18770.30	1500.00	3.10	1613.67	40.44	0.00215	0.19902	-0.09741	2.336	362.098	2.95	0.12	1500.00	1000.00
1877	18781.12	1500.00	3.07	1612.22	40.44	0.00244	0.19941	-0.10220	2.246	362.473	2.95	0.13	1500.00	1000.00
1878	18790.78	1500.00	3.07	1606.70	40.31	0.00283	0.19810	-0.10918	2.236	362.845	2.94	0.12	1500.00	1000.00
1879	18800.40	1500.00	3.06	1615.54	40.31	0.00317	0.19878	-0.09946	2.239	363.218	2.93	0.12	1500.00	1000.00
1880	18810.01	1500.00	3.03	1620.83	40.31	0.00186	0.19790	-0.10503	2.180	363.582	2.91	0.12	1500.00	1000.00
1881	18820.77	1500.00	3.02	1612.21	40.31	0.00225	0.19746	-0.10688	2.148	363.940	2.90	0.11	1500.00	1000.00
1882	18830.38	1500.00	3.00	1611.83	40.44	0.00210	0.19722	-0.10195	2.131	364.295	2.88	0.12	1500.00	1000.00
1883	18840.00	1500.00	2.97	1610.19	40.31	0.00220	0.19561	-0.10449	2.083	364.642	2.86	0.11	1500.00	1000.00
1884	18850.76	1500.00	2.97	1605.17	40.44	0.00278	0.19565	-0.10659	2.087	364.990	2.86	0.11	1500.00	1000.00
1885	18860.37	1500.00	2.94	1625.70	40.44	0.00229	0.19487	-0.10483	2.031	365.329	2.83	0.11	1500.00	1000.00
1886	18871.19	1500.00	2.92	1622.59	40.31	0.00137	0.19463	-0.10947	2.012	365.664	2.80	0.11	1500.00	1000.00
1887	18880.86	1500.00	2.88	1617.13	40.31	0.00117	0.19395	-0.11030	2.024	366.001	2.78	0.11	1500.00	1000.00
1888	18890.47	1500.00	2.87	1626.60	40.31	0.00122	0.19380	-0.11069	1.948	366.326	2.76	0.11	1500.00	1000.00

1889	18900.09	1500.00	2.85	1605.74	40.31	0.00210	0.19312	-0.10518	1.938	366.649	2.76	0.11	1500.00	1000.00
1890	18910.85	1500.00	2.83	1698.60	40.44	0.00171	0.19302	-0.10776	1.921	366.969	2.71	0.11	1500.00	1000.00
1891	18920.46	1500.00	2.80	1635.30	40.31	0.00171	0.19209	-0.10498	1.890	367.284	2.68	0.11	1500.00	1000.00
1892	18930.07	1500.00	2.77	1632.74	40.44	0.00117	0.19321	-0.11641	1.858	367.594	2.67	0.11	1500.00	1000.00
1893	18940.89	1500.00	2.76	1631.92	40.44	0.00107	0.19302	-0.11040	1.816	367.897	2.62	0.11	1500.00	1000.00
1894	18950.45	1500.00	2.70	1625.97	40.31	0.00063	0.19248	-0.11548	1.792	368.195	2.60	0.11	1500.00	1000.00
1895	18960.06	1500.00	2.68	1641.91	40.31	0.00112	0.19214	-0.11182	1.790	368.493	2.56	0.11	1500.00	1000.00
1896	18970.88	1500.00	2.65	1627.74	40.31	0.00151	0.19253	-0.11011	1.716	368.780	2.54	0.11	1500.00	1000.00
1897	18980.44	1500.00	2.61	1627.47	40.44	0.00142	0.19243	-0.11411	1.687	369.061	2.50	0.11	1500.00	1000.00
1898	18990.05	1500.00	2.59	1632.66	40.31	0.00063	0.19185	-0.11230	1.682	369.341	2.46	0.10	1500.00	1000.00
1899	19000.87	1500.00	2.54	1628.42	40.31	0.00161	0.19180	-0.11304	1.611	369.610	2.43	0.10	1500.00	1000.00
1900	19010.49	1500.00	2.50	1652.67	40.31	0.00063	0.19077	-0.11167	1.580	369.873	2.40	0.10	1500.00	1000.00
1901	19020.04	1500.00	2.48	1642.10	40.44	0.00063	0.18970	-0.11602	1.567	370.134	2.36	0.10	1500.00	1000.00
1902	19030.86	1500.00	2.43	1649.02	40.31	0.00010	0.18926	-0.11577	1.536	370.390	2.32	0.10	1500.00	1000.00
1903	19040.47	1500.00	2.39	1583.79	40.31	0.00078	0.18867	-0.11577	1.528	370.645	2.29	0.10	1500.00	1000.00
1904	19050.03	1500.00	2.37	1663.59	40.31	0.00010	0.18794	-0.11250	1.494	370.894	2.27	0.10	1500.00	1000.00
1905	19060.85	1500.00	2.34	1626.70	40.31	0.00068	0.18887	-0.11582	1.475	371.140	2.24	0.09	1500.00	1000.00
1906	19070.46	1500.00	2.30	1659.56	40.31	0.00029	0.18716	-0.11514	1.484	371.387	2.20	0.09	1500.00	1000.00
1907	19080.08	1500.00	2.27	1641.45	40.31	0.00000	0.18511	-0.12046	1.431	371.625	2.18	0.09	1500.00	1000.00
1908	19090.84	1500.00	2.23	1650.39	40.31	0.00020	0.18413	-0.11494	1.409	371.860	2.13	0.09	1500.00	1000.00
1909	19100.45	1500.00	2.20	1650.05	40.31	-0.00039	0.18369	-0.11724	1.787	372.158	2.11	0.09	1500.00	1000.00
1910	19110.07	1500.00	2.32	1641.19	40.18	0.00020	0.18389	-0.11187	2.446	372.566	2.24	0.09	1500.00	1000.00
1911	19120.83	1500.00	2.47	1638.40	40.18	0.00054	0.18213	-0.10889	2.542	372.989	2.40	0.09	1500.00	1000.00
1912	19130.44	1500.00	2.58	1628.37	40.18	0.00098	0.18232	-0.10693	2.578	373.419	2.50	0.08	1500.00	1000.00
1913	19140.05	1500.00	2.65	1635.60	40.06	0.00215	0.18208	-0.09678	2.524	373.840	2.60	0.08	1500.00	1000.00
1914	19150.82	1500.00	2.73	1623.49	40.06	0.00127	0.18062	-0.09448	0.024	373.844	2.65	0.08	1500.00	1000.00
1915	19160.43	1500.00	2.78	1607.35	39.93	0.00161	0.18076	-0.09448	2.451	374.252	2.73	0.08	1500.00	1000.00
1916	19170.04	1500.00	2.84	1625.52	40.06	0.00322	0.18037	-0.09336	2.466	374.663	2.77	0.08	1500.00	1000.00
1917	19180.81	1500.00	2.86	1623.18	40.06	0.00254	0.18008	-0.08965	2.451	375.072	2.78	0.08	1500.00	1000.00
1918	19190.42	1500.00	2.89	1614.96	39.93	0.00132	0.18115	-0.09424	2.451	375.480	2.79	0.08	1500.00	1000.00
1919	19200.03	1500.00	2.90	1618.92	40.06	0.00229	0.18022	-0.09399	2.395	375.880	2.83	0.08	1500.00	1000.00

1920	19210.85	1500.00	2.90	1623.37	39.93	0.00249	0.17988	-0.08804	2.373	376.275	2.83	0.08	1500.00	1000.00
1921	19220.41	1500.00	2.93	1614.59	39.93	0.00225	0.18018	-0.09873	2.346	376.666	2.85	0.14	1500.00	1000.00
1922	19230.02	1500.00	2.90	1637.26	39.93	0.00190	0.18022	-0.09326	2.329	377.054	2.84	0.07	1500.00	1000.00
1923	19240.84	1500.00	2.94	1610.79	39.93	0.00190	0.17939	-0.09360	2.329	377.442	2.84	0.08	1500.00	1000.00
1924	19250.40	1500.00	2.92	1683.92	40.06	0.00137	0.17837	-0.09683	2.288	377.824	2.84	0.08	1500.00	1000.00
1925	19260.01	1500.00	2.91	1626.88	39.93	0.00186	0.17803	-0.09946	2.256	378.200	2.84	0.07	1500.00	1000.00
1926	19270.83	1500.00	2.90	1603.72	39.93	0.00239	0.17729	-0.08696	2.253	378.575	2.82	0.08	1500.00	1000.00
1927	19280.44	1500.00	2.90	1626.56	39.93	0.00142	0.17754	-0.09585	2.195	378.941	2.82	0.08	1500.00	1000.00
1928	19290.00	1500.00	2.86	1680.03	39.93	0.00151	0.17666	-0.09146	2.183	379.305	2.81	0.08	1500.00	1000.00
1929	19300.82	1500.00	2.86	1633.55	39.93	0.00254	0.17471	-0.09453	2.163	379.665	2.80	0.08	1500.00	1000.00
1930	19310.43	1500.00	2.85	1630.29	40.06	0.00205	0.17461	-0.09697	2.122	380.019	2.76	0.08	1500.00	1000.00
1931	19321.20	1500.00	2.85	1630.91	39.93	0.00112	0.17578	-0.09790	2.107	380.370	2.76	0.08	1500.00	1000.00
1932	19330.81	1500.00	2.82	1601.70	40.06	0.00024	0.17485	-0.09653	2.048	380.712	2.74	0.08	1500.00	1000.00
1933	19340.42	1500.00	2.81	1655.17	40.06	0.00054	0.17480	-0.09355	2.036	381.051	2.72	0.07	1500.00	1000.00
1934	19350.03	1500.00	2.75	1691.90	40.06	0.00288	0.17563	-0.09702	2.019	381.387	2.69	0.08	1500.00	1000.00
1935	19360.80	1500.00	2.75	1629.96	40.06	0.00054	0.17441	-0.10503	1.973	381.716	2.69	0.08	1500.00	1000.00
1936	19370.41	1500.00	2.71	1659.22	40.06	0.00112	0.17397	-0.09585	1.929	382.038	2.63	0.08	1500.00	1000.00
1937	19380.02	1500.00	2.69	1637.56	39.93	0.00181	0.17480	-0.10278	1.902	382.355	2.62	0.08	1500.00	1000.00
1938	19390.79	1500.00	2.65	1644.33	40.06	0.00195	0.17485	-0.09858	1.870	382.666	2.58	0.07	1500.00	1000.00
1939	19400.40	1500.00	2.63	1642.13	40.06	0.00181	0.17539	-0.09702	1.851	382.975	2.55	0.07	1500.00	1000.00
1940	19410.01	1500.00	2.58	1633.79	40.06	0.00049	0.17446	-0.10308	1.787	383.273	2.49	0.07	1500.00	1000.00
1941	19420.78	1500.00	2.56	1623.01	40.06	0.00059	0.17466	-0.10278	1.750	383.564	2.48	0.07	1500.00	1000.00
1942	19430.39	1500.00	2.50	1635.91	40.06	0.00146	0.17446	-0.10420	1.743	383.855	2.42	0.07	1500.00	1000.00
1943	19440.00	1500.00	2.47	1628.62	40.06	0.00088	0.17412	-0.10264	1.687	384.136	2.40	0.07	1500.00	1000.00
1944	19450.77	1500.00	2.43	1667.10	40.06	0.00088	0.17422	-0.10703	1.643	384.410	2.36	0.07	1500.00	1000.00
1945	19460.38	1500.00	2.38	1647.74	40.06	0.00010	0.17305	-0.10317	1.633	384.682	2.31	0.07	1500.00	1000.00
1946	19471.20	1500.00	2.34	1685.89	40.18	0.00044	0.17432	-0.10391	1.577	384.945	2.27	0.08	1500.00	1000.00
1947	19480.81	1500.00	2.32	1675.17	40.06	0.00015	0.17349	-0.10552	1.531	385.200	2.24	0.07	1500.00	1000.00
1948	19490.37	1500.00	2.26	1642.44	40.18	0.00010	0.17241	-0.10479	1.531	385.455	2.18	0.07	1500.00	1000.00
1949	19501.19	1500.00	2.21	1670.21	40.06	0.00010	0.17344	-0.10708	1.484	385.703	2.14	0.07	1500.00	1000.00
1950	19510.80	1500.00	2.16	1563.47	40.18	-0.00020	0.17290	-0.10781	1.460	385.946	2.11	0.07	1500.00	1000.00

1951	19520.36	1500.00	2.14	1639.60	40.06	0.00112	0.17246	-0.10967	1.411	386.181	2.07	0.07	1500.00	1000.00
1952	19531.18	1500.00	2.08	1654.25	40.18	0.00044	0.17134	-0.11055	1.379	386.411	2.01	0.07	1500.00	1000.00
1953	19540.79	1500.00	2.03	1617.25	40.18	-0.00020	0.17280	-0.11318	1.394	386.643	1.97	0.07	1500.00	1000.00
1954	19550.40	1500.00	2.02	1605.67	40.06	-0.00034	0.17207	-0.10952	1.328	386.865	1.94	0.07	1500.00	1000.00
1955	19561.17	1500.00	1.95	1613.23	40.18	-0.00010	0.17134	-0.10933	1.287	387.079	1.89	0.07	1500.00	1000.00
1956	19570.78	1500.00	1.28	1650.98	40.06	-0.00005	0.17061	-0.11001	0.015	387.082	1.80	-0.38	1500.00	999.00
1957	19580.39	1500.00	2.05	1659.43	40.06	0.00039	0.17129	-0.11680	1.274	387.294	1.84	0.14	1500.00	1000.00
1958	19591.16	1500.00	1.85	1654.62	40.06	0.00044	0.17129	-0.11436	1.257	387.504	1.78	0.07	1500.00	1000.00
1959	19600.77	1500.00	1.79	1647.06	40.06	0.00015	0.17061	-0.11226	1.216	387.706	1.74	0.06	1500.00	1000.00
1960	19610.38	1500.00	1.76	1648.32	40.18	-0.00103	0.17075	-0.11123	1.167	387.901	1.71	0.07	1500.00	1000.00
1961	19621.15	1500.00	1.72	1654.91	40.06	-0.00024	0.17109	-0.11270	1.177	388.097	1.66	0.06	1500.00	1000.00
1962	19630.76	1500.00	1.62	1652.82	40.18	0.00049	0.17075	-0.11279	1.240	388.303	1.52	0.06	1500.00	1000.00
1963	19640.37	1500.00	1.29	1667.97	40.18	0.00713	0.16870	-0.05391	0.847	388.445	1.20	0.06	1500.00	1000.00
1964	19651.14	1500.00	0.99	1667.94	40.31	0.01177	0.16621	-0.03228	0.725	388.566	0.90	0.06	1500.00	1000.00
1965	19660.75	1500.00	0.77	1670.80	40.31	0.01245	0.16484	-0.01978	0.564	388.660	0.70	0.05	1500.00	1000.00
1966	19670.36	1500.00	0.60	1661.83	40.31	0.01504	0.16382	-0.02529	0.566	388.754	0.53	0.05	1500.00	1000.00
1967	19681.18	1500.00	0.42	1684.64	40.31	0.01582	0.16152	-0.01504	0.457	388.830	0.35	0.05	1500.00	1000.00
1968	19690.74	1500.00	0.24	1679.70	40.18	0.02046	0.15923	-0.00933	0.405	388.898	0.19	0.04	1500.00	999.00
1969	19700.35	1500.00	0.18	1684.22	40.18	0.17881	0.36885	0.02905	0.374	388.960	0.15	0.03	1500.00	999.00
1970	19711.17	1500.00	0.17	1682.75	40.06	0.11089	0.13359	0.04009	0.408	389.028	0.14	0.02	1500.00	999.00
1971	19720.73	1500.00	0.17	1697.97	40.18	0.07285	0.09819	0.03960	0.371	389.090	0.11	0.05	1500.00	999.00
1972	19730.34	1500.00	0.16	1684.95	40.18	0.08521	0.10737	0.04321	0.337	389.146	0.11	0.05	1500.00	999.00
1973	19741.16	1500.00	0.15	1654.44	40.06	0.10210	0.12334	0.03330	0.320	389.199	0.10	0.05	1500.00	999.00
1974	19750.77	1500.00	0.13	1682.28	40.06	0.10723	0.13237	0.03828	0.266	389.243	0.09	0.04	1500.00	1000.00
1975	19760.33	1500.00	0.14	1704.46	40.06	0.11587	0.14141	0.03516	0.293	389.292	0.08	0.05	1500.00	999.00
1976	19771.15	1500.00	0.15	1682.04	40.06	0.12329	0.15156	0.04131	0.225	389.330	0.09	0.04	1500.00	1000.00
1977	19780.76	1500.00	0.11	1670.28	40.06	0.12876	0.15654	0.03784	0.295	389.379	0.07	0.05	1500.00	1000.00
1978	19790.32	1500.00	0.12	1682.78	40.06	0.13325	0.16182	0.04097	0.190	389.411	0.07	0.05	1500.00	999.00
1979	19801.14	1500.00	0.11	1657.20	40.18	0.13867	0.17036	0.03779	0.232	389.449	0.06	0.05	1500.00	1000.00
1980	19810.75	1500.00	0.11	1680.09	40.06	0.14341	0.17612	0.03398	0.142	389.473	0.06	0.05	1500.00	999.00
1981	19820.36	1500.00	0.10	1682.89	40.06	0.15571	0.19136	0.04238	0.137	389.496	0.06	0.05	1500.00	1000.00

1982	19831.13	1500.00	0.10	1675.00	40.06	0.15845	0.19390	0.04009	0.156	389.522	0.05	0.05	1500.00	1000.00
1983	19840.74	1500.00	0.10	1676.56	39.93	0.16582	0.20459	0.04248	0.068	389.533	0.05	0.05	1500.00	1000.00
1984	19850.35	1500.00	0.09	1693.37	40.06	0.17671	0.21748	0.03853	0.098	389.549	0.04	0.05	1500.00	1000.00
1985	19861.12	1500.00	0.09	1673.86	40.06	0.17388	0.21538	0.03608	0.112	389.568	0.04	0.05	1500.00	1000.00
1986	19870.73	1500.00	0.09	1675.39	40.06	0.17495	0.21479	0.03574	0.059	389.578	0.04	0.05	1500.00	1000.00
1987	19880.34	1500.00	0.09	1702.06	40.06	0.18486	0.22881	0.03579	0.051	389.586	0.04	0.05	1500.00	1000.00
1988	19891.11	1500.00	0.09	1702.51	40.06	0.18647	0.23037	0.03740	0.081	389.600	0.04	0.05	1500.00	1000.00
1989	19900.72	1500.00	0.10	1718.45	40.06	0.18604	0.22817	0.03730	0.042	389.607	0.04	0.06	1500.00	1000.00
1990	19910.33	1500.00	0.07	1638.25	40.06	0.18555	0.23091	0.04043	0.056	389.616	0.02	0.05	1500.00	1000.00
1991	19921.10	1500.00	0.07	1689.05	40.06	0.19346	0.24038	0.03516	0.027	389.621	0.03	0.04	1500.00	1000.00
1992	19930.71	1500.00	0.05	1748.32	40.06	0.19287	0.23862	0.04014	0.085	389.635	0.01	0.04	1500.00	1000.00
1993	19940.32	1500.00	0.06	1682.83	40.06	0.19155	0.23789	0.03037	0.044	389.642	0.02	0.04	1500.00	1000.00
1994	19951.14	1516.00	21.55	1683.08	40.18	0.18218	0.22837	0.04136	0.288	389.690	-3.41	7.31	1507.00	1007.00
1995	19960.70	1500.00	3.43	1683.99	40.06	0.00327	0.05024	-0.00005	1.636	389.963	1.74	0.85	1500.00	1001.00
1996	19970.31	1500.00	2.95	1689.41	40.18	-0.00361	0.03086	-0.01230	2.219	390.333	3.17	-0.03	1500.00	999.00
1997	19981.13	1500.00	3.17	1681.32	40.06	-0.00635	0.00596	0.00596	2.480	390.746	3.09	0.07	1500.00	1000.00
1998	19990.74	1500.00	3.39	1680.41	40.06	-0.00635	0.00156	0.01343	2.634	391.185	3.24	0.13	1500.00	1000.00
1999	20000.30	1500.00	3.36	1699.56	40.06	-0.00547	-0.00034	0.02192	2.683	391.632	3.32	0.05	1500.00	1000.00
2000	20011.12	1500.00	3.51	1676.00	40.06	-0.00596	-0.00181	0.02695	2.827	392.104	3.50	0.04	1500.00	1000.00
2001	20020.73	1500.00	3.65	1613.29	40.06	-0.00586	-0.00181	0.02231	2.961	392.597	3.65	0.04	1500.00	1000.00
2002	20030.29	1500.00	3.78	1680.12	40.06	-0.00557	-0.00317	0.02729	3.018	393.100	3.73	0.04	1500.00	1000.00
2003	20041.11	1500.00	3.85	1676.37	40.06	-0.00562	-0.00391	0.03027	3.098	393.616	3.87	0.02	1500.00	1000.00
2004	20050.72	1500.00	3.81	1695.94	40.06	-0.00669	-0.00317	0.02866	3.074	394.129	3.86	-0.05	1500.00	1000.00
2005	20060.28	1500.00	3.92	1648.68	40.06	-0.00640	-0.00317	0.02544	3.135	394.651	3.90	0.03	1500.00	1000.00
2006	20071.10	1500.00	3.94	1658.22	40.06	-0.00571	-0.00293	0.02896	3.259	395.194	3.95	0.02	1500.00	1000.00
2007	20080.71	1500.00	14.06	1652.76	39.93	-0.00537	-0.00298	0.03257	3.179	395.724	5.60	5.61	1505.00	1476.00
2008	20090.32	1500.00	8.24	1701.91	40.06	-0.00566	-0.00293	0.02939	3.257	396.267	4.04	4.04	1514.00	1485.00
2009	20101.09	1500.00	6.74	1671.68	40.06	-0.00547	-0.00425	0.02900	3.247	396.808	3.33	3.33	1500.00	1500.00
2010	20110.70	1500.00	-195.44	1677.42	40.06	-0.00566	-0.00264	0.02876	3.086	397.322	-204.06	7.96	691.00	1500.00
2011	20120.31	1500.00	-197.93	1689.57	40.06	-0.00479	-0.00239	0.03467	3.049	397.831	-204.11	6.03	690.00	1500.00
2012	20131.08	1500.00	-198.55	1673.83	40.06	-0.00430	-0.00205	0.03340	3.032	398.336	-204.03	5.48	692.00	1500.00

2013	20140.69	1500.00	-198.88	1674.74	40.06	-0.00464	-0.00283	0.03218	3.022	398.840	-204.09	5.14	692.00	1500.00
2014	20150.30	1500.00	-199.02	1682.59	39.93	-0.00508	-0.00283	0.03433	3.076	399.352	-204.07	5.01	692.00	1500.00
2015	20161.06	1500.00	-199.22	1676.62	40.06	-0.00391	-0.00312	0.03291	3.057	399.862	-204.05	4.82	692.00	1500.00
2016	20170.68	1500.00	-199.20	1671.61	39.93	-0.00366	-0.00225	0.03228	3.042	400.369	-204.02	4.74	691.00	1500.00
2017	20180.29	1500.00	-199.44	1662.53	40.06	-0.00376	-0.00308	0.03413	3.088	400.884	-204.06	4.66	690.00	1500.00
2018	20191.05	1500.00	-199.29	1692.34	40.06	-0.00366	-0.00317	0.03682	2.993	401.382	-204.07	4.52	689.00	1500.00
2019	20200.67	1500.00	-199.61	1684.98	39.93	-0.00498	-0.00259	0.03330	3.035	401.888	-204.08	4.46	689.00	1500.00
2020	20210.28	1500.00	-199.66	1623.45	39.93	-0.00488	-0.00210	0.03252	3.015	402.391	-203.57	4.41	688.00	1500.00
2021	20221.10	1500.00	-199.75	1675.05	40.06	-0.00376	-0.00288	0.02935	3.005	402.892	0.00	4.30	691.00	1500.00
2022	20230.66	1500.00	132.46	1655.43	39.93	-0.00420	-0.00371	0.04067	3.044	403.399	135.65	4.26	693.00	1500.00
2023	20240.27	1500.00	200.80	1671.56	40.06	-0.00391	-0.00269	0.03560	3.027	403.904	198.36	4.20	712.00	1500.00
2024	20251.09	1500.00	202.12	1692.84	40.06	-0.00439	-0.00259	0.03516	3.013	404.406	198.36	4.10	737.00	1500.00
2025	20260.70	1500.00	201.99	1670.47	40.06	-0.00410	-0.00352	0.03418	3.047	404.914	197.88	4.12	764.00	1500.00
2026	20270.26	1500.00	201.86	1693.03	39.93	-0.00483	-0.00273	0.03281	3.003	405.414	197.38	3.98	800.00	1500.00
2027	20281.08	1500.00	201.12	1594.89	40.06	-0.00405	-0.00337	0.03672	3.015	405.917	196.93	3.92	859.00	1500.00
2028	20290.69	1500.00	200.02	1738.23	40.06	-0.00547	-0.00229	0.03540	3.040	406.423	196.46	3.92	942.00	1500.00
2029	20300.25	1500.00	180.75	1653.06	39.93	-0.00459	-0.00293	0.03105	2.998	406.923	162.27	3.82	1070.00	1500.00
2030	20311.07	1500.00	30.04	1643.93	39.93	-0.00464	-0.00288	0.03389	3.015	407.425	13.59	3.82	1052.00	1500.00
2031	20320.68	1500.00	21.74	1718.53	39.93	-0.00444	-0.00381	0.03086	2.993	407.924	21.98	3.77	972.00	1500.00
2032	20330.24	1500.00	10.63	1684.46	39.93	-0.00356	-0.00308	0.03413	2.996	408.423	6.38	3.73	1000.00	1500.00
2033	20341.06	1500.00	11.18	1703.79	39.93	-0.00391	-0.00332	0.03447	3.013	408.926	7.63	3.72	999.00	1500.00
2034	20350.67	1500.00	10.01	1680.25	39.93	-0.00474	-0.00200	0.03115	3.000	409.426	6.01	3.73	1000.00	1500.00
2035	20360.28	1500.00	9.04	1676.59	40.06	-0.00303	-0.00225	0.03716	3.005	409.927	5.22	3.77	1000.00	1500.00
2036	20371.04	1500.00	8.18	1670.69	39.93	-0.00469	-0.00327	0.03726	3.020	410.430	4.24	3.81	1000.00	1500.00
2037	20380.66	1500.00	7.52	1680.70	39.93	-0.00361	-0.00259	0.03350	3.005	410.931	3.69	3.80	1000.00	1500.00
2038	20390.27	1500.00	7.13	1666.07	39.93	-0.00454	-0.00181	0.03325	2.988	411.429	3.26	3.81	1000.00	1500.00
2039	20401.03	1500.00	6.76	1675.28	39.93	-0.00312	-0.00342	0.03257	3.037	411.935	2.84	3.88	1000.00	1500.00
2040	20410.65	1500.00	6.91	1680.16	40.06	-0.00361	-0.00259	0.03193	2.988	412.433	3.06	3.82	1000.00	1500.00
2041	20420.26	1500.00	6.30	1651.66	39.93	-0.00425	-0.00405	0.03271	2.993	412.932	2.41	3.87	1000.00	1500.00
2042	20431.02	1500.00	6.07	1670.64	39.93	-0.00435	-0.00283	0.03774	3.005	413.433	2.15	3.90	999.00	1500.00
2043	20440.64	1500.00	5.77	1689.03	39.93	-0.00464	-0.00366	0.03188	3.538	414.022	1.69	4.89	997.00	1500.00

2044	20450.25	1500.00	5.03	1701.96	39.93	-0.00391	-0.00283	0.03071	2.932	414.511	1.94	3.93	999.00	1500.00
2045	20461.07	1500.00	5.35	1652.21	39.93	-0.00430	-0.00254	0.03506	2.776	414.974	1.65	3.66	1000.00	1500.00
2046	20470.62	1500.00	5.24	1694.34	39.93	-0.00449	-0.00283	0.03989	2.776	415.436	1.64	3.59	1000.00	1500.00
2047	20480.24	1500.00	5.23	1668.28	39.93	-0.00474	-0.00376	0.03120	2.813	415.905	1.57	3.66	1000.00	1500.00
2048	20491.06	1500.00	5.29	1675.40	39.93	-0.00391	-0.00303	0.03853	2.764	416.366	1.59	3.58	1000.00	1500.00
2049	20500.61	1500.00	5.01	1675.81	39.93	-0.00439	-0.00278	0.03735	2.761	416.826	1.36	3.61	1000.00	1500.00
2050	20510.23	1500.00	4.95	1723.37	39.93	-0.00376	-0.00249	0.03242	2.781	417.289	1.35	3.61	999.00	1500.00
2051	20521.05	1500.00	4.86	1645.63	39.93	-0.00420	-0.00269	0.03750	2.729	417.744	1.25	3.59	999.00	1500.00
2052	20530.60	1500.00	4.83	1603.72	40.06	-0.00493	-0.00264	0.03574	2.744	418.202	1.18	3.60	1000.00	1500.00
2053	20540.22	1500.00	4.70	1676.92	39.93	-0.00493	-0.00327	0.03042	2.722	418.655	1.12	3.59	1000.00	1500.00
2054	20551.04	1500.00	4.63	1631.60	39.93	-0.00332	-0.00259	0.03633	2.725	419.110	1.03	3.59	1000.00	1500.00
2055	20560.65	1500.00	4.71	1700.10	39.93	-0.00386	-0.00176	0.03887	2.749	419.568	1.08	3.66	1000.00	1500.00
2056	20570.20	1500.00	4.54	1631.38	39.93	-0.00459	-0.00293	0.03452	2.729	420.023	0.96	3.58	999.00	1500.00
2057	20581.02	1500.00	4.54	1681.60	39.93	-0.00400	-0.00347	0.03379	2.727	420.477	0.91	3.58	1000.00	1500.00
2058	20590.64	1500.00	4.48	1723.42	39.93	-0.00488	-0.00391	0.03438	2.776	420.940	0.87	3.65	1000.00	1500.00
2059	20600.19	1500.00	4.44	1696.94	39.93	-0.00396	-0.00205	0.03906	2.727	421.394	0.86	3.57	1000.00	1500.00
2060	20611.01	1500.00	4.37	1680.80	39.93	-0.00469	-0.00269	0.03364	2.734	421.850	0.78	3.58	1000.00	1500.00
2061	20620.63	1500.00	4.38	1661.91	39.93	-0.00444	-0.00273	0.03223	2.776	422.313	0.79	3.61	1000.00	1500.00
2062	20630.24	1500.00	4.27	1699.71	40.06	-0.00435	-0.00259	0.03965	2.705	422.763	0.72	3.54	1000.00	1500.00
2063	20641.00	1500.00	4.33	1683.80	39.93	-0.00391	-0.00264	0.03335	2.732	423.219	0.72	3.57	1000.00	1500.00
2064	20650.62	1500.00	4.15	1760.70	39.93	-0.00376	-0.00293	0.03428	2.703	423.669	0.69	3.56	1000.00	1500.00
2065	20660.23	1500.00	4.23	1682.42	39.93	-0.00444	-0.00317	0.03408	2.712	424.121	0.67	3.54	1000.00	1500.00
2066	20670.99	1500.00	4.22	1699.08	39.93	-0.00527	-0.00298	0.03491	2.729	424.576	0.67	3.55	1000.00	1500.00
2067	20680.60	1500.00	4.18	1673.43	39.93	-0.00444	-0.00278	0.03423	2.705	425.027	0.71	3.55	1000.00	1500.00
2068	20690.22	1500.00	4.10	1594.96	39.93	-0.00454	-0.00210	0.03335	2.712	425.479	0.57	3.56	1000.00	1500.00
2069	20700.98	1500.00	4.11	1671.62	39.80	-0.00396	-0.00269	0.03594	2.756	425.938	0.58	3.59	1000.00	1500.00
2070	20710.59	1500.00	4.07	1684.00	39.93	-0.00503	-0.00234	0.03433	2.720	426.392	0.55	3.54	1000.00	1500.00
2071	20720.21	1500.00	4.06	1663.69	39.93	-0.00425	-0.00322	0.03276	2.720	426.845	0.52	3.53	1000.00	1500.00
2072	20731.03	1500.00	4.05	1670.61	39.93	-0.00425	-0.00376	0.03354	2.764	427.306	0.51	3.58	1000.00	1500.00
2073	20740.58	1500.00	3.99	1663.62	39.93	-0.00396	-0.00303	0.03540	2.690	427.754	0.50	3.48	1000.00	1500.00
2074	20750.20	1500.00	4.01	1680.96	39.93	-0.00503	-0.00244	0.03447	2.710	428.206	0.47	3.51	1000.00	1500.00

2075	20761.02	1500.00	3.96	1668.79	39.93	-0.00386	-0.00225	0.03335	2.715	428.658	0.49	3.50	1000.00	1500.00
2076	20770.57	1500.00	3.91	1696.44	39.93	-0.00386	-0.00288	0.03613	2.695	429.107	0.42	3.47	1000.00	1500.00
2077	20780.18	1500.00	3.99	1703.77	39.93	-0.00420	-0.00293	0.03237	2.727	429.562	0.46	3.54	1000.00	1500.00
2078	20791.01	1500.00	3.90	1677.65	39.93	-0.00469	-0.00298	0.03506	2.683	430.009	0.40	3.52	1000.00	1500.00
2079	20800.62	1500.00	5.01	1676.39	39.93	-0.00322	-0.00283	0.04072	2.695	430.458	1.47	3.88	1000.00	1500.00
2080	20810.17	1500.00	3.76	1670.62	39.93	-0.00366	-0.00264	0.03779	2.744	430.916	0.32	3.56	1000.00	1500.00
2081	20820.99	1500.00	3.86	1688.49	39.93	-0.00459	-0.00356	0.03325	2.715	431.368	0.41	3.46	1000.00	1500.00
2082	20830.61	1500.00	3.84	1665.29	39.93	-0.00444	-0.00254	0.03428	2.712	431.820	0.36	3.48	1000.00	1500.00
2083	20840.16	1500.00	3.85	1661.57	39.93	-0.00400	-0.00264	0.03267	2.725	432.274	0.38	3.47	1000.00	1500.00
2084	20850.98	1500.00	3.77	1659.08	39.93	-0.00420	-0.00288	0.03882	2.678	432.721	0.37	3.43	999.00	1500.00
2085	20860.60	1500.00	3.86	1705.64	39.93	-0.00420	-0.00273	0.03682	2.698	433.170	0.34	3.48	1000.00	1500.00
2086	20870.21	1500.00	3.83	1673.88	39.93	-0.00444	-0.00283	0.03335	2.678	433.617	0.36	3.48	1000.00	1500.00
2087	20880.97	1500.00	3.76	1674.02	39.93	-0.00425	-0.00244	0.03555	2.690	434.065	0.33	3.45	1000.00	1500.00
2088	20890.58	1500.00	3.82	1661.44	39.93	-0.00449	-0.00332	0.03457	2.705	434.516	0.36	3.46	1000.00	1500.00
2089	20900.20	1500.00	3.72	1662.45	39.93	-0.00435	-0.00312	0.03740	2.676	434.962	0.29	3.44	999.00	1500.00
2090	20910.96	1500.00	3.74	1671.81	39.93	-0.00356	-0.00312	0.03726	2.693	435.411	0.32	3.41	1000.00	1500.00
2091	20920.57	1500.00	3.70	1675.95	39.93	-0.00430	-0.00322	0.03706	2.734	435.866	0.24	3.51	1000.00	1500.00
2092	20930.19	1500.00	3.74	1666.33	39.93	-0.00366	-0.00273	0.03472	2.698	436.316	0.31	3.41	1000.00	1500.00
2093	20940.95	1500.00	3.70	1661.52	39.93	-0.00430	-0.00269	0.03516	2.686	436.764	0.22	3.43	1000.00	1500.00
2094	20950.56	1500.00	3.69	1644.79	39.80	-0.00356	-0.00327	0.03740	2.725	437.218	0.28	3.46	1000.00	1500.00
2095	20960.18	1500.00	3.69	1663.24	39.80	-0.00361	-0.00288	0.03843	2.671	437.663	0.29	3.41	1000.00	1500.00
2096	20970.94	1500.00	3.67	1680.40	39.93	-0.00469	-0.00371	0.03164	2.686	438.110	0.23	3.41	1000.00	1500.00
2097	20980.55	1500.00	3.71	1672.35	39.93	-0.00474	-0.00244	0.03823	2.671	438.556	0.28	3.42	1000.00	1500.00
2098	20990.16	1500.00	3.61	1675.20	39.93	-0.00415	-0.00298	0.03281	2.664	439.000	0.18	3.39	1000.00	1500.00
2099	21000.99	1500.00	3.72	1667.46	39.93	-0.00430	-0.00293	0.03242	2.690	439.448	0.25	3.41	1000.00	1500.00
2100	21010.54	1500.00	3.67	1667.40	39.93	-0.00449	-0.00273	0.03311	2.654	439.890	0.24	3.43	1000.00	1500.00
2101	21020.15	1500.00	3.64	1674.11	39.93	-0.00469	-0.00288	0.03340	2.671	440.335	0.24	3.41	1000.00	1500.00
2102	21030.97	1500.00	3.69	1663.39	39.80	-0.00459	-0.00288	0.03350	2.705	440.786	0.25	3.46	1000.00	1500.00
2103	21040.53	1500.00	3.61	1668.72	39.93	-0.00454	-0.00249	0.03325	2.683	441.233	0.23	3.40	1000.00	1500.00
2104	21050.14	1500.00	3.64	1677.59	39.93	-0.00454	-0.00239	0.03320	2.681	441.680	0.23	3.40	1000.00	1500.00
2105	21060.96	1500.00	3.66	1669.58	39.80	-0.00332	-0.00312	0.03560	2.722	442.134	0.30	3.43	1000.00	1500.00

2106	21070.58	1500.00	3.56	1659.83	39.93	-0.00449	-0.00229	0.03364	2.651	442.576	0.19	3.37	999.00	1500.00
2107	21080.13	1500.00	3.66	1675.96	39.93	-0.00454	-0.00225	0.03911	2.671	443.021	0.22	3.38	1000.00	1500.00
2108	21090.95	1500.00	3.63	1660.61	39.93	-0.00464	-0.00264	0.03652	2.673	443.467	0.22	3.40	1000.00	1500.00
2109	21100.57	1500.00	3.59	1666.35	39.93	-0.00366	-0.00322	0.03398	2.659	443.910	0.22	3.37	1000.00	1500.00
2110	21110.12	1500.00	3.68	1690.66	39.80	-0.00444	-0.00298	0.03457	2.703	444.360	0.23	3.45	1000.00	1500.00
2111	21120.94	1500.00	3.57	1679.12	39.93	-0.00361	-0.00210	0.03599	2.639	444.800	0.20	3.41	1000.00	1500.00
2112	21130.55	1500.00	3.61	1674.79	39.93	-0.00366	-0.00220	0.03838	2.661	445.243	0.21	3.37	1000.00	1500.00
2113	21140.11	1500.00	3.59	1660.65	39.80	-0.00420	-0.00317	0.03926	2.710	445.695	0.20	3.43	1000.00	1500.00
2114	21150.93	1500.00	3.55	1700.70	39.80	-0.00498	-0.00317	0.03467	2.676	446.141	0.21	3.38	1000.00	1500.00
2115	21160.54	1500.00	3.56	1673.39	39.93	-0.00439	-0.00303	0.03306	2.668	446.586	0.19	3.39	1000.00	1500.00
2116	21170.16	1500.00	3.60	1668.87	39.93	-0.00498	-0.00273	0.03618	2.708	447.037	0.19	3.39	1000.00	1500.00
2117	21180.92	1500.00	3.54	1664.12	39.80	-0.00444	-0.00244	0.03589	2.649	447.479	0.18	3.34	999.00	1500.00
2118	21190.53	1500.00	3.57	1671.41	39.80	-0.00352	-0.00288	0.03613	2.664	447.922	0.18	3.39	1000.00	1500.00
2119	21200.15	1500.00	3.55	1682.89	39.80	-0.00420	-0.00283	0.03315	2.646	448.364	0.19	3.39	1000.00	1500.00
2120	21210.91	1500.00	3.51	1673.23	39.93	-0.00312	-0.00234	0.03618	2.644	448.804	0.17	3.34	1000.00	1500.00
2121	21220.52	1500.00	3.59	1683.35	39.93	-0.00430	-0.00269	0.03730	2.671	449.249	0.19	3.38	1000.00	1500.00
2122	21230.13	1500.00	3.52	1678.54	39.80	-0.00366	-0.00229	0.03589	2.637	449.689	0.17	3.36	999.00	1500.00
2123	21240.90	1500.00	3.52	1676.50	39.93	-0.00396	-0.00288	0.03584	2.656	450.132	0.17	3.34	1000.00	1500.00
2124	21250.51	1500.00	3.55	1664.46	39.93	-0.00415	-0.00239	0.03677	2.698	450.581	0.17	3.43	1000.00	1500.00
2125	21260.12	1500.00	3.50	1671.30	39.93	-0.00376	-0.00225	0.03486	2.659	451.024	0.15	3.35	1000.00	1500.00
2126	21270.94	1500.00	3.52	1668.45	39.93	-0.00361	-0.00254	0.03652	2.664	451.468	0.17	3.35	1000.00	1500.00
2127	21280.50	1500.00	3.52	1640.00	39.80	-0.00449	-0.00210	0.03301	2.690	451.917	0.16	3.40	1000.00	1500.00
2128	21290.11	1500.00	3.53	1661.26	39.93	-0.00391	-0.00269	0.03486	2.637	452.356	0.16	3.31	1000.00	1500.00
2129	21300.93	1500.00	3.51	1671.45	39.80	-0.00464	-0.00249	0.03818	2.654	452.798	0.15	3.35	1000.00	1500.00
2130	21310.49	1492.00	1.24	1689.00	39.93	-0.00420	-0.00176	0.03403	2.637	453.238	-0.70	3.87	994.00	1494.00
2131	21320.10	1500.00	3.06	1667.80	39.80	-0.00342	-0.00400	0.03843	2.639	453.678	-0.54	3.39	1000.00	1500.00
2132	21330.92	1500.00	3.59	1669.73	39.93	-0.00391	-0.00376	0.03706	2.649	454.119	0.19	3.35	1000.00	1500.00
2133	21340.53	1500.00	3.50	1665.82	39.93	-0.00366	-0.00308	0.03594	2.622	454.556	0.15	3.36	1000.00	1500.00
2134	21350.09	1500.00	3.50	1677.41	39.93	-0.00371	-0.00327	0.03799	2.644	454.997	0.15	3.33	1000.00	1500.00
2135	21360.91	1500.00	3.51	1692.71	39.80	-0.00410	-0.00327	0.03550	2.678	455.443	0.15	3.37	1000.00	1500.00
2136	21370.52	1500.00	3.47	1638.98	39.80	-0.00391	-0.00273	0.03696	2.659	455.886	0.14	3.34	1000.00	1500.00

2137	21380.08	1500.00	3.46	1652.32	39.80	-0.00361	-0.00298	0.03691	2.646	456.327	0.14	3.34	1000.00	1500.00
2138	21390.90	1500.00	3.48	1688.66	39.80	-0.00405	-0.00234	0.03447	2.693	456.776	0.13	3.40	1000.00	1500.00
2139	21400.51	1500.00	-0.44	1697.49	39.93	-0.00371	-0.00176	0.03340	2.456	457.186	-0.47	-1.12	1000.00	1500.00
2140	21410.13	1500.00	0.06	1671.11	39.80	0.00415	0.00513	0.03862	1.975	457.515	0.17	-0.01	1002.00	1500.00
2141	21420.89	1500.00	0.09	1670.49	39.80	0.00923	0.00981	0.04194	1.401	457.748	0.13	-0.07	1002.00	1500.00
2142	21430.50	1500.00	0.09	1670.14	39.80	0.17578	0.20117	0.04019	0.959	457.908	0.13	-0.04	1003.00	1500.00
2143	21440.11	1500.00	0.10	1672.38	39.93	0.17036	0.12822	0.04482	0.818	458.045	0.15	-0.03	1003.00	1500.00
2144	21450.88	1500.00	0.11	1674.05	39.93	0.10342	0.10781	0.03730	0.671	458.156	0.15	-0.03	1003.00	1500.00
2145	21460.49	1500.00	0.10	1672.96	39.80	0.11333	0.12446	0.04136	0.591	458.255	0.14	-0.02	1003.00	1500.00
2146	21470.10	1500.00	0.09	1672.16	39.80	0.12422	0.13940	0.03892	0.505	458.339	0.12	-0.03	1002.00	1500.00
2147	21480.87	1500.00	0.12	1663.20	39.93	0.13979	0.16187	0.04033	0.388	458.404	0.14	-0.02	1003.00	1500.00
2148	21490.48	1500.00	0.01	1662.16	39.80	0.15420	0.17983	0.03335	0.256	458.447	0.06	-0.02	1001.00	1500.00
2149	21500.09	1500.00	0.16	1670.24	39.80	0.16494	0.19741	0.03652	0.227	458.484	0.16	0.00	1002.00	1500.00
2150	21510.86	1500.00	0.17	1666.72	39.80	0.17178	0.20635	0.04414	0.144	458.508	0.16	-0.01	1003.00	1500.00
2151	21520.47	1500.00	0.09	1678.33	39.80	0.17832	0.21533	0.03525	0.144	458.532	0.12	-0.01	1002.00	1500.00
2152	21530.08	1500.00	0.13	1663.14	39.93	0.18179	0.22134	0.03745	0.100	458.549	0.14	-0.02	1003.00	1500.00
2153	21540.90	1500.00	0.12	1666.37	39.80	0.18535	0.22549	0.03740	0.093	458.565	0.13	0.00	1002.00	1500.00
2154	21550.46	1500.00	0.14	1661.77	39.80	0.18730	0.22861	0.03735	0.056	458.574	0.14	-0.01	1003.00	1500.00
2155	21560.07	1500.00	0.12	1669.48	39.80	0.19375	0.23569	0.03657	0.061	458.584	0.13	0.00	1003.00	1500.00
2156	21570.89	1500.00	0.12	1665.92	39.80	0.19312	0.23564	0.03936	0.054	458.593	0.12	0.00	1002.00	1500.00
2157	21580.45	1500.00	0.14	1668.75	39.80	0.19419	0.23579	0.03828	0.024	458.597	0.14	0.00	1003.00	1500.00
2158	21590.06	1500.00	0.12	1656.69	39.93	0.19766	0.24272	0.03740	0.034	458.603	0.12	0.00	1003.00	1500.00
2159	21600.88	1500.00	0.11	1666.17	39.93	0.19766	0.24229	0.03706	0.044	458.610	0.11	0.00	1003.00	1500.00
2160	21610.49	1500.00	0.13	1659.67	39.93	0.19844	0.24185	0.03477	0.039	458.617	0.13	0.00	1003.00	1500.00
2161	21620.05	1500.00	0.12	1673.43	39.80	0.19775	0.24194	0.03569	0.020	458.620	0.12	0.00	1003.00	1500.00
2162	21630.87	1500.00	0.12	1664.09	39.80	0.20195	0.24756	0.03506	0.020	458.623	0.12	0.00	1003.00	1500.00
2163	21640.48	1500.00	0.12	1665.89	39.80	0.20181	0.24644	0.03335	0.027	458.628	0.12	0.00	1003.00	1500.00
2164	21650.04	1500.00	0.11	1664.24	39.80	0.20127	0.24463	0.03633	0.024	458.632	0.12	0.00	1003.00	1500.00
2165	21660.86	1500.00	0.11	1668.63	39.80	0.20166	0.24600	0.03589	0.017	458.635	0.11	0.00	1002.00	1500.00
2166	21670.47	1500.00	0.11	1668.35	39.80	0.20254	0.24854	0.03745	0.020	458.638	0.11	0.00	1002.00	1500.00
2167	21680.03	1500.00	0.12	1663.73	39.80	0.20190	0.24761	0.04058	0.017	458.641	0.11	0.00	1002.00	1500.00

2168	21690.85	1500.00	0.11	1663.15	39.80	0.20190	0.24575	0.03638	0.022	458.644	0.11	0.00	1002.00	1500.00
2169	21700.57	1500.00	0.10	1669.10	39.80	0.20161	0.24683	0.03975	0.017	458.647	0.10	0.00	1002.00	1500.00
2170	21710.13	1500.00	0.10	1664.62	39.80	0.20146	0.24688	0.03677	0.015	458.650	0.10	0.00	1002.00	1500.00
2171	21720.95	1500.00	0.10	1646.39	39.80	0.20210	0.24692	0.03369	0.012	458.652	0.10	0.00	1002.00	1500.00
2172	21730.56	1500.00	0.10	1664.12	39.80	0.20269	0.24800	0.03618	0.012	458.654	0.10	0.00	1002.00	1500.00
2173	21740.17	1500.00	0.09	1667.83	39.93	0.20352	0.24766	0.03887	0.015	458.656	0.09	0.00	1001.00	1500.00
2174	21750.94	1500.00	0.09	1667.21	39.93	0.20308	0.24775	0.03530	0.012	458.658	0.09	0.00	1001.00	1500.00
2175	21760.55	1500.00	0.09	1670.46	39.80	0.20322	0.24824	0.04058	0.015	458.661	0.09	0.00	1001.00	1500.00
2176	21770.16	1500.00	0.09	1667.52	39.93	0.20313	0.24854	0.04019	0.012	458.663	0.10	0.00	1001.00	1500.00
2177	21780.93	1500.00	0.09	1667.84	39.80	0.20376	0.24873	0.03447	0.015	458.665	0.09	0.00	1001.00	1500.00
2178	21790.54	1500.00	0.09	1672.74	39.93	0.20449	0.24912	0.03726	0.012	458.667	0.09	0.00	1001.00	1500.00
2179	21800.15	1500.00	0.09	1670.68	39.80	0.20439	0.25029	0.03569	0.012	458.669	0.09	0.00	1001.00	1500.00
2180	21810.92	1500.00	0.09	1673.03	39.80	0.20503	0.24956	0.03911	0.015	458.672	0.09	0.00	1000.00	1500.00
2181	21820.53	1500.00	0.08	1668.50	39.80	0.20522	0.24971	0.03716	0.012	458.674	0.08	0.00	1000.00	1500.00
2182	21830.14	1500.00	0.08	1666.42	39.80	0.20547	0.25122	0.03491	0.012	458.676	0.08	0.00	1000.00	1500.00
2183	21840.91	1500.00	0.09	1668.03	39.80	0.20532	0.25151	0.03716	0.012	458.678	0.08	0.00	1000.00	1500.00
2184	21850.52	1500.00	0.09	1666.67	39.80	0.20610	0.25078	0.03779	0.010	458.679	0.09	0.00	1000.00	1500.00
2185	21860.13	1500.00	0.11	1667.78	39.93	0.20537	0.25083	0.03623	0.015	458.682	0.09	0.03	1000.00	1500.00
2186	21870.95	1500.00	0.11	1669.71	39.80	0.20635	0.25186	0.03809	0.012	458.684	-1.62	-0.03	1005.00	1500.00
2187	21880.51	1500.00	0.02	1662.40	39.93	0.20591	0.25249	0.03994	0.010	458.686	-0.03	0.04	1000.00	1500.00
2188	21890.12	1500.00	0.14	1666.58	39.80	0.20615	0.25229	0.03438	0.012	458.688	0.13	0.03	1000.00	1500.00
2189	21900.94	1500.00	0.16	1664.36	39.80	0.20703	0.25181	0.04038	0.012	458.690	0.11	0.02	1000.00	1500.00
2190	21910.50	1500.00	0.11	1674.41	39.80	0.20713	0.25288	0.03931	0.012	458.692	0.09	0.02	1000.00	1500.00
2191	21920.11	1500.00	0.11	1670.62	39.93	0.20649	0.25337	0.03657	0.010	458.693	0.09	0.02	1000.00	1500.00
2192	21931.04	1500.00	0.11	1668.79	39.80	0.20703	0.25298	0.03447	0.012	458.695	0.14	0.02	1000.00	1500.00
2193	21940.60	1500.00	0.10	1669.96	39.80	0.20703	0.25400	0.03560	0.012	458.697	0.08	0.02	1000.00	1500.00
2194	21950.21	1500.00	0.10	1665.11	39.93	0.20811	0.25396	0.04136	0.012	458.699	0.09	0.01	1000.00	1500.00
2195	21961.03	1500.00	0.10	1666.75	39.93	0.20723	0.25381	0.03745	0.012	458.701	0.09	0.01	1000.00	1500.00
2196	21970.69	1500.00	0.09	1664.66	39.93	0.20732	0.25254	0.03730	0.012	458.704	0.08	0.01	1000.00	1500.00
2197	21980.31	1500.00	0.10	1662.64	39.93	0.20620	0.25166	0.04092	0.012	458.706	0.10	0.01	1000.00	1500.00
2198	21991.13	1500.00	0.10	1668.94	39.80	0.20688	0.25229	0.04185	0.010	458.707	0.09	0.01	1000.00	1500.00

2199	22000.68	1500.00	0.08	1664.36	39.93	0.20527	0.25122	0.03809	0.012	458.709	0.08	0.00	1000.00	1500.00
2200	22010.30	1500.00	0.09	1665.46	39.80	0.20659	0.25146	0.04390	0.012	458.711	0.08	0.01	1000.00	1500.00
2201	22021.12	1500.00	0.09	1666.50	39.93	0.20625	0.25015	0.03525	0.010	458.713	0.08	0.01	1000.00	1500.00
2202	22030.73	1500.00	0.09	1669.71	39.80	0.20552	0.24951	0.03135	0.012	458.715	0.08	0.02	1000.00	1500.00
2203	22040.29	1500.00	0.08	1662.51	39.93	0.20464	0.24844	0.03848	0.012	458.717	0.08	0.01	1000.00	1500.00
2204	22051.11	1500.00	0.09	1666.50	39.80	0.20464	0.24824	0.03618	0.012	458.719	0.08	0.01	1000.00	1500.00
2205	22060.72	1500.00	0.09	1666.02	39.93	0.20410	0.24736	0.04014	0.012	458.721	0.08	0.01	1000.00	1500.00
2206	22070.27	1500.00	0.09	1667.92	39.80	0.20430	0.24688	0.04062	0.012	458.723	0.08	0.01	1000.00	1500.00
2207	22081.10	1500.00	0.09	1671.37	39.80	0.20381	0.24624	0.03584	0.012	458.725	0.08	0.01	1000.00	1500.00
2208	22090.71	1500.00	0.09	1673.01	39.80	0.20356	0.24658	0.04004	0.010	458.727	0.08	0.01	1000.00	1500.00
2209	22100.32	1500.00	0.09	1669.88	39.93	0.20293	0.24590	0.03423	0.012	458.729	0.08	0.01	1000.00	1500.00
2210	22111.08	1500.00	0.09	1672.58	39.93	0.20317	0.24468	0.03770	0.012	458.731	0.08	0.01	1000.00	1500.00
2211	22120.70	1500.00	0.08	1672.17	39.93	0.20322	0.24507	0.04121	0.012	458.733	0.08	0.00	1000.00	1500.00
2212	22130.31	1500.00	0.09	1673.09	39.93	0.20293	0.24419	0.03921	0.012	458.735	0.08	0.01	1000.00	1500.00
2213	22141.07	1500.00	0.09	1674.24	39.93	0.20269	0.24473	0.03745	0.012	458.737	0.08	0.01	1000.00	1500.00
2214	22150.69	1500.00	0.08	1678.80	40.06	0.20254	0.24370	0.03799	0.012	458.739	0.08	0.00	1000.00	1500.00
2215	22160.30	1500.00	0.08	1668.88	40.06	0.20273	0.24438	0.03848	0.012	458.741	0.08	0.00	1000.00	1500.00
2216	22171.06	1500.00	0.09	1671.96	40.06	0.20210	0.24424	0.03813	0.012	458.743	0.08	0.01	1000.00	1500.00
2217	22180.67	1500.00	0.09	1678.99	40.06	0.20181	0.24326	0.03984	0.012	458.745	0.07	0.01	1000.00	1500.00
2218	22190.29	1500.00	0.08	1674.41	40.06	0.20195	0.24419	0.03833	0.012	458.747	0.07	0.00	1000.00	1500.00
2219	22201.11	1500.00	0.08	1679.37	40.06	0.20127	0.24253	0.03462	0.010	458.749	0.07	0.00	1000.00	1500.00
2220	22210.66	1500.00	0.08	1681.83	40.06	0.20132	0.24170	0.03530	0.010	458.750	0.07	0.01	1000.00	1500.00
2221	22220.28	1500.00	0.08	1674.14	40.18	0.20098	0.24004	0.03354	0.010	458.752	0.07	0.01	1000.00	1500.00
2222	22231.10	1500.00	0.07	1653.17	40.18	0.20005	0.23813	0.03447	0.012	458.754	0.07	0.01	1000.00	1500.00
2223	22240.65	1500.00	0.08	1701.10	40.18	0.54194	0.37012	0.04800	0.012	458.756	0.07	0.01	1000.00	1500.00
2224	22250.27	1500.00	0.08	1670.94	40.18	0.53838	0.52559	0.03833	0.012	458.758	0.07	0.00	1000.00	1500.00
2225	22261.09	1500.00	0.08	1690.25	40.31	0.59009	0.60952	0.03833	0.012	458.760	0.07	0.01	1000.00	1500.00
2226	22270.64	1500.00	0.08	1657.54	40.18	0.50371	0.68130	0.03496	0.012	458.762	0.07	0.01	1000.00	1500.00
2227	22280.25	1500.00	0.08	1713.12	40.31	0.67554	1.05010	0.03296	0.010	458.764	0.07	0.01	1000.00	1500.00
2228	22291.08	1500.00	0.08	1650.11	40.31	0.83086	1.05376	0.04165	0.012	458.766	0.08	0.00	1000.00	1500.00
2229	22300.69	1500.00	0.08	1689.11	40.31	0.20972	0.83149	0.00415	0.012	458.768	0.08	0.01	1000.00	1500.00

2230	22310.24	1500.00	0.06	1726.73	40.31	0.03286	0.56567	-0.09209	0.012	458.770	0.06	0.01	1000.00	1500.00
2231	22321.06	1500.00	0.09	1694.26	40.44	0.01016	0.41855	-0.14380	0.012	458.772	0.08	0.01	1000.00	1500.00
2232	22330.68	1500.00	0.08	1684.41	40.31	0.00801	0.37832	-0.14746	0.010	458.774	0.08	0.01	1000.00	1500.00
2233	22340.23	1500.00	0.08	1714.94	40.31	0.00762	0.38037	-0.15742	0.012	458.776	0.07	0.01	1000.00	1500.00
2234	22351.05	1500.00	0.08	1705.82	40.31	0.00747	0.37690	-0.15972	0.012	458.778	0.07	0.01	1000.00	1500.00
2235	22360.67	1500.00	0.08	1687.80	40.44	0.00767	0.37578	-0.15298	0.010	458.779	0.08	0.01	1000.00	1500.00
2236	22370.28	1500.00	0.09	1705.77	40.44	0.00713	0.37793	-0.15073	0.012	458.781	0.06	0.04	999.00	1500.00
2237	22381.04	1500.00	0.10	1686.03	40.31	0.00757	0.37324	-0.15425	0.010	458.783	0.09	0.01	1000.00	1500.00
2238	22390.66	1500.00	0.10	1685.48	40.44	0.00796	0.37710	-0.15527	0.010	458.785	0.04	0.09	999.00	1500.00
2239	22400.27	1500.00	0.17	1742.03	40.31	0.00742	0.37803	-0.15229	0.012	458.787	0.10	0.06	1000.00	1500.00
2240	22411.03	1500.00	0.10	1648.67	40.31	0.00786	0.37407	-0.15488	0.012	458.789	0.09	0.01	1000.00	1500.00
2241	22420.64	1500.00	0.10	1651.46	40.31	0.00825	0.37915	-0.15469	0.012	458.791	0.08	0.02	1000.00	1500.00
2242	22430.26	1500.00	0.10	1681.75	40.31	0.00781	0.38130	-0.16069	0.010	458.792	0.08	0.01	1000.00	1500.00
2243	22441.02	1500.00	0.10	1656.55	40.18	0.00771	0.37837	-0.15742	0.010	458.794	0.09	0.02	1000.00	1500.00
2244	22450.63	1500.00	0.10	1761.95	40.31	0.00728	0.38218	-0.15684	0.010	458.796	0.07	0.02	1000.00	1500.00
2245	22460.25	1500.00	-0.28	1637.91	40.18	0.10645	0.16528	0.03936	0.056	458.805	-0.47	3.34	995.00	1500.00
2246	22471.07	1500.00	2.59	1670.01	40.18	0.00381	0.00552	0.03613	0.886	458.953	0.05	3.58	1000.00	1500.00
2247	22480.62	1500.00	2.74	1681.92	40.18	0.00098	0.00347	0.04028	1.169	459.148	0.11	2.62	1000.00	1500.00
2248	22490.24	1500.00	2.61	1671.63	40.18	-0.00034	0.00239	0.03652	1.226	459.352	0.15	2.37	1001.00	1500.00
2249	22501.06	1500.00	2.12	1668.14	40.18	-0.00171	0.00093	0.03813	1.682	459.632	0.02	2.24	1000.00	1500.00
2250	22510.61	1500.00	2.37	1679.55	40.18	-0.00244	0.00005	0.03550	1.899	459.949	0.09	2.27	1000.00	1500.00
2251	22520.22	1500.00	2.48	1679.64	40.06	-0.00278	-0.00068	0.03613	1.941	460.272	0.09	2.37	1000.00	1500.00
2252	22531.04	1500.00	2.46	1676.79	40.18	-0.00264	-0.00063	0.03340	1.978	460.602	0.07	2.41	1000.00	1500.00
2253	22540.60	1500.00	2.58	1672.92	40.18	-0.00337	-0.00029	0.03164	2.075	460.948	0.08	2.52	1000.00	1500.00
2254	22550.21	1500.00	2.66	1671.16	40.06	-0.00278	-0.00132	0.03257	2.131	461.303	0.08	2.59	1000.00	1500.00
2255	22561.03	1500.00	2.64	1670.32	40.06	-0.00215	0.00010	0.03799	2.173	461.665	0.07	2.57	1000.00	1500.00
2256	22570.65	1500.00	2.70	1673.37	40.06	-0.00288	-0.00024	0.03320	2.266	462.043	0.04	2.70	1000.00	1500.00
2257	22580.20	1500.00	2.81	1665.17	40.06	-0.00210	0.00034	0.02979	2.322	462.430	0.05	2.85	1000.00	1500.00
2258	22591.02	1500.00	1.41	1677.03	40.06	-0.00205	-0.00024	0.03472	2.410	462.831	-1.46	2.30	994.00	1494.00
2259	22600.64	1500.00	2.84	1674.36	39.93	-0.00229	-0.00039	0.03550	2.542	463.255	-0.67	3.02	999.00	1500.00
2260	22610.19	1500.00	3.03	1679.32	39.93	-0.00259	-0.00039	0.03535	2.505	463.672	0.04	3.02	999.00	1500.00

2261	22621.01	1500.00	3.15	1662.43	40.06	-0.00327	0.00015	0.03403	2.507	464.090	0.08	2.99	1000.00	1500.00
2262	22630.62	1500.00	3.08	1680.51	39.93	-0.00273	0.00063	0.03271	2.712	464.542	0.05	2.99	999.00	1500.00
2263	22640.24	1500.00	3.15	1669.90	39.93	-0.00234	0.00034	0.03257	2.537	464.965	0.05	3.08	1000.00	1500.00
2264	22651.00	1500.00	3.24	1666.36	39.93	-0.00166	0.00034	0.03906	2.556	465.391	0.05	3.17	1000.00	1500.00
2265	22660.61	1500.00	3.26	1672.75	39.93	-0.00220	0.00063	0.03623	2.656	465.834	0.06	3.19	1000.00	1500.00
2266	22670.23	1500.00	3.24	1663.77	39.93	-0.00288	-0.00044	0.03359	2.671	466.279	0.04	3.19	1000.00	1500.00
2267	22680.99	1500.00	3.30	1668.22	39.93	-0.00225	0.00034	0.03452	2.671	466.724	0.05	3.29	1000.00	1500.00
2268	22690.60	1500.00	3.34	1672.42	39.93	-0.00205	0.00073	0.03462	2.686	467.172	0.04	3.32	1000.00	1500.00
2269	22700.22	1500.00	3.33	1673.32	39.93	-0.00151	0.00039	0.03647	2.693	467.621	0.04	3.28	1000.00	1500.00
2270	22710.98	1500.00	3.34	1666.30	39.93	-0.00161	0.00083	0.03296	2.759	468.080	0.03	3.35	1000.00	1500.00
2271	22720.59	1500.00	3.35	1678.24	39.93	-0.00259	0.00044	0.03442	2.756	468.540	0.03	3.35	1000.00	1500.00
2272	22730.20	1500.00	3.39	1669.90	39.93	-0.00234	-0.00010	0.03813	2.764	469.000	0.04	3.35	1000.00	1500.00
2273	22740.97	1500.00	3.39	1667.93	39.93	-0.00239	0.00054	0.03330	2.805	469.468	0.04	3.34	1000.00	1500.00
2274	22750.58	1500.00	3.38	1656.81	39.93	-0.00190	0.00078	0.03906	2.751	469.926	0.04	3.34	1000.00	1500.00
2275	22760.19	1500.00	3.42	1674.42	39.93	-0.00205	0.00024	0.03696	2.754	470.385	0.04	3.37	1000.00	1500.00
2276	22771.01	1500.00	3.43	1669.11	39.93	-0.00112	0.00093	0.03970	2.766	470.847	0.05	3.36	1000.00	1500.00
2277	22780.57	1500.00	3.37	1667.00	39.80	-0.00220	0.00083	0.03101	2.737	471.303	0.04	3.34	1000.00	1500.00
2278	22790.18	1500.00	3.40	1665.52	39.93	-0.00205	0.00015	0.03477	2.769	471.764	0.03	3.37	1000.00	1500.00
2279	22801.00	1500.00	3.39	1668.96	39.93	-0.00137	0.00083	0.03564	2.720	472.217	0.03	3.38	1000.00	1500.00
2280	22810.56	1500.00	3.38	1665.25	39.93	-0.00142	0.00093	0.03521	2.754	472.676	0.04	3.34	1000.00	1500.00
2281	22820.17	1500.00	3.39	1657.43	39.80	-0.00293	0.00073	0.03452	2.764	473.137	0.03	3.36	1000.00	1500.00
2282	22830.99	1500.00	3.37	1666.46	39.93	-0.00186	0.00127	0.03701	2.773	473.599	0.03	3.39	1000.00	1500.00
2283	22840.60	1500.00	3.39	1659.10	39.93	-0.00195	0.00034	0.03384	2.766	474.060	0.03	3.34	1000.00	1500.00
2284	22850.16	1500.00	3.41	1664.54	39.93	-0.00215	0.00015	0.03350	2.747	474.518	0.05	3.33	1000.00	1500.00
2285	22860.98	1500.00	3.35	1661.23	39.80	-0.00142	0.00093	0.03594	2.737	474.974	0.03	3.32	1000.00	1500.00
2286	22870.59	1500.00	3.40	1664.11	39.80	-0.00269	0.00063	0.03452	2.749	475.432	0.04	3.36	1000.00	1500.00
2287	22880.15	1500.00	3.41	1672.59	39.80	-0.00181	0.00015	0.03989	2.739	475.889	0.04	3.38	1000.00	1500.00
2288	22890.97	1500.00	3.39	1667.97	39.93	-0.00264	0.00049	0.02979	2.720	476.342	0.03	3.34	1000.00	1500.00
2289	22900.58	1500.00	3.42	1657.20	39.80	-0.00142	0.00059	0.03818	2.759	476.802	0.04	3.37	1000.00	1500.00
2290	22910.20	1500.00	3.38	1670.59	39.80	-0.00200	0.00005	0.03892	2.742	477.259	0.05	3.36	999.00	1500.00
2291	22920.96	1500.00	3.36	1664.13	39.80	-0.00146	0.00137	0.03179	2.722	477.713	0.03	3.32	1017.00	1500.00

2292	22930.57	1500.00	9.36	1668.88	39.80	-0.00186	0.00088	0.03438	2.668	478.157	3.98	4.14	1475.00	1532.00
2293	22940.18	1500.00	3.59	1661.17	39.80	0.00781	0.00723	0.04253	2.034	478.496	1.75	1.75	1473.00	1529.00
2294	22950.95	1492.00	2.07	1695.50	39.80	0.01274	0.01392	0.03628	1.873	478.808	5.30	1.16	1481.00	1536.00
2295	22960.56	1500.00	-201.79	1693.32	39.80	0.37676	0.48320	0.03306	1.472	479.054	2.25	-204.05	1500.00	739.00
2296	22970.17	1500.00	-202.41	1651.87	39.80	0.10088	0.09805	0.04072	1.174	479.249	1.42	-203.98	1500.00	742.00
2297	22980.94	1500.00	-202.88	1677.45	39.80	0.12202	0.13271	0.03716	0.723	479.370	1.16	-204.06	1500.00	744.00
2298	22990.55	1500.00	-202.94	1636.44	39.80	0.14653	0.16758	0.03770	0.527	479.458	0.99	-203.88	1500.00	743.00
2299	23000.16	1500.00	-203.19	1676.26	39.80	0.16650	0.19482	0.03809	0.369	479.519	0.89	-204.05	1500.00	743.00
2300	23010.93	1500.00	-203.27	1646.73	39.80	0.18257	0.21763	0.04170	0.234	479.558	0.77	-203.75	1500.00	742.00
2301	23020.54	1500.00	-203.35	1694.08	39.80	0.19136	0.23062	0.04482	0.176	479.588	0.71	-204.06	1500.00	742.00
2302	23030.15	1500.00	-203.42	1645.20	39.80	0.19941	0.23862	0.03804	0.127	479.609	0.67	-204.05	1500.00	741.00
2303	23040.97	1500.00	-203.45	1649.66	39.80	0.20376	0.24595	0.03921	0.093	479.624	0.59	-204.07	1500.00	741.00
2304	23050.53	1500.00	-203.46	1634.64	39.80	0.20737	0.25049	0.03545	0.071	479.636	0.70	-204.07	1500.00	740.00
2305	23060.14	1500.00	-202.13	1634.21	39.80	0.20898	0.25273	0.03643	0.054	479.645	1.52	-204.06	1500.00	739.00
2306	23070.96	1500.00	71.06	1663.17	39.93	0.21045	0.25688	0.04165	0.042	479.652	1.14	81.27	1500.00	743.00
2307	23080.52	1500.00	146.77	1658.04	39.93	0.21265	0.25708	0.03433	0.034	479.658	0.90	153.46	1500.00	743.00
2308	23090.13	1500.00	198.60	1673.58	39.93	0.21367	0.25815	0.03301	0.027	479.662	0.71	197.88	1500.00	765.00
2309	23100.95	1500.00	198.46	1671.99	39.93	0.21421	0.26011	0.04238	0.022	479.666	0.55	197.89	1500.00	792.00
2310	23110.56	1500.00	197.89	1666.67	39.93	0.21440	0.26089	0.04233	0.020	479.669	0.46	197.43	1500.00	821.00
2311	23120.12	1500.00	197.38	1678.83	39.80	0.21567	0.26040	0.03716	0.017	479.672	0.44	196.94	1500.00	859.00
2312	23130.94	1500.00	196.80	1689.37	39.93	0.21567	0.26211	0.03677	0.017	479.675	0.40	196.39	1500.00	922.00
2313	23140.55	1500.00	196.04	1662.01	39.80	0.21616	0.26172	0.03848	0.015	479.677	0.38	194.64	1500.00	1010.00
2314	23150.11	1500.00	115.70	1673.75	39.80	0.21577	0.26138	0.03247	0.015	479.680	0.34	103.86	1500.00	1056.00
2315	23160.93	1500.00	9.77	1661.48	39.80	0.21675	0.26201	0.03730	0.012	479.682	0.32	-1.75	1500.00	1020.00
2316	23170.54	1500.00	12.73	1673.23	39.80	0.21572	0.26328	0.03315	0.012	479.684	0.30	17.68	1500.00	974.00
2317	23180.15	1500.00	34.37	1666.14	39.93	0.21699	0.26226	0.03550	0.015	479.686	0.29	34.21	1500.00	1000.00
2318	23190.92	1500.00	23.26	1670.44	39.80	0.21704	0.26279	0.03735	0.012	479.688	0.27	22.16	1500.00	1000.00
2319	23200.53	1500.00	10.61	1676.08	39.80	0.21797	0.26255	0.03931	0.012	479.690	0.14	8.89	1500.00	999.00
2320	23210.14	1500.00	5.85	1669.26	39.80	0.21797	0.26323	0.03765	0.012	479.692	0.19	5.39	1500.00	999.00
2321	23220.91	1500.00	4.20	1673.75	39.80	0.21753	0.26343	0.03408	0.012	479.694	0.21	3.93	1500.00	999.00
2322	23230.52	1500.00	3.69	1661.02	39.80	0.21855	0.26313	0.04263	0.012	479.696	0.21	3.42	1500.00	999.00

2323	23240.13	1500.00	3.28	1673.37	39.80	0.21758	0.26255	0.03667	0.010	479.698	0.20	3.02	1500.00	999.00
2324	23250.90	1500.00	2.91	1670.50	39.80	0.21729	0.26279	0.03643	0.012	479.700	0.19	2.67	1500.00	999.00
2325	23260.51	1500.00	2.64	1676.42	39.80	0.21675	0.26274	0.03647	0.012	479.702	0.19	2.42	1500.00	999.00
2326	23270.12	1500.00	2.42	1674.38	39.80	0.21846	0.26367	0.03721	0.012	479.704	0.18	2.23	1500.00	999.00
2327	23280.94	1500.00	2.23	1677.76	39.80	0.21826	0.26274	0.04014	0.012	479.706	0.18	2.01	1500.00	999.00
2328	23290.50	1500.00	2.06	1675.79	39.80	0.21816	0.26367	0.03857	0.010	479.708	0.17	1.89	1500.00	999.00
2329	23300.11	1500.00	1.94	1671.53	39.80	0.21787	0.26309	0.03643	0.012	479.710	0.17	1.76	1500.00	999.00
2330	23310.93	1500.00	1.82	1672.70	39.80	0.21870	0.26274	0.04004	0.012	479.712	0.15	1.63	1500.00	999.00
2331	23320.49	1500.00	1.67	1674.18	39.80	0.21787	0.26343	0.03755	0.012	479.714	0.16	1.52	1500.00	999.00
2332	23330.10	1500.00	1.59	1673.88	39.80	0.21753	0.26367	0.03735	0.012	479.716	0.14	1.45	1500.00	999.00
2333	23340.92	1500.00	1.52	1676.00	39.80	0.21743	0.26396	0.03613	0.012	479.718	0.14	1.35	1500.00	999.00
2334	23350.48	1500.00	1.45	1680.43	39.80	0.21846	0.26338	0.04453	0.010	479.720	0.14	1.29	1500.00	999.00
2335	23360.09	1500.00	1.38	1673.73	39.80	0.21855	0.26323	0.03916	0.012	479.722	0.14	1.23	1500.00	999.00
2336	23370.91	1500.00	1.30	1669.20	39.80	0.21865	0.26338	0.03867	0.010	479.723	0.14	1.16	1500.00	999.00
2337	23380.52	1500.00	1.23	1673.25	39.68	0.21816	0.26299	0.03657	0.012	479.725	0.13	1.10	1500.00	999.00
2338	23390.08	1500.00	1.20	1673.64	39.80	0.21826	0.26274	0.03955	0.012	479.727	0.13	1.06	1500.00	999.00
2339	23400.90	1500.00	1.13	1677.51	39.68	0.21865	0.26348	0.03828	0.010	479.729	0.12	1.00	1500.00	999.00
2340	23410.51	1500.00	1.09	1682.43	39.80	0.21816	0.26328	0.04277	0.010	479.731	0.11	0.95	1500.00	999.00
2341	23420.07	1500.00	1.05	1674.60	39.80	0.21846	0.26289	0.03945	0.010	479.732	0.11	0.93	1500.00	999.00
2342	23430.89	1500.00	0.97	1672.89	39.80	0.21807	0.26187	0.03848	0.012	479.734	0.10	0.89	1500.00	999.00
2343	23440.50	1500.00	0.93	1667.90	39.80	0.21777	0.26255	0.03569	0.012	479.736	0.10	0.85	1500.00	999.00
2344	23450.11	1500.00	0.91	1671.91	39.68	0.21831	0.26211	0.03721	0.012	479.738	0.10	0.81	1500.00	999.00
2345	23460.88	1500.00	0.85	1676.86	39.80	0.21870	0.26328	0.03472	0.012	479.740	0.10	0.77	1500.00	999.00
2346	23470.49	1500.00	0.85	1677.87	39.80	0.21738	0.26226	0.03813	0.012	479.742	0.11	0.74	1500.00	999.00
2347	23480.10	1500.00	0.81	1680.37	39.68	0.21875	0.26274	0.03745	0.012	479.744	0.09	0.71	1500.00	999.00
2348	23490.87	1500.00	0.77	1673.32	39.68	0.21836	0.26235	0.03862	0.010	479.746	0.10	0.68	1500.00	999.00
2349	23500.48	1500.00	0.75	1672.53	39.80	0.21797	0.26284	0.03862	0.010	479.748	0.10	0.66	1500.00	999.00
2350	23510.09	1500.00	0.73	1672.83	39.68	0.21738	0.26162	0.03784	0.010	479.749	0.09	0.63	1500.00	999.00
2351	23520.86	1500.00	0.71	1684.03	39.80	0.21782	0.26211	0.04033	0.010	479.751	0.09	0.60	1500.00	999.00
2352	23530.47	1500.00	0.68	1674.55	39.68	0.21768	0.26245	0.03687	0.012	479.753	0.09	0.59	1500.00	999.00
2353	23540.08	1500.00	0.66	1675.61	39.68	0.21729	0.26313	0.03813	0.010	479.755	0.09	0.57	1500.00	999.00

2354	23550.90	1500.00	0.66	1669.61	39.68	0.21738	0.26206	0.03945	0.010	479.756	0.08	0.54	1500.00	999.00
2355	23560.46	1500.00	0.62	1674.41	39.80	0.21855	0.26167	0.03447	0.012	479.758	0.07	0.54	1500.00	999.00
2356	23570.07	1500.00	0.58	1680.77	39.68	0.21694	0.26201	0.03848	0.012	479.760	0.06	0.52	1500.00	999.00
2357	23580.89	1500.00	0.55	1678.24	39.80	0.21812	0.26182	0.04033	0.012	479.762	0.05	0.49	1500.00	1000.00
2358	23590.45	1500.00	0.52	1680.12	39.68	0.21777	0.26138	0.04043	0.010	479.764	0.04	0.48	1500.00	1000.00
2359	23600.06	1500.00	0.51	1684.46	39.68	0.21831	0.26245	0.03979	0.012	479.766	0.04	0.47	1500.00	1000.00
2360	23610.88	1500.00	0.48	1670.60	39.80	0.21758	0.26206	0.03828	0.010	479.768	0.01	0.46	1500.00	1000.00
2361	23620.49	1500.00	0.45	1682.85	39.68	0.21890	0.26177	0.03887	0.012	479.770	0.00	0.44	1500.00	1000.00
2362	23630.05	1500.00	0.45	1676.14	39.80	0.21831	0.26167	0.03979	0.010	479.771	0.00	0.43	1500.00	1000.00
2363	23640.87	1500.00	0.37	1676.27	39.80	0.21797	0.26245	0.03828	0.010	479.773	-0.05	0.43	1500.00	1000.00
2364	23650.48	1500.00	0.45	1682.70	39.80	0.21851	0.26138	0.03584	0.010	479.774	0.00	0.41	1500.00	1000.00
2365	23660.04	1500.00	0.41	1682.60	39.80	0.21743	0.26147	0.03936	0.012	479.777	0.00	0.42	1500.00	1001.00
2366	23670.86	1500.00	0.39	1673.02	39.80	0.21675	0.26128	0.03657	0.010	479.778	0.00	0.41	1500.00	1001.00
2367	23680.47	1500.00	0.42	1678.17	39.80	0.21826	0.26108	0.03691	0.010	479.780	0.00	0.40	1500.00	1002.00
2368	23690.03	1500.00	0.41	1679.78	39.80	0.21802	0.26064	0.03770	0.010	479.781	0.00	0.39	1500.00	1002.00
2369	23700.85	1500.00	0.38	1684.55	39.80	0.21748	0.26089	0.03428	0.010	479.783	0.00	0.41	1500.00	1002.00
2370	23710.46	1500.00	0.22	1677.18	39.80	0.21758	0.26040	0.03501	0.010	479.785	-0.17	0.38	1500.00	1003.00
2371	23720.07	1500.00	0.19	1678.31	39.80	0.21792	0.26104	0.03672	0.010	479.786	-0.13	0.35	1500.00	1003.00
2372	23730.84	1500.00	0.21	1682.27	39.93	0.21797	0.26045	0.04067	0.010	479.788	-0.15	0.34	1500.00	1003.00
2373	23740.45	1500.00	0.18	1680.87	39.93	0.21738	0.26157	0.04121	0.012	479.790	-0.13	0.32	1500.00	1003.00
2374	23750.06	1500.00	0.17	1680.59	39.93	0.21729	0.26143	0.03579	0.012	479.792	-0.14	0.31	1500.00	1003.00
2375	23760.83	1500.00	0.14	1683.04	39.80	0.21729	0.26030	0.04014	0.010	479.794	-0.17	0.32	1500.00	1003.00
2376	23770.44	1500.00	0.11	1676.18	39.93	0.21816	0.26045	0.03813	0.012	479.796	-0.18	0.30	1500.00	1003.00
2377	23780.05	1500.00	0.09	1680.19	39.93	0.21787	0.26084	0.03931	0.012	479.798	-0.21	0.29	1500.00	1003.00
2378	23790.82	1500.00	0.09	1677.37	39.93	0.21733	0.26084	0.04023	0.010	479.799	-0.19	0.29	1500.00	1003.00
2379	23800.43	1500.00	0.05	1673.65	39.93	0.21738	0.26021	0.03140	0.012	479.801	-0.23	0.27	1500.00	1003.00
2380	23810.04	1500.00	0.07	1684.51	40.06	0.21665	0.26016	0.03521	0.012	479.803	-0.21	0.27	1500.00	1003.00
2381	23820.86	1500.00	-0.03	1674.80	39.93	0.21729	0.26025	0.03882	0.012	479.805	-0.23	0.22	1500.00	1003.00
2382	23830.42	1500.00	0.02	1686.08	39.93	0.21841	0.26040	0.04395	0.012	479.807	-0.23	0.25	1500.00	1003.00
2383	23840.03	1500.00	0.01	1680.96	40.06	0.21733	0.25957	0.03633	0.012	479.809	-0.38	0.22	1500.00	1000.00
2384	23850.85	1500.00	0.24	1682.18	40.06	0.21680	0.25986	0.03467	0.012	479.812	0.15	0.14	1500.00	999.00

2385	23860.41	1500.00	0.30	1676.92	40.06	0.21714	0.26074	0.03896	0.012	479.814	0.06	0.23	1500.00	1000.00
2386	23870.02	1500.00	0.26	1689.50	40.06	0.21743	0.25977	0.03916	0.012	479.816	0.02	0.23	1500.00	1000.00
2387	23880.84	1500.00	0.24	1683.42	40.18	0.21729	0.25967	0.03516	0.012	479.818	0.02	0.22	1500.00	1000.00
2388	23890.40	1500.00	0.24	1688.19	40.18	0.21719	0.26025	0.03896	0.010	479.819	0.03	0.21	1500.00	1000.00
2389	23900.01	1500.00	0.24	1688.22	40.18	0.21743	0.26011	0.03857	0.012	479.821	0.02	0.22	1500.00	1000.00
2390	23910.83	1500.00	0.23	1691.71	40.18	0.21694	0.25952	0.03794	0.010	479.823	0.02	0.21	1500.00	1000.00
2391	23920.44	1500.00	0.23	1692.64	40.31	0.21763	0.26045	0.03877	0.012	479.825	0.02	0.20	1500.00	1000.00
2392	23930.00	1500.00	0.22	1689.44	40.31	0.21685	0.26016	0.03936	0.010	479.827	0.03	0.20	1500.00	1000.00
2393	23940.82	1500.00	0.22	1697.37	40.31	0.21768	0.26021	0.03418	0.010	479.828	0.02	0.20	1500.00	1000.00
2394	23950.43	1500.00	0.22	1693.01	40.31	0.21748	0.25991	0.03721	0.010	479.830	0.02	0.22	1500.00	1000.00
2395	23961.19	1500.00	0.20	1697.52	40.44	0.21729	0.25967	0.03862	0.010	479.831	0.01	0.19	1500.00	1000.00
2396	23970.81	1500.00	0.21	1695.09	40.44	0.21787	0.25996	0.03896	0.012	479.834	0.02	0.19	1500.00	1000.00
2397	23980.42	1500.00	0.21	1698.28	40.44	0.21646	0.26021	0.03491	0.012	479.836	0.02	0.19	1500.00	1000.00
2398	23990.03	1500.00	0.21	1698.78	40.44	0.21768	0.26050	0.03774	0.012	479.838	0.02	0.18	1500.00	1000.00
2399	24000.80	1500.00	0.20	1698.68	40.44	0.21709	0.26021	0.04058	0.012	479.840	0.02	0.18	1500.00	1000.00
2400	24010.41	1500.00	0.21	1695.61	40.44	0.21704	0.26006	0.03931	0.012	479.842	0.02	0.18	1500.00	1000.00
2401	24020.02	1500.00	0.20	1704.23	40.44	0.21709	0.26001	0.03755	0.010	479.843	0.02	0.17	1500.00	1000.00
2402	24030.79	1500.00	0.20	1702.20	40.57	0.21729	0.25947	0.03989	0.010	479.845	0.02	0.18	1500.00	1000.00
2403	24040.40	1500.00	0.19	1700.10	40.57	0.21807	0.25933	0.03916	0.012	479.847	0.01	0.18	1500.00	1000.00
2404	24050.01	1500.00	0.19	1709.65	40.57	0.21782	0.25991	0.03877	0.010	479.849	0.02	0.17	1500.00	1000.00
2405	24060.77	1500.00	0.19	1710.14	40.57	0.21689	0.25928	0.03960	0.012	479.851	0.01	0.17	1500.00	1000.00
2406	24070.39	1500.00	0.19	1709.69	40.70	0.21704	0.25918	0.03999	0.012	479.853	0.01	0.17	1500.00	1000.00
2407	24080.00	1500.00	0.18	1711.53	40.70	0.21748	0.25884	0.03384	0.012	479.855	0.01	0.17	1500.00	1000.00
2408	24090.82	1500.00	0.18	1711.59	40.70	0.21719	0.25962	0.03481	0.010	479.856	0.02	0.17	1500.00	1000.00
2409	24100.38	1500.00	0.18	1711.30	40.70	0.21704	0.25840	0.03643	0.012	479.858	0.01	0.16	1500.00	1000.00
2410	24111.20	1500.00	0.18	1716.64	40.83	0.21777	0.25898	0.03999	0.010	479.860	0.02	0.16	1500.00	1000.00
2411	24120.81	1500.00	0.18	1708.46	40.83	0.21777	0.25918	0.03403	0.010	479.862	0.01	0.16	1500.00	1000.00
2412	24130.37	1500.00	0.17	1712.40	40.83	0.21675	0.26011	0.03721	0.012	479.864	0.01	0.15	1500.00	1000.00
2413	24141.19	1500.00	0.17	1708.93	40.70	0.21724	0.25908	0.04116	0.012	479.866	0.02	0.15	1500.00	1000.00
2414	24150.80	1500.00	0.17	1716.28	40.83	0.21724	0.25854	0.04116	0.012	479.868	0.02	0.14	1500.00	1000.00
2415	24160.41	1500.00	0.17	1714.69	40.70	0.21680	0.25884	0.03809	0.010	479.869	0.02	0.15	1500.00	1000.00

2416	24171.17	1500.00	0.17	1717.62	40.83	0.21699	0.25801	0.03472	0.012	479.871	0.02	0.15	1500.00	1000.00
2417	24180.79	1500.00	0.16	1719.23	40.83	0.21567	0.26011	0.03823	0.012	479.873	0.02	0.14	1500.00	1000.00
2418	24190.40	1500.00	0.16	1718.76	40.83	0.21738	0.25859	0.03896	0.010	479.875	0.02	0.14	1500.00	1000.00
2419	24201.16	1500.00	0.16	1741.85	40.83	0.21670	0.25869	0.03599	0.012	479.877	0.01	0.14	1500.00	1000.00
2420	24210.78	1500.00	0.15	1723.60	40.83	0.21733	0.25879	0.04028	0.012	479.879	0.02	0.13	1500.00	1000.00
2421	24220.39	1500.00	0.15	1707.88	40.83	0.21660	0.25889	0.04102	0.012	479.881	0.02	0.13	1500.00	1000.00
2422	24231.15	1500.00	0.15	1666.28	40.83	0.21733	0.25850	0.03564	0.010	479.883	0.02	0.14	1500.00	1000.00
2423	24240.77	1500.00	0.15	1733.92	40.83	0.21660	0.25840	0.04341	0.012	479.885	0.02	0.13	1500.00	1000.00
2424	24250.38	1500.00	0.15	1716.70	40.83	0.21777	0.25801	0.03774	0.010	479.886	0.03	0.13	1500.00	1000.00
2425	24261.14	1500.00	0.16	1715.82	40.83	0.21787	0.25864	0.03560	0.010	479.888	0.02	0.14	1500.00	1000.00
2426	24270.75	1500.00	0.16	1714.70	40.83	0.21689	0.25874	0.03809	0.010	479.890	0.02	0.14	1500.00	1000.00
2427	24280.37	1500.00	0.15	1718.04	40.83	0.21729	0.25747	0.03833	0.010	479.891	0.02	0.13	1500.00	1000.00
2428	24291.19	1500.00	0.16	1717.03	40.83	0.21772	0.25894	0.03804	0.010	479.893	0.03	0.13	1500.00	1000.00
2429	24300.74	1500.00	0.17	1720.02	40.83	0.21699	0.25859	0.03452	0.010	479.895	0.04	0.13	1500.00	1000.00
2430	24310.36	1500.00	0.18	1713.24	40.83	0.21689	0.25815	0.03735	0.010	479.896	0.04	0.14	1500.00	1000.00
2431	24321.18	1500.00	0.17	1709.16	40.83	0.21660	0.25840	0.04160	0.012	479.898	0.03	0.14	1500.00	1000.00
2432	24330.73	1500.00	0.18	1725.85	40.83	0.21694	0.25815	0.04521	0.010	479.900	0.04	0.14	1500.00	1000.00
2433	24340.35	1500.00	0.19	1711.84	40.70	0.21714	0.25820	0.03252	0.012	479.902	0.04	0.15	1500.00	1000.00
2434	24351.17	1500.00	0.26	1745.88	40.70	0.21650	0.25830	0.03623	0.012	479.904	0.06	0.13	1500.00	1000.00
2435	24360.78	1500.00	0.13	1726.65	40.70	0.21665	0.25923	0.03516	0.012	479.906	0.01	0.12	1500.00	1000.00
2436	24370.33	1500.00	0.20	1696.14	40.70	0.21660	0.25898	0.03853	0.010	479.908	0.04	0.15	1500.00	1000.00
2437	24381.15	1500.00	0.18	1700.17	40.70	0.21646	0.25786	0.03979	0.012	479.910	0.03	0.15	1500.00	1000.00
2438	24390.77	1500.00	0.18	1670.55	40.70	0.21641	0.25845	0.03589	0.010	479.911	0.04	0.14	1500.00	1000.00
2439	24400.32	1500.00	0.18	1685.35	40.57	0.21621	0.25825	0.03579	0.010	479.913	0.04	0.14	1500.00	1000.00
2440	24411.14	1500.00	0.18	1713.71	40.57	0.21626	0.25806	0.03789	0.012	479.915	0.04	0.14	1500.00	1000.00
2441	24420.76	1500.00	0.17	1738.24	40.57	0.21743	0.25762	0.03496	0.010	479.917	0.04	0.14	1500.00	1000.00
2442	24430.37	1500.00	0.17	1700.75	40.44	0.21738	0.25752	0.03706	0.012	479.919	0.03	0.14	1500.00	1000.00
2443	24441.13	1500.00	0.16	1729.34	40.44	0.21572	0.25874	0.03896	0.010	479.920	0.03	0.13	1500.00	1000.00
2444	24450.75	1500.00	0.16	1767.18	40.44	0.21753	0.25820	0.04355	0.010	479.922	0.03	0.13	1500.00	1000.00
2445	24460.36	1500.00	0.16	1681.90	40.44	0.21587	0.25869	0.04062	0.012	479.924	0.03	0.13	1500.00	1000.00
2446	24471.12	1500.00	0.16	1685.70	40.44	0.21694	0.25830	0.04092	0.010	479.925	0.03	0.13	1500.00	1000.00

2447	24480.73	1500.00	0.15	1693.05	40.44	0.21680	0.25752	0.03945	0.010	479.927	0.02	0.13	1500.00	1000.00
2448	24490.35	1500.00	0.15	1743.76	40.44	0.21616	0.25757	0.03872	0.012	479.929	0.02	0.12	1500.00	1000.00
2449	24501.11	1500.00	0.15	1671.22	40.44	0.21641	0.25713	0.03940	0.010	479.931	0.03	0.12	1500.00	1000.00
2450	24510.72	1500.00	0.14	1723.14	40.31	0.21694	0.25850	0.03511	0.010	479.932	0.03	0.12	1500.00	1000.00
2451	24520.34	1500.00	0.13	1673.09	40.31	0.21577	0.25815	0.03765	0.012	479.934	0.02	0.11	1500.00	1000.00
2452	24531.10	1500.00	0.14	1696.20	40.31	0.21680	0.25796	0.03579	0.010	479.936	0.02	0.11	1500.00	1000.00
2453	24540.71	1500.00	0.13	1692.69	40.31	0.21626	0.25718	0.03423	0.010	479.938	0.02	0.11	1500.00	1000.00
2454	24550.33	1500.00	0.13	1726.47	40.31	0.21636	0.25796	0.04233	0.012	479.940	0.02	0.11	1500.00	1000.00
2455	24561.15	1500.00	0.13	1679.64	40.18	0.21670	0.25654	0.04058	0.010	479.941	0.02	0.11	1500.00	1000.00
2456	24570.70	1500.00	0.13	1702.73	40.18	0.21704	0.25781	0.03940	0.010	479.943	0.02	0.10	1500.00	1000.00
2457	24580.31	1500.00	0.12	1679.04	40.18	0.21689	0.25762	0.03936	0.010	479.945	0.02	0.10	1500.00	1000.00
2458	24591.14	1500.00	0.12	1707.58	40.18	0.21709	0.25742	0.04463	0.012	479.947	0.02	0.10	1500.00	1000.00
2459	24600.69	1500.00	0.12	1694.43	40.18	0.21582	0.25776	0.04082	0.010	479.948	0.02	0.10	1500.00	1000.00
2460	24610.30	1500.00	0.12	1706.26	40.18	0.21650	0.25703	0.03389	0.012	479.950	0.02	0.10	1500.00	1000.00
2461	24621.12	1500.00	0.12	1696.98	40.06	0.21689	0.25732	0.03682	0.012	479.952	0.02	0.10	1500.00	1000.00
2462	24630.74	1500.00	0.10	1665.58	40.06	0.21636	0.25703	0.03882	0.010	479.954	0.01	0.10	1500.00	1000.00
2463	24640.29	1500.00	0.11	1683.75	40.06	0.21670	0.25732	0.04355	0.010	479.956	0.00	0.10	1500.00	1000.00
2464	24651.11	1500.00	0.13	1686.18	40.06	0.21675	0.25737	0.03638	0.012	479.958	0.06	0.07	1500.00	1000.00
2465	24660.73	1500.00	0.18	1704.62	40.06	0.21660	0.25728	0.03818	0.010	479.959	0.10	0.08	1500.00	999.00
2466	24670.28	1500.00	0.20	1671.32	40.06	0.21592	0.25679	0.03423	0.010	479.961	0.12	0.08	1500.00	999.00
2467	24681.10	1500.00	0.14	1651.29	40.06	0.21665	0.25718	0.03774	0.010	479.962	0.13	-0.01	1500.00	999.00
2468	24690.72	1500.00	0.26	1671.96	40.06	0.21665	0.25713	0.03730	0.010	479.964	0.14	0.11	1500.00	999.00
2469	24700.33	1500.00	0.23	1661.98	40.06	0.21670	0.25713	0.03979	0.012	479.966	0.15	0.08	1500.00	999.00
2470	24711.09	1500.00	0.24	1679.68	39.93	0.21631	0.25747	0.04355	0.010	479.968	0.16	0.08	1500.00	999.00
2471	24720.70	1500.00	0.24	1670.75	40.06	0.21621	0.25698	0.04419	0.012	479.970	0.16	0.08	1500.00	999.00
2472	24730.32	1500.00	0.24	1651.90	40.06	0.21646	0.25684	0.03809	0.010	479.971	0.16	0.08	1500.00	999.00
2473	24741.08	1500.00	0.25	1661.48	39.93	0.21621	0.25640	0.03667	0.010	479.973	0.16	0.08	1500.00	999.00
2474	24750.69	1500.00	0.25	1685.82	39.93	0.21626	0.25669	0.03848	0.010	479.975	0.17	0.08	1500.00	999.00
2475	24760.31	1500.00	0.26	1661.89	40.06	0.21616	0.25693	0.03350	0.010	479.976	0.18	0.08	1500.00	999.00
2476	24771.07	1500.00	0.26	1652.63	39.93	0.21641	0.25635	0.04019	0.012	479.978	0.18	0.08	1500.00	999.00
2477	24780.68	1500.00	0.26	1711.22	39.93	0.21670	0.25630	0.03682	0.012	479.980	0.18	0.07	1500.00	999.00

2478	24790.29	1500.00	0.25	1653.19	39.93	0.21636	0.25601	0.04189	0.012	479.982	0.18	0.08	1500.00	999.00
2479	24801.06	1500.00	0.25	1695.86	39.93	0.21553	0.25684	0.03594	0.010	479.984	0.18	0.08	1500.00	999.00
2480	24810.67	1500.00	0.25	1670.27	39.93	0.21626	0.25625	0.04448	0.010	479.986	0.17	0.08	1500.00	999.00
2481	24820.28	1500.00	0.25	1656.50	39.93	0.21646	0.25679	0.03398	0.012	479.988	0.18	0.08	1500.00	999.00
2482	24831.10	1500.00	0.25	1658.08	39.93	0.21592	0.25674	0.03950	0.010	479.989	0.18	0.08	1500.00	999.00
2483	24840.66	1500.00	0.25	1694.51	39.80	0.21611	0.25649	0.03970	0.017	479.992	0.18	0.08	1500.00	999.00
2484	24850.27	1500.00	0.26	1675.94	39.80	0.21646	0.25620	0.03652	0.012	479.994	0.18	0.07	1500.00	999.00
2485	24861.09	1500.00	0.24	1657.08	39.80	0.21606	0.25591	0.03408	0.012	479.996	0.17	0.08	1500.00	999.00
2486	24870.65	1500.00	0.25	1656.05	39.80	0.21597	0.25654	0.03320	0.012	479.998	0.18	0.07	1500.00	999.00
2487	24880.26	1500.00	0.25	1700.40	39.80	0.21665	0.25591	0.03760	0.012	480.000	0.18	0.08	1500.00	999.00
2488	24891.08	1500.00	0.25	1677.53	39.80	0.21621	0.25581	0.03569	0.012	480.002	0.17	0.07	1500.00	999.00
2489	24900.70	1500.00	0.25	1654.23	39.80	0.21602	0.25532	0.03940	0.012	480.004	0.18	0.07	1500.00	999.00
2490	24910.25	1500.00	0.25	1665.88	39.80	0.21611	0.25605	0.03804	0.020	480.008	0.18	0.07	1500.00	999.00
2491	24921.07	1500.00	0.25	1657.29	39.80	0.21548	0.25605	0.03540	0.012	480.010	0.18	0.08	1500.00	999.00
2492	24930.68	1500.00	0.25	1623.39	39.80	0.21567	0.25664	0.04014	0.012	480.012	0.17	0.07	1500.00	999.00
2493	24940.24	1500.00	0.25	1691.69	39.80	0.21650	0.25566	0.03672	0.012	480.014	0.18	0.08	1500.00	999.00
2494	24951.06	1500.00	0.25	1668.32	39.80	0.21602	0.25649	0.03979	0.012	480.016	0.18	0.07	1500.00	999.00
2495	24960.67	1500.00	0.25	1692.40	39.80	0.21577	0.25596	0.03730	0.012	480.018	0.17	0.08	1500.00	999.00
2496	24970.29	1500.00	0.25	1666.53	39.80	0.21587	0.25552	0.03569	0.012	480.020	0.17	0.08	1500.00	999.00
2497	24981.05	1500.00	0.24	1669.11	39.68	0.21597	0.25620	0.03672	0.012	480.022	0.17	0.05	1500.00	999.00
2498	24990.66	1493.00	2.24	1625.07	39.30	0.21699	0.25547	0.03760	1.594	480.288	4.04	-0.77	1500.00	996.00
2499	25000.28	1500.00	3.33	1614.61	38.94	0.01050	0.26348	-0.07954	2.681	480.734	3.12	0.15	1500.00	1000.00
2500	25011.04	1500.00	3.10	1683.05	39.18	0.00708	0.26392	-0.10884	2.375	481.130	3.00	0.11	1500.00	1000.00
2501	25020.65	1500.00	3.06	1607.81	39.18	0.00645	0.26489	-0.11821	2.222	481.501	2.97	0.08	1500.00	1000.00
2502	25030.26	1500.00	3.02	1602.71	39.30	0.00566	0.26572	-0.11973	2.175	481.863	2.96	0.07	1500.00	1000.00
2503	25041.03	1500.00	3.01	1545.78	39.43	0.00454	0.26621	-0.12051	2.126	482.218	2.93	0.07	1500.00	1000.00
2504	25050.64	1500.00	2.99	1720.27	39.30	0.00469	0.26519	-0.12329	2.112	482.570	2.92	0.08	1500.00	1000.00
2505	25060.25	1500.00	2.97	1545.73	39.43	0.00454	0.26367	-0.12544	2.107	482.921	2.88	0.07	1500.00	1000.00
2506	25071.02	1500.00	2.93	1523.25	39.43	0.00518	0.26538	-0.11919	2.017	483.257	2.87	0.07	1500.00	1000.00
2507	25080.63	1500.00	2.94	1597.63	39.43	0.00459	0.26294	-0.12764	1.995	483.589	2.87	0.07	1500.00	1000.00
2508	25090.24	1500.00	2.92	1653.84	39.43	0.00430	0.26226	-0.12725	1.992	483.921	2.84	0.07	1500.00	1000.00

2509	25101.06	1500.00	2.90	1674.04	39.43	0.00435	0.26191	-0.12319	1.887	484.236	2.82	0.07	1500.00	1000.00
2510	25110.62	1500.00	2.85	1578.63	39.43	0.00396	0.26055	-0.12554	1.819	484.539	2.78	0.07	1500.00	1000.00
2511	25120.23	1500.00	2.84	1626.41	39.55	0.00405	0.26118	-0.12891	1.743	484.829	2.74	0.08	1500.00	1000.00
2512	25131.05	1500.00	2.83	1589.89	39.55	0.00439	0.26021	-0.12974	1.702	485.113	2.72	0.07	1500.00	1000.00
2513	25140.61	1500.00	2.75	1607.14	39.55	0.00396	0.26025	-0.13057	1.655	485.389	2.67	0.07	1500.00	1000.00
2514	25150.22	1500.00	2.70	1621.99	39.43	0.00381	0.25918	-0.13359	1.548	485.647	2.62	0.07	1500.00	1000.00
2515	25161.04	1500.00	2.65	1626.35	39.43	0.00332	0.25981	-0.13735	1.526	485.901	2.58	0.07	1500.00	1000.00
2516	25170.65	1500.00	2.61	1586.89	39.55	0.00376	0.25996	-0.13330	1.509	486.153	2.53	0.07	1500.00	1000.00
2517	25180.21	1500.00	2.56	1723.04	39.55	0.00312	0.25991	-0.13945	1.426	486.390	0.39	0.12	1500.00	995.00
2518	25191.03	1500.00	2.93	1644.79	39.55	0.00347	0.25879	-0.13130	1.377	486.620	2.45	-0.25	1500.00	999.00
2519	25200.64	1500.00	2.43	1620.71	39.55	0.00337	0.25923	-0.13989	1.309	486.838	2.37	0.08	1500.00	1000.00
2520	25210.20	1500.00	2.37	1626.55	39.55	0.00317	0.25991	-0.14336	1.255	487.047	2.30	0.07	1500.00	1000.00
2521	25221.02	1500.00	2.32	1649.96	39.55	0.00322	0.25942	-0.14048	1.221	487.250	2.23	0.06	1500.00	1000.00
2522	25230.63	1500.00	2.25	1611.63	39.55	0.00337	0.25908	-0.14541	1.140	487.441	2.17	0.06	1500.00	1000.00
2523	25240.24	1500.00	2.17	1657.34	39.55	0.00278	0.25845	-0.14507	1.118	487.627	2.10	0.06	1500.00	1000.00
2524	25251.01	1500.00	2.12	1608.37	39.55	0.00220	0.25806	-0.14385	1.133	487.816	2.06	0.06	1500.00	1000.00
2525	25260.62	1500.00	1.39	1587.21	39.55	0.00342	0.25874	-0.14448	1.045	487.990	1.87	-0.38	1500.00	998.00
2526	25270.23	1500.00	2.15	1607.38	39.55	0.00215	0.25776	-0.14595	1.040	488.163	1.94	0.14	1500.00	1000.00
2527	25281.00	1500.00	1.93	1646.70	39.43	0.00376	0.25811	-0.14067	1.021	488.333	1.87	0.06	1500.00	1000.00
2528	25290.61	1500.00	1.88	1639.47	39.43	0.00220	0.25815	-0.14473	0.967	488.494	1.82	0.06	1500.00	1000.00
2529	25300.22	1500.00	1.82	1631.18	39.55	0.00356	0.25762	-0.14609	0.950	488.653	1.75	0.06	1500.00	1000.00
2530	25310.99	1500.00	1.78	1654.04	39.55	0.00322	0.25757	-0.14453	0.940	488.809	1.71	0.05	1500.00	1000.00
2531	25320.60	1500.00	1.69	1655.30	39.43	0.00298	0.25742	-0.14565	0.906	488.960	1.63	0.06	1500.00	1000.00
2532	25330.21	1500.00	1.68	1571.26	39.43	0.00322	0.25620	-0.14829	0.913	489.113	1.63	0.06	1500.00	1000.00
2533	25340.98	1500.00	1.62	1655.24	39.43	0.00229	0.25557	-0.14414	0.918	489.266	1.57	0.05	1500.00	1000.00
2534	25350.59	1500.00	1.60	1644.47	39.43	0.00273	0.25327	-0.14956	0.925	489.420	1.55	0.05	1500.00	1000.00
2535	25360.20	1500.00	1.56	1652.79	39.43	0.00161	0.25293	-0.14351	0.935	489.576	1.50	0.05	1500.00	1000.00
2536	25371.02	1500.00	1.55	1699.89	39.43	0.00254	0.25142	-0.14561	0.894	489.724	1.50	0.05	1500.00	1000.00
2537	25380.58	1500.00	1.50	1635.38	39.30	0.00269	0.24946	-0.14229	0.916	489.877	1.46	0.05	1500.00	1000.00
2538	25390.19	1500.00	1.49	1626.77	39.43	0.00234	0.24907	-0.14463	0.903	490.028	1.44	0.05	1500.00	1000.00
2539	25401.01	1500.00	1.48	1647.01	39.30	0.00229	0.24878	-0.14238	0.039	490.034	1.42	0.05	1500.00	1000.00

2540	25410.57	1500.00	1.45	1624.03	39.30	0.00166	0.24858	-0.14458	0.840	490.174	1.39	0.05	1500.00	1000.00
2541	25420.29	1500.00	1.45	1661.64	39.43	0.00210	0.24829	-0.14136	0.918	490.327	1.41	0.05	1500.00	1000.00
2542	25431.11	1500.00	1.46	1660.97	39.43	0.00215	0.24800	-0.14214	0.981	490.491	1.40	0.05	1500.00	1000.00
2543	25440.67	1500.00	1.48	1624.14	39.30	0.00254	0.24873	-0.14248	1.047	490.665	1.43	0.05	1500.00	1000.00
2544	25450.28	1500.00	1.49	1659.08	39.30	0.00259	0.24785	-0.14307	1.064	490.843	1.45	0.05	1500.00	1000.00
2545	25461.10	1500.00	1.53	1594.24	39.30	0.00234	0.24780	-0.14272	1.157	491.035	1.49	0.05	1500.00	1000.00
2546	25470.71	1500.00	1.57	1681.29	39.43	0.00273	0.24771	-0.14492	1.228	491.240	1.52	0.05	1500.00	1000.00
2547	25480.27	1500.00	1.61	1704.46	39.30	0.00264	0.24688	-0.14106	1.191	491.439	1.56	0.05	1500.00	1000.00
2548	25491.09	1500.00	1.60	1654.34	39.30	0.00161	0.24619	-0.13813	1.213	491.641	1.56	0.05	1500.00	1000.00
2549	25500.70	1500.00	1.65	1661.13	39.30	0.00215	0.24438	-0.13545	1.277	491.854	1.60	0.04	1500.00	1000.00
2550	25510.26	1500.00	1.64	1671.56	39.30	0.00244	0.24370	-0.13569	1.221	492.057	1.60	0.05	1500.00	1000.00
2551	25521.08	1500.00	1.66	1694.29	39.30	0.00254	0.24204	-0.13701	1.235	492.263	1.63	0.05	1500.00	1000.00
2552	25530.69	1500.00	1.68	1633.64	39.30	0.00273	0.24185	-0.13750	1.252	492.472	1.63	0.05	1500.00	1000.00
2553	25540.30	1500.00	1.66	1678.47	39.30	0.00234	0.24097	-0.14038	1.238	492.678	1.63	0.04	1500.00	1000.00
2554	25551.07	1500.00	1.67	1614.53	39.43	0.00161	0.24082	-0.13696	1.252	492.887	1.63	0.05	1500.00	1000.00
2555	25560.68	1500.00	1.68	1673.43	39.30	0.00273	0.24180	-0.13833	1.206	493.088	1.62	0.04	1500.00	1000.00
2556	25570.29	1500.00	1.77	1585.98	39.30	0.00269	0.24229	-0.13232	2.151	493.446	1.76	0.04	1500.00	1000.00
2557	25581.06	1500.00	2.05	1659.50	39.18	0.00293	0.24048	-0.12739	2.378	493.843	2.02	0.04	1500.00	1000.00
2558	25590.67	1500.00	2.19	1629.30	39.18	0.00352	0.23984	-0.12031	2.427	494.247	2.18	0.04	1500.00	1000.00
2559	25600.28	1500.00	2.31	1645.45	39.30	0.00444	0.23970	-0.11221	2.385	494.645	2.25	0.04	1500.00	1000.00
2560	25611.16	1500.00	2.40	1642.13	39.18	0.00444	0.23813	-0.11123	2.383	495.042	2.35	0.05	1500.00	1000.00
2561	25620.77	1500.00	2.45	1621.45	39.30	0.00361	0.23799	-0.11621	2.336	495.431	2.41	0.04	1500.00	1000.00
2562	25630.38	1500.00	2.48	1652.63	39.18	0.00430	0.23833	-0.10981	2.336	495.821	2.45	0.04	1500.00	1000.00
2563	25641.15	1500.00	2.54	1636.39	39.30	0.00415	0.23740	-0.11089	2.336	496.210	2.48	0.04	1500.00	1000.00
2564	25650.76	1500.00	2.56	1637.92	39.30	0.00439	0.23740	-0.11040	2.268	496.588	2.51	0.04	1500.00	1000.00
2565	25660.37	1500.00	2.57	1627.36	39.30	0.00376	0.23623	-0.11543	2.256	496.964	2.53	0.04	1500.00	1000.00
2566	25671.14	1500.00	2.58	1636.61	39.43	0.00366	0.23623	-0.11235	2.283	497.345	2.54	0.04	1500.00	1000.00
2567	25680.75	1500.00	2.57	1616.67	39.43	0.00454	0.23506	-0.11143	2.200	497.711	2.55	0.04	1500.00	1000.00
2568	25690.36	1500.00	2.59	1641.75	39.43	0.00449	0.23433	-0.11367	2.180	498.075	2.55	0.04	1500.00	1000.00
2569	25701.12	1500.00	2.57	1636.51	39.55	0.00444	0.23501	-0.11123	2.158	498.434	2.54	0.04	1500.00	1000.00
2570	25710.74	1500.00	2.58	1656.87	39.43	0.00405	0.23398	-0.11250	2.117	498.787	2.53	0.04	1500.00	1000.00

2571	25720.35	1500.00	2.56	1631.78	39.55	0.00430	0.23345	-0.11021	2.114	499.139	2.52	0.04	1500.00	1000.00
2572	25731.17	1500.00	2.54	1658.14	39.55	0.00410	0.23252	-0.11445	2.051	499.481	2.52	0.04	1500.00	1000.00
2573	25740.73	1500.00	2.54	1609.57	39.55	0.00410	0.23188	-0.11040	2.039	499.821	2.49	0.03	1500.00	1000.00
2574	25750.34	1500.00	2.54	1698.50	39.55	0.00361	0.23149	-0.11182	2.061	500.164	2.50	0.03	1500.00	1000.00
2575	25761.16	1500.00	2.52	1642.38	39.68	0.00312	0.22979	-0.10962	1.958	500.491	2.47	0.04	1500.00	1000.00
2576	25770.72	1500.00	2.51	1654.35	39.68	0.00405	0.23086	-0.11123	1.953	500.816	2.47	0.04	1500.00	1000.00
2577	25780.33	1500.00	2.47	1604.06	39.68	0.00396	0.23008	-0.11431	1.943	501.140	2.45	0.04	1500.00	1000.00
2578	25791.15	1500.00	2.46	1633.19	39.68	0.00352	0.22939	-0.11060	1.907	501.458	2.43	0.04	1500.00	1000.00
2579	25800.76	1500.00	2.44	1668.83	39.68	0.00420	0.22925	-0.11460	1.863	501.768	2.40	0.04	1500.00	1000.00
2580	25810.32	1500.00	2.43	1643.29	39.80	0.00327	0.22900	-0.11538	1.807	502.069	2.40	0.04	1500.00	1000.00
2581	25821.14	1500.00	2.39	1625.16	39.68	0.00322	0.22749	-0.11670	1.787	502.367	2.37	0.03	1500.00	1000.00
2582	25830.75	1500.00	2.39	1624.29	39.80	0.00327	0.22749	-0.11836	1.804	502.668	2.35	0.04	1500.00	1000.00
2583	25840.31	1500.00	2.36	1627.29	39.80	0.00322	0.22778	-0.11523	1.729	502.956	2.31	0.03	1500.00	1000.00
2584	25851.13	1500.00	2.34	1636.96	39.80	0.00327	0.22637	-0.11519	1.711	503.241	2.30	0.04	1500.00	1000.00
2585	25860.74	1500.00	2.30	1621.59	39.80	0.00337	0.22651	-0.11558	1.750	503.533	2.28	0.03	1500.00	1000.00
2586	25870.35	1500.00	2.27	1634.25	39.93	0.00327	0.22661	-0.11592	1.653	503.809	2.25	0.04	1500.00	1000.00
2587	25881.12	1500.00	2.28	1619.44	39.80	0.00259	0.22598	-0.11509	1.621	504.079	2.23	0.03	1500.00	1000.00
2588	25890.73	1500.00	2.24	1660.40	39.80	0.00283	0.22471	-0.11289	1.621	504.349	2.21	0.03	1500.00	1000.00
2589	25900.34	1500.00	2.22	1650.24	39.93	0.00386	0.22393	-0.12080	1.565	504.610	2.17	0.03	1500.00	1000.00
2590	25911.10	1500.00	2.19	1642.75	39.93	0.00234	0.22363	-0.12041	1.538	504.866	2.15	0.03	1500.00	1000.00
2591	25920.72	1500.00	2.17	1656.87	39.93	0.00312	0.22319	-0.11401	1.484	505.114	2.14	0.03	1500.00	1000.00
2592	25930.33	1500.00	2.15	1649.78	39.93	0.00278	0.22329	-0.11973	1.479	505.360	2.11	0.05	1500.00	1000.00
2593	25941.09	1500.00	2.12	1642.62	39.93	0.00254	0.22300	-0.11875	1.479	505.607	2.10	0.03	1500.00	1000.00
2594	25950.71	1500.00	2.08	1642.03	39.93	0.00225	0.22261	-0.11709	1.399	505.840	2.06	0.03	1500.00	1000.00
2595	25960.32	1500.00	2.08	1640.80	39.93	0.00225	0.22231	-0.11948	1.384	506.071	2.04	0.03	1500.00	1000.00
2596	25971.08	1500.00	2.17	1647.47	39.93	0.00229	0.22104	-0.11714	2.405	506.471	2.15	0.03	1500.00	1000.00
2597	25980.70	1500.00	2.36	1653.45	39.93	0.00293	0.21992	-0.11162	2.490	506.886	2.31	0.03	1500.00	1000.00
2598	25990.31	1500.00	2.46	1634.33	39.80	0.00405	0.21841	-0.10464	2.524	507.307	2.44	0.03	1500.00	1000.00
2599	26001.13	1500.00	2.57	1591.09	39.80	0.00400	0.21816	-0.09497	2.554	507.733	2.55	0.03	1500.00	1000.00
2600	26010.68	1500.00	2.64	1613.96	39.80	0.00459	0.21792	-0.09980	0.032	507.738	2.62	0.03	1500.00	1000.00
2601	26020.30	1500.00	2.70	1629.33	39.80	0.00425	0.21680	-0.10054	2.483	508.152	2.68	0.03	1500.00	1000.00

2602	26031.12	1500.00	2.72	1612.33	39.93	0.00444	0.21528	-0.09810	2.471	508.564	2.70	0.02	1500.00	1000.00
2603	26040.67	1500.00	2.76	1626.81	39.80	0.00415	0.21548	-0.09673	2.400	508.964	2.74	0.03	1500.00	1000.00
2604	26050.29	1500.00	2.80	1640.50	39.80	0.00474	0.21411	-0.09834	2.388	509.362	2.77	0.02	1500.00	1000.00
2605	26061.11	1500.00	2.80	1693.42	39.80	0.00376	0.21323	-0.09878	2.324	509.749	2.76	0.03	1500.00	1000.00
2606	26070.72	1500.00	2.83	1669.08	39.80	0.00439	0.21299	-0.09663	2.312	510.134	2.81	0.03	1500.00	1000.00
2607	26080.28	1500.00	2.83	1639.74	39.93	0.00405	0.21294	-0.09307	2.319	510.521	2.80	0.03	1500.00	1000.00
2608	26091.10	1500.00	2.86	1608.58	39.93	0.00415	0.21133	-0.09971	2.224	510.892	2.82	0.03	1500.00	1000.00
2609	26100.71	1500.00	2.83	1621.94	39.93	0.00444	0.21035	-0.09106	2.222	511.262	2.80	0.03	1500.00	1000.00
2610	26110.26	1500.00	2.85	1597.21	39.93	0.00527	0.20996	-0.09551	2.244	511.636	2.83	0.03	1500.00	1000.00
2611	26121.08	1500.00	2.81	1623.50	39.93	0.00469	0.21050	-0.09712	2.170	511.997	2.79	0.03	1500.00	1000.00
2612	26130.70	1500.00	2.83	1621.24	39.93	0.00410	0.20967	-0.09653	2.131	512.353	2.79	0.03	1500.00	1000.00
2613	26140.31	1500.00	2.80	1603.54	39.93	0.00381	0.20938	-0.09858	2.065	512.697	2.77	0.02	1500.00	1000.00
2614	26151.07	1500.00	2.79	1697.52	39.93	0.00396	0.20942	-0.09678	2.029	513.035	2.75	0.03	1500.00	1000.00
2615	26160.69	1500.00	2.79	1608.59	40.06	0.00371	0.20825	-0.10024	2.029	513.373	2.76	0.03	1500.00	1000.00
2616	26170.30	1500.00	2.77	1647.18	40.06	0.00415	0.20889	-0.09844	1.958	513.700	2.74	0.03	1500.00	1000.00
2617	26181.06	1500.00	2.74	1636.78	40.06	0.00356	0.20713	-0.10005	1.938	514.023	2.73	0.03	1500.00	1000.00
2618	26190.68	1500.00	2.73	1606.95	40.06	0.00293	0.20708	-0.09956	1.958	514.349	2.69	0.03	1500.00	1000.00
2619	26200.29	1500.00	2.71	1612.92	40.06	0.00244	0.20635	-0.09829	1.863	514.659	2.69	0.03	1500.00	1000.00
2620	26211.05	1500.00	2.68	1614.69	40.06	0.00361	0.20669	-0.10166	1.829	514.964	2.65	0.03	1500.00	1000.00
2621	26220.66	1500.00	2.69	1643.17	40.06	0.00386	0.20557	-0.09927	1.882	515.278	2.65	0.03	1500.00	1000.00
2622	26230.28	1500.00	2.64	1623.36	40.06	0.00352	0.20503	-0.09951	0.029	515.283	2.61	0.03	1500.00	1000.00
2623	26241.04	1500.00	2.59	1612.70	40.06	0.00337	0.20439	-0.10029	1.770	515.578	2.57	0.02	1500.00	1000.00
2624	26250.65	1500.00	2.59	1624.67	40.06	0.00352	0.20415	-0.10322	1.689	515.859	2.54	0.03	1500.00	1000.00
2625	26260.27	1500.00	2.56	1618.76	40.06	0.00298	0.20337	-0.10547	1.680	516.139	2.52	0.03	1500.00	1000.00
2626	26271.09	1500.00	2.52	1699.44	40.18	0.00391	0.20210	-0.10474	1.677	516.419	2.49	0.03	1500.00	1000.00
2627	26280.64	1500.00	2.49	1574.30	40.18	0.00366	0.20234	-0.10005	1.599	516.685	2.47	0.02	1500.00	1000.00
2628	26290.26	1500.00	2.47	1646.09	40.06	0.00278	0.20200	-0.10425	1.592	516.951	2.43	0.03	1500.00	1000.00
2629	26301.08	1500.00	2.41	1656.40	40.18	0.00298	0.20186	-0.10981	1.619	517.220	2.38	0.03	1500.00	1000.00
2630	26310.63	1500.00	2.37	1649.72	40.18	0.00229	0.20190	-0.10923	1.528	517.475	2.36	0.02	1500.00	1000.00
2631	26320.24	1500.00	2.36	1636.27	40.06	0.00283	0.20044	-0.10576	1.511	517.727	2.33	0.03	1500.00	1000.00
2632	26331.06	1500.00	2.33	1601.71	40.06	0.00220	0.20146	-0.10767	1.526	517.981	2.31	0.02	1500.00	1000.00

2633	26340.68	1500.00	2.29	1644.93	40.06	0.00220	0.20005	-0.11128	1.484	518.229	2.25	0.03	1500.00	1000.00
2634	26350.23	1500.00	2.26	1675.34	40.06	0.00190	0.19932	-0.10762	1.475	518.475	2.23	0.02	1500.00	1000.00
2635	26361.05	1500.00	2.23	1626.13	40.18	0.00190	0.20010	-0.10605	1.411	518.710	2.20	0.02	1500.00	1000.00
2636	26370.67	1500.00	2.18	1629.81	40.18	0.00210	0.19917	-0.10693	1.406	518.944	2.14	0.02	1500.00	1000.00
2637	26380.22	1500.00	2.16	1611.24	40.18	0.00244	0.19824	-0.10928	1.443	519.185	2.15	0.02	1500.00	1000.00
2638	26391.04	1500.00	2.12	1621.71	40.18	0.00220	0.19805	-0.10859	1.350	519.410	2.09	0.02	1500.00	1000.00
2639	26400.66	1500.00	2.10	1600.09	40.18	0.00117	0.19775	-0.10269	1.350	519.635	2.07	0.02	1500.00	1000.00
2640	26410.27	1500.00	2.06	1653.50	40.18	0.00137	0.19727	-0.10928	1.365	519.862	2.02	0.02	1500.00	1000.00
2641	26421.03	1500.00	2.03	1633.50	40.18	0.00303	0.19731	-0.10566	1.313	520.081	2.02	0.02	1500.00	1000.00
2642	26430.64	1500.00	0.64	1611.04	40.18	0.00083	0.19600	-0.11040	1.296	520.297	1.73	-0.46	1500.00	997.00
2643	26440.26	1500.00	2.19	1604.68	40.18	0.00254	0.19653	-0.10801	1.265	520.508	1.99	0.14	1500.00	1000.00
2644	26451.02	1500.00	1.96	1635.52	40.18	0.00195	0.19590	-0.10859	1.277	520.721	1.94	0.02	1500.00	1000.00
2645	26460.63	1500.00	1.93	1643.39	40.18	0.00142	0.19541	-0.10918	1.287	520.935	1.90	0.02	1500.00	1000.00
2646	26470.25	1500.00	1.91	1651.89	40.18	0.00254	0.19551	-0.11475	1.216	521.138	1.88	0.02	1500.00	1000.00
2647	26481.01	1500.00	1.87	1684.95	40.18	0.00161	0.19541	-0.11377	1.204	521.338	1.84	0.03	1500.00	1000.00
2648	26490.62	1500.00	1.85	1683.91	40.31	0.00200	0.19385	-0.10791	1.245	521.546	1.82	0.02	1500.00	1000.00
2649	26500.24	1500.00	1.82	1632.68	40.18	0.00161	0.19541	-0.10957	1.177	521.742	1.79	0.03	1500.00	1000.00
2650	26511.00	1500.00	1.79	1626.74	40.18	0.00156	0.19478	-0.11074	1.174	521.938	1.78	0.02	1500.00	1000.00
2651	26520.61	1500.00	1.82	1654.46	40.18	0.00229	0.19487	-0.11377	2.141	522.295	1.82	0.02	1500.00	1000.00
2652	26530.22	1500.00	2.07	1664.17	40.06	0.00205	0.19326	-0.10703	2.495	522.710	2.08	0.02	1500.00	1000.00
2653	26541.05	1500.00	2.28	1607.37	40.06	0.00347	0.19248	-0.09453	2.556	523.136	2.27	0.02	1500.00	1000.00
2654	26550.60	1500.00	2.42	1636.66	39.93	0.00376	0.19116	-0.09048	2.593	523.569	2.40	0.02	1500.00	1000.00
2655	26560.21	1500.00	2.52	1640.41	39.93	0.00454	0.19038	-0.08496	2.512	523.987	2.51	0.02	1500.00	1000.00
2656	26571.03	1500.00	2.60	1625.66	40.06	0.00322	0.19009	-0.08989	2.483	524.401	2.58	0.03	1500.00	1000.00
2657	26580.59	1500.00	2.65	1620.46	39.93	0.00278	0.19028	-0.09165	2.488	524.816	2.65	0.02	1500.00	1000.00
2658	26590.20	1500.00	2.70	1639.97	39.93	0.00308	0.18955	-0.08535	2.405	525.217	2.67	0.02	1500.00	1000.00
2659	26601.02	1500.00	2.72	1626.26	40.06	0.00356	0.18931	-0.09053	2.417	525.619	2.72	0.02	1500.00	1000.00
2660	26610.64	1500.00	2.75	1622.38	40.06	0.00269	0.18848	-0.08896	2.339	526.009	2.73	0.02	1500.00	1000.00
2661	26620.19	1500.00	2.78	1623.79	40.06	0.00366	0.18896	-0.09004	2.317	526.395	2.76	0.01	1500.00	1000.00
2662	26631.01	1500.00	2.76	1623.01	40.06	0.00381	0.18833	-0.08784	2.288	526.777	2.74	0.01	1500.00	1000.00
2663	26640.63	1500.00	2.77	1619.71	39.93	0.00337	0.18813	-0.09048	2.222	527.147	2.77	0.01	1500.00	1000.00

2664	26650.18	1500.00	2.76	1602.38	40.06	0.00356	0.18716	-0.08545	0.037	527.153	2.76	0.01	1500.00	1000.00
2665	26661.00	1500.00	2.77	1606.61	40.06	0.00435	0.18638	-0.08770	2.244	527.527	2.77	0.01	1500.00	1000.00
2666	26670.61	1500.00	2.76	1603.85	40.06	0.00400	0.18623	-0.08525	2.144	527.884	2.75	0.01	1500.00	1000.00
2667	26680.23	1500.00	2.75	1649.58	40.06	0.00347	0.18647	-0.08398	2.104	528.235	2.76	0.01	1500.00	1000.00
2668	26690.99	1500.00	2.76	1585.19	40.06	0.00347	0.18628	-0.08867	2.095	528.584	2.76	0.00	1500.00	1000.00
2669	26700.60	1500.00	2.74	1648.19	40.06	0.00366	0.18594	-0.08369	2.024	528.922	2.73	0.01	1500.00	1000.00
2670	26710.22	1500.00	2.73	1602.97	40.06	0.00366	0.18579	-0.08682	2.024	529.259	2.72	0.01	1500.00	1000.00
2671	26720.98	1500.00	2.71	1626.00	40.18	0.00293	0.18574	-0.09248	1.934	529.581	2.70	0.01	1500.00	1000.00
2672	26730.59	1500.00	2.72	1609.77	40.18	0.00303	0.18496	-0.09048	1.921	529.901	2.70	0.01	1500.00	1000.00
2673	26740.20	1500.00	2.68	1633.33	40.18	0.00361	0.18486	-0.09131	1.948	530.226	2.66	0.01	1500.00	1000.00
2674	26750.97	1500.00	2.67	1607.53	40.18	0.00312	0.18521	-0.08477	1.829	530.531	2.65	0.01	1500.00	1000.00
2675	26760.58	1500.00	2.63	1641.62	40.06	0.00347	0.18433	-0.09463	1.807	530.832	2.62	0.01	1500.00	1000.00
2676	26770.19	1500.00	2.62	1602.82	40.18	0.00278	0.18364	-0.09106	1.812	531.134	2.61	0.01	1500.00	1000.00
2677	26781.01	1500.00	2.51	1611.62	40.18	0.00210	0.18311	-0.09199	1.738	531.424	2.56	-0.04	1500.00	1000.00
2678	26790.57	1500.00	2.58	1629.31	40.18	0.00278	0.18335	-0.09419	1.707	531.708	2.54	0.04	1500.00	1000.00
2679	26800.18	1500.00	2.53	1641.33	40.31	0.00220	0.18262	-0.08643	1.663	531.985	2.51	0.02	1500.00	1000.00
2680	26811.00	1500.00	2.51	1633.39	40.18	0.00205	0.18286	-0.09609	1.638	532.258	2.49	0.02	1500.00	1000.00
2681	26820.56	1500.00	2.47	1641.17	40.18	0.00229	0.18135	-0.08970	1.638	532.531	2.44	0.02	1500.00	1000.00
2682	26830.17	1500.00	2.44	1629.80	40.18	0.00166	0.18125	-0.09297	1.558	532.791	2.41	0.02	1500.00	1000.00
2683	26840.99	1500.00	2.41	1618.79	40.18	0.00200	0.18179	-0.09424	1.558	533.050	2.39	0.02	1500.00	1000.00
2684	26850.55	1500.00	2.38	1638.52	40.18	0.00137	0.18076	-0.09497	1.582	533.314	2.34	0.02	1500.00	1000.00
2685	26860.16	1500.00	2.35	1641.01	40.18	0.00337	0.18159	-0.09360	1.487	533.562	2.32	0.02	1500.00	1000.00
2686	26870.98	1500.00	2.30	1630.37	40.18	0.00171	0.18042	-0.09395	1.460	533.805	2.26	0.03	1500.00	1000.00
2687	26880.59	1500.00	2.28	1653.08	40.31	0.00205	0.18008	-0.09551	1.458	534.048	2.25	0.02	1500.00	1000.00
2688	26890.15	1500.00	2.22	1643.33	40.18	0.00195	0.17930	-0.09556	1.433	534.287	2.20	0.02	1500.00	1000.00
2689	26900.97	1500.00	2.19	1631.03	40.18	0.00303	0.17939	-0.09526	1.389	534.518	2.18	0.02	1500.00	1000.00
2690	26910.58	1500.00	2.14	1626.40	40.31	0.00225	0.17949	-0.09995	1.333	534.741	2.12	0.02	1500.00	1000.00
2691	26920.14	1500.00	2.11	1670.42	40.18	0.00176	0.17939	-0.09482	1.335	534.963	2.10	0.02	1500.00	1000.00
2692	26930.96	1500.00	2.09	1614.85	40.31	0.00229	0.17969	-0.09897	1.353	535.189	2.05	0.02	1500.00	1000.00
2693	26940.57	1500.00	2.03	1641.28	40.31	0.00181	0.17891	-0.09702	1.270	535.400	2.01	0.02	1500.00	1000.00
2694	26950.19	1500.00	2.02	1645.86	40.31	0.00181	0.17783	-0.09937	1.252	535.609	1.99	0.02	1500.00	1000.00

2695	26960.95	1500.00	1.97	1647.67	40.18	0.00195	0.17793	-0.10215	1.282	535.823	1.94	0.02	1500.00	1000.00
2696	26970.56	1500.00	2.03	1698.89	40.18	0.00283	0.17769	-0.10713	2.500	536.239	2.04	0.02	1500.00	1000.00
2697	26980.17	1500.00	2.30	1576.81	40.18	0.00254	0.17617	-0.08960	2.922	536.726	2.31	0.02	1500.00	1000.00
2698	26990.94	1500.00	2.53	1658.04	40.06	0.00396	0.17515	-0.07876	3.081	537.240	2.53	0.02	1500.00	1000.00
2699	27000.55	1500.00	2.68	1637.84	39.93	0.00454	0.17510	-0.07056	3.057	537.749	2.67	0.02	1500.00	1000.00
2700	27010.16	1500.00	2.81	1633.70	39.93	0.00518	0.17437	-0.07100	3.005	538.250	2.79	0.02	1500.00	1000.00
2701	27020.93	1500.00	2.91	1638.06	39.93	0.00410	0.17339	-0.07012	2.993	538.749	2.90	0.02	1500.00	1000.00
2702	27030.54	1500.00	2.98	1624.45	39.93	0.00557	0.17339	-0.07095	2.888	539.230	2.95	0.02	1500.00	1000.00
2703	27040.15	1500.00	3.03	1661.72	39.93	0.00557	0.17310	-0.06899	2.896	539.713	3.02	0.02	1500.00	1000.00
2704	27050.97	1500.00	3.07	1553.90	40.06	0.00474	0.17173	-0.06299	2.883	540.193	3.07	0.02	1500.00	1000.00
2705	27060.53	1500.00	3.11	1594.28	40.06	0.00474	0.17119	-0.06304	2.822	540.664	3.09	0.02	1500.00	1000.00
2706	27070.14	1500.00	3.12	1598.83	39.93	0.00459	0.17212	-0.06416	0.042	540.671	3.12	0.01	1500.00	1000.00
2707	27080.96	1500.00	3.15	1519.85	40.06	0.00596	0.17109	-0.06367	2.773	541.133	3.15	0.02	1500.00	1000.00
2708	27090.52	1500.00	3.18	1601.48	40.06	0.00566	0.17129	-0.06050	2.729	541.588	3.16	0.01	1500.00	1000.00
2709	27100.13	1500.00	3.19	1601.91	40.18	0.00576	0.17046	-0.06279	2.722	542.042	3.19	0.02	1500.00	1000.00
2710	27110.95	1500.00	2.92	1605.62	40.18	0.01133	0.16611	-0.03140	2.041	542.382	2.84	0.01	1500.00	1000.00
2711	27120.51	1500.00	2.57	1606.84	40.44	0.01602	0.16284	-0.01587	1.577	542.645	2.54	0.01	1500.00	1000.00
2712	27130.12	1500.00	2.29	1637.35	40.57	0.65806	0.74775	0.03647	1.167	542.839	2.26	0.01	1500.00	1000.00
2713	27140.94	1500.00	2.34	1623.14	40.57	0.11899	0.13496	0.03477	0.657	542.949	2.06	0.63	1500.00	1000.00
2714	27150.55	1500.00	1.85	1651.26	40.57	0.13467	0.15728	0.03804	0.593	543.047	1.70	0.07	1500.00	1000.00
2715	27160.11	1500.00	0.11	1666.85	40.70	0.15366	0.18081	0.03887	0.505	543.132	27.75	-22.47	1374.00	954.00
2716	27170.93	1500.00	5.31	1671.44	40.57	0.01260	0.04429	0.02104	2.605	543.566	4.07	1.20	1500.00	1000.00
2717	27180.54	1500.00	3.58	1661.27	40.57	0.00122	0.01328	0.02510	2.402	543.966	3.45	0.02	1500.00	1001.00
2718	27190.10	1500.00	2.67	1655.41	40.44	-0.00190	0.00537	0.02769	1.987	544.297	2.67	0.01	1500.00	1000.00
2719	27200.92	1500.00	2.56	1655.03	40.44	-0.00342	0.00098	0.02959	1.931	544.619	2.50	0.05	1500.00	1000.00
2720	27210.53	1500.00	2.56	1642.24	40.31	-0.00366	-0.00024	0.03257	1.970	544.948	2.54	0.04	1500.00	1000.00
2721	27220.14	1500.00	2.46	1650.40	40.31	-0.00386	-0.00190	0.03291	1.887	545.262	2.48	0.02	1500.00	1000.00
2722	27230.91	1500.00	2.47	1650.56	40.31	-0.00435	-0.00229	0.03267	1.873	545.574	2.45	0.01	1500.00	1000.00
2723	27240.52	1500.00	2.53	1654.40	40.31	-0.00493	-0.00234	0.03496	1.868	545.886	2.44	0.03	1500.00	999.00
2724	27250.13	1500.00	2.43	1663.55	40.31	-0.00503	-0.00264	0.03320	1.855	546.195	2.41	0.01	1500.00	1000.00
2725	27260.90	1500.00	2.48	1643.38	40.31	-0.00493	-0.00327	0.03066	1.855	546.504	2.42	0.01	1500.00	1000.00

2726	27270.51	1500.00	2.50	1636.06	40.18	-0.00542	-0.00264	0.02969	1.821	546.808	2.46	0.02	1500.00	1000.00
2727	27280.12	1500.00	2.39	1648.96	40.31	-0.00474	-0.00337	0.03467	1.841	547.114	2.38	0.00	1500.00	1000.00
2728	27290.89	1500.00	2.47	1649.35	40.31	-0.00488	-0.00264	0.03633	1.882	547.428	2.46	0.01	1500.00	1000.00
2729	27300.50	1500.00	2.43	1650.71	40.31	-0.00562	-0.00347	0.03384	1.812	547.730	2.45	0.00	1500.00	1000.00
2730	27310.11	1500.00	2.37	1637.88	40.31	-0.00508	-0.00371	0.03379	1.826	548.034	2.38	0.00	1500.00	1000.00
2731	27320.93	1500.00	2.38	1650.11	40.18	-0.00425	-0.00200	0.03179	1.892	548.350	2.44	0.00	1500.00	1000.00
2732	27330.49	1500.00	2.36	1644.54	40.31	-0.00488	-0.00317	0.03247	1.824	548.654	2.40	0.00	1500.00	1000.00
2733	27340.10	1500.00	2.38	1646.42	40.31	-0.00508	-0.00361	0.03579	1.816	548.956	2.36	0.00	1500.00	1000.00
2734	27350.92	1500.00	2.40	1648.24	40.31	-0.00435	-0.00332	0.03325	1.836	549.262	2.39	0.00	1500.00	1000.00
2735	27360.48	1500.00	2.34	1646.38	40.18	-0.00444	-0.00249	0.03569	1.804	549.563	2.33	0.00	1500.00	999.00
2736	27370.09	1500.00	2.42	1646.06	40.18	-0.00508	-0.00376	0.03413	1.834	549.869	2.39	0.00	1500.00	1000.00
2737	27380.91	1500.00	2.43	1645.04	40.18	-0.00488	-0.00371	0.03472	1.790	550.167	2.39	0.00	1500.00	1000.00
2738	27390.47	1500.00	2.34	1640.65	40.18	-0.00454	-0.00278	0.03647	1.816	550.470	2.34	0.00	1500.00	999.00
2739	27400.08	1500.00	1.95	1653.61	40.18	-0.00479	-0.00254	0.03188	1.558	550.729	1.95	0.00	1500.00	1000.00
2740	27410.90	1500.00	1.83	1652.32	40.18	-0.00527	-0.00337	0.03330	1.304	550.947	1.81	0.00	1500.00	1000.00
2741	27420.51	1500.00	1.54	1645.91	40.18	-0.00522	-0.00361	0.04062	1.211	551.149	1.49	0.00	1500.00	1000.00
2742	27430.07	1500.00	1.46	1642.68	40.18	-0.00459	-0.00376	0.03350	1.028	551.320	1.39	0.00	1500.00	1000.00
2743	27440.89	1500.00	1.15	1646.48	40.18	-0.00601	-0.00376	0.03433	0.947	551.478	1.23	0.00	1500.00	1000.00
2744	27450.50	1500.00	1.07	1643.82	40.18	-0.00469	-0.00327	0.03325	0.906	551.629	1.06	0.00	1500.00	1000.00
2745	27460.06	1500.00	1.06	1646.90	40.18	-0.00518	-0.00435	0.03428	0.813	551.764	1.04	0.00	1500.00	1000.00
2746	27470.88	1500.00	0.98	1641.66	40.18	-0.00493	-0.00439	0.03701	0.793	551.896	1.01	0.00	1500.00	999.00
2747	27480.49	1500.00	0.96	1641.51	40.18	-0.00552	-0.00396	0.03569	0.798	552.029	0.97	0.00	1500.00	1000.00
2748	27490.10	1500.00	1.00	1640.15	40.18	-0.00459	-0.00342	0.03750	0.762	552.156	1.04	-0.05	1500.00	1000.00
2749	27500.87	1500.00	0.98	1655.32	40.18	-0.00542	-0.00449	0.02700	0.774	552.285	0.96	0.00	1500.00	1000.00
2750	27510.48	1500.00	23.78	1640.94	40.18	-0.00552	-0.00327	0.03198	0.757	552.412	0.96	14.21	1500.00	1454.00
2751	27520.09	1500.00	3.30	1643.48	40.18	-0.00566	-0.00425	0.03071	0.781	552.542	2.37	1.88	1545.00	1450.00
2752	27530.86	1500.00	3.47	1643.22	40.18	-0.00547	-0.00435	0.03008	0.837	552.681	1.65	1.65	1565.00	1435.00
2753	27540.47	1506.00	-3.92	1645.61	40.18	-0.00586	-0.00439	0.02847	0.820	552.818	-204.00	2.17	687.00	1492.00
2754	27550.08	1500.00	-202.59	1645.83	40.06	-0.00547	-0.00469	0.03403	0.798	552.951	-204.04	1.48	680.00	1500.00
2755	27560.85	1514.00	0.00	1633.52	40.18	-0.00405	-0.00366	0.03687	0.720	553.071	0.00	0.00	685.00	1511.00
2756	27570.46	1493.00	0.00	1619.67	40.18	-0.00020	-0.00024	0.03828	0.596	553.170	0.00	0.00	687.00	1490.00

2757	27580.07	1477.00	0.00	1641.50	40.06	0.00142	0.00171	0.03804	0.559	553.264	0.00	0.00	688.00	1475.00
2758	27590.89	1463.00	0.00	1623.83	40.06	0.00259	0.00239	0.03691	0.476	553.343	0.00	0.00	688.00	1462.00
2759	27600.45	1453.00	0.00	1672.15	40.18	0.00386	0.00391	0.03853	0.427	553.414	0.00	0.00	689.00	1452.00
2760	27610.06	1445.00	0.00	1617.03	40.18	0.00518	0.00522	0.04116	0.386	553.479	0.00	0.00	689.00	1444.00
2761	27620.88	1437.00	0.00	1646.91	40.06	0.00640	0.00645	0.04395	0.315	553.531	0.00	0.00	690.00	1436.00
2762	27630.44	1430.00	0.00	1608.49	40.18	0.00776	0.00835	0.04004	0.283	553.578	0.00	0.00	690.00	1429.00
2763	27640.05	1424.00	0.00	1633.56	40.18	0.00937	0.00981	0.03950	0.244	553.619	0.00	0.00	690.00	1424.00
2764	27650.87	1419.00	0.00	1682.49	40.18	0.01016	0.01284	0.03389	0.200	553.652	0.00	0.00	690.00	1418.00
2765	27660.43	1414.00	0.00	1629.41	40.18	0.01387	0.01572	0.03857	0.144	553.676	0.00	0.00	691.00	1414.00
2766	27670.04	1410.00	0.00	1470.24	38.10	0.01372	0.01714	0.04165	0.120	553.696	0.00	0.00	691.00	1410.00
2767	27680.86	1406.00	0.00	1370.06	37.40	0.01660	0.01938	0.04341	0.098	553.713	0.00	0.00	686.00	1406.00
2768	27690.47	1403.00	0.00	1336.92	37.40	0.01880	0.02095	0.04199	0.061	553.723	0.00	0.00	683.00	1402.00
2769	27700.03	1400.00	0.00	1301.90	36.83	0.01719	0.01895	0.03447	0.044	553.730	0.00	0.00	680.00	1400.00
2770	27710.85	1397.00	0.00	1249.03	35.72	0.01665	0.01885	0.04062	0.027	553.735	0.00	0.00	678.00	1397.00
2771	27720.46	1395.00	0.00	1207.17	34.87	0.01611	0.01870	0.04058	0.022	553.738	0.00	0.00	676.00	1394.00
2772	27730.07	1393.00	0.00	1166.34	33.94	0.01421	0.01636	0.03965	0.020	553.741	0.00	0.00	675.00	1392.00
2773	27740.84	1391.00	0.00	1075.89	32.85	0.01377	0.01538	0.04019	0.017	553.744	0.00	0.00	673.00	1390.00
2774	27750.45	1389.00	0.00	996.19	31.61	0.01323	0.01460	0.03569	0.015	553.747	0.00	0.00	671.00	1389.00
2775	27760.06	1388.00	0.00	892.32	30.69	0.01216	0.01465	0.03467	0.015	553.749	0.00	0.00	670.00	1387.00
2776	27770.83	1386.00	0.00	780.45	29.89	0.01187	0.01436	0.03740	0.012	553.751	0.00	0.00	669.00	1386.00
2777	27780.44	1385.00	0.00	674.43	28.94	0.01309	0.01533	0.03882	0.015	553.754	0.00	0.00	667.00	1385.00
2778	27790.05	1384.00	0.00	557.59	28.10	0.01401	0.01826	0.03755	0.015	553.756	0.00	0.00	666.00	1384.00
2779	27800.82	1383.00	0.00	449.93	27.29	0.01465	0.01963	0.03438	0.012	553.758	0.00	0.00	665.00	1383.00
2780	27810.43	1382.00	0.00	366.78	26.81	0.01514	0.02344	0.03989	0.012	553.760	0.00	0.00	664.00	1382.00
2781	27820.04	1382.00	0.00	312.57	26.34	0.02036	0.03262	0.03594	0.012	553.762	0.00	0.00	662.00	1382.00
2782	27830.81	1381.00	0.00	265.37	25.96	0.09526	0.14795	0.03921	0.012	553.764	0.00	0.00	661.00	1381.00
2783	27840.42	1381.00	0.00	210.12	25.73	0.18022	0.27168	0.03086	0.012	553.766	0.00	0.00	660.00	1381.00
2784	27850.03	1380.00	0.00	186.63	25.73	0.07983	0.08228	0.04331	0.012	553.768	0.00	0.00	659.00	1380.00
2785	27860.85	1380.00	0.00	166.36	25.80	0.04937	0.05396	0.03613	0.012	553.770	0.00	0.00	658.00	1380.00
2786	27870.41	1379.00	0.00	148.52	25.96	0.05151	0.05322	0.03628	0.010	553.772	0.00	0.00	657.00	1379.00
2787	27880.02	1379.00	0.00	141.49	26.19	0.05366	0.05400	0.04287	0.010	553.773	0.00	0.00	656.00	1379.00

2788	27890.84	1379.00	0.00	126.00	26.42	0.05332	0.05464	0.03340	0.012	553.775	0.00	0.00	656.00	1379.00
2789	27900.40	1379.00	0.00	113.63	26.73	0.05112	0.05498	0.03647	0.012	553.777	0.00	0.00	655.00	1379.00
2790	27910.01	1379.00	0.00	124.06	26.97	0.05195	0.05278	0.03789	0.012	553.779	0.00	0.00	654.00	1379.00
2791	27920.83	1378.00	0.00	113.52	27.37	0.04971	0.05034	0.04224	0.012	553.781	0.00	0.00	653.00	1378.00
2792	27930.44	1378.00	0.00	106.96	27.69	0.05239	0.05283	0.04248	0.010	553.783	0.00	0.00	653.00	1378.00
2793	27940.00	1378.00	0.00	108.62	27.94	0.05337	0.05259	0.04087	0.012	553.785	0.00	0.00	652.00	1378.00
2794	27950.82	1378.00	0.00	106.87	28.27	0.05371	0.05439	0.03960	0.010	553.787	0.00	0.00	651.00	1378.00
2795	27960.43	1378.00	0.00	113.72	28.60	0.05532	0.05371	0.03608	0.012	553.789	0.00	0.00	651.00	1378.00
2796	27971.20	1378.00	0.00	103.78	28.85	0.05342	0.05327	0.03735	0.012	553.791	0.00	0.00	650.00	1378.00
2797	27980.81	1378.00	0.00	100.00	29.11	0.04932	0.05151	0.03721	0.010	553.792	0.00	0.00	650.00	1378.00
2798	27990.42	1378.00	0.00	102.95	29.37	0.10625	0.08652	0.04111	0.012	553.794	0.00	0.00	649.00	1378.00
2799	28001.18	1378.00	0.00	105.87	29.63	0.09224	0.07573	0.03945	0.010	553.796	0.00	0.00	648.00	1378.00
2800	28010.80	1378.00	0.00	101.21	29.89	0.12651	0.12642	0.03965	0.012	553.798	0.00	0.00	648.00	1378.00
2801	28020.41	1378.00	0.00	94.88	30.15	0.26440	0.17139	0.04761	0.012	553.800	0.00	0.00	647.00	1378.00
2802	28030.02	1378.00	0.00	112.58	30.42	0.03052	0.04199	0.03403	0.010	553.802	0.00	0.00	647.00	1378.00
2803	28040.79	1377.00	0.00	111.34	30.60	0.00898	0.01357	0.03647	0.010	553.803	0.00	0.00	646.00	1378.00
2804	28050.40	1377.00	0.00	101.65	30.78	0.00854	0.01304	0.03809	0.010	553.805	0.00	0.00	646.00	1377.00
2805	28060.01	1377.00	0.00	95.96	31.05	0.00845	0.00923	0.03853	0.010	553.807	0.00	0.00	645.00	1377.00
2806	28070.77	1377.00	0.00	103.30	31.24	0.00527	0.00601	0.03462	0.012	553.809	0.00	0.00	645.00	1377.00
2807	28080.39	1377.00	0.00	119.31	31.42	0.00425	0.00586	0.03618	0.010	553.810	0.00	0.00	645.00	1377.00
2808	28090.00	1377.00	0.00	103.04	31.61	0.00957	0.05220	0.01548	0.012	553.812	0.00	0.00	644.00	1377.00
2809	28100.76	1377.00	0.00	98.17	31.79	0.03350	0.18408	0.00474	0.012	553.814	0.00	0.00	644.00	1377.00
2810	28110.38	1377.00	0.00	96.13	31.98	0.00054	0.18960	-0.13101	0.010	553.816	0.00	0.00	643.00	1377.00
2811	28121.20	1377.00	0.00	103.06	32.17	0.00825	0.22871	-0.06650	0.012	553.818	0.00	0.00	643.00	1377.00
2812	28130.81	1377.00	0.00	90.85	32.27	-0.00117	0.22021	-0.18057	0.012	553.820	0.00	0.00	643.00	1377.00
2813	28140.37	1377.00	0.00	97.64	32.46	0.01318	0.24614	-0.06201	0.010	553.822	0.00	0.00	642.00	1377.00
2814	28151.19	1377.00	0.00	106.71	32.55	0.00435	0.24443	-0.11919	0.010	553.823	0.00	0.00	642.00	1377.00
2815	28160.80	1377.00	0.00	100.48	32.75	0.00459	0.25166	-0.13613	0.010	553.825	0.00	0.00	642.00	1377.00
2816	28170.35	1377.00	0.00	108.30	32.85	0.00327	0.24717	-0.14136	0.010	553.827	0.00	0.00	641.00	1377.00
2817	28181.18	1377.00	0.00	101.51	33.04	0.00547	0.26870	-0.11860	0.012	553.829	0.00	0.00	641.00	1377.00

APPENDIX A3

Appendix A3 Solvent trap analysis data and scans

Scans of $Cu(tta)_2$ and tta in methanol

Because $Cu(tta)_2$ and tta may be present in the methanol solvent traps, scans were done with methanol solutions containing $Cu(tta)_2$ and tta. These two graphs follow. As it is possible to see, after a wavelength of approximately 400 nm and up to 500 nm, $Cu(tta)_2$ is visible but not tta. For this reason a wavelength lower than 400 nm was not chosen. For the solubility experiments, the solvent traps were analyzed at 430 nm. For the extraction experiments, the solvent traps were analyzed at 420 nm. The change was made because 420 nm gave higher values on the spectrophotometer.

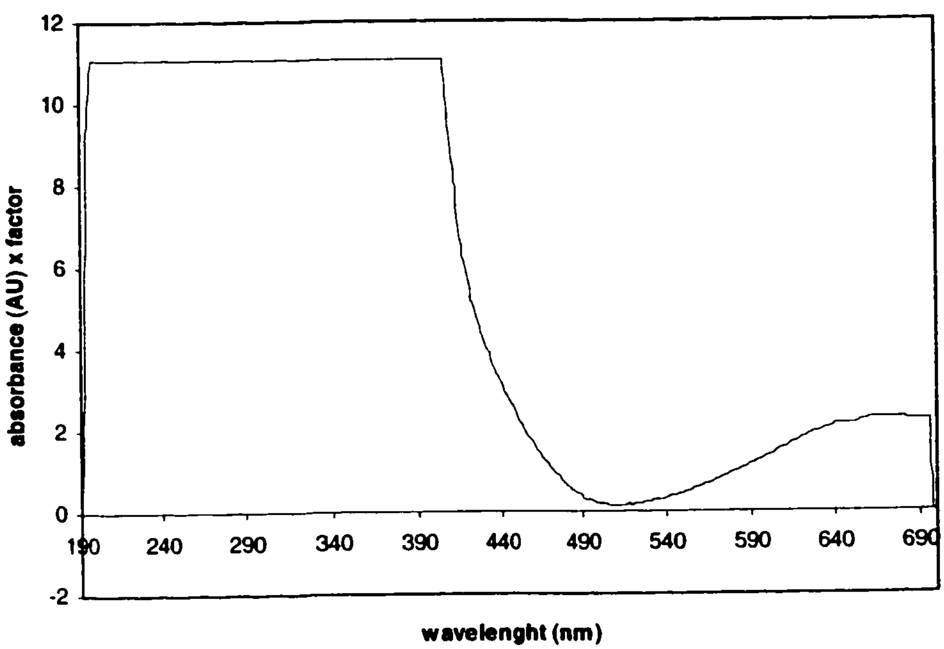

Figure A3.1 Scan of $Cu(tta)_2$ in methanol

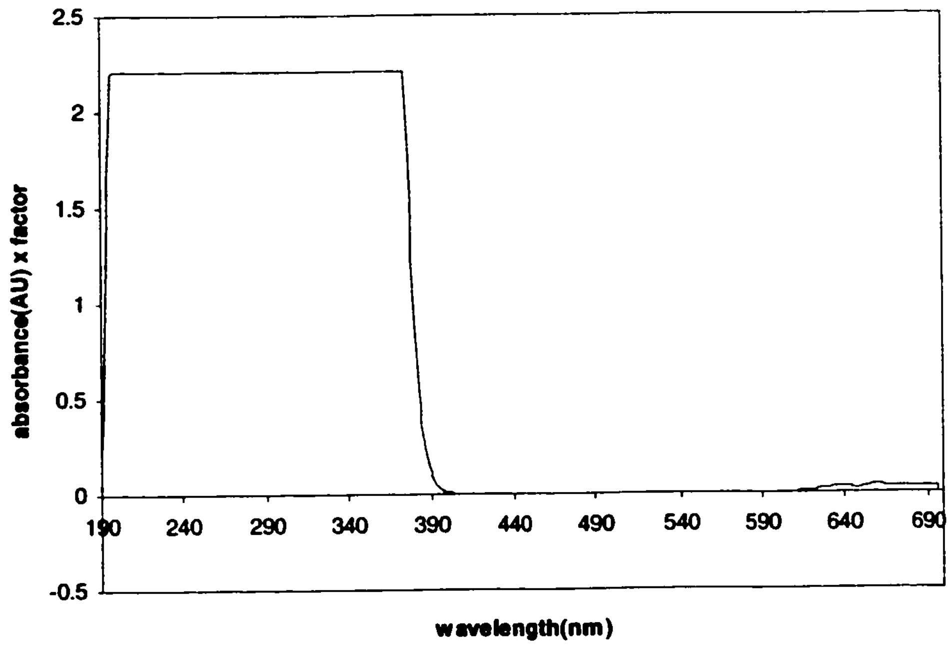

Figure A3.2 Scan of tta in methanol

Calibration curve at 430nm

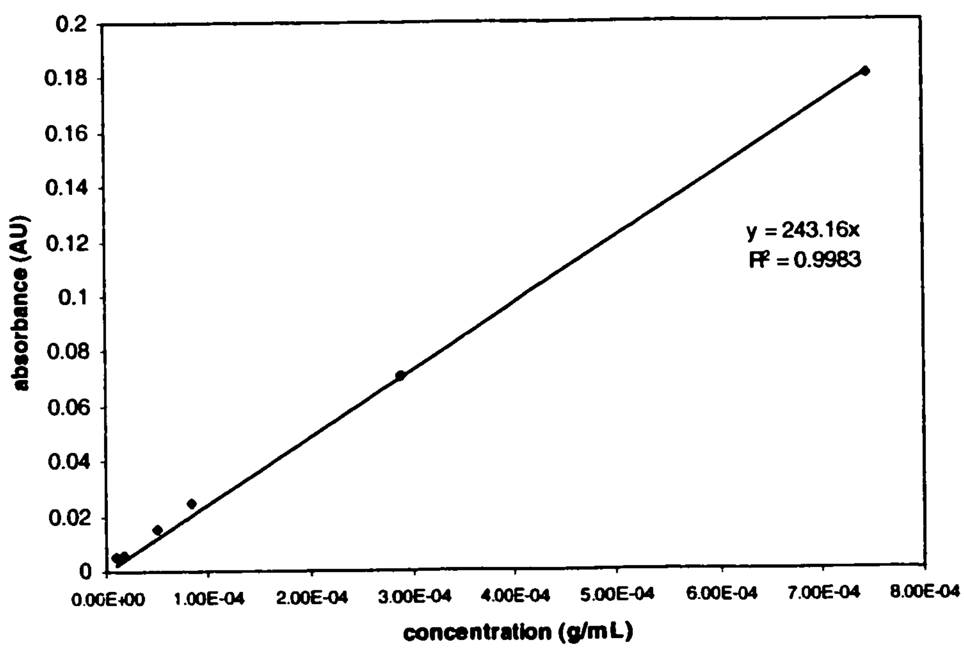

Figure A3.3 Calibration curve for $Cu(tta)_2$ in methanol at 430nm

Sample calculation of concentration

Knowing the absorbance, it is possible to calculate the concentration of the solvent traps using equation 3.1. From the calibration curve, it is determined that if the same cell and spectrophotometer are used εl is equal to 243.16. Substituting the absorbance and the constant in equation 3.1 and rearranging the equation gives the concentration.

$$A = \varepsilon c l \tag{3.1}$$

$$c = \frac{A}{\varepsilon l}$$

$$c = \frac{0.025\text{AU}}{243.16\frac{\text{AU}\cdot\text{mm}\cdot\text{mL}}{\text{mm}\cdot\text{g}}}$$

$$c = 1.03 \times 10^{-4}\ \text{g/mL}$$

Solvent trap data

The raw solvent trap data and the calculated concentration for the three solubility runs done at 10.34 MPa and 40°C are as follows.

sample	Absorbance (AU)	Concentration (g/mL)	Volume(mL)	Cu(tta)2 collected (g)
7/6/01				
Cu(tta)2invessel with beads2.xls				
trap 1				
trap on before starting	0.006	2.47E-05	7.3	1.80E-04
0 to 7700s	0.074	3.04E-04	5.7	1.73E-03
7700s to 8830s	0.047	1.93E-04	6.7	1.30E-03
8830s to 9730s	0.009	3.70E-05	8.5	3.15E-04
9730s to 11150s	0.008	3.29E-05	13.4	4.41E-04
11150s to 12150s	0.007	2.88E-05	9	2.59E-04
12150s to 13000s	0.007	2.88E-05	7.1	2.04E-04
13000s to 13650s	0.007	2.88E-05	5.2	1.50E-04
13650s to 15200s	0.004	1.65E-05	10.4	1.71E-04
15200s to 16150s	0.009	3.70E-05	6.3	2.33E-04
16150s to 17050s	0.005	2.06E-05	8.7	1.79E-04

last last trap	0.005	2.06E-05	8	1.65E-04
sum				3.41E-03
trap 2				
trap before starting	0.001	4.11E-06	7	2.88E-05
0 to 7600s	0.001	4.11E-06	5.8	2.39E-05
last last trap	0.001	4.11E-06	5.5	2.26E-05
sum				2.26E-05
vessel				
vial 1	0.03	1.23E-04	38	4.69E-03
vial 2	0.029	1.19E-04	35.6	4.25E-03
vial 3(estimated ml)	0.022	9.05E-05	37	3.35E-03
vial 4	0.013	5.35E-05	37.2	1.99E-03
vial 5	0.02	8.23E-05	39.5	3.25E-03
vial 6	0.028	1.15E-04	23.4	2.69E-03
sum				2.02E-02
tubing cleaning				
1	0.001	4.11E-06	9.1	3.74E-05
2	0	0.00E+00	8.8	0.00E+00
3	0	0.00E+00	9	0.00E+00
5	0.01	4.11E-05	7	2.88E-04
5b	0.001	4.11E-06	4	1.65E-05
5c	0	0.00E+00	5.2	0.00E+00
5d	0	0.00E+00	5.9	0.00E+00
6	0	0.00E+00	9.2	0.00E+00
7	0	0.00E+00	6.8	0.00E+00
7b	0.001	4.11E-06	7.1	2.92E-05
7c	0.001	4.11E-06	7.2	2.96E-05
8	0	0.00E+00	9.6	0.00E+00
9	0	0.00E+00	9.4	0.00E+00
10	0.001	4.11E-06	5.5	2.26E-05
10a	0.001	4.11E-06	5	2.06E-05
10b	0.001	4.11E-06	8.6	3.54E-05
10c	0.001	4.11E-06	6.7	2.76E-05
11	0	0.00E+00	7.4	0.00E+00
12	0.012	4.94E-05	6.5	3.21E-04
12b	0.002	8.23E-06	6.1	5.02E-05
12c	0.005	2.06E-05	5.6	1.15E-04
13	0.003	1.23E-05	5.5	6.79E-05
sum				1.06E-03

sample	Absorbance (AU)	Concentration (g/mL)	Volume(mL)	Cu(tta)2 collected (g)
7/13/01				
Cu(tta)2invessel with beads3.xls				
trap 1				
trap on before starting	0.017	6.99E-05	6	4.19E-04
0 to 8250s	0.063	2.59E-04	9.25	2.40E-03
8250s to 9800s	0.004	1.65E-05	12	1.97E-04
9800s to 10800s	0.01	4.11E-05	9	3.70E-04
10800s to 11700s	0.016	6.58E-05	7.5	4.94E-04
11700s to 12600s	0.01	4.11E-05	7	2.88E-04
12600s to 13650s	0.009	3.70E-05	8.5	3.15E-04
last trap	0.003	1.23E-05	8	9.87E-05
sum				1.76E-03
trap 2				
trap before starting	0.004	1.65E-05	6	9.87E-05
0 to 8320s	0	0.00E+00	7.5	0.00E+00
8320s to 9840s	0.003	1.23E-05	5.5	6.79E-05
last trap	0.001	4.11E-06	6	2.47E-05
sum				9.25E-05
vessel				
vial 1	0.025	1.03E-04	37	3.80E-03
vial 2	0.024	9.87E-05	38.5	3.80E-03
vial 3	0.03	1.23E-04	39	4.81E-03
vial 4	0.027	1.11E-04	37.5	4.16E-03
vial 5	0.025	1.03E-04	38.5	3.96E-03
vial 6	0.031	1.27E-04	39	4.97E-03
vial 7	0.025	1.03E-04	19.75	2.03E-03
sum				2.75E-02
tubing cleaning				
1	0.006	2.47E-05	9.1	2.25E-04
2	0.002	8.23E-06	8.8	7.24E-05
3	0	0.00E+00	9	0.00E+00
5	0.014	5.76E-05	7	4.03E-04
5b	0.009	3.70E-05	4	1.48E-04
5c	0.002	8.23E-06	5.2	4.28E-05
5d	0.001	4.11E-06	5.9	2.43E-05
6	0	0.00E+00	9.2	0.00E+00
7	0	0.00E+00	6.8	0.00E+00
7b	0.005	2.06E-05	7.1	1.46E-04

7c	0.01	4.11E-05	7.2	2.96E-04
8	0.006	2.47E-05	9.6	2.37E-04
9	0.004	1.65E-05	9.4	1.55E-04
10	0.001	4.11E-06	5.5	2.26E-05
10a	0.007	2.88E-05	5	1.44E-04
10b	0.005	2.06E-05	8.6	1.77E-04
10c	0.007	2.88E-05	6.7	1.93E-04
11	0.001	4.11E-06	7.4	3.04E-05
12	0.009	3.70E-05	6.5	2.41E-04
12b	0.004	1.65E-05	6.1	1.00E-04
12c	0.001	4.11E-06	5.6	2.30E-05
13	0.005	2.06E-05	5.5	1.13E-04
sum				2.79E-03

sample	Absorbance (AU)	Concentration (g/mL)	Volume(mL)	Cu(tta)2 collected (g)
7/17/01				
Cu(tta)2invessel with beads4.xls				
trap 1				
trap on before starting	0.012	4.94E-05	4.5	2.22E-04
0 to 9400s	0.043	1.77E-04	10.25	1.81E-03
9400s to 9920s	0.018	7.40E-05	4	2.96E-04
9920s to 10340s	0.018	7.40E-05	4	2.96E-04
10340s to 10760s	0.014	5.76E-05	4	2.30E-04
10760s to 11180s	0.025	1.03E-04	4	4.11E-04
11180s to 11600s	0.015	6.17E-05	4	2.47E-04
11600s to 12020s	0.017	6.99E-05	3.5	2.45E-04
12020s to 16150s	0.025	1.03E-04	30	3.08E-03
16150s to 17400s	0.038	1.56E-04	6.5	1.02E-03
17400s to 17950s	0.023	9.46E-05	3.5	3.31E-04
17950s to 18310s	0.016	6.58E-05	3	1.97E-04
18310s to 18730s	0.029	1.19E-04	3	3.58E-04
18730s to 19150s	0.015	6.17E-05	3	1.85E-04
19150s to 19570s	0.011	4.52E-05	3	1.36E-04
19570s to 24820s	0.01	4.11E-05	22.1	9.09E-04
24820s to 25390s	0.038	1.56E-04	5.3	8.28E-04
25390s to 26000s	0.007	2.88E-05	6.5	1.87E-04
26000s to 26230s	0.004	1.65E-05	3.8	6.25E-05
26230s to 26650s	0.007	2.88E-05	4	1.15E-04
26650s to 27070s	0.007	2.88E-05	4	1.15E-04
last trap	0.014	5.76E-05	12.1	6.97E-04
				9.95E-03
trap 2				

trap before starting	0	0.00E+00	5	0.00E+00
0 to 9350s	0.002	8.23E-06	7.2	5.92E-05
9350s to 12150s	0	0.00E+00	6.8	0.00E+00
12150s to 16250s	0.005	2.06E-05	12	2.47E-04
16250s to 24900s	0.007	2.88E-05	6.3	1.81E-04
last trap	0	0.00E+00	3.8	0.00E+00
				4.28E-04
vessel				
vial 1	0.034	1.40E-04	36	5.03E-03
vial 2	0.031	1.27E-04	39	4.97E-03
vial 3	0.034	1.40E-04	40.25	5.63E-03
vial 4	0.032	1.32E-04	39.5	5.20E-03
				1.58E-02
tubing cleaning				
1	0.003	1.23E-05	8.25	1.02E-04
2	0.002	8.23E-06	9	7.40E-05
3	0.001	4.11E-06	9.5	3.91E-05
5	0.005	2.06E-05	6.75	1.39E-04
5b	0.009	3.70E-05	7	2.59E-04
5c	0.006	2.47E-05	7	1.73E-04
5d	0.016	6.58E-05	7.25	4.77E-04
6	0.009	3.70E-05	9.5	3.52E-04
7	0.01	4.11E-05	6.5	2.67E-04
7b	0.015	6.17E-05	6.75	4.16E-04
7c	0.009	3.70E-05	7	2.59E-04
8	0.004	1.65E-05	7.75	1.27E-04
9	0.016	6.58E-05	7.25	4.77E-04
10	0.018	7.40E-05	7	5.18E-04
10a	0.009	3.70E-05	7	2.59E-04
10b	0.002	8.23E-06	7	5.76E-05
10c	0	0.00E+00	7	0.00E+00
11	0.002	8.23E-06	6.5	5.35E-05
12	0.007	2.88E-05	7	2.02E-04
12b	0.016	6.58E-05	6.5	4.28E-04
12c	0.014	5.76E-05	7.5	4.32E-04
13	0.015	6.17E-05	6.5	4.01E-04
				5.51E-03

APPENDIX A4

Appendix A4 Solubility sample calculation

To calculate the solubility of $Cu(tta)_2$ in SC CO_2 in the scope of this research, it is necessary to know the amount of $Cu(tta)_2$ collected in the solvent trap and the amount of CO_2 that flowed through this solvent trap. The mass of $Cu(tta)_2$ in the solvent trap is determined by multiplying the concentration of the solution by the volume of solution. The mass flowmeter and totalizer measured the amount of CO_2 flowing out of the system.

Density of CO_2

First, the density of CO_2 at room temperature and 101.325 KPa is calculated using the following equation

$$D = \frac{MP}{RT} \qquad (A.3)$$

where D is the density, M is the molar mass (44.01g/mol for CO_2), P is the pressure, R is a constant (8.314J/mol·K) and T is the temperature.

At 20°C (293.15K), the density of carbon dioxide is calculated as follows

$$D = \frac{(44.01\text{x}10^{-3}\,\text{kg/mol})(101.325\text{x}10^{3}\,\text{Pa})}{(8.314\,\text{J/mol}\cdot\text{K})(293.15\,\text{K})}$$

$$D = 1.82923 \text{ kg/m}^3 = 1.82923 \text{ g/L}$$

The density of CO_2 at 20°C and atmospheric pressure is 1.83 g/L.

Solubility

The solubility of $Cu(tta)_2$ is calculated as follows

$$s = \frac{m_{Cu(tta)2} \cdot M_{CO2}}{V_{CO2} \cdot D_{CO2} \cdot M_{Cu(tta)2}} \tag{A.4}$$

where s is the solubility, $m_{Cu(tta)2}$ is the mass of $Cu(tta)_2$ in the solvent trap, M_{CO2} is the molar mass of CO_2 (44.01g/mol), V_{CO2} is the volume of CO_2 that flowed through the trap, D_{CO2} is the density of CO_2 at room temperature and pressure and $M_{Cu(tta)2}$ is the molar mass of $Cu(tta)_2$ (505.9g/mol).

For 2001-07-06, $m_{Cu(tta)2} = 1.30 \times 10^{-3}$g and $V_{CO2} = 35$ L,

$$s = \frac{\left(1.30x10^{-3} gCu(tta)_2\right) \cdot \left(44.01gCO_2 / molCO_2\right)}{\left(35LCO_2\right) \cdot \left(1.83gCO_2 / LCO_2\right) \cdot \left(505.9gCu(tta)_2 / molCu(tta)_2\right)}$$

$$s = 1.76 \times 10^{-6} \text{ mol } Cu(tta)_2/\text{mol } CO_2$$

For 2001-07-13, $m_{Cu(tta)2} = 4.94 \times 10^{-4}$g and $V_{CO2} = 28$ L,

$$s = \frac{\left(4.94x10^{-4} gCu(tta)_2\right) \cdot \left(44.01gCO_2 / molCO_2\right)}{\left(28LCO_2\right) \cdot \left(1.83gCO_2 / LCO_2\right) \cdot \left(505.9gCu(tta)_2 / molCu(tta)_2\right)}$$

$$s = 8.38 \times 10^{-7} \text{ mol } Cu(tta)_2/\text{mol } CO_2$$

For 2001-07-17, $m_{Cu(tta)2} = 4.11 \times 10^{-4}$g and $V_{CO2} = 12$ L,

$$s = \frac{\left(4.11x10^{-4} gCu(tta)_2\right) \cdot \left(44.01gCO_2 / molCO_2\right)}{\left(12LCO_2\right) \cdot \left(1.83gCO_2 / LCO_2\right) \cdot \left(505.9gCu(tta)_2 / molCu(tta)_2\right)}$$

$$s = 8.38 \times 10^{-7} \text{ mol } Cu(tta)_2/\text{mol } CO_2$$

APPENDIX A5

Appendix A5 Statistical analysis

Two statistical analyses are done. First, a F-test two sample for variances is done to determine if the variances are statistically equal. Second, a t-test is done to determine if the means are statistically equal.

Current research and Guigard (1999)

Table A.1 gives the solubility data from this research and Guigard (1999) at 10.34MPa and 40°C.

Table A.1 Guigard (1999) and current research solubility data at 10.34MPa and 40°C

Solubility (mol/mol)	
Guigard (1999)	Current work
2.40E-06	1.76E-06
3.66E-06	8.38E-07
1.77E-06	1.63E-06
1.70E-06	
6.46E-06	

The F-test results are given in Table A.2. For this analysis, alpha was chosen to be 0.05.

Table A.2 Guigard (1999) and current research F-test results

	Guigard (1999)	*Current work*
Mean	0.000003198	1.40933E-06
Variance	3.94352E-12	2.49041E-13
Observations	5	3
df	4	2
F	15.83480118	
P(F<=f) one-tail	0.060282047	
F Critical one-tail	19.24672688	

Because $F_{calculated} < F_{critical}$, it can be concluded that the analysis fails to reject the hypothesis that the variances are equal. This indicates that the variances are statistically equal with a confidence interval of 95%.

Assuming that the variances are equal, it is possible to conduct a t-test to determine if the means are statistically equal. The results of the analysis are presented in Table A.3.

Table A.3 Guigard (1999) and current research t-test results

	Guigard (1999)	Current work
Mean	0.000003198	1.40933E-06
Variance	3.94352E-12	2.49041E-13
Observations	5	3
Pooled Variance	2.71203E-12	
Hypothesized Mean Difference	0	
df	6	
t Stat	1.487246777	
P(T<=t) one-tail	0.093754656	
t Critical one-tail	1.943180905	
P(T<=t) two-tail	0.187509312	
t Critical two-tail	2.446913641	

Because $t_{calculated} < t_{critical}$, it is possible to conclude that the test fails to reject the hypothesis that the means are equal. This indicates that the means of the two solubility data sets are statistically equal.

Current research and Stroich (2001)

Table A.4 gives the solubility data from this research and Stroich (2001) at 10.34 MPa and 40°C.

Table A.4 Stroich (2001) and current research solubility data at 10.34MPa and 40°C

Solubility (mol/mol)	
Stroich (2001)	Current work
1.57E-06	1.76E-06
9.89E-07	8.38E-07
1.61E-06	1.63E-06
3.08E-06	

The F-test results are given in Table A.5. For this analysis, alpha was chosen to be 0.05.

Table A.5 Stroich (2001) and current research F-test results

	Stroich (2001)	*Current work*
Mean	1.81225E-06	1.40933E-06
Variance	7.9484E-13	2.49041E-13
Observations	4	3
df	3	2
F	3.191599721	
P(F<=f) one-tail	0.247642398	
F Critical one-tail	19.16419023	

Because $F_{calculated} < F_{critical}$, it can be concluded that the analysis fails to reject the hypothesis that the variances are equal. This indicates that the variances are statistically equal with a confidence interval of 95%.

Assuming that the variances are equal, it is possible to conduct a t-test to determine if the means are statistically equal. The results of the analysis are presented in Table A.6.

Table A.6 Stroich (2001) and current research t-test results

	Stroich (2001)	*Current work*
Mean	1.81225E-06	1.40933E-06
Variance	7.9484E-13	2.49041E-13
Observations	4	3
Pooled Variance	5.76521E-13	
Hypothesized Mean Difference	0	
df	5	
t Stat	0.694783329	
P(T<=t) one-tail	0.259073418	
t Critical one-tail	2.015049176	
P(T<=t) two-tail	0.518146837	
t Critical two-tail	2.570577635	

Because $t_{calculated} < t_{critical}$, it is possible to conclude that the test fails to reject the hypothesis that the means are equal. This indicates that the means of the two solubility data sets are statistically equal.

APPENDIX B

APPENDIX B1

Appendix B1 **Sample spreadsheet of extraction experiment data**

2001-11-27-E.xls

Date: 2001-11-27

Wavelength 1: 490nm
Wavelength 2: 670nm

Sensitivity 1: 0.01AUFS
Sensitivity 2: 0.01AUFS

Comments: 1500psi, 40°C, 7.0549g sand spiked @ 56.5mg Cu^{2+}/kg soil, 0.1310g tta, 0.7mL water (10%), stir bar, about 225mL glass beads, pump A independent, flowmeter zero @ 0.05L/min, pressurize with first valve shut @ 250s(0L), open first valve to vessel @ 600s(0L), small leak @ outlet, flow coming out @ flowmeter ???, maybe 3-way valve is not working properly, switch valve after vessel to bypass line to stop flow, vessel pressurized @ 1100s(3L), bypass to zero UV @ 3600s(4L), with methanol @ 0.75mL/min and SC CO_2 @ 2-2.5mL/min, trap is orange???, zero UV anyway @ 4000s(14L), shut bypass @ 4300s(22L), shut valve before vessel, refill, pressurize with first valve shut @ 4550s(23L), , open first valve to vessel @ 5000s(23L), change trap 1 and 2 @ 6300s(23L), open valve after vessel @ 6500s(23L), change trap 1 @ 7400s(45L), change trap 1 @ 8300s(67L), change trap 1 @ 9200s(89L), change trap 1 @ 10100s(112L), temp in vessel went down suddenly??, change trap 1 @ 11000s(137L), change trap 1 @ 11900s(162L) and shut valve after vessel, change trap 2 @ 11950s(163L), shut valve before vessel and refill pump, pressurize with first valve shut @ 12350s(164L), open first valve to vessel @ 12700s(164L), temperature remains 2 degrees lower than water bath temperature, change trap 1 and 2 @ 17100s (164L), open valve after vessel @ 17300s(164L), change trap 1 @ 18200s(184L), change trap 1 @ 19100s(208L), change trap 1 @ 20000s(236L), change trap 1 @ 20900s(236L), going to run out of SC CO_2, shut valve before and after vessel @ 21450s(278L), stop pump and refill, pressurize with first valve shut @ 21650s(279L), open first valve to vessel @ 21950s(279L) and valve after vessel, change trap 1 @ 23200s (), and shut valve after vessel, change trap 2 @ 23250s(), shut valve before vessel, stop pump, depressurize vessel through top. Inside the vessel is a purple color and soil is a bit red. Traps are bright orange.

Scan#	Time (s)	Pump P (psi)	Pump F (ml/min)	Transd. P (psi)	Temp. C	UV1 (AU)	UV2 (AU)	UV3	F (L/min)	Total F (L)	Pump F A (mL/min)	Pump F B (mL/min)	Pump P A (psi)	Pump P B (psi)
0	10.71	693	0.00	161.12	31.05	-0.36304	-0.48027	0.04824	0.037	0.006	0.00	0.00	693	695
1	20.32	693	0.00	113.53	31.24	-0.3625	-0.48179	0.04761	0.034	0.012	0.00	0.00	693	695
2	31.14	693	0.00	124.04	31.33	-0.36431	-0.48291	0.04819	0.034	0.018	0.00	0.00	693	695
3	40.76	693	0.00	112.32	31.42	-0.36553	-0.48394	0.04546	0.037	0.024	0.00	0.00	693	695
4	50.31	693	0.00	102.03	31.61	-0.36523	-0.48438	0.04409	0.034	0.029	0.00	0.00	693	695
5	61.13	693	0.00	116.28	31.79	-0.36582	-0.48667	0.04658	0.034	0.035	0.00	0.00	693	695
6	70.75	693	0.00	114.93	31.89	-0.36597	-0.48672	0.04834	0.032	0.040	0.00	0.00	693	695
7	80.36	693	0.00	64.63	31.98	-0.36626	-0.48794	0.04214	0.034	0.046	0.00	0.00	693	695
8	91.12	693	0.00	86.88	32.17	-0.36719	-0.48799	0.04243	0.034	0.052	0.00	0.00	693	695
9	100.74	693	0.00	132.57	32.27	-0.36694	-0.48906	0.04243	0.037	0.058	0.00	0.00	693	695
10	110.35	806	0.00	111.08	32.36	-0.36787	-0.48999	0.04229	0.034	0.063	0.00	0.00	806	773
11	121.11	806	-204.08	118.55	32.46	-0.36855	-0.49209	0.04736	0.034	0.069	-204.09	0.00	806	773
12	130.72	806	-203.96	109.80	32.65	-0.3686	-0.49233	0.04473	0.034	0.075	-204.03	0.00	806	773
13	140.34	805	-204.09	100.39	32.75	-0.36963	-0.49375	0.04395	0.034	0.081	-204.08	0.00	805	772
14	151.1	804	-203.85	105.94	32.85	-0.37021	-0.49453	0.04443	0.034	0.086	-204.04	0.00	804	771
15	160.71	803	-204.10	114.81	33.04	-0.37036	-0.49614	0.04365	0.034	0.092	-204.06	0.00	803	770
16	170.33	802	-204.10	113.12	33.14	-0.37085	-0.49712	0.03926	0.034	0.098	-203.71	0.00	802	769
17	181.09	801	-204.06	120.81	33.24	-0.37065	-0.49883	0.04629	0.034	0.103	-204.06	0.00	801	768
18	190.7	800	-204.07	117.00	33.34	-0.37261	-0.49893	0.04404	0.034	0.109	-203.64	0.00	800	767
19	200.32	803	0.00	109.54	33.44	-0.37236	-0.49995	0.04399	0.034	0.115	0.00	0.00	803	769
20	211.14	803	0.00	122.94	33.54	-0.37236	-0.5002	0.0458	0.032	0.120	0.00	0.00	803	769
21	220.69	803	0.00	77.99	33.64	-0.37314	-0.50024	0.04561	0.034	0.126	0.00	0.00	803	769
22	230.3	803	0.00	111.14	33.74	-0.3729	-0.50161	0.04443	0.034	0.131	0.00	0.00	803	769
23	241.12	803	0.00	113.38	33.84	-0.37275	-0.50137	0.04146	0.034	0.137	0.00	0.00	803	769
24	250.68	804	2.21	104.60	33.94	-0.37256	-0.50005	0.0416	0.034	0.143	178.89	0.00	808	774
25	260.29	831	196.93	118.55	34.04	-0.373	-0.5021	0.04399	0.037	0.149	197.17	0.00	834	797
26	271.11	856	196.93	102.39	34.14	-0.37397	-0.50176	0.04565	0.034	0.155	196.93	0.00	859	821
27	280.67	880	196.93	113.32	34.25	-0.37354	-0.50288	0.03955	0.037	0.161	196.49	0.00	884	846
28	290.28	928	196.45	103.01	34.35	-0.37402	-0.50347	0.04287	0.032	0.166	196.10	0.00	935	807
29	301.1	994	195.98	114.08	34.45	-0.3752	-0.50376	0.03682	0.034	0.172	195.98	0.00	1005	797
30	310.72	1080	195.03	115.80	34.56	-0.37432	-0.50435	0.04346	0.034	0.177	194.65	0.00	1092	791

31	320.27	1336	193.12	114.20	34.56	-0.37524	-0.50483	0.04243	0.037	0.184	192.16	0.00	1433	787
32	331.09	1573	7.86	119.38	34.66	-0.37603	-0.50601	0.04185	0.029	0.188	7.12	0.00	1552	784
33	340.7	1490	12.85	111.93	34.76	-0.37666	-0.50767	0.04458	0.034	0.194	12.91	0.00	1500	781
34	350.26	1500	8.53	112.46	34.87	-0.37603	-0.50659	0.04521	0.034	0.200	7.61	0.00	1500	779
35	361.08	1500	5.96	112.49	34.87	-0.37568	-0.50894	0.04229	0.032	0.205	5.84	0.00	1500	776
36	370.69	1500	4.99	112.34	34.97	-0.37661	-0.50664	0.04272	0.032	0.210	4.89	0.00	1500	774
37	380.31	1500	4.22	108.68	35.08	-0.377	-0.50923	0.04409	0.037	0.216	4.12	0.00	1500	773
38	391.07	1500	4.59	117.91	35.19	-0.37729	-0.50923	0.04644	0.034	0.222	4.07	0.00	1500	772
39	400.68	1500	3.17	110.10	35.19	-0.37739	-0.50967	0.04556	0.032	0.227	3.17	0.00	1500	772
40	410.3	1500	2.92	108.91	35.29	-0.37803	-0.50825	0.0436	0.034	0.233	2.85	0.00	1500	772
41	421.06	1500	2.60	99.74	35.40	-0.37681	-0.51104	0.04336	0.032	0.238	2.57	0.00	1500	772
42	430.67	1500	2.37	115.77	35.51	-0.37798	-0.51157	0.04355	0.032	0.244	2.36	0.00	1500	772
43	440.28	1500	2.21	117.52	35.51	-0.3791	-0.51133	0.0418	0.034	0.249	2.18	0.00	1500	772
44	451.05	1500	2.04	112.15	35.61	-0.37837	-0.51196	0.04492	0.029	0.254	2.01	0.00	1500	772
45	460.66	1500	1.89	111.67	35.72	-0.37925	-0.51382	0.0395	0.029	0.259	1.88	0.00	1500	772
46	470.27	1500	1.77	117.10	35.72	-0.37925	-0.51475	0.04409	0.044	0.267	1.76	0.00	1500	772
47	481.09	1500	1.65	109.54	35.83	-0.38076	-0.51587	0.04307	0.029	0.271	1.65	0.00	1500	772
48	490.65	1500	1.58	108.35	35.83	-0.38179	-0.51763	0.04263	0.032	0.277	1.56	0.00	1500	772
49	500.26	1500	1.48	109.15	35.94	-0.38125	-0.51714	0.04399	0.034	0.282	1.46	0.00	1500	772
50	511.08	1500	1.39	111.99	36.05	-0.38208	-0.51992	0.04497	0.034	0.288	1.38	0.00	1500	772
51	520.64	1500	1.32	106.46	36.05	-0.38369	-0.52158	0.04888	0.029	0.293	1.30	0.00	1500	772
52	530.25	1500	1.26	116.70	36.16	-0.38232	-0.52061	0.04683	0.032	0.298	1.23	0.00	1500	772
53	541.07	1500	1.18	117.66	36.27	-0.38296	-0.52192	0.0437	0.032	0.304	1.17	0.00	1500	772
54	550.63	1500	1.13	117.58	36.27	-0.3832	-0.52378	0.04385	0.034	0.309	1.11	0.00	1500	772
55	560.24	1500	1.06	117.00	36.38	-0.38428	-0.52275	0.04268	0.032	0.315	1.04	0.00	1500	772
56	571.06	1500	1.01	99.57	36.38	-0.38428	-0.52466	0.04307	0.037	0.321	0.99	0.00	1500	772
57	580.67	1500	0.95	109.79	36.49	-0.38452	-0.52432	0.04624	0.034	0.326	0.95	0.00	1500	772
58	590.23	1500	0.92	105.69	36.49	-0.38462	-0.52593	0.04233	0.037	0.332	0.90	0.00	1500	772
59	601.05	1500	0.86	112.98	36.60	-0.38574	-0.52637	0.04692	0.034	0.338	0.86	0.00	1500	772
60	610.66	1398	78.94	1021.49	37.63	-0.61714	-0.61753	0.04282	0.029	0.343	82.00	0.00	1418	772
61	620.28	1500	79.96	1152.22	39.30	-1.12266	-1.1188	0.04844	0.034	0.349	77.88	0.00	1500	772
62	631.04	1500	71.37	1234.48	41.09	-1.12178	-1.11514	0.04502	0.034	0.354	69.60	0.00	1500	772
63	640.65	1500	63.61	1320.15	42.45	-1.12144	-1.11592	0.04297	0.037	0.361	62.29	0.00	1500	772

64	650.26	1500	57.43	1360.47	43.44	-0.32095	-0.23242	0.04385	0.037	0.367	56.13	0.00	1500	772
65	661.03	1500	50.99	1394.68	44.17	-0.70767	-0.63188	0.04268	0.034	0.372	50.70	0.00	1500	772
66	670.64	1500	46.48	1427.39	44.32	-0.77373	-0.70205	0.04292	0.039	0.379	45.97	0.00	1500	772
67	680.25	1500	42.40	1447.69	44.17	-0.85776	-0.86484	0.04434	0.168	0.407	41.93	0.00	1500	771
68	691.02	1500	38.32	1465.42	43.87	-0.5896	-0.51445	0.04375	0.073	0.419	37.47	0.00	1500	771
69	700.63	1500	34.51	1480.74	43.73	-1.07334	-1.06787	0.04736	0.107	0.437	33.78	0.00	1500	771
70	710.24	1500	30.56	1500.56	43.73	-0.35386	-0.1584	0.04282	0.178	0.467	29.66	0.00	1500	771
71	721.01	1500	25.01	1508.92	43.58	-0.34287	-0.12075	0.04438	0.205	0.501	24.77	0.00	1500	771
72	730.62	1500	20.58	1535.55	43.73	-0.41602	-0.28325	0.04277	0.405	0.568	20.16	0.00	1500	771
73	740.23	1500	15.67	1543.07	43.58	-0.89468	-0.79316	0.04653	0.513	0.654	15.10	0.00	1500	771
74	751.05	1500	11.18	1555.58	43.29	-0.30493	-0.1188	0.04351	0.630	0.759	10.88	0.00	1500	771
75	760.61	1500	8.25	1561.36	43.15	-0.59946	-0.48154	0.03779	0.698	0.875	8.02	0.00	1500	771
76	770.22	1500	6.04	1560.34	42.87	-0.72622	-0.65068	0.0481	0.696	0.991	5.73	0.00	1500	771
77	781.04	1500	5.02	1555.55	42.59	-0.74678	-0.68774	0.0459	0.662	1.101	4.96	0.00	1500	771
78	790.6	1500	4.96	1565.26	42.31	-0.78682	-0.74189	0.04263	0.762	1.228	5.05	0.00	1500	771
79	800.21	1500	4.96	1568.51	42.17	-0.82783	-0.79824	0.04453	0.830	1.367	4.91	0.00	1500	771
80	811.03	1500	4.44	1552.25	42.03	-0.8355	-0.74028	0.04399	0.896	1.516	4.40	0.00	1500	771
81	820.64	1500	4.13	1561.68	41.90	-0.57754	-0.38384	0.04282	0.879	1.663	4.11	0.00	1500	771
82	830.2	1500	3.84	1564.53	41.76	-0.35469	-0.14971	0.04009	0.864	1.807	3.80	0.00	1500	771
83	841.02	1500	3.61	1570.55	41.49	-0.62681	-0.78081	0.04795	0.845	1.947	3.89	0.00	1500	771
84	850.63	1500	4.28	1569.13	41.36	-0.71616	-0.84277	0.0418	0.835	2.087	4.19	0.00	1500	771
85	860.19	1500	3.13	1562.02	41.36	-0.77041	-0.87563	0.04448	0.842	2.227	3.02	0.00	1500	771
86	871.01	1500	2.90	1560.25	41.22	-0.75537	-0.86504	0.04082	0.811	2.362	2.91	0.00	1500	771
87	880.62	1500	2.78	1558.89	41.09	-0.75405	-0.86387	0.04365	0.803	2.496	2.76	0.00	1500	771
88	890.18	1500	2.64	1566.61	41.09	-0.80181	-0.8897	0.04888	0.789	2.627	2.62	0.00	1500	771
89	901	1500	2.50	1564.63	40.96	-0.78413	-0.86162	0.04087	0.779	2.757	2.49	0.00	1500	771
90	910.61	1500	2.39	1566.52	40.96	-0.85283	-0.89106	0.04448	0.769	2.885	2.39	0.00	1500	770
91	920.22	1500	2.33	1561.49	40.83	-1.00322	-1.00293	0.04673	0.745	3.009	2.30	0.00	1500	770
92	930.99	1500	2.20	1568.75	40.70	-1.01265	-1.01499	0.04478	0.708	3.127	2.18	0.00	1500	770
93	940.6	1500	2.12	1565.17	40.83	-1.01812	-1.02241	0.04292	0.676	3.240	2.10	0.00	1500	770
94	950.32	1500	2.00	1562.80	40.70	-1.02173	-1.02705	0.04399	0.654	3.349	2.00	0.00	1500	770
95	961.09	1500	1.93	1559.63	40.57	-1.02749	-1.03433	0.04282	0.635	3.455	1.91	0.00	1500	770
96	970.7	1500	1.81	1572.47	40.57	-1.03149	-1.03862	0.04614	0.605	3.556	1.80	0.00	1500	770

97	980.31	1500	1.76	1564.54	40.57	-1.02998	-1.0356	0.04194	0.579	3.652	1.78	0.00	1500	770
98	991.08	1500	1.25	1563.13	40.44	-1.01372	-1.02803	0.04087	0.547	3.743	1.11	0.00	1500	770
99	1000.69	1500	0.35	1556.78	40.44	-1.0064	-1.02373	0.04219	0.500	3.827	0.40	0.00	1500	770
100	1010.3	1500	0.60	1560.76	40.31	-1.00513	-1.02188	0.04233	0.457	3.903	0.60	0.00	1500	770
101	1021.07	1500	0.53	1554.45	40.31	-1.00127	-1.01846	0.04248	0.413	3.972	0.53	0.00	1500	770
102	1030.68	1500	0.55	1568.10	40.31	-0.99961	-1.01948	0.04346	0.396	4.038	0.55	0.00	1500	770
103	1040.29	1500	0.52	1565.01	40.18	-0.60874	-0.66782	0.04146	0.369	4.099	0.51	0.00	1500	770
104	1051.06	1500	0.51	1558.20	40.18	0.17812	0.10356	0.05815	0.325	4.153	0.51	0.00	1500	770
105	1060.67	1500	0.47	1571.65	40.18	-0.87241	-0.85493	0.04316	0.320	4.207	0.46	0.00	1500	770
106	1070.28	1500	0.52	1563.74	40.06	-0.89629	-0.89277	0.04248	0.269	4.251	0.52	0.00	1500	770
107	1081.1	1500	0.50	1564.72	40.06	-0.88345	-0.877	0.0439	0.239	4.291	0.47	0.00	1500	770
108	1090.66	1500	0.45	1564.01	40.06	-0.9481	-0.93242	0.0394	0.264	4.335	0.45	0.00	1500	770
109	1100.27	1500	0.46	1566.56	40.06	-1.01357	-1.00127	0.04463	0.244	4.376	0.46	0.00	1500	770
110	1111.09	1500	0.44	1568.95	40.06	-1.0394	-1.03223	0.04043	0.232	4.414	0.45	0.00	1500	770
111	1120.65	1500	0.43	1566.36	39.93	-1.04956	-1.04668	0.04106	0.244	4.455	0.42	0.00	1500	770
112	1130.26	1500	0.39	1560.00	39.93	-1.05991	-1.06177	0.04219	0.234	4.494	0.39	0.00	1500	770
113	1141.08	1500	0.44	1569.68	39.93	-1.06587	-1.07017	0.04346	0.225	4.532	0.44	0.00	1500	769
114	1150.69	1500	0.42	1569.57	39.93	-1.07305	-1.08076	0.04263	0.225	4.569	0.43	0.00	1500	769
115	1160.25	1500	0.41	1568.12	39.93	-1.07568	-1.0835	0.04512	0.222	4.606	0.40	0.00	1500	769
116	1171.07	1500	0.40	1572.22	39.80	-1.07695	-1.08491	0.04312	0.205	4.640	0.40	0.00	1500	769
117	1180.68	1500	0.42	1568.55	39.80	-1.07793	-1.08521	0.04331	0.198	4.673	0.43	0.00	1500	769
118	1190.24	1500	0.40	1568.76	39.80	-1.0771	-1.08545	0.04448	0.190	4.705	0.39	0.00	1500	769
119	1201.06	1500	0.41	1570.75	39.80	-1.075	-1.0835	0.04819	0.188	4.736	0.39	0.00	1500	769
120	1210.67	1500	0.41	1562.68	39.93	-1.07485	-1.08262	0.04351	0.188	4.768	0.41	0.00	1500	769
121	1220.28	1500	0.37	1568.80	39.80	-1.07412	-1.08164	0.04399	0.146	4.792	0.38	0.00	1500	769
122	1231.05	1500	0.41	1561.96	39.93	-1.07319	-1.08013	0.04707	0.132	4.814	0.39	0.00	1500	769
123	1240.66	1500	0.37	1560.72	39.93	-1.07207	-1.08032	0.0436	0.129	4.836	0.37	0.00	1500	769
124	1250.27	1500	0.35	1570.99	39.93	-1.07217	-1.08071	0.04478	0.129	4.857	0.36	0.00	1500	769
125	1261.04	1500	0.36	1567.98	39.80	-1.07227	-1.07954	0.04053	0.132	4.879	0.37	0.00	1500	769
126	1270.65	1500	0.30	1565.86	39.80	-1.07183	-1.08003	0.04561	0.134	4.902	0.28	0.00	1500	769
127	1280.26	1500	0.34	1568.00	39.80	-1.07104	-1.07886	0.04219	0.137	4.924	0.31	0.00	1500	769
128	1291.03	1500	0.31	1565.64	39.80	-1.07109	-1.07969	0.04136	0.139	4.948	0.31	0.00	1500	769
129	1300.64	1500	0.34	1569.29	39.80	-1.07148	-1.08018	0.04233	0.137	4.970	0.33	0.00	1500	769

130	1310.25	1500	0.31	1571.15	39.80	-1.07129	-1.08018	0.04331	0.139	4.993	0.32	0.00	1500	769
131	1321.01	1500	0.31	1569.26	39.80	-1.07192	-1.08018	0.04199	0.142	5.017	0.31	0.00	1500	769
132	1330.63	1500	0.33	1569.08	39.80	-1.07197	-1.08013	0.0418	0.142	5.041	0.33	0.00	1500	769
133	1340.24	1500	0.32	1566.59	39.80	-1.0708	-1.08018	0.04092	0.142	5.064	0.34	0.00	1500	769
134	1351.06	1500	0.35	1571.70	39.80	-1.0709	-1.07974	0.046	0.142	5.088	0.34	0.00	1500	769
135	1360.62	1500	0.32	1565.82	39.68	-1.07051	-1.07959	0.04272	0.139	5.111	0.32	0.00	1500	769
136	1370.23	1500	0.17	1570.87	39.68	-1.06909	-1.07817	0.04253	0.134	5.133	0.14	0.00	1500	769
137	1381.05	1500	0.16	1562.72	39.68	-1.06855	-1.07627	0.04409	0.129	5.155	0.17	0.00	1500	769
138	1390.61	1500	0.21	1559.49	39.68	-1.06772	-1.075	0.03755	0.120	5.175	0.22	0.00	1500	769
139	1400.22	1500	0.24	1565.71	39.68	-1.06606	-1.07344	0.04185	0.117	5.195	0.24	0.00	1500	768
140	1411.04	1500	0.24	1568.85	39.68	-1.06265	-1.06968	0.04102	0.107	5.212	0.24	0.00	1500	769
141	1420.65	1500	0.25	1573.11	39.68	-1.0603	-1.06582	0.04565	0.100	5.229	0.25	0.00	1500	768
142	1430.21	1500	0.24	1565.41	39.68	-1.05884	-1.06245	0.04717	0.095	5.245	0.24	0.00	1500	768
143	1441.03	1500	0.23	1566.01	39.68	-1.05488	-1.05762	0.04536	0.090	5.260	0.23	0.00	1500	768
144	1450.64	1500	0.23	1573.17	39.68	-1.05332	-1.05342	0.04458	0.085	5.274	0.23	0.00	1500	768
145	1460.2	1500	0.23	1571.03	39.68	-1.03301	-1.02598	0.046	0.081	5.288	0.24	0.00	1500	768
146	1471.02	1500	0.22	1564.48	39.68	-0.96543	-0.95259	0.04287	0.076	5.300	0.22	0.00	1500	768
147	1480.63	1500	0.24	1559.22	39.68	-0.95098	-0.93721	0.04434	0.076	5.313	0.24	0.00	1500	768
148	1490.24	1500	0.22	1566.42	39.55	-0.94995	-0.93701	0.04438	0.068	5.324	0.22	0.00	1500	768
149	1501.01	1500	0.21	1569.08	39.68	-0.94937	-0.93672	0.04409	0.071	5.336	0.21	0.00	1500	768
150	1510.62	1500	0.22	1563.75	39.68	-0.94863	-0.93818	0.0436	0.063	5.347	0.23	0.00	1500	768
151	1520.23	1500	0.22	1566.65	39.68	-0.9481	-0.93623	0.04429	0.063	5.357	0.22	0.00	1500	768
152	1530.99	1500	0.20	1571.62	39.68	-0.94771	-0.93516	0.04492	0.059	5.367	0.20	0.00	1500	768
153	1540.61	1500	0.20	1570.78	39.68	-0.94683	-0.93521	0.04229	0.061	5.377	0.20	0.00	1500	768
154	1550.22	1500	0.19	1570.80	39.55	-0.94663	-0.93452	0.04546	0.054	5.386	0.19	0.00	1500	768
155	1560.98	1500	0.20	1568.28	39.55	-0.94629	-0.93447	0.04106	0.056	5.396	0.20	0.00	1500	768
156	1570.6	1500	0.19	1567.41	39.55	-0.94639	-0.93394	0.0458	0.054	5.404	0.19	0.00	1500	768
157	1580.21	1500	0.19	1565.36	39.55	-0.94561	-0.93374	0.04839	0.051	5.413	0.19	0.00	1500	768
158	1590.97	1500	0.18	1566.84	39.68	-0.94507	-0.93394	0.04556	0.049	5.421	0.19	0.00	1500	768
159	1600.59	1500	0.19	1566.52	39.55	-0.94517	-0.93306	0.04712	0.049	5.429	0.19	0.00	1500	768
160	1610.31	1500	0.18	1567.51	39.55	-0.94502	-0.93213	0.04248	0.049	5.437	0.18	0.00	1500	768
161	1621.07	1500	0.17	1565.68	39.68	-0.94561	-0.93237	0.04316	0.046	5.445	0.17	0.00	1500	768
162	1630.68	1500	0.18	1578.71	39.68	-0.94463	-0.93223	0.04243	0.044	5.452	0.17	0.00	1500	768

163	1640.3	1500	0.14	1571.85	39.68	-0.94482	-0.93271	0.0416	0.046	5.460	0.14	0.00	1500	768
164	1651.12	1500	0.14	1566.08	39.55	-0.94448	-0.93242	0.04014	0.044	5.468	0.14	0.00	1500	768
165	1660.67	1500	0.15	1572.10	39.55	-0.94443	-0.93232	0.04497	0.046	5.475	0.14	0.00	1500	768
166	1670.29	1500	0.13	1578.06	39.55	-0.9438	-0.93384	0.0394	0.044	5.483	0.13	0.00	1500	768
167	1681.11	1500	0.09	1573.05	39.55	-0.94521	-0.93271	0.04585	0.042	5.490	0.09	0.00	1500	767
168	1690.66	1500	0.09	1575.41	39.55	-0.94448	-0.93198	0.04512	0.042	5.496	0.09	0.00	1500	767
169	1700.28	1500	0.09	1574.53	39.55	-0.94326	-0.93301	0.04072	0.042	5.503	0.09	0.00	1500	767
170	1711.1	1500	0.09	1571.22	39.55	-0.9438	-0.93291	0.04419	0.042	5.510	0.09	0.00	1500	767
171	1720.71	1500	0.08	1568.47	39.55	-0.9437	-0.93286	0.04146	0.039	5.517	0.08	0.00	1500	767
172	1730.26	1500	0.07	1575.85	39.55	-0.94399	-0.9311	0.04521	0.042	5.524	0.06	0.00	1500	767
173	1741.09	1500	0.04	1570.83	39.55	-0.94312	-0.93101	0.04253	0.042	5.531	0.04	0.00	1500	767
174	1750.7	1500	0.06	1574.81	39.55	-0.94341	-0.93193	0.04463	0.042	5.538	0.05	0.00	1500	767
175	1760.25	1500	0.04	1567.53	39.55	-0.94272	-0.93149	0.03896	0.042	5.544	0.04	0.00	1500	767
176	1771.07	1500	0.04	1574.09	39.68	-0.94346	-0.93154	0.04414	0.039	5.551	0.04	0.00	1500	767
177	1780.69	1500	0.04	1574.08	39.55	-0.94351	-0.9314	0.04326	0.037	5.557	0.04	0.00	1500	767
178	1790.24	1500	0.04	1571.92	39.68	-0.94292	-0.93145	0.03955	0.039	5.564	0.04	0.00	1500	767
179	1801.06	1500	0.04	1569.33	39.55	-0.94268	-0.93188	0.0418	0.037	5.570	0.04	0.00	1500	767
180	1810.68	1500	0.04	1571.54	39.55	-0.94341	-0.93184	0.04092	0.039	5.576	0.03	0.00	1500	767
181	1820.29	1500	0.04	1566.50	39.55	-0.94346	-0.93169	0.04336	0.039	5.583	0.04	0.00	1500	767
182	1831.05	1500	0.04	1571.75	39.55	-0.94253	-0.93032	0.04478	0.034	5.588	0.04	0.00	1500	767
183	1840.66	1500	0.03	1574.22	39.55	-0.94277	-0.93086	0.04321	0.039	5.595	0.04	0.00	1500	767
184	1850.28	1500	0.04	1566.30	39.55	-0.94268	-0.93037	0.046	0.034	5.601	0.04	0.00	1500	767
185	1861.15	1500	0.03	1577.02	39.55	-0.94302	-0.93125	0.04136	0.034	5.606	0.04	0.00	1500	767
186	1870.76	1500	0.03	1573.70	39.55	-0.94219	-0.93032	0.03853	0.039	5.613	0.03	0.00	1500	767
187	1880.38	1500	0.03	1571.75	39.55	-0.94302	-0.93101	0.04355	0.037	5.619	0.03	0.00	1500	767
188	1891.14	1500	0.03	1572.61	39.55	-0.94277	-0.93027	0.04097	0.037	5.625	0.03	0.00	1500	767
189	1900.75	1500	0.04	1570.28	39.55	-0.94302	-0.93145	0.04424	0.037	5.631	0.03	0.00	1500	767
190	1910.37	1500	0.03	1580.08	39.55	-0.94307	-0.93096	0.04541	0.037	5.637	0.03	0.00	1500	767
191	1921.13	1500	0.03	1569.90	39.68	-0.94233	-0.93071	0.04619	0.037	5.643	0.03	0.00	1500	767
192	1930.74	1500	0.03	1573.83	39.68	-0.94214	-0.92949	0.04717	0.037	5.649	0.03	0.00	1500	766
193	1940.35	1500	0.03	1571.81	39.68	-0.94253	-0.93101	0.04268	0.034	5.655	0.03	0.00	1500	766
194	1951.18	1500	0.03	1575.70	39.68	-0.94316	-0.93115	0.04575	0.037	5.661	0.03	0.00	1500	766
195	1960.73	1500	0.03	1578.63	39.80	-0.94238	-0.93076	0.04243	0.034	5.667	0.03	0.00	1500	766

196	1970.34	1500	0.03	1579.53	39.68	-0.94185	-0.93135	0.04048	0.037	5.673	0.03	0.00	1500	766
197	1981.16	1500	0.03	1578.12	39.68	-0.94302	-0.93101	0.04165	0.037	5.679	0.03	0.00	1500	766
198	1990.72	1500	0.03	1582.21	39.68	-0.94297	-0.93008	0.04307	0.034	5.685	0.03	0.00	1500	766
199	2000.33	1500	0.03	1574.05	39.80	-0.94219	-0.93125	0.04492	0.037	5.691	0.02	0.00	1500	766
200	2011.15	1500	0.03	1572.51	39.80	-0.94194	-0.92988	0.04614	0.034	5.697	0.03	0.00	1500	766
201	2020.71	1500	0.03	1572.70	39.80	-0.94248	-0.93042	0.04233	0.034	5.702	0.03	0.00	1500	766
202	2030.32	1500	0.03	1576.99	39.80	-0.94189	-0.93018	0.04268	0.037	5.708	0.03	0.00	1500	766
203	2041.14	1500	0.03	1582.78	39.68	-0.94287	-0.9314	0.04668	0.037	5.715	0.02	0.00	1500	766
204	2050.75	1500	0.02	1579.61	39.80	-0.94248	-0.93105	0.04219	0.034	5.720	0.03	0.00	1500	766
205	2060.31	1500	0.03	1579.61	39.80	-0.94243	-0.93027	0.04434	0.032	5.726	0.03	0.00	1500	766
206	2071.13	1500	0.03	1576.79	39.80	-0.9417	-0.92988	0.04482	0.037	5.732	0.02	0.00	1500	766
207	2080.74	1500	0.03	1581.58	39.80	-0.9415	-0.92988	0.04653	0.037	5.738	0.03	0.00	1500	766
208	2090.3	1500	0.02	1574.96	39.80	-0.94243	-0.93062	0.04541	0.034	5.743	0.07	0.00	1500	766
209	2101.12	1500	-0.04	1577.55	39.68	-0.94199	-0.93027	0.04346	0.034	5.749	-0.03	0.00	1500	766
210	2110.73	1500	0.06	1577.31	39.80	-0.94224	-0.9311	0.04009	0.034	5.755	0.05	0.00	1500	766
211	2120.35	1500	0.03	1579.44	39.80	-0.94209	-0.93013	0.04829	0.032	5.760	0.02	0.00	1500	766
212	2131.11	1500	0.03	1584.07	39.80	-0.9418	-0.93052	0.04224	0.034	5.766	0.02	0.00	1500	766
213	2140.72	1500	0.03	1583.70	39.80	-0.94126	-0.9293	0.04121	0.034	5.771	0.02	0.00	1500	766
214	2150.33	1500	0.02	1587.44	39.80	-0.94199	-0.93022	0.04028	0.032	5.777	0.02	0.00	1500	766
215	2161.1	1500	0.02	1581.74	39.68	-0.94243	-0.9311	0.04121	0.037	5.783	0.03	0.00	1500	766
216	2170.71	1500	0.03	1576.77	39.93	-0.94253	-0.93022	0.04834	0.034	5.789	0.02	0.00	1500	766
217	2180.32	1500	0.02	1583.00	39.80	-0.94155	-0.93037	0.04321	0.034	5.794	0.02	0.00	1500	766
218	2191.09	1500	0.02	1581.36	39.80	-0.94155	-0.93042	0.0438	0.034	5.800	0.02	0.00	1500	766
219	2200.7	1500	0.02	1588.30	39.80	-0.9417	-0.93003	0.04731	0.032	5.805	0.02	0.00	1500	766
220	2210.31	1500	0.03	1583.85	39.80	-0.94126	-0.93027	0.04434	0.034	5.811	0.02	0.00	1500	766
221	2221.08	1500	0.02	1575.76	39.93	-0.94131	-0.93032	0.04155	0.032	5.816	0.02	0.00	1500	766
222	2230.69	1500	0.02	1580.82	39.93	-0.94131	-0.9293	0.04692	0.032	5.822	0.02	0.00	1500	765
223	2240.3	1500	0.02	1584.43	39.93	-0.94146	-0.92998	0.04243	0.034	5.827	0.02	0.00	1500	765
224	2251.12	1500	0.02	1582.84	39.80	-0.94082	-0.93027	0.04473	0.034	5.833	0.02	0.00	1500	765
225	2260.68	1500	0.03	1583.00	39.93	-0.94053	-0.93032	0.03896	0.032	5.838	0.02	0.00	1500	765
226	2270.29	1500	0.02	1585.96	39.93	-0.94077	-0.93076	0.04541	0.032	5.844	0.03	0.00	1500	765
227	2281.11	1500	0.02	1591.22	39.93	-0.9416	-0.92944	0.04785	0.034	5.849	0.10	0.00	1500	765
228	2290.67	1500	0.01	1580.90	39.93	-0.94121	-0.93013	0.04385	0.032	5.854	0.00	0.00	1500	765

229	2300.28	1500	0.00	1584.52	39.93	-0.94155	-0.92876	0.04248	0.032	5.860	0.01	0.00	1500	765
230	2311.1	1500	0.02	1588.33	39.93	-0.94111	-0.92876	0.03979	0.034	5.865	0.02	0.00	1500	765
231	2320.71	1500	0.01	1586.37	39.93	-0.9417	-0.92896	0.04268	0.032	5.871	0.02	0.00	1500	765
232	2330.27	1500	0.02	1587.19	39.93	-0.94146	-0.92988	0.04375	0.032	5.876	0.02	0.00	1500	765
233	2341.09	1500	0.02	1587.08	39.93	-0.94136	-0.92876	0.04497	0.032	5.881	0.02	0.00	1500	765
234	2350.7	1500	0.02	1590.73	39.93	-0.94121	-0.92959	0.04438	0.032	5.887	0.02	0.00	1500	765
235	2360.26	1500	0.01	1587.63	39.93	-0.94189	-0.92944	0.04365	0.034	5.892	0.02	0.00	1500	765
236	2371.08	1500	0.01	1590.12	40.06	-0.94126	-0.92905	0.04585	0.029	5.897	0.01	0.00	1500	765
237	2380.69	1500	0.02	1588.13	39.93	-0.94229	-0.92954	0.04111	0.032	5.903	0.02	0.00	1500	765
238	2390.3	1500	0.01	1595.24	40.06	-0.94141	-0.92866	0.04678	0.032	5.908	0.02	0.00	1500	765
239	2401.07	1500	0.01	1587.95	40.18	-0.94214	-0.92949	0.04575	0.034	5.913	0.02	0.00	1500	765
240	2410.68	1500	0.02	1593.12	40.06	-0.94141	-0.92964	0.04326	0.032	5.919	0.01	0.00	1500	765
241	2420.29	1500	0.02	1592.50	40.06	-0.94038	-0.9293	0.04097	0.032	5.924	0.01	0.00	1500	765
242	2431.06	1500	0.01	1594.83	40.06	-0.94141	-0.92983	0.04321	0.032	5.929	0.01	0.00	1500	765
243	2440.67	1500	0.02	1590.98	40.06	-0.94058	-0.92822	0.04507	0.032	5.935	0.03	0.00	1500	765
244	2450.28	1500	0.01	1592.12	40.06	-0.94063	-0.92954	0.0457	0.029	5.940	0.01	0.00	1500	765
245	2461.05	1500	0.02	1594.58	40.18	-0.9416	-0.92988	0.04673	0.034	5.945	0.01	0.00	1500	765
246	2470.66	1500	0.01	1588.49	40.18	-0.94224	-0.92959	0.04512	0.032	5.951	0.01	0.00	1500	765
247	2480.27	1500	0.01	1589.91	40.18	-0.94189	-0.93032	0.04126	0.029	5.955	0.01	0.00	1500	765
248	2491.09	1500	0.01	1597.06	40.18	-0.94209	-0.9293	0.04531	0.032	5.961	0.01	0.00	1500	765
249	2500.65	1500	0.01	1590.98	40.06	-0.94277	-0.92969	0.04351	0.032	5.966	0.00	0.00	1500	765
250	2510.26	1500	0.01	1586.19	40.18	-0.94146	-0.92935	0.04194	0.029	5.971	0.01	0.00	1500	765
251	2521.14	1500	0.01	1591.13	40.18	-0.94141	-0.92993	0.04268	0.029	5.976	0.01	0.00	1500	765
252	2530.75	1500	0.01	1589.72	40.18	-0.94258	-0.93037	0.0418	0.032	5.981	0.00	0.00	1500	765
253	2540.36	1500	0.00	1594.94	40.18	-0.94155	-0.93062	0.03989	0.032	5.986	0.00	0.00	1500	765
254	2551.18	1500	0.00	1594.69	40.18	-0.94243	-0.93042	0.0436	0.032	5.992	0.00	0.00	1500	764
255	2560.74	1500	0.00	1597.50	40.18	-0.94272	-0.93057	0.03999	0.032	5.997	0.00	0.00	1500	764
256	2570.35	1500	0.00	1591.36	40.18	-0.94316	-0.93125	0.04839	0.032	6.002	0.00	0.00	1500	764
257	2581.17	1500	0.01	1599.27	40.18	-0.94165	-0.93086	0.03857	0.032	6.007	0.00	0.00	1500	764
258	2590.73	1500	0.00	1594.28	40.18	-0.94287	-0.93066	0.04102	0.029	6.012	0.00	0.00	1500	764
259	2600.34	1500	0.00	1594.42	40.18	-0.94292	-0.93081	0.04185	0.032	6.018	0.00	0.00	1500	764
260	2611.16	1500	0.00	1593.78	40.18	-0.94219	-0.93091	0.03789	0.032	6.023	0.00	0.00	1500	764
261	2620.77	1500	0.00	1591.99	40.18	-0.94263	-0.93037	0.04067	0.032	6.028	0.00	0.00	1500	764

262	2630.33	1500	0.00	1600.00	40.31	-0.94199	-0.9313	0.04058	0.029	6.033	0.00	0.00	1500	764
263	2641.15	1500	0.00	1595.77	40.31	-0.94229	-0.93076	0.04487	0.029	6.038	0.00	0.00	1500	764
264	2650.76	1500	0.00	1596.67	40.18	-0.94292	-0.93081	0.04346	0.032	6.043	0.00	0.00	1500	764
265	2660.32	1500	0.00	1591.70	40.18	-0.94292	-0.93081	0.04453	0.032	6.049	0.00	0.00	1500	764
266	2671.14	1500	0.00	1602.47	40.31	-0.94312	-0.93188	0.04419	0.032	6.054	0.00	0.00	1500	764
267	2680.75	1500	0.00	1593.88	40.18	-0.94219	-0.93081	0.04219	0.032	6.059	0.00	0.00	1500	764
268	2690.36	1500	0.00	1598.32	40.18	-0.94287	-0.93125	0.04404	0.032	6.064	0.00	0.00	1500	764
269	2701.13	1500	0.00	1587.14	40.31	-0.94326	-0.93013	0.04199	0.032	6.070	0.00	0.00	1500	764
270	2710.74	1500	0.00	1594.51	40.18	-0.9438	-0.93125	0.04731	0.027	6.074	0.00	0.00	1500	764
271	2720.35	1500	0.00	1597.46	40.31	-0.94307	-0.92979	0.04062	0.029	6.079	0.00	0.00	1500	764
272	2731.12	1500	0.00	1599.80	40.31	-0.94297	-0.93179	0.04565	0.029	6.084	0.00	0.00	1500	764
273	2740.73	1500	0.00	1598.91	40.31	-0.94224	-0.93135	0.04448	0.029	6.089	0.00	0.00	1500	764
274	2750.34	1500	0.00	1595.65	40.31	-0.94277	-0.9314	0.04536	0.029	6.094	0.00	0.00	1500	764
275	2761.11	1500	0.00	1597.32	40.31	-0.94346	-0.93149	0.04238	0.027	6.098	0.00	0.00	1500	764
276	2770.72	1500	0.00	1595.35	40.31	-0.94243	-0.93076	0.04053	0.029	6.103	0.00	0.00	1500	764
277	2780.33	1500	0.00	1594.48	40.31	-0.94331	-0.93105	0.04604	0.029	6.108	0.00	0.00	1500	764
278	2790	1500	0.00	1596.08	40.31	-0.94312	-0.93169	0.04058	0.029	6.113	0.00	0.00	1500	764
279	2800.82	1500	0.00	1595.82	40.31	-0.94473	-0.93193	0.04443	0.032	6.118	0.00	0.00	1500	764
280	2810.43	1500	0.00	1599.07	40.31	-0.94429	-0.93179	0.04644	0.032	6.123	0.00	0.00	1500	764
281	2820.04	1500	0.00	1601.04	40.31	-0.94429	-0.93091	0.04268	0.027	6.128	0.00	0.00	1500	764
282	2830.81	1500	0.00	1598.88	40.31	-0.94414	-0.93091	0.04434	0.029	6.133	0.00	0.00	1500	764
283	2840.42	1500	0.00	1599.93	40.18	-0.94341	-0.93203	0.04077	0.029	6.138	0.00	0.00	1500	764
284	2850.03	1500	0.00	1596.27	40.31	-0.94409	-0.93247	0.03779	0.029	6.143	0.00	0.00	1500	764
285	2860.8	1500	0.00	1596.31	40.31	-0.94487	-0.93164	0.04473	0.029	6.147	0.00	0.00	1500	764
286	2870.41	1500	0.00	1596.43	40.31	-0.94365	-0.93271	0.04214	0.029	6.152	0.00	0.00	1500	764
287	2880.02	1500	0.00	1601.24	40.31	-0.94536	-0.93315	0.04214	0.034	6.158	0.00	0.00	1500	763
288	2890.79	1500	0.00	1598.99	40.31	-0.94438	-0.93193	0.04419	0.032	6.163	0.00	0.00	1500	763
289	2900.4	1500	0.00	1603.80	40.31	-0.94492	-0.93267	0.0437	0.029	6.168	0.00	0.00	1500	763
290	2910.01	1500	0.00	1597.13	40.31	-0.94414	-0.93242	0.0396	0.029	6.173	0.00	0.00	1500	763
291	2920.77	1500	0.00	1591.79	40.31	-0.9436	-0.93203	0.04253	0.029	6.178	0.00	0.00	1500	763
292	2930.39	1500	0.00	1595.98	40.31	-0.94468	-0.93213	0.03965	0.032	6.183	0.00	0.00	1500	763
293	2940	1500	0.00	1596.37	40.31	-0.94507	-0.93257	0.04272	0.032	6.189	0.00	0.00	1500	763
294	2950.82	1500	0.00	1592.72	40.31	-0.94419	-0.93208	0.04604	0.029	6.193	0.00	0.00	1500	763

295	2960.38	1500	0.00	1595.21	40.31	-0.94512	-0.93184	0.04629	0.032	6.199	0.00	0.00	1500	763
296	2971.2	1500	0.00	1595.24	40.31	-0.94404	-0.93179	0.04224	0.029	6.204	0.00	0.00	1500	763
297	2980.81	1500	0.00	1597.06	40.31	-0.94517	-0.93247	0.04199	0.032	6.209	0.00	0.00	1500	763
298	2990.37	1500	0.00	1602.77	40.31	-0.94526	-0.93276	0.04644	0.029	6.214	0.00	0.00	1500	763
299	3001.19	1500	0.01	1596.42	40.31	-0.94409	-0.93188	0.04062	0.034	6.219	0.01	0.00	1500	763
300	3010.8	1500	0.00	1595.27	40.31	-0.94399	-0.93242	0.04277	0.032	6.225	0.01	0.00	1500	763
301	3020.41	1500	0.00	1598.86	40.31	-0.94448	-0.93223	0.04414	0.029	6.230	0.00	0.00	1500	763
302	3031.17	1500	0.00	1602.20	40.31	-0.94434	-0.93345	0.04126	0.032	6.235	0.00	0.00	1500	763
303	3040.79	1500	0.00	1597.71	40.44	-0.94482	-0.93311	0.04194	0.032	6.240	0.00	0.00	1500	763
304	3050.4	1500	0.01	1600.91	40.31	-0.94419	-0.93276	0.04253	0.029	6.245	0.01	0.00	1500	763
305	3061.16	1500	0.00	1600.39	40.31	-0.94478	-0.93335	0.04268	0.032	6.250	0.00	0.00	1500	763
306	3070.78	1500	0.00	1597.02	40.31	-0.94375	-0.93359	0.04102	0.029	6.255	0.00	0.00	1500	763
307	3080.39	1500	0.01	1600.46	40.44	-0.94497	-0.93394	0.04165	0.029	6.260	0.00	0.00	1500	763
308	3090	1500	0.00	1597.87	40.31	-0.94536	-0.93345	0.04673	0.027	6.265	0.00	0.00	1500	763
309	3100.77	1500	0.00	1592.49	40.31	-0.94507	-0.9333	0.04092	0.029	6.270	0.00	0.00	1500	763
310	3110.38	1500	0.01	1597.32	40.44	-0.94468	-0.93384	0.04243	0.032	6.275	0.01	0.00	1500	763
311	3121.14	1500	0.00	1603.61	40.44	-0.94497	-0.93325	0.04141	0.029	6.280	0.00	0.00	1500	763
312	3130.75	1500	0.00	1597.06	40.31	-0.94507	-0.93296	0.0417	0.029	6.285	0.00	0.00	1500	763
313	3140.37	1500	0.01	1599.95	40.31	-0.94463	-0.93223	0.04082	0.029	6.289	0.00	0.00	1500	763
314	3151.19	1500	0.00	1598.00	40.31	-0.94565	-0.93364	0.04468	0.032	6.295	0.01	0.00	1500	763
315	3160.74	1500	0.00	1584.89	40.31	-0.94556	-0.93389	0.04385	0.029	6.300	0.01	0.00	1500	763
316	3170.36	1500	0.00	1596.47	40.31	-0.94629	-0.93384	0.0458	0.029	6.305	0.00	0.00	1500	763
317	3181.18	1500	0.00	1600.02	40.31	-0.94619	-0.93447	0.04609	0.029	6.309	0.00	0.00	1500	763
318	3190.73	1500	0.01	1600.49	40.31	-0.94639	-0.93462	0.04155	0.032	6.315	0.01	0.00	1500	763
319	3200.35	1500	0.00	1596.20	40.31	-0.94673	-0.9353	0.04131	0.029	6.320	0.00	0.00	1500	762
320	3211.17	1500	0.01	1597.69	40.31	-0.94775	-0.93521	0.04541	0.029	6.324	0.01	0.00	1500	763
321	3220.78	1500	0.00	1598.04	40.31	-0.94785	-0.93589	0.04468	0.029	6.329	0.01	0.00	1500	762
322	3230.33	1500	0.00	1593.82	40.31	-0.94805	-0.93501	0.04292	0.032	6.335	0.00	0.00	1500	762
323	3241.16	1500	0.00	1596.64	40.31	-0.94756	-0.93569	0.04429	0.029	6.340	0.00	0.00	1500	762
324	3250.77	1500	0.00	1598.73	40.31	-0.94771	-0.93525	0.04375	0.032	6.345	0.01	0.00	1500	762
325	3260.32	1500	0.01	1592.05	40.31	-0.94824	-0.93564	0.04468	0.029	6.350	0.01	0.00	1500	762
326	3271.14	1500	0.00	1596.14	40.31	-0.94746	-0.93647	0.04189	0.029	6.355	0.00	0.00	1500	762
327	3280.76	1500	0.01	1599.11	40.31	-0.94839	-0.93579	0.03867	0.032	6.360	0.01	0.00	1500	762

328	3290.37	1500	0.01	1595.55	40.31	-0.94907	-0.93687	0.04175	0.032	6.365	0.00	0.00	1500	762
329	3301.13	1500	0.01	1597.21	40.31	-0.94814	-0.93652	0.04263	0.032	6.370	0.01	0.00	1500	762
330	3310.75	1500	0.01	1599.43	40.31	-0.94863	-0.93638	0.04346	0.029	6.375	0.01	0.00	1500	762
331	3320.36	1500	0.00	1599.21	40.31	-0.94873	-0.93643	0.04385	0.032	6.381	0.00	0.00	1500	762
332	3331.12	1500	0.00	1593.71	40.31	-0.94937	-0.93691	0.0416	0.032	6.386	0.00	0.00	1500	762
333	3340.74	1500	0.00	1585.66	40.31	-0.94937	-0.9373	0.0415	0.029	6.391	0.00	0.00	1500	762
334	3350.35	1500	0.00	1597.68	40.31	-0.94922	-0.93691	0.03774	0.034	6.396	0.01	0.00	1500	762
335	3361.11	1500	0.01	1594.66	40.31	-0.94985	-0.93716	0.04067	0.029	6.401	0.01	0.00	1500	762
336	3370.72	1500	0.01	1592.20	40.31	-0.95049	-0.93755	0.04795	0.029	6.406	0.00	0.00	1500	762
337	3380.34	1500	0.00	1589.91	40.31	-0.95098	-0.93765	0.0416	0.024	6.410	0.01	0.00	1500	762
338	3391.1	1500	0.01	1599.29	40.31	-0.95005	-0.93882	0.04399	0.032	6.416	0.01	0.00	1500	762
339	3400.71	1500	0.01	1584.84	40.31	-0.95229	-0.93994	0.04546	0.029	6.420	0.01	0.00	1500	762
340	3410.33	1500	0.01	1584.52	40.31	-0.95142	-0.94009	0.03779	0.032	6.426	-0.06	0.00	1500	762
341	3421.15	1500	0.02	1589.68	40.31	-0.95288	-0.9397	0.04385	0.029	6.431	0.02	0.00	1500	762
342	3430.7	1500	0.01	1583.63	40.31	-0.95254	-0.94004	0.04224	0.029	6.436	0.01	0.00	1500	762
343	3440.31	1500	0.01	1583.88	40.31	-0.95347	-0.94048	0.04487	0.029	6.440	0.00	0.00	1500	762
344	3451.14	1500	0.01	1584.29	40.18	-0.95337	-0.94111	0.04419	0.029	6.445	0.01	0.00	1500	762
345	3460.69	1500	0.01	1589.55	40.31	-0.95288	-0.94116	0.04312	0.032	6.451	0.00	0.00	1500	762
346	3470.3	1500	0.01	1584.83	40.31	-0.9543	-0.94023	0.04092	0.029	6.455	0.01	0.00	1500	762
347	3481.12	1500	0.00	1584.24	40.31	-0.95376	-0.94014	0.04629	0.032	6.461	0.00	0.00	1500	762
348	3490.74	1500	0.01	1583.19	40.31	-0.95361	-0.9416	0.04209	0.032	6.466	0.01	0.00	1500	762
349	3500.29	1500	0.00	1583.85	40.31	-0.95371	-0.94141	0.04058	0.029	6.471	0.00	0.00	1500	762
350	3511.11	1500	0.01	1587.85	40.31	-0.95449	-0.9415	0.04551	0.010	6.473	0.01	0.00	1500	762
351	3520.73	1500	0.00	1588.34	40.31	-0.95483	-0.94209	0.03721	0.024	6.477	0.00	0.00	1500	762
352	3530.28	1500	-0.01	1572.25	40.31	-0.95522	-0.94258	0.04062	0.029	6.482	0.01	0.00	1500	762
353	3541.1	1500	0.01	1596.04	40.31	-0.95522	-0.94204	0.04458	0.029	6.486	0.00	0.00	1500	762
354	3550.72	1500	0.00	1581.15	40.31	-0.95586	-0.94199	0.04067	0.029	6.491	0.00	0.00	1500	762
355	3560.33	1500	0.00	1583.57	40.31	-0.95449	-0.94287	0.04116	0.027	6.496	0.00	0.00	1500	762
356	3571.09	1500	0.00	1585.08	40.31	-0.95635	-0.94336	0.04346	0.032	6.501	0.00	0.00	1500	762
357	3580.7	1500	0.00	1583.10	40.31	-0.95562	-0.94336	0.04189	0.032	6.506	0.00	0.00	1500	762
358	3590.32	1500	0.00	1579.48	40.31	-0.95688	-0.94409	0.04072	0.034	6.512	0.00	0.00	1500	762
359	3601.08	1500	0.00	1582.43	40.31	-0.95625	-0.94438	0.0418	0.034	6.518	0.00	0.00	1500	762
360	3610.69	1483	14.06	1598.54	40.31	-0.95781	-0.94604	0.04443	0.188	6.549	8.99	0.00	1500	762

361	3620.31	1500	2.88	1739.24	40.31	-0.19229	-0.154	0.04072	0.510	6.634	2.05	0.00	1500	762
362	3631.07	1500	1.67	1556.82	40.31	-0.96108	-1.04619	0.04536	0.627	6.739	1.59	0.00	1500	762
363	3640.68	1500	0.57	1581.72	40.31	-1.03623	-1.09072	0.04097	0.779	6.868	0.66	0.00	1500	762
364	3650.3	1500	0.78	1593.37	40.31	-1.06812	-1.0939	0.04346	0.627	6.973	0.70	0.00	1500	762
365	3661.12	1500	0.38	1586.31	40.18	-1.07998	-1.09668	0.04321	0.520	7.060	0.37	0.00	1500	762
366	3670.67	1500	0.34	1574.08	40.31	-1.08867	-1.10317	0.04409	0.491	7.142	0.33	0.00	1500	762
367	3680.28	1500	0.62	1601.89	40.31	-1.09712	-1.10781	0.0416	0.635	7.247	0.71	0.00	1500	762
368	3691.1	1500	0.41	1597.73	40.31	-1.10322	-1.1126	0.04448	0.486	7.328	0.39	0.00	1500	762
369	3700.66	1500	2.58	1579.95	40.31	-1.10845	-1.11567	0.04121	1.699	7.611	3.23	0.00	1500	762
370	3710.27	1500	2.07	1582.46	40.31	-1.10854	-1.11587	0.04204	1.045	7.786	2.01	0.00	1500	762
371	3721.09	1500	1.80	1583.20	40.18	-1.08843	-1.09604	0.04243	1.099	7.969	1.78	0.00	1500	762
372	3730.65	1500	1.95	1570.39	40.31	-1.09102	-1.09644	0.04199	1.389	8.200	1.91	0.00	1500	762
373	3740.26	1500	1.94	1584.67	40.31	-1.10127	-1.10664	0.04409	1.414	8.436	1.92	0.00	1500	762
374	3751.08	1500	1.92	1596.02	40.18	-1.10005	-1.10566	0.04146	1.421	8.673	1.93	0.00	1500	762
375	3760.7	1500	1.95	1589.93	40.18	-1.09536	-1.10146	0.03706	1.406	8.907	1.86	0.00	1500	762
376	3770.25	1500	1.89	1580.64	40.31	-1.10234	-1.10713	0.04053	1.416	9.143	1.90	0.00	1500	762
377	3781.07	1500	1.86	1585.42	40.18	-1.1022	-1.10806	0.04546	1.436	9.382	1.86	0.00	1500	762
378	3790.68	1500	2.82	1580.10	40.18	-1.09907	-1.10566	0.04321	1.931	9.704	2.29	0.00	1500	762
379	3800.24	1500	3.02	1590.10	40.31	-1.10137	-1.10581	0.03975	1.848	10.012	3.25	0.00	1500	762
380	3811.06	1494	1.30	1582.15	40.31	-1.09175	-1.09883	0.0415	1.904	10.330	2.07	0.00	1494	762
381	3820.67	1500	2.64	1580.95	40.31	-1.08418	-1.09116	0.0457	1.924	10.650	2.65	0.00	1500	762
382	3830.29	1500	2.60	1584.27	40.31	-1.0937	-1.09941	0.04688	1.921	10.970	2.60	0.00	1500	762
383	3841.05	1500	2.50	1579.64	40.18	-1.09121	-1.09849	0.04209	1.931	11.292	2.53	0.00	1500	762
384	3850.66	1500	2.57	1580.83	40.18	-1.08779	-1.09438	0.04395	1.738	11.582	2.52	0.00	1500	762
385	3860.28	1500	2.38	1585.11	40.31	-1.09375	-1.1002	0.04272	1.794	11.881	2.36	0.00	1500	762
386	3871.04	1500	2.35	1582.94	40.31	-1.09185	-1.10034	0.04199	1.794	12.180	2.31	0.00	1500	762
387	3880.65	1500	2.31	1573.34	40.31	-1.09673	-1.10288	0.04712	1.746	12.471	2.32	0.00	1500	762
388	3890.26	1500	2.33	1586.35	40.18	-1.09556	-1.10298	0.04365	1.746	12.762	2.35	0.00	1500	762
389	3901.03	1500	2.35	1583.89	40.31	-1.09077	-1.09707	0.04087	1.750	13.054	2.30	0.00	1500	762
390	3910.64	1500	2.27	1582.08	40.31	-1.09712	-1.1041	0.04473	1.719	13.340	2.25	0.00	1500	762
391	3920.25	1500	2.25	1582.53	40.31	-1.09604	-1.10288	0.0416	1.716	13.626	2.32	0.00	1500	762
392	3931.07	1500	2.25	1569.39	40.18	-1.0915	-1.09795	0.04375	1.721	13.913	2.33	0.00	1500	762
393	3940.63	1500	2.24	1584.21	40.18	-1.09712	-1.10371	0.04185	1.707	14.198	2.25	0.00	1500	762

394	3950.24	1500	2.24	1590.70	40.18	-1.09399	-1.10146	0.04023	1.707	14.482	2.24	0.00	1500	762
395	3961.06	1500	2.19	1583.07	40.18	-1.09761	-1.10254	0.04375	1.675	14.761	2.18	0.00	1500	762
396	3970.62	1500	2.27	1578.34	40.18	-1.09897	-1.10444	0.04116	1.682	15.042	2.26	0.00	1500	762
397	3980.23	1500	2.28	1568.91	40.18	-1.0939	-1.09888	0.03647	1.719	15.328	2.20	0.00	1500	762
398	3991.05	1500	2.23	1592.83	40.18	-1.09893	-1.10464	0.03765	1.687	15.609	2.22	0.00	1500	762
399	4000.61	1500	2.28	1583.63	40.18	-1.0979	-1.10518	0.04097	1.689	15.891	2.25	0.00	1500	762
400	4010.22	1500	2.23	1593.41	40.18	0.002	0.00264	0.04341	1.697	16.174	2.23	0.00	1500	762
401	4021.04	1500	2.21	1584.98	40.18	-0.00591	-0.00513	0.04126	1.653	16.449	2.20	0.00	1500	762
402	4030.65	1500	2.21	1580.92	40.31	-0.00308	-0.00391	0.0459	1.667	16.727	2.26	0.00	1500	763
403	4040.21	1500	2.16	1588.43	40.18	-0.00029	-0.00078	0.04404	1.653	17.002	2.24	0.00	1500	762
404	4051.03	1500	2.21	1580.43	40.18	-0.00405	-0.00381	0.04116	1.670	17.281	2.19	0.00	1500	763
405	4060.64	1500	2.18	1586.87	40.18	-0.0001	-0.00161	0.05122	1.665	17.558	2.21	0.00	1500	763
406	4070.26	1500	2.17	1575.17	40.18	-0.00391	-0.00508	0.04614	1.628	17.830	2.17	0.00	1500	763
407	4081.02	1500	2.43	1572.42	40.31	-0.00361	-0.00532	0.04736	1.680	18.110	2.37	0.00	1500	763
408	4090.63	1500	2.19	1579.41	40.18	0.00098	0.00054	0.04883	1.670	18.388	2.14	0.00	1500	763
409	4100.24	1500	2.18	1576.80	40.18	-0.00493	-0.00532	0.0416	1.646	18.662	2.18	0.00	1500	763
410	4111.01	1500	2.21	1584.99	40.18	-0.00537	-0.00537	0.0418	1.663	18.939	2.19	0.00	1500	763
411	4120.62	1500	2.26	1579.10	40.18	0.00186	0.0021	0.04502	1.694	19.222	2.21	0.00	1500	763
412	4130.23	1500	2.17	1580.46	40.18	-0.00459	-0.00503	0.04482	1.660	19.498	2.17	0.00	1500	763
413	4141	1500	2.19	1581.93	40.18	-0.00371	-0.00503	0.0415	1.655	19.774	2.20	0.00	1500	763
414	4150.61	1500	2.16	1582.27	40.18	-0.00039	0.00093	0.03872	1.677	20.054	2.23	0.00	1500	763
415	4160.22	1500	2.20	1575.46	40.18	-0.00537	-0.00454	0.04126	1.658	20.330	2.17	0.00	1500	763
416	4170.99	1500	2.15	1580.77	40.18	-0.00103	-0.00371	0.04639	1.655	20.606	2.19	0.00	1500	763
417	4180.6	1500	2.14	1577.18	40.18	-0.00361	-0.00566	0.04414	1.633	20.878	0.43	0.00	1500	763
418	4190.21	1500	2.29	1580.95	40.18	-0.00454	-0.00542	0.04023	1.655	21.154	2.22	0.00	1500	763
419	4201.03	1500	2.14	1577.43	40.18	-0.00015	-0.00132	0.05049	1.660	21.431	2.13	0.00	1500	763
420	4210.59	1500	2.15	1583.85	40.18	-0.00542	-0.00591	0.04326	1.636	21.703	2.14	0.00	1500	763
421	4220.2	1500	2.20	1585.39	40.18	-0.0042	-0.00522	0.04531	1.655	21.979	2.16	0.00	1500	763
422	4231.02	1500	2.24	1585.64	40.18	0.00166	0.00132	0.04062	1.670	22.257	2.18	0.00	1500	763
423	4240.58	1500	2.14	1579.07	40.18	-0.00527	-0.00513	0.03916	1.641	22.531	2.13	0.00	1500	763
424	4250.19	1500	2.14	1579.45	40.18	-0.004	-0.00425	0.04282	1.650	22.806	2.21	0.00	1500	763
425	4261.01	1500	2.16	1579.59	40.18	0.00083	0.00044	0.0396	1.672	23.085	2.23	0.00	1500	763
426	4270.62	1500	2.11	1577.07	40.18	-0.00469	-0.00522	0.04272	1.643	23.359	2.11	0.00	1500	763

427	4280.18	1500	2.15	1580.26	40.18	-0.00112	-0.00337	0.04707	1.660	23.635	2.17	0.00	1500	763
428	4291	1500	2.13	1584.26	40.18	-0.0022	-0.00347	0.04966	1.621	23.905	2.13	0.00	1500	763
429	4300.61	1500	2.16	1581.67	40.18	-0.00444	-0.00532	0.046	1.653	24.181	2.16	0.00	1500	763
430	4310.17	1500	-0.01	1581.46	40.18	0.00493	0.00488	0.04292	1.555	24.440	-0.03	0.00	1500	763
431	4320.99	1500	-0.09	1572.95	40.18	-0.01055	-0.01152	0.04141	1.499	24.690	-0.07	0.00	1500	763
432	4330.6	1500	-0.05	1587.55	40.18	0.73306	0.66118	0.04233	1.492	24.939	-0.05	0.00	1500	763
433	4340.21	1500	-0.02	1592.22	40.18	0.0189	0.0166	0.04819	1.094	25.121	-0.06	0.00	1500	763
434	4350.98	1500	-0.04	1590.94	40.18	0.09224	0.10044	0.04404	0.847	25.262	-0.05	0.00	1500	763
435	4360.59	1500	-0.04	1575.41	40.18	0.12393	0.12354	0.04346	0.581	25.359	-0.06	0.00	1500	763
436	4370.2	1500	-0.02	1591.15	40.18	0.12422	0.12148	0.04448	0.427	25.430	-0.05	0.00	1500	763
437	4380.97	1500	-0.01	1609.08	40.18	0.12485	0.12173	0.04399	0.315	25.483	-0.01	0.00	1500	763
438	4390.58	793	-203.41	1532.32	40.18	0.12607	0.1228	0.04419	0.247	25.524	-204.13	0.00	791	762
439	4400.19	790	-204.06	1591.24	40.18	0.12764	0.12456	0.04521	0.186	25.555	-204.05	0.00	790	762
440	4410.96	788	-203.60	1571.55	40.18	0.12959	0.12671	0.04707	0.149	25.579	-204.10	0.00	788	761
441	4420.57	788	-204.09	1556.75	40.18	0.13179	0.12993	0.04341	0.125	25.600	-204.07	0.00	787	761
442	4430.18	787	-204.08	1580.47	40.18	0.13271	0.13149	0.04746	0.107	25.618	-203.71	0.00	787	760
443	4440.95	786	-204.08	1614.72	40.18	0.13389	0.13232	0.04604	0.090	25.633	-204.05	0.00	786	760
444	4450.56	786	-204.07	1578.76	40.18	0.13374	0.13521	0.04258	0.081	25.647	-204.05	0.00	785	760
445	4460.17	785	-204.10	1579.37	40.18	0.1334	0.13599	0.04746	0.071	25.658	-204.06	0.00	785	759
446	4471.05	784	-204.08	1578.21	40.18	0.13291	0.13555	0.04541	0.066	25.669	-204.05	0.00	784	759
447	4480.66	784	-204.04	1587.37	40.18	0.13091	0.13506	0.04478	0.061	25.680	-204.10	0.00	784	759
448	4490.27	783	-204.08	1578.05	40.18	0.13057	0.13457	0.04365	0.059	25.689	-204.09	0.00	783	759
449	4501.04	783	-204.00	1573.14	40.18	0.12803	0.13354	0.04399	0.054	25.698	-204.04	0.00	783	758
450	4510.65	785	0.00	1574.38	40.18	0.12715	0.13262	0.04272	0.051	25.707	0.00	0.00	785	758
451	4520.26	785	0.00	1577.89	40.18	0.12607	0.13101	0.04321	0.049	25.715	0.00	0.00	785	758
452	4531.08	786	0.00	1571.89	40.18	0.12539	0.13091	0.04482	0.046	25.723	0.00	0.00	786	758
453	4540.64	786	0.00	1581.54	40.18	0.1272	0.13662	0.04102	0.046	25.730	0.00	0.00	786	757
454	4550.25	786	0.00	1578.52	40.06	0.2251	0.28745	0.03853	0.044	25.738	9.49	0.00	787	757
455	4561.07	813	197.40	1571.72	40.18	0.23257	0.2938	0.03765	0.046	25.745	197.41	0.00	816	757
456	4570.63	836	197.30	1579.88	40.18	0.22729	0.29844	0.04136	0.044	25.753	197.19	0.00	840	757
457	4580.24	862	196.98	1584.15	40.18	0.24634	0.31475	0.04199	0.044	25.760	196.93	0.00	866	757
458	4591.06	896	196.93	1572.39	40.18	0.24932	0.33364	0.04546	0.042	25.767	196.67	0.00	901	757
459	4600.67	936	195.99	1583.94	40.18	0.252	0.33228	0.04185	0.044	25.774	196.46	0.00	943	756

460	4610.23	990	195.48	1575.05	40.18	0.25605	0.352	0.04072	0.044	25.782	195.51	0.00	1000	756
461	4621.05	1079	195.04	1585.61	40.18	0.4792	0.60024	0.04272	0.044	25.789	194.70	0.00	1086	756
462	4630.66	1302	193.13	1574.67	40.18	0.4832	0.59741	0.04033	0.042	25.796	192.36	0.00	1390	756
463	4640.22	1597	35.09	1580.48	40.18	0.49678	0.62378	0.04404	0.042	25.803	20.54	0.00	1585	756
464	4651.04	1487	15.71	1580.55	40.18	0.55771	0.69175	0.04209	0.044	25.810	16.29	0.00	1493	755
465	4660.65	1500	11.32	1575.29	40.18	0.55308	0.69985	0.04019	0.042	25.817	10.37	0.00	1500	756
466	4670.26	1500	7.65	1580.99	40.18	0.55234	0.68901	0.04126	0.042	25.824	7.17	0.00	1500	756
467	4681.03	1500	6.22	1582.76	40.18	0.5543	0.69258	0.04287	0.042	25.831	6.09	0.00	1500	756
468	4690.64	1500	5.11	1570.31	40.18	0.55615	0.69692	0.04126	0.042	25.838	5.03	0.00	1500	756
469	4700.25	1500	4.41	1581.26	40.18	0.55679	0.70166	0.04351	0.042	25.845	4.34	0.00	1500	756
470	4711.02	1500	3.82	1580.48	40.18	0.55459	0.6979	0.03604	0.042	25.852	3.76	0.00	1500	756
471	4720.63	1500	3.40	1570.48	40.18	0.55825	0.69941	0.04292	0.039	25.858	3.35	0.00	1500	756
472	4730.24	1500	3.06	1578.21	40.18	0.55859	0.69604	0.03774	0.044	25.865	3.01	0.00	1500	756
473	4741.01	1500	2.74	1580.48	40.18	0.60127	0.73818	0.04341	0.042	25.872	2.72	0.00	1500	756
474	4750.62	1500	2.51	1588.26	40.18	0.6019	0.74067	0.04194	0.042	25.879	2.49	0.00	1500	756
475	4760.23	1500	2.32	1573.77	40.18	0.6022	0.73296	0.04053	0.044	25.887	2.29	0.00	1500	756
476	4771.05	1500	2.13	1571.72	40.18	0.60942	0.73599	0.04282	0.044	25.894	2.12	0.00	1500	756
477	4780.61	1500	1.99	1575.80	40.18	0.60044	0.73691	0.04023	0.042	25.901	1.98	0.00	1500	756
478	4790.22	1500	1.86	1572.55	40.18	0.58867	0.72549	0.04121	0.044	25.908	1.84	0.00	1500	756
479	4801.04	1500	1.73	1587.47	40.18	0.59575	0.73638	0.04189	0.039	25.915	1.72	0.00	1500	756
480	4810.6	1500	1.63	1577.05	40.18	0.66299	0.74004	0.04253	0.042	25.922	1.62	0.00	1500	756
481	4820.21	1500	1.53	1576.48	40.18	0.35869	0.4584	0.03999	0.042	25.929	1.52	0.00	1500	756
482	4831.03	1500	1.43	1580.09	40.18	0.30796	0.40215	0.0397	0.039	25.935	1.43	0.00	1500	756
483	4840.59	1500	1.35	1580.58	40.18	0.2896	0.38115	0.04277	0.044	25.942	1.35	0.00	1500	756
484	4850.2	1500	1.28	1580.29	40.18	0.2749	0.35933	0.0502	0.044	25.950	1.27	0.00	1500	756
485	4861.02	1500	1.20	1572.81	40.18	0.2627	0.34917	0.04233	0.042	25.957	1.20	0.00	1500	756
486	4870.63	1500	1.13	1577.80	40.18	0.23833	0.31641	0.04419	0.042	25.964	1.13	0.00	1500	756
487	4880.19	1500	1.09	1575.88	40.18	0.21704	0.29277	0.03921	0.039	25.970	1.06	0.00	1500	757
488	4891.01	1500	1.02	1575.58	40.18	0.17085	0.23599	0.04087	0.042	25.977	1.01	0.00	1500	757
489	4900.62	1500	0.96	1580.54	40.18	0.13369	0.19053	0.03403	0.042	25.984	0.97	0.00	1500	757
490	4910.18	1500	0.92	1573.19	40.18	0.08813	0.11743	0.04717	0.042	25.991	0.92	0.00	1500	757
491	4921	1500	0.86	1576.30	40.18	0.0835	0.12261	0.0396	0.042	25.998	0.86	0.00	1500	757
492	4930.61	1500	0.83	1576.01	40.18	0.0751	0.10674	0.03979	0.039	26.004	0.83	0.00	1500	757

493	4940.22	1500	0.80	1574.49	40.06	0.0563	0.08374	0.03945	0.042	26.011	0.79	0.00	1500	757
494	4950.99	1500	0.75	1575.75	40.18	0.02607	0.03613	0.04326	0.042	26.018	0.75	0.00	1500	757
495	4960.6	1500	0.72	1577.11	40.18	0.01094	0.01709	0.04351	0.042	26.025	0.71	0.00	1500	757
496	4970.21	1500	0.69	1577.45	40.18	0.00972	0.01851	0.03472	0.044	26.032	0.69	0.00	1500	757
497	4980.98	1500	0.65	1575.98	40.18	0.01064	0.01543	0.04229	0.039	26.039	0.65	0.00	1500	757
498	4990.59	1500	0.63	1577.23	40.18	0.01206	0.01587	0.0418	0.042	26.046	0.62	0.00	1500	757
499	5000.2	1500	0.60	1573.54	40.18	0.20337	0.27637	0.03784	0.039	26.052	0.60	0.00	1500	757
500	5010.96	1500	0.57	1581.86	40.18	0.17739	0.24175	0.03955	0.042	26.059	0.57	0.00	1500	757
501	5020.58	1500	0.56	1578.22	40.18	0.15898	0.22046	0.04258	0.037	26.065	0.54	0.00	1500	757
502	5030.19	1500	0.53	1579.25	40.18	0.13828	0.19585	0.03789	0.039	26.072	0.52	0.00	1500	757
503	5041.01	1500	0.51	1580.33	40.18	0.13062	0.17612	0.04414	0.042	26.079	0.51	0.00	1500	757
504	5050.57	1500	0.49	1580.01	40.18	0.11196	0.154	0.04019	0.042	26.086	0.49	0.00	1500	757
505	5060.18	1500	0.47	1575.78	40.18	0.09941	0.1353	0.04229	0.039	26.092	0.47	0.00	1500	757
506	5071	1500	0.45	1577.54	40.18	0.09365	0.12993	0.04263	0.042	26.099	0.45	0.00	1500	757
507	5080.55	1500	0.43	1580.11	40.18	0.07881	0.11138	0.03799	0.042	26.106	0.42	0.00	1500	757
508	5090.17	1500	0.41	1581.88	40.18	0.07314	0.1022	0.03828	0.039	26.112	0.41	0.00	1500	757
509	5100.99	1500	0.40	1579.32	40.18	0.04814	0.06528	0.04165	0.039	26.119	0.40	0.00	1500	757
510	5110.54	1500	0.38	1580.48	40.18	0.03369	0.04956	0.0377	0.039	26.125	0.38	0.00	1500	757
511	5120.16	1500	0.37	1578.26	40.18	0.02915	0.03696	0.04009	0.039	26.132	0.37	0.00	1500	757
512	5130.98	1500	0.34	1578.12	40.18	0.02637	0.03442	0.04048	0.042	26.139	0.35	0.00	1500	757
513	5140.59	1500	0.34	1579.20	40.18	0.02944	0.03848	0.03867	0.039	26.145	0.35	0.00	1500	757
514	5150.15	1500	0.33	1579.82	40.18	0.02974	0.03794	0.04448	0.042	26.152	0.33	0.00	1500	757
515	5160.97	1500	0.32	1579.71	40.18	0.0355	0.04507	0.04028	0.044	26.160	0.31	0.00	1500	757
516	5170.58	1500	0.30	1572.68	40.18	0.0334	0.04204	0.03853	0.039	26.166	0.31	0.00	1500	757
517	5180.13	1500	0.29	1578.68	40.18	0.03779	0.04478	0.04346	0.039	26.173	0.30	0.00	1500	757
518	5190.96	1500	0.29	1581.55	40.18	0.03896	0.04897	0.03789	0.042	26.180	0.29	0.00	1500	757
519	5200.57	1500	0.28	1579.81	40.18	0.04038	0.04878	0.0418	0.042	26.187	0.28	0.00	1500	757
520	5210.18	1500	0.27	1580.42	40.18	0.04082	0.05	0.04189	0.044	26.194	0.27	0.00	1500	757
521	5220.94	1500	0.26	1574.32	40.18	0.3564	0.45005	0.03691	0.042	26.201	0.23	0.00	1500	757
522	5230.56	1500	0.24	1575.05	40.18	0.34185	0.43506	0.03799	0.042	26.208	0.24	0.00	1500	758
523	5240.17	1500	0.24	1579.59	40.18	0.33242	0.42349	0.04155	0.042	26.215	0.25	0.00	1500	758
524	5250.93	1500	0.24	1579.25	40.18	0.33799	0.42065	0.03809	0.042	26.222	0.24	0.00	1500	758
525	5260.55	1500	0.23	1576.28	40.18	0.32471	0.40835	0.04219	0.042	26.228	0.23	0.00	1500	758

526	5270.16	1500	0.23	1578.82	40.18	0.33257	0.41938	0.04116	0.042	26.235	0.23	0.00	1500	758
527	5280.92	1500	0.22	1576.96	40.18	0.31611	0.40679	0.04531	0.042	26.242	0.22	0.00	1500	758
528	5290.54	1500	0.21	1577.96	40.18	0.32832	0.42334	0.04038	0.037	26.248	0.21	0.00	1500	758
529	5300.15	1500	0.21	1578.39	40.18	0.30972	0.40469	0.04048	0.039	26.255	0.21	0.00	1500	758
530	5310.91	1500	0.20	1578.85	40.18	0.31914	0.40586	0.04009	0.042	26.262	0.20	0.00	1500	758
531	5320.52	1500	0.20	1574.01	40.18	0.30474	0.38813	0.04004	0.039	26.268	0.20	0.00	1500	758
532	5330.14	1500	0.19	1577.41	40.18	0.29668	0.37666	0.04131	0.042	26.275	0.19	0.00	1500	758
533	5340.96	1500	0.19	1574.99	40.18	0.30083	0.38643	0.0377	0.039	26.282	0.19	0.00	1500	758
534	5350.51	1500	0.19	1577.26	40.18	0.28667	0.3707	0.03887	0.042	26.289	0.19	0.00	1500	758
535	5360.13	1500	0.18	1573.34	40.18	0.28442	0.3709	0.0439	0.039	26.295	0.18	0.00	1500	758
536	5370.95	1500	0.18	1579.84	40.18	0.26445	0.34697	0.03682	0.042	26.302	0.18	0.00	1500	758
537	5380.5	1500	0.18	1577.84	40.06	0.27163	0.35117	0.03872	0.042	26.309	0.18	0.00	1500	758
538	5390.12	1500	0.21	1576.37	40.06	0.27295	0.36099	0.0356	0.042	26.316	0.16	0.00	1500	758
539	5400.94	1500	0.17	1578.90	40.18	0.25298	0.33013	0.04155	0.039	26.322	0.17	0.00	1500	758
540	5410.55	1500	0.17	1578.58	40.06	0.24888	0.32471	0.04219	0.042	26.329	0.16	0.00	1500	758
541	5420.1	1500	0.16	1580.51	40.18	0.24287	0.31816	0.04014	0.042	26.336	0.17	0.00	1500	758
542	5430.92	1500	0.16	1580.52	40.06	0.21709	0.28813	0.04233	0.039	26.343	0.16	0.00	1500	758
543	5440.54	1500	0.16	1574.86	40.18	0.21431	0.28374	0.04175	0.042	26.350	0.16	0.00	1500	758
544	5450.09	1500	0.16	1576.77	40.06	0.20508	0.27515	0.04185	0.042	26.357	0.16	0.00	1500	758
545	5460.91	1500	0.16	1575.33	40.06	0.20215	0.27388	0.03711	0.044	26.364	0.15	0.00	1500	758
546	5470.53	1500	0.15	1577.48	40.06	0.20083	0.26953	0.04199	0.039	26.370	0.15	0.00	1500	758
547	5480.14	1500	0.15	1572.98	40.06	0.19893	0.26787	0.04033	0.042	26.377	0.15	0.00	1500	758
548	5490.9	1500	0.15	1578.13	40.18	0.20015	0.26758	0.03818	0.044	26.385	0.15	0.00	1500	758
549	5500.52	1500	0.14	1579.26	40.06	0.19927	0.2665	0.04023	0.042	26.392	0.15	0.00	1500	758
550	5510.13	1500	0.14	1577.13	40.18	0.19697	0.26343	0.04146	0.042	26.399	0.14	0.00	1500	758
551	5520.89	1500	0.14	1575.53	40.06	0.21392	0.28789	0.03984	0.039	26.405	0.14	0.00	1500	758
552	5530.5	1500	0.14	1576.59	40.18	0.19404	0.25957	0.0438	0.042	26.412	0.14	0.00	1500	758
553	5540.12	1500	0.13	1576.09	40.06	0.17734	0.2376	0.04443	0.042	26.419	0.13	0.00	1500	759
554	5550.88	1500	0.14	1576.36	40.06	0.13364	0.17344	0.0436	0.042	26.426	0.14	0.00	1500	759
555	5560.49	1500	0.13	1575.02	40.06	0.1229	0.15625	0.04204	0.044	26.433	0.13	0.00	1500	758
556	5570.11	1500	0.13	1578.65	40.18	0.12207	0.15381	0.0415	0.042	26.440	0.13	0.00	1500	759
557	5580.87	1500	0.13	1574.63	40.06	0.13262	0.17148	0.04307	0.042	26.447	0.13	0.00	1500	759
558	5590.48	1500	0.13	1575.98	40.06	0.13555	0.17544	0.03848	0.042	26.454	0.13	0.00	1500	759

559	5600.1	1500	0.13	1577.28	40.06	0.13267	0.16953	0.03921	0.042	26.461	0.12	0.00	1500	759
560	5610.92	1500	0.12	1578.52	40.18	0.12798	0.16338	0.04082	0.042	26.468	0.13	0.00	1500	759
561	5620.47	1500	0.12	1571.25	40.06	0.12285	0.15444	0.04194	0.042	26.475	0.12	0.00	1500	759
562	5630.08	1500	0.12	1577.15	40.06	0.11265	0.13574	0.04092	0.042	26.482	0.12	0.00	1500	759
563	5640.9	1500	0.12	1570.25	40.06	0.10122	0.12026	0.04385	0.042	26.488	0.12	0.00	1500	759
564	5650.46	1500	0.12	1575.69	40.18	0.0959	0.11323	0.03774	0.039	26.495	0.12	0.00	1500	759
565	5660.07	1500	0.12	1570.76	40.06	0.08584	0.10317	0.04136	0.044	26.502	0.12	0.00	1500	759
566	5670.89	1500	0.11	1573.20	40.18	0.08511	0.09844	0.03926	0.042	26.509	0.11	0.00	1500	759
567	5680.51	1500	0.11	1571.39	40.06	0.08062	0.09365	0.04331	0.042	26.516	0.11	0.00	1500	759
568	5690.06	1500	0.11	1574.39	40.06	0.08301	0.09365	0.04229	0.039	26.523	0.11	0.00	1500	759
569	5700.88	1500	0.11	1570.44	40.06	0.08125	0.09253	0.04414	0.044	26.530	0.11	0.00	1500	759
570	5710.5	1500	0.11	1572.47	40.06	0.08145	0.09326	0.04092	0.044	26.537	0.11	0.00	1500	759
571	5720.05	1500	0.11	1570.35	40.06	0.08115	0.09355	0.04097	0.042	26.544	0.11	0.00	1500	759
572	5730.87	1500	0.11	1572.44	40.06	0.0814	0.09326	0.04067	0.039	26.551	0.11	0.00	1500	759
573	5740.48	1500	0.11	1573.97	40.06	0.08086	0.09336	0.03989	0.042	26.558	0.11	0.00	1500	759
574	5750.1	1500	0.11	1572.67	40.06	0.08086	0.09297	0.04595	0.042	26.565	0.11	0.00	1500	759
575	5760.86	1500	0.11	1571.02	40.18	0.08203	0.09448	0.04233	0.042	26.571	0.11	0.00	1500	759
576	5770.47	1500	0.10	1574.83	40.06	0.08325	0.09536	0.04565	0.044	26.579	0.11	0.00	1500	759
577	5780.09	1500	0.10	1570.77	40.06	0.08179	0.09375	0.04399	0.042	26.586	0.10	0.00	1500	759
578	5790.85	1500	0.10	1572.51	40.06	0.08374	0.09478	0.04302	0.044	26.593	0.10	0.00	1500	759
579	5800.46	1500	0.10	1574.20	40.06	0.08267	0.09453	0.04067	0.042	26.600	0.10	0.00	1500	759
580	5810.08	1500	0.10	1571.65	40.06	0.08257	0.09521	0.04395	0.044	26.607	0.10	0.00	1500	759
581	5820.84	1500	0.10	1572.77	40.06	0.08271	0.09585	0.04072	0.042	26.614	0.10	0.00	1500	759
582	5830.45	1500	0.10	1573.77	39.93	0.08228	0.09624	0.04536	0.042	26.621	0.10	0.00	1500	759
583	5840.06	1500	0.10	1569.79	40.06	0.08237	0.09492	0.04351	0.042	26.628	0.10	0.00	1500	759
584	5850.89	1500	0.10	1571.77	40.06	0.08369	0.09517	0.04033	0.042	26.635	0.10	0.00	1500	759
585	5860.44	1500	0.10	1570.58	40.06	0.08408	0.09414	0.04229	0.042	26.642	0.10	0.00	1500	759
586	5870.05	1500	0.10	1572.11	40.06	0.08247	0.09375	0.04253	0.039	26.648	0.10	0.00	1500	759
587	5880.87	1500	0.09	1571.79	40.06	0.08286	0.09546	0.03784	0.042	26.655	0.09	0.00	1500	759
588	5890.43	1500	0.09	1569.49	40.06	0.08315	0.09434	0.04019	0.042	26.662	0.09	0.00	1500	759
589	5900.04	1500	0.09	1570.00	40.06	0.08398	0.09546	0.04146	0.044	26.670	0.09	0.00	1500	759
590	5910.86	1500	0.09	1574.84	40.06	0.08398	0.09565	0.04473	0.042	26.676	0.09	0.00	1500	759
591	5920.42	1500	0.09	1571.33	40.06	0.08384	0.09492	0.04473	0.042	26.683	0.09	0.00	1500	759

592	5930.03	1500	0.09	1569.02	40.06	0.0833	0.09482	0.04136	0.039	26.690	0.09	0.00	1500	760
593	5940.85	1500	0.06	1569.39	40.06	0.08345	0.0959	0.04712	0.042	26.697	0.08	0.00	1500	760
594	5950.46	1500	0.09	1570.28	40.06	0.08423	0.09526	0.04409	0.042	26.704	0.09	0.00	1500	760
595	5960.02	1500	0.08	1571.72	40.06	0.0835	0.09492	0.04077	0.042	26.711	0.08	0.00	1500	760
596	5970.84	1500	0.08	1572.40	40.06	0.08389	0.09536	0.04375	0.042	26.718	0.08	0.00	1500	760
597	5980.45	1500	0.08	1570.24	40.06	0.08403	0.09531	0.04507	0.042	26.724	0.08	0.00	1500	760
598	5990.01	1500	0.08	1568.13	40.06	0.08364	0.09512	0.04038	0.044	26.732	0.08	0.00	1500	760
599	6000.83	1500	0.08	1568.04	40.06	0.08398	0.09487	0.04238	0.042	26.739	0.08	0.00	1500	760
600	6010.44	1500	0.08	1570.51	40.06	0.08433	0.09458	0.04424	0.042	26.746	0.08	0.00	1500	760
601	6020.06	1500	0.08	1574.00	40.06	0.08472	0.09551	0.04487	0.042	26.753	0.07	0.00	1500	760
602	6030.82	1500	0.07	1567.90	40.06	0.08555	0.09624	0.04385	0.044	26.760	0.07	0.00	1500	760
603	6040.43	1500	0.08	1574.53	40.06	0.08364	0.09487	0.04331	0.042	26.767	0.07	0.00	1500	760
604	6050.04	1500	0.07	1570.59	40.06	0.50342	0.62617	0.03989	0.042	26.774	0.07	0.00	1500	760
605	6060.81	1500	0.07	1566.31	40.06	0.49497	0.61606	0.04053	0.042	26.781	0.07	0.00	1500	760
606	6070.42	1500	0.07	1571.27	40.06	0.48037	0.61162	0.03989	0.039	26.787	0.07	0.00	1500	760
607	6080.03	1500	0.07	1567.64	40.06	0.48643	0.59722	0.04175	0.044	26.794	0.07	0.00	1500	760
608	6090.8	1500	0.07	1570.14	39.93	0.4751	0.59438	0.03823	0.044	26.802	0.07	0.00	1500	760
609	6100.41	1500	0.07	1571.23	40.06	0.47573	0.60176	0.04199	0.039	26.808	0.07	0.00	1500	760
610	6110.02	1500	0.08	1568.43	39.93	0.47876	0.60029	0.0394	0.042	26.815	0.07	0.00	1500	760
611	6120.84	1500	0.07	1570.22	39.93	0.46577	0.58506	0.0437	0.039	26.822	0.07	0.00	1500	760
612	6130.4	1500	0.07	1568.89	39.93	0.45615	0.58887	0.03848	0.042	26.829	0.07	0.00	1500	760
613	6140.01	1500	0.07	1568.92	39.93	0.45283	0.57471	0.03721	0.042	26.836	0.07	0.00	1500	760
614	6150.83	1500	0.07	1571.40	39.93	0.45283	0.58501	0.0397	0.042	26.842	0.07	0.00	1500	760
615	6160.39	1500	0.07	1566.75	40.06	0.45635	0.57529	0.0394	0.042	26.849	0.07	0.00	1500	760
616	6170	1500	0.07	1569.06	40.06	0.46152	0.57949	0.04038	0.042	26.856	0.07	0.00	1500	760
617	6180.82	1500	0.07	1571.76	40.06	0.45112	0.58135	0.0396	0.042	26.863	0.07	0.00	1500	760
618	6190.38	1500	0.07	1568.58	39.93	0.43853	0.56436	0.04185	0.039	26.870	0.07	0.00	1500	760
619	6201.2	1500	0.07	1567.29	39.93	0.44404	0.57144	0.04336	0.044	26.877	0.07	0.00	1500	760
620	6210.81	1500	0.07	1570.01	40.06	0.43247	0.55801	0.03857	0.046	26.885	0.07	0.00	1500	760
621	6220.42	1500	0.06	1572.19	40.06	0.43501	0.56748	0.04268	0.042	26.892	0.06	0.00	1500	760
622	6231.19	1500	0.07	1565.50	40.06	0.42812	0.56074	0.03726	0.039	26.898	0.06	0.00	1500	760
623	6240.8	1500	0.07	1567.25	39.93	0.41831	0.54922	0.04287	0.039	26.905	0.06	0.00	1500	760
624	6250.41	1500	0.07	1568.79	40.06	0.40449	0.54009	0.04023	0.039	26.911	0.06	0.00	1500	760

625	6261.18	1500	0.07	1572.55	39.93	0.42139	0.54346	0.04033	0.042	26.918	0.07	0.00	1500	760
626	6270.79	1500	0.07	1568.07	40.06	0.41289	0.53906	0.03755	0.039	26.925	0.07	0.00	1500	760
627	6280.4	1500	0.07	1568.20	39.93	0.40991	0.54175	0.04116	0.039	26.931	0.07	0.00	1500	760
628	6290.01	1500	0.07	1569.99	39.93	0.40791	0.52783	0.04126	0.042	26.938	0.07	0.00	1500	760
629	6300.78	1500	0.07	1567.48	39.93	0.39126	0.51494	0.04126	0.039	26.945	0.07	0.00	1500	760
630	6310.39	1500	0.07	1572.28	40.06	0.37891	0.50518	0.0397	0.037	26.951	0.07	0.00	1500	760
631	6320	1500	0.07	1567.45	40.06	0.37217	0.50391	0.03774	0.042	26.958	0.07	0.00	1500	760
632	6330.77	1500	0.08	1568.98	39.93	0.37939	0.49971	0.04028	0.039	26.964	0.08	0.00	1500	760
633	6340.38	1500	0.08	1570.18	40.06	0.37349	0.49448	0.04336	0.042	26.971	0.08	0.00	1500	761
634	6351.2	1500	0.08	1570.30	40.06	0.37104	0.49541	0.03789	0.039	26.978	0.08	0.00	1500	760
635	6360.76	1500	0.08	1569.25	40.06	0.34839	0.45732	0.03916	0.039	26.984	0.08	0.00	1500	761
636	6370.37	1500	0.08	1572.28	39.93	0.34648	0.45864	0.04331	0.037	26.990	0.08	0.00	1500	761
637	6381.19	1500	0.08	1568.41	40.06	0.35259	0.46392	0.0417	0.039	26.997	0.08	0.00	1500	761
638	6390.8	1500	0.08	1571.71	40.06	0.33296	0.44307	0.03672	0.039	27.003	0.08	0.00	1500	761
639	6400.36	1500	0.08	1571.01	40.06	0.32021	0.43892	0.03428	0.039	27.010	0.08	0.00	1500	761
640	6411.18	1500	0.08	1570.84	40.06	0.33726	0.44575	0.04048	0.042	27.017	0.08	0.00	1500	761
641	6420.79	1500	0.08	1573.00	40.06	0.31958	0.43594	0.04282	0.044	27.024	0.08	0.00	1500	761
642	6430.35	1500	0.08	1567.78	40.06	0.31382	0.42085	0.03794	0.044	27.031	0.08	0.00	1500	761
643	6441.17	1500	0.08	1572.55	40.06	0.28887	0.39067	0.03779	0.042	27.038	0.08	0.00	1500	761
644	6450.78	1500	0.08	1570.09	40.06	0.25815	0.35864	0.03657	0.042	27.045	0.08	0.00	1500	761
645	6460.39	1500	0.08	1568.20	40.06	0.26426	0.35889	0.03989	0.042	27.052	0.08	0.00	1500	761
646	6471.16	1500	0.08	1568.63	40.06	0.273	0.37065	0.03853	0.042	27.059	0.08	0.00	1500	761
647	6480.77	1500	0.08	1566.30	40.06	0.27417	0.37124	0.03535	0.042	27.066	0.08	0.00	1500	761
648	6490.38	1500	0.08	1574.47	40.06	0.23115	0.31621	0.03896	0.044	27.073	0.08	0.00	1500	761
649	6501.15	1500	0.08	1563.17	40.06	0.21875	0.3063	0.04194	0.146	27.098	3.24	0.00	1489	761
650	6510.76	1500	5.87	1546.60	39.80	0.03076	0.02583	0.04487	1.025	27.269	6.07	0.00	1500	761
651	6520.37	1500	3.01	1557.72	39.80	1.05625	0.84648	0.04463	0.747	27.393	2.80	0.00	1500	761
652	6531.14	1500	-0.30	1554.35	39.93	0.09468	0.021	0.07207	0.535	27.482	0.13	0.00	1500	761
653	6540.75	1500	-0.01	1551.99	39.93	0.05352	0.0229	0.05562	0.464	27.559	0.02	0.00	1500	761
654	6550.36	1500	0.13	1549.48	39.93	0.05024	0.0189	0.05708	0.464	27.637	0.13	0.00	1500	761
655	6561.13	1500	0.11	1551.73	40.06	0.03564	0.00981	0.06611	0.796	27.769	0.14	0.00	1500	761
656	6570.74	1500	1.64	1552.48	39.93	0.0103	-0.00698	0.03765	1.018	27.939	1.41	0.00	1500	761
657	6580.35	1500	1.53	1552.41	39.93	-0.00415	-0.01396	0.04258	0.791	28.071	1.42	0.00	1500	761

658	6591.17	1500	1.07	1555.05	39.93	0.01846	-0.00244	0.1583	0.674	28.183	1.04	0.00	1500	761
659	6600.73	1500	1.11	1558.07	39.93	0.02241	0.00068	0.0959	1.565	28.444	1.24	0.00	1500	761
660	6610.34	1500	3.09	1552.85	39.93	0.02095	-0.0002	0.10054	1.929	28.765	3.25	0.00	1500	761
661	6621.16	1500	3.18	1548.73	39.93	0.05298	0.0292	0.05601	2.007	29.100	3.07	0.00	1500	761
662	6630.72	1500	2.90	1552.15	39.93	0.04614	0.0228	0.05049	1.838	29.406	2.82	0.00	1500	761
663	6640.33	1500	2.52	1551.71	39.93	0.05317	0.02734	0.05752	1.880	29.720	2.55	0.00	1500	761
664	6651.15	1500	2.51	1549.04	39.93	0.03799	0.01597	0.05791	1.785	30.017	2.49	0.00	1500	761
665	6660.76	1500	2.36	1551.32	39.93	0.03838	0.01606	0.05762	1.748	30.308	2.39	0.00	1500	761
666	6670.32	1500	2.34	1554.47	39.93	0.04082	0.02041	0.05327	1.709	30.593	2.34	0.00	1500	761
667	6681.14	1500	2.33	1553.20	39.93	0.03535	0.01348	0.05493	1.689	30.875	2.31	0.00	1500	761
668	6690.75	1500	2.27	1551.53	39.93	0.0373	0.01577	0.05552	1.694	31.157	2.27	0.00	1500	761
669	6700.31	1500	2.27	1550.60	39.93	0.03364	0.01338	0.06069	1.660	31.434	2.28	0.00	1500	761
670	6711.13	1500	2.27	1549.69	39.93	0.0333	0.01206	0.05811	1.660	31.711	2.26	0.00	1500	761
671	6720.74	1500	2.29	1550.28	40.06	0.04126	0.01743	0.05747	1.655	31.987	2.26	0.00	1500	761
672	6730.35	1500	2.23	1549.08	39.93	0.03281	0.01108	0.05957	1.633	32.259	2.22	0.00	1500	761
673	6741.12	1500	2.21	1551.43	39.93	0.03276	0.01201	0.0603	1.646	32.533	2.20	0.00	1500	761
674	6750.73	1500	2.24	1549.51	39.93	0.04204	0.01836	0.05176	1.641	32.806	2.24	0.00	1500	761
675	6760.34	1500	2.23	1556.96	39.93	0.03232	0.01016	0.05718	1.616	33.076	2.21	0.00	1500	761
676	6771.11	1500	2.19	1552.62	39.93	0.03252	0.01108	0.05728	1.619	33.346	2.21	0.00	1500	761
677	6780.72	1500	2.16	1554.32	39.93	0.03657	0.01528	0.05469	1.614	33.615	2.17	0.00	1500	762
678	6790.33	1500	2.19	1552.57	40.06	0.03223	0.0106	0.06216	1.614	33.884	2.17	0.00	1500	762
679	6801.1	1500	2.17	1550.94	39.93	0.03413	0.01294	0.05405	1.604	34.151	2.17	0.00	1500	762
680	6810.71	1500	2.16	1555.27	39.93	0.03154	0.0105	0.05684	1.577	34.414	2.16	0.00	1500	762
681	6820.32	1500	2.18	1552.10	39.93	0.03193	0.01089	0.06172	1.594	34.679	2.17	0.00	1500	762
682	6831.09	1500	2.17	1551.64	39.93	0.03877	0.01499	0.05664	1.584	34.943	2.17	0.00	1500	762
683	6840.7	1500	2.12	1548.62	39.93	0.03047	0.00972	0.06177	1.565	35.204	2.11	0.00	1500	762
684	6850.31	1500	2.15	1552.44	39.93	0.03223	0.01006	0.06406	1.589	35.469	2.16	0.00	1500	762
685	6861.13	1500	2.16	1550.27	39.93	0.04053	0.01626	0.06104	1.575	35.732	2.16	0.00	1500	762
686	6870.69	1500	2.12	1553.33	40.06	0.03188	0.01045	0.06055	1.563	35.992	2.11	0.00	1500	762
687	6880.3	1500	2.13	1555.63	39.93	0.03345	0.01162	0.05889	1.570	36.254	2.15	0.00	1500	762
688	6891.12	1500	2.11	1558.34	39.93	0.03555	0.01421	0.06177	1.577	36.517	2.14	0.00	1500	762
689	6900.68	1500	2.10	1551.82	39.93	0.0314	0.00923	0.05937	1.565	36.777	2.10	0.00	1500	762
690	6910.29	1500	2.16	1553.85	39.93	0.03716	0.01353	0.0563	1.548	37.035	2.17	0.00	1500	762

691	6921.11	1500	2.11	1557.79	39.93	0.03115	0.01021	0.06011	1.531	37.290	2.10	0.00	1500	762
692	6930.72	1500	2.16	1553.63	39.93	0.0313	0.00869	0.05923	1.558	37.550	2.16	0.00	1500	762
693	6940.28	1500	2.14	1552.88	39.93	0.03955	0.01558	0.0563	1.541	37.807	2.11	0.00	1500	762
694	6951.1	1500	2.08	1553.44	39.93	0.03027	0.0083	0.06182	1.538	38.063	2.08	0.00	1500	762
695	6960.71	1500	2.11	1557.88	39.93	0.03066	0.00972	0.06196	1.553	38.322	2.10	0.00	1500	762
696	6970.27	1500	2.11	1552.36	40.06	0.03647	0.01455	0.05698	1.545	38.580	2.15	0.00	1500	762
697	6981.09	1500	2.07	1554.89	39.93	0.02939	0.00894	0.06255	1.538	38.836	2.05	0.00	1500	762
698	6990.7	1500	2.10	1555.46	39.93	0.03188	0.00991	0.06255	1.541	39.093	2.11	0.00	1500	762
699	7000.31	1500	2.06	1550.84	40.06	0.03013	0.01084	0.05444	1.531	39.348	2.10	0.00	1500	762
700	7011.08	1500	2.09	1555.85	39.93	0.03032	0.00898	0.06377	1.536	39.604	2.08	0.00	1500	762
701	7020.69	1500	0.27	1554.14	39.93	0.03359	0.01147	0.0626	1.523	39.858	1.33	0.00	1500	762
702	7030.3	1500	2.25	1553.61	39.93	0.02822	0.00845	0.06196	1.514	40.110	2.49	0.00	1500	762
703	7041.07	1500	2.22	1552.75	39.93	0.0293	0.00815	0.06245	1.538	40.366	2.12	0.00	1500	762
704	7050.68	1500	2.04	1555.46	39.93	0.03701	0.01509	0.05557	1.514	40.619	2.05	0.00	1500	762
705	7060.29	1500	2.04	1555.97	39.93	0.02769	0.00811	0.05898	1.516	40.871	2.03	0.00	1500	762
706	7071.05	1500	2.07	1553.36	39.93	0.02959	0.00894	0.06216	1.533	41.127	2.07	0.00	1500	762
707	7080.67	1500	2.08	1553.45	39.93	0.03467	0.01455	0.05649	1.526	41.381	2.09	0.00	1500	762
708	7090.28	1500	2.07	1553.97	39.93	0.02764	0.00884	0.05796	1.523	41.635	2.06	0.00	1500	762
709	7101.04	1500	2.04	1557.33	39.93	0.02871	0.00972	0.05859	1.523	41.889	2.04	0.00	1500	762
710	7110.66	1500	1.98	1555.25	39.93	0.0293	0.01187	0.05786	1.526	42.143	2.04	0.00	1500	762
711	7120.27	1500	2.05	1553.73	39.93	0.02725	0.00811	0.0605	1.523	42.397	2.03	0.00	1500	762
712	7131.09	1500	2.04	1553.30	39.93	0.03149	0.01128	0.05596	1.514	42.649	0.16	0.00	1500	762
713	7140.65	1500	2.01	1549.46	39.93	0.02627	0.0082	0.05693	1.501	42.900	2.26	0.00	1500	762
714	7150.26	1500	2.27	1555.85	39.93	0.02686	0.00864	0.05835	1.528	43.154	2.11	0.00	1500	762
715	7161.08	1500	2.00	1557.28	39.93	0.03486	0.01328	0.05679	1.506	43.405	1.99	0.00	1500	762
716	7170.63	1500	1.96	1555.10	39.93	0.02676	0.00825	0.05605	1.509	43.657	1.96	0.00	1500	762
717	7180.25	1500	1.94	1554.86	39.93	0.027	0.00845	0.05894	1.519	43.910	1.96	0.00	1500	762
718	7191.07	1500	1.99	1556.59	39.93	0.03442	0.01445	0.05571	1.509	44.161	1.99	0.00	1500	762
719	7200.68	1500	1.96	1558.15	39.93	0.02588	0.00718	0.06011	1.501	44.412	1.96	0.00	1500	762
720	7210.24	1500	1.94	1557.14	39.93	0.02822	0.01123	0.05679	1.506	44.663	1.94	0.00	1500	762
721	7221.06	1500	1.92	1553.71	39.93	0.02788	0.01177	0.05669	1.516	44.915	1.96	0.00	1500	762
722	7230.67	1500	1.97	1556.85	39.93	0.02446	0.00771	0.05776	1.504	45.166	1.98	0.00	1500	762
723	7240.23	1500	1.96	1555.08	39.93	0.03091	0.01177	0.05801	1.494	45.415	1.94	0.00	1500	762

724	7251.05	1500	2.08	1556.85	39.93	0.02515	0.00854	0.05967	1.555	45.674	2.07	0.00	1500	762
725	7260.66	1500	2.10	1556.43	39.93	0.02671	0.00908	0.06245	1.577	45.937	2.09	0.00	1500	763
726	7270.27	1500	2.10	1560.19	40.06	0.03496	0.01489	0.05752	1.582	46.201	2.07	0.00	1500	763
727	7281.04	1500	2.08	1556.82	39.93	0.02554	0.00923	0.05474	1.565	46.462	2.09	0.00	1500	763
728	7290.65	1500	2.12	1551.57	39.93	0.02661	0.0104	0.05986	1.592	46.727	2.10	0.00	1500	763
729	7300.26	1500	2.04	1559.35	39.93	0.03364	0.01572	0.05522	1.580	46.990	2.06	0.00	1500	763
730	7311.02	1500	2.05	1557.59	39.93	0.02515	0.00845	0.05537	1.563	47.251	2.04	0.00	1500	763
731	7320.64	1500	2.06	1557.49	39.93	0.02646	0.00947	0.05894	1.577	47.513	2.07	0.00	1500	763
732	7330.25	1500	2.02	1557.26	39.93	0.02695	0.01108	0.05435	1.558	47.773	2.05	0.00	1500	763
733	7341.01	1500	2.03	1553.84	39.93	0.02568	0.00898	0.05601	1.545	48.031	2.03	0.00	1500	763
734	7350.63	1500	2.02	1559.31	39.93	0.02939	0.01167	0.05278	1.548	48.289	2.05	0.00	1500	763
735	7360.24	1500	2.03	1553.43	39.93	0.02368	0.0082	0.05845	1.528	48.543	2.01	0.00	1500	763
736	7371	1500	2.01	1555.90	39.93	0.02505	0.00859	0.0561	1.541	48.800	1.99	0.00	1500	763
737	7380.61	1500	2.04	1553.56	39.93	0.03228	0.01436	0.05068	1.528	49.055	2.04	0.00	1500	763
738	7390.23	1500	2.02	1555.43	39.93	0.02324	0.00786	0.05708	1.526	49.309	2.02	0.00	1500	763
739	7401.05	1500	2.00	1560.52	39.93	0.02451	0.00942	0.05771	0.056	49.318	2.01	0.00	1500	763
740	7410.6	1500	2.01	1557.01	40.06	0.0312	0.01514	0.05054	1.401	49.552	2.02	0.00	1500	763
741	7420.22	1500	2.02	1555.41	40.06	0.02334	0.00854	0.05562	1.519	49.805	2.01	0.00	1500	763
742	7431.04	1500	2.00	1555.73	39.93	0.02446	0.00942	0.05234	1.516	50.058	2.01	0.00	1500	763
743	7440.59	1500	2.01	1558.97	39.93	0.02578	0.01152	0.05288	1.516	50.311	2.03	0.00	1500	763
744	7450.21	1500	2.41	1553.03	39.93	0.02368	0.00879	0.05522	1.511	50.562	2.16	0.00	1500	763
745	7461.03	1500	2.22	1562.65	39.93	0.0272	0.01108	0.05273	1.504	50.813	2.12	0.00	1500	763
746	7470.64	1500	1.98	1556.20	39.93	0.02246	0.00889	0.05376	1.482	51.060	1.98	0.00	1500	763
747	7480.19	1500	2.03	1558.43	40.06	0.02266	0.00806	0.05713	1.514	51.312	2.00	0.00	1500	763
748	7491.02	1500	2.00	1555.61	40.06	0.02983	0.01338	0.05542	1.487	51.560	2.03	0.00	1500	763
749	7500.63	1500	1.98	1555.27	40.06	0.02197	0.00732	0.05854	1.484	51.808	1.98	0.00	1500	763
750	7510.18	1500	2.01	1560.07	39.93	0.0229	0.00825	0.05449	1.501	52.058	0.34	0.00	1500	763
751	7521	1500	2.22	1551.15	39.93	0.02969	0.01475	0.05112	1.494	52.307	2.37	0.00	1500	763
752	7530.62	1500	2.22	1559.00	39.93	0.02104	0.00776	0.05674	1.487	52.555	2.11	0.00	1500	763
753	7540.23	1500	2.00	1554.71	39.93	0.02461	0.01021	0.05518	1.492	52.803	1.99	0.00	1500	763
754	7550.99	1500	1.97	1554.44	39.93	0.02515	0.01118	0.0563	1.497	53.053	2.01	0.00	1500	763
755	7560.61	1500	2.00	1555.68	40.06	0.02109	0.00732	0.05728	1.479	53.299	1.98	0.00	1500	763
756	7570.22	1500	1.98	1556.78	40.06	0.02788	0.01201	0.05405	1.470	53.544	1.99	0.00	1500	763

757	7580.98	1500	1.96	1558.17	40.06	0.02017	0.00752	0.05591	1.470	53.789	1.97	0.00	1500	763
758	7590.6	1500	1.96	1562.86	40.06	0.02129	0.00825	0.06074	1.492	54.038	1.95	0.00	1500	763
759	7600.21	1500	2.01	1555.94	39.93	0.02969	0.01436	0.05171	1.479	54.284	2.01	0.00	1500	763
760	7610.97	1500	1.96	1558.45	39.93	0.01948	0.00718	0.05811	1.475	54.530	1.96	0.00	1500	763
761	7620.58	1500	1.99	1558.96	39.93	0.02104	0.00908	0.05293	1.497	54.780	2.00	0.00	1500	763
762	7630.2	1500	2.01	1557.30	39.93	0.02568	0.01226	0.05386	1.492	55.028	2.03	0.00	1500	763
763	7640.96	1500	1.97	1557.03	40.06	0.01963	0.00654	0.05991	1.487	55.276	1.96	0.00	1500	763
764	7650.57	1500	2.02	1558.63	39.93	0.02144	0.00908	0.05068	1.501	55.526	2.01	0.00	1500	763
765	7660.19	1500	0.69	1559.40	39.93	0.02065	0.00957	0.05327	1.494	55.775	1.13	0.00	1500	763
766	7671.01	1500	2.60	1555.81	39.93	0.01997	0.00825	0.05591	1.494	56.024	2.69	0.00	1500	763
767	7680.56	1500	2.01	1560.57	39.93	0.0252	0.01089	0.0585	1.492	56.273	1.92	0.00	1500	763
768	7690.18	1500	1.96	1557.07	39.93	0.02002	0.00752	0.05195	1.477	56.519	1.95	0.00	1500	763
769	7701	1500	1.97	1559.51	40.06	0.02085	0.00732	0.05884	1.501	56.769	1.98	0.00	1500	763
770	7710.55	1500	2.02	1556.58	40.06	0.02852	0.01367	0.05493	1.484	57.017	2.01	0.00	1500	763
771	7720.16	1500	1.97	1559.39	39.93	0.0188	0.00664	0.04971	1.479	57.263	1.96	0.00	1500	763
772	7730.98	1500	1.97	1558.08	40.06	0.01958	0.00791	0.05488	1.499	57.513	1.97	0.00	1500	763
773	7740.6	1500	2.06	1552.91	39.93	0.02612	0.01299	0.05278	1.572	57.775	2.09	0.00	1500	763
774	7750.15	1500	2.10	1560.33	39.93	0.01982	0.00723	0.0541	1.560	58.035	2.09	0.00	1500	763
775	7760.97	1500	2.14	1557.37	39.93	0.02212	0.01006	0.05117	1.580	58.298	2.12	0.00	1500	763
776	7770.59	1500	2.09	1561.30	40.06	0.0249	0.01284	0.05156	1.587	58.563	2.12	0.00	1500	763
777	7780.14	1500	2.10	1557.06	40.06	0.02017	0.00928	0.05283	1.577	58.826	2.07	0.00	1500	763
778	7790.96	1500	2.11	1560.03	40.06	0.02358	0.01104	0.05381	1.582	59.089	2.12	0.00	1500	763
779	7800.58	1500	2.07	1556.82	39.93	0.02109	0.00977	0.05181	1.550	59.348	2.07	0.00	1500	763
780	7810.19	1500	2.08	1559.82	40.06	0.02114	0.00967	0.05088	1.580	59.611	2.07	0.00	1500	763
781	7820.95	1500	2.09	1559.38	39.93	0.02661	0.01387	0.04951	1.567	59.872	2.09	0.00	1500	763
782	7830.56	1500	2.06	1558.56	39.93	0.01934	0.00874	0.05215	1.543	60.129	2.04	0.00	1500	763
783	7840.18	1500	2.05	1556.60	39.93	0.0207	0.00991	0.0542	1.572	60.391	2.08	0.00	1500	763
784	7850.94	1500	2.07	1558.28	40.06	0.02822	0.01523	0.0519	1.553	60.650	2.05	0.00	1500	764
785	7860.55	1500	2.01	1559.75	40.06	0.01973	0.00898	0.05298	1.548	60.908	2.01	0.00	1500	764
786	7870.17	1500	2.06	1561.87	39.93	0.02187	0.01089	0.05444	1.558	61.168	2.09	0.00	1500	763
787	7880.93	1500	2.03	1559.94	40.06	0.02461	0.01421	0.05171	1.560	61.428	2.06	0.00	1500	763
788	7890.54	1500	1.99	1559.65	39.93	0.01973	0.00806	0.05005	1.548	61.686	1.99	0.00	1500	764
789	7900.16	1500	2.04	1554.65	39.93	0.02529	0.01206	0.05288	1.543	61.943	2.04	0.00	1500	764

790	7910.92	1500	2.01	1558.13	39.93	0.01987	0.00957	0.04902	1.523	62.197	2.00	0.00	1500	764
791	7920.53	1500	2.04	1557.00	40.06	0.01909	0.00874	0.05283	1.548	62.455	2.03	0.00	1500	764
792	7930.14	1500	2.06	1561.65	39.93	0.02725	0.01484	0.05132	1.533	62.710	2.03	0.00	1500	764
793	7940.96	1500	1.96	1554.26	39.93	0.01812	0.00718	0.05376	1.521	62.964	1.96	0.00	1500	764
794	7950.52	1500	2.02	1561.77	39.93	0.01934	0.00854	0.04863	1.543	63.221	2.04	0.00	1500	764
795	7960.13	1500	2.03	1559.32	39.93	0.02529	0.01465	0.05317	1.538	63.477	2.06	0.00	1500	764
796	7970.95	1500	1.98	1565.90	39.93	0.01753	0.00786	0.05161	1.521	63.731	1.98	0.00	1500	764
797	7980.51	1500	2.03	1559.87	40.06	0.01895	0.01021	0.0541	1.533	63.986	2.03	0.00	1500	764
798	7990.12	1500	1.96	1563.30	39.93	0.01899	0.00991	0.05259	1.528	64.241	1.99	0.00	1500	764
799	8000.94	1500	1.98	1559.40	40.06	0.01821	0.00796	0.05249	1.521	64.495	1.98	0.00	1500	764
800	8010.56	1500	2.00	1564.82	40.06	0.02207	0.01162	0.05098	1.514	64.747	2.00	0.00	1500	764
801	8020.11	1500	1.95	1561.73	40.06	0.0168	0.00776	0.04971	1.497	64.996	1.94	0.00	1500	764
802	8030.93	1500	1.99	1559.95	39.93	0.01699	0.00894	0.05078	1.528	65.251	1.99	0.00	1500	764
803	8040.54	1500	2.00	1557.79	40.06	0.02578	0.01377	0.0498	1.509	65.503	2.00	0.00	1500	764
804	8050.1	1500	1.96	1554.82	39.93	0.0168	0.00747	0.05762	1.511	65.754	1.96	0.00	1500	764
805	8060.92	1500	2.01	1554.42	39.93	0.01807	0.00796	0.05068	1.528	66.009	2.01	0.00	1500	764
806	8070.53	1500	2.00	1554.94	39.93	0.02407	0.01406	0.04629	1.521	66.263	1.99	0.00	1500	764
807	8080.15	1500	1.97	1559.99	40.06	0.01709	0.00713	0.05552	1.516	66.515	1.97	0.00	1500	764
808	8090.91	1500	1.99	1565.90	39.93	0.01743	0.00796	0.04795	1.553	66.774	2.00	0.00	1500	764
809	8100.52	1500	1.99	1557.28	40.06	0.02021	0.01172	0.04985	1.560	67.034	2.05	0.00	1500	764
810	8110.14	1500	2.03	1556.90	39.93	0.01709	0.00845	0.05244	1.545	67.292	2.01	0.00	1500	764
811	8120.9	1500	2.02	1548.19	39.93	0.01963	0.01011	0.05005	1.545	67.549	2.02	0.00	1500	764
812	8130.51	1500	1.98	1560.70	40.06	0.01694	0.00854	0.04756	1.521	67.803	1.99	0.00	1500	764
813	8140.12	1500	2.01	1561.05	39.93	0.0165	0.00884	0.05215	1.543	68.060	1.99	0.00	1500	764
814	8150.89	1500	2.00	1570.11	39.93	0.02402	0.0124	0.05254	1.526	68.314	1.99	0.00	1500	764
815	8160.5	1500	1.97	1546.63	39.93	0.01606	0.00791	0.05063	1.514	68.567	1.96	0.00	1500	764
816	8170.11	1500	2.01	1555.75	39.93	0.01709	0.00859	0.04883	1.531	68.822	1.99	0.00	1500	764
817	8180.88	1500	1.98	1550.61	40.06	0.02422	0.01401	0.05059	1.519	69.075	1.99	0.00	1500	764
818	8190.49	1500	1.96	1551.50	40.06	0.01597	0.00762	0.04912	1.509	69.326	1.96	0.00	1500	764
819	8200.1	1500	1.99	1565.59	39.93	0.01763	0.00967	0.05527	1.521	69.580	1.98	0.00	1500	764
820	8210.92	1500	1.97	1571.29	39.93	0.01992	0.01191	0.04932	1.526	69.834	2.00	0.00	1500	764
821	8220.48	1500	1.95	1561.16	40.06	0.01602	0.00669	0.05039	1.509	70.085	1.96	0.00	1500	764
822	8230.09	1500	1.96	1557.44	39.93	0.02134	0.01182	0.04897	1.506	70.337	1.95	0.00	1500	764

823	8240.91	1500	1.93	1560.42	39.93	0.01577	0.00898	0.04995	1.494	70.586	1.93	0.00	1500	764
824	8250.52	1500	1.97	1552.63	39.93	0.01563	0.00747	0.05288	1.516	70.838	1.96	0.00	1500	764
825	8260.08	1500	1.97	1556.03	40.06	0.02402	0.01411	0.0498	1.499	71.088	1.97	0.00	1500	764
826	8270.9	1500	1.93	1562.13	39.93	0.0144	0.0063	0.0521	1.489	71.336	1.92	0.00	1500	764
827	8280.51	1500	1.74	1560.81	39.93	0.01533	0.00718	0.05083	1.519	71.589	2.43	0.00	1500	764
828	8290.07	1500	2.31	1563.58	39.93	0.02119	0.01226	0.04609	1.511	71.841	2.21	0.00	1500	764
829	8300.89	1500	1.94	1554.83	39.93	0.01475	0.00649	0.04932	0.059	71.851	1.94	0.00	1500	764
830	8310.5	1500	1.97	1570.11	40.06	0.01514	0.00864	0.052	1.448	72.092	1.98	0.00	1500	764
831	8320.06	1500	1.92	1567.80	40.06	0.01631	0.00903	0.04473	1.511	72.344	1.97	0.00	1500	764
832	8330.88	1500	1.94	1556.74	40.06	0.01436	0.00703	0.05259	1.506	72.595	1.93	0.00	1500	764
833	8340.49	1500	1.95	1560.66	39.93	0.01909	0.01143	0.04985	1.501	72.846	1.94	0.00	1500	764
834	8350.1	1500	1.90	1557.97	39.93	0.01392	0.00708	0.0498	1.492	73.094	1.90	0.00	1500	764
835	8360.87	1500	1.94	1543.92	39.93	0.01436	0.00742	0.05278	1.511	73.346	1.92	0.00	1500	764
836	8370.48	1500	1.97	1559.05	39.93	0.02261	0.0126	0.0562	1.497	73.595	1.95	0.00	1500	764
837	8380.09	1500	1.93	1566.50	39.93	0.01357	0.0064	0.04756	1.499	73.845	1.94	0.00	1500	764
838	8390.86	1500	1.98	1572.81	39.93	0.01377	0.00737	0.04736	1.516	74.098	1.97	0.00	1500	764
839	8400.47	1500	1.92	1504.99	39.93	0.02197	0.01333	0.04517	1.428	74.336	1.93	0.00	1500	764
840	8410.08	1500	1.95	1565.86	39.93	0.01362	0.00703	0.04775	1.494	74.585	1.93	0.00	1500	764
841	8420.85	1500	2.05	1584.33	39.93	0.01445	0.00732	0.04995	1.472	74.830	2.01	0.00	1500	764
842	8430.46	1500	1.94	1555.49	39.93	0.01641	0.0103	0.04707	1.472	75.076	1.98	0.00	1500	764
843	8440.07	1500	1.99	1549.91	39.93	0.01299	0.00747	0.05161	1.460	75.319	2.00	0.00	1500	764
844	8450.84	1500	1.99	1554.34	39.93	0.01709	0.00918	0.0499	1.458	75.562	1.99	0.00	1500	764
845	8460.45	1500	2.00	1582.65	39.93	0.01348	0.00713	0.0522	1.484	75.809	2.01	0.00	1500	764
846	8470.06	1500	2.04	1552.20	39.93	0.01401	0.00708	0.0481	1.499	76.059	2.04	0.00	1500	764
847	8480.88	1500	2.04	1542.64	39.93	0.02119	0.01323	0.05078	1.499	76.309	2.03	0.00	1500	764
848	8490.44	1500	2.01	1567.92	39.93	0.01401	0.00811	0.04741	1.489	76.557	2.00	0.00	1500	764
849	8500.05	1500	2.08	1543.91	39.93	0.01572	0.00854	0.04502	1.516	76.810	2.09	0.00	1500	764
850	8510.87	1500	2.07	1554.16	39.93	0.02349	0.01436	0.04536	1.499	77.060	2.04	0.00	1500	764
851	8520.43	1500	2.02	1547.80	39.93	0.01333	0.00767	0.0522	1.489	77.308	2.01	0.00	1500	764
852	8530.04	1500	2.06	1548.35	39.93	0.01577	0.00962	0.04814	1.499	77.558	2.06	0.00	1500	764
853	8540.86	1500	2.00	1553.30	39.93	0.01914	0.01255	0.04863	1.499	77.808	2.04	0.00	1500	764
854	8550.47	1500	2.00	1554.58	39.93	0.01357	0.00791	0.05049	1.494	78.057	1.99	0.00	1500	764
855	8560.03	1500	2.00	1549.62	39.93	0.01772	0.01118	0.04722	1.484	78.304	2.00	0.00	1500	765

856	8570.85	1500	1.97	1556.92	39.93	0.01465	0.00845	0.04297	1.477	78.550	1.98	0.00	1500	764
857	8580.46	1500	2.00	1557.53	39.93	0.01392	0.00737	0.05093	1.497	78.800	1.98	0.00	1500	765
858	8590.02	1500	2.02	1558.32	39.93	0.02241	0.01455	0.04644	1.475	79.045	2.03	0.00	1500	765
859	8600.84	1500	1.97	1559.07	39.93	0.01304	0.00708	0.04434	1.462	79.289	1.97	0.00	1500	765
860	8610.45	1500	1.95	1560.89	39.93	0.01313	0.00767	0.054	1.494	79.538	1.95	0.00	1500	765
861	8620.06	1500	2.00	1565.72	39.93	0.02061	0.01333	0.04492	1.482	79.785	2.01	0.00	1500	765
862	8630.83	1500	1.96	1559.39	39.93	0.01323	0.00762	0.05542	1.465	80.029	1.94	0.00	1500	765
863	8640.44	1500	1.97	1561.39	39.93	0.01455	0.00884	0.04819	1.484	80.277	1.97	0.00	1500	765
864	8650.05	1500	0.32	1564.01	39.93	0.01528	0.0105	0.04858	1.484	80.524	0.73	0.00	1500	765
865	8660.82	1500	2.40	1548.90	39.93	0.01304	0.00718	0.05073	1.472	80.770	2.49	0.00	1500	765
866	8670.43	1500	1.99	1564.63	39.93	0.01641	0.01021	0.04741	1.465	81.014	1.99	0.00	1500	765
867	8680.04	1500	1.95	1557.85	39.93	0.01201	0.00728	0.04937	1.450	81.255	1.94	0.00	1500	765
868	8690.81	1500	1.96	1558.26	39.93	0.01304	0.00742	0.048	1.467	81.500	1.96	0.00	1500	765
869	8700.42	1500	1.99	1559.40	39.93	0.0189	0.01343	0.0541	1.458	81.743	1.96	0.00	1500	765
870	8710.03	1500	1.90	1567.96	39.93	0.01201	0.00581	0.04482	1.455	81.985	1.90	0.00	1500	765
871	8720.85	1500	2.01	1561.55	39.93	0.01255	0.00684	0.05117	1.509	82.237	2.02	0.00	1500	765
872	8730.41	1500	2.02	1544.09	39.93	0.02051	0.01436	0.05015	1.504	82.487	2.00	0.00	1500	765
873	8740.02	1500	2.00	1558.88	39.93	0.01226	0.00703	0.04868	1.497	82.737	1.99	0.00	1500	765
874	8750.84	1500	2.02	1564.73	39.93	0.01455	0.00952	0.04849	1.519	82.990	2.01	0.00	1500	765
875	8760.4	1500	1.96	1564.97	39.93	0.01748	0.01284	0.04834	1.526	83.244	1.99	0.00	1500	765
876	8770.01	1500	2.03	1564.69	39.93	0.01226	0.00825	0.05122	1.504	83.495	2.02	0.00	1500	765
877	8780.83	1500	1.22	1559.23	39.93	0.01548	0.01064	0.04712	1.509	83.746	1.28	0.00	1500	765
878	8790.39	1500	2.56	1559.59	39.80	0.01333	0.00889	0.04678	1.487	83.994	2.59	0.00	1500	765
879	8800	1500	1.97	1565.97	39.93	0.01328	0.00786	0.04678	1.509	84.246	1.97	0.00	1500	765
880	8810.82	1500	1.97	1552.36	39.93	0.01865	0.01216	0.04707	1.497	84.495	2.00	0.00	1500	765
881	8820.43	1500	1.98	1558.24	39.93	0.01226	0.00762	0.04478	1.484	84.742	1.97	0.00	1500	765
882	8831.2	1500	1.98	1557.76	39.93	0.01304	0.0084	0.04678	1.494	84.991	1.97	0.00	1500	765
883	8840.81	1500	1.30	1559.14	39.93	0.0208	0.01387	0.0479	1.489	85.240	1.44	0.00	1500	765
884	8850.42	1500	2.57	1559.64	39.93	0.01274	0.00728	0.04658	1.477	85.486	2.53	0.00	1500	765
885	8861.19	1500	1.93	1564.33	39.93	0.01206	0.00728	0.04966	1.499	85.736	1.94	0.00	1500	765
886	8870.8	1500	2.01	1559.32	39.93	0.01753	0.01274	0.0457	1.494	85.985	2.03	0.00	1500	765
887	8880.41	1500	1.95	1567.09	39.93	0.01138	0.00737	0.04951	1.477	86.231	1.94	0.00	1500	765
888	8890.02	1500	2.00	1558.52	39.93	0.01646	0.01147	0.0458	1.514	86.483	2.00	0.00	1500	765

889	8900.79	1500	2.00	1562.30	39.93	0.01362	0.00923	0.04404	1.506	86.734	2.02	0.00	1500	765
890	8910.4	1500	1.99	1552.41	39.93	0.01196	0.00767	0.04702	1.514	86.987	1.98	0.00	1500	765
891	8920.01	1500	2.00	1567.14	39.93	0.01938	0.01338	0.04409	1.504	87.237	1.99	0.00	1500	765
892	8930.78	1500	1.97	1558.86	39.93	0.01206	0.00757	0.04873	1.492	87.486	1.96	0.00	1500	765
893	8940.39	1500	1.98	1558.65	39.93	0.01279	0.00825	0.04658	1.514	87.738	1.99	0.00	1500	765
894	8950	1500	2.04	1562.28	39.93	0.02012	0.01475	0.04243	1.511	87.990	2.04	0.00	1500	765
895	8960.77	1500	1.93	1561.10	39.93	0.01167	0.00684	0.04785	1.497	88.239	1.92	0.00	1500	765
896	8970.38	1500	1.99	1562.79	39.93	0.01284	0.00884	0.04551	1.506	88.490	2.00	0.00	1500	765
897	8981.2	1500	1.98	1555.96	39.93	0.01816	0.01465	0.0501	1.499	88.740	1.99	0.00	1500	765
898	8990.81	1500	1.94	1562.87	39.93	0.01167	0.00713	0.04609	1.489	88.988	1.93	0.00	1500	765
899	9000.37	1500	1.95	1557.10	39.93	0.01504	0.0105	0.04712	1.489	89.237	1.96	0.00	1500	765
900	9011.19	1500	1.89	1566.55	39.93	0.01396	0.01006	0.04629	1.504	89.487	1.94	0.00	1500	765
901	9020.8	1500	1.96	1560.27	39.93	0.01089	0.00776	0.04761	1.492	89.736	1.96	0.00	1500	765
902	9030.36	1500	1.97	1560.80	39.93	0.01899	0.01279	0.04746	1.472	89.981	1.95	0.00	1500	765
903	9041.18	1500	1.92	1560.39	39.93	0.01128	0.00737	0.05078	1.467	90.226	1.91	0.00	1500	765
904	9050.79	1500	1.96	1558.77	39.93	0.01187	0.0083	0.05039	1.484	90.473	1.97	0.00	1500	765
905	9060.35	1500	1.96	1557.31	39.93	0.01899	0.01421	0.04424	1.477	90.719	1.95	0.00	1500	765
906	9071.17	1500	1.94	1556.15	39.93	0.01094	0.00786	0.04932	1.467	90.964	1.93	0.00	1500	765
907	9080.78	1500	2.08	1559.85	39.93	0.01182	0.00835	0.04697	1.584	91.228	2.08	0.00	1500	764
908	9090.39	1500	2.03	1561.99	39.93	0.01758	0.01426	0.04429	1.584	91.492	2.05	0.00	1500	764
909	9101.16	1500	2.11	1560.14	39.93	0.01401	0.00996	0.04492	1.577	91.755	2.09	0.00	1500	764
910	9110.77	1500	2.08	1555.46	39.93	0.01489	0.01162	0.04492	1.592	92.020	2.09	0.00	1500	764
911	9120.38	1500	2.09	1555.59	39.93	0.01606	0.01284	0.04492	1.570	92.282	2.10	0.00	1500	764
912	9131.15	1500	2.11	1557.98	40.06	0.01387	0.00889	0.04185	1.589	92.547	2.07	0.00	1500	764
913	9140.76	1500	2.07	1553.04	39.93	0.01777	0.01294	0.05186	1.592	92.812	2.09	0.00	1500	764
914	9150.37	1500	2.06	1567.37	39.93	0.0124	0.00879	0.04648	1.565	93.073	2.06	0.00	1500	764
915	9161.13	1500	2.09	1561.16	39.93	0.01274	0.00986	0.04663	1.587	93.337	2.08	0.00	1500	764
916	9170.75	1500	2.08	1566.59	40.06	0.02114	0.01621	0.04756	1.584	93.602	2.08	0.00	1500	764
917	9180.36	1500	2.08	1546.75	39.93	0.0123	0.00825	0.0457	1.575	93.864	2.06	0.00	1500	764
918	9191.18	1500	2.06	1565.63	39.93	0.01333	0.00996	0.04487	1.594	94.130	2.07	0.00	1500	764
919	9200.74	1500	2.08	1552.70	39.93	0.02061	0.01519	0.04639	0.061	94.140	2.10	0.00	1500	764
920	9210.35	1500	2.04	1547.13	40.06	0.01265	0.00918	0.04883	1.489	94.388	2.02	0.00	1500	764
921	9221.17	1500	2.10	1562.55	39.93	0.01255	0.00977	0.04478	1.555	94.647	2.10	0.00	1500	764

922	9230.73	1500	2.03	1559.85	39.93	0.0145	0.01104	0.04961	1.543	94.904	2.04	0.00	1500	765
923	9240.34	1500	2.04	1552.65	39.93	0.01216	0.00913	0.0481	1.548	95.162	2.04	0.00	1500	764
924	9251.16	1500	2.03	1548.17	39.93	0.01567	0.01191	0.04658	1.543	95.420	2.02	0.00	1500	765
925	9260.77	1500	1.98	1559.75	39.93	0.01226	0.0084	0.04248	1.526	95.674	1.97	0.00	1500	765
926	9270.33	1500	2.01	1544.24	39.93	0.01211	0.00874	0.04937	1.550	95.932	2.01	0.00	1500	765
927	9281.15	1500	2.06	1561.96	39.93	0.01855	0.01396	0.04849	1.536	96.188	2.04	0.00	1500	765
928	9290.76	1500	2.00	1549.25	39.80	0.01079	0.00806	0.04624	1.528	96.443	2.00	0.00	1500	765
929	9300.32	1500	2.05	1556.34	39.93	0.01284	0.00889	0.04678	1.533	96.698	2.05	0.00	1500	765
930	9311.14	1500	2.03	1573.16	39.93	0.01978	0.01558	0.04575	1.541	96.955	2.03	0.00	1500	765
931	9320.75	1500	2.02	1564.09	40.06	0.01055	0.00874	0.04219	1.536	97.211	2.00	0.00	1500	765
932	9330.36	1500	2.01	1551.88	39.80	0.01377	0.01025	0.04761	1.523	97.465	2.02	0.00	1500	765
933	9341.13	1500	1.94	1557.72	39.93	0.01426	0.01245	0.04248	1.538	97.721	2.01	0.00	1500	765
934	9350.74	1500	2.03	1542.62	39.93	0.01074	0.0083	0.04814	1.536	97.977	2.02	0.00	1500	765
935	9360.35	1500	2.03	1559.53	39.93	0.01758	0.01289	0.048	1.523	98.231	2.02	0.00	1500	765
936	9371.11	1500	2.01	1556.42	39.93	0.01152	0.0084	0.04668	1.494	98.480	1.99	0.00	1500	765
937	9380.73	1500	2.03	1545.06	39.93	0.01182	0.0084	0.04688	1.533	98.736	2.02	0.00	1500	765
938	9390.34	1500	2.03	1549.13	39.93	0.01904	0.01567	0.04229	1.526	98.990	2.02	0.00	1500	765
939	9401.1	1500	1.98	1569.11	39.93	0.00972	0.00806	0.04834	1.506	99.241	1.98	0.00	1500	765
940	9410.72	1500	1.98	1565.46	40.06	0.01084	0.00811	0.04414	1.528	99.496	1.99	0.00	1500	765
941	9420.33	1500	2.01	1533.29	39.93	0.01675	0.01333	0.04463	1.528	99.751	2.03	0.00	1500	765
942	9431.09	1500	2.00	1545.65	39.93	0.00996	0.00718	0.04482	1.509	100.002	1.99	0.00	1500	765
943	9440.71	1500	1.97	1566.03	39.93	0.01235	0.00957	0.04561	1.519	100.255	2.00	0.00	1500	765
944	9450.32	1500	1.97	1532.29	39.93	0.01108	0.01011	0.04526	1.511	100.507	1.99	0.00	1500	765
945	9461.14	1500	1.99	1557.75	39.93	0.00952	0.00791	0.04233	1.516	100.760	1.97	0.00	1500	765
946	9470.69	1500	2.01	1546.42	39.93	0.01567	0.01226	0.04971	1.509	101.011	2.01	0.00	1500	765
947	9480.31	1500	2.00	1539.17	39.80	0.00967	0.00728	0.04761	1.501	101.261	1.99	0.00	1500	765
948	9491.13	1500	1.99	1550.93	39.93	0.00991	0.00845	0.04434	1.528	101.516	2.00	0.00	1500	765
949	9500.68	1500	2.02	1533.91	39.93	0.01724	0.01436	0.04517	1.514	101.768	2.01	0.00	1500	765
950	9510.3	1500	1.97	1548.84	39.93	0.01001	0.00752	0.0502	1.501	102.019	1.96	0.00	1500	765
951	9521.12	1500	1.99	1548.67	39.93	0.01016	0.00825	0.04253	1.523	102.273	1.99	0.00	1500	765
952	9530.73	1500	2.00	1541.29	39.93	0.01665	0.01426	0.04321	1.526	102.527	2.02	0.00	1500	765
953	9540.29	1500	1.96	1560.34	39.93	0.00981	0.00762	0.04365	1.516	102.780	1.96	0.00	1500	765
954	9551.11	1500	2.02	1561.02	39.93	0.01069	0.00908	0.04106	1.521	103.033	2.04	0.00	1500	765

955	9560.72	1500	1.97	1547.96	39.93	0.0125	0.01055	0.04424	1.506	103.284	2.00	0.00	1500	765
956	9570.27	1500	1.98	1536.56	39.93	0.0105	0.00757	0.04922	1.516	103.537	1.97	0.00	1500	765
957	9581.09	1500	1.99	1538.24	39.93	0.01392	0.01108	0.04722	1.509	103.788	2.00	0.00	1500	765
958	9590.71	1500	1.95	1536.12	39.93	0.01001	0.00771	0.04141	1.497	104.038	1.95	0.00	1500	765
959	9600.32	1500	1.99	1543.68	39.93	0.0105	0.00786	0.03877	1.528	104.292	1.98	0.00	1500	765
960	9611.08	1500	1.99	1557.43	39.93	0.01655	0.0146	0.05029	1.506	104.544	1.98	0.00	1500	765
961	9620.7	1500	1.94	1563.78	39.93	0.00957	0.00698	0.04551	1.504	104.794	1.96	0.00	1500	765
962	9630.31	1500	2.00	1541.91	39.93	0.01064	0.00918	0.04429	1.519	105.047	2.01	0.00	1500	765
963	9641.07	1500	1.40	1532.58	39.93	0.01646	0.01543	0.04097	1.511	105.299	2.18	0.00	1500	765
964	9650.69	1500	2.53	1549.26	39.93	0.00962	0.00776	0.04395	1.501	105.549	2.43	0.00	1500	765
965	9660.3	1500	1.93	1542.09	40.06	0.01211	0.00962	0.04497	1.506	105.800	1.94	0.00	1500	765
966	9671.06	1500	1.93	1525.31	39.93	0.01255	0.01177	0.04717	1.521	106.054	1.99	0.00	1500	765
967	9680.67	1500	1.96	1537.18	39.93	0.00928	0.00728	0.04248	1.521	106.307	1.95	0.00	1500	765
968	9690.29	1500	1.97	1559.60	39.93	0.01519	0.01274	0.0481	1.492	106.556	1.97	0.00	1500	765
969	9701.05	1500	1.94	1567.23	39.93	0.00981	0.00806	0.04771	1.477	106.802	1.95	0.00	1500	765
970	9710.66	1500	2.23	1554.73	39.93	0.00991	0.00796	0.04609	1.682	107.083	2.23	0.00	1500	765
971	9720.28	1500	2.27	1541.99	39.93	0.01772	0.01504	0.04331	1.697	107.365	2.22	0.00	1500	765
972	9731.1	1500	2.25	1552.72	39.93	0.01274	0.01113	0.04551	1.697	107.648	2.25	0.00	1500	765
973	9740.65	1500	2.29	1550.95	39.93	0.01348	0.01206	0.04585	1.731	107.937	2.30	0.00	1500	765
974	9750.27	1500	2.27	1562.92	39.93	0.02339	0.02031	0.04585	1.750	108.228	2.30	0.00	1500	765
975	9761.09	1500	2.29	1537.80	39.93	0.01401	0.01255	0.04883	1.714	108.514	2.28	0.00	1500	765
976	9770.64	1500	2.29	1548.00	39.93	0.0146	0.01401	0.04224	1.741	108.804	2.29	0.00	1500	765
977	9780.25	1500	2.25	1560.05	39.93	0.02095	0.01938	0.04287	1.731	109.093	2.28	0.00	1500	765
978	9791.08	1500	2.31	1543.27	39.93	0.01392	0.01255	0.04448	1.726	109.380	2.30	0.00	1500	765
979	9800.69	1500	2.25	1547.59	40.06	0.01631	0.01509	0.04326	1.743	109.671	2.27	0.00	1500	765
980	9810.24	1500	0.19	1560.46	39.93	0.01533	0.01392	0.04014	1.702	109.954	0.88	0.00	1500	765
981	9821.06	1500	2.76	1542.27	39.93	0.01416	0.01201	0.04106	1.729	110.243	2.86	0.00	1500	765
982	9830.68	1500	2.25	1559.60	39.93	0.02007	0.01709	0.04395	1.750	110.534	2.17	0.00	1500	765
983	9840.23	1500	2.21	1556.42	39.93	0.01323	0.01167	0.04141	1.711	110.820	2.20	0.00	1500	765
984	9851.05	1500	2.29	1547.46	39.93	0.01255	0.01172	0.04834	1.726	111.107	2.28	0.00	1500	765
985	9860.67	1500	2.18	1559.42	40.06	0.0231	0.02129	0.04619	1.741	111.397	2.19	0.00	1500	765
986	9870.28	1500	2.21	1564.59	39.93	0.01279	0.01226	0.04424	1.719	111.684	2.18	0.00	1500	765
987	9881.04	1500	2.23	1564.37	39.93	0.01357	0.01206	0.0416	1.721	111.971	2.22	0.00	1500	765

988	9890.66	1500	2.10	1554.18	39.93	0.02002	0.01953	0.04482	1.736	112.260	2.13	0.00	1500	765
989	9900.27	1500	2.15	1561.75	39.93	0.01318	0.01133	0.04487	1.719	112.546	2.14	0.00	1500	765
990	9911.03	1500	2.06	1563.35	39.93	0.01567	0.01387	0.04346	1.724	112.834	2.06	0.00	1500	765
991	9920.64	1500	1.99	1565.77	40.06	0.01479	0.01533	0.04087	1.689	113.115	1.99	0.00	1500	765
992	9930.26	1500	2.07	1566.67	40.06	0.01357	0.01187	0.0478	1.719	113.402	2.07	0.00	1500	765
993	9941.02	1500	2.00	1565.29	40.06	0.01748	0.01528	0.05015	1.721	113.689	2.01	0.00	1500	765
994	9950.63	1500	1.37	1554.32	40.06	0.01182	0.01182	0.04385	1.694	113.971	1.57	0.00	1500	765
995	9960.25	1500	2.51	1562.13	40.06	0.01313	0.01167	0.04336	1.719	114.257	2.43	0.00	1500	765
996	9971.01	1500	1.99	1555.80	40.18	0.02046	0.0188	0.04858	1.721	114.544	1.99	0.00	1500	765
997	9980.62	1500	1.89	1560.68	40.06	0.01196	0.01191	0.04478	1.697	114.827	1.87	0.00	1500	765
998	9990.23	1500	1.88	1553.06	40.18	0.01367	0.01309	0.04194	1.714	115.113	1.92	0.00	1500	765
999	10001.06	1500	1.89	1565.70	40.18	0.02139	0.01963	0.0458	1.729	115.401	1.91	0.00	1500	765
1000	10010.61	1500	1.88	1556.00	40.18	0.01333	0.01069	0.04712	1.699	115.684	1.87	0.00	1500	765
1001	10020.22	1500	1.86	1558.88	40.18	0.01616	0.01445	0.04517	1.716	115.970	1.86	0.00	1500	765
1002	10031.04	1500	1.82	1564.95	40.18	0.01489	0.01523	0.04429	1.685	116.251	1.81	0.00	1500	765
1003	10040.6	1500	1.87	1561.89	40.18	0.01274	0.01333	0.04644	1.702	116.534	1.81	0.00	1500	765
1004	10050.21	1500	1.78	1560.67	40.31	0.01865	0.01743	0.04512	1.709	116.819	1.78	0.00	1500	765
1005	10061.03	1500	1.85	1562.00	40.18	0.01157	0.01206	0.04194	1.682	117.100	1.85	0.00	1500	765
1006	10070.65	1500	1.83	1548.05	40.18	0.01177	0.01187	0.04873	1.702	117.383	1.81	0.00	1500	765
1007	10080.2	1500	1.79	1563.46	40.31	0.02144	0.01982	0.0457	1.760	117.677	1.82	0.00	1500	765
1008	10091.02	1500	1.85	1559.80	40.31	0.01187	0.01089	0.03804	1.716	117.963	1.84	0.00	1500	765
1009	10100.64	1500	1.84	1558.56	40.31	0.0126	0.01255	0.0439	0.051	117.971	1.85	0.00	1500	765
1010	10110.19	1500	1.85	1560.23	40.31	0.01816	0.01758	0.0437	1.694	118.254	1.86	0.00	1500	765
1011	10121.01	1500	1.87	1559.90	40.44	0.01182	0.01187	0.03838	1.702	118.537	1.86	0.00	1500	765
1012	10130.62	1500	1.88	1565.27	40.44	0.01514	0.0144	0.04526	1.716	118.823	1.90	0.00	1500	765
1013	10140.24	1500	1.89	1563.47	40.44	0.01357	0.01357	0.04478	1.680	119.103	1.89	0.00	1500	765
1014	10151	1500	1.96	1561.87	40.44	0.01245	0.01187	0.04048	1.711	119.388	1.96	0.00	1500	765
1015	10160.61	1500	1.96	1554.30	40.44	0.0167	0.01611	0.04263	1.711	119.674	1.96	0.00	1500	766
1016	10170.23	1500	1.98	1556.56	40.44	0.01118	0.01147	0.04282	1.692	119.956	1.97	0.00	1500	766
1017	10180.99	1500	2.06	1567.08	40.57	0.01187	0.01191	0.04526	1.704	120.240	2.06	0.00	1500	765
1018	10190.6	1500	2.04	1561.68	40.44	0.01919	0.01909	0.04131	1.719	120.526	2.02	0.00	1500	766
1019	10200.22	1500	2.05	1559.70	40.57	0.01152	0.01216	0.04238	1.692	120.808	2.04	0.00	1500	766
1020	10210.98	1500	2.07	1568.87	40.57	0.01133	0.0123	0.03691	1.714	121.094	2.08	0.00	1500	766

1021	10220.59	1500	2.07	1567.85	40.44	0.01855	0.01841	0.04453	1.711	121.379	2.11	0.00	1500	766
1022	10230.2	1500	2.11	1563.26	40.57	0.01152	0.01133	0.04204	1.697	121.662	2.10	0.00	1500	766
1023	10240.97	1500	2.11	1553.63	40.44	0.01338	0.01367	0.04824	1.704	121.946	2.12	0.00	1500	766
1024	10250.58	1500	2.11	1572.64	40.44	0.01274	0.01382	0.04307	1.667	122.224	2.11	0.00	1500	766
1025	10260.19	1500	2.17	1546.66	40.57	0.01133	0.01143	0.0416	1.694	122.506	2.14	0.00	1500	766
1026	10271.01	1500	2.13	1563.73	38.33	0.01567	0.01553	0.04243	1.687	122.787	2.13	0.00	1500	766
1027	10280.57	1500	2.16	1541.45	38.33	0.01084	0.0106	0.04551	1.653	123.063	2.16	0.00	1500	766
1028	10290.18	1500	2.25	1530.48	38.33	0.01104	0.01206	0.04341	1.692	123.345	2.24	0.00	1500	766
1029	10301	1500	2.20	1557.06	38.33	0.0187	0.01729	0.04561	1.697	123.628	2.19	0.00	1500	766
1030	10310.56	1500	2.25	1545.29	38.33	0.01074	0.01128	0.04697	1.670	123.906	2.25	0.00	1500	766
1031	10320.17	1500	2.26	1547.43	38.33	0.0126	0.01328	0.04229	1.697	124.189	2.28	0.00	1500	766
1032	10330.99	1500	2.25	1560.16	38.33	0.0189	0.01978	0.04688	1.697	124.472	2.28	0.00	1500	766
1033	10340.6	1500	2.30	1540.03	38.33	0.0105	0.01157	0.04463	1.680	124.751	2.27	0.00	1500	766
1034	10350.16	1500	2.27	1553.56	38.45	0.01475	0.01392	0.0397	1.697	125.034	2.29	0.00	1500	766
1035	10360.98	1500	2.29	1551.28	38.33	0.01387	0.01563	0.04341	1.655	125.310	2.28	0.00	1500	766
1036	10370.59	1500	2.31	1548.92	38.33	0.01123	0.01206	0.04697	1.677	125.590	2.30	0.00	1500	766
1037	10380.15	1500	2.29	1550.28	38.33	0.01655	0.01733	0.0481	1.692	125.872	2.25	0.00	1500	766
1038	10390.97	1500	2.27	1532.19	38.33	0.01084	0.01226	0.0355	1.660	126.148	2.28	0.00	1500	766
1039	10400.58	1500	2.32	1552.47	38.33	0.0105	0.01187	0.04497	1.677	126.428	2.32	0.00	1500	766
1040	10410.2	1500	2.28	1539.81	38.33	0.01948	0.01978	0.04688	1.689	126.709	2.31	0.00	1500	766
1041	10420.96	1500	2.31	1547.16	38.33	0.00962	0.01113	0.04556	1.660	126.986	2.30	0.00	1500	766
1042	10430.57	1500	2.31	1550.75	38.33	0.01162	0.01128	0.04243	1.685	127.267	2.33	0.00	1500	766
1043	10440.18	1500	2.31	1543.70	38.33	0.01611	0.0166	0.04038	1.677	127.546	2.33	0.00	1500	766
1044	10451.06	1500	2.34	1553.86	38.33	0.01064	0.01157	0.04087	1.660	127.823	2.34	0.00	1500	766
1045	10460.67	1500	2.33	1547.02	38.33	0.01392	0.0127	0.04082	1.680	128.103	2.33	0.00	1500	766
1046	10470.28	1500	2.31	1542.75	38.21	0.01133	0.01309	0.03848	1.638	128.376	2.29	0.00	1500	766
1047	10481.05	1500	2.33	1548.67	38.33	0.01016	0.01118	0.04414	1.665	128.654	2.32	0.00	1500	766
1048	10490.66	1500	2.32	1546.93	38.21	0.01543	0.01558	0.0458	1.667	128.932	2.31	0.00	1500	766
1049	10500.27	1500	2.31	1548.03	38.21	0.00947	0.0105	0.03857	1.641	129.205	2.28	0.00	1500	766
1050	10511.04	1500	2.34	1548.68	38.33	0.00952	0.01108	0.04351	1.667	129.483	2.33	0.00	1500	766
1051	10520.65	1500	2.30	1527.97	38.21	0.01831	0.01763	0.04185	1.665	129.760	2.31	0.00	1500	766
1052	10530.26	1500	2.34	1546.88	38.21	0.00894	0.00933	0.04092	1.648	130.035	2.32	0.00	1500	766
1053	10541.03	1500	2.32	1549.05	38.21	0.00962	0.01064	0.03965	1.663	130.312	2.33	0.00	1500	766

1054	10550.64	1500	2.27	1537.83	38.21	0.01631	0.01748	0.04282	1.670	130.591	2.31	0.00	1500	766
1055	10560.25	1500	2.52	1549.83	38.21	0.00874	0.01113	0.03882	1.648	130.865	2.79	0.00	1500	766
1056	10571.07	1500	2.68	1546.13	38.21	0.01108	0.01265	0.04434	1.667	131.143	2.58	0.00	1500	766
1057	10580.63	1500	2.31	1544.42	38.21	0.01143	0.01294	0.04292	1.624	131.414	2.31	0.00	1500	766
1058	10590.24	1500	2.39	1556.99	38.21	0.01001	0.01113	0.04502	1.658	131.690	2.36	0.00	1500	766
1059	10601.06	1500	2.33	1547.43	38.21	0.01421	0.01431	0.04058	1.665	131.967	2.34	0.00	1500	766
1060	10610.62	1500	2.31	1550.10	38.21	0.00884	0.01133	0.04355	1.633	132.240	2.29	0.00	1500	766
1061	10620.23	1500	2.33	1541.97	38.21	0.00913	0.01128	0.03672	1.660	132.516	2.35	0.00	1500	766
1062	10631.05	1500	2.36	1543.89	38.21	0.01621	0.01772	0.04214	1.665	132.794	2.35	0.00	1500	766
1063	10640.66	1500	2.35	1542.92	38.21	0.00908	0.01064	0.04209	1.641	133.067	2.32	0.00	1500	766
1064	10650.22	1500	2.36	1542.96	38.21	0.0105	0.01206	0.04282	1.665	133.345	2.36	0.00	1500	766
1065	10661.04	1500	2.43	1559.19	38.10	0.01694	0.01753	0.04829	1.670	133.623	0.37	0.00	1500	766
1066	10670.65	1500	3.23	1554.57	38.21	0.00913	0.01001	0.04136	1.650	133.898	2.94	0.00	1500	766
1067	10680.21	1500	2.86	1550.88	38.21	0.01187	0.0125	0.04033	1.663	134.175	2.69	0.00	1500	766
1068	10691.03	1500	2.34	1555.27	38.10	0.01245	0.0144	0.04111	1.628	134.447	2.36	0.00	1500	766
1069	10700.64	1500	2.45	1544.60	38.10	0.0084	0.01074	0.03994	1.650	134.722	2.44	0.00	1500	766
1070	10710.2	1500	2.41	1546.49	38.10	0.01553	0.01572	0.0457	1.643	134.996	2.37	0.00	1500	766
1071	10721.02	1500	2.41	1547.90	38.10	0.00879	0.01074	0.0418	1.624	135.266	2.41	0.00	1500	766
1072	10730.63	1500	2.41	1545.84	38.10	0.00908	0.01069	0.03906	1.653	135.542	2.39	0.00	1500	766
1073	10740.24	1500	2.40	1554.02	37.98	0.01636	0.01689	0.04087	1.648	135.816	2.41	0.00	1500	766
1074	10751.01	1500	2.34	1555.05	37.98	0.00718	0.01001	0.04038	1.631	136.088	2.33	0.00	1500	766
1075	10760.62	1500	2.37	1548.28	37.98	0.00908	0.01016	0.04302	1.660	136.365	2.36	0.00	1500	766
1076	10770.23	1500	2.31	1539.55	37.98	0.01284	0.01577	0.04478	1.650	136.640	2.36	0.00	1500	766
1077	10781	1500	2.32	1545.06	37.98	0.0082	0.00962	0.04185	1.638	136.913	2.32	0.00	1500	766
1078	10790.61	1500	2.30	1545.52	37.98	0.01016	0.01274	0.04458	1.648	137.188	2.33	0.00	1500	766
1079	10800.22	1500	2.28	1540.27	37.98	0.00903	0.01064	0.0416	1.616	137.457	2.25	0.00	1500	766
1080	10810.99	1500	2.32	1543.13	37.98	0.00918	0.01113	0.04341	1.646	137.731	2.30	0.00	1500	766
1081	10820.6	1500	2.29	1550.88	37.98	0.01196	0.01475	0.04707	1.650	138.006	2.26	0.00	1500	766
1082	10830.21	1500	2.28	1542.63	37.98	0.00767	0.01021	0.0395	1.624	138.277	2.28	0.00	1500	766
1083	10841.03	1500	2.26	1547.90	37.98	0.00811	0.00996	0.03882	1.650	138.552	2.26	0.00	1500	766
1084	10850.59	1500	2.33	1546.31	37.98	0.01572	0.01743	0.04443	1.638	138.825	2.31	0.00	1500	766
1085	10860.2	1500	2.18	1545.80	38.10	0.00796	0.01006	0.04258	1.628	139.096	2.18	0.00	1500	766
1086	10871.02	1500	2.26	1548.71	38.10	0.00869	0.01069	0.03706	1.646	139.371	2.26	0.00	1500	766

1087	10880.58	1500	2.17	1543.59	37.98	0.01426	0.01602	0.04106	1.641	139.644	2.22	0.00	1500	766
1088	10890.19	1500	2.17	1551.04	37.98	0.00742	0.00942	0.04185	1.631	139.916	2.14	0.00	1500	766
1089	10901.01	1500	2.64	1543.43	37.98	0.00869	0.01216	0.04326	1.636	140.188	2.81	0.00	1500	766
1090	10910.62	1500	2.50	1542.32	37.98	0.00869	0.0123	0.04268	1.614	140.457	2.35	0.00	1500	766
1091	10920.18	1500	2.19	1543.67	37.98	0.00742	0.00962	0.0438	1.633	140.730	2.18	0.00	1500	766
1092	10931	1500	2.14	1556.94	37.98	0.01133	0.01396	0.03701	1.633	141.002	2.16	0.00	1500	766
1093	10940.61	1500	2.13	1539.70	37.98	0.00669	0.00962	0.04395	1.611	141.270	2.15	0.00	1500	766
1094	10950.17	1500	2.16	1543.79	37.98	0.00747	0.01079	0.03823	1.646	141.545	2.14	0.00	1500	766
1095	10960.99	1500	2.15	1548.84	37.98	0.01396	0.01611	0.04307	1.638	141.818	2.14	0.00	1500	766
1096	10970.6	1500	2.13	1550.47	37.98	0.00708	0.00986	0.04507	1.638	142.091	2.12	0.00	1500	766
1097	10980.21	1500	2.13	1551.19	37.98	0.00869	0.01118	0.04165	1.660	142.367	2.13	0.00	1500	766
1098	10990.98	1500	2.13	1554.96	37.98	0.01406	0.01704	0.04062	1.685	142.648	2.15	0.00	1500	766
1099	11000.59	1500	2.11	1560.67	37.98	0.0064	0.00977	0.04131	0.073	142.660	2.07	0.00	1500	766
1100	11010.2	1500	2.14	1546.38	37.98	0.0104	0.01318	0.04028	1.624	142.931	2.15	0.00	1500	766
1101	11020.97	1500	2.06	1546.56	37.98	0.01089	0.01382	0.04146	1.643	143.205	2.08	0.00	1500	766
1102	11030.58	1500	2.18	1543.22	37.98	0.00732	0.01079	0.04155	1.658	143.481	2.16	0.00	1500	766
1103	11040.19	1500	2.16	1544.40	37.98	0.01328	0.0166	0.04219	1.670	143.759	2.20	0.00	1500	766
1104	11050.96	1500	2.18	1551.41	37.98	0.00781	0.01074	0.03735	1.643	144.033	2.15	0.00	1500	766
1105	11060.57	1500	2.18	1547.87	37.98	0.00752	0.0105	0.04414	1.672	144.312	2.19	0.00	1500	766
1106	11070.18	1500	2.18	1543.36	37.98	0.01611	0.01797	0.04146	1.670	144.590	2.14	0.00	1500	766
1107	11080.95	1500	2.15	1551.56	37.98	0.00732	0.0106	0.04473	1.653	144.866	2.13	0.00	1500	766
1108	11090.56	1500	2.08	1549.80	37.98	0.00835	0.01113	0.0416	1.675	145.145	2.11	0.00	1500	766
1109	11100.17	1500	2.16	1535.82	37.98	0.01289	0.01689	0.04873	1.667	145.423	2.18	0.00	1500	766
1110	11110.99	1500	2.10	1544.13	37.98	0.00664	0.01011	0.03896	1.655	145.699	2.08	0.00	1500	766
1111	11120.55	1500	2.10	1545.62	37.98	0.00967	0.01177	0.0355	1.670	145.977	2.13	0.00	1500	766
1112	11130.16	1500	2.09	1546.67	37.98	0.00815	0.01157	0.04082	1.636	146.250	2.07	0.00	1500	766
1113	11140.98	1500	2.14	1550.34	37.98	0.00708	0.00996	0.04092	1.667	146.528	2.12	0.00	1500	766
1114	11150.54	1500	2.08	1542.54	37.98	0.01187	0.0146	0.04209	1.665	146.805	2.08	0.00	1500	766
1115	11160.15	1500	2.12	1544.92	37.98	0.00679	0.00918	0.04077	1.638	147.078	2.10	0.00	1500	767
1116	11170.97	1500	2.11	1537.96	37.98	0.00723	0.01108	0.04258	1.667	147.356	2.09	0.00	1500	767
1117	11180.58	1500	2.12	1553.85	37.98	0.01533	0.01729	0.04316	1.663	147.633	2.10	0.00	1500	766
1118	11190.14	1500	2.05	1543.64	37.98	0.00791	0.00996	0.04199	1.648	147.908	2.07	0.00	1500	766
1119	11200.96	1500	2.11	1543.01	37.98	0.00684	0.01021	0.03984	1.658	148.184	2.11	0.00	1500	766

1120	11210.57	1500	2.07	1547.49	37.98	0.01406	0.01724	0.0394	1.665	148.462	2.12	0.00	1500	766
1121	11220.13	1500	2.06	1552.43	37.98	0.00674	0.01025	0.0394	1.650	148.737	2.04	0.00	1500	767
1122	11230.95	1500	2.11	1551.75	37.98	0.00825	0.01035	0.03921	1.660	149.013	2.11	0.00	1500	767
1123	11240.56	1500	2.03	1548.03	37.98	0.00889	0.01304	0.04468	1.631	149.285	2.02	0.00	1500	767
1124	11250.17	1500	1.33	1558.16	38.10	0.00669	0.0104	0.04214	1.650	149.560	1.53	0.00	1500	766
1125	11261.05	1500	2.61	1554.02	37.98	0.01104	0.01362	0.04058	1.665	149.838	2.54	0.00	1500	766
1126	11270.66	1500	1.98	1544.53	38.10	0.00601	0.01025	0.03838	1.626	150.109	1.98	0.00	1500	766
1127	11280.22	1500	2.10	1551.28	38.10	0.00654	0.01025	0.04175	1.663	150.386	2.10	0.00	1500	766
1128	11291.04	1500	2.10	1549.62	38.10	0.01284	0.01558	0.04414	1.646	150.660	2.08	0.00	1500	766
1129	11300.65	1500	2.03	1549.62	38.10	0.00596	0.00981	0.04399	1.636	150.933	2.03	0.00	1500	767
1130	11310.26	1500	2.10	1544.89	38.10	0.00664	0.0103	0.03882	1.655	151.209	2.11	0.00	1500	766
1131	11321.02	1500	2.08	1544.78	38.10	0.01348	0.01631	0.04092	1.650	151.484	2.09	0.00	1500	766
1132	11330.64	1500	2.04	1547.16	38.10	0.00635	0.00977	0.04326	1.638	151.757	1.98	0.00	1500	766
1133	11340.25	1500	1.25	1544.68	38.10	0.00898	0.01191	0.04321	1.648	152.031	1.30	0.00	1500	766
1134	11351.01	1500	2.58	1549.78	38.10	0.00952	0.01309	0.04111	1.638	152.304	2.57	0.00	1500	766
1135	11360.63	1500	1.99	1544.97	38.10	0.00557	0.00991	0.0397	1.641	152.578	2.00	0.00	1500	767
1136	11370.24	1500	1.99	1547.21	38.10	0.01167	0.01489	0.04287	1.643	152.852	1.98	0.00	1500	766
1137	11381	1500	1.97	1545.59	38.10	0.00581	0.00937	0.03896	1.619	153.121	1.95	0.00	1500	767
1138	11390.62	1500	1.98	1544.24	38.10	0.00571	0.00977	0.03931	1.646	153.396	1.94	0.00	1500	767
1139	11400.23	1500	1.87	1548.77	38.10	0.01401	0.01733	0.04238	1.636	153.668	1.91	0.00	1500	767
1140	11411.05	1500	1.94	1542.68	38.10	0.00557	0.00835	0.03955	1.628	153.940	1.93	0.00	1500	766
1141	11420.6	1500	1.91	1546.03	38.10	0.00557	0.00908	0.0397	1.650	154.215	1.90	0.00	1500	766
1142	11430.22	1500	1.88	1549.63	38.10	0.01162	0.01548	0.03716	1.653	154.490	1.94	0.00	1500	766
1143	11441.04	1500	1.89	1553.59	38.10	0.00527	0.00918	0.0377	1.631	154.762	1.88	0.00	1500	767
1144	11450.59	1500	1.84	1551.22	38.10	0.00835	0.01162	0.0395	1.646	155.036	1.85	0.00	1500	767
1145	11460.21	1500	1.83	1553.49	38.21	0.00693	0.01123	0.0415	1.609	155.304	1.82	0.00	1500	767
1146	11471.03	1500	1.88	1550.22	38.21	0.00547	0.00952	0.03784	1.636	155.577	1.85	0.00	1500	767
1147	11480.58	1500	1.78	1548.96	38.21	0.00962	0.01309	0.04014	1.633	155.849	1.80	0.00	1500	767
1148	11490.2	1500	1.76	1545.61	38.21	0.00483	0.00972	0.03911	1.616	156.119	1.75	0.00	1500	767
1149	11501.02	1500	1.79	1546.17	38.21	0.00581	0.01001	0.03579	1.636	156.391	1.78	0.00	1500	767
1150	11510.63	1500	1.87	1538.19	38.21	0.01318	0.01675	0.04214	1.633	156.663	1.85	0.00	1500	767
1151	11520.18	1500	1.78	1547.03	38.33	0.00459	0.01016	0.03848	1.621	156.934	1.79	0.00	1500	767
1152	11531	1500	1.81	1543.30	38.33	0.00557	0.00947	0.0417	1.636	157.206	1.83	0.00	1500	767

1153	11540.62	1500	1.92	1549.98	38.33	0.01245	0.01626	0.04238	1.838	157.513	1.99	0.00	1500	767
1154	11550.17	1500	2.08	1544.03	38.33	0.0061	0.01016	0.04028	1.812	157.815	2.07	0.00	1500	767
1155	11560.99	1500	2.12	1547.85	38.33	0.01108	0.0147	0.03853	1.860	158.125	2.13	0.00	1500	767
1156	11570.61	1500	2.12	1539.76	38.33	0.01875	0.02075	0.04141	1.863	158.435	2.12	0.00	1500	767
1157	11580.22	1500	2.18	1545.73	38.33	0.0106	0.01479	0.04092	1.882	158.749	2.16	0.00	1500	767
1158	11590.98	1500	2.11	1539.55	38.33	0.01245	0.01743	0.03945	1.892	159.064	2.14	0.00	1500	767
1159	11600.6	1500	2.19	1551.90	38.33	0.01357	0.01758	0.04512	1.855	159.373	2.18	0.00	1500	767
1160	11610.21	1500	2.17	1536.86	38.33	0.01021	0.01499	0.03765	1.882	159.687	2.16	0.00	1500	767
1161	11620.97	1500	2.17	1545.88	38.45	0.01528	0.01841	0.04048	1.897	160.003	2.17	0.00	1500	767
1162	11630.58	1500	2.21	1552.49	38.45	0.01084	0.01489	0.04478	1.855	160.313	2.22	0.00	1500	767
1163	11640.2	1500	2.23	1547.41	38.45	0.01079	0.01479	0.04072	1.882	160.626	2.25	0.00	1500	767
1164	11650.96	1500	2.19	1547.63	38.45	0.01812	0.02236	0.04058	1.909	160.945	2.18	0.00	1500	767
1165	11660.57	1500	2.23	1550.27	38.45	0.00977	0.01377	0.03784	1.863	161.255	2.23	0.00	1500	767
1166	11670.19	1500	2.20	1535.46	38.45	0.01245	0.01665	0.04292	1.880	161.568	2.24	0.00	1500	767
1167	11681.01	1500	2.19	1552.70	38.45	0.01924	0.02378	0.04253	1.890	161.883	2.22	0.00	1500	767
1168	11690.56	1500	2.24	1544.41	38.57	0.01074	0.01558	0.04048	1.863	162.194	2.22	0.00	1500	767
1169	11700.18	1500	2.19	1546.66	38.57	0.01411	0.01812	0.0457	1.885	162.508	2.21	0.00	1500	767
1170	11711	1500	2.29	1543.32	38.45	0.01411	0.01909	0.04375	1.834	162.813	2.28	0.00	1500	767
1171	11720.55	1500	2.26	1541.50	38.45	0.00903	0.01377	0.04077	1.863	163.124	2.23	0.00	1500	767
1172	11730.16	1500	2.25	1550.17	38.57	0.01597	0.02056	0.04204	1.892	163.439	2.25	0.00	1500	767
1173	11740.99	1500	2.25	1550.96	38.57	0.00967	0.0144	0.04341	1.831	163.744	2.23	0.00	1500	767
1174	11750.54	1500	2.31	1561.83	38.57	0.01016	0.01421	0.04077	1.860	164.054	2.33	0.00	1500	767
1175	11760.15	1500	2.27	1550.91	38.57	0.01821	0.02251	0.04155	1.890	164.369	2.28	0.00	1500	767
1176	11770.97	1500	2.23	1546.08	38.57	0.00962	0.01406	0.03618	1.836	164.675	2.25	0.00	1500	767
1177	11780.59	1500	2.30	1548.90	38.57	0.01128	0.01494	0.0373	1.855	164.985	2.34	0.00	1500	767
1178	11790.14	1500	2.30	1552.72	38.57	0.01577	0.02061	0.04214	1.821	165.288	2.29	0.00	1500	767
1179	11800.96	1500	2.26	1546.23	38.57	0.00986	0.01382	0.03813	1.843	165.595	2.26	0.00	1500	767
1180	11810.58	1500	2.27	1549.13	38.57	0.01245	0.01743	0.04302	1.863	165.906	2.28	0.00	1500	767
1181	11820.13	1500	2.27	1549.51	38.57	0.0106	0.01504	0.03799	1.826	166.210	2.26	0.00	1500	767
1182	11830.95	1500	2.32	1548.02	38.57	0.00903	0.01372	0.04258	1.841	166.517	2.31	0.00	1500	767
1183	11840.57	1500	2.28	1549.85	38.57	0.01484	0.0186	0.03989	1.865	166.828	2.26	0.00	1500	767
1184	11850.18	1500	2.30	1541.75	38.57	0.00937	0.01313	0.03965	1.824	167.132	2.31	0.00	1500	767
1185	11860.94	1500	2.33	1547.04	38.57	0.00918	0.01348	0.03867	1.846	167.440	2.35	0.00	1500	767

1186	11870.55	1500	2.27	1539.76	38.69	0.01812	0.02187	0.04297	1.873	167.752	2.27	0.00	1500	767
1187	11880.17	1500	2.32	1548.25	38.57	0.00884	0.01411	0.04219	1.831	168.057	2.29	0.00	1500	767
1188	11890.93	1500	2.33	1551.06	38.69	0.00991	0.01401	0.04233	1.848	168.365	2.37	0.00	1500	767
1189	11900.54	1500	1.41	1548.47	38.57	0.01592	0.02065	0.04204	1.135	168.554	1.51	0.00	1500	767
1190	11910.16	1500	-0.05	1553.65	38.69	0.00952	0.01421	0.04028	1.775	168.850	0.13	0.00	1500	767
1191	11920.92	1500	0.01	1534.64	38.69	0.01636	0.02036	0.04136	1.680	169.130	0.00	0.00	1500	767
1192	11930.53	1500	0.00	1554.18	38.69	0.75605	0.82778	0.04111	1.611	169.398	0.00	0.00	1500	767
1193	11940.14	1500	0.00	1552.00	38.57	0.02598	0.02646	0.04502	0.051	169.407	0.00	0.00	1500	767
1194	11950.97	1500	0.00	1537.38	38.69	0.12437	0.12598	0.04663	0.828	169.545	0.00	0.00	1500	767
1195	11960.52	1500	0.00	1555.99	38.69	0.12031	0.11826	0.03975	0.554	169.637	0.00	0.00	1500	767
1196	11970.13	1500	0.00	1553.50	38.69	0.12222	0.11807	0.0415	0.396	169.703	0.00	0.00	1500	767
1197	11980.95	1500	0.00	1557.43	38.69	0.12354	0.12012	0.04238	0.283	169.750	0.00	0.00	1500	767
1198	11990.51	1500	0.00	1544.80	38.69	0.12407	0.12109	0.04258	0.208	169.785	0.00	0.00	1500	767
1199	12000.12	1500	0.00	1550.54	38.69	0.12734	0.12539	0.0417	0.164	169.812	0.00	0.00	1500	767
1200	12010.94	1500	0.00	1551.59	38.69	0.13037	0.12827	0.04487	0.129	169.834	0.00	0.00	1500	767
1201	12020.56	1500	0.00	1548.74	38.69	0.13052	0.13188	0.04077	0.107	169.852	0.00	0.00	1500	767
1202	12030.11	1500	0.00	1556.30	38.69	0.13066	0.13247	0.04561	0.090	169.867	0.00	0.00	1500	767
1203	12040.93	1500	0.00	1544.86	38.69	0.12822	0.13154	0.04678	0.078	169.880	0.00	0.00	1500	767
1204	12050.55	1500	0.00	1547.68	38.69	0.12344	0.12812	0.04507	0.066	169.891	0.00	0.00	1500	767
1205	12060.1	1500	0.00	1553.72	38.69	0.11772	0.12388	0.04702	0.063	169.901	0.00	0.00	1500	767
1206	12070.92	1500	-0.03	1567.42	38.69	0.11455	0.12217	0.03955	0.059	169.911	-0.02	0.00	1500	767
1207	12080.53	1500	-0.03	1551.97	38.69	0.11445	0.12256	0.04248	0.054	169.920	-0.02	0.00	1500	767
1208	12090.09	1500	-0.01	1520.50	38.69	0.11455	0.12231	0.04438	0.051	169.929	-0.03	0.00	1500	767
1209	12100.91	1500	-0.02	1554.32	38.69	0.11455	0.12124	0.04253	0.054	169.937	-0.01	0.00	1500	767
1210	12110.52	1500	-0.01	1549.15	38.69	0.11338	0.12109	0.04219	0.051	169.946	-0.03	0.00	1500	767
1211	12120.14	1500	-0.01	1542.84	38.69	0.11265	0.12065	0.04199	0.049	169.954	-0.01	0.00	1500	767
1212	12130.9	1500	-0.02	1536.50	38.69	0.11123	0.11841	0.04116	0.046	169.962	-0.01	0.00	1500	767
1213	12140.51	1500	-0.01	1559.14	38.81	0.10942	0.11763	0.04561	0.046	169.970	-0.01	0.00	1500	767
1214	12150.13	1500	-0.02	1548.84	38.69	0.10942	0.11753	0.04326	0.044	169.977	-0.02	0.00	1500	768
1215	12160.89	1500	0.00	1544.21	38.69	0.10757	0.11626	0.04263	0.046	169.985	0.00	0.00	1490	768
1216	12170.5	796	-204.07	1538.27	38.69	0.10796	0.11509	0.04331	0.042	169.992	-204.06	0.00	795	768
1217	12180.11	795	-203.72	1546.34	38.69	0.1063	0.11484	0.04321	0.044	169.999	-204.12	0.00	795	768
1218	12190.88	794	-204.12	1548.81	38.69	0.10635	0.11499	0.04531	0.042	170.006	-204.07	0.00	794	768

1219	12200.49	793	-203.66	1549.92	38.81	0.10732	0.11553	0.04155	0.042	170.013	-204.09	0.00	793	768
1220	12210.1	792	-204.07	1550.43	38.81	0.1064	0.11465	0.04326	0.042	170.020	-204.07	0.00	792	768
1221	12220.87	791	-203.61	1549.35	38.69	0.1064	0.11431	0.04678	0.044	170.027	-204.11	0.00	791	768
1222	12230.48	791	-204.05	1551.84	38.69	0.10381	0.11235	0.04351	0.044	170.034	-204.10	0.00	791	768
1223	12240.09	790	-204.05	1555.24	38.81	0.11792	0.12954	0.04048	0.044	170.042	-203.59	0.00	790	768
1224	12250.91	789	-204.06	1561.79	38.69	0.42827	0.54385	0.04058	0.042	170.049	-204.07	0.00	789	767
1225	12260.47	789	-204.07	1554.29	38.81	0.42075	0.54287	0.03726	0.042	170.055	-203.84	0.00	789	767
1226	12270.08	788	-204.08	1564.92	38.69	0.41704	0.54902	0.04028	0.042	170.062	-204.06	0.00	788	767
1227	12280.9	787	-204.09	1549.93	38.69	0.42661	0.54697	0.03848	0.042	170.069	-203.93	0.00	787	767
1228	12290.51	787	-204.11	1555.23	38.69	0.42412	0.54224	0.03887	0.042	170.076	-204.07	0.00	787	767
1229	12300.07	786	-204.10	1543.07	38.69	0.42881	0.55684	0.03745	0.042	170.083	-204.03	0.00	786	767
1230	12310.89	789	0.00	1550.73	38.69	0.43135	0.56475	0.04224	0.042	170.090	0.00	0.00	789	767
1231	12320.5	789	0.00	1555.30	38.69	0.42705	0.55723	0.03853	0.039	170.097	0.00	0.00	789	767
1232	12330.06	789	0.00	1551.65	38.69	0.43101	0.55874	0.03735	0.039	170.103	0.00	0.00	789	767
1233	12340.88	790	0.00	1554.68	38.69	0.43169	0.55811	0.04121	0.042	170.110	0.00	0.00	790	767
1234	12350.49	790	0.00	1547.59	38.69	0.43765	0.55288	0.03452	0.042	170.117	178.28	0.00	793	767
1235	12360.05	810	197.73	1550.21	38.69	0.42871	0.55513	0.03867	0.044	170.124	197.37	0.00	812	767
1236	12370.87	830	197.41	1554.60	38.69	0.43306	0.5666	0.03892	0.042	170.131	197.08	0.00	832	767
1237	12380.48	850	197.21	1548.03	38.69	0.4335	0.56226	0.03872	0.044	170.138	197.15	0.00	853	767
1238	12390.09	873	196.93	1549.84	38.69	0.44194	0.56074	0.04507	0.044	170.146	196.92	0.00	876	767
1239	12400.86	904	196.81	1547.07	38.69	0.43662	0.56396	0.03403	0.039	170.152	196.78	0.00	908	767
1240	12410.47	939	196.24	1546.65	38.69	0.43833	0.56279	0.0377	0.039	170.159	196.07	0.00	945	767
1241	12420.08	986	195.98	1548.42	38.57	0.44248	0.56733	0.03589	0.039	170.165	195.20	0.00	994	767
1242	12430.85	1064	195.02	1544.51	38.69	0.4501	0.57339	0.04321	0.042	170.172	195.03	0.00	1075	767
1243	12440.46	1181	194.08	1545.79	38.57	0.44536	0.57534	0.03965	0.044	170.180	193.98	0.00	1222	767
1244	12450.07	1606	33.02	1542.76	38.57	0.45049	0.5771	0.04326	0.042	170.186	38.77	0.00	1604	767
1245	12460.84	1500	8.80	1549.87	38.57	0.45591	0.58091	0.03931	0.039	170.193	12.15	0.00	1486	767
1246	12470.45	1500	11.54	1549.05	38.57	0.45205	0.58242	0.04536	0.039	170.199	11.85	0.00	1500	767
1247	12480.06	1500	9.16	1543.68	38.69	0.44771	0.59912	0.0396	0.042	170.206	8.68	0.00	1500	767
1248	12490.88	1500	7.16	1545.46	38.57	0.44985	0.58892	0.03843	0.042	170.213	7.00	0.00	1500	767
1249	12500.44	1500	5.84	1540.28	38.57	0.46309	0.59326	0.03647	0.042	170.220	5.73	0.00	1500	768
1250	12510.05	1500	4.94	1545.63	38.57	0.45728	0.59331	0.03359	0.039	170.227	4.81	0.00	1500	768
1251	12520.87	1500	4.20	1546.57	38.57	0.45747	0.60444	0.03799	0.039	170.233	4.14	0.00	1500	768

1252	12530.43	1500	3.70	1544.30	38.57	0.46318	0.60332	0.03633	0.042	170.240	3.66	0.00	1500	768
1253	12540.04	1500	3.31	1544.66	38.57	0.46953	0.60532	0.04048	0.042	170.247	3.24	0.00	1500	768
1254	12550.86	1500	2.94	1541.69	38.57	0.46787	0.59961	0.04302	0.042	170.254	2.92	0.00	1500	768
1255	12560.42	1500	2.70	1545.42	38.57	0.46821	0.61235	0.04233	0.042	170.261	2.66	0.00	1500	768
1256	12570.03	1500	2.47	1543.12	38.57	0.47485	0.61006	0.03228	0.039	170.267	2.44	0.00	1500	768
1257	12580.85	1500	2.25	1545.15	38.57	0.48408	0.60796	0.0397	0.042	170.274	2.23	0.00	1500	768
1258	12590.46	1500	2.09	1543.05	38.57	0.47222	0.61528	0.04033	0.042	170.281	2.07	0.00	1500	768
1259	12600.02	1500	1.95	1542.57	38.45	0.48491	0.60654	0.04043	0.039	170.288	1.92	0.00	1500	768
1260	12610.84	1500	1.81	1540.98	38.57	0.47959	0.61851	0.03608	0.039	170.294	1.78	0.00	1500	768
1261	12620.45	1500	1.67	1538.61	38.45	0.47764	0.61987	0.04087	0.039	170.301	1.68	0.00	1500	768
1262	12630.01	1500	1.58	1542.52	38.45	0.48179	0.6189	0.04141	0.042	170.308	1.58	0.00	1500	768
1263	12640.83	1500	1.48	1543.76	38.45	0.48198	0.61992	0.03867	0.039	170.314	1.47	0.00	1500	769
1264	12650.44	1500	1.39	1536.18	38.45	0.48657	0.61006	0.0377	0.039	170.321	1.39	0.00	1500	769
1265	12660.05	1500	1.32	1544.03	38.45	0.48242	0.61616	0.04307	0.042	170.328	1.31	0.00	1500	769
1266	12670.82	1500	1.24	1539.89	38.45	0.4814	0.61416	0.04331	0.039	170.334	1.23	0.00	1500	769
1267	12680.43	1500	1.17	1544.63	38.45	0.48379	0.61724	0.03882	0.042	170.341	1.16	0.00	1500	769
1268	12690.04	1500	1.11	1539.71	38.45	0.48276	0.61782	0.03472	0.042	170.348	1.10	0.00	1500	769
1269	12700.81	1500	1.04	1536.40	38.45	0.4875	0.61973	0.04072	0.042	170.355	1.04	0.00	1500	769
1270	12710.42	1500	0.99	1533.60	38.45	0.47422	0.61807	0.03643	0.042	170.362	0.99	0.00	1500	769
1271	12720.03	1500	0.94	1536.02	38.45	0.49023	0.61758	0.03706	0.042	170.369	0.94	0.00	1500	769
1272	12730.8	1500	0.89	1538.12	38.45	0.48018	0.62051	0.03765	0.044	170.376	0.89	0.00	1500	769
1273	12740.41	1500	0.85	1527.94	38.45	0.4897	0.62173	0.03481	0.039	170.383	0.85	0.00	1500	768
1274	12750.02	1500	0.81	1540.70	38.33	0.49243	0.6229	0.03877	0.039	170.389	0.80	0.00	1500	769
1275	12760.84	1500	0.77	1550.49	38.45	0.49385	0.6231	0.03926	0.039	170.396	0.77	0.00	1500	768
1276	12770.4	1500	0.74	1549.34	38.33	0.48779	0.6271	0.03911	0.042	170.403	0.73	0.00	1500	768
1277	12780.01	1500	0.70	1541.87	38.33	0.49136	0.62075	0.03608	0.042	170.409	0.70	0.00	1500	768
1278	12790.83	1500	0.67	1537.89	38.33	0.49214	0.62983	0.04238	0.042	170.416	0.67	0.00	1500	768
1279	12800.39	1500	0.65	1539.47	38.33	0.48877	0.6291	0.04219	0.042	170.423	0.64	0.00	1500	768
1280	12810	1500	0.62	1542.12	38.33	0.48711	0.62988	0.03677	0.042	170.430	0.62	0.00	1500	768
1281	12820.82	1500	0.59	1536.98	38.33	0.48916	0.62388	0.04053	0.042	170.437	0.59	0.00	1500	768
1282	12830.43	1500	0.57	1539.27	38.21	0.49463	0.63105	0.03535	0.042	170.444	0.57	0.00	1500	768
1283	12841.2	1500	0.55	1542.47	38.33	0.49014	0.63149	0.03804	0.039	170.450	0.55	0.00	1500	768
1284	12850.81	1500	0.53	1534.59	38.33	0.49077	0.63042	0.03809	0.037	170.457	0.52	0.00	1500	767

1285	12860.42	1500	0.50	1535.74	38.33	0.49189	0.62153	0.03774	0.042	170.464	0.51	0.00	1500	767
1286	12871.19	1500	0.49	1536.67	38.33	0.4875	0.62627	0.04482	0.042	170.470	0.48	0.00	1500	767
1287	12880.8	1500	0.47	1537.89	38.33	0.49331	0.6313	0.03955	0.039	170.477	0.46	0.00	1500	767
1288	12890.41	1500	0.45	1537.07	38.33	0.49097	0.63149	0.04263	0.042	170.484	0.46	0.00	1500	767
1289	12901.18	1500	0.44	1531.77	38.33	0.49277	0.62241	0.04277	0.039	170.490	0.44	0.00	1500	766
1290	12910.79	1500	0.42	1534.61	38.33	0.48804	0.62822	0.03877	0.039	170.497	0.42	0.00	1500	766
1291	12920.4	1500	0.41	1535.38	38.33	0.48809	0.62871	0.0394	0.039	170.503	0.41	0.00	1500	766
1292	12930.01	1500	0.40	1537.87	38.33	0.49375	0.62295	0.03975	0.042	170.510	0.39	0.00	1500	766
1293	12940.78	1500	0.39	1537.66	38.33	0.49502	0.62827	0.03638	0.037	170.516	0.38	0.00	1500	766
1294	12950.39	1500	0.38	1534.09	38.33	0.48794	0.62808	0.03926	0.039	170.523	0.37	0.00	1500	766
1295	12960	1500	0.37	1537.22	38.33	0.49336	0.62158	0.03726	0.042	170.530	0.36	0.00	1500	766
1296	12970.77	1500	0.36	1529.86	38.21	0.49131	0.62373	0.03848	0.039	170.536	0.35	0.00	1500	765
1297	12980.38	1500	0.34	1535.31	38.33	0.48838	0.629	0.03403	0.039	170.543	0.35	0.00	1500	765
1298	12991.2	1500	0.33	1535.49	38.33	0.48755	0.62773	0.04277	0.042	170.550	0.34	0.00	1500	765
1299	13000.76	1500	0.33	1535.25	38.21	0.49087	0.62837	0.04189	0.044	170.557	0.33	0.00	1500	765
1300	13010.37	1500	0.32	1534.49	38.21	0.49048	0.62734	0.03784	0.042	170.564	0.32	0.00	1500	765
1301	13021.19	1500	0.31	1533.79	38.21	0.4937	0.62695	0.03945	0.039	170.571	0.31	0.00	1500	764
1302	13030.8	1500	0.20	1537.51	38.21	0.49434	0.62856	0.04009	0.042	170.577	0.16	0.00	1500	764
1303	13040.36	1500	0.32	1535.86	38.33	0.49546	0.63086	0.04136	0.039	170.584	0.33	0.00	1500	764
1304	13051.18	1500	0.29	1533.23	38.21	0.49858	0.62847	0.03677	0.039	170.590	0.29	0.00	1500	764
1305	13060.79	1500	0.28	1532.57	38.21	0.49224	0.63325	0.03975	0.039	170.597	0.28	0.00	1500	764
1306	13070.35	1500	0.28	1536.67	38.21	0.5084	0.64893	0.03989	0.039	170.604	0.27	0.00	1500	764
1307	13081.17	1500	0.27	1537.13	38.21	0.52231	0.67197	0.03872	0.042	170.610	0.26	0.00	1500	764
1308	13090.78	1500	0.26	1534.78	38.21	0.52378	0.66851	0.04146	0.032	170.616	0.23	0.00	1500	764
1309	13100.39	1500	0.24	1529.01	38.21	0.52451	0.67065	0.04097	0.042	170.623	0.24	0.00	1500	764
1310	13111.16	1500	0.25	1534.70	38.21	0.52554	0.66836	0.03735	0.039	170.629	0.25	0.00	1500	763
1311	13120.77	1500	0.24	1536.02	38.21	0.52539	0.66929	0.04072	0.037	170.635	0.24	0.00	1500	763
1312	13130.38	1500	0.24	1530.14	38.21	0.52407	0.66904	0.04443	0.037	170.641	0.24	0.00	1500	763
1313	13141.15	1500	0.23	1534.03	38.21	0.52168	0.67002	0.03608	0.039	170.648	0.23	0.00	1500	763
1314	13150.76	1500	0.23	1530.66	38.21	0.52466	0.66475	0.0373	0.042	170.655	0.23	0.00	1500	763
1315	13160.37	1500	0.22	1529.71	38.21	0.52231	0.67085	0.03755	0.039	170.661	0.23	0.00	1500	763
1316	13171.14	1500	0.22	1531.67	38.21	0.52549	0.6647	0.0355	0.039	170.668	0.22	0.00	1500	763
1317	13180.75	1500	0.22	1533.94	38.21	0.52446	0.66641	0.04141	0.039	170.674	0.21	0.00	1500	763

1318	13190.36	1500	0.21	1531.94	38.21	0.52476	0.67051	0.04116	0.039	170.681	0.21	0.00	1500	763
1319	13201.12	1500	0.21	1533.36	38.21	0.52437	0.66719	0.03984	0.039	170.687	0.21	0.00	1500	763
1320	13210.74	1500	0.20	1531.02	38.10	0.52427	0.67012	0.04458	0.042	170.694	0.21	0.00	1500	763
1321	13220.35	1500	0.20	1534.34	38.21	0.52432	0.67095	0.03628	0.042	170.701	0.20	0.00	1500	763
1322	13231.17	1500	0.20	1525.26	38.21	0.5249	0.67085	0.04023	0.039	170.708	0.20	0.00	1500	762
1323	13240.73	1500	0.20	1531.77	38.21	0.52378	0.66719	0.04189	0.042	170.715	0.20	0.00	1500	762
1324	13250.34	1500	0.19	1529.83	38.21	0.52529	0.66914	0.0374	0.039	170.721	0.19	0.00	1500	762
1325	13261.16	1500	0.19	1531.72	38.21	0.52295	0.671	0.0374	0.042	170.728	0.19	0.00	1500	762
1326	13270.71	1500	0.19	1532.21	38.21	0.52422	0.67056	0.0438	0.044	170.735	0.19	0.00	1500	762
1327	13280.33	1500	0.18	1530.99	38.21	0.52402	0.66953	0.03521	0.039	170.742	0.18	0.00	1500	762
1328	13291.15	1500	0.18	1529.85	38.21	0.52417	0.66812	0.04077	0.039	170.748	0.18	0.00	1500	762
1329	13300.76	1500	0.17	1531.65	38.21	0.52275	0.67056	0.03823	0.042	170.755	0.18	0.00	1500	762
1330	13310.32	1500	0.17	1533.59	38.21	0.52437	0.67104	0.04272	0.042	170.762	0.17	0.00	1500	762
1331	13321.14	1500	0.17	1533.08	38.21	0.52451	0.66753	0.03965	0.042	170.769	0.17	0.00	1500	762
1332	13330.75	1500	0.17	1533.23	38.21	0.52417	0.66953	0.04087	0.039	170.776	0.17	0.00	1500	762
1333	13340.31	1500	0.17	1533.81	38.21	0.52432	0.66909	0.03892	0.042	170.783	0.17	0.00	1500	762
1334	13351.13	1500	0.17	1527.72	38.21	0.52422	0.66455	0.03975	0.039	170.789	0.16	0.00	1500	762
1335	13360.74	1500	0.16	1531.03	38.21	0.52412	0.67031	0.03784	0.042	170.796	0.16	0.00	1500	762
1336	13370.35	1500	0.16	1529.21	38.21	0.52461	0.671	0.03887	0.039	170.802	0.16	0.00	1500	762
1337	13381.12	1500	0.15	1528.49	38.21	0.52495	0.66841	0.04072	0.042	170.809	0.15	0.00	1500	762
1338	13390.73	1500	0.15	1533.48	38.21	0.52407	0.67012	0.03911	0.042	170.816	0.15	0.00	1500	761
1339	13400.34	1500	0.15	1529.09	38.21	0.52314	0.671	0.03877	0.039	170.823	0.15	0.00	1500	761
1340	13411.1	1500	0.20	1532.52	38.21	0.52295	0.66978	0.04014	0.042	170.830	0.18	0.00	1500	762
1341	13420.72	1500	0.15	1533.09	38.21	0.525	0.66855	0.04224	0.039	170.836	0.15	0.00	1500	762
1342	13430.33	1500	0.15	1535.85	38.21	0.52417	0.67148	0.03613	0.039	170.843	0.15	0.00	1500	761
1343	13441.09	1500	0.15	1529.26	38.21	0.523	0.66724	0.03745	0.042	170.850	0.14	0.00	1500	761
1344	13450.71	1500	0.14	1533.41	38.21	0.52461	0.66777	0.04351	0.039	170.856	0.14	0.00	1500	761
1345	13460.32	1500	0.14	1532.62	38.21	0.52437	0.67041	0.03823	0.042	170.863	0.14	0.00	1500	761
1346	13471.08	1500	0.14	1532.13	38.33	0.52368	0.66748	0.03682	0.042	170.870	0.14	0.00	1500	761
1347	13480.7	1500	0.14	1531.97	38.33	0.5229	0.67109	0.03828	0.039	170.877	0.14	0.00	1500	761
1348	13490.31	1500	0.14	1536.80	38.33	0.5228	0.66982	0.04258	0.039	170.883	0.14	0.00	1500	761
1349	13501.13	1500	0.14	1535.19	38.33	0.52402	0.66895	0.03813	0.042	170.890	0.14	0.00	1500	761
1350	13510.68	1500	0.14	1537.87	38.33	0.52314	0.6708	0.03706	0.039	170.896	0.14	0.00	1500	761

1351	13520.3	1500	0.14	1536.69	38.33	0.52373	0.67095	0.04082	0.042	170.903	0.14	0.00	1500	761
1352	13531.12	1500	0.14	1537.91	38.33	0.52349	0.67065	0.03418	0.042	170.910	0.14	0.00	1500	761
1353	13540.67	1500	0.13	1541.07	38.45	0.52227	0.66987	0.03999	0.039	170.917	0.14	0.00	1500	761
1354	13550.29	1500	0.13	1541.42	38.45	0.52368	0.67061	0.03828	0.039	170.923	0.13	0.00	1500	761
1355	13561.11	1500	0.13	1542.82	38.45	0.52344	0.67095	0.03975	0.042	170.930	0.13	0.00	1500	761
1356	13570.72	1500	0.13	1539.51	38.45	0.52432	0.67124	0.03994	0.039	170.937	0.13	0.00	1500	761
1357	13580.28	1500	0.13	1547.48	38.45	0.5249	0.66924	0.04399	0.037	170.943	0.13	0.00	1500	761
1358	13591.1	1500	0.12	1544.79	38.57	0.52153	0.67158	0.0394	0.042	170.950	0.12	0.00	1500	761
1359	13600.71	1500	0.13	1548.93	38.57	0.52334	0.67026	0.03896	0.042	170.957	0.13	0.00	1500	761
1360	13610.26	1500	0.12	1544.55	38.57	0.52427	0.67188	0.03794	0.042	170.964	0.12	0.00	1500	761
1361	13621.08	1500	0.12	1547.47	38.57	0.52432	0.67192	0.04302	0.039	170.970	0.12	0.00	1500	761
1362	13630.7	1500	0.12	1545.48	38.57	0.52451	0.67134	0.03677	0.042	170.977	0.12	0.00	1500	761
1363	13640.31	1500	0.12	1553.97	38.69	0.52285	0.66616	0.04106	0.042	170.984	0.12	0.00	1500	761
1364	13651.07	1500	0.18	1551.40	38.69	0.52251	0.67026	0.03843	0.042	170.991	0.11	0.00	1500	761
1365	13660.69	1500	0.11	1551.94	38.69	0.52275	0.67051	0.04111	0.037	170.997	0.11	0.00	1500	761
1366	13670.3	1500	0.11	1553.55	38.69	0.52417	0.67109	0.04146	0.042	171.004	0.11	0.00	1500	760
1367	13681.06	1500	0.11	1551.92	38.81	0.52432	0.67158	0.04175	0.042	171.011	0.11	0.00	1500	761
1368	13690.68	1500	0.11	1559.89	38.69	0.52456	0.6707	0.04102	0.042	171.018	0.11	0.00	1500	761
1369	13700.29	1500	0.11	1554.05	38.81	0.52437	0.67007	0.04312	0.039	171.024	0.11	0.00	1500	760
1370	13711.05	1500	0.11	1555.22	38.81	0.52417	0.66978	0.03838	0.039	171.031	0.11	0.00	1500	760
1371	13720.66	1500	0.11	1561.02	38.81	0.52456	0.6708	0.0375	0.046	171.038	0.10	0.00	1500	761
1372	13730.28	1500	0.10	1559.79	38.81	0.52407	0.66792	0.03994	0.039	171.045	0.10	0.00	1500	761
1373	13741.04	1500	0.10	1563.89	38.94	0.52471	0.6707	0.03877	0.042	171.052	0.10	0.00	1500	760
1374	13750.65	1500	0.10	1559.88	38.94	0.52432	0.67139	0.03857	0.039	171.058	0.10	0.00	1500	760
1375	13760.27	1500	0.10	1560.10	38.94	0.52334	0.66968	0.03848	0.042	171.065	0.10	0.00	1500	760
1376	13771.09	1500	0.10	1560.22	38.94	0.52446	0.67021	0.03853	0.042	171.072	0.09	0.00	1500	761
1377	13780.64	1500	0.10	1562.24	39.06	0.52412	0.66973	0.04229	0.039	171.079	0.10	0.00	1500	760
1378	13790.26	1500	0.09	1565.70	38.94	0.52476	0.67178	0.03599	0.042	171.086	0.09	0.00	1500	760
1379	13801.08	1500	0.09	1564.85	39.06	0.52529	0.67212	0.03994	0.042	171.093	0.09	0.00	1500	760
1380	13810.63	1500	0.09	1559.69	39.06	0.52446	0.67114	0.03989	0.039	171.099	0.09	0.00	1500	761
1381	13820.24	1500	0.09	1566.11	39.06	0.52397	0.67031	0.03979	0.039	171.106	0.09	0.00	1500	760
1382	13831.06	1500	0.09	1564.47	39.06	0.5252	0.67134	0.03652	0.039	171.112	0.09	0.00	1500	760
1383	13840.68	1500	0.09	1568.08	39.06	0.523	0.66953	0.0395	0.042	171.119	0.09	0.00	1500	760

1384	13850.23	1500	0.09	1565.11	39.06	0.52446	0.66685	0.03882	0.042	171.126	0.09	0.00	1500	761
1385	13861.05	1500	0.09	1567.02	39.06	0.52354	0.67051	0.04106	0.042	171.133	0.09	0.00	1500	760
1386	13870.67	1500	0.09	1570.85	39.06	0.52368	0.67012	0.04014	0.042	171.140	0.09	0.00	1500	760
1387	13880.22	1500	0.09	1568.55	39.06	0.52373	0.6668	0.04204	0.042	171.147	0.09	0.00	1500	760
1388	13891.04	1500	0.09	1565.96	39.06	0.52446	0.67041	0.04053	0.042	171.154	0.04	0.00	1500	761
1389	13900.66	1500	0.09	1568.02	39.06	0.52378	0.67051	0.03721	0.039	171.160	0.09	0.00	1500	761
1390	13910.27	1500	0.08	1567.42	39.06	0.52378	0.671	0.0373	0.042	171.167	0.08	0.00	1500	760
1391	13921.03	1500	0.08	1564.20	39.06	0.52358	0.66587	0.0375	0.042	171.174	0.08	0.00	1500	760
1392	13930.64	1500	0.08	1563.72	39.06	0.52407	0.67026	0.04058	0.039	171.180	0.08	0.00	1500	761
1393	13940.26	1500	0.08	1566.12	39.06	0.52437	0.67178	0.0415	0.042	171.187	0.08	0.00	1500	761
1394	13951.02	1500	0.08	1568.96	39.06	0.52393	0.66929	0.04058	0.042	171.194	0.08	0.00	1500	760
1395	13960.63	1500	0.08	1566.71	39.06	0.5248	0.6687	0.03931	0.039	171.201	0.08	0.00	1500	760
1396	13970.25	1500	0.08	1566.96	39.06	0.52329	0.6709	0.03755	0.039	171.207	0.08	0.00	1500	760
1397	13981.01	1500	0.08	1566.02	39.06	0.52363	0.67139	0.03652	0.044	171.215	0.08	0.00	1500	761
1398	13990.62	1500	0.08	1567.69	39.06	0.52388	0.67109	0.0354	0.042	171.222	0.08	0.00	1500	760
1399	14000.24	1500	0.07	1567.01	39.06	0.5248	0.67168	0.03877	0.042	171.228	0.08	0.00	1500	760
1400	14011	1500	0.08	1569.50	39.06	0.52476	0.67061	0.03994	0.042	171.235	0.07	0.00	1500	760
1401	14020.61	1500	0.07	1567.89	39.06	0.52485	0.67227	0.03779	0.042	171.242	0.07	0.00	1500	761
1402	14030.22	1500	0.07	1561.81	39.06	0.52446	0.67061	0.04087	0.042	171.249	0.07	0.00	1500	761
1403	14041.05	1500	0.07	1560.90	39.06	0.52456	0.67197	0.03672	0.042	171.256	0.07	0.00	1500	760
1404	14050.6	1500	0.07	1562.62	39.06	0.52466	0.67188	0.0416	0.042	171.263	0.07	0.00	1500	760
1405	14060.21	1500	0.07	1561.63	39.06	0.52373	0.67017	0.04062	0.042	171.270	0.07	0.00	1500	761
1406	14071.03	1500	0.07	1566.03	38.94	0.52544	0.67173	0.03887	0.042	171.277	0.07	0.00	1500	761
1407	14080.59	1500	0.07	1562.71	38.94	0.52397	0.66997	0.03911	0.044	171.284	0.07	0.00	1500	760
1408	14090.2	1500	0.07	1560.45	38.94	0.52422	0.67017	0.04224	0.046	171.292	0.07	0.00	1500	760
1409	14101.02	1500	0.07	1555.91	38.94	0.52412	0.67036	0.04507	0.039	171.298	0.07	0.00	1500	760
1410	14110.64	1500	0.07	1560.45	38.94	0.52285	0.6666	0.04141	0.039	171.305	0.07	0.00	1500	760
1411	14120.19	1500	0.07	1558.16	38.94	0.52363	0.66992	0.04067	0.039	171.311	0.07	0.00	1500	760
1412	14131.01	1500	0.07	1558.00	38.94	0.52471	0.67227	0.03965	0.039	171.318	0.06	0.00	1500	760
1413	14140.62	1500	0.07	1558.81	38.94	0.52461	0.66689	0.04106	0.042	171.325	0.07	0.00	1500	760
1414	14150.18	1500	0.07	1554.91	38.94	0.52153	0.67095	0.03911	0.042	171.332	0.07	0.00	1500	760
1415	14161	1500	0.07	1561.49	38.81	0.52388	0.67129	0.0418	0.039	171.338	0.07	0.00	1500	760
1416	14170.61	1500	0.07	1555.94	38.81	0.52402	0.66943	0.04243	0.039	171.345	0.07	0.00	1500	760

1417	14180.23	1500	0.07	1559.43	38.81	0.52427	0.6709	0.03647	0.042	171.352	0.07	0.00	1500	760
1418	14190.99	1500	0.07	1556.37	38.81	0.52485	0.67173	0.03828	0.044	171.359	0.06	0.00	1500	760
1419	14200.6	1500	0.06	1556.92	38.81	0.5248	0.67129	0.04136	0.042	171.366	0.07	0.00	1500	760
1420	14210.22	1500	0.06	1557.85	38.81	0.52383	0.67075	0.03618	0.042	171.373	0.07	0.00	1500	760
1421	14220.98	1500	0.07	1550.80	38.81	0.52417	0.67183	0.03921	0.046	171.381	0.07	0.00	1500	760
1422	14230.59	1500	0.06	1552.94	38.69	0.52446	0.67139	0.04058	0.042	171.388	0.07	0.00	1500	760
1423	14240.2	1500	0.07	1557.48	38.69	0.52417	0.67139	0.03823	0.039	171.394	0.07	0.00	1500	760
1424	14250.97	1500	0.07	1552.04	38.81	0.52573	0.66841	0.04092	0.039	171.401	0.07	0.00	1500	760
1425	14260.58	1500	0.06	1554.08	38.69	0.52495	0.67227	0.03975	0.037	171.407	0.06	0.00	1500	760
1426	14270.19	1500	0.06	1552.96	38.69	0.525	0.67266	0.03418	0.039	171.413	0.06	0.00	1500	760
1427	14280.96	1500	0.06	1555.88	38.69	0.52324	0.67158	0.03926	0.042	171.420	0.06	0.00	1500	760
1428	14290.57	1500	0.06	1554.54	38.69	0.5251	0.67104	0.04209	0.042	171.427	0.07	0.00	1500	760
1429	14300.18	1500	0.06	1553.17	38.69	0.52456	0.67266	0.0395	0.039	171.434	0.06	0.00	1500	760
1430	14311	1500	0.06	1550.68	38.69	0.52349	0.67134	0.0376	0.042	171.440	0.06	0.00	1500	760
1431	14320.56	1500	0.06	1549.80	38.57	0.52388	0.67124	0.03994	0.042	171.447	0.06	0.00	1500	760
1432	14330.17	1500	0.06	1551.48	38.69	0.52397	0.67158	0.03916	0.042	171.454	0.06	0.00	1500	760
1433	14340.99	1500	0.06	1557.42	38.57	0.55674	0.7022	0.04048	0.042	171.461	0.06	0.00	1500	760
1434	14350.55	1500	0.06	1550.93	38.69	0.56108	0.6814	0.04004	0.042	171.468	0.06	0.00	1500	760
1435	14360.16	1500	0.06	1551.19	38.57	0.5478	0.61953	0.03892	0.039	171.475	0.06	0.00	1500	760
1436	14370.98	1500	0.05	1550.05	38.57	0.67349	0.63789	0.04214	0.042	171.482	0.05	0.00	1500	760
1437	14380.59	1500	0.05	1549.49	38.57	0.72812	0.65435	0.04385	0.042	171.488	0.05	0.00	1500	760
1438	14390.15	1500	0.05	1549.70	38.57	0.81836	0.73105	0.0416	0.042	171.495	0.05	0.00	1500	760
1439	14400.97	1500	0.06	1550.03	38.57	0.87778	0.80537	0.04639	0.039	171.502	0.05	0.00	1500	760
1440	14410.58	1500	0.05	1547.13	38.57	0.87925	0.80557	0.04531	0.042	171.509	0.05	0.00	1500	760
1441	14420.14	1500	0.05	1548.70	38.57	1.01162	0.93242	0.04121	0.042	171.516	0.05	0.00	1500	760
1442	14430.96	1500	0.06	1544.32	38.57	1.0166	0.95479	0.04194	0.042	171.523	0.05	0.00	1500	760
1443	14440.57	1500	0.06	1551.01	38.57	0.89453	0.99541	0.04443	0.042	171.530	0.05	0.00	1500	760
1444	14450.19	1500	0.05	1549.38	38.57	0.83979	0.96147	0.03936	0.042	171.536	0.05	0.00	1500	760
1445	14461.06	1500	0.05	1542.02	38.57	0.44409	0.56904	0.03892	0.042	171.543	0.05	0.00	1500	760
1446	14470.67	1500	0.05	1543.28	38.45	0.43901	0.55625	0.04038	0.039	171.550	0.05	0.00	1500	760
1447	14480.23	1500	0.05	1543.82	38.45	0.43735	0.55039	0.04355	0.042	171.557	0.05	0.00	1500	760
1448	14491.05	1500	0.05	1546.54	38.57	0.43555	0.54546	0.03809	0.042	171.564	0.05	0.00	1500	760
1449	14500.66	1500	0.05	1544.72	38.57	0.43433	0.54214	0.0376	0.042	171.571	0.05	0.00	1500	760

1450	14510.27	1500	0.05	1549.07	38.57	0.43408	0.54233	0.04448	0.042	171.577	0.05	0.00	1500	760
1451	14521.04	1500	0.05	1541.35	38.45	0.43413	0.54028	0.03462	0.042	171.584	0.05	0.00	1500	760
1452	14530.65	1500	0.05	1541.87	38.45	0.43379	0.54033	0.04194	0.042	171.591	0.05	0.00	1500	760
1453	14540.26	1500	0.05	1544.29	38.45	0.43379	0.53936	0.0415	0.042	171.598	0.05	0.00	1500	760
1454	14551.03	1500	0.05	1544.54	38.45	0.43423	0.54072	0.03765	0.044	171.606	0.05	0.00	1500	760
1455	14560.64	1500	0.05	1542.26	38.57	0.43398	0.53872	0.03799	0.044	171.613	0.04	0.00	1500	760
1456	14570.25	1500	0.05	1544.62	38.57	0.4333	0.53467	0.04136	0.042	171.620	0.04	0.00	1500	760
1457	14581.02	1500	0.04	1541.27	38.45	0.43354	0.53501	0.0416	0.042	171.627	0.05	0.00	1500	760
1458	14590.63	1500	0.06	1537.76	38.45	0.43237	0.53345	0.04028	0.042	171.634	0.05	0.00	1500	760
1459	14600.24	1500	0.08	1542.05	38.45	0.43203	0.53379	0.0373	0.042	171.641	0.09	0.00	1500	760
1460	14611.06	1500	0.13	1534.46	38.45	0.43296	0.53379	0.03691	0.042	171.647	0.14	0.00	1500	760
1461	14620.62	1500	0.15	1539.95	38.45	0.43281	0.53472	0.03853	0.039	171.654	0.15	0.00	1500	760
1462	14630.23	1500	0.18	1538.76	38.45	0.43296	0.53345	0.04331	0.042	171.661	0.18	0.00	1500	760
1463	14641.05	1500	0.19	1540.06	38.45	0.43237	0.53091	0.0397	0.039	171.667	0.19	0.00	1500	760
1464	14650.61	1500	0.19	1540.85	38.45	0.43242	0.53027	0.0373	0.042	171.674	0.19	0.00	1500	760
1465	14660.22	1500	0.19	1539.51	38.45	0.4311	0.52871	0.04092	0.042	171.681	0.19	0.00	1500	760
1466	14671.04	1500	0.20	1538.07	38.45	0.43228	0.52813	0.04146	0.042	171.688	0.20	0.00	1500	760
1467	14680.65	1500	0.22	1538.40	38.45	0.43193	0.52715	0.03799	0.042	171.695	0.22	0.00	1500	760
1468	14690.21	1500	0.22	1541.83	38.33	0.43159	0.52671	0.03594	0.042	171.702	0.22	0.00	1500	760
1469	14701.03	1500	0.23	1539.94	38.33	0.43237	0.52573	0.04302	0.042	171.709	0.23	0.00	1500	760
1470	14710.64	1500	0.23	1538.14	38.33	0.43101	0.5251	0.03926	0.042	171.716	0.23	0.00	1500	760
1471	14720.2	1500	0.24	1537.25	38.33	0.4314	0.52505	0.04268	0.042	171.723	0.24	0.00	1500	760
1472	14731.02	1500	0.23	1539.57	38.33	0.43184	0.52363	0.03882	0.044	171.730	0.23	0.00	1500	760
1473	14740.63	1500	0.24	1539.86	38.33	0.43188	0.52329	0.03989	0.042	171.737	0.24	0.00	1500	760
1474	14750.19	1500	0.23	1541.75	38.45	0.43237	0.52314	0.0437	0.042	171.744	0.23	0.00	1500	760
1475	14761.01	1500	0.23	1535.53	38.33	0.43232	0.52168	0.04194	0.042	171.751	0.23	0.00	1500	760
1476	14770.62	1500	0.23	1541.16	38.33	0.43359	0.52212	0.04082	0.042	171.758	0.23	0.00	1500	760
1477	14780.23	1500	0.23	1541.79	38.33	0.43179	0.52168	0.04023	0.042	171.765	0.23	0.00	1500	760
1478	14791	1500	0.23	1539.41	38.33	0.43218	0.52134	0.03657	0.044	171.772	0.22	0.00	1500	760
1479	14800.61	1500	0.24	1538.83	38.33	0.43315	0.52241	0.03872	0.042	171.779	0.24	0.00	1500	760
1480	14810.22	1500	0.24	1541.03	38.33	0.43433	0.52163	0.03975	0.044	171.786	0.24	0.00	1500	760
1481	14820.99	1500	0.24	1541.60	38.33	0.43335	0.51958	0.04014	0.042	171.793	0.24	0.00	1500	760
1482	14830.6	1500	0.24	1533.94	38.21	0.43389	0.52085	0.03936	0.042	171.800	0.24	0.00	1500	760

1483	14840.21	1500	0.24	1543.12	38.21	0.43408	0.52017	0.03862	0.044	171.807	0.24	0.00	1500	760
1484	14850.98	1500	0.24	1541.38	38.21	0.4334	0.52012	0.03994	0.042	171.814	0.24	0.00	1500	760
1485	14860.59	1500	0.24	1544.18	38.21	0.43379	0.51982	0.04243	0.042	171.821	0.24	0.00	1500	760
1486	14870.2	1500	0.24	1539.57	38.21	0.43472	0.5187	0.03994	0.042	171.828	0.24	0.00	1500	760
1487	14881.02	1500	0.24	1541.76	38.21	0.43442	0.51895	0.04302	0.042	171.835	0.24	0.00	1500	760
1488	14890.58	1500	0.24	1541.41	38.21	0.43545	0.51992	0.03662	0.042	171.842	0.24	0.00	1500	760
1489	14900.19	1500	0.24	1541.35	38.21	0.4355	0.51953	0.04282	0.042	171.849	0.24	0.00	1500	760
1490	14911.01	1500	0.24	1539.43	38.33	0.43521	0.51924	0.04009	0.042	171.856	0.24	0.00	1500	760
1491	14920.57	1500	0.24	1546.33	38.21	0.43604	0.51978	0.0439	0.042	171.863	0.24	0.00	1500	760
1492	14930.18	1500	0.24	1540.56	38.21	0.43726	0.51987	0.04209	0.044	171.870	0.24	0.00	1500	760
1493	14941	1500	0.24	1542.97	38.21	0.43838	0.52109	0.03882	0.039	171.876	0.24	0.00	1500	760
1494	14950.61	1500	0.24	1544.57	38.21	0.43838	0.52012	0.04019	0.042	171.883	0.24	0.00	1500	760
1495	14960.17	1500	0.24	1539.09	38.10	0.43901	0.52139	0.03872	0.042	171.890	0.25	0.00	1500	760
1496	14970.99	1500	0.24	1543.17	38.21	0.43931	0.52119	0.03872	0.042	171.897	0.24	0.00	1500	760
1497	14980.6	1500	0.24	1540.48	38.21	0.43945	0.52148	0.03452	0.042	171.904	0.23	0.00	1500	760
1498	14990.16	1500	0.23	1539.20	38.21	0.44019	0.52153	0.04307	0.044	171.911	0.23	0.00	1500	760
1499	15000.98	1500	0.24	1541.99	38.21	0.44067	0.52275	0.03862	0.044	171.919	0.24	0.00	1500	760
1500	15010.59	1500	0.25	1538.68	38.21	0.44194	0.5231	0.04727	0.042	171.926	0.24	0.00	1500	760
1501	15020.15	1500	0.24	1540.28	38.21	0.44312	0.52339	0.04102	0.044	171.933	0.24	0.00	1500	760
1502	15030.97	1500	0.23	1539.74	38.10	0.44224	0.52344	0.04336	0.042	171.940	0.23	0.00	1500	760
1503	15040.58	1500	0.22	1542.26	38.10	0.44326	0.5252	0.04023	0.044	171.947	0.23	0.00	1500	760
1504	15050.19	1500	0.24	1539.18	38.10	0.44448	0.52612	0.04219	0.042	171.954	0.24	0.00	1500	760
1505	15060.96	1500	0.24	1545.80	38.10	0.44507	0.527	0.04414	0.044	171.961	0.24	0.00	1500	760
1506	15070.57	1500	0.23	1541.97	38.10	0.44526	0.52749	0.04131	0.042	171.968	0.23	0.00	1500	760
1507	15080.18	1500	0.23	1538.97	38.10	0.44697	0.52808	0.03799	0.044	171.976	0.24	0.00	1500	760
1508	15091.06	1500	0.24	1539.77	38.21	0.44814	0.52964	0.04287	0.042	171.983	0.24	0.00	1500	760
1509	15100.67	1500	0.58	1535.13	38.21	0.44888	0.53022	0.04092	0.042	171.989	0.61	0.00	1500	760
1510	15110.28	1500	0.39	1535.74	38.10	0.44902	0.53008	0.03916	0.042	171.996	0.41	0.00	1500	760
1511	15121.05	1500	0.42	1547.38	38.10	0.4498	0.53223	0.04414	0.039	172.003	0.40	0.00	1500	760
1512	15130.66	1500	0.34	1547.21	38.10	0.45024	0.53325	0.0373	0.042	172.010	0.34	0.00	1500	760
1513	15140.27	1500	0.37	1544.98	38.10	0.45205	0.53496	0.04165	0.044	172.017	0.36	0.00	1500	760
1514	15151.03	1500	0.35	1548.62	37.98	0.45298	0.53428	0.04136	0.042	172.024	0.33	0.00	1500	760
1515	15160.65	1500	0.36	1538.08	38.10	0.45308	0.53569	0.03813	0.044	172.031	0.37	0.00	1500	760

1516	15170.26	1500	0.34	1538.87	38.10	0.45459	0.53667	0.04146	0.044	172.039	0.34	0.00	1500	760
1517	15181.08	1500	0.36	1533.59	37.98	0.45449	0.53848	0.03818	0.044	172.046	0.36	0.00	1500	760
1518	15190.64	1500	0.36	1543.37	37.98	0.4563	0.53999	0.03364	0.044	172.053	0.37	0.00	1500	760
1519	15200.25	1500	0.35	1542.89	37.98	0.45684	0.54126	0.0439	0.044	172.061	0.34	0.00	1500	760
1520	15211.07	1500	0.38	1541.60	37.98	0.45757	0.54102	0.04121	0.042	172.068	0.38	0.00	1500	760
1521	15220.62	1500	0.34	1538.33	37.98	0.45864	0.54233	0.04258	0.042	172.074	0.34	0.00	1500	760
1522	15230.24	1500	0.32	1541.36	37.86	0.45928	0.54272	0.03784	0.042	172.081	0.32	0.00	1500	760
1523	15241.06	1500	0.35	1538.57	37.86	0.4605	0.54453	0.04194	0.039	172.088	0.33	0.00	1500	760
1524	15250.61	1500	0.31	1541.87	37.86	0.46152	0.54502	0.04131	0.039	172.094	0.31	0.00	1500	760
1525	15260.23	1500	0.13	1546.27	37.86	0.46221	0.54653	0.03833	0.042	172.101	0.12	0.00	1500	760
1526	15271.05	1500	0.18	1540.18	37.86	0.46367	0.54775	0.04443	0.042	172.108	0.18	0.00	1500	760
1527	15280.66	1500	0.21	1542.25	37.74	0.46465	0.54868	0.0459	0.042	172.115	0.22	0.00	1500	760
1528	15290.22	1500	0.22	1545.50	37.74	0.46548	0.55024	0.03994	0.042	172.122	0.22	0.00	1500	760
1529	15301.04	1500	0.40	1541.67	37.74	0.46567	0.55132	0.04292	0.039	172.129	0.50	0.00	1500	760
1530	15310.65	1500	0.16	1547.26	37.74	0.46709	0.55146	0.03818	0.042	172.136	0.12	0.00	1500	760
1531	15320.2	1500	0.13	1545.03	37.74	0.46816	0.55342	0.04238	0.042	172.142	0.14	0.00	1500	760
1532	15331.03	1500	0.13	1544.34	37.86	0.4689	0.55439	0.03804	0.042	172.149	0.13	0.00	1500	760
1533	15340.64	1500	0.13	1539.81	37.86	0.46968	0.55586	0.04146	0.042	172.156	0.12	0.00	1500	760
1534	15350.25	1500	0.09	1543.54	37.86	0.47031	0.55737	0.03862	0.039	172.163	0.09	0.00	1500	760
1535	15361.01	1500	0.06	1543.21	37.86	0.47158	0.55767	0.04126	0.042	172.170	0.05	0.00	1500	760
1536	15370.63	1500	0.08	1547.44	37.86	0.47197	0.56021	0.04243	0.042	172.177	0.06	0.00	1500	760
1537	15380.24	1500	0.02	1545.72	37.86	0.47368	0.56182	0.04185	0.044	172.184	0.02	0.00	1500	760
1538	15391	1500	0.02	1542.15	37.86	0.47432	0.56382	0.04053	0.042	172.191	0.02	0.00	1500	760
1539	15400.62	1500	0.02	1547.90	37.98	0.47622	0.56533	0.03711	0.042	172.198	0.02	0.00	1500	760
1540	15410.23	1500	0.01	1543.32	37.98	0.47646	0.56543	0.03877	0.039	172.204	0.02	0.00	1500	760
1541	15420.99	1500	0.02	1547.17	37.98	0.47627	0.56636	0.04067	0.039	172.211	0.02	0.00	1500	760
1542	15430.61	1500	0.02	1544.75	37.98	0.47832	0.56807	0.03643	0.042	172.218	0.02	0.00	1500	760
1543	15440.22	1500	0.02	1550.41	37.98	0.4791	0.57026	0.03862	0.042	172.225	0.02	0.00	1500	760
1544	15450.98	1500	0.02	1547.18	37.98	0.47998	0.57109	0.03818	0.042	172.232	0.02	0.00	1500	760
1545	15460.59	1500	0.02	1544.33	37.98	0.48218	0.57373	0.04023	0.042	172.238	0.02	0.00	1500	760
1546	15470.21	1500	0.02	1546.03	37.98	0.48296	0.57539	0.03589	0.044	172.246	0.02	0.00	1500	760
1547	15481.03	1500	0.02	1546.38	37.98	0.48418	0.5772	0.04165	0.042	172.253	0.02	0.00	1500	760
1548	15490.58	1500	0.02	1549.31	37.98	0.48433	0.57783	0.03857	0.042	172.260	0.03	0.00	1500	760

1549	15500.2	1500	0.02	1549.34	37.98	0.48682	0.57983	0.04731	0.044	172.267	0.02	0.00	1500	760
1550	15511.02	1500	0.02	1553.29	37.98	0.4875	0.58125	0.04512	0.039	172.273	0.02	0.00	1500	760
1551	15520.57	1500	0.02	1552.96	37.98	0.48789	0.58364	0.03789	0.042	172.280	0.02	0.00	1500	760
1552	15530.19	1500	0.02	1550.67	37.98	0.48901	0.58452	0.0394	0.042	172.287	0.02	0.00	1500	760
1553	15541.01	1500	0.02	1548.47	38.10	0.49004	0.58438	0.03823	0.044	172.295	0.02	0.00	1500	760
1554	15550.62	1500	0.02	1555.07	38.10	0.49019	0.5875	0.04004	0.042	172.301	0.01	0.00	1500	760
1555	15560.17	1500	0.02	1556.75	38.10	0.49204	0.58896	0.0377	0.042	172.308	0.02	0.00	1500	759
1556	15570.99	1500	0.02	1553.07	38.10	0.49185	0.59082	0.04116	0.042	172.315	0.02	0.00	1500	760
1557	15580.61	1500	0.02	1551.27	38.10	0.49272	0.59214	0.03667	0.044	172.323	0.02	0.00	1500	760
1558	15590.16	1500	0.02	1554.77	38.21	0.49453	0.59375	0.04336	0.044	172.330	0.02	0.00	1500	759
1559	15600.98	1500	0.02	1554.78	38.21	0.4957	0.59517	0.03779	0.042	172.337	0.02	0.00	1500	759
1560	15610.6	1500	0.02	1557.43	38.21	0.49595	0.59575	0.04058	0.042	172.344	0.02	0.00	1500	759
1561	15620.21	1500	0.02	1560.01	38.21	0.49644	0.59819	0.0415	0.042	172.351	0.02	0.00	1500	759
1562	15630.97	1500	0.01	1562.14	38.21	0.49697	0.59883	0.04419	0.039	172.357	0.02	0.00	1500	759
1563	15640.59	1500	0.02	1558.89	38.21	0.49814	0.59985	0.04004	0.039	172.364	0.01	0.00	1500	759
1564	15650.2	1500	0.02	1558.87	38.21	0.49771	0.60151	0.03999	0.044	172.371	0.02	0.00	1500	759
1565	15660.96	1500	0.01	1558.37	38.21	0.4998	0.60376	0.04199	0.039	172.378	0.02	0.00	1500	759
1566	15670.57	1500	0.02	1560.04	38.21	0.50073	0.60654	0.03618	0.044	172.385	0.01	0.00	1500	759
1567	15680.19	1500	0.02	1560.50	38.21	0.5021	0.60713	0.04512	0.044	172.392	0.02	0.00	1500	759
1568	15690.95	1500	0.01	1569.50	38.33	0.50151	0.60835	0.03701	0.044	172.400	0.01	0.00	1500	759
1569	15700.56	1500	0.02	1557.18	38.33	0.50288	0.60903	0.03979	0.042	172.406	0.01	0.00	1500	759
1570	15710.18	1500	0.02	1569.96	38.33	0.50278	0.60957	0.03687	0.044	172.414	0.02	0.00	1500	759
1571	15720.94	1500	0.02	1564.75	38.33	0.50396	0.61104	0.04243	0.042	172.421	0.01	0.00	1500	759
1572	15730.55	1500	0.02	1569.87	38.33	0.50386	0.6127	0.04023	0.042	172.428	0.02	0.00	1500	759
1573	15740.17	1500	0.01	1563.61	38.33	0.50396	0.61357	0.03779	0.042	172.434	0.01	0.00	1500	760
1574	15750.99	1500	0.01	1567.33	38.45	0.50537	0.61504	0.04111	0.042	172.441	0.01	0.00	1500	760
1575	15760.54	1500	0.03	1564.40	38.33	0.50571	0.61655	0.03564	0.044	172.449	0.04	0.00	1500	759
1576	15770.15	1500	0.02	1567.74	38.45	0.50698	0.61733	0.04058	0.044	172.456	0.02	0.00	1500	759
1577	15780.97	1500	0.02	1572.34	38.45	0.50728	0.61919	0.03735	0.042	172.463	0.01	0.00	1500	760
1578	15790.59	1500	0.01	1569.11	38.45	0.50903	0.62007	0.04067	0.042	172.470	0.01	0.00	1500	760
1579	15800.14	1500	0.01	1571.09	38.57	0.50898	0.62114	0.04297	0.044	172.477	0.01	0.00	1500	760
1580	15810.96	1500	0.01	1571.42	38.45	0.50874	0.62207	0.03618	0.042	172.484	0.01	0.00	1500	759
1581	15820.58	1500	0.01	1575.46	38.57	0.51025	0.62319	0.03926	0.039	172.491	0.01	0.00	1500	759

1582	15830.13	1500	0.02	1572.57	38.45	0.51006	0.62368	0.04004	0.044	172.498	0.01	0.00	1500	760
1583	15840.95	1500	0.01	1578.25	38.57	0.5106	0.62285	0.03945	0.042	172.505	0.01	0.00	1500	759
1584	15850.57	1500	0.02	1575.81	38.57	0.5105	0.62568	0.04097	0.042	172.512	0.01	0.00	1500	759
1585	15860.12	1500	0.01	1576.53	38.57	0.51182	0.62612	0.03569	0.039	172.518	0.01	0.00	1500	759
1586	15870.94	1500	0.01	1575.57	38.57	0.51182	0.62725	0.04116	0.039	172.525	0.01	0.00	1500	759
1587	15880.55	1500	0.02	1575.65	38.57	0.51123	0.62695	0.04053	0.039	172.531	0.01	0.00	1500	760
1588	15890.17	1500	0.02	1574.05	38.69	0.51128	0.62861	0.03647	0.042	172.538	0.01	0.00	1500	760
1589	15900.93	1500	0.01	1578.74	38.57	0.51328	0.6292	0.04146	0.042	172.545	0.02	0.00	1500	759
1590	15910.54	1500	0.01	1575.14	38.57	0.51309	0.63159	0.03887	0.039	172.552	0.01	0.00	1500	759
1591	15920.16	1500	0.01	1579.33	38.57	0.51328	0.63091	0.03252	0.044	172.559	0.02	0.00	1500	760
1592	15930.92	1500	0.01	1578.40	38.69	0.51406	0.6311	0.0415	0.044	172.566	0.01	0.00	1500	760
1593	15940.53	1500	0.01	1581.68	38.69	0.5145	0.63257	0.03906	0.044	172.574	0.01	0.00	1500	760
1594	15950.15	1500	0.01	1577.39	38.69	0.51377	0.6334	0.03647	0.044	172.581	0.01	0.00	1500	760
1595	15960.91	1500	0.01	1580.76	38.69	0.51528	0.63379	0.04019	0.039	172.587	0.01	0.00	1500	760
1596	15970.52	1500	0.02	1586.78	38.69	0.51509	0.63442	0.03984	0.044	172.595	0.01	0.00	1500	760
1597	15980.13	1500	0.01	1586.17	38.69	0.51558	0.63564	0.03862	0.042	172.602	0.02	0.00	1500	760
1598	15990.95	1500	0.01	1581.27	38.69	0.51616	0.63701	0.04219	0.042	172.609	0.02	0.00	1500	759
1599	16000.51	1500	0.01	1584.86	38.69	0.51567	0.63804	0.04141	0.042	172.616	0.01	0.00	1500	760
1600	16010.12	1500	0.01	1585.75	38.81	0.5166	0.6375	0.04136	0.042	172.622	0.01	0.00	1500	760
1601	16020.94	1500	0.01	1591.44	38.81	0.5167	0.63745	0.04277	0.042	172.629	0.01	0.00	1500	760
1602	16030.5	1500	0.01	1583.97	38.81	0.51606	0.63809	0.03647	0.044	172.637	0.01	0.00	1500	759
1603	16040.11	1500	0.01	1582.92	38.81	0.51685	0.63936	0.0356	0.039	172.643	0.01	0.00	1500	759
1604	16050.93	1500	0.01	1588.69	38.94	0.51699	0.63945	0.0395	0.044	172.651	0.01	0.00	1500	759
1605	16060.49	1500	0.01	1593.21	38.81	0.51685	0.63945	0.04199	0.042	172.657	0.01	0.00	1500	760
1606	16070.1	1500	0.01	1594.02	38.94	0.51743	0.6394	0.03862	0.044	172.665	0.01	0.00	1500	760
1607	16080.92	1500	0.01	1586.92	38.94	0.51675	0.63994	0.04126	0.042	172.672	0.01	0.00	1500	759
1608	16090.53	1500	0.00	1591.97	38.81	0.51787	0.64077	0.04043	0.042	172.679	0.01	0.00	1500	759
1609	16100.09	1500	0.01	1591.16	38.94	0.51724	0.64106	0.03345	0.042	172.686	0.01	0.00	1500	760
1610	16110.91	1500	0.01	1588.53	38.94	0.51797	0.6415	0.04019	0.044	172.693	0.01	0.00	1500	760
1611	16120.52	1500	0.00	1590.06	38.94	0.51797	0.64312	0.0355	0.042	172.700	0.01	0.00	1500	759
1612	16130.08	1500	0.01	1600.10	38.94	0.5187	0.64253	0.03955	0.042	172.707	0.01	0.00	1500	759
1613	16140.9	1500	0.01	1594.39	38.94	0.5186	0.64355	0.03774	0.044	172.714	0.01	0.00	1500	759
1614	16150.51	1500	0.00	1591.96	38.94	0.51914	0.64399	0.0395	0.042	172.721	0.02	0.00	1500	760

1615	16160.13	1500	0.01	1594.42	39.06	0.52007	0.64556	0.04404	0.042	172.728	0.01	0.00	1500	759
1616	16170.89	1500	0.01	1593.37	38.94	0.51895	0.64497	0.04209	0.042	172.735	0.01	0.00	1500	759
1617	16180.5	1500	0.01	1599.55	39.06	0.51929	0.64497	0.03784	0.044	172.742	0.01	0.00	1500	760
1618	16190.11	1500	0.01	1592.26	38.94	0.51934	0.64619	0.04004	0.042	172.749	0.01	0.00	1500	760
1619	16200.88	1500	0.01	1599.08	39.06	0.52065	0.64609	0.04043	0.044	172.756	0.01	0.00	1500	760
1620	16210.49	1500	0.00	1594.65	39.06	0.52021	0.64653	0.03779	0.044	172.764	0.01	0.00	1500	759
1621	16220.1	1500	0.01	1604.64	39.06	0.52046	0.64717	0.04102	0.044	172.771	0.01	0.00	1500	759
1622	16230.87	1500	0.01	1597.84	39.18	0.52046	0.64741	0.04219	0.042	172.778	0.01	0.00	1500	760
1623	16240.48	1500	0.02	1602.12	39.18	0.52007	0.64673	0.04292	0.044	172.785	0.02	0.00	1500	760
1624	16250.09	1500	0.01	1599.79	39.18	0.52114	0.64771	0.0374	0.044	172.792	0.02	0.00	1500	759
1625	16260.91	1500	0.01	1598.56	39.18	0.52065	0.64741	0.04136	0.042	172.799	0.00	0.00	1500	759
1626	16270.47	1500	0.01	1603.71	39.18	0.5207	0.64814	0.04102	0.044	172.807	0.01	0.00	1500	759
1627	16280.08	1500	0.01	1603.12	39.18	0.52031	0.64888	0.03765	0.042	172.814	0.01	0.00	1500	760
1628	16290.9	1500	0.01	1600.40	39.06	0.52124	0.64946	0.03901	0.042	172.821	0.01	0.00	1500	760
1629	16300.46	1500	0.01	1603.24	39.18	0.52109	0.64805	0.03545	0.042	172.827	0.02	0.00	1500	759
1630	16310.07	1500	0.02	1604.29	39.18	0.52046	0.64854	0.03789	0.042	172.834	0.01	0.00	1500	759
1631	16320.89	1500	0.00	1605.24	39.18	0.52065	0.64775	0.0375	0.042	172.841	0.00	0.00	1500	759
1632	16330.5	1500	0.01	1606.49	39.18	0.52178	0.6481	0.04414	0.042	172.848	0.01	0.00	1500	760
1633	16340.06	1500	0.01	1604.00	39.18	0.52139	0.64858	0.03745	0.044	172.856	0.01	0.00	1500	759
1634	16350.88	1500	0.01	1602.48	39.30	0.52202	0.65098	0.04014	0.042	172.862	0.01	0.00	1500	759
1635	16360.49	1500	0.01	1609.15	39.30	0.52192	0.64932	0.03892	0.042	172.869	0.00	0.00	1500	759
1636	16370.05	1500	0.01	1609.54	39.30	0.52212	0.6479	0.03633	0.044	172.877	0.02	0.00	1500	759
1637	16380.87	1500	0.01	1606.29	39.30	0.52139	0.64941	0.03921	0.044	172.884	0.01	0.00	1500	760
1638	16390.48	1500	0.01	1610.29	39.30	0.5209	0.64785	0.04219	0.042	172.891	0.01	0.00	1500	759
1639	16400.04	1500	0.00	1610.74	39.30	0.5207	0.64932	0.03867	0.042	172.898	0.01	0.00	1500	760
1640	16410.86	1500	0.01	1607.52	39.30	0.52163	0.65039	0.03735	0.044	172.905	0.01	0.00	1500	760
1641	16420.47	1500	0.01	1604.72	39.30	0.52207	0.64839	0.04146	0.042	172.912	0.01	0.00	1500	760
1642	16430.08	1500	0.01	1606.95	39.30	0.52163	0.64951	0.04331	0.042	172.919	0.01	0.00	1500	759
1643	16440.85	1500	0.00	1612.47	39.43	0.52075	0.64995	0.04009	0.044	172.926	0.00	0.00	1500	760
1644	16450.46	1500	0.01	1606.38	39.30	0.52183	0.65054	0.03691	0.042	172.933	0.01	0.00	1500	760
1645	16460.07	1500	0.01	1614.66	39.30	0.52104	0.64976	0.04165	0.042	172.940	0.01	0.00	1500	760
1646	16470.84	1500	0.01	1607.06	39.30	0.52129	0.64971	0.03911	0.044	172.947	0.01	0.00	1500	760
1647	16480.45	1500	0.01	1608.37	39.30	0.52231	0.65015	0.0394	0.042	172.954	0.01	0.00	1500	759

1648	16490.06	1500	0.00	1612.87	39.30	0.52168	0.64941	0.03691	0.042	172.961	0.00	0.00	1500	759
1649	16500.83	1500	0.01	1612.50	39.43	0.52231	0.65088	0.03994	0.042	172.968	0.01	0.00	1500	760
1650	16510.44	1500	0.01	1611.76	39.43	0.52173	0.65044	0.04014	0.042	172.975	0.01	0.00	1500	760
1651	16520.05	1500	0.01	1605.57	39.43	0.52207	0.65122	0.03823	0.042	172.982	0.01	0.00	1500	760
1652	16530.87	1500	0.00	1610.46	39.43	0.52202	0.65054	0.03965	0.042	172.989	0.00	0.00	1500	760
1653	16540.43	1500	0.01	1609.36	39.43	0.52139	0.65127	0.04062	0.042	172.996	0.00	0.00	1500	760
1654	16550.04	1500	0.00	1617.93	39.43	0.52275	0.65298	0.04092	0.044	173.003	0.00	0.00	1500	760
1655	16560.86	1500	0.01	1611.15	39.30	0.52192	0.65083	0.04165	0.042	173.010	0.01	0.00	1500	760
1656	16570.42	1500	0.02	1608.60	39.30	0.52236	0.6522	0.03936	0.039	173.017	0.01	0.00	1500	760
1657	16580.03	1500	0.00	1613.47	39.43	0.52207	0.65117	0.0436	0.042	173.023	0.00	0.00	1500	760
1658	16590.85	1500	0.01	1610.48	39.30	0.52241	0.65264	0.04097	0.044	173.031	0.01	0.00	1500	760
1659	16600.46	1500	0.01	1612.18	39.30	0.5229	0.65278	0.04355	0.042	173.038	0.01	0.00	1500	760
1660	16610.02	1500	0.00	1609.36	39.30	0.52295	0.65298	0.03984	0.042	173.045	0.00	0.00	1500	760
1661	16620.84	1500	0.00	1606.59	39.30	0.52271	0.65273	0.04448	0.044	173.052	0.00	0.00	1500	760
1662	16630.45	1500	0.00	1610.68	39.43	0.52261	0.65186	0.03999	0.042	173.059	0.00	0.00	1500	760
1663	16640.01	1500	0.01	1605.13	39.30	0.52295	0.65249	0.0396	0.042	173.066	0.00	0.00	1500	760
1664	16650.83	1500	0.01	1609.69	39.30	0.52349	0.65327	0.04087	0.044	173.073	0.00	0.00	1500	760
1665	16660.44	1500	0.01	1609.60	39.30	0.52295	0.65273	0.03555	0.046	173.081	0.00	0.00	1500	760
1666	16670	1500	0.00	1605.04	39.30	0.52222	0.65239	0.03745	0.042	173.088	0.00	0.00	1500	760
1667	16680.82	1500	0.00	1608.29	39.30	0.52241	0.65234	0.03994	0.044	173.095	0.00	0.00	1500	760
1668	16690.43	1500	0.01	1607.35	39.30	0.52261	0.6522	0.04043	0.042	173.102	0.00	0.00	1500	760
1669	16700.04	1500	0.01	1611.17	39.30	0.52251	0.65283	0.03774	0.042	173.109	0.01	0.00	1500	760
1670	16710.81	1500	0.01	1608.69	39.30	0.52354	0.65322	0.03975	0.046	173.117	0.01	0.00	1500	760
1671	16720.42	1500	0.01	1603.42	39.30	0.523	0.654	0.03994	0.044	173.124	0.01	0.00	1500	760
1672	16730.14	1500	0.00	1607.48	39.30	0.52344	0.65439	0.03833	0.046	173.132	0.00	0.00	1500	760
1673	16740.91	1500	0.01	1604.31	39.18	0.52266	0.65317	0.03765	0.046	173.139	0.01	0.00	1500	760
1674	16750.52	1500	0.01	1607.24	39.18	0.5229	0.6541	0.04258	0.042	173.146	0.01	0.00	1500	760
1675	16760.13	1500	0.01	1610.11	39.30	0.52334	0.65386	0.03853	0.042	173.153	0.01	0.00	1500	760
1676	16770.9	1500	0.00	1603.75	39.18	0.52266	0.654	0.03604	0.042	173.160	0.01	0.00	1500	760
1677	16780.51	1500	0.00	1603.16	39.18	0.52324	0.65459	0.03657	0.044	173.168	0.01	0.00	1500	760
1678	16790.12	1500	0.00	1605.39	39.18	0.52305	0.65439	0.04097	0.042	173.174	0.00	0.00	1500	760
1679	16800.89	1500	0.00	1599.84	39.18	0.52393	0.65591	0.04209	0.042	173.181	0.00	0.00	1500	760
1680	16810.5	1500	0.01	1598.60	39.18	0.52407	0.65688	0.03452	0.044	173.189	0.01	0.00	1500	760

1681	16820.11	1500	0.01	1611.63	39.18	0.52236	0.65439	0.03813	0.044	173.196	0.01	0.00	1500	760
1682	16830.88	1500	0.00	1598.11	39.18	0.52266	0.65381	0.0396	0.044	173.203	0.01	0.00	1500	760
1683	16840.49	1500	0.01	1602.87	39.18	0.52183	0.65303	0.04326	0.042	173.210	0.01	0.00	1500	760
1684	16850.1	1500	0.01	1597.42	39.06	0.52319	0.65386	0.04272	0.044	173.218	0.01	0.00	1500	760
1685	16860.92	1500	0.01	1604.82	39.18	0.52319	0.6541	0.04033	0.042	173.224	0.01	0.00	1500	760
1686	16870.48	1500	0.01	1603.57	39.06	0.523	0.65425	0.03589	0.042	173.231	0.01	0.00	1500	760
1687	16880.09	1500	0.00	1596.45	39.18	0.52354	0.65386	0.04473	0.044	173.239	0.00	0.00	1500	760
1688	16890.91	1500	0.01	1600.01	39.06	0.5231	0.65381	0.03809	0.042	173.246	0.01	0.00	1500	760
1689	16900.47	1500	0.00	1605.60	39.06	0.52261	0.65371	0.04067	0.044	173.253	0.00	0.00	1500	760
1690	16910.08	1500	0.00	1601.43	39.06	0.52373	0.65439	0.03911	0.042	173.260	0.00	0.00	1500	760
1691	16920.9	1500	0.00	1602.80	39.06	0.52314	0.65576	0.03921	0.044	173.267	0.00	0.00	1500	760
1692	16930.51	1500	0.00	1604.85	39.06	0.52349	0.65444	0.04468	0.042	173.274	0.00	0.00	1500	760
1693	16940.07	1500	0.01	1600.04	39.18	0.52412	0.65425	0.03955	0.046	173.282	0.01	0.00	1500	760
1694	16950.89	1500	0.01	1597.90	39.06	0.52261	0.65503	0.03613	0.044	173.289	0.01	0.00	1500	760
1695	16960.5	1500	0.01	1597.74	39.06	0.52344	0.65479	0.04102	0.046	173.297	0.01	0.00	1500	760
1696	16970.06	1500	0.01	1601.05	39.06	0.52339	0.65542	0.04385	0.039	173.303	0.01	0.00	1500	760
1697	16980.88	1500	0.01	1601.72	39.06	0.5231	0.65454	0.03984	0.044	173.311	0.01	0.00	1500	760
1698	16990.49	1500	0.00	1598.49	39.06	0.52349	0.65532	0.04541	0.039	173.317	0.00	0.00	1500	760
1699	17000.1	1500	0.01	1615.55	39.06	0.52324	0.6543	0.03701	0.049	173.325	0.00	0.00	1500	761
1700	17010.87	1500	0.00	1590.94	39.06	0.52334	0.65508	0.04043	0.039	173.332	0.00	0.00	1500	761
1701	17020.48	1500	0.01	1588.48	39.06	0.52427	0.65635	0.03853	0.039	173.338	0.00	0.00	1500	761
1702	17030.09	1500	0.00	1602.94	39.06	0.52446	0.65615	0.04199	0.027	173.343	0.00	0.00	1500	761
1703	17040.86	1500	0.00	1594.15	39.06	0.52402	0.6563	0.03745	0.042	173.350	0.00	0.00	1500	761
1704	17050.47	1500	0.00	1589.56	39.06	0.52466	0.6562	0.03877	0.042	173.357	0.01	0.00	1500	761
1705	17060.08	1500	0.00	1600.65	38.94	0.52417	0.65679	0.03965	0.042	173.364	0.00	0.00	1500	761
1706	17070.85	1500	0.00	1591.57	38.94	0.52393	0.65557	0.03931	0.042	173.371	0.00	0.00	1500	761
1707	17080.46	1500	0.00	1586.17	39.06	0.52441	0.65601	0.03828	0.044	173.378	0.01	0.00	1500	761
1708	17090.07	1500	0.01	1598.51	38.94	0.52466	0.65615	0.04194	0.044	173.385	0.01	0.00	1500	761
1709	17100.83	1500	0.00	1598.99	38.94	0.52407	0.65723	0.04062	0.044	173.392	0.00	0.00	1500	761
1710	17110.45	1500	0.00	1595.45	39.06	0.52471	0.65718	0.03931	0.044	173.400	0.00	0.00	1500	761
1711	17120.06	1500	0.00	1589.01	38.94	0.525	0.65688	0.03926	0.046	173.408	0.00	0.00	1500	761
1712	17130.88	1500	0.00	1600.98	38.94	0.52402	0.65591	0.0417	0.044	173.415	0.00	0.00	1500	761
1713	17140.44	1500	0.00	1594.73	38.94	0.52388	0.6561	0.04131	0.046	173.423	0.00	0.00	1500	761

1714	17150.05	1500	0.00	1577.37	38.94	0.52495	0.65542	0.04019	0.046	173.430	0.00	0.00	1500	761
1715	17160.87	1500	0.00	1590.08	38.94	0.52441	0.65562	0.03667	0.046	173.438	0.00	0.00	1500	761
1716	17170.43	1500	0.01	1589.53	38.94	0.52368	0.65503	0.04189	0.044	173.445	0.00	0.00	1500	761
1717	17180.04	1500	0.00	1594.05	38.94	0.52314	0.65566	0.04219	0.046	173.453	0.00	0.00	1500	761
1718	17190.86	1500	0.01	1586.25	38.94	0.52417	0.65635	0.04087	0.046	173.461	0.00	0.00	1500	761
1719	17200.47	1500	0.01	1585.02	38.81	0.52451	0.65581	0.04214	0.046	173.469	0.01	0.00	1500	761
1720	17210.03	1500	0.00	1593.53	38.94	0.52393	0.65625	0.04614	0.046	173.476	0.00	0.00	1500	761
1721	17220.85	1500	0.01	1581.35	38.94	0.52456	0.65566	0.03794	0.046	173.484	0.00	0.00	1500	761
1722	17230.46	1500	0.00	1586.70	38.94	0.52407	0.65469	0.03901	0.046	173.492	0.00	0.00	1500	761
1723	17240.02	1500	0.00	1585.83	38.81	0.52407	0.65542	0.04424	0.046	173.500	0.00	0.00	1500	761
1724	17250.84	1500	0.00	1589.09	38.81	0.52393	0.65488	0.04082	0.046	173.507	0.00	0.00	1500	761
1725	17260.45	1500	0.01	1588.27	38.81	0.52397	0.65576	0.03892	0.049	173.515	0.01	0.00	1500	761
1726	17270.06	1500	0.00	1583.26	38.81	0.52383	0.65581	0.03804	0.046	173.523	0.00	0.00	1500	761
1727	17280.83	1500	0.00	1590.73	38.81	0.52437	0.65659	0.03936	0.044	173.530	0.00	0.00	1500	761
1728	17290.44	1500	-0.06	1584.22	38.81	0.52368	0.65645	0.04019	0.044	173.538	-0.04	0.00	1500	761
1729	17300.05	1500	0.02	1580.66	38.81	0.52358	0.65532	0.03364	0.046	173.546	0.02	0.00	1500	761
1730	17310.81	1500	0.01	1546.11	38.57	0.04043	0.03867	0.04502	1.001	173.712	0.01	0.00	1500	761
1731	17320.43	1500	2.63	1549.52	38.33	1.22671	1.22612	0.04355	0.835	173.852	2.94	0.00	1500	761
1732	17330.04	1500	1.38	1553.92	38.45	0.05063	0.02314	0.05342	0.754	173.977	0.65	0.00	1500	761
1733	17340.8	1500	-0.04	1546.28	38.57	0.02534	0.02642	0.04287	0.603	174.078	-0.04	0.00	1500	761
1734	17350.42	1500	0.10	1542.63	38.57	0.01885	0.01919	0.04673	1.179	174.274	0.17	0.00	1500	761
1735	17360.03	1500	1.40	1543.28	38.57	-0.00435	-0.00107	0.04204	1.130	174.463	1.61	0.00	1500	761
1736	17370.79	1500	1.60	1544.07	38.57	-0.00488	-0.00186	0.02422	1.169	174.658	1.58	0.00	1500	761
1737	17380.41	1500	1.54	1548.78	38.57	0.0041	0.00581	0.03945	1.282	174.871	1.59	0.00	1500	761
1738	17390.02	1500	1.93	1550.11	38.57	0.0021	0.00537	0.04004	1.394	175.104	1.93	0.00	1500	761
1739	17400.84	1500	2.00	1542.03	38.57	0.00635	0.00947	0.03833	1.448	175.345	1.98	0.00	1500	762
1740	17410.39	1500	2.03	1543.50	38.57	0.01626	0.01704	0.04258	1.497	175.594	2.04	0.00	1500	761
1741	17420.01	1500	2.06	1546.55	38.57	0.00723	0.00986	0.04023	1.526	175.849	2.07	0.00	1500	761
1742	17430.83	1500	2.14	1548.06	38.57	0.00864	0.01245	0.03628	1.555	176.108	2.14	0.00	1500	762
1743	17440.38	1500	2.14	1540.28	38.69	0.01694	0.01846	0.04204	1.548	176.366	2.14	0.00	1500	762
1744	17450	1500	2.11	1545.49	38.57	0.00845	0.01113	0.04355	1.553	176.625	2.09	0.00	1500	762
1745	17460.82	1500	2.16	1551.62	38.69	0.00937	0.0126	0.03955	1.567	176.886	2.16	0.00	1500	762
1746	17470.43	1500	2.12	1540.37	38.57	0.01416	0.01631	0.04292	1.567	177.147	2.15	0.00	1500	762

1747	17481.19	1500	2.18	1544.37	38.57	0.00898	0.01152	0.03901	1.545	177.405	2.17	0.00	1500	762
1748	17490.81	1500	2.16	1543.91	38.57	0.01172	0.01362	0.04487	1.550	177.663	2.18	0.00	1500	762
1749	17500.42	1500	2.11	1547.78	38.57	0.00908	0.0125	0.04033	1.531	177.918	2.12	0.00	1500	762
1750	17511.18	1500	2.17	1542.62	38.57	0.00825	0.01133	0.0416	1.545	178.176	2.18	0.00	1500	762
1751	17520.79	1500	2.15	1546.49	38.57	0.01387	0.01553	0.04097	1.538	178.432	2.15	0.00	1500	763
1752	17530.41	1500	2.16	1542.88	38.57	0.00752	0.00942	0.04438	1.528	178.687	2.16	0.00	1500	763
1753	17540.02	1500	2.18	1545.35	38.57	0.0082	0.01055	0.04233	1.538	178.943	2.18	0.00	1500	763
1754	17550.78	1500	2.18	1546.32	38.57	0.0166	0.01836	0.04126	1.514	179.195	2.17	0.00	1500	763
1755	17560.4	1500	2.15	1548.46	38.57	0.00591	0.00923	0.03833	1.519	179.448	2.14	0.00	1500	763
1756	17570.01	1500	2.16	1548.20	38.57	0.0084	0.01191	0.04395	1.514	179.701	2.19	0.00	1500	763
1757	17580.77	1500	2.13	1544.56	38.57	0.01201	0.01475	0.04365	1.511	179.953	2.15	0.00	1500	763
1758	17590.39	1500	2.16	1546.57	38.57	0.00659	0.00933	0.04395	1.499	180.202	2.15	0.00	1500	763
1759	17600	1500	2.18	1542.06	38.57	0.01138	0.01382	0.03687	1.497	180.452	2.17	0.00	1500	763
1760	17610.76	1500	2.11	1547.74	38.57	0.00732	0.01011	0.03906	1.482	180.699	2.11	0.00	1500	763
1761	17620.37	1500	2.16	1543.15	38.45	0.00591	0.00957	0.04175	1.492	180.947	2.16	0.00	1500	764
1762	17631.19	1500	2.16	1545.66	38.57	0.0104	0.01309	0.04375	1.479	181.194	2.17	0.00	1500	764
1763	17640.75	1500	2.13	1543.69	38.57	0.00513	0.00889	0.0418	1.472	181.439	2.12	0.00	1500	764
1764	17650.36	1500	2.14	1547.44	38.57	0.00547	0.00933	0.04009	1.487	181.687	2.14	0.00	1500	764
1765	17661.18	1500	2.15	1551.41	38.45	0.01323	0.0147	0.04468	1.465	181.931	2.15	0.00	1500	764
1766	17670.8	1500	2.13	1546.74	38.45	0.00493	0.00869	0.03896	1.462	182.175	2.13	0.00	1500	764
1767	17680.35	1500	2.14	1547.47	38.45	0.00649	0.00977	0.03848	1.475	182.421	2.16	0.00	1500	764
1768	17691.17	1500	2.18	1545.21	38.45	0.01055	0.0146	0.03828	1.462	182.665	2.17	0.00	1500	764
1769	17700.79	1500	2.11	1541.90	38.45	0.00508	0.0084	0.03608	1.472	182.910	2.11	0.00	1500	764
1770	17710.34	1500	2.12	1550.04	38.45	0.00854	0.01133	0.03999	1.460	183.153	2.12	0.00	1500	764
1771	17721.16	1500	1.29	1545.69	38.45	0.00601	0.01016	0.04014	1.472	183.399	1.33	0.00	1500	764
1772	17730.77	1500	2.76	1544.04	38.45	0.00503	0.0083	0.03896	1.470	183.644	2.81	0.00	1500	764
1773	17740.39	1500	2.11	1545.13	38.33	0.01123	0.01367	0.0415	1.453	183.886	2.09	0.00	1500	764
1774	17751.15	1500	2.13	1546.81	38.45	0.00425	0.00835	0.03638	1.453	184.128	2.11	0.00	1500	764
1775	17760.76	1500	2.13	1544.60	38.33	0.00483	0.0085	0.04238	1.467	184.372	2.14	0.00	1500	764
1776	17770.38	1500	2.13	1545.13	38.45	0.01055	0.0146	0.03896	1.453	184.614	2.13	0.00	1500	764
1777	17781.14	1500	2.11	1546.97	38.33	0.00415	0.00742	0.04048	1.453	184.857	2.11	0.00	1500	764
1778	17790.75	1500	2.16	1544.82	38.33	0.00601	0.00957	0.04028	1.465	185.101	2.16	0.00	1500	764
1779	17800.37	1500	2.18	1548.80	38.33	0.00698	0.01133	0.04253	1.467	185.345	2.21	0.00	1500	764

1780	17811.13	1500	2.12	1541.60	38.33	0.00469	0.00825	0.03608	1.450	185.587	2.09	0.00	1500	764
1781	17820.74	1500	2.12	1542.15	38.33	0.00698	0.01084	0.03975	1.448	185.828	2.12	0.00	1500	765
1782	17830.35	1500	2.11	1547.84	38.33	0.00469	0.00913	0.03994	1.436	186.068	2.10	0.00	1500	765
1783	17841.18	1500	2.14	1544.61	38.33	0.00439	0.00796	0.03667	1.450	186.309	2.12	0.00	1500	765
1784	17850.73	1500	2.13	1543.20	38.33	0.00991	0.01353	0.04077	1.433	186.548	2.13	0.00	1500	765
1785	17860.34	1500	2.12	1545.45	38.33	0.00381	0.00771	0.03682	1.438	186.788	2.11	0.00	1500	765
1786	17871.16	1500	2.12	1549.40	38.21	0.00366	0.00806	0.03916	1.450	187.029	2.13	0.00	1500	765
1787	17880.72	1500	2.14	1552.06	38.21	0.01079	0.01479	0.03877	1.431	187.268	2.13	0.00	1500	765
1788	17890.33	1500	2.09	1551.61	38.21	0.00381	0.00742	0.03735	1.436	187.507	2.09	0.00	1500	765
1789	17901.15	1500	2.12	1548.01	38.21	0.00396	0.00781	0.03843	1.450	187.749	2.14	0.00	1500	765
1790	17910.71	1500	2.11	1547.47	38.21	0.00703	0.01235	0.03828	1.448	187.990	2.15	0.00	1500	765
1791	17920.32	1500	2.13	1546.95	38.21	0.0041	0.00786	0.04121	1.426	188.228	2.12	0.00	1500	765
1792	17931.14	1500	2.12	1549.46	38.21	0.00625	0.01025	0.04106	1.443	188.468	2.11	0.00	1500	765
1793	17940.76	1500	2.09	1550.32	38.21	0.0043	0.0083	0.03975	1.436	188.708	2.11	0.00	1500	765
1794	17950.31	1500	2.13	1545.55	38.21	0.00337	0.00781	0.03945	1.445	188.948	2.12	0.00	1500	765
1795	17961.13	1500	2.13	1545.01	38.21	0.0082	0.01226	0.03755	1.426	189.186	2.13	0.00	1500	765
1796	17970.74	1500	2.12	1546.55	38.21	0.00234	0.0061	0.03506	1.428	189.424	2.11	0.00	1500	765
1797	17980.3	1500	2.11	1546.91	38.21	0.00347	0.00811	0.03716	1.448	189.665	2.11	0.00	1500	765
1798	17991.12	1500	2.13	1546.18	38.21	0.00996	0.01367	0.04546	1.416	189.901	2.11	0.00	1500	765
1799	18000.73	1500	2.07	1548.08	38.10	0.00308	0.00723	0.03691	1.428	190.139	2.07	0.00	1500	765
1800	18010.35	1500	2.10	1545.26	38.21	0.00425	0.00889	0.03394	1.436	190.379	2.12	0.00	1500	765
1801	18021.11	1500	2.12	1548.93	38.10	0.00728	0.01206	0.03604	1.431	190.617	2.14	0.00	1500	765
1802	18030.72	1500	2.09	1547.29	38.10	0.00249	0.00708	0.03311	1.433	190.856	2.07	0.00	1500	765
1803	18040.33	1500	2.06	1545.26	38.10	0.00649	0.01045	0.03887	1.426	191.094	2.07	0.00	1500	765
1804	18051.1	1500	2.07	1550.13	38.10	0.00269	0.00796	0.03433	1.440	191.334	2.10	0.00	1500	765
1805	18060.71	1500	2.06	1552.38	38.10	0.00273	0.00723	0.03789	1.433	191.572	2.05	0.00	1500	765
1806	18070.32	1500	2.10	1548.19	38.10	0.00933	0.01406	0.04238	1.416	191.808	2.10	0.00	1500	765
1807	18081.09	1500	2.06	1553.29	38.10	0.002	0.00688	0.04004	1.414	192.044	2.06	0.00	1500	765
1808	18090.7	1500	2.09	1548.26	38.10	0.00312	0.00801	0.03325	1.436	192.283	2.09	0.00	1500	765
1809	18100.31	1500	2.09	1554.82	37.98	0.00806	0.01289	0.04102	1.421	192.520	2.08	0.00	1500	765
1810	18111.13	1500	2.05	1546.88	37.98	0.00151	0.0064	0.0334	1.418	192.757	2.06	0.00	1500	765
1811	18120.69	1500	2.08	1550.44	37.98	0.00352	0.00767	0.03413	1.431	192.995	2.07	0.00	1500	765
1812	18130.3	1500	2.05	1546.99	37.98	0.00518	0.01035	0.03906	1.438	193.235	2.09	0.00	1500	765

1813	18141.12	1500	2.05	1546.09	37.98	0.00195	0.0064	0.03301	1.421	193.472	2.05	0.00	1500	765
1814	18150.68	1500	2.07	1548.15	37.98	0.00542	0.01006	0.03848	1.431	193.710	2.07	0.00	1500	765
1815	18160.29	1500	2.04	1548.64	37.98	0.00278	0.00762	0.03569	1.421	193.947	2.04	0.00	1500	765
1816	18171.11	1500	2.07	1548.76	37.98	0.00264	0.00713	0.03379	1.440	194.187	2.05	0.00	1500	764
1817	18180.72	1500	2.08	1548.69	37.98	0.00835	0.0127	0.04053	1.431	194.425	2.07	0.00	1500	764
1818	18190.28	1500	2.04	1544.78	37.86	0.00146	0.00654	0.0397	1.423	194.663	2.04	0.00	1500	764
1819	18201.1	1500	2.04	1546.13	37.98	0.00293	0.00767	0.03081	1.282	194.876	2.06	0.00	1500	764
1820	18210.71	1500	2.10	1549.31	37.98	0.00825	0.01318	0.04092	1.387	195.107	2.09	0.00	1500	764
1821	18220.27	1500	2.03	1552.16	37.98	0.00186	0.00747	0.03574	1.416	195.343	2.04	0.00	1500	764
1822	18231.09	1500	2.08	1549.45	37.86	0.00298	0.00776	0.03843	1.428	195.581	2.06	0.00	1500	764
1823	18240.7	1500	2.08	1547.43	37.98	0.00581	0.01079	0.03364	1.433	195.820	2.10	0.00	1500	764
1824	18250.32	1500	2.45	1547.17	37.86	0.00171	0.00635	0.03496	1.428	196.058	2.63	0.00	1500	763
1825	18261.08	1500	2.26	1547.38	37.86	0.00459	0.00918	0.03696	1.423	196.295	2.12	0.00	1500	763
1826	18270.69	1500	2.04	1548.46	37.86	0.00254	0.00713	0.03486	1.423	196.533	2.06	0.00	1500	763
1827	18280.3	1500	2.06	1547.57	37.86	0.00093	0.00679	0.0332	1.433	196.771	2.04	0.00	1500	763
1828	18291.07	1500	2.10	1546.92	37.86	0.00703	0.01133	0.03779	1.416	197.007	2.07	0.00	1500	763
1829	18300.68	1500	2.05	1548.97	37.86	0.00068	0.00615	0.03325	1.414	197.243	2.04	0.00	1500	763
1830	18310.29	1500	2.04	1549.32	37.86	0.00215	0.00649	0.03647	1.426	197.481	2.03	0.00	1500	763
1831	18321.06	1500	2.08	1546.10	37.86	0.00845	0.01309	0.04248	1.406	197.715	2.07	0.00	1500	763
1832	18330.67	1500	2.00	1548.69	37.86	0.00093	0.00649	0.03413	1.414	197.951	2.00	0.00	1500	763
1833	18340.28	1500	1.99	1549.92	37.86	0.0022	0.00757	0.0395	1.418	198.187	2.01	0.00	1500	763
1834	18351.05	1500	2.05	1545.73	37.86	0.00615	0.01123	0.04194	1.404	198.421	2.06	0.00	1500	763
1835	18360.66	1500	1.98	1546.23	37.74	0.00078	0.0061	0.02612	1.406	198.655	1.96	0.00	1500	763
1836	18370.27	1500	2.00	1551.56	37.86	0.00415	0.01011	0.03472	1.387	198.887	2.00	0.00	1500	763
1837	18381.15	1500	1.95	1545.35	37.74	0.0022	0.00698	0.03984	1.414	199.122	1.98	0.00	1500	763
1838	18390.76	1500	1.96	1548.60	37.86	0.00068	0.00601	0.03184	1.406	199.357	1.96	0.00	1500	763
1839	18400.37	1500	1.92	1547.60	37.86	0.00767	0.01187	0.03955	1.387	199.588	1.92	0.00	1500	763
1840	18411.14	1500	1.93	1549.68	37.74	0.00024	0.00596	0.03203	1.392	199.820	1.92	0.00	1500	762
1841	18420.75	1500	1.89	1546.62	37.86	0.00127	0.00723	0.03281	1.409	200.054	1.88	0.00	1500	762
1842	18430.36	1500	1.93	1549.51	37.86	0.00752	0.01152	0.03667	1.389	200.286	1.94	0.00	1500	762
1843	18441.18	1500	1.84	1550.08	37.74	-0.0001	0.00586	0.03071	1.394	200.518	1.85	0.00	1500	762
1844	18450.74	1500	1.88	1548.99	37.74	0.00186	0.00688	0.03574	1.396	200.751	1.87	0.00	1500	762
1845	18460.35	1500	1.84	1551.62	37.74	0.00283	0.00811	0.03389	1.406	200.985	1.88	0.00	1500	762

1846	18471.17	1500	1.84	1549.16	37.74	0.0001	0.00537	0.03325	1.394	201.218	1.80	0.00	1500	762
1847	18480.73	1500	1.82	1547.58	37.86	0.00303	0.00815	0.03696	1.387	201.449	1.82	0.00	1500	762
1848	18490.34	1500	1.80	1546.64	37.74	0.00068	0.00737	0.02607	1.392	201.681	1.81	0.00	1500	762
1849	18501.16	1500	1.78	1551.02	37.74	-0.00044	0.00586	0.03066	1.399	201.914	1.79	0.00	1500	762
1850	18510.77	1500	1.83	1547.05	37.74	0.00522	0.01113	0.03735	1.377	202.143	1.82	0.00	1500	762
1851	18520.33	1500	1.78	1550.67	37.86	-0.00068	0.00571	0.02729	1.382	202.374	1.77	0.00	1500	762
1852	18531.15	1500	1.74	1550.14	37.74	0.00044	0.00679	0.02788	1.399	202.607	1.73	0.00	1500	762
1853	18540.76	1500	1.80	1550.09	37.74	0.00649	0.01162	0.03667	1.379	202.837	1.79	0.00	1500	762
1854	18550.32	1500	1.72	1547.79	37.86	-0.00054	0.00557	0.0269	1.392	203.069	1.71	0.00	1500	762
1855	18561.14	1500	1.75	1551.46	37.86	0.00098	0.00664	0.03208	1.394	203.301	1.75	0.00	1500	762
1856	18570.75	1500	1.73	1550.20	37.86	0.00342	0.00898	0.03853	1.396	203.534	1.77	0.00	1500	762
1857	18580.36	1500	1.74	1549.56	37.74	-0.00049	0.00591	0.03257	1.399	203.767	1.73	0.00	1500	762
1858	18591.13	1500	1.71	1553.17	37.86	0.00239	0.00845	0.03281	1.584	204.031	1.72	0.00	1500	762
1859	18600.74	1500	2.18	1547.92	37.86	0.00298	0.00894	0.03403	1.675	204.310	2.21	0.00	1500	763
1860	18610.35	1500	2.16	1549.02	37.86	0.0042	0.01133	0.03398	1.675	204.589	2.16	0.00	1500	762
1861	18621.12	1500	2.21	1547.59	37.86	0.00977	0.0145	0.04014	1.750	204.881	2.23	0.00	1500	763
1862	18630.73	1500	2.18	1549.63	37.86	0.01011	0.0147	0.03843	1.736	205.170	2.18	0.00	1500	763
1863	18640.34	1500	2.25	1546.63	37.86	0.00791	0.01353	0.04023	1.763	205.464	2.26	0.00	1500	763
1864	18651.11	1500	2.20	1550.40	37.86	0.0124	0.01743	0.03818	1.782	205.761	2.23	0.00	1500	763
1865	18660.72	1500	2.22	1549.27	37.86	0.00762	0.01353	0.0374	1.748	206.052	2.20	0.00	1500	762
1866	18670.33	1500	2.25	1544.46	37.86	0.00845	0.01357	0.04204	1.780	206.349	2.25	0.00	1500	762
1867	18681.15	1500	2.22	1545.73	37.86	0.01597	0.02051	0.04082	1.794	206.648	2.21	0.00	1500	762
1868	18690.71	1500	2.21	1550.25	37.86	0.00825	0.01411	0.03975	1.768	206.943	2.22	0.00	1500	762
1869	18700.32	1500	2.22	1552.80	37.86	0.00977	0.01523	0.03779	1.792	207.241	2.24	0.00	1500	762
1870	18710.04	1500	2.23	1546.47	37.86	0.01338	0.0189	0.04355	1.760	207.535	2.22	0.00	1500	762
1871	18720.81	1500	2.24	1548.06	37.86	0.00771	0.01309	0.03574	1.765	207.829	2.23	0.00	1500	762
1872	18730.42	1500	2.23	1546.48	37.86	0.01084	0.01699	0.0377	1.794	208.128	2.24	0.00	1500	762
1873	18740.03	1500	2.19	1546.73	37.86	0.0085	0.0145	0.03906	1.758	208.421	2.20	0.00	1500	762
1874	18750.8	1500	2.22	1547.30	37.98	0.00796	0.01445	0.04199	1.780	208.718	2.20	0.00	1500	761
1875	18760.41	1500	2.18	1546.42	37.98	0.01279	0.0186	0.04087	1.794	209.017	2.22	0.00	1500	761
1876	18770.02	1500	2.18	1548.83	37.86	0.00796	0.01323	0.03628	1.770	209.312	2.17	0.00	1500	761
1877	18780.79	1500	2.19	1546.51	37.86	0.00713	0.01445	0.03066	1.787	209.610	2.19	0.00	1500	761
1878	18790.4	1500	2.15	1547.02	37.86	0.01553	0.0209	0.03906	1.807	209.911	2.17	0.00	1500	761

1879	18800.01	1500	2.12	1551.57	37.98	0.00703	0.01353	0.04092	1.772	210.206	2.12	0.00	1500	760
1880	18810.77	1500	2.15	1551.78	37.98	0.00898	0.01396	0.04556	1.785	210.504	2.16	0.00	1500	760
1881	18820.39	1500	2.05	1544.77	37.98	0.01396	0.02095	0.04038	1.790	210.802	2.07	0.00	1500	760
1882	18830	1500	2.06	1547.07	37.98	0.00825	0.01348	0.04478	1.782	211.099	2.05	0.00	1500	760
1883	18840.82	1500	2.04	1549.82	37.98	0.01011	0.01626	0.04121	1.790	211.397	2.05	0.00	1500	760
1884	18850.38	1500	2.04	1548.28	37.98	0.00957	0.01611	0.04409	1.760	211.691	2.04	0.00	1500	760
1885	18861.2	1500	2.01	1547.95	37.98	0.00776	0.01406	0.04199	1.787	211.988	1.98	0.00	1500	760
1886	18870.81	1500	1.97	1545.36	38.10	0.01152	0.0188	0.03921	1.799	212.288	1.97	0.00	1500	759
1887	18880.42	1500	1.95	1551.37	38.10	0.00762	0.01387	0.03789	1.770	212.583	1.96	0.00	1500	759
1888	18891.19	1500	2.01	1554.29	38.10	0.00781	0.01431	0.03564	1.787	212.881	2.01	0.00	1500	759
1889	18900.8	1500	1.96	1546.54	38.10	0.01572	0.02158	0.04233	1.809	213.183	1.95	0.00	1500	759
1890	18910.41	1500	1.92	1550.80	38.10	0.00762	0.01489	0.03545	1.780	213.479	1.92	0.00	1500	759
1891	18921.18	1500	1.95	1554.43	38.21	0.00791	0.01416	0.0375	1.790	213.778	1.95	0.00	1500	759
1892	18930.79	1500	1.89	1540.09	38.10	0.01514	0.02173	0.04365	1.807	214.079	1.92	0.00	1500	759
1893	18940.4	1500	1.89	1549.63	38.21	0.00771	0.01455	0.04033	1.782	214.376	1.90	0.00	1500	759
1894	18951.16	1500	1.91	1556.01	38.21	0.00967	0.01548	0.04282	1.794	214.675	1.91	0.00	1500	759
1895	18960.78	1500	1.87	1549.78	38.21	0.01084	0.01753	0.03618	1.765	214.969	1.90	0.00	1500	759
1896	18970.39	1500	1.92	1551.43	38.21	0.00791	0.01392	0.03735	1.787	215.267	1.90	0.00	1500	759
1897	18980	1500	1.84	1548.50	38.21	0.01279	0.01904	0.0374	1.797	215.566	1.81	0.00	1500	759
1898	18990.77	1500	1.63	1551.76	38.21	0.00713	0.01421	0.03887	1.770	215.861	1.84	0.00	1500	759
1899	19000.38	1500	1.89	1551.99	38.33	0.00703	0.01387	0.03833	1.787	216.159	1.89	0.00	1500	759
1900	19011.2	1500	1.85	1550.93	38.33	0.01367	0.01973	0.03892	1.797	216.459	1.83	0.00	1500	759
1901	19020.76	1500	1.85	1552.12	38.33	0.00664	0.01426	0.03682	1.777	216.755	1.84	0.00	1500	759
1902	19030.37	1500	1.88	1551.61	38.45	0.00845	0.01436	0.03774	1.882	217.069	1.90	0.00	1500	759
1903	19041.19	1500	2.05	1550.85	38.33	0.01558	0.02236	0.04097	1.982	217.399	2.09	0.00	1500	759
1904	19050.74	1500	2.09	1543.84	38.33	0.0104	0.0168	0.0394	1.941	217.722	2.07	0.00	1500	759
1905	19060.36	1500	2.03	1548.35	38.45	0.01289	0.01948	0.03623	1.965	218.050	2.06	0.00	1500	759
1906	19071.18	1500	2.07	1556.36	38.45	0.01978	0.02622	0.04321	1.970	218.378	2.07	0.00	1500	759
1907	19080.79	1500	2.06	1535.68	38.45	0.01084	0.01797	0.03911	1.973	218.707	2.05	0.00	1500	759
1908	19090.35	1500	2.02	1550.68	38.45	0.01494	0.02163	0.04175	2.004	219.041	1.98	0.00	1500	759
1909	19101.17	1500	1.99	1547.86	38.57	0.0147	0.021	0.04087	1.541	219.298	1.98	0.00	1500	759
1910	19110.78	1500	2.05	1537.25	38.57	0.00996	0.01748	0.03286	1.943	219.622	2.07	0.00	1500	759
1911	19120.33	1500	1.98	1527.56	38.57	0.01743	0.02441	0.04458	2.002	219.956	1.97	0.00	1500	759

1912	19131.16	1500	2.02	1562.41	38.69	0.0124	0.01748	0.04194	1.938	220.279	2.03	0.00	1500	759
1913	19140.77	1500	2.01	1536.25	38.57	0.01108	0.01836	0.03872	1.956	220.605	2.03	0.00	1500	759
1914	19150.38	1500	1.98	1548.20	38.69	0.02002	0.02627	0.04189	1.978	220.934	1.98	0.00	1500	759
1915	19161.14	1500	2.03	1508.73	38.69	0.01089	0.01812	0.03999	1.951	221.259	1.99	0.00	1500	759
1916	19170.76	1500	1.95	1550.87	38.69	0.01318	0.01929	0.0457	1.958	221.586	1.99	0.00	1500	759
1917	19180.37	1500	1.98	1493.63	38.81	0.01646	0.02334	0.03843	1.934	221.908	1.95	0.00	1500	759
1918	19191.13	1500	1.99	1542.15	38.81	0.01045	0.01782	0.03799	1.943	222.232	2.01	0.00	1500	759
1919	19200.75	1500	1.94	1561.42	38.81	0.01411	0.02065	0.04355	1.958	222.558	1.92	0.00	1500	759
1920	19210.36	1500	1.92	1558.83	38.81	0.0126	0.01943	0.04175	1.936	222.881	1.91	0.00	1500	759
1921	19221.12	1500	2.01	1554.27	38.81	0.01011	0.01714	0.03877	1.975	223.210	2.01	0.00	1500	759
1922	19230.74	1500	2.00	1596.63	38.94	0.01563	0.0229	0.04199	1.965	223.537	1.98	0.00	1500	759
1923	19240.35	1500	2.03	1519.44	38.94	0.01001	0.01802	0.03979	1.907	223.855	2.01	0.00	1500	759
1924	19251.11	1500	2.06	1536.03	38.94	0.01079	0.01733	0.03618	1.902	224.172	2.07	0.00	1500	759
1925	19260.72	1500	1.98	1622.33	38.94	0.01851	0.02534	0.04038	1.938	224.495	2.01	0.00	1500	759
1926	19270.34	1500	2.05	1560.97	38.94	0.01074	0.01797	0.03853	1.899	224.812	2.04	0.00	1500	759
1927	19281.16	1500	2.04	1545.38	38.94	0.01099	0.01841	0.03633	1.904	225.129	2.08	0.00	1500	759
1928	19290.71	1500	2.07	1531.82	38.94	0.01758	0.02446	0.04111	1.877	225.442	2.09	0.00	1500	759
1929	19300.33	1500	2.19	1512.41	39.06	0.00986	0.01768	0.03955	1.895	225.758	2.18	0.00	1500	759
1930	19311.15	1500	2.14	1548.67	39.06	0.01343	0.01885	0.03989	1.902	226.075	2.17	0.00	1500	759
1931	19320.7	1500	2.17	1560.37	39.06	0.01162	0.01914	0.0397	1.877	226.388	2.15	0.00	1500	759
1932	19330.32	1500	2.27	1514.65	39.06	0.01021	0.01699	0.04062	1.887	226.702	2.29	0.00	1500	759
1933	19341.14	1500	2.27	1555.53	39.06	0.01396	0.02104	0.03779	1.914	227.021	2.23	0.00	1500	759
1934	19350.75	1500	2.29	1559.92	39.06	0.00952	0.01655	0.03657	1.873	227.333	2.29	0.00	1500	759
1935	19360.3	1500	2.33	1549.09	39.06	0.01069	0.0187	0.03887	1.880	227.647	2.36	0.00	1500	759
1936	19371.12	1500	2.31	1545.52	39.06	0.01758	0.02402	0.04292	1.929	227.968	2.33	0.00	1500	759
1937	19380.74	1500	2.40	1544.55	39.18	0.00962	0.0167	0.04185	1.875	228.281	2.39	0.00	1500	759
1938	19390.29	1500	2.36	1553.54	39.18	0.01138	0.01831	0.03477	1.885	228.595	2.39	0.00	1500	758
1939	19401.11	1500	2.40	1548.18	39.18	0.0168	0.02446	0.03745	1.873	228.907	2.40	0.00	1500	758
1940	19410.73	1500	2.45	1546.99	39.18	0.00918	0.01675	0.04097	1.873	229.219	2.43	0.00	1500	758
1941	19420.28	1500	2.40	1549.92	39.18	0.01274	0.01934	0.03516	1.897	229.535	2.39	0.00	1500	758
1942	19431.1	1500	2.44	1547.89	39.18	0.01143	0.01982	0.04087	1.853	229.844	2.43	0.00	1500	758
1943	19440.72	1500	1.58	1552.31	39.06	0.01025	0.01563	0.03945	1.868	230.155	2.31	0.00	1500	758
1944	19450.33	1500	3.17	1547.18	39.18	0.01548	0.02241	0.03931	1.912	230.474	3.17	0.00	1500	758

1945	19461.09	1500	2.39	1550.97	39.18	0.00937	0.01675	0.04146	1.848	230.782	2.40	0.00	1500	758
1946	19470.7	1500	2.55	1558.27	39.18	0.00908	0.01768	0.03848	1.873	231.094	2.57	0.00	1500	758
1947	19480.32	1500	2.50	1550.78	39.18	0.01758	0.02397	0.04102	1.897	231.410	2.51	0.00	1500	758
1948	19491.08	1500	2.55	1567.38	39.18	0.00859	0.01636	0.03657	1.855	231.719	2.53	0.00	1500	758
1949	19500.69	1500	2.51	1560.80	39.18	0.00991	0.01758	0.03574	1.870	232.031	2.53	0.00	1500	758
1950	19510.31	1500	2.54	1550.18	39.06	0.01274	0.02139	0.03813	1.843	232.338	2.54	0.00	1500	758
1951	19521.07	1500	2.59	1542.18	39.18	0.00918	0.0166	0.03906	1.865	232.649	2.56	0.00	1500	758
1952	19530.68	1500	2.53	1552.98	39.18	0.01201	0.01929	0.04023	1.875	232.962	2.54	0.00	1500	758
1953	19540.3	1500	2.57	1551.16	39.18	0.00937	0.01689	0.0375	1.843	233.269	2.56	0.00	1500	758
1954	19551.12	1500	2.60	1555.17	39.18	0.0085	0.01641	0.03701	1.865	233.580	2.59	0.00	1500	758
1955	19560.67	1500	2.58	1554.08	39.06	0.01499	0.02158	0.0416	1.882	233.893	2.56	0.00	1500	758
1956	19570.28	1500	2.58	1545.80	39.18	0.00806	0.01577	0.0397	1.843	234.201	2.58	0.00	1500	758
1957	19581.1	1500	2.60	1553.40	39.18	0.00854	0.01631	0.03735	1.868	234.512	2.59	0.00	1500	758
1958	19590.66	1500	2.56	1552.17	39.18	0.01631	0.02334	0.04004	1.890	234.827	2.58	0.00	1500	758
1959	19600.27	1500	2.61	1549.54	39.18	0.00815	0.01631	0.03472	1.843	235.134	2.59	0.00	1500	758
1960	19610	1500	0.39	1552.78	39.18	0.01133	0.01831	0.04272	1.855	235.443	1.09	0.00	1500	758
1961	19620.76	1500	3.09	1556.51	39.18	0.01396	0.0228	0.04238	1.841	235.750	3.21	0.00	1500	758
1962	19630.37	1500	2.79	1551.03	39.18	0.0083	0.01577	0.04146	1.843	236.057	2.68	0.00	1500	758
1963	19641.19	1500	2.57	1550.26	39.06	0.01104	0.0189	0.03848	1.868	236.369	2.60	0.00	1500	758
1964	19650.75	1500	2.60	1550.18	39.06	0.00933	0.01753	0.04092	1.824	236.673	2.60	0.00	1500	758
1965	19660.36	1500	2.66	1547.15	39.06	0.00806	0.01563	0.04258	1.846	236.980	2.65	0.00	1500	758
1966	19671.18	1500	2.59	1549.83	39.06	0.01235	0.01987	0.03989	1.865	237.291	2.58	0.00	1500	758
1967	19680.79	1500	2.62	1554.93	39.06	0.0082	0.01543	0.03999	1.829	237.596	2.61	0.00	1500	758
1968	19690.35	1500	2.64	1551.90	39.06	0.00869	0.01597	0.03569	1.853	237.905	2.65	0.00	1500	758
1969	19701.17	1500	2.62	1552.83	39.06	0.01489	0.02207	0.03662	1.875	238.217	2.61	0.00	1500	758
1970	19710.78	1500	2.59	1556.05	39.06	0.00781	0.01567	0.0438	1.831	238.522	2.58	0.00	1500	758
1971	19720.34	1500	2.57	1550.60	39.06	0.01001	0.01714	0.0377	1.841	238.829	2.59	0.00	1500	758
1972	19731.16	1500	2.53	1556.78	39.06	0.01436	0.02227	0.0415	1.834	239.135	2.53	0.00	1500	758
1973	19740.77	1500	2.64	1552.79	39.06	0.00781	0.01563	0.04014	1.836	239.441	2.61	0.00	1500	758
1974	19750.39	1500	2.50	1552.29	39.06	0.01157	0.01865	0.03911	1.846	239.748	2.49	0.00	1500	758
1975	19761.15	1500	2.49	1547.86	39.06	0.00991	0.01841	0.03765	1.814	240.051	2.50	0.00	1500	758
1976	19770.76	1500	2.56	1555.12	39.06	0.00742	0.0144	0.03691	1.838	240.357	2.53	0.00	1500	758
1977	19780.37	1500	2.50	1550.50	39.06	0.0126	0.0208	0.03555	1.863	240.668	2.48	0.00	1500	758

1978	19791.14	1500	2.51	1549.04	38.94	0.00669	0.01445	0.03521	1.821	240.971	2.50	0.00	1500	758
1979	19800.75	1500	2.55	1554.23	39.06	0.00742	0.01499	0.03896	1.836	241.277	2.55	0.00	1500	758
1980	19810.36	1500	2.48	1552.44	39.06	0.0145	0.02295	0.04062	1.860	241.587	2.50	0.00	1500	757
1981	19821.13	1500	2.54	1555.65	39.06	0.00708	0.01489	0.0355	1.816	241.890	2.53	0.00	1500	757
1982	19830.74	1500	2.53	1554.07	39.06	0.0083	0.01636	0.03975	1.831	242.195	2.55	0.00	1500	757
1983	19840.35	1500	2.58	1554.02	39.06	0.01211	0.01938	0.04438	1.809	242.497	2.59	0.00	1500	757
1984	19851.17	1500	2.62	1548.69	38.94	0.00688	0.01489	0.03984	1.829	242.801	2.61	0.00	1500	757
1985	19860.73	1500	2.61	1553.09	39.06	0.00962	0.0189	0.03774	1.834	243.107	2.62	0.00	1500	757
1986	19870.34	1500	3.07	1551.79	39.06	0.0061	0.01567	0.03457	1.812	243.409	3.25	0.00	1500	757
1987	19881.16	1500	3.11	1551.29	39.06	0.00635	0.0147	0.03813	1.819	243.712	2.95	0.00	1500	757
1988	19890.72	1500	2.68	1552.13	39.06	0.01221	0.02021	0.04399	1.853	244.021	2.68	0.00	1500	757
1989	19900.33	1500	2.75	1550.14	39.06	0.00645	0.01416	0.0376	1.809	244.322	2.76	0.00	1500	757
1990	19911.15	1500	2.80	1554.91	38.94	0.00659	0.01543	0.03184	1.831	244.628	2.80	0.00	1500	757
1991	19920.76	1500	2.78	1553.89	38.94	0.01494	0.02251	0.04424	1.873	244.940	2.80	0.00	1500	757
1992	19930.32	1500	2.81	1553.26	38.94	0.0061	0.01436	0.03843	1.821	245.243	2.82	0.00	1500	757
1993	19941.14	1500	2.76	1552.78	38.94	0.00732	0.01582	0.03779	1.831	245.548	2.77	0.00	1500	757
1994	19950.75	1500	2.78	1552.92	38.94	0.0126	0.02075	0.04185	1.812	245.850	2.77	0.00	1500	757
1995	19960.31	1500	2.86	1555.57	38.94	0.00693	0.01421	0.03716	1.829	246.155	2.84	0.00	1500	757
1996	19971.13	1500	2.79	1548.01	38.94	0.00889	0.01636	0.03848	1.836	246.461	2.80	0.00	1500	757
1997	19980.74	1500	2.82	1550.67	38.94	0.00752	0.01592	0.03774	1.807	246.762	2.82	0.00	1500	757
1998	19990.3	1500	2.89	1552.75	38.94	0.00557	0.01455	0.02959	1.865	247.073	2.89	0.00	1500	757
1999	20001.12	1500	2.79	1545.83	38.81	0.01104	0.01904	0.03862	1.785	247.370	2.78	0.00	1500	757
2000	20010.73	1500	2.85	1554.00	38.81	0.00669	0.01445	0.03672	1.807	247.672	2.84	0.00	1500	757
2001	20020.34	1500	2.85	1556.43	38.81	0.00654	0.01489	0.03901	1.826	247.976	2.86	0.00	1500	757
2002	20031.11	1500	2.82	1553.01	38.81	0.01387	0.02056	0.0416	1.858	248.286	2.83	0.00	1500	757
2003	20040.72	1500	2.78	1548.39	38.81	0.00586	0.01396	0.03335	1.816	248.588	2.78	0.00	1500	757
2004	20050.33	1500	2.75	1555.14	38.81	0.00713	0.01641	0.03594	1.829	248.893	2.79	0.00	1500	757
2005	20061.1	1500	2.68	1553.15	38.69	0.01323	0.02192	0.03813	1.836	249.199	2.71	0.00	1500	757
2006	20070.71	1500	2.63	1555.70	38.81	0.00566	0.01416	0.03745	1.763	249.493	2.60	0.00	1500	757
2007	20080.32	1500	2.60	1551.47	38.81	0.00977	0.01699	0.03613	1.782	249.790	2.59	0.00	1500	757
2008	20091.09	1500	2.54	1551.70	38.69	0.00537	0.01543	0.03354	1.746	250.081	2.51	0.00	1500	757
2009	20100.7	1500	2.56	1554.24	38.69	0.00532	0.01274	0.03687	1.763	250.375	2.54	0.00	1500	757
2010	20110.31	1500	2.47	1549.58	38.81	0.01074	0.0188	0.04209	1.770	250.670	2.45	0.00	1500	757

2011	20121.08	1500	2.44	1556.87	38.69	0.00386	0.01172	0.0312	1.731	250.958	2.42	0.00	1500	757
2012	20130.69	1500	2.44	1554.47	38.69	0.00439	0.01309	0.03325	1.755	251.251	2.46	0.00	1500	757
2013	20140.3	1500	2.37	1552.26	38.69	0.01084	0.02021	0.03779	1.768	251.545	2.37	0.00	1500	757
2014	20151.12	1500	2.30	1543.42	38.57	0.00396	0.01211	0.03042	1.733	251.834	2.26	0.00	1500	757
2015	20160.68	1500	2.29	1552.40	38.69	0.00557	0.01421	0.03643	1.753	252.126	2.30	0.00	1500	757
2016	20170.29	1500	2.24	1548.29	38.69	0.00698	0.01675	0.03662	1.724	252.414	2.23	0.00	1500	757
2017	20181.11	1500	2.26	1552.01	38.69	0.00371	0.01221	0.03301	1.736	252.703	2.24	0.00	1500	757
2018	20190.67	1500	2.19	1559.25	38.69	0.00718	0.01631	0.03467	1.748	252.994	2.22	0.00	1500	757
2019	20200.28	1500	2.15	1562.93	38.69	0.00332	0.01255	0.03462	1.721	253.281	2.16	0.00	1500	757
2020	20211.1	1500	2.13	1555.22	38.69	0.00439	0.01187	0.03101	1.743	253.572	2.14	0.00	1500	757
2021	20220.71	1500	2.12	1551.03	38.81	0.00859	0.01724	0.03477	1.746	253.863	2.09	0.00	1500	757
2022	20230.27	1500	2.12	1567.23	38.81	0.00303	0.01206	0.03335	1.726	254.150	2.08	0.00	1500	757
2023	20241.09	1500	2.15	1559.81	38.69	0.00337	0.01196	0.03276	1.738	254.440	2.15	0.00	1500	757
2024	20250.7	1500	2.00	1553.50	38.69	0.01035	0.01938	0.0376	1.758	254.733	2.01	0.00	1500	757
2025	20260.26	1500	2.07	1538.53	38.81	0.00371	0.01187	0.02998	1.726	255.021	2.06	0.00	1500	757
2026	20271.08	1500	2.08	1551.38	38.81	0.00371	0.01265	0.03291	1.731	255.309	2.09	0.00	1500	757
2027	20280.69	1500	1.97	1554.69	38.81	0.00708	0.0165	0.03501	1.714	255.595	1.98	0.00	1500	757
2028	20290.3	1500	1.98	1556.31	38.81	0.00288	0.01279	0.0292	1.724	255.882	1.97	0.00	1500	757
2029	20301.07	1500	1.89	1550.36	38.81	0.0064	0.01392	0.03652	1.719	256.168	1.90	0.00	1500	757
2030	20310.68	1500	1.96	1532.65	38.94	0.00322	0.0125	0.03076	1.704	256.452	1.94	0.00	1500	756
2031	20320.29	1500	1.95	1557.47	38.94	0.00288	0.01128	0.03516	1.731	256.741	1.94	0.00	1500	756
2032	20331.06	1500	2.06	1516.22	38.81	0.00752	0.01699	0.03564	1.843	257.048	2.09	0.00	1500	756
2033	20340.67	1500	2.03	1555.00	38.94	0.00566	0.01304	0.03472	1.816	257.351	2.02	0.00	1500	756
2034	20350.28	1500	2.13	1535.74	38.94	0.00645	0.01294	0.03374	1.863	257.661	2.15	0.00	1500	756
2035	20361.05	1500	2.01	1555.57	38.94	0.01182	0.02046	0.03994	1.895	257.977	2.02	0.00	1500	756
2036	20370.66	1500	2.13	1526.31	38.94	0.00479	0.01416	0.03906	1.860	258.287	2.13	0.00	1500	756
2037	20380.27	1500	2.00	1570.22	38.94	0.00835	0.0166	0.0438	1.875	258.600	0.40	0.00	1500	756
2038	20391.09	1500	2.23	1583.62	38.94	0.01357	0.02197	0.03926	1.877	258.913	2.45	0.00	1500	756
2039	20400.65	1500	2.12	1538.40	39.06	0.00615	0.01489	0.03994	1.853	259.221	2.08	0.00	1500	756
2040	20410.26	1500	2.04	1558.28	39.06	0.00908	0.01738	0.04229	1.877	259.534	2.07	0.00	1500	756
2041	20421.08	1500	2.00	1542.69	39.06	0.00903	0.01909	0.03628	1.846	259.842	2.01	0.00	1500	756
2042	20430.64	1500	2.03	1585.06	39.06	0.00562	0.01514	0.03149	1.863	260.152	2.02	0.00	1500	756
2043	20440.25	1500	1.98	1574.36	39.18	0.0105	0.01982	0.04038	1.887	260.467	1.98	0.00	1500	756

2044	20451.07	1500	1.96	1561.26	39.18	0.00664	0.0146	0.0394	1.843	260.774	1.93	0.00	1500	756
2045	20460.63	1500	2.00	1513.43	39.18	0.00503	0.0146	0.03462	1.863	261.085	2.00	0.00	1500	756
2046	20470.35	1500	1.94	1599.30	39.18	0.01396	0.02139	0.04536	1.895	261.400	1.95	0.00	1500	756
2047	20481.17	1500	1.96	1531.55	39.18	0.00503	0.01309	0.03594	1.841	261.707	1.98	0.00	1500	756
2048	20490.73	1500	1.93	1550.20	39.18	0.00566	0.01509	0.03423	1.858	262.017	1.96	0.00	1500	756
2049	20500.34	1500	1.91	1544.94	39.30	0.01157	0.02026	0.03862	1.846	262.324	1.89	0.00	1500	756
2050	20511.16	1500	1.96	1553.49	39.18	0.00493	0.01445	0.03071	1.848	262.632	1.96	0.00	1500	756
2051	20520.77	1500	1.92	1533.69	39.30	0.00845	0.01597	0.04048	1.855	262.942	1.92	0.00	1500	756
2052	20530.33	1500	1.91	1569.01	39.30	0.00762	0.01655	0.03892	1.831	263.247	1.91	0.00	1500	756
2053	20541.15	1500	1.95	1544.61	39.30	0.00552	0.01406	0.03394	1.848	263.555	1.93	0.00	1500	756
2054	20550.76	1500	1.88	1549.88	39.30	0.00957	0.01758	0.04038	1.870	263.867	1.85	0.00	1500	756
2055	20560.32	1500	1.88	1554.67	39.43	0.00386	0.01372	0.03604	1.834	264.172	1.90	0.00	1500	756
2056	20571.14	1500	2.00	1550.15	39.43	0.00576	0.01455	0.03896	1.838	264.479	1.98	0.00	1500	756
2057	20580.75	1500	1.90	1557.27	39.43	0.01201	0.02002	0.04482	1.880	264.792	1.89	0.00	1500	756
2058	20590.36	1500	1.89	1557.81	39.43	0.00566	0.01396	0.03535	1.826	265.096	1.86	0.00	1500	756
2059	20601.13	1500	1.89	1549.98	39.55	0.00591	0.01523	0.03335	1.841	265.403	1.90	0.00	1500	756
2060	20610.74	1500	1.77	1550.44	39.55	0.01206	0.02095	0.03828	1.848	265.711	1.78	0.00	1500	756
2061	20620.35	1500	1.91	1550.15	39.55	0.0043	0.01401	0.03604	1.824	266.015	1.89	0.00	1500	756
2062	20631.12	1500	1.79	1544.71	39.55	0.0064	0.01514	0.03081	1.846	266.323	1.82	0.00	1500	756
2063	20640.73	1500	1.87	1552.45	39.68	0.00806	0.01587	0.03765	1.816	266.625	1.87	0.00	1500	756
2064	20650.34	1500	1.89	1555.82	39.68	0.00532	0.01255	0.03491	1.819	266.928	1.88	0.00	1500	756
2065	20661.1	1500	1.91	1577.89	39.68	0.00854	0.01836	0.03579	1.831	267.234	1.91	0.00	1500	756
2066	20670.72	1500	1.97	1565.03	39.68	0.00547	0.01367	0.03628	1.821	267.537	1.98	0.00	1500	756
2067	20680.33	1500	2.08	1553.02	39.68	0.00503	0.01431	0.03564	1.831	267.842	2.11	0.00	1500	756
2068	20691.09	1500	1.59	1546.34	39.68	0.01133	0.01982	0.03906	1.855	268.152	2.37	0.00	1500	756
2069	20700.71	1500	2.85	1557.37	39.68	0.00361	0.01338	0.0313	1.812	268.453	2.80	0.00	1500	756
2070	20710.32	1500	2.33	1560.41	39.68	0.00591	0.01509	0.03672	1.826	268.758	2.37	0.00	1500	756
2071	20721.14	1500	2.44	1561.13	39.68	0.01157	0.02129	0.03896	1.851	269.066	2.45	0.00	1500	756
2072	20730.7	1500	2.61	1556.62	39.80	0.00347	0.01221	0.03193	1.814	269.369	2.61	0.00	1500	756
2073	20740.31	1500	2.72	1568.44	39.68	0.00737	0.0168	0.03867	1.829	269.673	2.71	0.00	1500	756
2074	20751.13	1500	2.80	1561.00	39.68	0.00684	0.01733	0.03286	1.804	269.974	2.82	0.00	1500	756
2075	20760.68	1500	2.95	1548.56	39.68	0.00439	0.01353	0.03013	1.816	270.277	2.95	0.00	1500	756
2076	20770.3	1500	2.98	1559.41	39.68	0.00928	0.01802	0.03579	1.841	270.584	2.97	0.00	1500	756

2077	20781.12	1500	2.95	1544.68	39.68	0.00327	0.01216	0.02959	1.750	270.875	2.94	0.00	1500	756
2078	20790.73	1500	3.01	1560.26	39.55	0.00322	0.0124	0.03315	1.785	271.173	3.01	0.00	1500	756
2079	20800.29	1500	2.99	1586.40	39.68	0.00967	0.02046	0.03486	1.792	271.472	3.00	0.00	1500	756
2080	20811.11	1500	2.97	1543.58	39.55	0.00225	0.01235	0.02979	1.758	271.764	2.97	0.00	1500	756
2081	20820.72	1500	2.99	1576.86	39.55	0.00439	0.01191	0.03311	1.763	272.058	3.00	0.00	1500	756
2082	20830.28	1500	2.96	1546.58	39.55	0.00786	0.01636	0.03105	1.736	272.348	2.96	0.00	1500	756
2083	20841.1	1500	3.01	1562.07	39.55	0.00244	0.0106	0.02925	1.758	272.641	2.98	0.00	1500	756
2084	20850.71	1500	2.95	1579.51	39.55	0.00527	0.01484	0.03647	1.765	272.935	2.97	0.00	1500	755
2085	20860.32	1500	2.96	1542.25	39.43	0.00322	0.01206	0.03589	1.746	273.226	2.96	0.00	1500	756
2086	20871.09	1500	2.96	1556.31	39.43	0.00229	0.01143	0.02681	1.763	273.519	2.96	0.00	1500	755
2087	20880.7	1500	1.15	1551.98	39.30	0.00728	0.01626	0.03828	1.765	273.814	1.77	0.00	1500	755
2088	20890.31	1500	3.41	1550.34	39.43	0.00303	0.0106	0.0312	1.753	274.106	3.56	0.00	1500	755
2089	20901.07	1500	3.08	1541.57	39.30	-0.00068	0.0125	0.02275	0.120	274.126	2.92	0.00	1500	755
2090	20910.69	1500	2.90	1594.32	39.30	0.00874	0.0188	0.03257	1.716	274.412	2.90	0.00	1500	755
2091	20920.3	1500	2.88	1532.96	39.30	0.00239	0.0105	0.02915	1.726	274.699	2.87	0.00	1500	755
2092	20931.06	1500	2.87	1537.09	39.30	0.00259	0.01323	0.03433	1.746	274.990	2.87	0.00	1500	755
2093	20940.68	1500	2.83	1553.43	39.30	0.00762	0.01636	0.03896	1.741	275.280	2.84	0.00	1500	755
2094	20950.29	1500	2.87	1536.09	39.30	0.00215	0.01123	0.02261	1.748	275.572	2.87	0.00	1500	755
2095	20961.05	1500	2.82	1553.02	39.18	0.00239	0.01411	0.02212	1.748	275.863	2.85	0.00	1500	755
2096	20970.66	1500	2.79	1547.65	39.18	0.0042	0.01318	0.02915	1.731	276.152	2.78	0.00	1500	755
2097	20980.28	1500	2.84	1541.72	39.18	0.00186	0.01128	0.03115	1.750	276.443	2.84	0.00	1500	755
2098	20991.1	1500	2.76	1547.61	39.18	0.00605	0.01602	0.03223	1.753	276.736	2.76	0.00	1500	755
2099	21000.65	1500	2.77	1533.38	39.06	0.00137	0.00947	0.02998	1.724	277.023	2.77	0.00	1500	755
2100	21010.27	1500	2.79	1584.50	39.18	0.00166	0.01108	0.02305	1.746	277.314	2.80	0.00	1500	755
2101	21021.09	1500	2.75	1547.78	39.06	0.00752	0.0168	0.03779	1.755	277.606	2.74	0.00	1500	755
2102	21030.64	1500	2.73	1528.37	39.06	0.00117	0.01084	0.02788	1.736	277.896	2.72	0.00	1500	755
2103	21040.26	1500	2.70	1561.65	39.06	0.00322	0.01235	0.03193	1.743	278.186	2.73	0.00	1500	755
2104	21051.08	1500	2.69	1528.27	39.06	0.00713	0.01816	0.03643	1.748	278.478	2.71	0.00	1500	755
2105	21060.69	1500	2.70	1537.92	39.06	0.00151	0.01157	0.02554	1.716	278.764	2.70	0.00	1500	755
2106	21070.24	1500	2.65	1549.07	39.06	0.00508	0.01382	0.03545	1.733	279.052	2.67	0.00	1500	755
2107	21081.07	1500	2.57	1549.47	39.06	0.00327	0.0123	0.0353	1.621	279.323	2.54	0.00	1500	755
2108	21090.68	1500	2.55	1554.28	39.06	0.00088	0.00942	0.02471	1.650	279.598	2.55	0.00	1500	755
2109	21100.23	1500	2.51	1542.54	38.94	0.00469	0.01509	0.02944	1.636	279.870	2.50	0.00	1500	755

2110	21111.05	1500	2.50	1544.29	38.94	-0.00151	0.00786	0.01226	1.611	280.139	2.50	0.00	1500	755
2111	21120.67	1500	2.53	1547.65	38.94	-0.00171	0.00825	0.01602	1.631	280.411	2.52	0.00	1500	755
2112	21130.28	1500	2.47	1545.59	38.94	0.00474	0.01396	0.03354	1.621	280.681	2.49	0.00	1500	755
2113	21141.04	1500	2.48	1549.69	38.94	-0.00264	0.00781	0.00488	1.604	280.948	2.47	0.00	1500	755
2114	21150.66	1500	2.48	1545.70	38.94	-0.00083	0.00986	0.01675	1.621	281.218	2.49	0.00	1500	755
2115	21160.27	1500	2.44	1532.60	38.94	0.00063	0.00933	0.03027	1.597	281.484	2.45	0.00	1500	755
2116	21171.03	1500	2.51	1545.13	38.94	-0.00132	0.00762	0.00762	1.626	281.755	2.50	0.00	1500	755
2117	21180.65	1500	2.47	1547.53	38.94	0.0021	0.01123	0.02676	1.616	282.025	2.49	0.00	1500	755
2118	21190.26	1500	2.43	1549.42	38.81	-0.00122	0.00684	0.01343	1.602	282.292	2.43	0.00	1500	755
2119	21201.02	1500	2.47	1540.82	38.81	-0.00146	0.00674	0.00815	1.609	282.560	2.46	0.00	1500	755
2120	21210.63	1500	2.44	1547.19	38.94	0.00361	0.01289	0.03691	1.602	282.827	2.44	0.00	1500	755
2121	21220.36	1500	2.42	1550.28	38.94	-0.00386	0.00723	-0.00732	1.609	283.095	2.42	0.00	1500	755
2122	21231.12	1500	2.47	1534.88	38.81	-0.00215	0.00737	0.00542	1.609	283.363	2.45	0.00	1500	755
2123	21240.73	1500	2.44	1560.16	38.81	0.00527	0.01304	0.02798	1.604	283.631	2.44	0.00	1500	755
2124	21250.35	1500	2.46	1544.73	38.81	-0.00361	0.00693	-0.00244	1.606	283.898	2.44	0.00	1500	755
2125	21261.11	1500	2.44	1556.85	38.81	-0.00234	0.00781	0.00693	1.602	284.165	2.45	0.00	1500	755
2126	21270.72	1500	2.40	1527.22	38.94	0.00146	0.01113	0.02769	1.609	284.433	2.41	0.00	1500	755
2127	21280.33	1500	2.43	1547.95	38.81	-0.00156	0.00781	0.00293	1.602	284.700	2.41	0.00	1500	755
2128	21291.16	1500	2.44	1559.11	38.81	0.00024	0.00928	0.02168	1.594	284.966	2.45	0.00	1500	755
2129	21300.71	1500	2.38	1574.73	38.81	-0.00317	0.00723	0.01016	1.582	285.230	2.37	0.00	1500	755
2130	21310.32	1500	2.44	1566.12	38.69	-0.00337	0.00684	-0.00952	1.592	285.495	2.44	0.00	1500	755
2131	21321.14	1500	2.42	1542.93	38.81	0.00264	0.01147	0.02471	1.592	285.760	2.42	0.00	1500	755
2132	21330.7	1500	2.42	1552.63	38.69	-0.00469	0.00664	-0.02607	1.584	286.024	2.41	0.00	1500	755
2133	21340.31	1500	2.41	1553.82	38.69	-0.00283	0.00776	-0.0022	1.594	286.290	2.42	0.00	1500	755
2134	21351.13	1500	2.39	1554.84	38.57	0.00425	0.01318	0.03291	1.592	286.555	2.39	0.00	1500	755
2135	21360.75	1500	2.41	1542.10	38.69	-0.0041	0.00718	-0.02871	1.577	286.818	2.41	0.00	1500	755
2136	21370.3	1500	2.40	1554.72	38.81	-0.00034	0.00859	0.00713	1.589	287.083	2.42	0.00	1500	755
2137	21381.12	1500	2.35	1549.31	38.69	0.00259	0.01138	0.02666	1.602	287.350	2.37	0.00	1500	755
2138	21390.74	1500	2.38	1556.93	38.69	-0.00513	0.0061	-0.02896	1.577	287.613	2.37	0.00	1500	755
2139	21400.29	1500	2.38	1539.87	38.69	0.00093	0.01035	0.02495	1.572	287.875	2.37	0.00	1500	755
2140	21411.11	1500	2.37	1550.45	38.69	-0.00244	0.00815	0.00737	1.555	288.134	2.37	0.00	1500	755
2141	21420.72	1500	2.38	1555.30	38.69	-0.0042	0.00674	-0.01943	1.575	288.397	2.39	0.00	1500	755
2142	21430.28	1500	1.51	1547.20	38.57	0.00269	0.0124	0.03184	1.570	288.658	1.58	0.00	1500	755

2143	21441.1	1500	2.99	1540.46	38.69	-0.00249	0.00625	0.04365	1.553	288.917	2.92	0.00	1500	755
2144	21450.71	1500	1.24	1552.76	38.57	-0.00332	0.00649	-0.02246	1.477	289.163	0.91	0.00	1500	755
2145	21460.38	1500	0.01	1544.58	38.57	0.00532	0.0144	0.03506	1.340	289.387	-0.01	0.00	1500	755
2146	21471.2	779	-204.06	1521.87	38.57	-0.01094	-0.00229	0.04214	1.230	289.592	-204.07	0.00	779	755
2147	21480.81	780	-204.07	1550.30	38.57	0.27676	0.19238	0.04712	1.179	289.788	-203.56	0.00	780	755
2148	21490.42	779	-204.06	1552.31	38.57	0.00688	0.00464	0.04321	0.896	289.937	-204.07	0.00	779	755
2149	21501.19	778	-204.07	1524.22	38.57	0.06362	0.07168	0.04072	0.662	290.048	-203.58	0.00	778	755
2150	21510.8	777	-204.03	1547.76	38.57	0.11802	0.12529	0.04336	0.469	290.126	-204.05	0.00	777	754
2151	21520.41	776	-204.03	1548.10	38.57	0.13027	0.1291	0.04561	0.364	290.186	-204.07	0.00	776	754
2152	21531.18	775	-204.06	1542.55	38.57	0.1314	0.12998	0.0437	0.286	290.234	-204.06	0.00	775	754
2153	21540.79	775	-204.06	1544.81	38.45	0.13257	0.13174	0.04155	0.229	290.272	-204.07	0.00	775	754
2154	21550.4	774	-203.61	1547.93	38.45	0.13408	0.13325	0.04136	0.193	290.304	-204.06	0.00	774	754
2155	21561.17	773	-204.06	1546.85	38.45	0.1356	0.13501	0.04883	0.159	290.331	-204.05	0.00	773	754
2156	21570.78	773	-203.61	1545.76	38.57	0.13833	0.13989	0.04609	0.129	290.353	-204.08	0.00	772	754
2157	21580.39	772	-204.05	1543.05	38.45	0.13784	0.14126	0.04453	0.115	290.372	-204.04	0.00	772	754
2158	21590	771	-204.06	1544.65	38.45	0.13989	0.14312	0.04199	0.100	290.388	-203.72	0.00	771	754
2159	21600.77	771	-204.08	1553.76	38.45	0.13936	0.1439	0.04517	0.085	290.403	-204.07	0.00	771	754
2160	21610.38	770	-204.07	1537.71	38.33	0.13857	0.14502	0.04355	0.076	290.415	-204.05	0.00	770	754
2161	21621.2	773	0.00	1562.77	38.45	0.13589	0.1438	0.04736	0.068	290.427	0.00	0.00	773	754
2162	21630.76	773	0.00	1546.13	38.45	0.13418	0.14355	0.04146	0.061	290.437	0.00	0.00	773	754
2163	21640.37	773	0.00	1543.94	38.45	0.13247	0.14155	0.03979	0.061	290.447	0.00	0.00	773	754
2164	21651.19	777	193.64	1529.34	38.33	0.12939	0.14043	0.03945	0.056	290.456	197.88	0.00	780	754
2165	21660.75	794	197.87	1546.26	38.33	0.12725	0.13657	0.0458	0.049	290.464	197.87	0.00	796	753
2166	21670.36	810	197.08	1549.44	38.45	0.12573	0.13569	0.04043	0.051	290.473	196.95	0.00	812	754
2167	21681.18	829	196.94	1531.77	38.21	0.12397	0.13506	0.04609	0.044	290.480	197.42	0.00	832	753
2168	21690.79	850	196.93	1541.89	38.33	0.12222	0.1335	0.04624	0.046	290.488	196.94	0.00	853	753
2169	21700.35	873	196.92	1535.92	38.33	0.12192	0.13301	0.0418	0.046	290.496	196.93	0.00	877	753
2170	21711.17	907	196.33	1543.39	38.33	0.11997	0.13179	0.03999	0.046	290.503	196.52	0.00	912	753
2171	21720.78	947	196.15	1536.88	38.33	0.11929	0.13081	0.04346	0.044	290.511	196.32	0.00	954	753
2172	21730.34	1003	195.66	1536.47	38.33	0.11855	0.1314	0.04248	0.042	290.518	195.73	0.00	1013	753
2173	21741.16	1087	194.50	1537.46	38.33	0.11699	0.12959	0.04355	0.039	290.524	195.03	0.00	1103	753
2174	21750.77	1412	192.17	1537.44	38.33	0.11631	0.12812	0.0418	0.042	290.531	191.23	0.00	1544	753
2175	21760.38	1580	19.27	1540.19	38.33	0.11665	0.12798	0.04438	0.039	290.538	14.98	0.00	1557	753

2176	21771.15	1500	16.04	1532.17	38.33	0.11602	0.12847	0.04155	0.039	290.544	14.84	0.00	1500	754
2177	21780.76	1500	9.20	1529.30	38.33	0.1147	0.12725	0.04189	0.042	290.551	9.32	0.00	1500	753
2178	21790.37	1500	7.07	1533.67	38.21	0.11548	0.12656	0.04116	0.037	290.557	6.91	0.00	1500	753
2179	21801.14	1500	5.91	1535.08	38.21	0.11509	0.12783	0.04233	0.039	290.564	5.79	0.00	1500	754
2180	21810.75	1500	4.88	1544.14	38.33	0.11494	0.12617	0.04326	0.039	290.570	4.79	0.00	1500	754
2181	21820.36	1500	4.18	1535.58	38.33	0.11328	0.1269	0.03965	0.039	290.577	4.10	0.00	1500	754
2182	21831.13	1500	3.56	1541.10	38.21	0.11279	0.12646	0.04312	0.039	290.583	3.52	0.00	1500	754
2183	21840.74	1500	3.17	1535.09	38.10	0.11313	0.12534	0.03745	0.037	290.589	3.15	0.00	1500	754
2184	21850.35	1500	2.85	1532.99	38.21	0.11323	0.1249	0.04038	0.039	290.596	2.81	0.00	1500	754
2185	21861.12	1500	2.55	1533.27	38.21	0.11211	0.12529	0.04292	0.039	290.602	2.52	0.00	1500	754
2186	21870.73	1500	2.33	1532.27	38.21	0.11133	0.12466	0.04248	0.039	290.609	2.31	0.00	1500	754
2187	21880.34	1500	2.13	1531.01	38.21	0.11284	0.12441	0.04688	0.039	290.615	2.12	0.00	1500	754
2188	21891.16	1500	1.96	1532.14	38.10	0.11172	0.12393	0.04009	0.042	290.622	1.94	0.00	1500	754
2189	21900.72	1500	1.82	1538.32	38.21	0.11001	0.12437	0.04448	0.037	290.628	1.81	0.00	1500	754
2190	21910.33	1500	1.70	1531.93	38.21	0.1103	0.12388	0.04277	0.034	290.634	1.69	0.00	1500	754
2191	21921.15	1500	1.58	1532.02	38.10	0.1104	0.12368	0.03735	0.037	290.640	1.56	0.00	1500	754
2192	21930.71	1500	1.47	1535.50	38.21	0.11074	0.123	0.04644	0.039	290.647	1.47	0.00	1500	754
2193	21940.32	1500	1.39	1530.33	38.21	0.10986	0.12314	0.03809	0.037	290.653	1.38	0.00	1500	754
2194	21951.14	1482	5.86	1517.84	38.10	0.10928	0.12275	0.0437	0.398	290.719	8.06	0.00	1486	755
2195	21960.75	1500	10.99	1521.33	37.98	0.09067	0.10083	0.04302	0.999	290.885	8.36	0.00	1500	755
2196	21970.31	1500	2.84	1523.50	38.10	0.06948	0.0666	0.0436	0.994	291.051	2.61	0.00	1500	755
2197	21981.13	1500	2.03	1524.30	37.98	0.08438	0.07915	0.04004	0.933	291.206	2.11	0.00	1500	755
2198	21990.74	1500	2.21	1526.98	38.10	0.04102	0.046	0.04404	0.950	291.365	2.18	0.00	1500	755
2199	22000.3	1500	2.08	1528.80	38.10	-0.0084	-0.00068	0.04287	0.837	291.504	2.03	0.00	1500	755
2200	22011.12	1500	1.63	1529.91	38.10	-0.01196	-0.00488	0.04282	0.581	291.601	1.62	0.00	1500	755
2201	22020.73	1500	1.31	1523.46	38.10	-0.01299	-0.00527	0.04604	0.513	291.687	1.29	0.00	1500	755
2202	22030.34	1500	1.25	1521.77	38.10	-0.01328	-0.00591	0.04106	0.449	291.761	1.23	0.00	1500	755
2203	22041.11	1500	1.06	1526.01	38.10	-0.01738	-0.01089	0.04336	0.403	291.829	1.10	0.00	1500	755
2204	22050.72	1500	0.99	1529.97	37.98	-0.01846	-0.01362	0.04287	0.374	291.891	0.99	0.00	1500	755
2205	22060.33	1500	1.05	1532.44	37.98	-0.0209	-0.01621	0.04102	0.354	291.950	1.03	0.00	1500	755
2206	22071.1	1500	0.87	1526.53	37.98	-0.02368	-0.01807	0.03965	0.330	292.005	0.87	0.00	1500	755
2207	22080.71	1500	0.85	1530.71	38.10	-0.02563	-0.02041	0.03789	0.313	292.057	0.84	0.00	1500	755
2208	22090.32	1500	0.87	1524.53	37.98	-0.02656	-0.02295	0.04194	0.303	292.107	0.89	0.00	1500	755

2209	22101.09	1500	0.76	1531.25	37.98	-0.02871	-0.02549	0.03604	0.276	292.153	0.75	0.00	1500	755
2210	22110.7	1500	0.78	1529.75	37.98	-0.02949	-0.02676	0.0416	0.251	292.195	0.76	0.00	1500	754
2211	22120.42	1500	0.69	1529.82	37.98	-0.03066	-0.02935	0.03892	0.229	292.233	0.73	0.00	1500	754
2212	22131.19	1500	1.09	1523.96	37.98	-0.03203	-0.03032	0.04092	0.552	292.325	1.27	0.00	1500	754
2213	22140.8	1500	2.44	1527.18	37.98	-0.03638	-0.03584	0.0377	0.420	292.395	2.47	0.00	1500	754
2214	22150.41	1500	2.64	1526.22	37.98	-0.01104	0.00005	0.04194	0.557	292.488	2.71	0.00	1500	754
2215	22160.02	1500	5.09	1528.40	37.86	-0.00815	0.00034	0.04331	1.826	292.793	5.36	0.00	1500	754
2216	22170.79	1500	3.87	1524.05	37.86	0.01523	0.02344	0.03813	1.892	293.108	3.63	0.00	1500	753
2217	22180.4	1500	3.14	1519.09	37.98	0.01323	0.02148	0.03677	1.917	293.427	3.18	0.00	1500	753
2218	22190.01	1500	3.30	1521.94	37.98	0.00161	0.01069	0.02397	1.863	293.738	3.30	0.00	1500	753
2219	22200.78	1500	3.03	1524.58	37.86	0.00278	0.0123	0.03154	1.755	294.030	3.03	0.00	1500	753
2220	22210.39	1500	2.98	1524.26	37.86	-0.004	0.0063	-0.00718	1.714	294.316	2.97	0.00	1500	753
2221	22220	1500	2.88	1523.03	37.86	-0.00425	0.00625	-0.02891	1.619	294.586	2.83	0.00	1500	752
2222	22230.77	1500	2.76	1521.39	37.86	0.00312	0.01206	0.0311	1.548	294.844	2.75	0.00	1500	752
2223	22240.38	1500	2.65	1532.09	37.86	-0.00615	0.00415	0.04209	1.528	295.098	2.64	0.00	1500	752
2224	22251.2	1500	2.65	1528.58	37.86	-0.00557	0.00317	0.04551	1.514	295.351	2.65	0.00	1500	752
2225	22260.75	1500	2.42	1520.51	37.86	-0.00449	0.00459	0.04165	1.306	295.568	2.39	0.00	1500	752
2226	22270.37	1500	2.20	1530.05	37.86	-0.00693	0.00254	0.04355	1.370	295.797	2.20	0.00	1500	751
2227	22281.19	1500	2.19	1535.21	37.86	-0.00732	0.00181	0.04512	1.257	296.006	2.18	0.00	1500	751
2228	22290.8	1500	2.10	1533.13	37.86	-0.01138	-0.00229	0.04604	1.238	296.213	2.08	0.00	1500	751
2229	22300.36	1500	2.04	1533.76	37.86	-0.01055	-0.00107	0.0437	1.226	296.417	2.04	0.00	1500	750
2230	22311.18	1500	2.10	1524.00	37.86	-0.0083	-0.00127	0.04507	1.150	296.608	2.09	0.00	1500	750
2231	22320.79	1500	1.93	1534.32	37.74	-0.01333	-0.00386	0.04312	1.152	296.800	1.92	0.00	1500	750
2232	22330.4	1500	1.99	1531.39	37.86	-0.01084	-0.00127	0.04302	1.123	296.988	1.96	0.00	1500	750
2233	22341.17	1500	1.94	1527.67	37.86	-0.01309	-0.00479	0.03979	1.135	297.177	1.94	0.00	1500	750
2234	22350.78	1500	1.88	1532.44	37.74	-0.01318	-0.00435	0.04053	1.116	297.363	1.85	0.00	1500	750
2235	22360.39	1500	1.89	1533.52	37.86	-0.01011	-0.002	0.0438	1.096	297.546	1.88	0.00	1500	750
2236	22371.16	1500	1.88	1527.93	37.86	-0.01436	-0.00532	0.04351	1.177	297.742	1.92	0.00	1500	749
2237	22380.77	1500	1.91	1530.53	37.74	-0.01182	-0.0042	0.04204	1.157	297.935	1.91	0.00	1500	749
2238	22390.38	1500	1.96	1525.87	37.74	-0.00908	-0.00107	0.04478	1.152	298.127	1.95	0.00	1500	749
2239	22401.14	1500	1.84	1526.26	37.86	-0.01216	-0.004	0.03867	1.162	298.320	1.86	0.00	1500	749
2240	22410.76	1500	1.84	1530.38	37.86	-0.01196	-0.00249	0.04482	1.165	298.514	1.84	0.00	1500	749
2241	22420.37	1500	1.91	1532.56	37.74	-0.0106	-0.00234	0.04409	1.179	298.711	1.91	0.00	1500	749

2242	22431.13	1500	1.92	1529.98	37.74	-0.01284	-0.00522	0.04058	1.279	298.924	1.92	0.00	1500	749
2243	22440.75	1500	2.07	1527.76	37.74	-0.01094	-0.0021	0.03677	1.313	299.143	2.07	0.00	1500	749
2244	22450.36	1500	2.05	1522.90	37.74	-0.00898	0.00024	0.04482	1.318	299.363	2.07	0.00	1500	749
2245	22461.18	1500	2.06	1520.22	37.74	-0.01064	-0.00127	0.04141	1.360	299.589	2.08	0.00	1500	748
2246	22470.74	1500	2.06	1536.84	37.74	-0.00879	0.00142	0.04004	1.367	299.817	2.07	0.00	1500	748
2247	22480.35	1500	2.05	1523.65	37.74	-0.00933	-0.00015	0.04175	1.389	300.049	2.05	0.00	1500	748
2248	22491.17	1500	2.05	1517.89	37.74	-0.00991	-0.00112	0.04434	1.389	300.280	2.05	0.00	1500	748
2249	22500.72	1500	2.04	1533.04	37.86	-0.00596	0.00386	0.04243	1.382	300.511	2.03	0.00	1500	748
2250	22510.34	1500	1.98	1526.39	37.74	-0.00933	-0.00005	0.04253	1.387	300.742	1.98	0.00	1500	748
2251	22521.16	1500	1.99	1546.37	37.74	-0.00879	-0.0002	0.04146	1.399	300.975	2.00	0.00	1500	748
2252	22530.77	1500	2.02	1560.14	37.74	-0.00483	0.00415	0.04248	1.377	301.204	2.02	0.00	1500	748
2253	22540.33	1500	1.95	1529.20	37.86	-0.00986	-0.00088	0.04438	1.392	301.436	1.93	0.00	1500	748
2254	22551.15	1500	1.95	1568.49	37.74	-0.0083	-0.00015	0.04229	1.401	301.670	1.94	0.00	1500	748
2255	22560.76	1500	1.96	1503.62	37.74	-0.0062	0.00337	0.04585	1.379	301.900	1.97	0.00	1500	748
2256	22570.32	1500	1.94	1554.73	37.74	-0.00977	-0.00044	0.04043	1.396	302.133	1.92	0.00	1500	748
2257	22581.14	1500	1.91	1530.20	37.86	-0.00928	0.00054	0.04502	1.394	302.365	1.91	0.00	1500	748
2258	22590.75	1500	1.92	1520.43	37.86	-0.0084	0	0.0439	1.399	302.598	1.95	0.00	1500	748
2259	22600.36	1500	1.89	1528.82	37.86	-0.00942	-0.00151	0.04507	1.394	302.830	1.88	0.00	1500	748
2260	22611.12	1500	1.95	1532.61	37.74	-0.00688	0.00264	0.04141	1.375	303.059	1.94	0.00	1500	748
2261	22620.74	1500	1.84	1521.47	37.74	-0.00937	-0.00132	0.04355	1.377	303.289	1.84	0.00	1500	748
2262	22630.35	1500	1.90	1535.24	37.86	-0.00928	0.00054	0.04492	1.392	303.521	1.88	0.00	1500	748
2263	22641.11	1500	1.89	1530.21	37.74	-0.00498	0.00361	0.0437	1.372	303.750	1.91	0.00	1500	748
2264	22650.73	1500	1.87	1535.29	37.86	-0.01006	-0.00122	0.04189	1.382	303.980	1.86	0.00	1500	748
2265	22660.34	1500	1.84	1533.59	37.86	-0.00889	0.00093	0.03989	1.387	304.211	1.85	0.00	1500	748
2266	22671.1	1500	1.90	1531.56	37.86	-0.00581	0.00288	0.03911	1.370	304.439	1.88	0.00	1500	748
2267	22680.72	1500	1.82	1522.61	37.86	-0.00913	-0.00195	0.0377	1.387	304.670	1.83	0.00	1500	748
2268	22690.33	1500	1.85	1536.51	37.86	-0.00723	0.00083	0.048	1.372	304.899	1.83	0.00	1500	748
2269	22701.09	1500	1.84	1531.99	37.86	-0.00903	0.00024	0.03999	1.382	305.129	1.88	0.00	1500	748
2270	22710.7	1500	1.82	1541.62	37.86	-0.00981	-0.00093	0.04409	1.387	305.360	1.81	0.00	1500	748
2271	22720.32	1500	1.87	1538.96	37.86	-0.00605	0.00386	0.04526	1.360	305.587	1.86	0.00	1500	748
2272	22731.14	1500	1.76	1533.54	37.86	-0.01035	-0.00205	0.04282	1.379	305.817	1.78	0.00	1500	748
2273	22740.69	1500	1.83	1526.52	37.86	-0.00952	-0.00039	0.0458	1.384	306.048	1.83	0.00	1500	748
2274	22750.31	1500	1.86	1535.16	37.86	-0.00532	0.00361	0.04458	1.360	306.274	1.83	0.00	1500	748

2275	22761.13	1500	1.79	1528.36	37.86	-0.01108	-0.0021	0.0457	1.377	306.504	1.78	0.00	1500	749
2276	22770.68	1500	1.80	1528.50	37.86	-0.00864	-0.00083	0.04082	1.367	306.732	1.80	0.00	1500	749
2277	22780.3	1500	1.81	1529.12	37.98	-0.00835	0.00146	0.04111	1.372	306.960	1.82	0.00	1500	749
2278	22791.12	1500	1.88	1544.07	37.86	-0.01108	-0.00327	0.04302	1.445	307.201	1.89	0.00	1500	749
2279	22800.73	1500	1.85	1534.77	37.86	-0.00874	0.00073	0.04795	1.436	307.441	1.85	0.00	1500	749
2280	22810.28	1500	1.87	1531.92	37.98	-0.00742	0.00039	0.04351	1.455	307.683	1.89	0.00	1500	749
2281	22821.1	1500	1.88	1541.26	37.86	-0.00986	-0.00103	0.04214	1.455	307.926	1.88	0.00	1500	749
2282	22830.72	1500	1.91	1522.11	37.98	-0.00513	0.00317	0.04131	1.453	308.168	1.91	0.00	1500	749
2283	22840.27	1500	1.86	1522.88	37.98	-0.00928	-0.00044	0.04355	1.445	308.409	1.85	0.00	1500	749
2284	22851.09	1500	1.88	1527.26	37.98	-0.00854	-0.00029	0.04224	1.462	308.652	1.88	0.00	1500	749
2285	22860.71	1500	1.90	1542.21	37.98	-0.00342	0.00518	0.0438	1.443	308.893	1.89	0.00	1500	750
2286	22870.26	1500	1.87	1535.44	37.98	-0.00923	-0.00024	0.03843	1.455	309.135	1.86	0.00	1500	750
2287	22881.08	1500	1.88	1536.93	37.98	-0.00898	0.00098	0.04629	1.467	309.380	1.87	0.00	1500	750
2288	22890.7	1500	1.93	1540.43	37.98	-0.00425	0.00425	0.04106	1.443	309.620	1.92	0.00	1500	750
2289	22900.31	1500	1.84	1536.85	37.98	-0.00928	-0.00088	0.04287	1.458	309.863	1.84	0.00	1500	751
2290	22911.07	1500	1.86	1615.34	37.98	-0.00825	0.00083	0.04292	1.460	310.107	1.85	0.00	1500	750
2291	22920.68	1500	1.82	1529.26	37.98	-0.00728	0.00093	0.03857	1.519	310.360	1.85	0.00	1500	750
2292	22930.3	1500	1.99	1461.76	37.98	-0.00806	-0.00156	0.04121	1.543	310.617	2.02	0.00	1500	751
2293	22941.06	1500	1.99	1597.75	37.98	-0.00557	0.00332	0.04077	1.550	310.875	1.99	0.00	1500	751
2294	22950.67	1500	1.97	1520.42	37.98	-0.00679	0.00146	0.04556	1.541	311.132	1.98	0.00	1500	751
2295	22960.29	1500	2.00	1583.97	37.98	-0.00747	0.00132	0.04023	1.577	311.395	1.98	0.00	1500	751
2296	22971.05	1500	2.05	1537.03	38.10	-0.00283	0.00581	0.03853	1.575	311.657	2.04	0.00	1500	751
2297	22980.66	1500	1.97	1592.03	37.98	-0.00684	0.002	0.04136	1.570	311.919	1.95	0.00	1500	752
2298	22990.28	1500	2.02	1604.09	38.10	-0.00645	0.00215	0.04272	1.587	312.183	2.02	0.00	1500	752
2299	23001.1	1500	2.01	1537.03	38.10	-0.00161	0.00762	0.01284	1.572	312.445	1.96	0.00	1500	752
2300	23010.65	1500	2.02	1544.07	38.10	-0.00693	0.00068	0.03979	1.577	312.708	2.02	0.00	1500	752
2301	23020.26	1500	1.97	1520.51	38.10	-0.00635	0.00273	0.04263	1.582	312.972	1.98	0.00	1500	752
2302	23031.08	1500	2.00	1514.88	38.10	-0.00283	0.00664	0.00562	1.577	313.235	2.03	0.00	1500	752
2303	23040.64	1500	1.97	1533.75	38.10	-0.00776	0.00034	0.04409	1.580	313.498	1.97	0.00	1500	753
2304	23050.25	1500	2.02	1522.43	38.10	-0.0043	0.00439	0.04575	1.577	313.761	2.02	0.00	1500	753
2305	23061.07	1500	1.97	1530.26	38.10	-0.00635	0.0022	0.04077	1.570	314.023	1.97	0.00	1500	753
2306	23070.69	1500	2.02	1556.47	38.10	-0.0061	0.00122	0.04121	1.577	314.285	2.01	0.00	1500	753
2307	23080.24	1500	1.96	1562.25	38.21	-0.00308	0.00698	-0.00791	1.563	314.546	1.93	0.00	1500	753

2308	23091.06	1500	2.00	1534.66	38.10	-0.00732	0.00137	0.0438	1.558	314.805	1.97	0.00	1500	753
2309	23100.68	1500	2.04	1536.96	38.10	-0.00732	0.00137	0.03999	1.577	315.068	2.04	0.00	1500	753
2310	23110.23	1500	2.02	1525.31	38.10	-0.00186	0.00649	0.01675	1.563	315.329	2.01	0.00	1500	753
2311	23121.05	1500	1.99	1536.64	38.10	-0.00815	0.00059	0.04189	1.565	315.589	1.98	0.00	1500	753
2312	23130.66	1500	1.98	1535.53	38.10	-0.0062	0.0021	0.04048	1.580	315.853	1.98	0.00	1500	753
2313	23140.22	1500	1.95	1541.63	38.10	-0.0042	0.0041	0.04385	1.582	316.116	1.98	0.00	1500	754
2314	23151.04	1500	2.00	1541.12	38.21	-0.00767	0.00054	0.04609	1.572	316.378	1.97	0.00	1500	754
2315	23160.65	1500	1.95	1545.32	38.21	-0.00557	0.00308	0.0396	1.589	316.643	1.96	0.00	1500	754
2316	23170.27	1500	2.00	1543.92	38.21	-0.00806	0.00073	0.04165	1.584	316.907	1.99	0.00	1500	754
2317	23181.03	1500	1.99	1548.77	38.21	-0.00815	0.00054	0.0397	1.614	317.176	1.96	0.00	1500	754
2318	23190.64	1500	1.97	1536.87	38.21	-0.00386	0.00586	-0.00308	1.611	317.445	1.98	0.00	1500	754
2319	23200.37	1500	1.96	1542.79	38.21	-0.00742	0.00098	0.04478	0.068	317.456	1.97	0.00	1500	754
2320	23211.13	1500	-0.57	1542.40	38.21	-0.00718	0.00059	0.04302	1.565	317.717	-0.75	0.00	1500	754
2321	23220.74	1500	-0.02	1546.03	38.21	0.00176	0.01016	0.03076	1.475	317.963	-0.01	0.00	1500	754
2322	23230.35	1500	0.00	1542.33	38.21	0.19741	0.13564	0.04702	1.350	318.188	0.00	0.00	1500	754
2323	23241.12	1500	0.00	1544.46	38.21	0.04043	0.046	0.04717	1.189	318.386	0.00	0.00	1500	754
2324	23250.73	1500	0.00	1541.97	38.33	0.02798	0.02856	0.0479	0.061	318.396	0.00	0.00	1500	755
2325	23260.34	1500	0.00	1541.89	38.33	0.10171	0.10605	0.04229	0.596	318.496	0.00	0.00	1500	755
2326	23271.11	1500	0.00	1547.99	38.33	0.11401	0.11152	0.04336	0.432	318.568	0.00	0.00	1500	755
2327	23280.72	1500	0.00	1548.27	38.33	0.11499	0.11191	0.03955	0.339	318.624	0.00	0.00	1500	755
2328	23290.33	1500	0.00	1548.64	38.33	0.11729	0.11343	0.04116	0.271	318.669	0.00	0.00	1500	755
2329	23301.15	1500	0.00	1547.60	38.21	0.11875	0.11558	0.04614	0.215	318.705	0.00	0.00	1500	755
2330	23310.71	1500	0.00	1544.78	38.21	0.12021	0.11665	0.0459	0.178	318.735	0.00	0.00	1500	755
2331	23320.32	1500	0.00	1548.18	38.33	0.12026	0.11807	0.04307	0.151	318.760	0.00	0.00	1500	755
2332	23331.14	1500	0.00	1545.86	38.33	0.11343	0.11118	0.0396	0.125	318.781	0.00	0.00	1500	755
2333	23340.7	1500	0.00	1548.18	38.33	0.11489	0.1124	0.0458	0.107	318.799	0.00	0.00	1500	756
2334	23350.31	1500	0.00	1548.32	38.33	0.11538	0.11392	0.04102	0.093	318.814	0.00	0.00	1500	756
2335	23361.13	1500	0.00	1551.33	38.33	0.11533	0.11367	0.04102	0.081	318.828	0.00	0.00	1500	756
2336	23370.69	1500	0.00	1545.30	38.33	0.11514	0.11318	0.04312	0.073	318.840	0.00	0.00	1500	756
2337	23380.3	1494	0.00	1544.68	38.33	0.11572	0.11333	0.04316	0.066	318.851	0.00	0.00	1494	756
2338	23391.12	1493	0.00	1548.79	38.33	0.11553	0.11421	0.04258	0.063	318.861	0.00	0.00	1493	756
2339	23400.73	1492	0.00	1547.75	38.33	0.11582	0.1145	0.04731	0.061	318.871	0.00	0.00	1492	756
2340	23410.29	1491	0.00	1549.76	38.33	0.11602	0.11353	0.04233	0.059	318.881	0.00	0.00	1491	756

2341	23421.11	1491	0.00	1547.90	38.33	0.11543	0.11353	0.04326	0.051	318.890	0.00	0.00	1490	756
2342	23430.72	1490	0.00	1430.52	37.05	0.11558	0.11304	0.03809	0.054	318.899	0.00	0.00	1490	757
2343	23440.28	1489	0.00	1365.41	36.27	0.11597	0.11318	0.04541	0.051	318.907	0.00	0.00	1489	757
2344	23451.1	1488	0.00	1330.96	36.05	0.11602	0.11406	0.04297	0.046	318.915	0.00	0.00	1488	757
2345	23460.71	1487	0.00	1308.41	35.83	0.11553	0.11318	0.04263	0.049	318.923	0.00	0.00	1487	757
2346	23470.32	1486	0.00	1292.19	35.72	0.11558	0.11323	0.04409	0.046	318.931	0.00	0.00	1486	757
2347	23481.09	1485	0.00	1257.43	34.97	0.11499	0.11343	0.04541	0.044	318.938	0.00	0.00	1485	757
2348	23490.7	1484	0.00	1225.63	34.14	0.11558	0.11333	0.04131	0.044	318.946	0.00	0.00	1484	757
2349	23500.31	1483	0.00	1191.57	33.44	0.11548	0.11416	0.04634	0.046	318.953	0.00	0.00	1483	758
2350	23511.08	1482	0.00	1149.31	32.85	0.11616	0.11387	0.04141	0.044	318.961	0.00	0.00	1482	758
2351	23520.69	1481	0.00	1105.01	32.36	0.11597	0.11294	0.04707	0.049	318.969	0.00	0.00	1481	758
2352	23530.3	1480	0.00	1053.39	31.89	0.11523	0.11323	0.04448	0.046	318.976	0.00	0.00	1480	758
2353	23541.07	1480	0.00	986.77	31.61	0.11558	0.11333	0.04858	0.042	318.983	0.00	0.00	1479	758
2354	23550.68	1479	0.00	928.60	31.24	0.11514	0.11343	0.04614	0.042	318.990	0.00	0.00	1479	759
2355	23560.29	1478	0.00	864.57	30.96	0.11548	0.11323	0.04258	0.044	318.998	0.00	0.00	1478	759
2356	23571.06	1477	0.00	809.99	30.69	0.11528	0.11226	0.0439	0.039	319.004	0.00	0.00	1477	759
2357	23580.67	1477	0.00	764.97	30.60	0.11611	0.11245	0.04546	0.044	319.011	0.00	0.00	1476	759
2358	23590.28	1476	0.00	730.73	30.69	0.11602	0.11392	0.04546	0.044	319.019	0.00	0.00	1476	759
2359	23601.1	1475	0.00	695.04	30.78	0.11616	0.11372	0.04888	0.042	319.026	0.00	0.00	1475	760
2360	23610.66	1475	0.00	654.91	30.78	0.1167	0.11421	0.0416	0.044	319.033	0.00	0.00	1475	760
2361	23620.27	1474	0.00	624.19	30.78	0.11636	0.1144	0.04224	0.044	319.040	0.00	0.00	1474	760
2362	23631.09	1473	0.00	578.39	30.69	0.1165	0.11436	0.0439	0.042	319.047	0.00	0.00	1473	760
2363	23640.65	1471	0.00	504.75	30.51	0.1167	0.1146	0.04233	0.044	319.055	0.00	0.00	1471	760
2364	23650.26	1471	0.00	412.03	30.24	0.11582	0.11431	0.04355	0.042	319.062	0.00	0.00	1471	760
2365	23661.08	1470	0.00	307.71	29.80	0.11636	0.11538	0.04497	0.042	319.068	0.00	0.00	1470	760
2366	23670.69	1470	0.00	241.85	29.63	0.1167	0.1146	0.04526	0.042	319.075	0.00	0.00	1469	760
2367	23680.25	1469	0.00	194.07	29.45	0.11685	0.11528	0.0416	0.042	319.082	0.00	0.00	1469	761
2368	23691.07	1468	0.00	101.25	29.19	0.11699	0.11563	0.04414	0.042	319.089	0.00	0.00	1468	761
2369	23700.68	1467	0.00	95.79	29.19	0.11714	0.11455	0.04429	0.042	319.096	0.00	0.00	1467	761
2370	23710.24	1467	0.00	97.19	29.19	0.11719	0.1145	0.04434	0.039	319.103	0.00	0.00	1467	761
2371	23721.06	1466	0.00	95.26	29.37	0.11655	0.1146	0.04536	0.044	319.110	0.00	0.00	1466	761
2372	23730.67	1465	0.00	98.25	29.45	0.11763	0.11538	0.04272	0.039	319.116	0.00	0.00	1465	761
2373	23740.28	1465	0.00	94.43	29.54	0.11685	0.11514	0.04336	0.042	319.123	0.00	0.00	1465	761

2374	23751.05	1464	0.00	101.84	29.71	0.11704	0.11499	0.04087	0.039	319.130	0.00	0.00	1464	761
2375	23760.66	1463	0.00	96.42	29.80	0.11699	0.11455	0.04771	0.042	319.137	0.00	0.00	1463	761
2376	23770.27	1462	0.00	96.47	29.89	0.11665	0.11489	0.04116	0.039	319.143	0.00	0.00	1462	761
2377	23781.04	1461	0.00	101.60	29.98	0.1165	0.11465	0.04297	0.039	319.150	0.00	0.00	1461	761
2378	23790.65	1460	0.00	95.65	30.15	0.11797	0.11509	0.04253	0.042	319.157	0.00	0.00	1460	761
2379	23800.26	1459	0.00	101.63	29.71	0.11748	0.11499	0.04126	0.039	319.163	0.00	0.00	1459	761
2380	23811.03	1458	0.00	96.70	28.60	0.11748	0.11494	0.04893	0.042	319.170	0.00	0.00	1457	760
2381	23820.64	1456	0.00	104.49	27.94	0.11694	0.11538	0.04917	0.039	319.177	0.00	0.00	1456	760
2382	23830.25	1455	0.00	103.46	27.29	0.1165	0.11509	0.04326	0.039	319.183	0.00	0.00	1455	760
2383	23841.07	1453	0.00	97.08	26.65	0.11675	0.11533	0.04492	0.042	319.190	0.00	0.00	1453	760
2384	23850.63	1452	0.00	98.26	26.34	0.11572	0.11519	0.04185	0.042	319.197	0.00	0.00	1452	760
2385	23860.24	1451	0.00	87.35	26.42	0.1168	0.1147	0.04834	0.039	319.204	0.00	0.00	1451	760
2386	23871.06	1450	0.00	99.47	26.42	0.11606	0.11494	0.03857	0.044	319.211	0.00	0.00	1450	760
2387	23880.62	1446	0.00	102.51	26.58	0.11748	0.1147	0.04824	0.042	319.218	0.00	0.00	1446	760
2388	23890.23	1445	0.00	97.92	26.73	0.11763	0.11499	0.05054	0.042	319.225	0.00	0.00	1445	760
2389	23901.05	1443	0.00	103.70	27.05	0.11646	0.11421	0.04482	0.042	319.232	0.00	0.00	1443	760
2390	23910.66	1442	0.00	86.82	26.89	0.11729	0.11426	0.04287	0.042	319.239	0.00	0.00	1442	760
2391	23920.22	1441	0.00	91.67	26.34	0.11729	0.11519	0.04468	0.042	319.246	0.00	0.00	1441	760
2392	23931.04	1440	0.00	96.46	26.42	0.1168	0.11475	0.04131	0.039	319.252	0.00	0.00	1440	760
2393	23940.65	1439	0.00	95.19	26.58	0.11743	0.11445	0.04443	0.039	319.259	0.00	0.00	1439	760
2394	23950.21	1437	0.00	92.14	26.50	0.11675	0.11519	0.04194	0.042	319.265	0.00	0.00	1436	760
2395	23961.03	1434	0.00	92.62	26.58	0.11689	0.11489	0.04966	0.039	319.272	0.00	0.00	1434	760
2396	23970.64	1431	0.00	100.58	26.81	0.11748	0.11416	0.0436	0.039	319.278	0.00	0.00	1431	760
2397	23980.2	1430	0.00	95.89	26.58	0.11685	0.11509	0.04424	0.039	319.285	0.00	0.00	1429	760
2398	23991.02	1429	0.00	96.17	26.58	0.11616	0.11426	0.04702	0.042	319.292	0.00	0.00	1429	760
2399	24000.63	1428	0.00	103.50	26.27	0.11685	0.11431	0.0459	0.039	319.298	0.00	0.00	1428	760
2400	24010.24	1428	0.00	91.84	26.42	0.11675	0.1144	0.04355	0.051	319.307	0.00	0.00	1428	760
2401	24021.01	1428	0.00	95.61	26.34	0.1168	0.11592	0.04897	0.039	319.313	0.00	0.00	1428	760
2402	24030.62	1428	0.00	160.74	26.50	0.11807	0.11533	0.04648	0.039	319.320	0.00	0.00	1428	760
2403	24040.23	1427	0.00	73.94	26.58	0.1168	0.11514	0.04087	0.034	319.326	0.00	0.00	1427	760
2404	24051	1426	0.00	74.20	26.65	0.1168	0.11567	0.04419	0.042	319.333	0.00	0.00	1426	760
2405	24060.61	1426	0.00	87.35	26.73	0.11694	0.11509	0.04512	0.039	319.339	0.00	0.00	1426	760
2406	24070.22	1425	0.00	83.09	26.97	0.11753	0.11528	0.04326	0.042	319.346	0.00	0.00	1426	760

2407	24080.99	1425	0.00	75.35	27.13	0.11724	0.11484	0.04502	0.039	319.352	0.00	0.00	1425	760
2408	24090.6	1424	0.00	104.63	27.21	0.11738	0.1146	0.04468	0.039	319.359	0.00	0.00	1424	760
2409	24100.21	1423	0.00	64.53	27.29	0.11738	0.11519	0.0416	0.039	319.365	0.00	0.00	1423	759
2410	24111.03	1423	0.00	101.16	27.29	0.11714	0.11528	0.04888	0.037	319.372	0.00	0.00	1423	759
2411	24120.59	1422	0.00	96.28	27.37	0.11689	0.11484	0.04194	0.044	319.379	0.00	0.00	1422	760
2412	24130.2	1422	0.00	97.77	27.37	0.11685	0.1146	0.04238	0.042	319.386	0.00	0.00	1422	759
2413	24141.02	1421	0.00	74.33	27.21	0.1166	0.11519	0.03936	0.039	319.392	0.00	0.00	1421	759
2414	24150.58	1421	0.00	106.67	27.29	0.11665	0.11494	0.04795	0.039	319.399	0.00	0.00	1421	759
2415	24160.19	1421	0.00	84.53	26.81	0.11685	0.11499	0.04067	0.037	319.405	0.00	0.00	1421	759
2416	24171.01	1420	0.00	84.05	26.65	0.11675	0.11538	0.04048	0.037	319.411	0.00	0.00	1420	759
2417	24180.57	1419	0.00	94.72	26.58	0.11685	0.11431	0.04126	0.039	319.418	0.00	0.00	1419	759
2418	24190.18	1418	0.00	91.95	26.34	0.11704	0.11455	0.04141	0.037	319.424	0.00	0.00	1418	759
2419	24201	1418	0.00	82.73	26.19	0.11709	0.1146	0.04341	0.039	319.430	0.00	0.00	1417	759
2420	24210.61	1417	0.00	87.67	26.03	0.11714	0.1147	0.04297	0.037	319.436	0.00	0.00	1417	759
2421	24220.28	1417	0.00	89.05	26.50	0.11704	0.11504	0.04688	0.042	319.443	0.00	0.00	1416	759
2422	24231.1	1416	0.00	94.47	26.81	0.11631	0.11519	0.04702	0.042	319.450	0.00	0.00	1416	759
2423	24240.71	1416	0.00	98.49	26.81	0.1168	0.11372	0.04355	0.039	319.457	0.00	0.00	1416	759
2424	24250.27	1415	0.00	98.37	26.50	0.11626	0.11436	0.03975	0.039	319.463	0.00	0.00	1415	759
2425	24261.09	1414	0.00	93.97	26.34	0.11768	0.11353	0.046	0.039	319.470	0.00	0.00	1414	759
2426	24270.7	1414	0.00	68.48	26.34	0.72524	0.69888	0.05122	0.042	319.477	0.00	0.00	1414	759
2427	24280.26	1414	0.00	114.61	26.65	0.7874	0.77979	0.04688	0.039	319.483	0.00	0.00	1414	759
2428	24291.08	1413	0.00	100.14	26.97	0.92407	0.96772	0.04482	0.042	319.490	0.00	0.00	1413	759
2429	24300.69	1412	0.00	110.39	27.05	0.80884	0.83281	0.04609	0.037	319.496	0.00	0.00	1412	759
2430	24310.3	1411	0.00	90.57	27.13	0.82749	0.71274	0.04438	0.039	319.503	0.00	0.00	1411	759
2431	24321.07	1410	0.00	97.23	27.13	0.84282	0.63145	0.04648	0.039	319.509	0.00	0.00	1410	758
2432	24330.68	1409	0.00	89.83	27.21	0.78281	0.79941	0.04043	0.037	319.515	0.00	0.00	1409	758
2433	24340.29	1408	0.00	85.96	27.05	0.61914	0.56011	0.04087	0.039	319.522	0.00	0.00	1408	758
2434	24351.05	1408	0.00	95.19	26.97	0.60562	0.60786	0.04229	0.039	319.528	0.00	0.00	1407	759
2435	24360.67	1407	0.00	98.69	26.81	0.68081	0.70532	0.04248	0.039	319.535	0.00	0.00	1407	759
2436	24370.28	1407	0.00	96.01	26.97	0.53027	0.4896	0.04785	0.039	319.541	0.00	0.00	1407	759
2437	24381.04	1406	0.00	88.43	26.97	0.57158	0.58657	0.03589	0.042	319.548	0.00	0.00	1406	759
2438	24390.66	1405	0.00	97.05	27.05	1.11724	1.07095	0.04175	0.042	319.555	0.00	0.00	1405	759
2439	24400.27	1405	0.00	98.65	27.13	0.98247	0.88647	0.04434	0.042	319.562	0.00	0.00	1405	759

2440	24411.03	1404	0.00	98.62	27.29	0.8415	0.64487	0.04482	0.039	319.568	0.00	0.00	1404	759
2441	24420.65	1404	0.00	93.98	27.37	0.76396	0.64697	0.04048	0.039	319.575	0.00	0.00	1404	759
2442	24430.26	1403	0.00	94.52	27.45	0.52544	0.48257	0.04365	0.039	319.581	0.00	0.00	1403	759
2443	24441.08	1403	0.00	100.12	27.45	0.79287	0.577	0.04404	0.039	319.588	0.00	0.00	1403	759
2444	24450.63	1402	0.00	96.22	27.61	0.4417	0.54258	0.04312	0.039	319.594	0.00	0.00	1402	759
2445	24460.25	1402	0.00	92.04	27.53	1.02075	0.98872	0.04307	0.039	319.601	0.00	0.00	1402	759
2446	24471.07	1402	0.00	102.80	27.21	0.72051	0.75034	0.04463	0.042	319.608	0.00	0.00	1402	759
2447	24480.62	1401	0.00	96.50	27.21	0.62681	0.5644	0.04644	0.039	319.614	0.00	0.00	1401	759
2448	24490.24	1401	0.00	92.00	27.37	0.70615	0.56108	0.04517	0.039	319.621	0.00	0.00	1401	759
2449	24501.06	1401	0.00	92.12	27.37	0.90562	0.72349	0.04092	0.042	319.628	0.00	0.00	1401	759
2450	24510.67	1400	0.00	96.79	27.37	0.59023	0.6312	0.04399	0.039	319.634	0.00	0.00	1400	759
2451	24520.22	1399	0.00	93.54	27.37	0.7814	0.7897	0.04639	0.039	319.641	0.00	0.00	1399	759
2452	24531.05	1398	0.00	95.99	27.45	0.92524	0.8502	0.04512	0.039	319.647	0.00	0.00	1398	759
2453	24540.66	1397	0.00	92.16	27.45	0.92881	0.92432	0.03989	0.039	319.654	0.00	0.00	1397	759
2454	24550.21	1397	0.00	95.23	27.53	0.5314	0.50537	0.04614	0.039	319.660	0.00	0.00	1397	759
2455	24561.03	1396	0.00	94.29	27.45	0.80425	0.85845	0.04189	0.042	319.667	0.00	0.00	1396	759
2456	24570.65	1396	0.00	92.48	27.53	0.61196	0.58677	0.04512	0.039	319.674	0.00	0.00	1395	759
2457	24580.26	1395	0.00	102.84	27.53	0.66841	0.57095	0.04399	0.042	319.681	0.00	0.00	1395	759
2458	24591.02	1394	0.00	95.30	27.61	0.72466	0.54448	0.04702	0.039	319.687	0.00	0.00	1394	759
2459	24600.64	1394	0.00	98.87	27.61	0.88345	0.84268	0.04209	0.039	319.694	0.00	0.00	1394	759
2460	24610.25	1394	0.00	99.26	27.69	0.89673	0.92832	0.04155	0.039	319.700	0.00	0.00	1394	759
2461	24621.01	1393	0.00	97.77	27.61	1.10708	1.02095	0.03945	0.042	319.707	0.00	0.00	1393	759
2462	24630.63	1393	0.00	91.89	27.45	0.47227	0.58228	0.03843	0.039	319.714	0.00	0.00	1393	758
2463	24640.24	1392	0.00	95.01	27.29	0.30898	0.41831	0.04434	0.042	319.721	0.00	0.00	1392	758
2464	24651	1392	0.00	91.66	27.13	0.679	0.52734	0.04785	0.044	319.728	0.00	0.00	1392	758
2465	24660.61	1391	0.00	96.16	26.81	0.6415	0.48218	0.04722	0.037	319.734	0.00	0.00	1391	758
2466	24670.23	1391	0.00	91.37	26.73	0.60942	0.44741	0.04644	0.037	319.740	0.00	0.00	1391	758
2467	24680.99	1390	0.00	102.60	26.58	0.58413	0.41826	0.04795	0.042	319.747	0.00	0.00	1390	758
2468	24690.6	1390	0.00	95.83	26.50	0.56128	0.39512	0.04478	0.042	319.754	0.00	0.00	1389	758
2469	24700.33	1389	0.00	94.63	26.50	0.53979	0.37256	0.05327	0.039	319.760	0.00	0.00	1389	758
2470	24711.09	1388	0.00	86.89	26.58	0.51719	0.34819	0.04814	0.039	319.767	0.00	0.00	1388	758
2471	24720.7	1388	0.00	106.56	26.50	0.49814	0.32739	0.05234	0.042	319.774	0.00	0.00	1388	758
2472	24730.31	1388	0.00	106.80	26.42	0.47461	0.30562	0.04785	0.039	319.780	0.00	0.00	1388	758

2473	24741.08	1387	0.00	81.24	26.42	0.44932	0.28325	0.05244	0.039	319.787	0.00	0.00	1387	758
2474	24750.69	1387	0.00	89.02	26.50	0.42954	0.26543	0.0499	0.034	319.793	0.00	0.00	1387	758
2475	24760.3	1386	0.00	43.11	26.42	0.42178	0.25728	0.04814	0.039	319.799	0.00	0.00	1386	758
2476	24771.12	1385	0.00	97.23	26.34	0.58096	0.36265	0.04834	0.042	319.806	0.00	0.00	1385	757
2477	24780.68	1385	0.00	204.59	26.42	0.70591	0.45088	0.05039	0.039	319.812	0.00	0.00	1385	757
2478	24790.29	1385	0.00	-14.95	26.42	0.6833	0.43154	0.04644	0.039	319.819	0.00	0.00	1385	757
2479	24801.11	1384	0.00	109.39	26.27	0.66265	0.41548	0.04678	0.037	319.825	0.00	0.00	1384	757
2480	24810.67	1384	0.00	43.46	26.27	0.64204	0.3998	0.04937	0.039	319.832	0.00	0.00	1384	757
2481	24820.28	1383	0.00	103.56	26.34	0.61987	0.38203	0.04883	0.042	319.839	0.00	0.00	1383	757
2482	24831.1	1383	0.00	85.30	26.27	0.60249	0.37012	0.05283	0.039	319.845	0.00	0.00	1383	757
2483	24840.72	1383	0.00	81.11	26.34	0.5875	0.35781	0.04907	0.039	319.852	0.00	0.00	1383	757
2484	24850.27	1382	0.00	71.20	26.27	0.5751	0.34888	0.04897	0.039	319.858	0.00	0.00	1382	757
2485	24861.09	1381	0.00	97.40	26.27	0.55928	0.33784	0.048	0.039	319.865	0.00	0.00	1381	757
2486	24870.7	1381	0.00	124.73	26.42	0.5459	0.32783	0.0459	0.039	319.871	0.00	0.00	1381	757
2487	24880.26	1380	0.00	91.00	26.42	0.54009	0.32354	0.04976	0.039	319.878	0.00	0.00	1380	757
2488	24891.08	1379	0.00	96.63	26.34	0.90396	0.679	0.04507	0.042	319.884	0.00	0.00	1379	757
2489	24900.69	1379	0.00	102.40	26.34	1.10215	0.99268	0.04351	0.039	319.891	0.00	0.00	1379	757
2490	24910.31	1379	0.00	80.33	26.34	1.14019	1.05815	0.04126	0.039	319.897	0.00	0.00	1379	757
2491	24921.07	1378	0.00	106.14	26.34	1.13677	1.05464	0.04019	0.039	319.904	0.00	0.00	1379	757
2492	24930.68	1378	0.00	95.88	26.27	1.13579	1.05259	0.04565	0.039	319.910	0.00	0.00	1378	757
2493	24940.3	1377	0.00	73.53	26.27	1.13369	1.04873	0.04536	0.042	319.917	0.00	0.00	1377	757
2494	24951.06	1377	0.00	110.62	26.19	1.13286	1.04551	0.04219	0.042	319.924	0.00	0.00	1377	757
2495	24960.67	1377	0.00	108.46	26.19	1.13188	1.04297	0.04531	0.039	319.931	0.00	0.00	1377	757
2496	24970.28	1376	0.00	96.58	26.27	1.13037	1.04204	0.04517	0.039	319.937	0.00	0.00	1376	757
2497	24981.05	1375	0.00	106.17	26.19	1.12925	1.03809	0.04185	0.037	319.943	0.00	0.00	1375	757
2498	24990.66	1375	0.00	102.63	26.11	1.12832	1.03677	0.04473	0.039	319.950	0.00	0.00	1375	757
2499	25000.27	1375	0.00	102.61	26.19	1.12715	1.03477	0.04443	0.037	319.956	0.00	0.00	1375	757
2500	25011.09	1375	0.00	93.50	26.11	1.12627	1.0333	0.04575	0.037	319.962	0.00	0.00	1375	757
2501	25020.65	1374	0.00	90.57	26.03	1.12524	1.03149	0.04663	0.042	319.969	0.00	0.00	1374	757
2502	25030.26	1374	0.00	95.99	26.03	1.12441	1.03042	0.04321	0.039	319.976	0.00	0.00	1373	757
2503	25041.08	1373	0.00	98.71	26.11	1.12295	1.02949	0.04272	0.042	319.982	0.00	0.00	1373	757
2504	25050.64	1373	0.00	101.78	26.03	1.12251	1.02686	0.04395	0.039	319.989	0.00	0.00	1373	757
2505	25060.25	1372	0.00	96.70	25.96	1.12261	1.02759	0.04106	0.039	319.995	0.00	0.00	1372	757

2506	25071.07	1372	0.00	95.72	25.96	1.12031	1.0249	0.04551	0.042	320.002	0.00	0.00	1372	757
2507	25080.68	1372	0.00	94.20	25.88	1.11992	1.02344	0.04478	0.039	320.009	0.00	0.00	1372	757
2508	25090.24	1371	0.00	101.45	25.88	1.1188	1.02197	0.0457	0.039	320.015	0.00	0.00	1371	757
2509	25101.06	1371	0.00	100.90	26.03	1.11689	1.0189	0.04517	0.039	320.022	0.00	0.00	1371	757
2510	25110.67	1371	0.00	89.72	26.11	1.11499	1.01699	0.04634	0.039	320.028	0.00	0.00	1371	757
2511	25120.23	1370	0.00	98.91	26.19	1.11445	1.01592	0.04375	0.039	320.035	0.00	0.00	1370	757
2512	25131.05	1370	0.00	97.09	26.19	1.11387	1.01226	0.04448	0.039	320.041	0.00	0.00	1370	757
2513	25140.66	1370	0.00	99.46	26.19	1.11323	1.01069	0.04355	0.039	320.048	0.00	0.00	1369	757
2514	25150.22	1369	0.00	97.25	26.11	1.11172	1.00986	0.04795	0.039	320.054	0.00	0.00	1369	757
2515	25161.04	1368	0.00	98.31	25.96	1.11104	1.00996	0.04473	0.039	320.061	0.00	0.00	1368	757
2516	25170.65	1368	0.00	93.98	26.03	1.11128	1.00898	0.04995	0.039	320.067	0.00	0.00	1368	757
2517	25180.26	1368	0.00	90.46	25.96	1.11035	1.00815	0.04805	0.039	320.074	0.00	0.00	1368	757
2518	25191.03	1367	0.00	90.99	25.96	1.11006	1.0062	0.04526	0.039	320.080	0.00	0.00	1367	757
2519	25200.64	1367	0.00	99.43	25.96	1.10854	1.00386	0.04385	0.042	320.087	0.00	0.00	1367	757
2520	25210.25	1366	0.00	92.77	25.80	1.10864	1.00366	0.04717	0.042	320.094	0.00	0.00	1366	757
2521	25221.02	1366	0.00	98.48	25.80	1.10708	1.00205	0.04321	0.039	320.101	0.00	0.00	1366	757
2522	25230.63	1365	0.00	99.25	25.88	1.10762	0.99961	0.04722	0.039	320.107	0.00	0.00	1365	757

APPENDIX B2

Appendix B2 Digestion and atomic absorption results

After the digestions were completed, the samples were analyzed for copper using atomic absorption spectrometry. The results are presented here. For a better understanding of the results, it is necessary to know what samples correspond to each experiment. Table B.1 indicates the sample and experiment associations. In the data, *B* corresponds to a blank. Only the chemicals (acid, water and hydrogen peroxide) were added to the flask. *BS* corresponds to blank soil. This is a soil sample that was not spiked with copper. Some samples are corrected for the instrument drift. In these cases, the average of the DI water reading taken before and after the sample reading is subtracted from the sample reading.

Table B.1 Sample numbers and experiment association

Date	Soil and condition	Sample number	
		before	after
2001-08-26	sand, 1500psi, 40°C, 0%w	5	8
		6	
2001-08-29		13	17
		14	
		15	
2001-08-30	sand, 1500psi, 40°C, 0%w	21	25
		22	
		23	
2001-08-31	sand, 1500psi, 40°C, 0%w	30	34
		31	
		32	
2001-09-02	silt, 1500psi, 40°C, 0%w	38	42
		40	
2001-09-03	silt, 1500psi, 40°C, 0%w	45	50
		46	
		47	
		48	
2001-09-04	silt, 1500psi, 40°C, 0%w	54	58
		55	
		56	
2001-10-12	sand, 1400psi, 40°C, 0%w	60	64
		61	64-2
		62	64-3
2001-10-14	sand, 1400psi, 40°C, 0%w	65	69

		66	69-2
		67	
2001-10-15	sand, 1400psi, 40°C, 0%w	70	74
		71	74-2
		72	
2001-10-29	sand, 1500psi, 40°C, 5%w	75	79
		76	79-2
		77	
2001-10-30	sand, 1500psi, 40°C, 5%w	80	84
		81	84-2
		82	
2001-10-31	sand, 1500psi, 40°C, 5%w	85	89
		86	89-2
		87	
2001-11-27	sand, 1500psi, 40°C, 10%w	90	94
		91	94-2
		92	
2001-11-29	sand, 1500psi, 40°C, 10%w	95	99
		96	99-2
		97	
2001-12-03	sand, 1500psi, 40°C, 10%w	100	104
		101	104-2
		102	104-3
2002-01-24	silt, 1500psi, 40°C, 5%w	104	108-1
		105	108-2
		106	
2002-01-28	silt, 1500psi, 40°C, 5%w	109	113-1
		110	113-2
		111	
2002-01-29	silt, 1500psi, 40°C, 5%w	114	118-1
		115	118-2
		116	118-3

2001-09-04 (no correction for instrument drift)

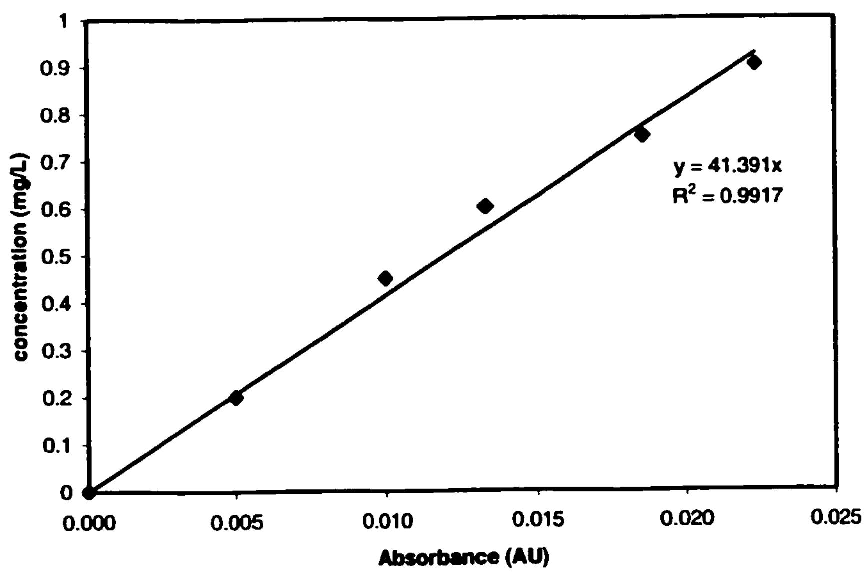

Figure B.1 Calibration curve for 2001-09-04

sample	reading				concentration		
	1	2	3	average	(mgCu/L)	gCu/gsoil	mg Cu/kg soil
B-1(blank)	0.005	0.003	0.004	0.004	0.166	1.66E-05	16.6
BS-1(soil blank)	0.001	0.003	0.002	0.002	0.083	8.28E-06	8.3
sample 5	0.017	0.015	0.014	0.015	0.635	6.35E-05	63.5
sample6	0.014	0.017	0.014	0.015	0.621	6.21E-05	62.1
sample 14	0.014	0.013	0.013	0.013	0.552	5.52E-05	55.2
sample 15	0.014	0.009	0.01	0.011	0.455	4.55E-05	45.5

2001-10-01 (no correction for instrument drift)

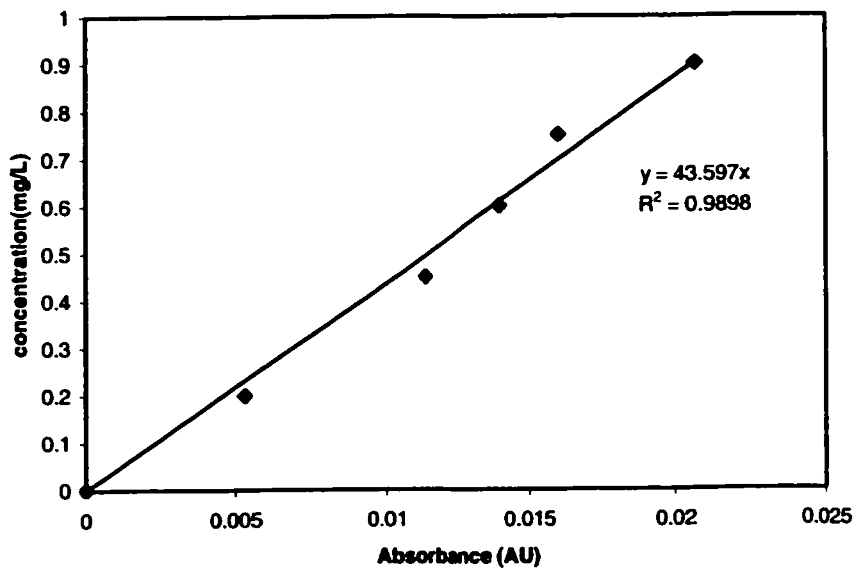

Figure B.2 Calibration curve for 2001-10-01

sample	reading 1	2	3	4	ave reading	conc(mg/L)	mgcu/kgsoil
B-2	0.004	0.002	0.007	0.001	0.0035	0.1526	15.26
BS-2	0.005	0.003	0.001	0.002	0.0028	0.1199	11.99
8	0.011	0.01	0.012	0.011	0.0110	0.4796	47.96
13	0.015	0.006	0.011	0.008	0.0100	0.4360	43.60
15	0.012	0.01	0.009	0.013	0.0110	0.4796	47.96
17	0.024	0.006	0.011	0.011	0.0130	0.5668	56.68
B-3	0.001	0.002	0	-0.003	0.0000	0.0000	0.00
BS-3	0.003	0.002	0.003	0.004	0.0030	0.1308	13.08
21	0.012	0.01	0.011	0.013	0.0115	0.5014	50.14
22	0.015	0.009	0.009	0.013	0.0115	0.5014	50.14
23	0.013	0.009	0.013	0.01	0.0113	0.4905	49.05
25	0.013	0.006	0.008	0.007	0.0085	0.3706	37.06
B-4	0.001	-0.002	-0.002	0	-0.0008	-0.0327	-3.27
BS-4	0.001	-0.003	-0.002	0	-0.0010	-0.0436	-4.36
30	0.015	0.009	0.008	0.009	0.0103	0.4469	44.69
31	0.012	0.008	0.009	0.009	0.0095	0.4142	41.42
32	0.013	0.009	0.009	0.008	0.0098	0.4251	42.51
34	0.013	0.008	0.009	0.005	0.0088	0.3815	38.15

2001-10-24 (with correction for instrument drift)

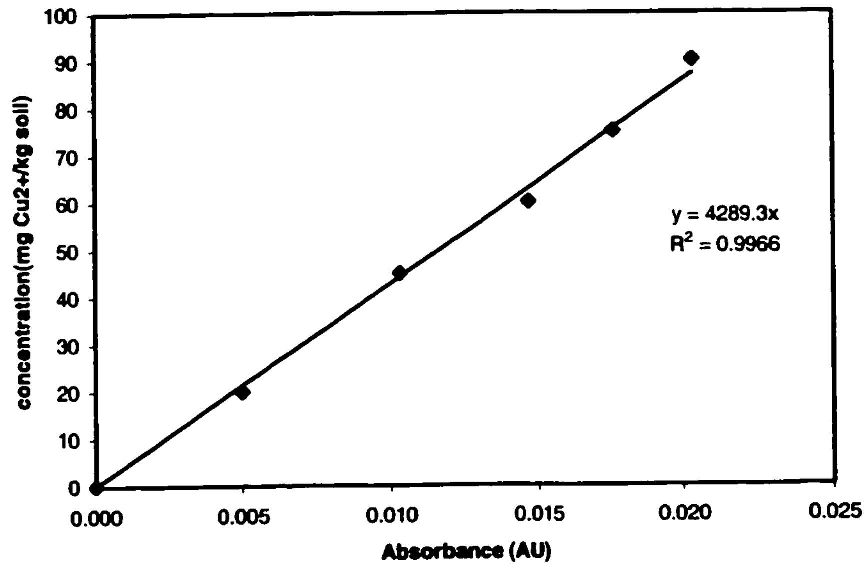

Figure B.3 Calibration curve for 2001-10-24

sample	reading 1	2	3	average	average corrected	conc. mg Cu/kg soil
B-5	0	-0.004	-0.001	-0.0017	0.0000	0.00
BS-5	0.003	0.004	0.001	0.0027	0.0043	18.59
38	0.011	0.012	0.011	0.0113	0.0130	55.76
40	0.013	0.011	0.01	0.0113	0.0130	55.76
42	0.013	0.01	0.012	0.0117	0.0133	57.19
46	0.007	0.012	0.011	0.0100	0.0117	50.04
DI	-0.001	-0.005	-0.004	-0.0033		
B-6	-0.002	-0.002	0	-0.0013	0.0025	10.72
BS-6	-0.003	0.001	-0.002	-0.0013	0.0025	10.72
45	0.013	0.007	0.01	0.0100	0.0138	59.34
47	0.011	0.011	0.011	0.0110	0.0148	63.62
48	0.009	0.009	0.008	0.0087	0.0125	53.62
50	0.009	0.011	0.007	0.0090	0.0128	55.05
DI	-0.003	-0.004	-0.006	-0.0043		
B-7	-0.008	0	-0.002	-0.0033	0.0008	3.57
BS-7	0	0.001	0.002	0.0010	0.0052	22.16

55	0.012	0.012	0.008	0.0107	0.0148	63.62
56	0.01	0.012	0.01	0.0107	0.0148	63.62
58	0.005	0.009	0.006	0.0067	0.0108	46.47
DI	-0.004	-0.004	-0.004	-0.0040		

2001-11-05 (with correction for instrument drift)

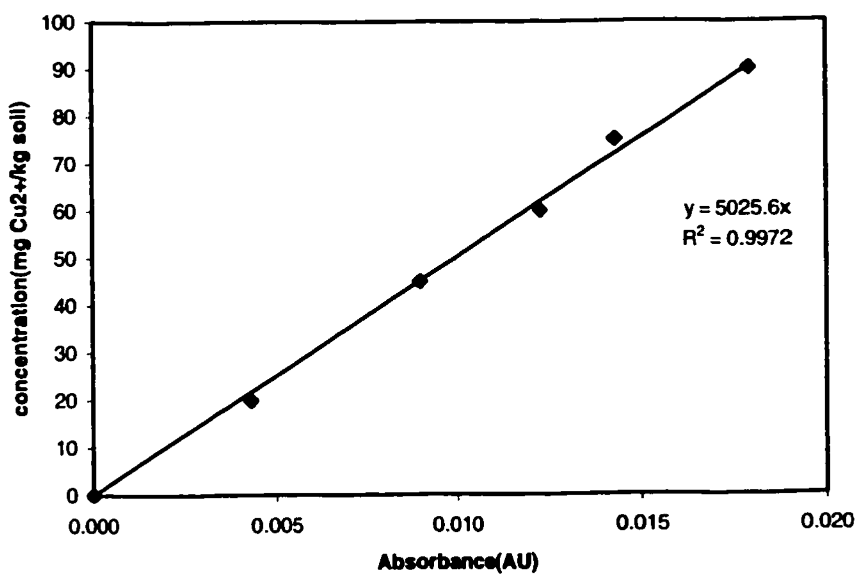

Figure B.4 Calibration curve for 2001-11-05

	sample	reading 1	2	3	average	conc. (mgCu/kgsoil)	conc/2
zero		0.001	0.003	0.002	0.002		
1g	1B-1	0.003	0.001	0.003	0.002333	4.188	
	1BS-1	0.004	0.005	0.001	0.003333	9.2136	
	1SS-1	0.006	0.003	0.004	0.004333	14.2392	
	1SS-2	0.005	0.006	0.006	0.005667	20.94	
	1SS-3	0.009	0.008	0.007	0.008	32.6664	
	1SS-4	0.011	0.01	0.014	0.011667	51.0936	
		0.002	0	0.001	0.001		
	2B-1	0.002	-0.001	-0.001	0	0	
	2BS-1	0.002	0	0	0.000667	3.3504	
	2SS-1	0.005	0.003	0.003	0.003667	18.4272	
	2SS-2	0.005	0.002	0.001	0.002667	13.4016	
	2SS-3	0.01	0.006	0.005	0.007	35.1792	
	2SS-4	0.009	0.011		0.01	50.256	
		-0.001	-0.002	0	-0.001		
	3B-1	0.001	-0.004	0	-0.001	8.7948	
	3BS-1	0.002	0	-0.001	0.000333	15.4956	
	3SS-1	0.003	0.003	0.001	0.002333	25.5468	
	3SS-2	0.003	0.002	-0.001	0.001333	20.5212	
	3SS-3	0.006	0.005	0.004	0.005	38.9484	
	3SS-4	0.005	0.005	0.007	0.005667	42.2988	
		-0.005	-0.004	-0.005	-0.0045		
2g	1B2-1	0	-0.004	-0.003	-0.002	10.47	5.235
	1BS2-1	-0.002	0	-0.002	-0.001	15.4956	7.7478
	1SS2-1	0.002	0.002	0.004	0.002	30.5724	15.2862
	1SS2-2	0.006	0.004	0.001	0.005	45.6492	22.8246
	1SS2-3	0.011	0.008	0.004	0.0095	68.2644	34.1322
	1SS2-4	0.011	0.008	0.009	0.009333	67.4268	33.7134
		-0.001	-0.007	-0.003	-0.00367		
	2B2-1	-0.006	-0.005	-0.002	-0.0055	-2.5128	-1.2564
	2BS2-1	-0.004	-0.006	-0.002	-0.005	0	0
	2SS2-1	0.004	-0.001	-0.003	0.0015	32.6664	16.3332
	2SS2-2	0.004	0.003	0	0.0035	42.7176	21.3588
	2SS2-3	0.006	0.011	0.009	0.0085	67.8456	33.9228
	2SS2-4	0.01	0.009	0.008	0.009	70.3584	35.1792
		-0.006	-0.008	-0.005	-0.00633		

3B2-1	-0.005	-0.004	-0.003	-0.0045	8.376	4.188
3BS2-1	-0.004	-0.005	-0.003	-0.0045	8.376	4.188
3SS2-1	0.001	0	0	0.0005	33.504	16.752
3SS2-2	0.004	0.004	0	0.004	51.0936	25.5468
3SS2-3	0.002	0.007	0.005	0.0045	53.6064	26.8032
3SS2-4	0.01	0.01	0.005	0.008779	75.11178	37.55589
	-0.006	-0.006	-0.006	-0.006		

2001-11-23 (with correction for instrument drift)

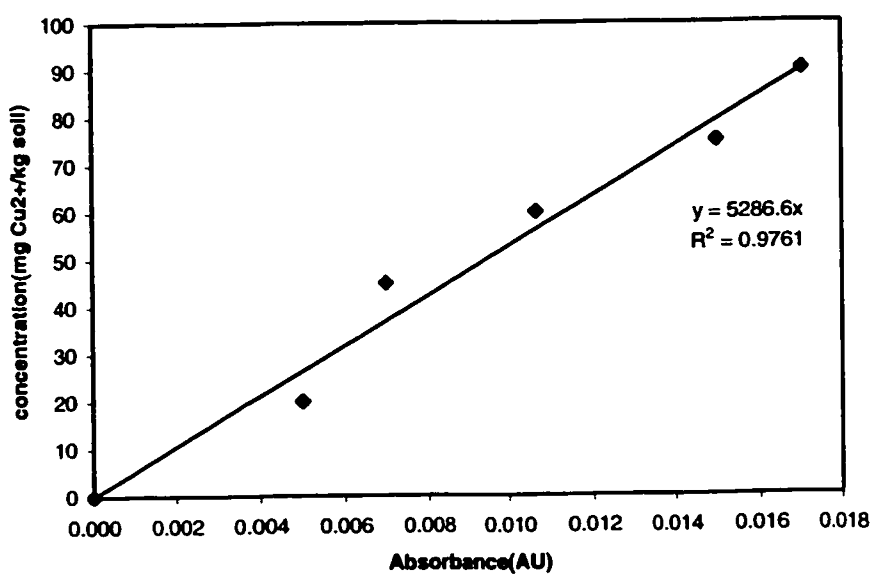

Figure B.5 Calibration curve for 2001-11-23

sample	reading 1	2	3	average	corrected	conc. mgCu/kgsoil	conc/2
	0.003	0.005	0.002	0.003333			
B-8	0.001	0.002	-0.001	0.000667	-0.00133	-7.0488	-3.5244
BS-8	0.003	0.001	0.002	0.002	0	0	0
60	0.017	0.017	0.017	0.017	0.015	79.299	39.6495
61	0.021	0.015	0.012	0.016	0.014	74.0124	37.0062
62	0.015	0.019	0.02	0.018	0.016	84.5856	42.2928
	0.001	-0.002	0.003	0.000667			
B-9	0	0.001	0.002	0.001	0.001833	9.6921	4.84605
BS-9	-0.001	-0.005	0.001	-0.00167	-0.00083	-4.4055	-2.20275
64-2	0.018	0.012	0.015	0.015	0.015833	83.7045	41.85225
65	0.019	0.015	0.014	0.016	0.016833	88.9911	44.49555
66	0.015	0.012	0.012	0.013	0.013833	73.1313	36.56565
67	0.012	0.014	0.015	0.013667	0.0145	76.6557	38.32785
	-0.002	-0.001	-0.004	-0.00233			
B-10	-0.004	-0.004	0	-0.00267	-0.00083	-4.4055	-2.20275
BS-10	-0.002	-0.004	-0.005	-0.00367	-0.00183	-9.6921	-4.84605
64-3	0.011	0.015	0.009	0.011667	0.0135	71.3691	35.68455
69	0.013	0.006	0.009	0.009333	0.011167	59.0337	29.51685
69-2	0.011	0.011	0.01	0.010667	0.0125	66.0825	33.04125
70	0.013	0.013	0.013	0.013	0.014833	78.4179	39.20895
	0	-0.001	-0.003	-0.00133			
B-11	-0.002	-0.003	-0.001	-0.0025	0.0005	2.6433	1.32165
BS-11	-0.002	-0.006	-0.002	-0.004	-0.001	-5.2866	-2.6433
71	0.011	0.012	0.012	0.0115	0.0145	76.6557	38.32785
72	0.011	0.015	0.011	0.013	0.016	84.5856	42.2928
74	0.006	0.012	0.009	0.009	0.012	63.4392	31.7196
74-2	0.013	0.01	0.01	0.011	0.014	74.0124	37.0062
	-0.007	-0.004	-0.003	-0.00467			
B-12	-0.002	-0.003	-0.005	-0.0025	0.001667	8.811	4.4055
BS-12	-0.002	-0.003	-0.005	-0.0025	0.001667	8.811	4.4055
75	0.013	0.009	0.012	0.011	0.015167	80.1801	40.09005
76	0.011	0.011	0.01	0.011	0.015167	80.1801	40.09005
77	0.015	0.017	0.009	0.016	0.020167	106.6131	53.30655
79	0.005	0.006	0.008	0.006333	0.0105	55.5093	27.75465
	-0.006	-0.004	-0.001	-0.00367			

B-13	-0.002	-0.005	-0.006	-0.0035	0.001	5.2866	2.6433
BS-13	0	-0.005	-0.005	-0.0025	0.002	10.5732	5.2866
79-2	0.007	0.003	0.005	0.005	0.0095	50.2227	25.11135
80	0.011	0.009	0.012	0.01	0.0145	76.6557	38.32785
81	0.011	0.007	0.008	0.009	0.0135	71.3691	35.68455
82	0.013	0.012	0.01	0.012291	0.016791	88.7664195	44.38321
	-0.005	-0.005	-0.006	-0.00533			
B-14	0.001	-0.007	-0.006	-0.003	0.003167	16.7409	8.37045
BS-14	-0.007	-0.008	-0.004	-0.0075	-0.00133	-7.0488	-3.5244
84	0.003	0.002	0.003	0.0025	0.008667	45.8172	22.9086
84-2	0.001	0.001	0.001	0.001	0.007167	37.8873	18.94365
85	0.008	0.007	0.007	0.0075	0.013667	72.2502	36.1251
86	0.012	0.012	0.013	0.012993	0.01916	101.2903749	50.64519
	-0.008	-0.008	-0.005	-0.007			
B-15	-0.009	-0.007	-0.008	-0.008	-0.0025	-13.2165	-6.60825
BS-15	-0.005	-0.006	-0.003	-0.0055	0	0	0
87	0.01	0.011	0.01	0.0105	0.016	84.5856	42.2928
89	0	0	0.004	0	0.0055	29.0763	14.53815
89-2	-0.005	0	0	-0.0025	0.003	15.8598	7.9299
2001-11-08-1	-0.004	-0.003	0.001	-0.00211	0.003393	17.9374338	8.968717
	-0.007	-0.003	-0.002	-0.004			

2001-12-12 (with correction for instrument drift)

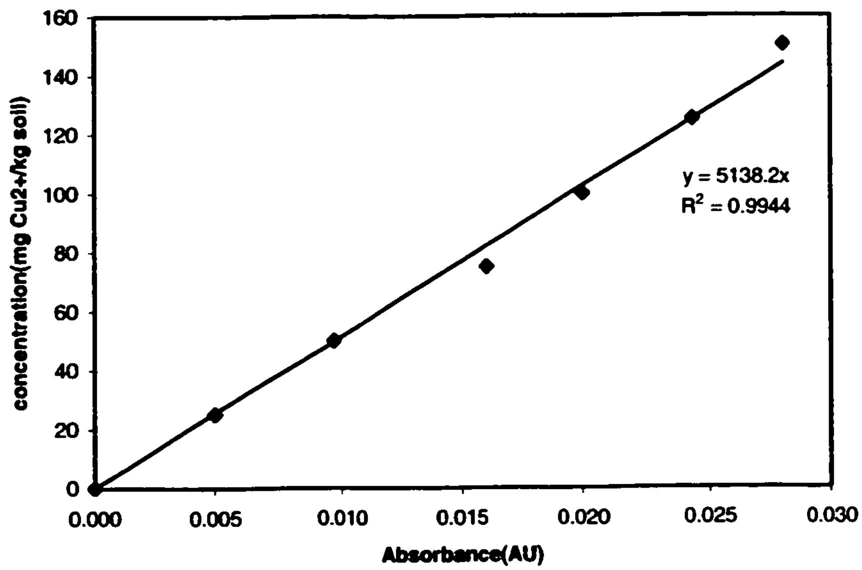

Figure B.6 Calibration curve for 2001-12-12

sample	reading 1	2	3	average	corrected	conc mg Cu/kgsoil	conc/2
	0.002	0.003	0.004	0.0030			
B-16	0	0.004	0.002	0.0020	-0.0015	-7.71	-3.85
BS-16	0.004	0.002	0.004	0.0033	-0.0002	-0.86	-0.43
90	0.019	0.019	0.02	0.0193	0.0158	81.36	40.68
91	0.017	0.018	0.019	0.0180	0.0145	74.51	37.25
92	0.02	0.017	0.022	0.0197	0.0162	83.07	41.53
94	0.014	0.016	0.013	0.0143	0.0108	55.66	27.83
	0.003	0.005	0.004	0.0040			
B-17	0.003	0.002	0.004	0.0030	0.0005	2.57	1.28
BS-17	0.001	0.001	0	0.0007	-0.0018	-9.42	-4.71
94-2	0.014	0.012	0.009	0.0117	0.0092	47.10	23.55
95	0.02	0.021	0.017	0.0193	0.0168	86.49	43.25

96	0.017	0.016	0.016	0.0163	0.0138	71.08	35.54
97	0.017	0.019	0.017	0.0177	0.0152	77.93	38.97
	0.002	0.002	-0.001	0.0010			
B-18	0.001	0	-0.001	0.0000	-0.0005	-2.57	-1.28
BS-18	0.001	0.001	0.003	0.0017	0.0012	5.99	3.00
99	0.003	0.008	0.008	0.0063	0.0058	29.97	14.99
99-2	0.009	0.007	0.007	0.0077	0.0072	36.82	18.41
101	0.009	0.014	0.01	0.0110	0.0105	53.95	26.98
	0.001	-0.001	0	0.0000			
B-19	-0.001	-0.001	-0.001	-0.0010	-5.1382	-2.57	-1.28
BS-19	0.002	0	-0.001	0.0010	5.1382	2.57	1.28
102	0.015	0.014	0.014	0.0145	74.5039	37.25	18.63
104-2	0.012	0.015	0.012	0.0135	69.3657	34.68	17.34
104-3	0.016	0.015	0.016	0.0157	80.4985	40.25	20.12
	-0.001	-0.001	-0.001	-0.0010			

2002-02-01 (with correction for instrument drift)

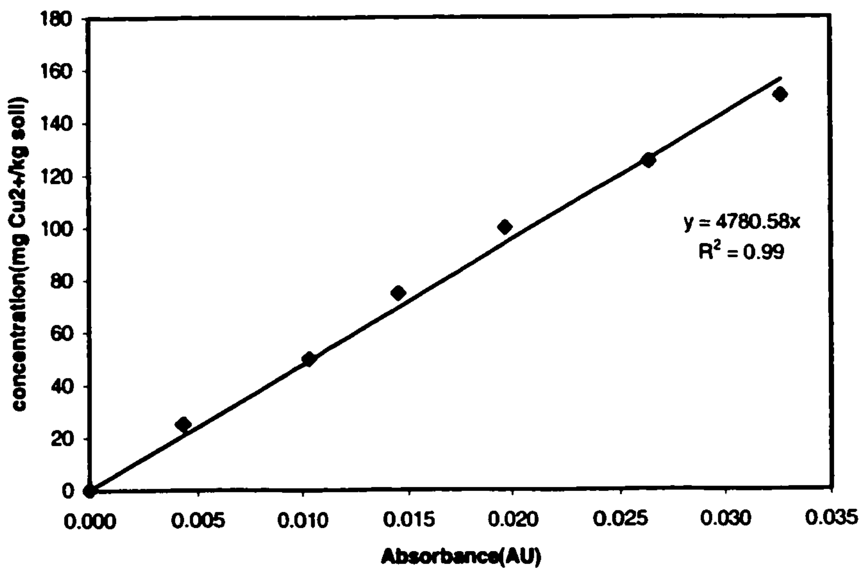

Figure B.7 Calibration curve for 2002-02-01

sample		reading 1	2	3	average	corrected	conc (mgCu/kgsoil)	conc/2
		0	0.002	0.002	0.0013			
B-20		-0.001	0.004	0.004	0.0023	0.0025	11.95	5.98
BS-20		0.01	0.01	0.009	0.0097	0.0098	47.01	23.50
	104	0.029	0.032	0.033	0.0313	0.0315	150.59	75.29
	105	0.03	0.027	0.025	0.0273	0.0275	131.47	65.73
	106	0.029	0.024	0.029	0.0273	0.0275	131.47	65.73
108-1		0.023	0.023	0.023	0.0230	0.0232	110.75	55.38
		0	-0.003	-0.002	-0.0017			
B-21		0	0	0.002	0.0007	0.0012	5.58	2.79
BS-21		0	0.003	0.004	0.0023	0.0028	13.54	6.77
108-2		0.022	0.021	0.021	0.0213	0.0218	104.38	52.19
	109	0.026	0.021	0.023	0.0233	0.0238	113.94	56.97
	110	0.025	0.026	0.021	0.0240	0.0245	117.12	58.56
	111	0.028	0.027	0.03	0.0283	0.0288	137.84	68.92
		0.002	0.001	-0.001	0.0007			

B-22		0.002	-0.003	0	-0.0003	-0.0003	-1.59	-0.80
Bs-22		0.001	-0.002	0.002	0.0003	0.0003	1.59	0.80
113-1		0.023	0.023	0.024	0.0233	0.0233	111.55	55.77
113-2		0.015	0.018	0.02	0.0177	0.0177	84.46	42.23
	114	0.027	0.023	0.028	0.0260	0.0260	124.30	62.15
	115	0.029	0.024	0.024	0.0257	0.0257	122.70	61.35
		-0.002	0	0	-0.0007			
B-23		0.002	0.001	-0.002	0.0015	0.0028	13.54	6.77
BS-23		0.006	0.005	0.006	0.0055	0.0068	32.67	16.33
	116	0.029	0.033	0.024	0.0310	0.0323	154.57	77.29
118-2		0.015	0.016	0.023	0.0155	0.0168	80.47	40.24
118-3		0.024	0.022	0.015	0.0203	0.0217	103.58	51.79
		0	-0.003	-0.003	-0.0020			

APPENDIX B3

Appendix B3 Sample copper extraction efficiency calculation

The extraction efficiency is calculated using the copper concentrations of the samples, which can be found in Appendix B2. For example, for the extraction experiment done January 24, 2002, the average before and after concentration of copper are calculated as 68.9 and 53.8 mg Cu^{2+}/kg soil, respectively. Then using equation 4.1, the extraction efficiency is calculated

$$\mathrm{EE}\ (\%) = \frac{C_B - C_A}{C_B} \times 100 \qquad (4.1)$$

$$\mathrm{EE}\ (\%) = \frac{68.9\mathrm{mgCu}^{2+}/\mathrm{kgsoil} - 53.8\mathrm{mgCu}^{2+}/\mathrm{kgsoil}}{68.9\mathrm{mgCu}^{2+}/\mathrm{kgsoil}} \times 100$$

$$\mathrm{EE} = 21.9\%$$

The extraction efficiency of copper from silt at 10.34 MPa and 40°C with 5% moisture content (2002-01-24) is 21.9%. The extraction efficiency is calculated in the same manner for every SFE experiment. A complete summary of the calculated extraction efficiencies will be given in Appendix B4.

APPENDIX B4

Appendix B4 Solvent trap data and extraction summary table

The solvent trap data measured using a Pharmacia Biotech Novaspec II spectrophotometer for each extraction experiment is presented here. Following this data will be a summary of the concentration, the extraction efficiency and the mass balance for each extraction experiment.

Calibration curve

The calibration curve was plotted with using $Cu(tta)_2$ in methanol solution. The absorbance was measured at 420 nm.

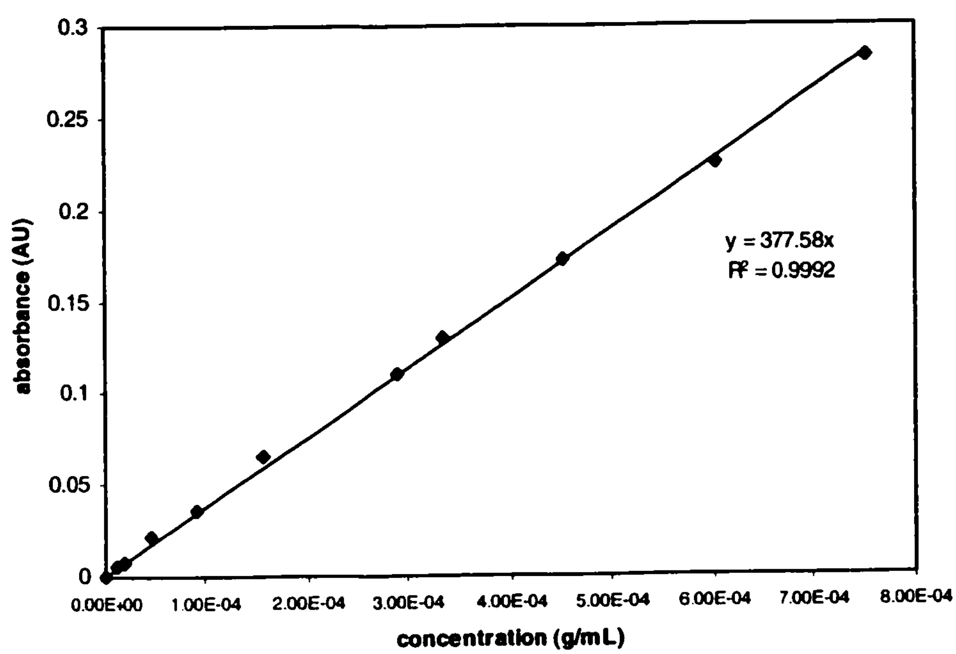

Figure B.8 Calibration curve for spectrophotometer at 420 nm

Solvent trap analysis

For each experiment the mass balance was calculated with and without the correction for atomic absorption instrument drift.

Sand, 10.34 MPa, 40°C, 0% water

2001-08-26

sample	Abs1 (AU)	Abs2 (AU)	Abs 3 (AU)	Ave absorbance (AU)	Concentration (g/mL)	Volume (mL)	Cu(tta)2 collected (g)
08/26/01(09/02/01)							
2001-08-26-E.xls							
trap 1							
trap on before starting	0.018	0.023	0.013	0.0180	4.77E-05	3.1	1.48E-04
0 to 7600s				#DIV/0!	#DIV/0!	0	0.00E+00
7600s to 13150s	0.008	0.009	0.008	0.0083	2.21E-05	8.8	1.94E-04
13150s to 18450s	0.004	0.003	0.004	0.0037	9.71E-06	3.7	3.59E-05
last trap	0.225	0.224	0.224	0.2243	5.94E-04	2.9	1.72E-03
							1.95E-03
trap 2							
trap before starting	0.001	0.001	0.001	0.0010	2.65E-06	3.5	9.27E-06
0 to 7600s	0	0	0	0.0000	0.00E+00	6.8	0.00E+00
7600s to 13200s	0.003	0.004	0.003	0.0033	8.83E-06	6	5.30E-05
13200s to 18500s	0	0.001	0	0.0003	8.83E-07	7.3	6.44E-06
last trap	0.001	0	0.001	0.0007	1.77E-06	5.9	1.04E-05
							6.98E-05
vessel							
vessel and beads	0.006	0.006	0.006	0.0060	1.59E-05	42	6.67E-04
tubing(vessel to 3 way-valve)	0	0	0	0.0000	0.00E+00	6.5	0.00E+00
glass wool	0.019	0.013	0.016	0.0160	4.24E-05	14.9	6.31E-04
tubing(trap 1)	0.049	0.05	0.049	0.0493	1.31E-04	16	2.09E-03
tubing (trap 2)	0	0	0	0.0000	0.00E+00	5.2	0.00E+00
							3.39E-03

	Not corrected
soil in vessel(g)	7.0259
soil Conc (mg Cu2+/kg soil)	51.81
total initial copper in soil(mg)	0.364011879

EE(%)	2.01E+01
residual copper in soil copper(mg)	2.91E-01
total cu(tta)2 in traps (g)	5.41E-03
trap converted to Cu (g)	6.80E-04
total cu after (mg)	9.71E-01
mass balance (%)	2.67E+02
	267.00%

2001-08-30

sample	Abs1 (AU)	Abs2 (AU)	Abs 3 (AU)	Ave absorbance (AU)	Concentration (g/mL)	Volume (mL)	Cu(tta)2 collected (g)
08/30/01(09/25/01)							
2001-08-30-E.xls							
trap 1							
0 to 6800s	0.02	0.018	0.019	0.0190	0.0001	11	5.54E-04
6800s to 8160s	0.058	0.059	0.057	0.0580	0.0002	7.5	1.15E-03
8160s to 8800s	0.05	0.051	0.05	0.0503	0.0001	4.5	6.00E-04
8800s to 9800s	0.037	0.037	0.036	0.0367	0.0001	7	6.80E-04
9800s to 10600s	0.03	0.027	0.029	0.0287	0.0001	5.75	4.37E-04
10600s to 11500s	0.026	0.026	0.026	0.0260	0.0001	6.5	4.48E-04
11500s to 12400s	0.024	0.023	0.023	0.0233	0.0001	6	3.71E-04
12400s to 18600s	0.012	0.011	0.013	0.0120	0.0000	4.5	1.43E-04
18600s to 19770s	0.08	0.083	0.082	0.0817	0.0002	6.5	1.41E-03
19770s to 2100s	0.033	0.034	0.032	0.0330	0.0001	8.5	7.43E-04
2100s to 21500s	0.027	0.026	0.026	0.0263	0.0001	3.5	2.44E-04
21500s to 22400s	0.021	0.02	0.022	0.0210	0.0001	6	3.34E-04
22400s to 23380s	0.024	0.023	0.023	0.0233	0.0001	4.5	2.78E-04
23380s to 24200s	0.016	0.016	0.016	0.0160	0.0000	7.25	3.07E-04
							7.14E-03
trap 2							
0 to 6850s	0.001	0	0	0.0003	0.0000	6.5	5.74E-06
6850s to 11450s	0.002	0.002	0.002	0.0020	0.0000	5.75	3.05E-05
11450s to 18650s	0	0.002	0	0.0007	0.0000	6	1.06E-05
last trap	0.001	0	0.002	0.0010	0.0000	6.5	1.72E-05
							5.83E-05
vessel cleaning	0.011	0.013	0.012	0.0120	0.0000	37.5	1.19E-03
vial 1	0.01	0.01	0.01	0.0100	0.0000	36.5	9.67E-04
vial 2	0.012	0.01	0.011	0.0110	0.0000	40	1.17E-03
vial 3	0.013	0.011	0.012	0.0120	0.0000	37.5	1.19E-03
vial 4	0.012	0.011	0.011	0.0113	0.0000	38.5	1.16E-03
vial 5	0.013	0.013	0.013	0.0130	0.0000	38.25	1.32E-03
vial 6	0.01	0.014	0.012	0.0120	0.0000	39.75	1.26E-03
vial 7	0.013	0.013	0.013	0.0130	0.0000	6.5	2.24E-04

tubing cleaning	0.002	0.003	0.003	0.0027	0.0000	7	4.94E-05
							8.52E-03

	Not corrected
soil in vessel(g)	7.0201
soil Conc (mg Cu/kgsoil)	51.81
total initial copper in soil (mg)	0.363711381
EE(%)	2.01E+01
residual copper in soil (mg)	2.91E-01
total cu(tta)2 in traps (g)	1.57E-02
trap converted to Cu (g)	1.98E-03
total cu after (mg)	2.27E+00
mass balance (%)	6.23E+02
	623.00%

2001-08-31

sample	Abs1 (AU)	Abs2 (AU)	Abs 3 (AU)	Ave absorbance (AU)	Concentration (g/mL)	Volume (mL)	Cu(tta)2 collected (g)
08/31/01(10/17/01)							
2001-08-29-E2.xls							
trap 1							
0 to 7450s	0.021	0.021	0.021	0.0210	0.0001	8.1	4.51E-04
7450s to 8700s	0.052	0.052	0.052	0.0520	0.0001	5.9	8.13E-04
8700s to 9600s	0.033	0.034	0.033	0.0333	0.0001	6.5	5.74E-04
9600s to 10500s	0.027	0.027	0.027	0.0270	0.0001	6.5	4.65E-04
10500s to 11400s	0.028	0.029	0.029	0.0287	0.0001	6.6	5.01E-04
11400s to 12300s	0.037	0.037	0.037	0.0370	0.0001	6.5	6.37E-04
12300s to 13200s	0.028	0.029	0.029	0.0287	0.0001	6.4	4.86E-04
2nd static	0.025	0.025	0.024	0.0247	0.0001	4	2.61E-04
18600s to 19500s	0.043	0.042	0.042	0.0423	0.0001	5.5	6.17E-04
19500s to 20400s	0.027	0.027	0.027	0.0270	0.0001	6.5	4.65E-04
20400s to 21300s	0.02	0.021	0.02	0.0203	0.0001	6.4	3.45E-04
21300s to 22200s	0.02	0.02	0.019	0.0197	0.0001	6.4	3.33E-04
22200s to 23100s	0.014	0.014	0.014	0.0140	0.0000	6.5	2.41E-04
23100s to 23900s	0.018	0.018	0.018	0.0180	0.0000	7	3.34E-04
							6.07E-03
trap 2							
0 to 7450s	0	0	0	0.0000	0.0000	5.1	0.00E+00
after 1st dynamic	0.006	0.004	0.004	0.0047	0.0000	5.4	6.67E-05

2nd static	0	0	0	0.0000	0.0000	4.7	0.00E+00
end of 2nd dynamic	0.003	0.002	0.002	0.0023	0.0000	7.3	4.51E-05
							1.12E-04
vessel cleaning							
vial 1	0.018	0.017	0.018	0.0177	0.0000	37.3	1.75E-03
vial 2	0.019	0.019	0.019	0.0190	0.0001	37.7	1.90E-03
vial 3	0.02	0.02	0.02	0.0200	0.0001	35.5	1.88E-03
vial 4	0.018	0.018	0.018	0.0180	0.0000	34.8	1.66E-03
vial 5	0.025	0.027	0.028	0.0267	0.0001	14.6	1.03E-03
tubing clean. trap 1	0.012	0.015	0.014	0.0137	0.0000	6.7	2.43E-04
tubing clean. trap 2	0	0	0	0.0000	0.0000	6.9	0.00E+00
							8.46E-03

	Not corrected
soil in vessel(g)	6.1206
soil Conc (mg Cu2+/kg soil)	51.81
total initial copper in soil(mg)	0.317108286
EE(%)	2.01E+01
residual copper in soil (mg)	2.54E-01
total cu(tta)2 in traps (g)	1.46E-02
trap converted to Cu (g)	1.84E-03
total cu after (mg)	2.09E+00
mass balance (%)	6.60E+02
	660.00%

Sand, 10.34MPa, 40°C, 5%water

2001-10-29

sample	Abs1 (AU)	Abs2 (AU)	Abs 3 (AU)	Ave absorbance (AU)	Concentration (g/mL)	Volume (mL)	Cu(tta)2 collected (g)
10/29/01(12/04/01)							
2001-10-29-E.xls							
trap 1							
0 to 6500s	0.023	0.022	0.023	0.0227	6.00E-05	5.5	3.30E-04
6500s to 7600s (Br.orang.)	0.899	0.909	0.842	0.8833	2.34E-03	6.2	1.45E-02
7600s to 8500s(orange)	0.73	0.639	0.739	0.7027	1.86E-03	6.3	1.17E-02
8500s to 9400s	0.575	0.575	0.579	0.5763	1.53E-03	6.4	9.77E-03
9400s to 10300s	0.462	0.472	0.471	0.4683	1.24E-03	6.5	8.06E-03
10300s to 11200s	0.509	0.514	0.511	0.5113	1.35E-03	5.2	7.04E-03

11200s to 12100s	0.486	0.489	0.488	0.4877	1.29E-03	4.7	6.07E-03
12100s to 17300s	0.002	0.002	0.001	0.0017	4.41E-06	5.9	2.60E-05
17300s to 18400s	0.513	0.523	0.523	0.5197	1.38E-03	6	8.26E-03
18400s to 19300s	0.411	0.416	0.417	0.4147	1.10E-03	6	6.59E-03
19300s to 20200s	0.285	0.282	0.289	0.2853	7.56E-04	6.5	4.91E-03
20200s to 21100s	0.256	0.257	0.258	0.2570	6.81E-04	6.1	4.15E-03
21100s to 22000s	0.239	0.244	0.243	0.2420	6.41E-04	5.5	3.53E-03
22000s to 22900s	0.19	0.192	0.194	0.1920	5.09E-04	5	2.54E-03
							8.72E-02
trap 2							
0 to 6500s	0.007	0.001	0	0.0027	7.06E-06	4.5	3.18E-05
6500s to 12100s	0.008	0.009	0.009	0.0087	2.30E-05	3.1	7.12E-05
12100s to 17300s	0.007	0	0.001	0.0027	7.06E-06	7.3	5.16E-05
17300s to 22950s	0.004	0	0.004	0.0027	7.06E-06	5.4	3.81E-05
							1.61E-04
vessel cleaning	0.103	0.1	0.102	0.1017	2.69E-04	24.1	6.49E-03
vial 1	0.033	0.035	0.035	0.0343	9.09E-05	38.5	3.50E-03
vial 2	0.036	0.034	0.037	0.0357	9.45E-05	40.2	3.80E-03
vial 3	0.032	0.037	0.034	0.0343	9.09E-05	42.3	3.85E-03
vial 4	0.034	0.033	0.033	0.0333	8.83E-05	41.9	3.70E-03
vial 5	0.034	0.035	0.036	0.0350	9.27E-05	42.1	3.90E-03
vial 6	0.034	0.036	0.033	0.0343	9.09E-05	41.8	3.80E-03
tubing cleaning trap 1	0.091	0.091	0.091	0.0910	2.41E-04	3.2	7.71E-04
tubing cleaning trap 2	0.003	0.002	0.001	0.0020	5.30E-06	5.7	3.02E-05
							2.98E-02

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	not corr	corr
soil in vessel(g)	7.0193	7.0193
soil Conc (mg Cu2+/kg soil)	29.45	42.33
total initial copper in soil(mg)	0.20671839	0.297126969
EE(%)	7.95E+01	53.82
residual copper in soil mg)	4.24E-02	1.37E-01
total cu(tta)2 in traps (g)	1.17E-01	1.17E-01
trap converted to Cu (g)	1.47E-02	1.47E-02
total cu after (mg)	1.48E+01	1.49E+01
mass balance (%)	7.15E+03	5.00E+03
	7150.00%	5000.00%

2001-10-30

sample	Abs1 (AU)	Abs2 (AU)	Abs 3 (AU)	Ave absorbance (AU)	Concentration (g/mL)	Volume (mL)	Cu(tta)2 collected (g)
10/30/01(11/09/01)							
2001-10-30-E.xls							
trap 1							
0 to 6500s	0.009	0.005	0.009	0.0077	2.03E-05	10.5	2.13E-04
6500s to 7600s(br. orang.)	0.615	0.622	0.625	0.6207	1.64E-03	6.2	1.02E-02
7600s to 8500s(orange)	0.501	0.53	0.529	0.5200	1.38E-03	6.5	8.95E-03
8500s to 9400s	0.401	0.426	0.426	0.4177	1.11E-03	6.9	7.63E-03
9400s to 10300s	0.363	0.089	0.095	0.1823	4.83E-04	5.5	2.66E-03
10300s to 11200s	0.277	0.282	0.283	0.2807	7.43E-04	6.4	4.76E-03
11200s to 12100s	0.235	0.249	0.253	0.2457	6.51E-04	6.5	4.23E-03
12100s to 17300s	0.016	0.016	0.011	0.0143	3.80E-05	6	2.28E-04
17300s to 18400s	0.451	0.434	0.461	0.4487	1.19E-03	5.9	7.01E-03
18400s to 19300s	0.314	0.313	0.317	0.3147	8.33E-04	6.3	5.25E-03
19300s to 20200s	0.248	0.25	0.251	0.2497	6.61E-04	6.5	4.30E-03
20200s to 21100s	0.202	0.202	0.203	0.2023	5.36E-04	6.4	3.43E-03
21100s to 22000s	0.168	0.17	0.169	0.1690	4.48E-04	6.3	2.82E-03
22000s to 22900s	0.155	0.158	0.158	0.1570	4.16E-04	5.8	2.41E-03
							6.39E-02
trap 2							
0 to 6500s	0.003	0	0	0.0010	2.65E-06	6.9	1.83E-05
6500s to 12100s	0.008	0.01	0.01	0.0093	2.47E-05	5.5	1.36E-04
12100s to 17300s	0.001	0	0.002	0.0010	2.65E-06	5.3	1.40E-05
17300s to 22950s	0	0	0.003	0.0010	2.65E-06	5.9	1.56E-05
							1.66E-04
vessel cleaning							
vial 1	0.032	0.027	0.028	0.0290	7.68E-05	38.7	2.97E-03
vial 2	0.026	0.03	0.027	0.0277	7.33E-05	39.6	2.90E-03
vial 3	0.026	0.031	0.03	0.0290	7.68E-05	39.1	3.00E-03
vial 4	0.03	0.029	0.031	0.0300	7.95E-05	15.7	1.25E-03
tubing cleaning trap 1	0.05	0.048	0.049	0.0490	1.30E-04	5.5	7.14E-04
tubing cleaning trap2	0	0	0	0.0000	0.00E+00	5.5	0.00E+00
							1.08E-02

	not corr	corr
soil in vessel(g)	7.0028	7.0028

soil Conc (mg Cu2+/kg soil)	29.45	42.33
total initial copper in soil(mg)	0.2062325	0.296428524
EE(%)	7.95E+01	53.8
residual copper in soil(mg)	4.23E-02	1.37E-01
total cu(tta)2 in traps (g)	7.49E-02	7.49E-02
trap converted to Cu (g)	9.41E-03	9.41E-03
total cu after (mg)	9.45E+00	9.55E+00
mass balance (%)	4.58E+03	3.22E+03
	4580.00%	3220.00%

2001-10-31

sample	Abs1 (AU)	Abs2 (AU)	Abs 3 (AU)	Ave absorbance (AU)	Concentration (g/mL)	Volume (mL)	Cu(tta)2 collected (g)
10/31/01(12/04/01)							
2001-10-31-E.xls							
trap 1							
0 to 6400s	0.019	0.016	0.018	0.0177	4.68E-05	7.3	3.42E-04
6400s to 7500s	0.245	0.246	0.246	0.2457	6.51E-04	6	3.90E-03
7500s to 8400s	0.194	0.198	0.196	0.1960	5.19E-04	6.5	3.37E-03
8400s to 9300s	0.171	0.178	0.176	0.1750	4.63E-04	6.6	3.06E-03
9300s to 10200s	0.158	0.159	0.161	0.1593	4.22E-04	6.2	2.62E-03
10200s to 11100s	0.136	0.138	0.139	0.1377	3.65E-04	6.4	2.33E-03
11100s to 12000s	0.117	0.118	0.117	0.1173	3.11E-04	6.6	2.05E-03
12000s to 17200s	0.001	0.002	0.001	0.0013	3.53E-06	6.7	2.37E-05
17200s to 18300s	0.294	0.298	0.298	0.2967	7.86E-04	6	4.71E-03
18300s to 19200s	0.205	0.207	0.201	0.2043	5.41E-04	6.4	3.46E-03
19200s to 20100s	0.183	0.187	0.187	0.1857	4.92E-04	6	2.95E-03
20100s to 21000s	0.16	0.161	0.163	0.1613	4.27E-04	5.9	2.52E-03
21000s to 21900s	0.133	0.135	0.136	0.1347	3.57E-04	6.5	2.32E-03
21900s to 22800s	0.117	0.119	0.122	0.1193	3.16E-04	6.2	1.96E-03
							3.53E-02
trap 2							
0 to 6400s	0	0	0	0.0000	0.00E+00	5.6	0.00E+00
6400s to 12050s	0.009	0.007	0.006	0.0073	1.94E-05	5	9.71E-05
12050s to 17200s	0	0	0	0.0000	0.00E+00	5	0.00E+00
17200s to 22850s	0	0	0	0.0000	0.00E+00	6.1	0.00E+00
							9.71E-05
vessel cleaning							
vial 1(yellowish)	0.047	0.045	0.045	0.0457	1.21E-04	40.3	4.87E-03
vial 2	0.045	0.044	0.046	0.0450	1.19E-04	40.8	4.86E-03
vial 3	0.043	0.045	0.046	0.0447	1.18E-04	41.7	4.93E-03

vial 4	0.04	0.039	0.041	0.0400	1.06E-04	34.1	3.61E-03
							1.83E-02

	not corr	corr
soil in vessel(g)	7.13	7.13
soil Conc (mg Cu2+/kg soil)	38.52	39.8
total initial copper in soil(mg)	0.2746476	0.283774
EE(%)	2.38E+01	12.53
residual copper in soil (mg)	2.09E-01	2.48E-01
total cu(tta)2 in traps (g)	5.37E-02	5.37E-02
trap converted to Cu (g)	6.75E-03	6.75E-03
total cu after (mg)	6.96E+00	7.00E+00
mass balance (%)	2.53E+03	2.47E+03
	2530.00%	2470.00%

Sand, 10.34MPa, 40°C, 10%water

2001-11-27

sample	Abs1 (AU)	Abs2 (AU)	Abs 3 (AU)	Ave absorbance (AU)	Concentration (g/mL)	Volume (mL)	Cu(tta)2 collected (g)
11/27/01(12/04/01)							
2001-11-27-E.xls							
trap 1							
0 to 6300s	0.165	0.164	0.164	0.1643	4.35E-04	4.8	2.09E-03
6300s to 7400s (br. orange)	0.978	1.008	1.006	0.9973	2.64E-03	6	1.58E-02
7400s to8300s(orange)	0.716	0.725	0.724	0.7217	1.91E-03	6.1	1.17E-02
8300s to 9200s	0.548	0.55	0.547	0.5483	1.45E-03	6.3	9.15E-03
9200s to 10100s	0.487	0.491	0.49	0.4893	1.30E-03	6.1	7.91E-03
10100s to 11000s	0.374	0.376	0.396	0.3820	1.01E-03	6	6.07E-03
11000s to 11900s	0.342	0.376	0.375	0.3643	9.65E-04	5.5	5.31E-03
11900s to 17100s	0.018	0.016	0.015	0.0163	4.33E-05	5.2	2.25E-04
17100s to 18200s	0.364	0.364	0.357	0.3617	9.58E-04	6	5.75E-03
18200s to 19100s	0.285	0.281	0.292	0.2860	7.57E-04	6.4	4.85E-03
19100s to 20000s	0.255	0.26	0.259	0.2580	6.83E-04	6.1	4.17E-03
20000s to 20900s	0.161	0.168	0.163	0.1640	4.34E-04	6.4	2.78E-03
20900s to 22300s	0.108	0.109	0.11	0.1090	2.89E-04	6	1.73E-03
22300s to 23200s	0.086	0.086	0.088	0.0867	2.30E-04	6	1.38E-03
							7.68E-02
trap 2							
0 to 6300s	0.001	0.001	0.001	0.0010	2.65E-06	4.1	1.09E-05

6300s to 11950s	0.004	0.002	0	0.0020	5.30E-06	6.4	3.39E-05
11950s to 17100s	0	0.001	0	0.0003	8.83E-07	4.6	4.06E-06
17100s to 23250s	0.002	0.002	0	0.0013	3.53E-06	5.6	1.98E-05
							5.77E-05
vessel cleaning and bead cleaning							
vial 1	0.36	0.356	0.361	0.3590	9.51E-04	38.1	3.62E-02
vial 2	0.355	0.363	0.361	0.3597	9.53E-04	18.2	1.73E-02
vial1	0.133	0.132	0.137	0.1340	3.55E-04	39.5	1.40E-02
vial2	0.136	0.136	0.136	0.1360	3.60E-04	34.6	1.25E-02
tubing cleaning trap 1	0.085	0.084	0.082	0.0837	2.22E-04	3.6	7.98E-04
tubing cleaning trap 2	0.005	0.001	0.004	0.0033	8.83E-06	5.5	4.86E-05
							8.09E-02

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	not corr	corr
soil in vessel(g)	7.0549	7.0549
soil Conc (mg Cu2+/kg soil)	42.38	33.96
total initial copper in soil(mg)	0.298986662	0.239584404
EE(%)	3.07E+01	36.93
residual copper in soil (mg)	2.07E-01	1.51E-01
total cu(tta)2 in traps (g)	1.58E-01	1.58E-01
trap converted to Cu (g)	1.98E-02	1.98E-02
total cu after (mg)	2.00E+01	2.00E+01
mass balance (%)	6.70E+03	8.34E+03
	6700.00%	8340.00%

2001-11-29

sample	Abs1 (AU)	Abs2 (AU)	Abs 3 (AU)	Ave absorbance (AU)	Concentration (g/mL)	Volume (mL)	Cu(tta)2 collected (g)
11/29/01(12/04/01)							
2001-11-29-E.xls							
trap 1							
0 to 6600s	0.033	0.028	0.031	0.0307	8.12E-05	7.9	6.42E-04
6600s to 7700s(orange)	0.602	0.568	0.564	0.5780	1.53E-03	5.6	8.57E-03
7700s to 8600s	0.422	0.427	0.424	0.4243	1.12E-03	6.3	7.08E-03
8600s to 9500s	0.352	0.363	0.362	0.3590	9.51E-04	5.9	5.61E-03
9500s to 10450s	0.269	0.269	0.275	0.2710	7.18E-04	6.2	4.45E-03
10450s to 11100s and 11600s to 11800s	0.232	0.233	0.232	0.2323	6.15E-04	6	3.69E-03

11800s to 12700s	0.152	0.153	0.154	0.1530	4.05E-04	6.5	2.63E-03
12700s to 17900s	0.008	0.007	0.006	0.0070	1.85E-05	5.6	1.04E-04
17900s to 18900s	0.25	0.249	0.255	0.2513	6.66E-04	5.5	3.66E-03
18900s to 19900s	0.185	0.194	0.187	0.1887	5.00E-04	7.4	3.70E-03
19900s to 20800s	0.15	0.155	0.152	0.1523	4.03E-04	6.5	2.62E-03
20800s to 21700s	0.134	0.134	0.132	0.1333	3.53E-04	6.1	2.15E-03
21900s to 22600s	0.115	0.118	0.117	0.1167	3.09E-04	6	1.85E-03
22600s to 23500s	0.088	0.087	0.088	0.0877	2.32E-04	6.8	1.58E-03
							4.77E-02

trap 2							
0 to 6600s	0.003	0	0.004	0.0023	6.18E-06	6.5	4.02E-05
6600s to 12750s	0.003	0	0.005	0.0027	7.06E-06	6.6	4.66E-05
12750s to 17900s	0.005	0.003	0.001	0.0030	7.95E-06	5.1	4.05E-05
17900s to 23550s	0.007	0.006	0.002	0.0050	1.32E-05	6.4	8.48E-05
							1.72E-04

vessel cleaning							
vial 1	0.05	0.054	0.052	0.0520	1.38E-04	38.7	5.33E-03
vial 2	0.052	0.051	0.052	0.0517	1.37E-04	42	5.75E-03
vial 3	0.054	0.054	0.054	0.0540	1.43E-04	41.2	5.89E-03
vial 4	0.051	0.05	0.055	0.0520	1.38E-04	39	5.37E-03
vial 5	0.06	0.059	0.056	0.0583	1.54E-04	16.3	2.52E-03
tubing cleaning trap 1	0.061	0.059	0.059	0.0597	1.58E-04	3	4.74E-04
tubing cleaning trap2	0.002	0.005	0.002	0.0030	7.95E-06	6.5	5.16E-05
							2.54E-02

	not corr	corr
soil in vessel(g)	7.0349	7.0349
soil Conc (mg Cu2+/kg soil)	42.31	33.96
total initial copper in soil(mg)	0.297646619	0.238905204
EE(%)	3.07E+01	36.93
residual copper in soil (mg)	2.06E-01	1.51E-01
total cu(tta)2 in traps (g)	7.33E-02	7.33E-02
trap converted to Cu (g)	9.21E-03	9.21E-03
total cu after (mg)	9.42E+00	9.36E+00
mass balance (%)	3.16E+03	3.92E+03
	3160.00%	3920.00%

2001-12-03

sample	Abs1 (AU)	Abs2 (AU)	Abs 3 (AU)	Ave absorbance (AU)	Concentration (g/mL)	Volume (mL)	Cu(tta)2 collected (g)
12/03/01(12/14/01)							
2001-12-03-E.xls							
trap 1							
0 to 6200s	0.033	0.036	0.034	0.0343	9.09E-05	8.5	7.73E-04
6200s to 7300s	0.391	0.396	0.398	0.3950	1.05E-03	6.3	6.59E-03
7300s to 8200s	0.349	0.351	0.353	0.3510	9.30E-04	5.9	5.48E-03
8200s to 9100s	0.3	0.293	0.306	0.2997	7.94E-04	5.5	4.37E-03
9100s to 10000s	0.23	0.234	0.232	0.2320	6.14E-04	6	3.69E-03
10000s to 10400s and 10800s to 11300s	0.204	0.202	0.21	0.2053	5.44E-04	6.2	3.37E-03
11300s to 12200s	0.176	0.179	0.178	0.1777	4.71E-04	5.6	2.64E-03
12200s to 17400s	0.011	0.005	0.009	0.0083	2.21E-05	6	1.32E-04
17400s to 18500s	0.272	0.286	0.286	0.2813	7.45E-04	6	4.47E-03
18500s to 19400s	0.207	0.206	0.211	0.2080	5.51E-04	6.2	3.42E-03
19400s to 20300s	0.164	0.166	0.167	0.1657	4.39E-04	6	2.63E-03
20300s to 21200s	0.135	0.136	0.136	0.1357	3.59E-04	6	2.16E-03
21200s to 22100s	0.088	0.088	0.085	0.0870	2.30E-04	6.2	1.43E-03
22100s to 23000s	0.101	0.104	0.104	0.1030	2.73E-04	6	1.64E-03
							4.20E-02
trap 2							
0 to 6200s	0	0.001	0	0.0003	8.83E-07	6.2	5.47E-06
6200s to 1400s and 10800s to 12250s	0.004	0.004	0.003	0.0037	9.71E-06	4.2	4.08E-05
12250s to 17400s	0.001	0	0.001	0.0007	1.77E-06	6.8	1.20E-05
17400s to 23050s	0.008	0.003	0.002	0.0043	1.15E-05	5.5	6.31E-05
							1.16E-04
vessel cleaning							
vial 1	0.038	0.033	0.039	0.0367	9.71E-05	41.7	4.05E-03
vial 2	0.037	0.037	0.034	0.0360	9.53E-05	40.4	3.85E-03
vial 3	0.034	0.035	0.033	0.0340	9.00E-05	41.6	3.75E-03
vial 4	0.038	0.034	0.04	0.0373	9.89E-05	30.7	3.04E-03
tubing cleaning trap 1	0.02	0.014	0.013	0.0157	4.15E-05	6.2	2.57E-04
tubing cleaning trap 2	0.002	0.006	0.001	0.0030	7.95E-06	6	4.77E-05
							1.50E-02

	not corr	corr
soil in vessel(g)	7.0106	7.0106
soil Conc (mg Cu2+/kg soil)	42.38	33.96
total initial copper in soil(mg)	0.29710923	0.238079976

EE(%)	3.07E+01	36.93
residual copper in soil (mg)	2.06E-01	1.50E-01
total cu(tta)2 in traps (g)	5.71E-02	5.71E-02
trap converted to Cu (g)	7.18E-03	7.18E-03
total cu after (mg)	7.39E+00	7.33E+00
mass balance (%)	2.49E+03	3.08E+03
	2490.00%	3080.00%

Sand, 9.65MPa, 40°C, 0%water

2001-10-12

sample	Abs1 (AU)	Abs2 (AU)	Abs 3 (AU)	Ave absorbance (AU)	Concentration (g/mL)	Volume (mL)	Cu(tta)2 collected (g)
10/12/01(10/22/01)							
2001-10-12-E.xls							
trap 1							
0 to 6200s	0.001	0	0	0.0003	8.83E-07	6.5	5.74E-06
6200s to 7300s(orange)	0.17	0.17	0.17	0.1700	4.50E-04	6.5	2.93E-03
7300s to 8200s	0.0125	0.0126	0.125	0.0500	1.33E-04	6.5	8.61E-04
8200s to 9100s	0.095	0.095	0.096	0.0953	2.52E-04	6.4	1.62E-03
9100s to 10000s	0.083	0.083	0.083	0.0830	2.20E-04	6.1	1.34E-03
10000s to 10900s	0.075	0.075	0.075	0.0750	1.99E-04	5.7	1.13E-03
10900s to 11800s	0.066	0.066	0.066	0.0660	1.75E-04	5.4	9.44E-04
11800s to 17000s	0.001	0.001	0.001	0.0010	2.65E-06	7.5	1.99E-05
17000s to 18100s	0.077	0.077	0.077	0.0770	2.04E-04	6.1	1.24E-03
18100s to 19000s	0.048	0.048	0.048	0.0480	1.27E-04	6.3	8.01E-04
19000s to 19900s	0.043	0.043	0.043	0.0430	1.14E-04	5.7	6.49E-04
19900s to 20800s	0.035	0.034	0.034	0.0343	9.09E-05	5.5	5.00E-04
20800s to 21700s	0.028	0.029	0.028	0.0283	7.50E-05	5.3	3.98E-04
21700s to 22600s	0.025	0.025	0.025	0.0250	6.62E-05	5.1	3.38E-04
							1.28E-02
trap 2							
0 to 6200s	0	0	0	0.0000	0.00E+00	5.5	0.00E+00
6200s to 11850s	0.006	0.007	0.006	0.0063	1.68E-05	5.6	9.39E-05
11850s to 17000s	0	0	0	0.0000	0.00E+00	4.3	0.00E+00
17000s to 22650s	0.001	0.002	0.001	0.0013	3.53E-06	5.4	1.91E-05
							1.13E-04

vessel cleaning							
vial 1	0.02	0.02	0.02	0.0200	5.30E-05	37.1	1.97E-03
vial 2	0.021	0.021	0.021	0.0210	5.56E-05	37.9	2.11E-03
vial 3	0.023	0.021	0.021	0.0217	5.74E-05	5.6	3.21E-04
tubing cleaning trap1(green)	0.033	0.032	0.033	0.0327	8.65E-05	14.2	1.23E-03
tubing cleaning trap 2	0.002	0.001	0.001	0.0013	3.53E-06	5.6	1.98E-05
							5.64E-03

	not corr	corr
soil in vessel(g)	7.0714	7.0714
soil Conc (mg Cu2+/kg soil)	38.52	39.8
total initial copper in soil(mg)	0.272390328	0.28144172
EE(%)	2.38E+01	12.53
residual copper in soil (mg)	2.08E-01	2.46E-01
total cu(tta)2 in traps (g)	1.85E-02	1.85E-02
trap converted to Cu (g)	2.33E-03	2.33E-03
total cu after (mg)	2.54E+00	2.58E+00
mass balance (%)	9.31E+02	9.15E+02
	931.00%	915.00%

2001-10-14

sample	Abs1 (AU)	Abs2 (AU)	Abs 3 (AU)	Ave absorbance (AU)	Concentration (g/mL)	Volume (mL)	Cu(tta)2 collected (g)
10/14/01(10/22/01)							
2001-10-14-E.xls							
trap 1							
0 to 6700s	0.015	0.016	0.015	0.0153	4.06E-05	6.1	2.48E-04
6700s to 7800s(orange)	0.12	0.12	0.118	0.1193	3.16E-04	6.5	2.05E-03
7800s to 8700s	0.111	0.109	0.112	0.1107	2.93E-04	6.5	1.91E-03
8700s to 9670s	0.103	0.104	0.103	0.1033	2.74E-04	7	1.92E-03
9670s to10500s	0.094	0.089	0.095	0.0927	2.45E-04	5.5	1.35E-03
10500s to 11400s	0.084	0.084	0.086	0.0847	2.24E-04	5.6	1.26E-03
11400s to 12300s	0.08	0.08	0.081	0.0803	2.13E-04	5.1	1.09E-03
12300s to 17500s	0.003	0.003	0.003	0.0030	7.95E-06	7	5.56E-05
17500s to 18600s	0.106	0.106	0.106	0.1060	2.81E-04	6.2	1.74E-03
18600s to 19500s	0.062	0.063	0.063	0.0627	1.66E-04	6.5	1.08E-03
19500s to 20400s	0.052	0.052	0.051	0.0517	1.37E-04	6.4	8.76E-04
20400s to 21300s	0.05	0.05	0.05	0.0500	1.32E-04	5.7	7.55E-04
21300s to 22200s	0.033	0.033	0.033	0.0330	8.74E-05	5.7	4.98E-04

22200s to 23100s	0.029	0.029	0.029	0.0290	7.68E-05	5.6	4.30E-04
							1.50E-02
trap 2							
0 to 6700s	0.001	0	0.001	0.0007	1.77E-06	5.6	9.89E-06
6700s to 12350s	0.004	0.005	0.004	0.0043	1.15E-05	4.5	5.16E-05
12350s to 17500s	0.001	0.002	0	0.0010	2.65E-06	5.5	1.46E-05
17500s to 23150s	0.004	0.002	0.003	0.0030	7.95E-06	5.9	4.69E-05
						7.9	1.13E-04
vessel cleaning							
vial 1	0.034	0.034	0.035	0.0343	9.09E-05	39.6	3.60E-03
vial 2	0.034	0.034	0.035	0.0343	9.09E-05	38.8	3.53E-03
vial 3	0.033	0.033	0.034	0.0333	8.83E-05	12.9	1.14E-03
tubing cleaning trap 1	0.063	0.064	0.063	0.0633	1.68E-04	4.3	7.21E-04
tubing cleaning trap2	0.002	0.002	0.002	0.0020	5.30E-06	5.2	2.75E-05
							9.02E-03

	not corr	corr
soil in vessel(g)	7.2777	7.2777
soil Conc (mg Cu2+/kg soil)	38.52	39.8
total initial copper in soil(mg)	0.280337004	0.28965246
EE(%)	2.38E+01	12.53
residual copper in soil copper(mg)	2.14E-01	2.53E-01
total cu(tta)2 in traps (g)	2.41E-02	2.41E-02
trap converted to Cu (g)	3.03E-03	3.03E-03
total cu after (mg)	3.25E+00	3.29E+00
mass balance (%)	1.16E+03	1.13E+03
	1160.00%	1130.00%

2001-10-15

sample	Abs1 (AU)	Abs2 (AU)	Abs 3 (AU)	Ave absorbance (AU)	Concentration (g/mL)	Volume (mL)	Cu(tta)2 collected (g)
10/15/01(10/22/01)							
2001-10-15-E.xls							
trap 1							
0 to 6700s	0.013	0.013	0.013	0.013	3.44E-05	9.4	3.24E-04
6700s to 7800s	0.092	0.092	0.091	0.091666667	2.43E-04	6.7	1.63E-03
7800s to 8700s	0.08	0.08	0.08	0.08	2.12E-04	6.9	1.46E-03

8700s to 9600s	0.074	0.075	0.074	0.074333333	1.97E-04	6.5	1.28E-03
9600s to 10500s	0.063	0.063	0.064	0.063333333	1.68E-04	6.9	1.16E-03
10500s to 11400s	0.06	0.06	0.06	0.06	1.59E-04	6.8	1.08E-03
11400s to 12300s	0.052	0.052	0.052	0.052	1.38E-04	6.5	8.95E-04
12300s to 17500s	0.005	0.004	0.004	0.004333333	1.15E-05	5	5.74E-05
17500s to 18600s	0.075	0.074	0.074	0.074333333	1.97E-04	6.4	1.26E-03
18600s to 19500s	0.042	0.042	0.042	0.042	1.11E-04	6.6	7.34E-04
19500s to 20400s	0.04	0.041	0.04	0.040333333	1.07E-04	6	6.41E-04
20400s to 21300s	0.031	0.031	0.031	0.031	8.21E-05	6	4.93E-04
21300s to 22200s	0.028	0.027	0.028	0.027666667	7.33E-05	5.6	4.10E-04
22200s to 23100s	0.023	0.023	0.023	0.023	6.09E-05	5.6	3.41E-04
							1.14E-02
trap 2							
0 to 6700s	0.001	0.001	0.001	0.001	2.65E-06	5.3	1.40E-05
6700s to 12350s	0.004	0.005	0.004	0.004333333	1.15E-05	5.9	6.77E-05
12350s to 17500s	0.003	0.004	0.003	0.003333333	8.83E-06	6	5.30E-05
17500s to 23150s	0.002	0.003	0.002	0.002333333	6.18E-06	6	3.71E-05
							1.58E-04
vessel cleaning							
vial 1	0.02	0.02	0.02	0.02	5.30E-05	38.3	2.03E-03
vial 2	0.02	0.02	0.02	0.02	5.30E-05	41	2.17E-03
vial 3	0.019	0.02	0.019	0.019333333	5.12E-05	40.7	2.08E-03
vial 4	0.02	0.019	0.02	0.019666667	5.21E-05	7.5	3.91E-04
tubing cleaning trap 1	0.052	0.055	0.053	0.053333333	1.41E-04	5.9	8.33E-04
tubing cleaning trap 2	0	0	0	0	0.00E+00	6	0.00E+00
							7.51E-03

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	not corr	corr
soil in vessel(g)	7.13	7.13
soil Conc (mg Cu2+/kg soil)	38.52	39.8
total initial copper in soil(mg)	0.2746476	0.283774
EE(%)	2.38E+01	12.53
residual copper in soil copper(mg)	2.09E-01	2.48E-01
total cu(tta)2 in traps (g)	1.91E-02	1.91E-02
trap converted to Cu (g)	2.40E-03	2.40E-03
total cu after (mg)	2.61E+00	2.65E+00
mass balance (%)	9.51E+02	9.34E+02
	951.00%	930.00%

Silt, 10.34MPa, 40°C, 0%water

2001-09-02

sample	Abs1 (AU)	Abs2 (AU)	Abs 3 (AU)	Ave absorbance (AU)	Concentration (g/mL)	Volume (mL)	Cu(tta)2 collected (g)
09/02/01(10/22/01)							
2001-09-02-E.xls							
trap 1							
0 to 6500s	0.014	0.016	0.015	0.0150	3.97E-05	6.9	2.74E-04
6500s to 7700s	0.066	0.066	0.066	0.0660	1.75E-04	7	1.22E-03
7700s to 8600s	0.062	0.064	0.062	0.0627	1.66E-04	6.6	1.10E-03
8600s to 9500s	0.058	0.06	0.059	0.0590	1.56E-04	6.5	1.02E-03
9500s to 10400s	0.052	0.054	0.052	0.0527	1.39E-04	6.3	8.79E-04
10400s to 11750s	0.044	0.043	0.044	0.0437	1.16E-04	9.5	1.10E-03
11750s to 12200s	0.048	0.048	0.048	0.0480	1.27E-04	3.3	4.20E-04
12200s to 17400s	0.01	0.007	0.007	0.0080	2.12E-05	6.3	1.33E-04
17400s to 18500s	0.066	0.066	0.065	0.0657	1.74E-04	6.5	1.13E-03
18500s to 19400s	0.046	0.046	0.045	0.0457	1.21E-04	6.5	7.86E-04
19400s to 20300s	0.049	0.049	0.049	0.0490	1.30E-04	6.5	8.44E-04
20300s to21200s	0.035	0.035	0.034	0.0347	9.18E-05	6.5	5.97E-04
21200s to 22100s	0.029	0.028	0.028	0.0283	7.50E-05	6.5	4.88E-04
22100s to 23100s	0.025	0.025	0.025	0.0250	6.62E-05	7	4.63E-04
							1.02E-02
trap 2							
0 to 6550s	0.002	0	0	0.0007	1.77E-06	9.4	1.66E-05
6550s to 12300s	0.003	0.003	0.003	0.0030	7.95E-06	5.1	4.05E-05
12300s to 17450s	0	0	0	0.0000	0.00E+00	7.5	0.00E+00
last trap	0.001	0.001	0.001	0.0010	2.65E-06	8.7	2.30E-05
							6.36E-05
vessel cleaning							
vial 1	0.025	0.026	0.026	0.0257	6.80E-05	39.8	2.71E-03
vial 2	0.025	0.026	0.027	0.0260	6.89E-05	37.6	2.59E-03
vial 3	0.026	0.026	0.026	0.0260	6.89E-05	37.7	2.60E-03
vial 4	0.031	0.031	0.031	0.0310	8.21E-05	38.5	3.16E-03
vial 5	0.043	0.042	0.042	0.0423	1.12E-04	34.4	3.86E-03
tubing cleaning trap 1	0.008	0.008	0.008	0.0080	2.12E-05	5.7	1.21E-04
tubing cleaning trap 2	0	0	0	0.0000	0.00E+00	9.1	0.00E+00
							1.50E-02

	not corr	corr
soil in vessel(g)	6.0396	6.0396
soil Conc (mg Cu2+/kg soil)	46.23	59.41
total initial copper in soil(mg)	0.2792107	0.358812636
EE(%)	1.68E+01	20.46
residual copper in soil(mg)	2.32E-01	2.85E-01
total cu(tta)2 in traps (g)	2.53E-02	2.53E-02
trap converted to Cu (g)	3.18E-03	3.18E-03
total cu after (mg)	3.41E+00	3.46E+00
mass balance (%)	1.22E+03	9.65E+02
	1220.00%	965.00%

2001-09-03

sample	Abs1 (AU)	Abs2 (AU)	Abs 3 (AU)	Ave absorbance (AU)	Concentration (g/mL)	Volume (mL)	Cu(tta)2 collected (g)
09/03/01(09/25/01)							
2001-09-03-E.xls							
trap 1							
0 to 6400s	0.009	0.014	0.013	0.0120	3.18E-05	6.5	2.07E-04
6400s to 7500s	0.119	0.119	0.12	0.1193	3.16E-04	7	2.21E-03
7500s to 8400s	0.118	0.116	0.117	0.1170	3.10E-04	6.5	2.01E-03
8400s to 9300s	0.1	0.098	0.099	0.0990	2.62E-04	6	1.57E-03
9300s to 10200s	0.073	0.077	0.075	0.0750	1.99E-04	6.4	1.27E-03
10200s to 11100s	0.074	0.073	0.073	0.0733	1.94E-04	6.5	1.26E-03
11100s to 12000s	0.071	0.069	0.07	0.0700	1.85E-04	6.25	1.16E-03
12000s to 17200s	0.006	0.006	0.006	0.0060	1.59E-05	6	9.53E-05
17200s to 18300s	0.09	0.094	0.092	0.0920	2.44E-04	7	1.71E-03
18300s to 19200s	0.066	0.064	0.065	0.0650	1.72E-04	6.5	1.12E-03
19200s to 20100s	0.057	0.057	0.056	0.0567	1.50E-04	6.25	9.38E-04
20100s to 21050s	0.048	0.045	0.047	0.0467	1.24E-04	6.5	8.03E-04
21050s to 21900s	0.045	0.044	0.044	0.0443	1.17E-04	5.5	6.46E-04
21900s to 22800s	0.035	0.037	0.033	0.0350	9.27E-05	6.5	6.03E-04
							1.54E-02
trap 2							
0 to 6450s	0.001	0.002	0.001	0.0013	3.53E-06	7.25	2.56E-05
6450s to 13350s	0.003	0.005	0.004	0.0040	1.06E-05	7.5	7.95E-05
13350s to 17250s	0.001	0.001	0.001	0.0010	2.65E-06	6.75	1.79E-05
last trap	0.004	0.002	0.003	0.0030	7.95E-06	7.5	5.96E-05

							1.57E-04
vessel cleaning							
vial 1	0.022	0.022	0.022	0.0220	5.83E-05	38.25	2.23E-03
vial 2	0.022	0.022	0.022	0.0220	5.83E-05	38	2.21E-03
vial 3	0.022	0.022	0.022	0.0220	5.83E-05	38.5	2.24E-03
tubing cleaning trap 1	0.013	0.015	0.012	0.0133	3.53E-05	3.5	1.24E-04
tubing cleaning trap2	0.004	0.005	0.003	0.0040	1.06E-05	4.5	4.77E-05
							6.86E-03

	not corr	corr
soil in vessel(g)	8.1227	8.1227
soil Conc (mg Cu2+/kg soil)	46.23	59.41
total initial copper in soil(mg)	0.37551242	0.482569607
EE(%)	1.68E+01	20.46
residual copper in soil(mg)	3.12E-01	3.84E-01
total cu(tta)2 in traps (g)	2.24E-02	2.24E-02
trap converted to Cu (g)	2.82E-03	2.82E-03
total cu after (mg)	3.13E+00	3.20E+00
mass balance (%)	8.34E+02	6.64E+02
	834.00%	664.00%

2001-09-04

sample	Abs1 (AU)	Abs2 (AU)	Abs 3 (AU)	Ave absorbance (AU)	Concentration (g/mL)	Volume (mL)	Cu(tta)2 collected (g)
09/04/01(09/20/01)							
2001-09-04-E.xls							
trap 1							
end of 1st static	0.005	0.006	0.005	0.0053	1.41E-05	8.5	1.20E-04
6700s to 7600s	0.111	0.111	0.111	0.1110	2.94E-04	6.5	1.91E-03
7600s to 8500s	0.092	0.097	0.095	0.0947	2.51E-04	6.5	1.63E-03
8500s to 9400s	0.086	0.084	0.085	0.0850	2.25E-04	7	1.58E-03
9400s to 10300s	0.085	0.085	0.085	0.0850	2.25E-04	6	1.35E-03
10300s to 11250s	0.073	0.075	0.074	0.0740	1.96E-04	7	1.37E-03
11250s to 12100s	0.057	0.067	0.055	0.0597	1.58E-04	6.75	1.07E-03
12100s to 17500s	0.003	0.006	0.006	0.0050	1.32E-05	5.5	7.28E-05
17500s to 18400s	0.106	0.108	0.107	0.1070	2.83E-04	7.25	2.05E-03
18400s to 19300s	0.069	0.074	0.07	0.0710	1.88E-04	6.5	1.22E-03
19300s to 20200s	0.058	0.055	0.056	0.0563	1.49E-04	6.5	9.70E-04

20200s to 21100s	0.042	0.046	0.044	0.0440	1.17E-04	7.25	8.45E-04
21100s to 22000s	0.039	0.037	0.04	0.0387	1.02E-04	5.5	5.63E-04
							1.46E-02
trap 2							
0 t06700s	0.011	0.004	0.005	0.0067	1.77E-05	6	1.06E-04
6700s to 12100s	0.006	0.006	0.006	0.0060	1.59E-05	8.75	1.39E-04
12100s to 17500s	0.009	0.01	0.009	0.0093	2.47E-05	5.5	1.36E-04
17500s to 22400s	0.005	0.005	0.006	0.0053	1.41E-05	7	9.89E-05
							3.74E-04
vessel cleaning							
vial 1	0.041	0.041	0.041	0.0410	1.09E-04	38	4.13E-03
vial 2	0.04	0.04	0.04	0.0400	1.06E-04	38	4.03E-03
vial 3	0.04	0.04	0.04	0.0400	1.06E-04	9	9.53E-04
tubing cleaning 1	0.01	0.01	0.01	0.0100	2.65E-05	6.2	1.64E-04
tubing cleaning 2	0	0.001	0	0.0003	8.83E-07	6.7	5.91E-06
							9.28E-03

	not corr	corr
soil in vessel(g)	7.9457	7.9457
soil Conc (mg Cu2+/kg soil)	46.23	59.41
total initial copper in soil(mg)	0.3673297	0.472054037
EE(%)	1.68E+01	20.46
residual copper in soil (mg)	3.06E-01	3.75E-01
total cu(tta)2 in traps (g)	2.43E-02	2.43E-02
trap converted to Cu (g)	3.05E-03	3.05E-03
total cu after (mg)	3.36E+00	3.43E+00
mass balance (%)	9.14E+02	7.26E+02
	914.00%	726.00%

Silt, 10.34MPa, 40°C, 5%water

2002-01-24

sample	Abs1 (AU)	Abs2 (AU)	Abs 3 (AU)	Ave absorbance (AU)	Concentration (g/mL)	Volume (mL)	Cu(tta)2 collected (g)
1/24/02							
2002-01-24-E.xls							
trap 1							
0 to 10250s	0.043	0.045	0.044	0.0440	1.17E-04	10.1	1.18E-03

10250s to 11300s	1.688	1.71	1.696	1.6980	4.50E-03	5.9	2.65E-02
11300s to 12100s	1.287	1.362	1.295	1.3147	3.48E-03	6	2.09E-02
12100s to 13000s	1.105	1.12	1.079	1.1013	2.92E-03	5.8	1.69E-02
1300s to 13900s	0.58	0.673	0.67	0.6410	1.70E-03	6	1.02E-02
13900s to 14800s	0.424	0.43	0.429	0.4277	1.13E-03	6.3	7.14E-03
14800s to 15700s	0.295	0.3	0.298	0.2977	7.88E-04	5.9	4.65E-03
15700s to 21050s	0.003	0.003	0.003	0.0030	7.95E-06	5.7	4.53E-05
21050s to 22000s	0.402	0.408	0.409	0.4063	1.08E-03	5.7	6.13E-03
22000s to 22900s	0.244	0.249	0.246	0.2463	6.52E-04	5.9	3.85E-03
22900s to 23800s	0.167	0.167	0.167	0.1670	4.42E-04	5.5	2.43E-03
23800s to 24700s	0.107	0.106	0.106	0.1063	2.82E-04	6.1	1.72E-03
24700s to 25600s	0.068	0.068	0.068	0.0680	1.80E-04	6.4	1.15E-03
25600s to 26500s	0.05	0.052	0.052	0.0513	1.36E-04	5.9	8.02E-04
							1.02E-01
trap 2							
0 to 10250s	0.002	0.001	0.001	0.0013	3.53E-06	8.1	2.86E-05
10250s to 15750s	0.007	0.007	0.007	0.0070	1.85E-05	3.5	6.49E-05
15750s to 21050s	0	0	0	0.0000	0.00E+00	6.9	0.00E+00
21050s	0.007	0.007	0.007	0.0070	1.85E-05	3.4	6.30E-05
							1.28E-04
vessel cleaning and bead cleaning							
vial 1	0.126	0.131	0.131	0.1293	3.43E-04	39.9	1.37E-02
vial 2	0.126	0.129	0.134	0.1297	3.43E-04	41.5	1.43E-02
vial 3	0.133	0.13	0.132	0.1317	3.49E-04	40.5	1.41E-02
vial 4	0.139	0.144	0.147	0.1433	3.80E-04	34.2	1.30E-02
tubing cleaning trap 1	0.018	0.018	0.018	0.0180	4.77E-05	4.9	2.34E-04
tubing cleaning trap 2	0	0.001	0.001	0.0007	1.77E-06	5.6	9.89E-06
							5.53E-02

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	not corr	corr
soil in vessel(g)	7.1091	7.1091
soil Conc (mg Cu2+/kg soil)	65.51	65.78
total initial copper in soil(mg)	0.465717	0.467636598
EE(%)	2.45E+01	24.51
residual copper in soil(mg)	3.52E-01	3.53E-01
total cu(tta)2 in traps (g)	1.58E-01	1.58E-01
trap converted to Cu (g)	1.98E-02	1.98E-02
total cu after (mg)	2.02E+01	2.02E+01
mass balance (%)	4.34E+03	4.32E+03
	4340.00%	4320.00%

2002-01-28

sample	Abs1 (AU)	Abs2 (AU)	Abs 3 (AU)	Ave absorbance (AU)	Concentration (g/mL)	Volume (mL)	Cu(tta)2 collected (g)
1/28/02							
2002-01-28-E.xls							
trap 1							
0 to 6550s	0.031	0.031	0.031	0.0310	8.21E-05	8	6.57E-04
6550s to 7500s(orange)	0.739	0.751	0.752	0.7473	1.98E-03	6.5	1.29E-02
7500s to 8400s	0.798	0.815	0.816	0.8097	2.14E-03	6.4	1.37E-02
8400s to 9300s	0.689	0.651	0.694	0.6780	1.80E-03	5.7	1.02E-02
9300s to 10200s	0.549	0.541	0.555	0.5483	1.45E-03	6	8.71E-03
10200s to 11100s	0.405	0.415	0.413	0.4110	1.09E-03	5.5	5.99E-03
11100s to 12000s	0.291	0.292	0.291	0.2913	7.72E-04	5.9	4.55E-03
12000s to 17950s	0.007	0.004	0.006	0.0057	1.50E-05	6.6	9.91E-05
17950s to 18300s	0.38	0.382	0.384	0.3820	1.01E-03	5.8	5.87E-03
18300s to 19200s	0.324	0.326	0.327	0.3257	8.63E-04	5.7	4.92E-03
19200s to 20100s	0.299	0.294	0.304	0.2990	7.92E-04	4.9	3.88E-03
20100s to 21000s	0.159	0.162	0.161	0.1607	4.26E-04	6.6	2.81E-03
21000s to 22000s	0.11	0.112	0.116	0.1127	2.98E-04	7	2.09E-03
22000s to 22800s	0.077	0.076	0.078	0.0770	2.04E-04	4.7	9.58E-04
							7.67E-02
trap 2							
0 to 6550s	0.001	0.003	0.002	0.0020	5.30E-06	5.8	3.07E-05
6550s to 12050s	0.002	0.005	0.003	0.0033	8.83E-06	5	4.41E-05
12050s to 17350s	0	0	0.001	0.0003	8.83E-07	7.2	6.36E-06
17350s to 22850s	0	0	0.001	0.0003	8.83E-07	4.6	4.06E-06
							5.46E-05
vessel cleaning							
vial 1	0.048	0.048	0.048	0.0480	1.27E-04	40.4	5.14E-03
vial 2	0.05	0.05	0.05	0.0500	1.32E-04	38.5	5.10E-03
vial 3	0.051	0.049	0.049	0.0497	1.32E-04	37.9	4.99E-03
vial 4	0.046	0.048	0.049	0.0477	1.26E-04	16.7	2.11E-03
tubing cleaning trap 1	0.028	0.028	0.028	0.0280	7.42E-05	5.9	4.38E-04
tubing cleaning trap2	0.004	0.001	0.001	0.0020	5.30E-06	4.5	2.38E-05
							1.78E-02

not corr corr

soil in vessel(g)	7.0269	7.0269
soil Conc (mg Cu2+/kg soil)	65.51	65.78
total initial copper in soil(mg)	0.46033222	0.462229482
EE(%)	2.45E+01	24.51
residual copper in soil copper(mg)	3.48E-01	3.49E-01
total cu(tta)2 in traps (g)	9.45E-02	9.45E-02
trap converted to Cu (g)	1.19E-02	1.19E-02
total cu after (mg)	1.22E+01	1.22E+01
mass balance (%)	2.66E+03	2.65E+03
	2660.00%	2650.00%

2002-01-29

sample	Abs1 (AU)	Abs2 (AU)	Abs 3 (AU)	Ave absorbance (AU)	Concentration (g/mL)	Volume (mL)	Cu(tta)2 collected (g)
1/21/02							
2002-01-29-E.xls							
trap 1							
0 to 6500s	0.02	0.019	0.016	0.0183	4.86E-05	8.8	4.27E-04
6500s to 7400s(orange)	1.04	1.071	0.995	1.0353	2.74E-03	6.5	1.78E-02
7400s to 8300s	1.026	1.028	0.952	1.0020	2.65E-03	6.4	1.70E-02
8300s to 9200s	0.754	0.74	0.768	0.7540	2.00E-03	6	1.20E-02
9200s to 10100s	0.586	0.583	0.567	0.5787	1.53E-03	6.1	9.35E-03
10100s to 11000s	0.367	0.385	0.37	0.3740	9.91E-04	6	5.94E-03
11000s to 11900s	0.265	0.271	0.265	0.2670	7.07E-04	5.9	4.17E-03
11900s to 12300s	0.01	0.009	0.009	0.0093	2.47E-05	5.4	1.33E-04
12300s to 18200s	0.266	0.267	0.266	0.2663	7.05E-04	5.5	3.88E-03
18200s to 19100s	0.193	0.198	0.198	0.1963	5.20E-04	5.6	2.91E-03
19100s to 20000s	0.175	0.176	0.176	0.1757	4.65E-04	4.5	2.09E-03
20000s to 20900s	0.105	0.106	0.107	0.1060	2.81E-04	5.7	1.60E-03
20900s to 21800s	0.075	0.077	0.075	0.0757	2.00E-04	5.5	1.10E-03
21800s to 22080s	0.022	0.022	0.022	0.0220	5.83E-05	5.6	3.26E-04
							7.83E-02
trap 2							
0 to 6500s	0	0.001	0.003	0.0013	3.53E-06	7.2	2.54E-05
6500s to 11950s	0.003	0.006	0.007	0.0053	1.41E-05	4.5	6.36E-05
11950s to 17300s	0	0.005	0	0.0017	4.41E-06	5.9	2.60E-05
17300s to 22100s	0.005	0.004	0	0.0030	7.95E-06	5.6	4.45E-05
							1.34E-04
vessel cleaning							
vial 1	0.049	0.045	0.042	0.0453	1.20E-04	43	5.16E-03
vial 2	0.045	0.043	0.045	0.0443	1.17E-04	42.3	4.97E-03

vial 3	0.045	0.042	0.044	0.0437	1.16E-04	38	4.39E-03
vial 4	0.04	0.04	0.044	0.0413	1.09E-04	17.8	1.95E-03
tubing cleaning trap 1	0.039	0.04	0.039	0.0393	1.04E-04	4.6	4.79E-04
tubing cleaning trap 2	0.004	0.005	0.001	0.0033	8.83E-06	4.9	4.33E-05
							1.70E-02

	not corr	corr
soil in vessel(g)	7.0164	7.0164
soil Conc (mg Cu2+/kg soil)	65.51	65.78
total initial copper in soil(mg)	0.4596444	0.461538792
EE(%)	2.45E+01	24.51
residual copper in soil (mg)	3.47E-01	3.48E-01
total cu(tta)2 in traps (g)	9.54E-02	9.54E-02
trap converted to Cu (g)	1.20E-02	1.20E-02
total cu after (mg)	1.23E+01	1.23E+01
mass balance (%)	2.69E+03	2.67E+03
	2690.00%	2670.00%

Summary of results for extraction experiments

Before correction for atomic absorption instrument drift

Soil	Condition	Date	%water	spiked conc. (mgCu/kgsoil)	before conc. (mgCu/kgsoil)	ave. before(s.d) (mgCu/kgsoil)	after conc. (mgCu/kgsoil)	ave. after(s.d.) (mgCu/kgsoil)	EE (%)	AveEE (s.d.) (%)	Mass bal. (%)
sand	1500psi, 40C, 0%w	8/26/01	0.05	57	63.5	62.8(1.0)					267
				57	62.1						
							48.0	48	23.6		
		8/30/01	0.05	57	50.1	49.8(0.6)					623
				57	50.1						
				57	49.0						
							37.1	37.1	25.5		
		8/31/01	0.05	57	44.7	42.9(1.7)					660
				57	41.4						
				57	42.5						
							38.1	38.1	11.1	20.1(7.8)	
	1500psi, 40C, 5%w	10/29/01	5.01	57.4	29.1	33.5(7.6)					7180
				57.4	29.1						
				57.4	42.3						
							16.7	15.0(2.5)	55.3		
							13.2				
		10/30/01	5.02	57.4	26.4	27.6(4.5)					4580
				57.4	23.8						
				57.4	32.5						
							6.6	4.6(2.8)	83.2		

						2.6				
	10/31/01	5	57.4	19.8	27.3(7.3)					2530
			57.4	34.3						
			57.4	27.8						
						0.0	0.0(0.0)	100.0	79.5(22.6)	
						0.0				
1500psi, 40C, 10%w	11/27/01	9.99	56.5	49.7	48.8(2.3)					6700
			56.5	46.2						
			56.5	50.5						
						36.8	33.4(4.8)	31.6		
						30.0				
	11/29/01	10.02	56.5	49.7	45.7(3.9)					3160
			56.5	42.0						
			56.5	45.4						
						16.3	18.0(2.4)	60.6		
						19.7				
	12/3/01	10.05	56.5	28.3	32.8(6.4)					2490
			56.5	37.3						
						34.7	37.5(3.9)	0.0	30.7(30.3)	
						40.2				
1400psi, 40C, 0%w	10/12/01	0.02	57.4	44.9	44.9(2.6)					932
			57.4	42.3						
			57.4	47.6						
						39.6	35.2(6.2)	21.6		
						30.8				

		10/14/01	0.02	57.4	42.3	37.6(4.2)					1160
				57.4	34.4						
				57.4	36.1						
							24.7	26.4(2.5)	29.7		
							28.2				
		10/15/01	0.02	57.4	34.4	33.0(2.3)					951
				57.4	30.4						
				57.4	34.4						
							23.8	26.4(3.7)	20.0	23.8(5.2)	
							29.1				
silt	1500psi, 40C, 0%w	9/2/01	0.5	55.6	48.6	48.6(0.0)					1220
				55.6	48.6						
							50.0	50	0.0		
		9/3/01	0.05	55.6	42.9	44.3(2.5)					834
				55.6	42.9						
				55.6	47.2						
							38.6	38.6	12.9		
		9/4/01	0.5	55.6	45.8	45.8(0.0)					914
				55.6	45.8						
							28.6	28.6	37.5	16.8(19.0)	
	1500psi, 40C, 5%w	1/24/02	5.2	57.9	74.9	68.5(5.5)					4340
				57.9	65.3						
				57.9	65.3						
							55.0	53.0(2.8)	22.7		
							51.0				
		1/28/02	5.26	57.9	55.8	60.3(6.5)					2660
				57.9	57.4						
				57.9	67.7						

							55.8	49.0(9.6)	18.7		
							42.2				
		1/29/02	5.27	57.9	62.1	67.7(10.3)					2690
				57.9	61.4						
				57.9	79.6						
							39.8	46.0(8.8)	32.0	24.5(6.8)	
							52.2				

After correction for atomic absorption instrument drift

Soil	Condition	Date	%water	spiked conc. (mgCu/kgsoil)	Before conc. (mgCu/kgsoil)	ave. before(s.d) (mgCu/kgsoil)	After conc. (mgCu/kgsoil)	ave. after(s.d.) (mgCu/kgsoil)	EE (%)	AveEE (s.d.) (%)	Mass bal. (%)
sand	1500psi, 40C, 0%w	8/26/01	0.05	57							
				57							
		8/30/01	0.05	57							
				57							
				57							
		8/31/01	0.05	57							
				57							
				57							
	1500psi, 40C, 5%w	10/29/01	5.01	57.4	40.1	44.5(7.6)					5000
				57.4	40.1						

		10/14/01	0.02	57.4	42.3	37.6(4.2)					1160
				57.4	34.4						
				57.4	36.1						
							24.7	26.4(2.5)	29.7		
							28.2				
		10/15/01	0.02	57.4	34.4	33.0(2.3)					951
				57.4	30.4						
				57.4	34.4						
							23.8	26.4(3.7)	20.0	23.8(5.2)	
							29.1				
silt	1500psi, 40C, 0%w	9/2/01	0.5	55.6	48.6	48.6(0.0)					1220
				55.6	48.6						
							50.0	50	0.0		
		9/3/01	0.05	55.6	42.9	44.3(2.5)					834
				55.6	42.9						
				55.6	47.2						
							38.6	38.6	12.9		
		9/4/01	0.5	55.6	45.8	45.8(0.0)					914
				55.6	45.8						
							28.6	28.6	37.5	16.8(19.0)	
	1500psi, 40C, 5%w	1/24/02	5.2	57.9	74.9	68.5(5.5)					4340
				57.9	65.3						
				57.9	65.3						
							55.0	53.0(2.8)	22.7		
							51.0				
		1/28/02	5.26	57.9	55.8	60.3(6.5)					2660
				57.9	57.4						
				57.9	67.7						

							55.8	49.0(9.6)	18.7		
							42.2				
		1/29/02	5.27	57.9	62.1	67.7(10.3)					2690
				57.9	61.4						
				57.9	79.6						
							39.8	46.0(8.8)	32.0	24.5(6.8)	
							52.2				

After correction for atomic absorption instrument drift

Soil	Condition	**Date**	%water	spiked conc. (mgCu/kgsoil)	Before conc. (mgCu/kgsoil)	ave. before(s.d) (mgCu/kgsoil)	After conc. (mgCu/kgsoil)	ave. after(s.d.) (mgCu/kgsoil)	EE (%)	AveEE (s.d.) (%)	Mass bal. **(%)**
sand	1500psi, 40C, 0%w	8/26/01	0.05	57							
				57							
		8/30/01	0.05	57							
				57							
				57							
		8/31/01	0.05	57							
				57							
				57							
	1500psi, 40C, 5%w	10/29/01	5.01	57.4	40.1	44.5(7.6)					5000
				57.4	40.1						

			57.4	53.3						
						27.8	26.4(1.9)	40.6		
						25.1				
	10/30/01	5.02	57.4	38.3	39.5(4.5)					3220
			57.4	35.7						
			57.4	44.4						
						22.9	20.9(2.8)	47.0		
						18.9				
	10/31/01	5	57.4	36.1	43.0(7.3)					2470
			57.4	50.6						
			57.4	42.3						
						14.5	11.2(4.7)	73.9	53.8(17.7)	
						7.9				
1500psi, 40C, 10%w	11/27/01	9.99	56.5	40.7	39.8(2.3)					8340
			56.5	37.3						
			56.5	41.5						
						27.8	25.7(3.0)	35.5		
						23.6				
	11/29/01	10.02	56.5	43.2	39.3(3.9)					3220
			56.5	35.5						
			56.5	39.0						
						15.0	16.792.4)	57.5		
						18.4				
	12/3/01	10.05	56.5	27.0	22.8(5.9)					2470
			56.5	18.6						
						17.3	18.7(2.0)	17.8	36.9(19.8)	
						20.1				