Estate of Michael Dolan Ms. Noreen Fitzpatrick, Trustee 3215 Deer Park Dr. Walnut Creek, CA 94598

2/23 .2007

Mr. Barney Chan Alameda County Health Care Services Agency **Environmental Protection Division** 1131 Harbor Bay Parkway, Suite 250 Alameda, CA 94502-6577

Re: Perjury Statement Dolan Property, 6393 Scarlett Court, Dublin, California; RO-210

Dear Mr Chan,

"I declare under penalty of perjury, that the information and / or recommendations contained in the attached proposal or report is true and correct to the best of my knowledge."

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Noreen Fitzpatrick, Trustee

Peter MacDonald, Esquire c. Wanden Treanor, Esquire

Workplan for Additional Remediation Efforts

Dolan Trust Property 6393 Scarlett Court Dublin, California ACEH Fuel Leak Case No. RO0000210

> February 16, 2007 BEI Job No. 202016

> > Prepared for:

Estate of Michael Dolan Mr. Michael Fitzpatrick, Trustee 3215 Deer Park Dr. Walnut Creek, CA 94598

Prepared by:

Blymyer Engineers, Inc. 1829 Clement Avenue Alameda, CA 94501-1395 (510) 521-3773

Limitations

Services performed by Blymyer Engineers, Inc. have been provided in accordance with generally accepted professional practices for the nature and conditions of similar work completed in the same or similar localities, at the time the work was performed. The scope of work for the project was conducted within the limitations prescribed by the client. This report is not meant to represent a legal opinion. No other warranty, expressed or implied, is made. This report was prepared for the sole use of the client, The Estate of Michael Dolan.

Blymyer Engineers, Inc.

 α No. 1788 By: 1 CERTIFIED $\overline{\mathbb{X}}$ Mark E. Detterman, CEG ENGINEERING Senior Geologist GEC

Michael S. Lewis, REA Vice President, Technical Services

And:

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1.0 Introduction

1.1 Workplan Background

On behalf of Mr. Michael Fitzpatrick, Executor of the Estate of Michael Dolan (Estate), Blymyer Engineers, Inc. (Blymyer Engineers) is pleased to forward this workplan for additional remedial treatment of soil and groundwater in the vicinity of well MW-4 as outlined in the *Response to January 2, 2007 Letter*, dated February 16, 2007. The subject property (Figure 1) has been sold to Dublin Honda and redevelopment has been underway since the remedial excavation was finished in early 2006. The specific purpose of this workplan is to address the scopes of work briefly described in the referenced response letter, and is specifically intended to address Technical Comments 1, 2, and 3 in the aforementioned letter.

1.2 Project Background

A 600-gallon underground storage tank (UST) was removed in February 1990 from the subject site (Figure 2). Although the UST had reportedly stored diesel more recently, soil and groundwater samples collected for laboratory analysis indicated that the contaminant of concern at the site was gasoline. Files maintained by the Alameda County Department of Environmental (ACDEH) do not contain waste manifests for the disposal of soil, although a Uniform Hazardous Waste Manifest is present documenting the disposal of a 600-gallon UST. This suggests that contaminated soil may not have been removed from the site. In October 1990, five soil bores were installed at the site, and soil and grab groundwater samples were collected. Additional delineation work was conducted in November 1991, when groundwater monitoring wells MW-1 through MW-4 were installed to a depth of 20 feet below grade surface (bgs). Soil and groundwater samples were collected. In November 1992, 14 additional soil bores were installed, and soil and grab groundwater samples were collected from selected bore locations. Although there were several data gaps in the perimeter zone of soil and groundwater delineation, the soil and groundwater plumes were largely defined as a result of this investigation. The groundwater plume did not appear to extend offsite; however, a thin free-phase layer was present immediately adjacent to the former UST basin, and at a location approximately 40 feet to the east. Additional wells were proposed to fill the existing data gaps and to monitor the lateral extent of impacted groundwater and free-phase. As a consequence, in March 1995, wells MW-5 and MW-6 were installed to a depth of 10 feet bgs. Intermittent groundwater sample collection or groundwater monitoring has occurred at the facility since 1991. In an August 1998 letter, the ACDEH suggested that a health risk analysis or the installation of an oxygen releasing compound (ORC) might be appropriate for the site. Also in the August 1998 letter, the ACDEH stated that groundwater sampling of wells MW-1, MW-3, MW-5, and MW-6 could be discontinued, stated that the sampling interval could be decreased to a semiannual basis, and requested resumption of groundwater monitoring.

In May 2002, Blymyer Engineers was retained by Mr. Michael Fitzpatrick, on behalf of Mr. Michael Dolan, to conduct semiannual groundwater sampling of wells MW-2 and MW-4, and to conduct a file review to help determine the next appropriate step at the site.

In May 2002, Blymyer Engineers located and rehabilitated the wells at the site. Well MW-5 required the most extensive rehabilitation work, and required resurveying due to a change in well casing elevation. In June 2002, wells MW-2 and MW-4 were sampled, while depth to groundwater was measured all of the wells. Except for a slight increase in benzene in groundwater from well MW-4, the concentration of all analytes in the two wells decreased from the August 1997 sampling event. Based upon a review of the results, the ACDEH recommended that well MW-5 be incorporated into the sampling program and that quarterly groundwater monitoring resume in order that contaminant concentrations and contaminant trends could be quickly generated for the recommended health risk assessment.

Two additional quarters were completed prior to the death of Mr. Dolan. Groundwater monitoring was on hold after January 2003 due to the Estate becoming established. During the groundwater monitoring event in December 2002, analysis for the fuel oxygenates was conducted by EPA Method 8260B. All fuel oxygenates were found to be non-detectable at good limits of detection. Consequently, all sporadic occurrences of methyl tert-butyl ether (MTBE) previously detected at the site have been attributed to 3-methyl-pentane, another gasoline related compound. This suggests that the release predates the use of MTBE and other fuel oxygenates as gasoline additives. All previously available data from the site has been tabulated on Tables I through III.

On June 13, 2003, a workplan was submitted to the ACDEH in order to allow further subsurface delineation of impacted soil at the site. In a telephone conversation on June 16, 2003, Mr. Scott Seery mentioned that it was unlikely that he would be able to respond in a timely manner due to the work load at the ACDEH, and noted that if a response was not issued 60 days after receipt, regulations stated that the workplan should be considered approved. Consequently, field work commenced on September 13, 2003. Nine Geoprobe⁷ soil bores were installed at the site to augment existing soil data. The data indicated that the lateral and vertical extent of impacted soil at the site had been adequately delineated to relatively low concentrations, and the limits further refined for the purposes of determining appropriate remedial actions (*Geoprobe⁷ Subsurface Investigation*, dated October 10, 2003).

Based on these data and a lack of further comments by the ACDEH, a *Remedial Action Plan* (RAP), dated April 6, 2004, was issued. The plan detailed overexcavation and construction dewatering, as the principal method of remedial action. Introduction of ORC into the resulting excavation as an additional measure of insurance, should residual contamination be intentionally or unintentionally left in place, was also proposed. Use of ORC was proposed based on general knowledge that biodegradation of petroleum hydrocarbons is generally an oxygen limited process. A Request for Proposal (RFP) was generated in early May 2004 for contractor bidding purposes; however, it was not released due to a change in the timeline for sale closure. On September 2, 2004, Blymyer Engineers contacted Mr. Seery in order to determine the status of the RAP review. At that time, Mr. Seery notified Blymyer Engineers that Mr. Robert Schultz was the new case manager for the site. Mr. Schultz required time to review and become familiar with the file. On November 15, 2004, the ACDEH issued a 5-page response letter (*Fuel Leak Case No. RO0000210*) requesting extensive additional work and containing several deadlines. A December 31, 2004 deadline was established for a workplan for additional site characterization. The *Workplan for Additional Investigation and Letter Report*, dated December 23, 2004, was submitted to the ACDEH on January 3, 2005.

In a letter dated January 24, 2005, the ACDEH approved the workplan provided four conditions were met:

• A pilot hole was to be used to identify lithology prior to collection of a groundwater sample from a deeper water-bearing zone,

- Should additional groundwater wells be required, the ACDEH would be consulted regarding well construction details,
- Should additional soil or groundwater samples be required, the ACDEH would be kept informed of planned changes and consistent dynamic investigation procedures, and
- A 72-hour written advanced warning would be provided.

On February 18, 2005, Blymyer Engineers mobilized to the site to install two to three dual-tube direct-push soil bores in an attempt to collect the approved soil and groundwater samples. As a precursor to the mobilization, a conduit survey was conducted. However, due to poor soil recovery an additional mobilization to the site was required. After notifying, and obtaining approval from, the ACDEH 72 hours in advance, a Cone Penetrometer Test (CPT) direct-push rig was mobilized to the site on March 28, 2005. Prior to the March 28, 2005 mobilization, the ACDEH approved a reduction in the quarterly analytical program, based on historical analytical trends. Specifically, hydrocarbon analysis of groundwater samples from wells MW-1, MW-3, and MW-6 was eliminated.

On April 13, 2005, CCS Environmental resurveyed all wells at the site. As of April 30, 2005, all tenant operations at the site ceased. This included the batch plant used by Dublin Concrete.

On May 10, 2005, Blymyer Engineers submitted the *Additional Site Investigation Data Transmittal* to the ACDEH providing a brief summary of the results of the CPT bore installations. Based on the detection of hydrocarbon compounds in groundwater between 30 and 40 feet bgs, the letter proposed the installation of groundwater well MW-7 across a deeper water-bearing zone in a downgradient position. Shortly thereafter, the ACDEH reported that Mr. Schultz had left the employ of the agency and that the case had not been assigned to a new case worker yet. The ACDEH was apprised that due to the sale of the parcel, work would proceed, pending agency review.

As a part of another related project, Blymyer Engineers oversaw the permitted destruction of two old water production wells between May 16 and May 24, 2005. According to Zone 7, both wells appear to have

dated from the 1940s or 1950s. Well "3S/1E 6F 1", located on the subject parcel was constructed of 8inch-diameter steel casing and was 95 feet in total depth. Well "3S/1E 6F 2" was located on the adjacent parcel, also owned by Dolan Properties, and was constructed of 13-inch-diameter riveted steel casing and was 38 feet in total depth. All Zone 7 permit conditions were observed; however, the upper 6 to 7.5 feet of each well casing was removed by excavation seven days after it had been filled to the surface with cement grout. An approximately 6- to 12-inch-thick concrete mushroom cap was placed over and around the remaining casing at depths of 6 and 7.5 feet bgs, respectively (where the casing broke during removal). The excavation was backfilled with native soil, and track rolled.

On July 5 and July 8, 2005, Blymyer Engineers oversaw the installation of downgradient groundwater monitoring well MW-7 (Figure 2). The well was installed into the second water-bearing zone beneath the site due to the detection of hydrocarbon contamination in groundwater in both CPT bores at depths of approximately 30 to 40 feet bgs. A conductor casing was installed to a depth of 30 feet in order to exclude upper water-bearing zones, and to prevent cross-contamination of deeper water-bearing zones. A 2-inch-diameter PVC casing was installed through the conductor casing and the well was screened between 30 and 40 feet bgs.

On October 7, 2005, Blymyer Engineers issued the *Remedial Investigation / Feasibility Study* report documenting all field work conducted since January 2005, and the results of a feasibility study. The report evaluated three remedial alternatives, including monitored natural attenuation, dual-phase extraction, and source soil excavation and dewatering. It was found that, under monitored natural attenuation, benzene would require approximately 33 years to reach the Maximum Contaminant Level (MCL) and that the remedial cost was the highest of the three options. Remedial costs were the second highest under the dual-phase extraction scenario, and would be more intrusive with respect to the future owner's land use. Remedial costs were lowest, and the site presence was least intrusive in the longer term under the remedial overexcavation and dewatering scenario. This scenario additionally proposed to introduce oxygen releasing compound (ORC) into the remedial excavation to stimulate biodegradation of the residual hydrocarbon contamination by indigenous microbes; previously shown to be oxygen-limited at the site. This scenario additionally proposed to treat soil and groundwater outside the plume core with ORC injected through

Geoprobe bores on an approximately 10-foot spacing interval. Principally because remedial costs were lowest, remedial excavation was selected as the most appropriate remedial technology for the site. On October 26, 2005, Blymyer Engineers issued the *Corrective Action Plan For Source Soil Excavation and Dewatering*. On November 2, 2005, the ACDEH issued the letter *Fuel Leak Case No. RO0000210*, which concurred with the recommended remedial plan, but contained six technical comments for clarification. On November 9, 2005, Blymyer Engineers issued the *Response to November 2, 2005 Letter*, that addressed the technical comments contained in the ACDEH letter. The letter indicated that soil reuse was not planned due to high perched groundwater as shallow as 3 feet bgs, provided documentation (Figure 2 of that letter) of the approximate planned bottom sample soil collection locations based on the iso-concentration figures, stated that ORC would be applied throughout the excavation as requested, attached NPK bio-nutrient calculations for the site, stated that a second excavation backfill well would be installed as requested, and stated that a post-remediation quarterly groundwater sampling program was planned for a minimum period of one year.

Remedial excavation began on November 29, 2005, with the initial installation of a slide-rail shoring system in the area for excavation. Between December 1, and December 8, 2005, Marcor Remediation, Inc. (Marcor) excavated and stockpiled 2,370 cubic yards (3,054.65 tons) of impacted soil from an area approximately 50 by 50 feet, by 20 to 21 feet in depth. Concurrent excavation dewatering was attempted, but due to the load of suspended fine particles, could not keep up with groundwater infiltration. Extracted groundwater was plumbed through a bag filter to remove the sediment load, and then through two 2,000pound granular activated carbon (GAC) vessels into a 20,000-gallon temporary aboveground storage tank. Prior to discharge to the sanitary sewer a groundwater sample was collected under observation of the Dublin-San Ramon Services District personnel. Four authoritative excavation bottom soil samples were collected from locations in close proximity to previously documented worst-case soil concentrations and each returned non-detectable concentrations for all analytes. The excavation was backfilled with imported crushed rock as it was placed into the excavation. On December 21 and 22, 2005, twenty-six ORC injection bores were pushed to approximately 21 feet bgs, and an ORC slurry was injected into the bores in areas surrounding the backfilled excavation in order to address residual contamination outside the area of excavation. The soil stockpiles were sampled concurrently with remedial excavation, and the soil was loaded, transported, and disposed at Keller Canyon Landfill in Pittsburg, California, between December 29, 2005, and January 4, 2006. On January 11, 2006, the property was sold by the Dolan Trust to Ken Harvey Honda, and site redevelopment planning was initiated for a car dealership.

On February 27, 2006, Blaine Tech Services, Inc. (Blaine) mobilized to the site to develop the two new wells (MW-8 and MW-9) located within the remedial excavation. Development details have been reported under separate cover in the report entitled *Report on Source Soil Excavation and Dewatering*, dated April 20, 2006. The first post-remediation groundwater monitoring event occurred on March 2, 2006, and was reported in the report entitled *First Quarter 2006 Groundwater Monitoring Event*, dated April 4, 2006. The *Second Quarter 2006 Groundwater Monitoring Event* dated June 22, 2006, was issued on June 28, 2006. The *Third Quarter 2006 Groundwater Monitoring Event* report dated December 1, 2006 was issued on December 4, 2006. On January 2, 2007, the ACDEH responded to recommendations contained in the latter report.

Current site redevelopment activities include paving and infrastructure installation for the car dealership. Additional groundwater monitoring is pending access to, and reconstruction of, the groundwater monitoring wells, temporarily paved over during site redevelopment. The wells require raising and lowering of well casings and well boxes to the new grade, as well as re-surveying to GeoTracker standards.

2.0 Scope of Work

2.1 Conduct bio-monitoring and quarterly groundwater monitoring

At the present time all wells at the site are inaccessible due to recent paving and grade changes at the site. As a method to preserve the wells, the paving contractor surveyed their locations and placed steel lids above the wells as a method to minimize damage to the existing wellhead. Blymyer Engineers is currently coordinating wellhead exhumation and replacement with a local contractor specializing in this work. Thereafter, the wells will be resurveyed to GeoTracker standards due to the grade changes.

Once the wells are accessible, the next planned quarterly groundwater monitoring and sampling event will be coordinated. All wells will be monitored and sampled, and the microbial assays will also occur. The assays will help determine if augmentation of the current microbial population might allow faster degradation. Groundwater from MW-1, MW-4, and MW-3 (upgradient, excavation area, and downgradient, respectively) will be collected to determine microbial trends across the site. The results will be reported within a quarterly groundwater monitoring report. The samples will be analyzed for total microbial population, and speciation for hydrocarbon-degrading microbes within the total population at the three wells, as recommended by the analytical laboratory, Cyto Culture Environmental Biotechnology in Point Richmond, CA.

If monitoring indicates a "sterile zone," then portions of the subsurface may be bio-augmented with a bacterial culture to populate soil and groundwater with hydrocarbon-degrading bacteria. The bacterial culture for bio-augmentation may be obtained from a commercially available product or, if viable hydrocarbon degraders are found in the groundwater samples from background wells, then purge waters from background wells may provide a source of native "site-adapted" bacteria. Bio-augmentation through existing monitoring wells (especially MW-4) should be performed when well conditions indicate groundwater has returned to near neutral conditions; that is, groundwater is no longer highly oxidative.

2.2 Introduce RegenOx in well MW-4

To induce accelerated destruction of hydrocarbons within the core of the residual groundwater plume, RegenOx has been proposed to be introduced to well MW-4. The goals for chemical oxidation projects are to attempt to reduce the contaminant mass and to stabilize or reduce the size of a plume. Because the size or location of the source in the vicinity of well MW-4 is unknown, Regenesis has recommended that RegenOx be introduced into well MW-4 at a rate of approximately 4 pounds per foot as a step towards achieving that goal.

In standard applications of RegenOx, two to three rounds of introduction are required to effectively remediate residual soil and groundwater contamination. RegenOx rapidly reduces dissolved-phase contaminants in groundwater; however, as contaminants sorbed on subsurface soil re-enter (re-dissolve) into groundwater in response to the initial decrease in groundwater concentrations, and groundwater concentrations typically rebound. Two treatment rounds have been recommended for the site prior to augmentation by the ORC socks. The treatments will be installed approximately 1 to 2 weeks apart. Installation of the ORC socks will help assure continued long-term treatment of residual contaminants in the project vicinity. The half-life of RegenOx is dependent on the contaminant concentration and the total oxygen demand, but typically averages 5 to 20 days.

2.3 Install ORC socks in well MW-4

To stimulate bacterial activity in the vicinity of well MW-4, ORC socks will be installed in the well after the two rounds of RegenOx installation. The ORC socks will be installed per the manufacturer's specifications, approximately 2 to 3 weeks after the final RegenOx introduction. ORC socks typically provide between 6 and 12 months of increased oxygen concentrations in groundwater. These concentrations will be monitored during quarterly groundwater monitoring events.

An additional round of bio-monitoring will occur during the following round of quarterly groundwater monitoring and sampling, after installation of the ORC socks. Chemical oxidation is known to disinfect (kill-off) bacterial populations; however, this disinfection is not reported as significant with the use of RegenOx.

However, post-treatment testing of groundwater from plume core well MW-4, and background locations (upgradient MW-1 and downgradient MW-3) for aerobic bacteria plate counts and speciation for hydrocarbon degraders will be undertaken. As before, if post-treatment monitoring indicates a "sterile zone," then portions of the subsurface may be bio-augmented with either a commercial product or an "site-adapted" bacterial culture to populate soil and groundwater with hydrocarbon-degrading bacteria.

2.4 Install Geoprobe confirmation bores

A minimum of three Geoprobe bores will be installed in the vicinity of well MW-4 at an appropriate juncture, or at documentation of depletion of DO concentrations in the subsurface, unless otherwise modified by future events. The intent of the bores is to define any residual hydrocarbon concentrations at the site. Bore locations will be defined and refined with regulatory input at an appropriate time in the future.

2.4.1 Secure all required permits

Prior to installation of the bores, soil bore or groundwater monitoring well permits will be obtained from the Zone 7 Water Agency.

2.4.2 Modify the existing site-specific health and safety plan

The existing site-specific health and safety plan will be updated for the proposed work and will outline potentially hazardous work conditions and contingencies for an emergency.

2.4.3 Locate utilities

Offsite utilities will be marked for location by Underground Service Alert (USA). Additionally, proposed bore locations will be marked for clearance by a private utility location service.

2.4.4 Install a minimum of three Geoprobe⁷ bores

A Geoprobe⁷ rig will be scheduled to install a minimum of three probe bores for the purpose of determining the vertical extent of soil contamination at the site, as requested in the ACDEH letter. The Geoprobe⁷ soil bores will be hydraulically pushed to an estimated depth of approximately 15 feet below grade surface

(bgs). A continuous soil core will be collected from each bore. The bores will be backfilled with tremied concrete grout upon completion.

2.4.5 Field screen and collect soil samples for laboratory analysis

At a minimum of 4-foot intervals, selected soil samples will be collected from the soil cores for field screening using a Photoionization Detector (PID) and for lithologic description. All soil samples will be collected in accordance with the previously forwarded Blymyer Engineers' *Standard Operating Procedure No. 4, Soil and Grab Groundwater Sampling Using Hydraulically-Driven Sampling Equipment.*

Up to three soil samples will be collected from each bore for laboratory analysis. Because existing data has documented increasing soil concentrations below groundwater before an apparent decrease at approximately 20 feet bgs, sample collection will include the sample displaying the highest PID reading, but will also include a sample collected at an intermediate depth, and a sample collected below the deepest level of documented soil contamination. The soil samples will be analyzed for Total Petroleum Hydrocarbons (TPH) as gasoline and TPH as diesel by modified EPA Method 8015; and for benzene, toluene, ethylbenzene, total xylenes (BTEX) and MTBE by EPA Method 8021. The soil samples will be submitted to a California-certified laboratory on a standard 5-day turnaround. Groundwater will not be collected from these temporary bores.

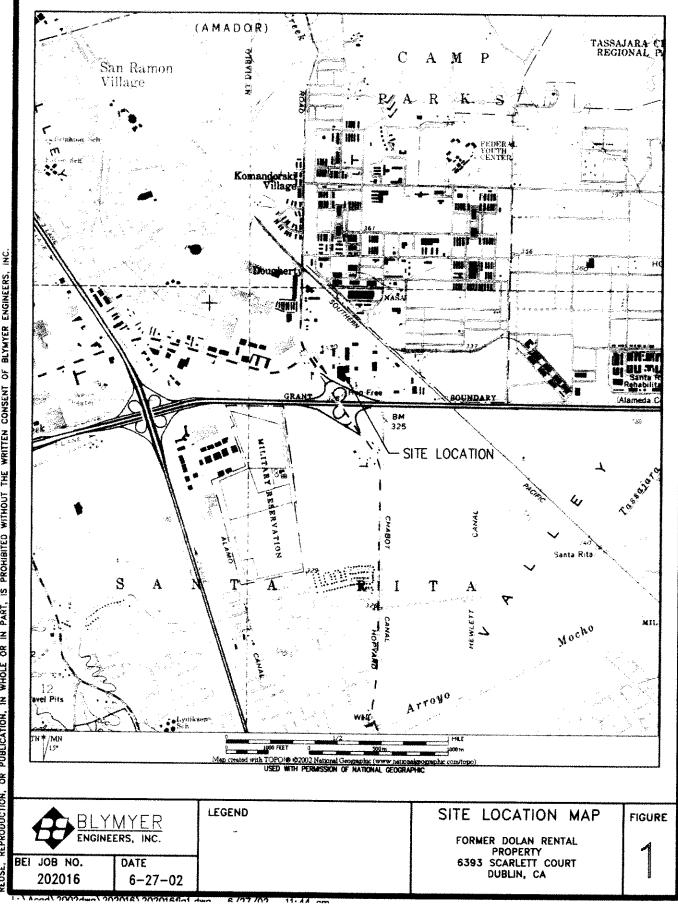
2.4.6 Soil management

Due to the volume of soil that is anticipated to be generated, all soil cuttings will be placed in DOTapproved 5-gallon pails for later disposal by the owner.

2.4.7 Generate letter report

A letter report will be prepared for submission to the ACDEH which will document all work performed and will include summaries of data, tables, figures, and conclusions and recommendations for closure or for further work, if warranted.

Figures



THE USE OF THESE DRAWINGS AND SPECIFICATIONS SHALL BE RESTRICTED TO THE ORIGINAL USE FOR WHICH THEY WERE PREPARED. REUSE, REPRODUCTION, OR PUBLICATION, IN WHOLE OR IN PART, IS PROHIBITED WITHOUT THE WRITTEN CONSENT OF BLYMYER ENGINEERS, INC.

