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11/1/2017

TRUESDAIL LABORATORIES, INC.

Response to The Nebraska State Racing Commission

The Nebraska State Racing Commission

Request for Solicitation Number RFP 5702 Z1 for Equine Drug Testing Laboratory Services 2018 - 2021

Due November 2, 2017 at 2:00 PM CDT

TRUESDAIL LABORATORIES

Proposal to

Nebraska State Racing Commission

For:

Equine Drug Testing Laboratory Services

2018 - 2021

Due: November 2, 2017 at 2:00 PM CDT

Section 1 – Cover Letter

November 1st, 2017

Ms. Teresa Fleming / Ms. Michelle Thompson
State Procurement Office
STATE OF NEBRASKA
1526 K Street, Suite 130
Lincoln, Nebraska 68508

Re: RFP 5702 Z1 – Nebraska State Racing Commission – Analysis of Equine Urine and Blood Drug Testing Laboratory Services

Dear Ms. Fleming and/or Ms. Thompson:

Truesdail Laboratories, Inc (Truesdail) is pleased to submit this bid in response to the Request for Proposal 5702 Z1 (RFP). Truesdail has serviced the Nebraska State Racing Commission (Commission) with equine drug testing since 2009 and we hope to continue that relationship.

There is no laboratory in the U.S. that has as many years of experience in equine drug testing as Truesdail. Truesdail has experience with applying every typical instrumental screening and confirmation test as required by the RFP.

Since bidding on the Commission's work four (4) years ago, Truesdail achieved a significant milestone in 2014 when we completed the RMTC accreditation program. We have improved our capabilities to do direct instrumental screening of samples by adding two (2) new pieces of equipment. Our first and most significant addition is two (2) new HPLC/MS (High Performance Liquid Chromatography / Mass Spectroscopy) systems that are equipped with pumping systems which allows for UHPLC (Ultra-High Performance Liquid Chromatography). UHPLC gives us better chromatography, better sensitivity, and improved run times. The UHPLC system is coupled to a Thermo Orbitrap© detector that provides High-Resolution Mass Spectroscopy (HRMS) with its accurate mass, time of flight (TOF) capabilities. In September 2017 we acquired a new AB Sciex 5500 Triple Quad Mass Spectrometer for the qualitative and quantitative confirmation of drugs. The 5500 system is designed to deliver high levels of sensitivity and robustness in the complex matrices of equine urine and blood samples.

The Thermo Orbitrap LC/MS technology offers a significant enhancement to our ability to screen for a large number of compounds at the same time. The older and more commonly used LC/MS detection (triple-quadrupole mass spectroscopy) is certainly sensitive, but is limited in the number of compounds that can be sought in a single run to 100 – 200, while the Orbitrap© technology allows screening for 100's of compounds at once. Our methodology is currently seeking over 1,800 compounds with more being added each week. We now have both instruments on-line and offer this state of the art technology in this proposal. It is discussed in more detail in **Section 8.11**.

Within the past year, the Texas A&M Drug Testing Laboratory confirmed positives for a previously unidentified drug called Nomifensine. We investigated testing methodology being used for Nomifensine detection and ordered analytical standards immediately upon coming aware of these findings. We confirmed our screening protocol easily detects Nomifensine and we have validated our screening and confirmation protocolos. All of your samples will be screened for Nomifensine if our bid is accepted.

The RMTC has recently recommended a threshold for Glaucine. Truesdail has in-place validated methods to both screen and confirm this compound and the associated alkaloids should the Commission adopt this threshold recommendation.

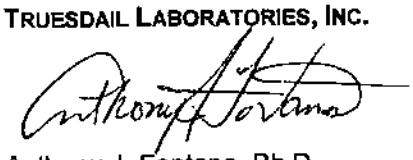
In summary, we:

- Are the largest commercial testing laboratory providing equine testing in the U.S.
- We have ISO/IEC 17025 with ILAC-G7 (Accreditation for Horseracing Laboratories) and RMTC accreditation for our equine testing.
- Have state-of-the-art equipment and an excellent professional staff (AORC professional and affiliates).
- Have well documented internal and external QA programs.
- Conduct ongoing research to improve methods and develop new methods.
- Offer qualified Ph.D. level staff for providing program management, expert testimony, and advice.

In short, we believe we offer the best value to meet the Commission's objectives set forth in the RFP's Scope of Service.

We invite you, or your designated representative, to visit and inspect our facility. Please call me with any questions you may have. My phone number is (714) 730.6239 ext. 190, or email me at afontana@truesdail.com.

Sincerely,
TRUESDAIL LABORATORIES, INC.



Anthony J. Fontana, Ph.D.
Chief Science Officer

Section 2 – Table of Contents

Table of Contents

Section 3 – Form A - Bidder Contact Sheet

Form A
Bidder Contact Sheet
Request for Proposal Number 5702 Z1

Form A should be completed and submitted with each response to this RFP. This is intended to provide the State with information on the bidder's name and address, and the specific person(s) who are responsible for preparation of the bidder's response.

Preparation of Response Contact Information	
Bidder Name:	Truesdail Laboratories, Inc.
Bidder Address:	3337 Michelson Drive, Suite 750 Irvine, California 92612
Contact Person & Title:	Dr. Anthony J. Fontana / Chief Science Officer
E-mail Address:	afontana@truesdail.com
Telephone Number (Office):	(714) 730-6239 Ext. 190
Telephone Number (Cellular):	(509) 432-9587
Fax Number:	(714) 730-6462

Each bidder should also designate a specific contact person who will be responsible for responding to the State if any clarifications of the bidder's response should become necessary. This will also be the person who the State contacts to set up a presentation/demonstration, if required.

Communication with the State Contact Information	
Bidder Name:	Truesdail Laboratories, Inc.
Bidder Address:	3337 Michelson Drive, Suite 750 Irvine, California 92612
Contact Person & Title:	Dr. Anthony J. Fontana / Chief Science Officer
E-mail Address:	afontana@truesdail.com
Telephone Number (Office):	(714) 730-6239, Ext. 190
Telephone Number (Cellular):	(509) 432-9587
Fax Number:	(714) 730-6462

Section 4 – Bidder Signature Page

BIDDER SIGNATURE PAGE

BIDDER MUST COMPLETE THE FOLLOWING

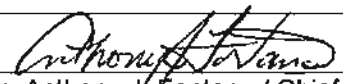
By signing this Bidder Signature Page form, the bidder guarantees compliance with the procedures stated in this Request for Proposal, and agrees to the terms and conditions unless otherwise indicated in writing (see Section II through IV) and certifies that bidder maintains a drug free work place.

Per Nebraska's Transparency in Government Procurement Act, Neb. Rev Stat § 73-603 DAS is required to collect statistical information regarding the number of contracts awarded to Nebraska Contractors. This information is for statistical purposes only and will not be considered for contract award purposes.

_____ NEBRASKA CONTRACTOR AFFIDAVIT: Bidder hereby attests that bidder is a Nebraska Contractor. "Nebraska Contractor" shall mean any bidder who has maintained a bona fide place of business and at least one employee within this state for at least the six (6) months immediately preceding the posting date of this RFP.

_____ I hereby certify that I am a Resident disabled veteran or business located in a designated enterprise zone in accordance with Neb. Rev. Stat. § 73-107 and wish to have preference, if applicable, considered in the award of this contract.

FORM MUST BE SIGNED USING AN INDELIBLE METHOD (NOT ELECTRONICALLY)

FIRM:	Truesdail Laboratories, Inc.
COMPLETE ADDRESS:	3337 Michelson Drive, Suite 750 Irvine, California 92612
TELEPHONE NUMBER:	(714) 730-6239
FAX NUMBER:	(714) 730-6462
DATE:	November 1, 2017
SIGNATURE:	
TYPED NAME & TITLE OF SIGNER:	Dr. Anthony J. Fontana / Chief Science Officer

Section 5 – Completed Sections II through IV

II. TERMS AND CONDITIONS

Bidders should complete Sections II through IV as part of their proposal. Bidder is expected to read the Terms and Conditions and should initial either accept, reject, or reject and provide alternative language for each clause. The bidder should also provide an explanation of why the bidder rejected the clause or rejected the clause and provided alternate language. By signing the RFP bidder is agreeing to be legally bound by all the accepted terms and conditions, and any proposed alternative terms and conditions submitted with the proposal. The State reserves the right to negotiate rejected or proposed alternative language. If the State and bidder fail to agree on the final Terms and Conditions, the State reserves the right to reject the proposal. The State of Nebraska is soliciting bids in response to the RFP. The State of Nebraska reserves the right to reject proposals that attempt to substitute the bidder's commercial contracts and/or documents for this RFP.

The bidder should submit with their proposal any license, user agreement, service level agreement, or similar documents that the bidder wants incorporated in the Contract. The State will not consider incorporation of any document not submitted with the bidder's proposal as the document will not have been included in the evaluation process. These documents shall be subject to negotiation and will be incorporated as addendums if agreed to by the Parties.

If a conflict or ambiguity arises after the addendums have been negotiated and agreed to, the addendums shall be interpreted as follows:

1. If only one Party has a particular clause then that clause shall control;
2. If both Parties have a similar clause, but the clauses do not conflict, the clauses shall be read together;
3. If both Parties have a similar clause, but the clauses conflict, the State's clause shall control.

A. GENERAL

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:
			

The contract resulting from this RFP shall incorporate the following documents:

1. Request for Proposal and Addenda;
2. Amendments to the RFP;
3. Questions and Answers;
4. Contractor's proposal (RFP)
5. Award;
6. The executed Contract and any Addenda (including Contractor's proposal and properly submitted documents) ; and,
7. Amendments to the Contract

These documents constitute the entirety of the contract.

Unless otherwise specifically stated in a future contract amendment, in case of any conflict between the incorporated documents, the documents shall govern in the following order of preference with number one (1) receiving preference over all other documents and with each lower numbered document having preference over any higher numbered document: 1) Amendment to the executed Contract with the most recent dated amendment having the highest priority, 2) executed Contract and any attached Addenda, 3) Amendments to RFP and any Questions and Answers, 4) the original RFP document and any Addenda, and 5) the Contractor's submitted Proposal.

Any ambiguity or conflict in the contract discovered after its execution, not otherwise addressed herein, shall be resolved in accordance with the rules of contract interpretation as established in the State of Nebraska.

B. NOTIFICATION

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:

Communications regarding the executed contract shall be in writing and shall be deemed to have been given if delivered personally or mailed, by U.S. Mail, postage prepaid, return receipt requested, to the parties at their respective addresses. All notices, requests, or communications shall be deemed effective upon personal delivery or three (3) calendar days following deposit in the mail.

Either party may change its address for notification purposes by giving notice of the change, and setting forth the new address and an effective date.

C. GOVERNING LAW (Statutory)

Notwithstanding any other provision of this contract, or any amendment or addendum(s) entered into contemporaneously or at a later time, the parties understand and agree that, (1) the State of Nebraska is a sovereign state and its authority to contract is therefore subject to limitation by the State's Constitution, statutes, common law, and regulation; (2) this contract will be interpreted and enforced under the laws of the State of Nebraska; (3) any action to enforce the provisions of this agreement must be brought in the State of Nebraska per state law; (4) the person signing this contract on behalf of the State of Nebraska does not have the authority to waive the State's sovereign immunity, statutes, common law, or regulations; (5) the indemnity, limitation of liability, remedy, and other similar provisions of the final contract, if any, are entered into subject to the State's Constitution, statutes, common law, regulations, and sovereign immunity; and, (6) all terms and conditions of the final contract, including but not limited to the clauses concerning third-party use, licenses, warranties, limitations of liability, governing law and venue, usage verification, indemnity, liability, remedy or other similar provisions of the final contract are entered into specifically subject to the State's Constitution, statutes, common law, regulations, and sovereign immunity.

The Parties must comply with all applicable local, state and federal laws, ordinances, rules, orders, and regulations.

D. BEGINNING OF WORK

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:

The bidder shall not commence any billable work until a valid contract has been fully executed by the State and the successful Contractor. The Contractor will be notified in writing when work may begin.

E. CHANGE ORDERS

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:

The State and the Contractor, upon the written agreement, may make changes to the contract within the general scope of the RFP. Changes may involve specifications, the quantity of work, or such other items as the State may find necessary or desirable. Corrections of any deliverable, service, or work required pursuant to the contract shall not be deemed a change. The Contractor may not claim forfeiture of the contract by reasons of such changes.

The Contractor shall prepare a written description of the work required due to the change and an itemized cost sheet for the change. Changes in work and the amount of compensation to be paid to the Contractor shall be determined in accordance with applicable unit prices if any, a pro-rated value, or through negotiations. The State shall not incur a price increase for changes that should have been included in the Contractor's proposal, were foreseeable, or result from difficulties with or failure of the Contractor's proposal or performance.

No change shall be implemented by the Contractor until approved by the State, and the Contract is amended to reflect the change and associated costs, if any. If there is a dispute regarding the cost, but both parties agree that immediate implementation is necessary, the change may be implemented, and cost negotiations may continue with both Parties retaining all remedies under the contract and law.

F. NOTICE OF POTENTIAL CONTRACTOR BREACH

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:

If Contractor breaches the contract or anticipates breaching the contract, the Contractor shall immediately give written notice to the State. The notice shall explain the breach or potential breach, a proposed cure, and may include a request for a waiver of the breach if so desired. The State may, in its discretion, temporarily or permanently waive the breach. By granting a waiver, the State does not forfeit any rights or remedies to which the State is entitled by law or equity, or pursuant to the provisions of the contract. Failure to give immediate notice, however, may be grounds for denial of any request for a waiver of a breach.

G. **BREACH**

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:

Either Party may terminate the contract, in whole or in part, if the other Party breaches its duty to perform its obligations under the contract in a timely and proper manner. Termination requires written notice of default and a thirty (30) calendar day (or longer at the non-breaching Party's discretion considering the gravity and nature of the default) cure period. Said notice shall be delivered by Certified Mail, Return Receipt Requested, or in person with proof of delivery. Allowing time to cure a failure or breach of contract does not waive the right to immediately terminate the contract for the same or different contract breach which may occur at a different time. In case of default of the Contractor, the State may contract the service from other sources and hold the Contractor responsible for any excess cost occasioned thereby.

The State's failure to make payment shall not be a breach, and the Contractor shall retain all available statutory remedies and protections.

H. **NON-WAIVER OF BREACH**

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:

The acceptance of late performance with or without objection or reservation by a Party shall not waive any rights of the Party nor constitute a waiver of the requirement of timely performance of any obligations remaining to be performed.

I. **SEVERABILITY**

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:

If any term or condition of the contract is declarad by a court of competent jurisdiction to be illegal or in conflict with any law, the validity of the remaining terms and conditions shall not be affected, and the rights and obligations of the parties shall be construed and enforced as if the contract did not contain the provision held to be invalid or illegal.

J. INDEMNIFICATION

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:

1. GENERAL

The Contractor agrees to defend, indemnify, and hold harmless the State and its employees, volunteers, agents, and its elected and appointed officials ("the indemnified parties") from and against any and all third party claims, liens, demands, damages, liability, actions, causes of action, losses, judgments, costs, and expenses of every nature, including investigation costs and expenses, settlement costs, and attorney fees and expenses ("the claims"), sustained or asserted against the State for personal injury, death, or property loss or damage, arising out of, resulting from, or attributable to the willful misconduct, negligence, error, or omission of the Contractor, its employees, Subcontractors, consultants, representatives, and agents, resulting from this contract, except to the extent such Contractor liability is attenuated by any action of the State which directly and proximately contributed to the claims.

2. INTELLECTUAL PROPERTY

The Contractor agrees it will, at its sole cost and expense, defend, indemnify, and hold harmless the indemnified parties from and against any and all claims, to the extent such claims arise out of, result from, or are attributable to, the actual or alleged infringement or misappropriation of any patent, copyright, trade secret, trademark, or confidential information of any third party by the Contractor or its employees, Subcontractors, consultants, representatives, and agents; provided, however, the State gives the Contractor prompt notice in writing of the claim. The Contractor may not settle any infringement claim that will affect the State's use of the Licensed Software without the State's prior written consent, which consent may be withheld for any reason.

If a judgment or settlement is obtained or reasonably anticipated against the State's use of any intellectual property for which the Contractor has indemnified the State, the Contractor shall, at the Contractor's sole cost and expense, promptly modify the item or items which were determined to be infringing, acquire a license or licenses on the State's behalf to provide the necessary rights to the State to eliminate the infringement, or provide the State with a non-infringing substitute that provides the State the same functionality. At the State's election, the actual or anticipated judgment may be treated as a breach of warranty by the Contractor, and the State may receive the remedies provided under this RFP.

3. PERSONNEL

The Contractor shall, at its expense, indemnify and hold harmless the indemnified parties from and against any claim with respect to withholding taxes, worker's compensation, employee benefits, or any other claim, demand, liability, damage, or loss of any nature relating to any of the personnel, including subcontractor's and their employees, provided by the Contractor.

4. SELF-INSURANCE

The State of Nebraska is self-insured for any loss and purchases excess insurance coverage pursuant to Neb. Rev. Stat. § 81-8,239.01 (Reissue 2008). If there is a presumed loss under the provisions of this agreement, Contractor may file a claim with the Office of Risk Management pursuant to Neb. Rev. Stat. §§ 81-8,829 – 81-8,306 for review by the State Claims Board. The State retains all rights and immunities under the State Miscellaneous (Section 81-8,294), Tort (Section 81-8,209), and Contract Claim Acts (Section 81-8,302), as outlined in Neb. Rev. Stat. § 81-8,209 et

seq. and under any other provisions of law and accepts liability under this agreement to the extent provided by law.

5. The Parties acknowledge that Attorney General for the State of Nebraska is required by statute to represent the legal interests of the State, and that any provision of this indemnity clause is subject to the statutory authority of the Attorney General.

K. ATTORNEY'S FEES

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:

In the event of prevails any litigation, appeal, or other legal action to enforce any provision of the contract, the Parties agree to pay all expenses of such action, as permitted by law and if order by the court, including attorney's fees and costs, if the other party.

L. PERFORMANCE BOND

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:

The Contractor will be required to supply a bond executed by a corporation authorized to contract surety in the State of Nebraska, payable to the State of Nebraska, which shall be valid for the life of the contract to include any renewal and/or extension periods. The amount of the bond must be $20,000.00 and will guarantee that the Contractor will faithfully perform all requirements, terms and conditions of the contract. Failure to comply shall be grounds for forfeiture of the bond as liquidated damages. Amount of forfeiture will be determined by the agency based on loss to the State. The bond will be returned when the service has been satisfactorily completed as solely determined by the State, after termination or expiration of the contract.

M. ASSIGNMENT, SALE, OR MERGER

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:

Either party may assign the contract upon mutual written agreement of the other party. Such agreement shall not be unreasonably withheld.

The Contractor retains the right to enter into a sale, merger, acquisition, internal reorganization, or similar transaction involving Contractor's business. Contractor agrees to cooperate with the State in executing amendments to the contract to allow for the transaction. If a third party or entity is involved in the transaction, the Contractor will remain responsible for performance of the contract

until such time as the person or entity involved in the transaction agrees in writing to be contractually bound by this contract and perform all obligations of the contract.

N. CONTRACTING WITH OTHER NEBRASKA POLITICAL SUB-DIVISIONS

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:

The Contractor may, but shall not be required to, allow agencies, as defined in Neb. Rev. Stat. §81-145, to use this contract. The terms and conditions, including price, of the contract may not be amended. The State shall not be contractually obligated or liable for any contract entered into pursuant to this clause. A listing of Nebraska political subdivisions may be found at the website of the Nebraska Auditor of Public Accounts.

O. FORCE MAJEURE

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:

Neither party shall be liable for any costs or damages, or for default resulting from its inability to perform any of its obligations under the contract due to a natural or manmade event outside the control and not the fault of the affected party ("Force Majeure Event"). The Party so affected shall immediately make a written request for relief to the other party, and shall have the burden of proof to justify the request. The other Party may be granted the relief requested; relief may not be unreasonably withheld. Labor disputes with the impacted party's own employees will not be considered a Force Majeure Event.

P. CONFIDENTIALITY

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:

All materials and information provided by the Parties or acquired by a Party on behalf of the other Party shall be regarded as confidential information. All materials and information provided or acquired shall be handled in accordance with federal and state law, and ethical standards. Should said confidentiality be breached by a Party, the Party shall notify the other Party immediately of said breach and take immediate corrective action.

It is incumbent upon the Parties to inform their officers and employees of the penalties for improper disclosure imposed by the Privacy Act of 1974, 5 U.S.C. 552a. Specifically, 5 U.S.C. 552a (i)(1), which is made applicable by 5 U.S.C. 552a (m)(1), provides that any officer or employee, who by virtue of his/her employment or official position has possession of or access to agency records which contain individually identifiable information, the disclosure of which is prohibited by the Privacy Act or

regulations established thereunder, and who knowing that disclosure of the specific material is prohibited, willfully discloses the material in any manner to any person or agency not entitled to receive it, shall be guilty of a misdemeanor and fined not more than $5,000.

Q. EARLY TERMINATION

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:

The contract may be terminated as follows:

1. The State and the Contractor, by mutual written agreement, may terminate the contract at any time.
2. The State, in its sole discretion, may terminate the contract for any reason upon thirty (30) calendar day's written notice to the Contractor. Such termination shall not relieve the Contractor of warranty or other service obligations incurred under the terms of the contract. In the event of termination the Contractor shall be entitled to payment, determined on a pro rata basis, for products or services satisfactorily performed or provided.
3. The State may terminate the contract immediately for the following reasons:
   a. if directed to do so by statute;
   b. Contractor has made an assignment for the benefit of creditors, has admitted in writing its inability to pay debts as they mature, or has ceased operating in the normal course of business;
   c. a trustee or receiver of the Contractor or of any substantial part of the Contractor's assets has been appointed by a court;
   d. fraud, misappropriation, embezzlement, malfeasance, misfeasance, or illegal conduct pertaining to performance under the contract by its Contractor, its employees, officers, directors, or shareholders;
   e. an involuntary proceeding has been commenced by any party against the Contractor under any one of the chapters of Title 11 of the United States Code and (i) the proceeding has been pending for at least sixty (60) calendar days; or (ii) the Contractor has consented, either expressly or by operation of law, to the entry of an order for relief; or (iii) the Contractor has been decreed or adjudged a debtor;
   f. a voluntary petition has been filed by the Contractor under any of the chapters of Title 11 of the United States Code;
   g. Contractor intentionally discloses confidential information;
   h. Contractor has or announces it will discontinue support of the deliverable; and,
   i. In the event funding is no longer available.

R. CONTRACT CLOSEOUT

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:

Upon termination of the contract for any reason the Contractor shall within 30 days, unless stated otherwise herein:

1. Transfer all completed or partially completed deliverables to the State;

2. Transfer ownership and title to all completed or partially completed deliverables to the State;
3. Return to the State all information and data, unless the Contractor is permitted to keep the information or data by contract or rule of law. Contractor may retain one copy of any information or data as required to comply with applicable work product documentation standards or as are automatically retained in the course of Contractor's routine back up procedures;
4. Cooperate with any successor contactor, person or entity in the assumption of any or all of the obligations of this contract;
5. Cooperate with any successor Contactor, person or entity with the transfer of information or data related to this contract;
6. Return or vacate any state owned real or personal property; and,
7. Return all data in a mutually acceptable format and manner.

Nothing in this Section should be construed to require the Contractor to surrender intellectual property, real or person property, or information or data owned by the Contractor for which the State has no legal claim.

III. CONTRACTOR DUTIES

A. INDEPENDENT CONTRACTOR / OBLIGATIONS

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:

It is agreed that the Contractor is an independent contractor and that nothing contained herein is intended or should be construed as creating or establishing a relationship of employment, agency, or a partnership.

The Contractor is solely responsible for fulfilling the contract. The Contractor or the Contractor's representative shall be the sole point of contact regarding all contractual matters.

The Contractor shall secure, at its own expense, all personnel required to perform the services under the contract. The personnel the Contractor uses to fulfill the contract shall have no contractual or other legal relationship with the State; they shall not be considered employees of the State and shall not be entitled to any compensation, rights or benefits from the State, including but not limited to, tenure rights, medical and hospital care, sick and vacation leave, severance pay, or retirement benefits.

By-name personnel commitments made in the Contractor's proposal shall not be changed without the prior written approval of the State. Replacement of these personnel, if approved by the State, shall be with personnel of equal or greater ability and qualifications.

All personnel assigned by the Contractor to the contract shall be employees of the Contractor or a subcontractor, and shall be fully qualified to perform the work required herein. Personnel employed by the Contractor or a subcontractor to fulfill the terms of the contract shall remain under the sole direction and control of the Contractor or the subcontractor respectively.

With respect to its employees, the Contractor agrees to be solely responsible for the following:

1. Any and all pay, benefits, and employment taxes and/or other payroll withholding;
2. Any and all vehicles used by the Contractor's employees, including all insurance required by state law;
3. Damages incurred by Contractor's employees within the scope of their duties under the contract;
4. Maintaining Workers' Compensation and health insurance that complies with state and federal law and submitting any reports on such insurance to the extent required by governing law; and
5. Determining the hours to be worked and the duties to be performed by the Contractor's employees.
6. All claims on behalf of any person arising out of employment or alleged employment (including without limit claims of discrimination alleged against the Contractor, its officers, agents, or subcontractors or subcontractor's employees)

If the Contractor intends to utilize any subcontractor, the Subcontractor's level of effort, tasks, and time allocation should be clearly defined in the Contractor's proposal. The Contractor shall agree that it will not utilize any Subcontractors not specifically included in its proposal in the performance of the contract without the prior written authorization of the State.

The State reserves the right to require the Contractor to reassign or remove from the project any Contractor or Subcontractor employee.

Contractor shall insure that the terms and conditions contained in any contract with a sub-contractor does not conflict with the terms and conditions of this contract.

The Contractor shall include a similar provision, for the protection of the State, in the contract with any Subcontractor engaged to perform work on this contract.

B. EMPLOYEE WORK ELIGIBILITY STATUS

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:

The Contractor is required and hereby agrees to use a federal immigration verification system to determine the work eligibility status of employees physically performing services within the State of Nebraska. A federal immigration verification system means the electronic verification of the work authorization program authorized by the Illegal Immigration Reform and Immigrant Responsibility Act of 1996, 8 U.S.C. 1324a, known as the E-Verify Program, or an equivalent federal program designated by the United States Department of Homeland Security or other federal agency authorized to verify the work eligibility status of an employee.

If the Contractor is an individual or sole proprietorship, the following applies:

1. The Contractor must complete the United States Citizenship Attestation Form, available on the Department of Administrative Services website at http://das.nebraska.gov/materiel/purchasing.html

   The completed United States Attestation Form should be submitted with the RFP response.

2. If the Contractor indicates on such attestation form that he or she is a qualified alien, the Contractor agrees to provide the US Citizenship and Immigration Services documentation required to verify the Contractor's lawful presence in the United States using the Systematic Alien Verification for Entitlements (SAVE) Program.

3. The Contractor understands and agrees that lawful presence in the United States is required and the Contractor may be disqualified or the contract terminated if such lawful presence cannot be verified as required by Neb. Rev. Stat. §4-108.

C. COMPLIANCE WITH CIVIL RIGHTS LAWS AND EQUAL OPPORTUNITY EMPLOYMENT / NONDISCRIMINATION (Statutory)

The Contractor shall comply with all applicable local, state, and federal statutes and regulations regarding civil rights laws and equal opportunity employment. The Nebraska Fair Employment Practice Act prohibits Contractors of the State of Nebraska, and their Subcontractors, from discriminating against any employee or applicant for employment, with respect to hire, tenure, terms, conditions, compensation, or privileges of employment because of race, color, religion, sex, disability, marital status, or national origin (Neb. Rev. Stat. §48-1101 to 48-1125). The Contractor guarantees compliance with the Nebraska Fair Employment Practice Act, and breach of this provision shall be regarded as a material breach of contract. The Contractor shall insert a similar provision in all Subcontracts for services to be covered by any contract resulting from this RFP.

D. COOPERATION WITH OTHER CONTRACTORS

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:

Contractor may be required to work with or in close proximity to other contractors or individuals that may be working on same or different projects. The Contractor shall agree to cooperate with such other contractors or individuals, and shall not commit or permit any act which may interfere with the performance of work by any other contractor or individual. Contractor is not required to compromise Contractor's intellectual property or proprietary information unless expressly required to do so by this contract.

E. PERMITS, REGULATIONS, LAWS

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:

The contract price shall include the cost of all royalties, licenses, permits, and approvals, whether arising from patents, trademarks, copyrights or otherwise, that are in any way involved in the contract. The Contractor shall obtain and pay for all royalties, licenses, and permits, and approvals necessary for the execution of the contract. The Contractor must guarantee that it has the full legal right to the materials, supplies, equipment, software, and other items used to execute this contract.

F. OWNERSHIP OF INFORMATION AND DATA / DELIVERABLES

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:

The State shall have the unlimited right to publish, duplicate, use, and disclose all information and data developed or obtained by the Contractor on behalf of the State pursuant to this contract.

The State shall own and hold exclusive title to any deliverable developed as a result of this contract. Contractor shall have no ownership interest or title, and shall not patent, license, or copyright, duplicate, transfer, sell, or exchange, the design, specifications, concept, or deliverable.

G. INSURANCE REQUIREMENTS

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:

The Contractor shall throughout the term of the contract maintain insurance as specified herein and provide the State a current Certificate of Insurance/Acord Form (COI) verifying the coverage. The Contractor shall not commence work on the contract until the insurance is in place. If Contractor subcontracts any portion of the Contract the Contractor must, throughout the term of the contract, either:

1. Provide equivalent insurance for each subcontractor and provide a COI verifying the coverage for the subcontractor;
2. Require each subcontractor to have equivalent insurance and provide written notice to the State that the Contractor has verified that each subcontractor has the required coverage; or,
3. Provide the State with copies of each subcontractor's Certificate of Insurance evidencing the required coverage.

The Contractor shall not allow any Subcontractor to commence work until the Subcontractor has equivalent insurance. The failure of the State to require a COI, or the failure of the Contractor to provide a COI or require subcontractor insurance shall not limit, relieve, or decrease the liability of the Contractor hereunder.

In the event that any policy written on a claims-made basis terminates or is canceled during the term of the contract or with in one (1) year of termination or expiration of the contract, the contractor shall obtain an extended discovery or reporting period, or a new insurance policy, providing coverage required by this contract for the term of the contract and one (1) year following termination or expiration of the contract.
If by the terms of any insurance a mandatory deductible is required, or if the Contractor elects to increase the mandatory deductible amount, the Contractor shall be responsible for payment of the amount of the deductible in the event of a paid claim.

Notwithstanding any other clause in this Contract, the State may recover up to the liability limits of the insurance policies required herein.

1. **WORKERS' COMPENSATION INSURANCE**
The Contractor shall take out and maintain during the life of this contract the statutory Workers' Compensation and Employer's Liability Insurance for all of the contactors' employees to be engaged in work on the project under this contract and, in case any such work is sublet, the Contractor shall require the Subcontractor similarly to provide Worker's Compensation and Employer's Liability Insurance for all of the Subcontractor's employees to be engaged in such work. This policy shall be written to meet the statutory requirements for the state in which the work is to be performed, including Occupational Disease. **The policy shall include a waiver of subrogation in favor of the State. The COI shall contain the mandatory COI subrogation waiver language found hereinafter**. The amounts of such insurance shall not be less than the limits stated hereinafter. For employees working in the State of Nebraska, the policy must be written by an entity authorized by the State of Nebraska Department of Insurance to write Workers' Compensation and Employer's Liability Insurance for Nebraska employees.

2. **COMMERCIAL GENERAL LIABILITY INSURANCE AND COMMERCIAL AUTOMOBILE LIABILITY INSURANCE**

The Contractor shall take out and maintain during the life of this contract such Commercial General Liability Insurance and Commercial Automobile Liability Insurance as shall protect Contractor and any Subcontractor performing work covered by this contract from claims for damages for bodily injury, including death, as well as from claims for property damage, which may arise from operations under this contract, whether such operation be by the Contractor or by any Subcontractor or by anyone directly or indirectly employed by either of them, and the amounts of such insurance shall not be less than limits stated hereinafter.

The Commercial General Liability Insurance shall be written on an **occurrence basis**, and provide Premises/Operations, Products/Completed Operations, Independent Contractors, Personal Injury, and Contractual Liability coverage. **The policy shall include the State, and others as required by the contract documents, as Additional Insured(s). This policy shall be primary, and any insurance or self-insurance carried by the State shall be considered secondary and non-contributory. The COI shall contain the mandatory COI liability waiver language found hereinafter.** The Commercial Automobile Liability Insurance shall be written to cover all Owned, Non-owned, and Hired vehicles.

REQUIRED INSURANCE COVERAGE	
COMMERCIAL GENERAL LIABILITY	
General Aggregate	$2,000,000
Products/Completed Operations Aggregate	$2,000,000
Personal/Advertising Injury	$1,000,000 per occurrence
Bodily Injury/Property Damage	$1,000,000 per occurrence
Medical Payments	$5,000 any one person
Damage to Rented Premises	$300,000 each occurrence
If higher limits are required, the Umbrella/Excess Liability limits are allowed to satisfy the higher limit.	
WORKER'S COMPENSATION	
Employers Liability Limits	$500K/$500K/$500K
Statutory Limits- All States	Statutory - State of Nebraska
Voluntary Compensation	Statutory
COMMERCIAL AUTOMOBILE LIABILITY	
Bodily Injury/Property Damage	$1,000,000 combined single limit
Include All Owned, Hired & Non-Owned Automobile liability	Included
Motor Carrier Act Endorsement	Where Applicable
UMBRELLA/EXCESS LIABILITY	
Over Primary Insurance	$5,000,000 per occurrence
MANDATORY COI SUBROGATION WAIVER LANGUAGE	
"Workers' Compensation policy shall include a waiver of subrogation in favor of the State of Nebraska."	
MANDATORY COI LIABILITY WAIVER LANGUAGE	
"Commercial General Liability & Commercial Automobile Liability policies shall be primary and any insurance or self-insurance carried by the State shall be considered secondary and non-contributory, as Additional Insured."	

If the mandatory COI subrogation waiver language or mandatory COI liability waiver language on the COI states that the waiver is subject to, condition upon, or otherwise limit by the insurance policy a copy of the relevant sections of the policy must be submitted with the COI so the State can review the limitations imposed by the insurance policy.

3. **EVIDENCE OF COVERAGE**
The Contractor must furnish to the State upon Contract execution, a certificate of insurance coverage complying with the above requirements to the attention of the Certificate Holder.

Certificate Holder:
Nebraska State Racing Commission
5903 Walker Avenue
Lincoln, NE 68507

These certificates or the cover sheet shall reference the RFP number, and the certificates shall include the name of the company, policy numbers, effective dates, dates of expiration, and amounts and types of coverage afforded. If the State is damaged by the failure of the Contractor to maintain such insurance, then the Contractor shall be responsible for all reasonable costs properly attributable thereto.

Reasonable notice of cancellation of any required insurance policy must be submitted to Nebraska State Racing Commission when issued and a new coverage binder shall be submitted immediately to ensure no break in coverage.

4. **DEVIATIONS**
The insurance requirements are subject to limited negotiation. Negotiation typically includes, but is not necessarily limited to, the correct type of coverage, necessity for Workers' Compensation, and the type of automobile coverage carried by the Contractor.

H. ANTITRUST

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:

The Contractor hereby assigns to the State any and all claims for overcharges as to goods and/or services provided in connection with this contract resulting from antitrust violations which arise under antitrust laws of the United States and the antitrust laws of the State.

I. CONFLICT OF INTEREST

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:

By submitting a proposal, bidder certifies that there does not now exist a relationship between the bidder and any person or entity which is or gives the appearance of a conflict of interest related to this RFP or project.

The bidder certifies that it shall not take any action or acquire any interest, either directly or indirectly, which will conflict in any manner or degree with the performance of its services hereunder or which creates an actual or an appearance of conflict of interest.

The bidder certifies that it will not knowingly employ any individual known by bidder to have a conflict of interest.

The Parties shall not knowingly, for a period of two years after execution of the contract, recruit or employ any employee or agent of the other Party who has worked on the RFP or project, or who had any influence on decisions affecting the RFP or project.

J. STATE PROPERTY

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:

The Contractor shall be responsible for the proper care and custody of any State-owned property which is furnished for the Contractor's use during the performance of the contract. The Contractor shall reimburse the State for any loss or damage of such property; normal wear and tear is expected.

K. SITE RULES AND REGULATIONS

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:

The Contractor shall use its best efforts to ensure that its employees, agents, and Subcontractors comply with site rules and regulations while on State premises. If the Contractor must perform on-site work outside of the daily operational hours set forth by the State, it must make arrangements with the State to ensure access to the facility and the equipment has been arranged. No additional payment will be made by the State on the basis of lack of access, unless the State fails to provide access as agreed to in writing between the State and the Contractor.

L. ADVERTISING

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:

The Contractor agrees not to refer to the contract award in advertising in such a manner as to state or imply that the company or its services are endorsed or preferred by the State. Any publicity releases pertaining to the project shall not be issued without prior written approval from the State.

M. NEBRASKA TECHNOLOGY ACCESS STANDARDS (Statutory)

Contractor shall review the Nebraska Technology Access Standards, found at http://nitc.nebraska.gov/standards/2-201.html and ensure that products and/or services provided under the contract are in compliance or will comply with the applicable standards to the greatest

degree possible. In the event such standards change during the Contractor's performance, the State may create an amendment to the contract to request the contract comply with the changed standard at a cost mutually acceptable to the parties.

N. DISASTER RECOVERY/BACK UP PLAN

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:

The Contractor shall have a disaster recovery and back-up plan, of which a copy should be provided upon request to the State, which includes, but is not limited to equipment, personnel, facilities, and transportation, in order to continue services as specified under the specifications in the contract in the event of a disaster.

O. DRUG POLICY

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:

Contractor certifies it maintains a drug free work place environment to ensure worker safety and workplace integrity. Contractor agrees to provide a copy of its drug free workplace policy at any time upon request by the State.

IV. PAYMENT

A. PROHIBITION AGAINST ADVANCE PAYMENT (Statutory)

Payments shall not be made until contractual deliverable(s) are received and accepted by the State.

B. TAXES

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:

The State is not required to pay taxes and assumes no such liability as a result of this solicitation. Any property tax payable on the Contractor's equipment which may be installed in a state-owned facility is the responsibility of the Contractor.

C. INVOICES

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:

Invoices for payments must be submitted by the Contractor to the agency requesting the services with sufficient detail to support payment. Invoices should be submitted monthly to Nebraska State Racing Commission, 5903 Walker Avenue, Lincoln, NE 68507. The invoice must include, but not limited to: Location of samples taken, the date samples were taken, the number of urine samples analyzed with sample identification number, the number of blood samples analyzed with sample identification number, etc. The terms and conditions included in the Contractor's invoice shall be deemed to be solely for the convenience of the parties. No terms or conditions of any such invoice shall be binding upon the State, and no action by the State, including without limitation the payment of any such invoice in whole or in part, shall be construed as binding or estopping the State with respect to any such term or condition, unless the invoice term or condition has been previously agreed to by the State as an amendment to the contract.

D. INSPECTION AND APPROVAL

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:

Final inspection and approval of all work required under the contract shall be performed by the designated State officials.

The State and/or its authorized representatives shall have the right to enter any premises where the Contractor or Subcontractor duties under the contract are being performed, and to inspect, monitor

or otherwise evaluate the work being performed. All inspections and evaluations shall be at reasonable times and in a manner that will not unreasonably delay work.

E. PAYMENT

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:

State will render payment to Contractor when the terms and conditions of the contract and specifications have been satisfactorily completed on the part of the Contractor as solely determined by the State. (Neb. Rev. Stat. Section 73-506(1)) Payment will be made by the responsible agency in compliance with the State of Nebraska Prompt Payment Act (See Neb. Rev. Stat. §81-2401 through 81-2408). The State may require the Contractor to accept payment by electronic means such as ACH deposit. In no event shall the State be responsible or liable to pay for any services provided by the Contractor prior to the Effective Date of the contract, and the Contractor hereby waives any claim or cause of action for any such services.

F. LATE PAYMENT

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:

The Contractor may charge the responsible agency interest for late payment in compliance with the State of Nebraska Prompt Payment Act (See Neb. Rev. Stat. § 81-2401 through 81-2408).

G. SUBJECT TO FUNDING / FUNDING OUT CLAUSE FOR LOSS OF APPROPRIATIONS

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:

The State's obligation to pay amounts due on the Contract for a fiscal years following the current fiscal year is contingent upon legislative appropriation of funds. Should said funds not be appropriated, the State may terminate the contract with respect to those payments for the fiscal year(s) for which such funds are not appropriated. The State will give the Contractor written notice thirty (30) calendar days prior to the effective date of termination. All obligations of the State to make payments after the termination date will cease. The Contractor shall be entitled to receive just and equitable compensation for any authorized work which has been satisfactorily completed as of the termination date. In no event shall the Contractor be paid for a loss of anticipated profit.

H. RIGHT TO AUDIT (Statutory)

The State shall have the right to audit the Contractor's performance of this contract upon a 30 days' written notice. Contractor shall utilize generally accepted accounting principles, and shall maintain the accounting records, and other records and information relevant to the contract (Information) to enable the State to audit the contract. The State may audit and the Contractor shall maintain, the information during the term of the contract and for a period of five (5) years after the completion of this contract or until all issues or litigation are resolved, whichever is later. The Contractor shall make the Information available to the State at Contractor's place of business or a location acceptable to both Parties during normal business hours. If this is not practical or the Contractor so elects, the Contractor may provide electronic or paper copies of the information. The State reserves the right to examine, make copies of, and take notes on any Information relevant to this contract, regardless of the form or the Information, how it is stored, or who possesses the information. Under no circumstance will the Contractor be required to create or maintain documents not kept in the ordinary course of contractor's business operations, nor will contractor be required to disclose any information, including but not limited to product cost data, which is confidential or proprietary to contractor.

The Parties shall pay their own costs of the audit unless the audit finds a previously undisclosed overpayment by the State. If a previously undisclosed overpayment exceeds one-half of one percent (.5%) of the total contract billings, or if fraud, material misrepresentations, or non-performance is discovered on the part of the Contractor, the Contractor shall reimburse the State for the total costs of the audit. Overpayments and audit costs owed to the State shall be paid within ninety days of written notice of the claim. The Contractor agrees to correct any material weaknesses or condition found as a result of the audit.

Section 6 – Completed Section R (Bidder Requirements)

1. Sample collection/processing/shipment

a. Provide samples, or photographs and descriptions of materials and equipment described in Section B. Sample Collection/Processing/Shipment.

Bidder Response:

Truesdail Laboratories, Inc. (Truesdail) will provide the Nebraska State Racing Commission (Commission) the necessary supplies for the collection, labeling, processing, storage, and shipping of samples. The sample collection supplies to be provided are:

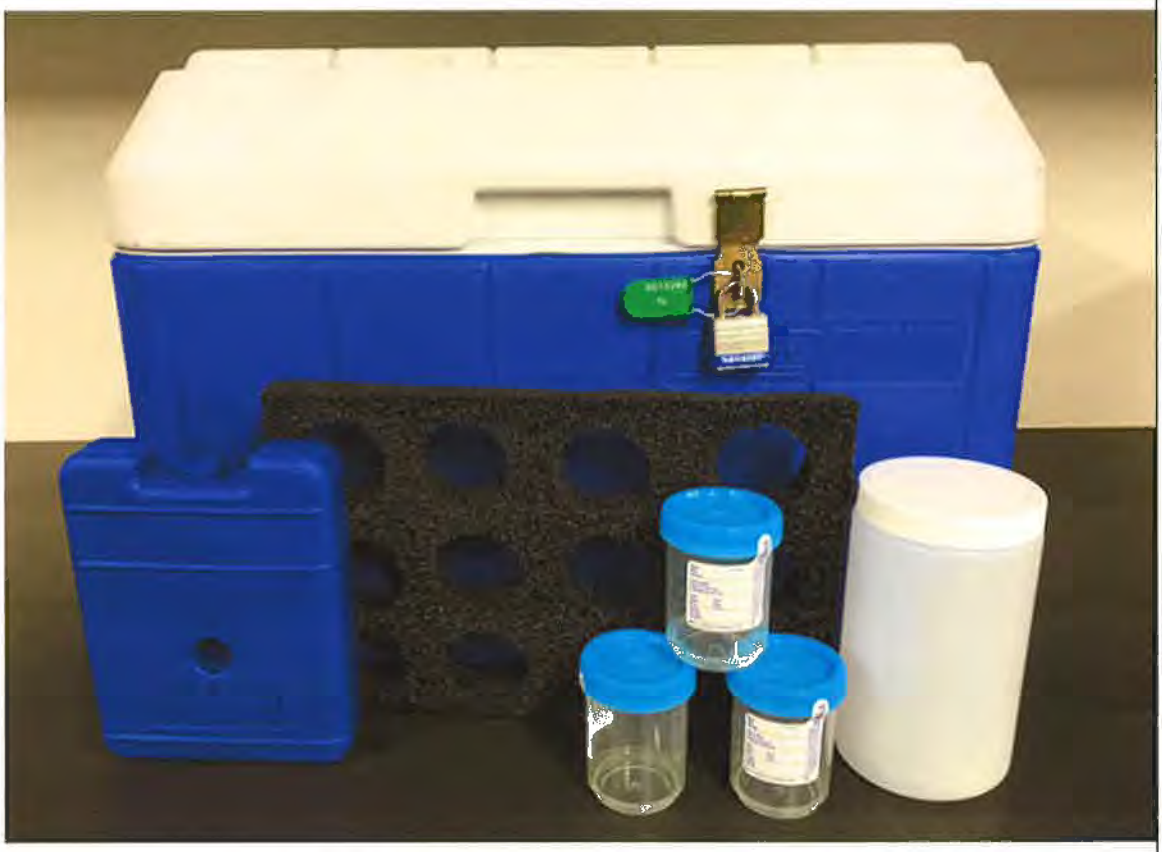
- New 16 oz. polyurethane urine collection cups that are lidded and bear a tamper evident security seal. factory-sealed.
- New 4oz. factory-sealed sterile plastic jars with lids (One (1) for the sample and one (1) for the split sample).
- Collection needles of 20-gauge (1) inch, 18-gauge (1.5) inch or 18-gauge (1) inch depending on the Commission's preferences.
- 10-mL blood collection tubes.
- Numbered, sample labels for identification and security of urine and blood samples after collection.
- Security tape for sealing of urine jars and blood tubes after collection.
- Insulated shipping containers adequate to maintain samples at not more than four (4) degrees centigrade for forty-eight (48) hours.
- Jar holders, blue ice block, etc.
- Padlocks for shipping containers.

b. Provide a copy of proposed training materials for Commission staff on the collection, labeling, processing, management, packaging, and shipment of official samples.

Bidder Response:

Shipping Cooler Instructions

1. The coolers will arrive in boxes and will come locked with a padlock, but please discard the boxes after arrival and we would appreciate it if you do not ship the coolers back in those boxes.



Pictured is what will come inside the cooler

2. When placing the samples back into the cooler please place the urine jars securely inside the foam holder. Stack each foam holder on top of each other.

Cooler with urine jars inside foam holders and blue ice

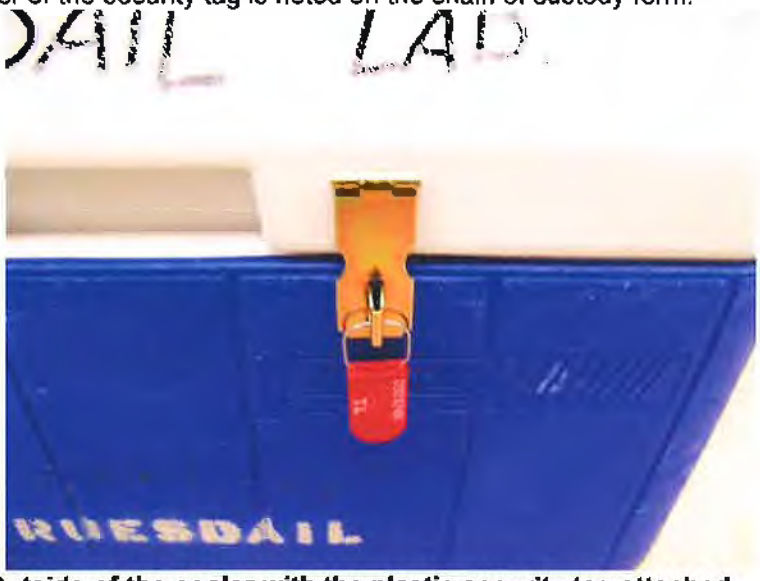
3. Place blood tubes inside the white plastic jar that is included in the cooler.

Blood tubes inside plastic jar

4. Put blood tubes inside the plastic jar and seal the jar.

Blood tubes inside the plastic jar and put it on the side of the urine jars.

5. Close cooler tightly. Fasten the hasp of the cooler. Place the plastic, numbered, wired security tag around the hasp on the outside of the cooler and close tightly. Make sure the number of the security tag is noted on the chain of custody form.

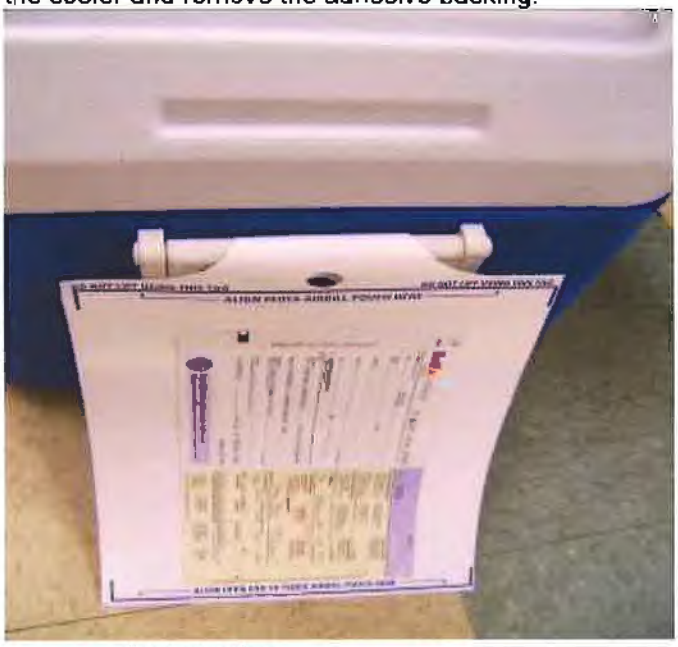


Outside of the cooler with the plastic security tag attached

6. Place the padlock around the hasp of the cooler and lock the padlock.

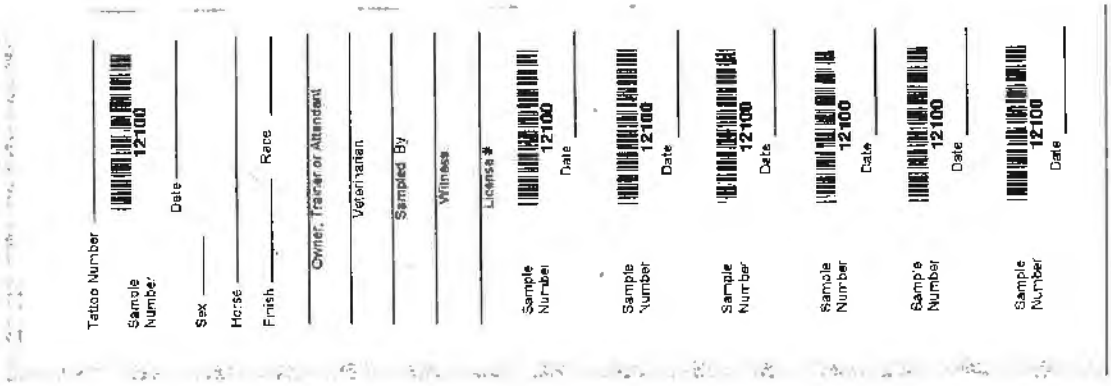
Outside of the cooler with the plastic security tag and padlock attached

7. Affix the self-adhesive Fed Ex airbill on to the luggage tag. Place luggage tag around the handle of the cooler and remove the adhesive backing.



Fed Ex luggage tag with airbill affixed to the cooler

Write all the appropriate information onto each sample id tag. Write the race date onto each of the peel-off adhesive tag and use one peel-off adhesive tag for each sample container.



Security tape should be placed so the sample number can be seen through the tape.

Please take 3 blood tubes per sample. Ship two blood tubes to the laboratory and keep one for split sample testing.
Please note: Blood tube and security tape may differ.

Please mark on the chain of custody form in the sex column the sex of the horse by the following notations. (H=male, colt. F=filly, mare. G=Gelding)
For TCO2 please mark "TCO2" on the top of the chain of custody form

TRUESDAIL LABORATORIES, INC.
14201 FRANKLIN AVENUE, TUSTIN, CALIFORNIA 92780

Chain-of-Custody Form

Race Track: ____________________ **Race Date:** ____________

Sample No.	Sex	Sample Type		Medications		Collected By	Sealed By	Supervisor
		Urine	Blood	Bute	Lasix			

Veterinarian/Commission Representative: ____________________

Security Seal #: ____________ **Sealed By:** ____________ **Date:** ____________

Samples Secured and Locked By: ____________________ **Date:** ____________

Carrier Service: ____________________ **Date:** ____________

Samples Received By: ____________________ **Date:** ____________

Phone: (714) 730-6239 · FAX (714) 730-6462 · www.truesdail.com · Email: julien@truesdail.com

If you have any questions, please contact the lab at 714-730-6239 ext. 380.

2. Facilities

a. Demonstrate adequate laboratory work space and storage capabilities to meet the anticipated sample load to be submitted by the Commission and the Contractor's other clients. Photos are acceptable.

Bidder Response:

Truesdail occupies Suite CN750, a new ~17,000 square-foot facility, in a large mixed-use commercial development campus called Park Place. Park Place has 24/7 security patrols of the entire complex. Truesdail's doors are checked on regular security rounds during non-business hours. Access to the complex is monitored by security cameras placed at strategic locations, entry ways, hallways etc. to provide added security. The campus has convenient access to transportation routes – Interstates 5 and 405, Newport (55) Freeway, 261 Toll Road, Orange County Airport, and local train station for Amtrak and Los Angeles Metro railroad lines.

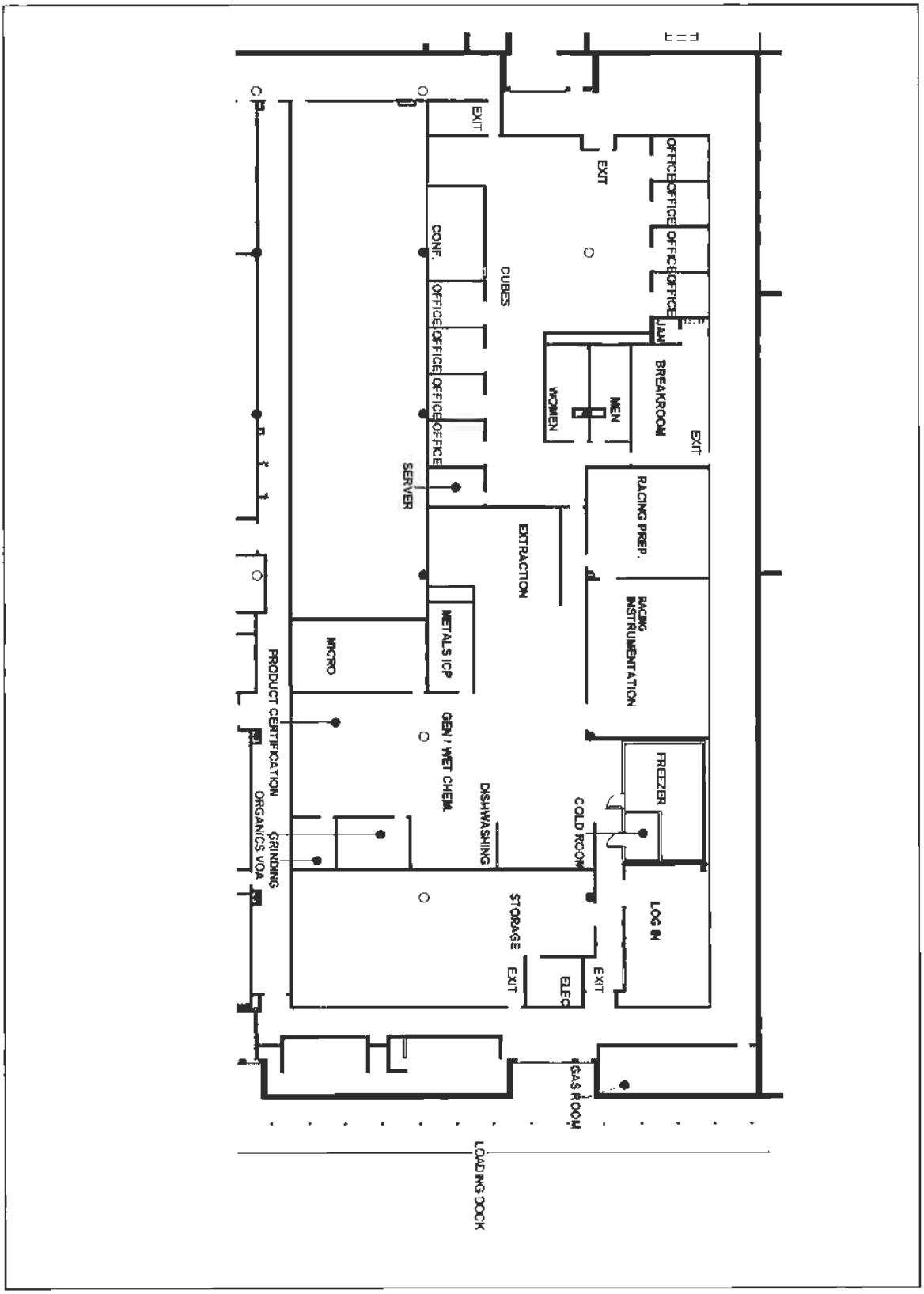
Truesdail Laboratories is a secured facility with controlled access to the Racing Chemistry Laboratory. The two (2) separate laboratories dedicated to animal drug testing are secured with electronic locks that require coded key cards. Key cards allowing access to the doors for the drug-testing laboratory are restricted to the Racing Chemistry Staff, the Facilities Manager and executive management. All paper files containing data about testing results are kept in locked file cabinets. Electronic data is kept in password protected data systems which are maintained on backed-up mirrored server hard drives.

The two Racing Chemistry Laboratory areas are Racing Preparation (650 square feet) and Racing Instrumentation (940 square feet). There is 500 square feet of dedicated walk-in freezer and walk-in cooler (Cold Room) for racing sample storage. Additional square footage is allocated to racing for support functions (login, warehouse, gas storage, etc.) and management activities.

The following areas are dedicated to the testing of racing samples and thus to perform work for the Commission. The Racing Preparation Laboratory is used for blood and urine extraction, TCO_2 analysis, and other wet chemistry analyses. This laboratory is fully equipped with lab benches, sink, two fume hoods, and solvent storage. The Racing Instrumentation Laboratory is used for instrumental analysis and immunoassay testing. Included among the instruments in this area are one (1) HPLC systems, two (2) GC/MS systems with auto samplers, four (4) LC/MS systems with auto sampler, two (2) automatic sampling devices for immunoassays, three (3) immunoassay plate readers, as well as other laboratory equipment associated with these types of instrumental and immunoassay analyses.

Our facility complies with OSHA, the State of California and local fire and safety requirements, and has met all the ISO/IEC 17025 and RMTC requirements.

A floor plan of the Laboratory is provided on the following page.


EXIT
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OFFICE
OFFICE
OFFICE
SERVER
WOMEN
MEN
BREAKROOM
EXIT
RACING PREP.
EXTRACTION
RACING INSTRUMENTATION
METALS ICP
MICRO
PRODUCT CERTIFICATION
GEN / WET CHEM.
DISHWASHING
FREEZER
COLD ROOM
ORGANICS VOA
GRINDING
STORAGE
LOG IN
EXIT
ELEC
EXIT
GAS ROOM
LOADING DOCK

Truesdail's Standard Operating Procedures are performed with the security of the samples firmly in mind. Each shipping container is sealed with a security seal and keyed padlock. Upon arrival at Truesdail, all seals are checked, samples are organized in numerical order, and then logged into our computerized laboratory report forms. The sample seals are broken and an aliquot is removed from the original container for the required analyses. Each sample is then resealed with security tape, initialed, and dated by the individual removing the test portions. Subsequent removal of test portions for confirmatory analyses is also accompanied by this procedure.

Original sample containers remain in a locked, temperature-controlled storage unit after portions are removed for analysis. One (1) storage unit is, 2,600 cubic foot freezer, which is inside our laboratory building. The temperature is monitored daily and maintained at approximately -15° C (±5° C). After 90 days, negative samples will be discarded. Our freezer is for storage of urine. Blood samples are stored long term in our new walk-in refrigerator (~600 cu ft) maintained at ~5°C,

2,600 cu. ft. Walk-in Freezer

Exterior of Racing's Secured Sample Storage

3. **Accreditations**
a. Disclose any deficiencies noted on the most recent accreditation (or re-accreditation) site inspection for both ISO 17025 and RMTC and provide documentation that said deficiencies have been remedied.
Bidder Response: Very recently (the week of October 17th, 2017) an on-site inspection and audit was conducted by the American National Accreditation Board (ANAB) at Truesdail's facility as part of its ISO 17025 accreditation. The ANAB ISO-17025 audit did not identify any deficiencies for the Racing Laboratory, but found five (5) other nonconformance findings for other laboratory areas. Responses by Truesdail to ANAB are still pending and will be provided to the state upon request when closed. The 2016 ANAB ISO-17025 audit did not have any findings within the laboratories and identified only 1 minor nonconformance for the incorrect use of the ANAB logo on our website. The most recent RMTC audit took place in October 2015. The findings from that audit and subsequent letter of satisfaction are below:

RMTC
Racing Medication & Testing Consortium

[redacted]

October 1, 2015

Dr. Anthony Fontana
Technical Director
Truesdail Laboratories
3337 Michelson Drive, Suite CN750
Irvine, California 92612

VIA ELECTRONIC MAIL

Dear Dr. Fontana:

Thank you for participating in the recent RMTC laboratory inspection and for any accommodations you made for Dr. Ulf Bondesson during his visit. I know this is a very busy time for your laboratory so your additional efforts are appreciated. Attached is a copy of the audit report.

Based from Dr. Bondesson's audit report there were several non-conformities identified which include:

- No description of the Element Laboratory Information Management System (LIMS) in the relevant Standard Operating Procedure (SOP), *R 9.03 Receiving Racing Chemistry Samples, rev: 6 Date 4/11;*
- No SOP or validation procedure exists for introducing new equipment or instruments;
- The requirements or criteria that are used to accept a batch or calibration should be included in the SOP of methods;
- Reconstitution of samples before analysis shall be documented in the method; and
- Review of all SOP's and note if conditions still apply.

Please correct the above non-conformities and submit all corrective actions to the RMTC. Upon receipt and review of all information, the Horse Testing Laboratory Committee (HTLC) will then determine whether to recommend any action regarding Truesdail's RMTC accreditation status. Such action may include suspension or revocation of the RMTC accreditation pursuant to the provisions of the RMTC Code (sections 2.4.9.2 and 2.4.9.3).

It was also noted that your laboratory recently underwent its ISO/IEC 17025:2005 inspection by ANSI-ASQ National Accreditation Board (ANAB) as part of your ongoing ISO accreditation. Once available, please provide the RMTC with a copy of the ANAB audit report, any non-conformities identified and any corrective actions taken pursuant to section 2.4.8.2 of the RMTC Code.

We will be sending you an invoice for the cost of Dr. Bondesson's travel, inspection, and assessment shortly.

RMTC
Racing Medication & Testing Consortium

[redacted]

January 29, 2016

Dr. Anthony Fontana
Technical Director
Truesdail Laboratories
3337 Michelson Drive, Suite CN750
Irvine, California 92612

VIA ELECTRONIC MAIL

Dear Dr. Fontana:

The Horseracing Testing Laboratories Committee (HTLC) has reviewed the current status of the investigation into Truesdail Laboratories. The HTLC is satisfied with the corrective actions your laboratory has taken in response to the customer complaints and the response to the non-conformities identified in the RMTC site inspection. Thank you for promptly addressing these matters and for your cooperation throughout this process.

The HTLC recognizes Truesdail's dedication to Quality Assurance and is evident though the external Quality Control program you developed with the UIC racing laboratory. The HTLC requests notification of any failed samples through this exchange program for a one (1) year period, beginning in January 2016.

Please feel free to contact me with any questions or concerns. Thanks for your participation in the RMTC Laboratory Accreditation program.

Best regards,

Christopher Ware

cc: HTLC Members

b. Disclose if any accreditation has ever been suspended, revoked, or otherwise sanctioned. Provide the details of any sanction(s) and its resolution.

Bidder Response:

In its 86-year history, Truesdail has never had any accreditations suspended, revoked, or otherwise sanctioned.

4. Quality Control and Quality Assurance

a. Provide the preceding 90 day's history of internal blind sample analysis.

Bidder Response:

Date	Analyst	Matrix	Drug Spiked	Spike Level	Drug Found	Result
8/8/17	Jose	Blood	Xylazine	0.2 ng/ml	Xylazine	Confirmed
8/8/17	Alberto	Urine	Mepivacaine	10 ng/ml	Mepivacaine	Confirmed
8/15/17	Jose	Blood	Detomidine	1 ng/ml	Detomidine	Confirmed
8/15/17	Alberto	Urine	Acetaminophen	100 ng/ml	Acetaminophen	Confirmed
8/22/17	Alberto	Blood	Ritalinic Acid	0.5 ng/ml	Ritalinic Acid	Confirmed
8/22/17	Alberto	Urine	Meperidine	10 ng/ml	Meperidine	Confirmed
8/29/17	Jose	Blood	Methyltestosterone	0.1 ng/ml	Nandrolone	Failed
8/29/17	Alberto	Urine	Clenbuterol	0.2 ng/ml	Clenbuterol	Confirmed
9/6/17	Jose	Blood	Cetirizine	10 ng/ml	Cetirizine	Confirmed
9/7/17	Alberto	Urine	Etodolac	20 ng/ml	Etodolac	Confirmed
9/12/17	Jose	Blood	Methylprednisolone	0.1 ng/ml	Methylprednisolone	Confirmed
9/12/17	Alberto	Urine	Diclofenac	500 ng/ml	Diclofenac	Confirmed
9/19/17	Jose	Blood	Procaine Penicillin	25 ng/ml	Nandrolone	Failed
9/19/17	Alberto	Urine	Pentazocine	10 ng/ml	Pentazocine	Confirmed
9/26/17	Jose	Blood	Guaifenesin	20 ng/ml	Guaifenesin	Confirmed
9/26/17	Alberto	Urine	Fluoxetine	20 ng/ml	Fluoxetine	Confirmed
10/3/17	Jose	Blood	Mepivacaine	0.1 ng/ml	Mepivacaine	Confirmed
10/3/17	Alberto	Urine	Meclofenamic Acid	100 ng/ml	Meclofenamic Acid	Confirmed
10/10/17	Jose	Blood	Butorphanol	2 ng/ml	Butorphanol	Confirmed
10/10/17	Alberto	Urine	Albuterol	1 ng/ml	Albuterol	Confirmed
10/17/17	Jose	Blood	Pentazocine	2 ng/ml	Pentazocine	Confirmed
10/17/17	Alberto	Urine	Morphine	20 ng/ml	Morphine	Confirmed

b. Provide a full description of your internal quality control measures and affirm that it has a designated, qualified Quality Assurance/Quality Control officer having the requisite authority to remedy deficiencies identified.

Bidder Response:

Internal Quality Assurance Programs

The goal of our internal quality control program is to introduce into our sample screening process blind quality control samples at a rate of 5 to 10%. The QA/QC weekly reports include the number of blind samples and the percentage of correctly identified specimens. Truesdail's blind sample analysis program is intended to push the limits of detection and create laboratory failures to identify and correct weaknesses in the laboratory. A robust QA/QC program will strive to identify failures and push current system limitations to identify areas of improvement as opposed to verification of identification at or above threshold levels.

Internal QC Procedure Summary

One or more blind QC samples will be incorporated into the "set" of race samples. A set usually consists of the samples shipped to the Lab from one day of racing. As samples are logged in, our LIMS system randomly chooses a QC sample spiked with one or more drugs and randomly assigns that sample to a position among the normal race samples. The QC drug number and the QC sample position are known only to the person sampling that set of samples, and thus are presented as blind samples to the analyst, i.e., the QC sample drug identity is known only to the QA/QC officer, Ms. Nga Le and QA Manager, Mr. Michael Ngo.

The QC samples are prepared by the QA/QC officer weekly. Drugs are selected for QC samples in order to challenge the Direct Instrumental method performed. The drug concentrations utilized routinely approach the detection limit of the analytical methods. The group of QC samples for a given week may contain the following:

- One or more drugs at Direct Instrumental detection levels for serum. Instrumental detection levels for each drug are determined by minimum detection limit studies for the methods in use or current regulatory thresholds.

- One or more drugs at Direct Instrumental detection levels for urine. Instrumental detection levels for each drug are determined by minimum detection limit studies for the methods in use or current regulatory thresholds.

The QA/QC officer keeps records on the performance of both the Direct Instrumental screening results obtained from the QA/QC program. The results are evaluated by the QA Manager and Chief Science Officer and actions deemed necessary to improve the screening process are implemented

Specific Internal Quality Control (QC) Activities

Five to ten percent (5-10%) of all laboratory operations in the Racing Chemistry Laboratory are related to quality control. Batch quality parameters are reviewed by multiple people for every batch of samples analyzed by each different method. These quality control systems include the following operations.

Direct Instrumental Screening

For each batch of samples, one or two internal QC samples are added to the batch containing multiple drugs covering the different class of drugs. Drugs should be identified when the internal QC sample is analyzed by GC/MS and/or LC/MS. If it is not identified, corrective action is taken.

Multiple Internal standards, typically deuterated standards of common drugs, are also added to every sample to be screened. Recovery of the internal standard demonstrates that the extraction and preparation process is functioning properly. Internal Standard recovery from the QC mixtures are control charted in order to detect trends or analysis issues. Additionally, Internal Standards in every sample need to be within the control chart specified limits. Continuing Verification Standards are analyzed after every 20 samples to ensure consistent performance of the instrumentation.

Immunoassay

Five to eight wells are used for calibration standards. Quality control samples are run at a frequency of 5 to 10%. This assures that immunoassay systems meet specifications for drug detection.

High Pressure Liquid Chromatography (HPLC)

Quality control samples, at varying concentrations of the specific analytes, are analyzed along with official blood or urine samples. Additionally, check standards (spiked samples) are quantitatively analyzed along with official samples to verify extraction efficiency and proper instrument function. The deviation range of our check standards (at the regulatory level) for a particular analyte must be within ±10%. These check standards are run every 10 samples. If this deviation criterion is not met, samples are re-extracted and re-analyzed.

Gas Chromatography/Mass Spectroscopy (GC/MS)

When suspect samples are submitted for GC/MS confirmation/identification, the GC/MS instrument is tuned to decafluorotriphenylphosphine (DFTPP) to validate the instrument's proper operation, after which a solvent blank, negative and positive control samples, standard solution of the suspect drug, and the suspect sample are examined. The spectra of all samples are then examined and recorded.

Liquid Chromatography / Mass Spectroscopy (LC/MS)

The LC/MS system is initially evaluated and calibrated using a mixture of compounds to characterize its performance. This mixture is used periodically if poor performance is suspected or after maintenance. The daily check for the LC/MS consists of obtaining satisfactory spectra of the drug(s) being sought on the day of analysis. Confirmation of drug samples will include the quality control of drug calibration mixtures, negative and positive control samples, and appropriate solvent and system blanks.

Interlaboratory Exchange Program

Truesdail has initiated and manages a sample exchange program with both the University of Illinois and Texas A&M Drug Testing Laboratories for independent verification of results. Both Texas A&M laboratory and the University of Illinois are RMTC accredited laboratories. These split exchanged blood and urine samples are blind to our laboratory staff and are used to verify that screening processes are robust for all drugs at the TOBA threshold levels.

Truesdail affirms that it has a designated, qualified Quality Assuranca/Quality Control officer that has the requisite authority to remedy deficiencies identified. His name in Michael Ngo and his information can be found in Section 7, Part I.

c. Identify the programs in which you participate, the number of EQAP samples it receives in a 12-month period and provide justification for the EQAPs in which it is enrolled.

Bidder Response:

External Quality Assurance Programs

Per year, Truesdail receives eight (8) samples from the AORC Proficiency program and two (2) sets of ten (10) samples from RMTC EQAP program. We achieved a 100% proficiency rate on the most recent RMTC and AORC proficiency testing samples. Details of these programs and certificates are given below.

State Programs

Most recently, Maryland and Oregon have sent double blind samples to test Truesdail's proficiency at screening samples and detecting drugs and we have passed all samples at 100%. In the past, California, Kentucky, Minnesota, and Washington used double blind programs to test Truesdail Laboratories proficiency at detecting drugs. Kentucky, with the most aggressive program, sent over 100 double blind samples in the years 1997 and 1998 combined. Double blind samples were then sent at a rate of one or two per month through 2001.

Association of Official Racing Chemists (AORC) Program

Truesdail Laboratories receives P.E. samples from the AORC. Our most recent certification of acceptable performance from this blind P.E. sample set follows.

In line with our commitment to stay abreast of concerns and trends in the racing industry, some of our staff members participated in most of the AORC meetings or in phone teleconferences. At

least one representative from Truesdail attends these meetings and incorporates the significant information into our drug-testing program.

Association of Official Racing Chemists

This Document Certifies that

Truesdail Laboratories, California, USA

has participated in the 2017 Proficiency Testing Program,
and has successfully isolated and identified the required number of unknown
urine and plasma specimens, in accordance with the Association's requirements.

David Batty
Chairman, Proficiency Testing Committee

Charles Russo
President, AORC

AORC

Racing Medication and Testing Consortium (RMTC)

The RMTC has developed a program to accredit laboratories, provide an ISO accredited proficiency program, fund method development, and other support activities previously supplied by the TIP program. The first goal of their program was for the drug testing labs to obtain ISO/IEC Guide 17025 accreditation and Truesdail obtained this approval in 2009. The accreditation program has proceeded significantly since the new director, Dr. Dionne Benson, was brought on board.

The RMTC accreditation program required the submission of a comprehensive application documenting SOP's, QA policies, instrumentation, staff, etc., which was reviewed by an outside reviewer. If differences were noted, responses and/or corrective actions were required.

Another requirement was the successful completion of two rounds of proficiency samples from RMTC's external quality assurance program (EQAP). A third major requirement was the on-site audit of the laboratory by the RMTC's technical auditor. If deficiencies were noted by the audit, they must be resolved before the lab advances.

Once these three major requirements were completed, the lab was advanced to the RMTC's Accreditation Committee for final review and award of accreditation status.

Truesdail applied for accreditation over 3 years ago. Our application was approved, we have successfully passed the required two rounds of EQAP P.E. samples, and we have been audited and all audit issues have been successfully resolved. We are pleased to report that our application package was reviewed by RMTC's Accreditation Committee on April 28, 2014 and Truesdail was awarded accreditation. A copy of RMTC's accreditation certificate is provided in **Appendix A.**

Maintaining RMTC accreditation requires the labs to continue to participate in their EQAP P.E. program and analyze two (2) sets of samples per year. Each EQAP P.E. set consists of ten (10) single masked samples (typically five (5) bloods and urine each). Truesdail continues to perform well in this EQAP program and meets the RMTC requirements.

In addition to accreditation activities, Truesdail has participated in other RMTC sponsored activities to benefit the racing community. In 2012, Truesdail was one of six labs asked to participate in a teleconference on the issues of detection and confirmation of the drug dermorphan. In 2013 and this year, Truesdail has been an active participant in the working group evaluating the issues surrounding the development of recommendations for regulations to control the use of cobalt. In 2014, Truesdail representatives were added to RMTC's Scientific Advisory Committee.

5. Historical information

a. Provide a history of your experience in analytic work relevant to the scope of work required by the Commission. Provide contact information for three clients having similar service requirements to those in this RFP.

Bidder Response:

Truesdail Laboratories has performed support services for racing authorities since the 1940s. Many things have changed over the last seven decades, but our integrity, rigor, and attention to detail have not. We combine our long history with the most up-to-date and cost-effective methods in the industry. The average tenure of our current Racing Chemistry staff (which includes three AORC members) is over 15 years. This stability has given us plenty of experience working as a team.

Three (3) clients with similar service requirements to Nebraska are Delaware, New Jersey, and Maryland. Their contact information is provided below.

Delaware

Contract:	Equine Drug Testing Services
Reference:	2015-2019
Period:	April 13, 2015, through April 12, 2019
Services:	Testing of equine urine and blood samples using a comprehensive direct instrumental analysis by our Orbitrap (UHPLC / HRMS) and immunoassay methodology. Quantitative analyses for permitted medications and confirmation testing on suspects are also performed
Agency:	**Thoroughbred Racing Commission**
Contact:	John F. Wayne, Executive Director
Address:	777 Delaware Park Boulevard, Wilmington, DE 19804
Telephone:	302-994-2521 ext. 8970
E-mail:	John.wayne@state.de.us

New Jersey

Contract:	Laboratory Testing Services for Equine and Human Drug Testing
Period:	2013-2015 (plus one two-year option)
Services:	Testing of equine urine and blood samples and human urine samples using immunoassay methodology and a comprehensive direct instrumental analysis using AB Sciex 4000 Q Trap triple-quad LC/MS/MS or Orbitrap (UHPLC / HRMS). Quantitative analyses of blood are performed for TCO_2 and permitted medications. Confirmation testing on suspects is also performed. Comprehensive out of competition testing program of bloods including cobalt testing by ICP-MS.
Agency:	**New Jersey Racing Commission**
Contact:	Frank Zanzuccki, Executive Director
Address:	P.O. Box 088 Trenton, NJ 08625
Telephone:	(609) 292-0613
E-mail:	frank.zanzuccki@lps.state.nj.us

Maryland

Contract:	Laboratory Testing Services for Equine Drug Testing
Reference:	DLLR-FY2014-007
Period:	February 2014 through January 2019
Services:	Testing of equine urine and blood samples using a comprehensive direct instrumental analysis by our Orbitrap (UHPLC / HRMS) and immunoassay methodology. Quantitative analyses of blood are performed for TCO_2 and Cobalt. Quantitative analyses for permitted medications and confirmation testing on suspects are also performed.
Agency:	**Maryland Racing Commission**
Contact:	Mike Hopkins, Executive Director
Address:	300 E. Towsontowne Boulevard Towson, Maryland 21286
Telephone:	(410) 296-9682
E-mail:	mike.hopkins@maryland.gov

b. Provide information related to the dismissal of any analytic findings related to failure in chain-of-custody, erroneous or inadequately documented analytic methods, data analysis error, or other event attributable.

Bidder Response:

No analytical finding related to failure in chain-of-custody, erroneous or inadequately documented analytic methods, data analysis error, or other event attributable has occurred.

c. Provide information related to the dismissal of any analytic findings related to a reference Contractor's split sample analysis failing to support the primary Contractor's finding.

Bidder Response:

Truesdail is not aware of any dismissal of any analytical findings related to a reference Contractor's split sample analysis failing to support the primary Contractor's finding

d. Provide information related to the determination by any hearing officer or quasi-judicial official that testimony provided by Contractor personnel was not credible.

Bidder Response:

Truesdail has not had any provided testimony deemed not credible by any hearing officer or quasi-judicial official

6. Research

a. Provide a summary of your ongoing and completed research relevant to equine drug testing, the regulation of therapeutic medications, or the detection of banned substances in racehorse samples.

Bidder Response:

Our capabilities are also indicated by the amount of research and development we have done over the years. Several examples follow.

- Since 1985 Truesdail has maintained an extensive research undertaking into the use and interpretation of immunoassay testing kits. We were the first U.S. laboratory to routinely utilize immunoassay (IA) testing in race samples (also in 1985).
- In 1992, Truesdail was the first laboratory to identify and confirm the presence of the sedative/analgesic detomidine (Dormosedan®) as its metabolite.
- In 1994, Truesdail was the first laboratory to identify and confirm the presence of the bicyclic antidepressant viloxazine (Vivirant®).
- In 1995, Truesdail was the first laboratory to identify and confirm the presence of the sedative romifidine (Sedivet®) in an equine sample.
- Also in 1995, Truesdail was the first laboratory to identify and confirm the presence of the local anesthetic pramoxine.
- In 2001, Truesdail was the first laboratory to identify and confirm the presence of flupirtine (an analgesic not approved by the FDA).
- In 2001, Truesdail was the first laboratory to identify and confirm by GC/MS the presence of guanabenz in an equine urine sample.
- In 2003, Truesdail confirmed the presence of methylpiperazine. Although this is not a new drug, to our knowledge this drug has never been confirmed before in the U.S.
- Further evidence of the effectiveness of our continuing R&D effort is Truesdail was the first to report all of the following drugs: methylphenidate (Ritalin®), oxymorphone (Numorphan®) and mazindol (Sanorex®).
- In 2009, Truesdail identified and confirmed the presence of the stimulant etilefrine.
- Truesdail was the first commercial laboratory to obtain and use Gas Chromatography Mass Spectrometry (GC/MS) for confirmation of all analytical findings.
- Official Analytical Methods: Participants in the *Testing Integrity Program* (TIP) provide standard analytical procedures that are peer reviewed by other laboratories and then made available to all racing organizations on the TIP internet website. Truesdail Laboratories has provided more analytical methods via TIP than any other commercial laboratory and nearly as many as the leading university lab. For more information see the TIP web site at http://www.testingintegrityprogam.org/.
- In 2010, Truesdail was the first commercial laboratory in the U.S. to obtain and use UHPLC / HRMS for equine drug screening.
- In 2012, Truesdail Labs was one of only a few labs that detected and confirmed the presence of dermorphin in race day samples; it is a hepta-peptide nicknamed "frog juice" because it is isolated from the skin of South American frogs. Dermorphin is 40 times more

potent than morphine. Truesdail was the first lab to demonstrate that the comprehensive UHPLC / HRMS technology we developed for screening could detect dermorphin. Previously, all other dermorphin detections required a targeted drug-specific test.

- In 2013, Truesdail Laboratories was the first lab to report methylhexanamine in an equine urine sample. Subsequently, ARCI added methylhexanamine as a Class I drug to their "Uniform Classification Guidelines for Foreign Substances" as of December 2013.
- In 2014, Truesdail was the first lab in the US to report the use of cobalt in race day samples.
- In 2016, Truesdail validated that we readily identify Glaucine using our routine screening methods with both spiked urine and blood samples immediately after the reported Glaucine positive finding in New York. We have already confirmed the presence of Glaucine in some post-race samples.

b. Provide the activities of senior staff relevant to meetings and outreach with industry representatives, stakeholders, and licensees. Describe ongoing efforts to monitor analytical trends, gather intelligence, and identify substances representing emerging threats to the integrity of the sport and the safety of its participants.

Bidder Response:

Dr. Anthony J. Fontana, Truesdail' s Chief Science Officer, and Dr. Norman Hester, Technician Director Emeritus are members of the Racing Medication and Testing Consortium's (RMTC) Scientific Advisory Committee (SAC) The RMTC SAC members are recognized as scientific experts in their respective fields. The committee reviews research data, peer reviewed publications, and historical regulatory experience to make scientifically-based recommendation to the RCI for the thresholds found in the Controlled Therapeutic Substances list. The SAC discusses emerging issues and threats to the racing industry and recommends research to address these issues. Truesdail's participation in the RMTC SAC benefits the State by ensuring that Truesdail is current with equine drug research activities and emerging issues and threats to the racing industry.

Dr. Anthony J. Fontana is a member of the RMTC Drug Classification Subcommittee which assists in the development of the Controlled Therapeutic Substances (CTS) list. The CTS list was created by the Association of Racing Commissioners International (RCI) to assist veterinarians in the medical treatment of racehorse. In addition to the creation of the CTS list, the RMTC SAC continuously updates the recommendations made with new information as it is made available. Truesdail's participation in the RMTC Drug Classification Subcommittee benefits the Commission by maintaining Truesdail is current to all changes and updates to the CTS list.

In 2016, Dr. Fontana was selected as a member of the RMTC task force on the usage of Glaucine, accidental or otherwise, as a performance enhancer and to address potential environmental sources. Dr. Fontana was selected to the RMTC Glaucine Task Force as a result of Truesdail's development in bringing Glaucine testing into its routine screening program. This testing was a result of a partnership between Truesdail and the University of Pennsylvania. This partnership benefits the Commission by providing a technique in identifying both glaucine and other alkaloids to distinguish environmental contamination from direct administration. In 2017, RMTC issues recommendations for Glaucine threshold limits based on the work from the Glaucine Task Force.

Truesdail maintains a close professional relationship with the University of California – Davis Equine Analytical Chemistry Laboratory and the Pennsylvania Equine Toxicology and Research Laboratory. These relationships enable Truesdail to receive technical and pharmacological assistance when needed in addressing method development, research activities and consultation to assist the Commission.

Truesdail actively participates, attends, and presents at scientific and racing industry meetings. We attend the International Conference of Racing Analysts and Veterinarians (ICRAV), Association of Official Racing Chemists (AORC), Racing Commissioners International (ARCI, and many State Racing Commission meeting. At the 2016 ICRAV meeting we presented a poster describing the Galucine research conducted by Truesdail and the paper is included in the proceedings from the meeting. At the 2017 ARCI meeting, Dr. Fontana was an expert panel member for a drug testing forum. Additionally, Dr. Fontana presents an overview for equine drug testing at individual State Racing Commission meetings.

7. Value-added services

a. Describe any value-added services you intend to provide beyond those required in this RFP.

Bidder Response:

Truesdail maintains a close relationship with all our State Racing Commissions. These relationships benefit the commissions by providing expert scientific and technical interpretation of results from the PhD scientists on staff. Dr. Fontana presents an overview for equine drug testing at individual State Racing Commission meetings and at race tracks for stewards and horsemen. Truesdail's goal is to be a scientific and expert resource for the Commission.

In 2016, the research work conducted by Truesdail for Glaucine and the alkaloids; protopine, liriodenine, and asimilobine, in blood and urine samples provides the racing commission and stewards a tool to help distinguish between deliberate administration of the drug versus probable environmental contamination.

In 2015, Truesdail initiated and manages a sample exchange program with both the University of Illinois and Texas A&M Drug Testing Laboratories for independent verification of results. Texas A&M Laboratory and the University of Illinois are RMTC accredited laboratories. These split exchanged blood and urine samples are blind to our laboratory and are used to verify that our drug screening processes are robust for all drugs at the TOBA threshold levels. This relationship brings value to the Commission by providing external validation to Truesdail screening results.

The RMTC has recently recommended a threshold for gamma-aminobutyric acid (GABA). Truesdail has in-place validated methods to both screen and confirm this compound should the Commission adopt this threshold recommendation.

Truesdail responds rapidly to new emerging drug threats. In 2017, the Texas A&M Drug Testing Laboratory confirmed positives for a previously unidentified drug called Nomifensine. We investigated testing methodology being used for Nomifensine detection and ordered analytical standards immediately upon coming aware of these findings. Within three weeks, we confirmed our screening protocol easily detects Nomifensine and we have validated our screening and confirmation protocolos. All of your samples will be screened for Nomifensine if our bid is accepted.

Section 7 – Corporate Overview

A. Bidder Identification and Information

Truesdail Laboratories, Inc.,
3337 Michelson Drive, Suite 750
Irvine, CA 92612
Phone: (714) 730-6239
Fax: (714) 730-6462
Email: afontana@truesdail.com

Truesdail Laboratories, Inc., is a Califomia Subchapter S Corporation, established in 1931. Since then we have been in continuous operation and today the Laboratory essentially operates as it was originally organized to do business

B. Financial Statement

Truesdail Laboratories was established during the depths of the Depression as an organization devoted to independent testing, consulting, inspection, research, and expert testimony. We have continued our operations for over 80 years because we are, and have been since our inception, financially conservative. Our financials are included in this section in an envelope marked "Proprietary".

Bank Reference:

Bridge Bank / Western Alliance Bank, N.A.
Contact: Justin Vogel, Relationship Manager
55 Almaden Boulevard
San Jose, CA 95113
(408) 423-8500

C. Change of Ownership

Truesdail does not anticipate any change in ownership or control of the company during the twelve (12) months following the proposal due date (November 2, 2017). Should Truesdail be awarded the contract, we will notify the State.

D. Office Location

Truesdail Laboratories' facility is located at the same address as our corporate offices (3337 Michelson Drive, Suite CN750, Irvine, California). We occupy a 16,000 square-foot facility, which is conveniently located near major transportation routes – the 5 and 405 Interstates, the Newport (55) Freeway, the 261 Toll Road, the Orange County Airport, and the Amtrak and Los Angeles Metro railroad lines. Our facility was discussed in detail in **Section 2.**

"Proprietary"

TRUESDAIL LABORATORIES, INC.
Established 1931
EXCELLENCE IN INDEPENDENT TESTING
3337 MICHELSON DRIVE, SUITE CN750 • IRVINE, CA 92612

Our Racing Chemistry Laboratory's hours are Monday – Friday, 6:00 am to 5:00 pm, PST. During peak racing periods, working hours are expanded. On many holidays the Racing Chemistry Laboratory is staffed.

E. Relationships With the State

Contract:	Equine Testing Services
Reference:	5654604
Period:	January 1st, 2009 – December 31, 2016 (plus a one-year option)
Services:	Testing of equine urine and blood samples using a comprehensive direct instrumental analysis by our Orbitrap (UHPLC / HRMS) and immunoassay methodology. Quantitative analyses for permitted medications and confirmation testing on suspects are also performed.
Agency:	**Nebraska State Racing Commission**
Contact:	Tom Sage, Executive Director
Address:	5903 Walker Avenue Lincoln, Nebraska 68507
Telephone:	(402) 471-4155
E-mail:	Tom.Sage@Nebraska.gov

F. Bidder's Employee Relations to State

Truesdail does not have any owners, officers or employees that have been an employee of the State.

G. Contract Performance

In our approximately 70-year history of providing equine drug testing we have had only one (1) contract terminated. The Contract terminated was in May 2015 with the Indiana Racing Commission, 1302 N. Meridian, Suite 175, Indianapolis, IN, 46202; phone (317) 233-3119.

Truesdail was notified by the Indiana Horse Racing Commission that it was in breach of its contract and the contract was being terminated for failure to identify drug violations in three samples. Each sample contained a corticosteroid drug in excess of the medical regulations. These drugs were identified by an audit lab and confirmed by the referee lab. When initially notified by Indiana of the failure to identify a drug in these samples, we initiated an investigation. We did identify other drugs in these samples, but they were below the threshold levels. Our focus at the initial time was to investigate possible miss-quantification or loss of sensitivity of these drugs. Thus, we cleared these samples.

We were subsequently notified by Indiana that the confirmations were for corticosteroids, and we changed the focus of our investigation. ISO 17025 and RMTC have specific protocols for investigation of and response to testing issues. As an accredited laboratory, we are required to

ensure proper protocols are followed and adequate checks and balances are in place to ensure a proper investigation and response is conducted. To conduct a proper root cause investigation, a systematic approach must be taken. We investigated multiple aspects of the process concurrently trying to eliminate each step of the process individually as the cause of the problem. What one does not want to do is to quickly change three or four items in your process and then the issue is resolved, because they you do not know which of the three or four items was the true root cause to the problem.

The core issue was our failure to identify this issue internally prior to releasing results. We identified the loss of sensitivity for corticosteroid drug compounds to the extraction protocol of the drugs from the horse blood samples and to the signal-to-noise threshold settings in the LC/MS software. We adjusted our extraction process by adding more solvent and mixing longer to ensure we consistently extract the drugs from the blood. Additionally, we adjusted the injection volume of the sample onto the LC/MS instrument to increase the signal size.

Please note; (1) prior to notification by Indiana, Truesdail identified and confirmed corticosteroids above threshold levels in five blood samples from other racing commissions. Several of these samples were at lower levels than the Indiana samples. The loss of sensitivity was a recent issue at the time and our quality system failure was to not identify this issue. (2) Truesdail's relocation was not the root cause to this sensitivity issue. The relocation did hinder the investigation. Instrumentation, equipment, and personnel had to be allocated to relocate to our new laboratory. Our focus was always trying to identify the cause for this issue. The loss of sensitivity occurred a few weeks prior to the relocation.

Truesdail is disappointed with the decision by Indiana to terminate the contract. We believe that we were not given enough time to fully investigate the root cause and to implement corrective and preventative actions. We take great pride in being both ISO/IEC 17025 and RMTC accredited and take every step to ensure complete compliance with accreditation protocols. Truesdail takes quality issues very seriously and we are committed to providing the highest quality results to all of our clients.

Truesdail is confident we have identified the root cause for this issue and have instigated effective corrective and preventative actions.

- Modified our sample drug extraction protocol and verified we can reliably screen and confirm all corticosteroid drugs at RMTC threshold levels.
- Confirmation of seven replicates of spiked serum samples on two separate days at the most sensitive threshold levels for corticosteroids. This confirmation demonstrates that we can consistently screen for the corticosteroids with seven replicate analyses and repeated this over two days. This confirms that we can reliably screen and confirm all drugs in this group at the RMTC threshold levels.
- Conducted a split sample study with a 3rd party lab to verify analytical results. A study of 30 random samples were sent to a 3rd party RMTC Accredited lab for independent verification of results. The results of this study was included with our CAR/PAR

Summary, in all 30 samples we detected the same drugs, with several instances of additional drugs detected by Truesdail lab staff. These split samples were in process samples that were blind to our lab staff.

- We are expanding our Quality Control testing program. This includes: adding more internal standards drugs spiked into each sample; adding additional drugs to the daily quality control mixture run with each screening batch of samples; and increasing the list of drugs used in our internal blind QC check samples.
- Analyze portion of screening samples with two different technologies (UHPLC/HRMS) and (LC/MS/MS).
- Increase the frequency of SOP audits from every two years to annually.
- Increased the frequency of our internal blind testing program.
- Ongoing parallel screening of samples by a 3rd party laboratory to independently verify screening results.

Truesdail has significantly upgraded its internal QA program as part of the preventative actions in response to this issue.

H. Summary of Bidder's Corporate Experience

We have a long professional relationship with the racing community. Listed below are the state agencies we have or have had recent contracts with and the name of a contact person

Arkansas

Contract:	Equine and Canine Drug Testing Services
Reference:	4501265487
Period:	From July 1, 2012 to June 30, 2013 (plus six one-year options)
Services:	Testing of equine urine and blood samples using a comprehensive direct instrumental analysis by Orbitrap UHPLC / HRMS or gas chromatography / mass spectrometry (GC/MS), high performance liquid chromatography, thin-layer chromatography and immunoassay methodology. Testing of canine urine samples using a comprehensive direct instrumental analysis by Orbitrap UHPLC / HRMS or gas chromatography / mass spectrometry (GC/MS). Quantitative analyses of blood are performed for TCO_2 and permitted medications. Confirmation testing on suspects is also performed.
Agency:	**Arkansas Racing Commission**
Contact:	Dr. Joseph Lokanc, DVM
Address:	515 West 7th Street, Suite 505 Little Rock, AR 72203
Telephone:	(501) 682-1467
E-mail:	Joseph.Lokanc@dfa.arkansas.gov
Alt. Contact:	Smokey Campbell, Manager
Email:	smokeycampbell43@me.com

Delaware

Contract:	Equine Drug Testing Services
Reference:	2015-2019
Period:	April 13, 2015, through April 12, 2019
Services:	Testing of equine urine and blood samples using a comprehensive direct instrumental analysis by our Orbitrap (UHPLC / HRMS) and immunoassay methodology. Quantitative analyses for permitted medications and confirmation testing on suspects are also performed
Agency:	**Thoroughbred Racing Commission**
Contact:	John F. Wayne, Executive Director
Address:	777 Delaware Park Boulevard, Wilmington, DE 19804
Telephone:	302-994-2521 ext. 8970
E-mail:	John.wayne@state.de.us

Idaho

Contract:	Laboratory Services, Detection of Prohibited Substances in Blood Samples
Reference:	BPO 01462
Period:	April 20, 2004, through April 19, 2005 (plus extensions).
Services:	Testing of equine blood samples using a comprehensive direct instrumental analysis by Orbitrap UHPLC / HRMS, high performance liquid chromatography and immunoassay methodology. Quantitative analyses of blood for permitted medications. Confirmation testing on suspects is also performed.
Agency:	**Idaho Racing Commission**
Contact:	Dr. Scott Leisble
Address:	700 S. Stratford Drive, Meridian, ID 83642
Telephone:	208-884-7080
E-mail:	scott.leisble@agri.idaho.gov

Indiana

Contract:	Equine Drug Testing Services
Reference:	10-3 and 15-03
Period:	From March 17, 2010 to March 16, 2012 (plus one two-year option) and March 20, 2015 to May 12, 2015
Services:	Testing equine urine and blood samples through direct instrumental analyses, immunoassay methodology and confirmation testing on suspects. Quantitative analyses of blood samples for permitted medications are also performed
Agency:	**Indiana Horse Racing Commission**
Contact:	Deena Pitman, Assistant Executive Director
Address:	1302 N. Meridian St., Suite 175 Indianapolis, Indiana 46202
Telephone:	(317) 233-3119
E-mail:	Dpitman@hrc.in.gov

Maryland

Contract:	Laboratory Testing Services for Equine Drug Testing
Reference:	DLLR-FY2014-007
Period:	February 2014 through January 2019
Services:	Testing of equine urine and blood samples using a comprehensive direct instrumental analysis by our Orbitrap (UHPLC / HRMS) and immunoassay methodology. Quantitative analyses of blood are performed for TCO_2 and Cobalt. Quantitative analyses for permitted medications and confirmation testing on suspects are also performed.
Agency:	**Maryland Racing Commission**
Contact:	Mike Hopkins, Executive Director
Address:	300 E. Towsontowne Boulevard Towson, Maryland 21286
Telephone:	(410) 296-9682
E-mail:	mike.hopkins@maryland.gov

Massachusetts

Contract:	Laboratory Testing Services for Equine Drug Testing
Reference:	MGC-2012-Equine
Period:	2013-2016
Services:	Testing of equine urine and blood samples using a comprehensive direct instrumental analysis by our Orbitrap (UHPLC / HRMS) and immunoassay methodology. Quantitative analyses for permitted medications and TCO_2 Confirmation testing on suspects are also performed.
Agency:	**The Massachusetts Gaming Commission**
Contact:	Dr. Alexandra Lightbown, Director of Racing
Address:	101 Federal Street, 23rd Floor Boston, MA 02110
Telephone:	(617) 979-8421
E-mail:	Alexandra.Lightbown@MassMail.State.MA.US

Mexico

Contract:	Laboratory Testing Services for Equine Drug Testing
Period:	2013-2017
Services:	Testing of equine urine and blood samples using a comprehensive direct instrumental analysis by our Orbitrap™ (UHPLC / HRMS) and immunoassay methodology. Also, quantitative analyses of permitted medications and confirmation testing on suspects are performed.
Agency:	**Comision Mexicana de Carreras de Caballos y de Galgos, A.C.**
Contact:	MVZ Guadalupe Zarinana Leguizamo
Address:	Vasco de Quiroga No. 3200, 1o. piso Mexico, D.F. C.P. 01210
Telephone:	011-52-55-53870636
E-mail:	lupita.zarinana@cmccgac.com.mx
Alt. Contact	Dr. Rafael Lopez
Email:	elopez@cie.com.mx

Nebraska

Contract:	Equine Testing Services
Reference:	5654604
Period:	January 1st, 2009 – December 31, 2016 (plus a one-year option)
Services:	Testing of equine urine and blood samples using a comprehensive direct instrumental analysis by our Orbitrap (UHPLC / HRMS) and immunoassay methodology. Quantitative analyses for permitted medications and confirmation testing on suspects are also performed.
Agency:	**Nebraska State Racing Commission**
Contact:	Tom Sage, Executive Director
Address:	5903 Walker Avenue Lincoln, Nebraska 68507
Telephone:	(402) 471-4155
E-mail:	Tom.Sage@Nebraska.gov

Nevada

Contract:	Drug Testing – Horses and Mules
Period:	Open, renewed yearly
Services:	Testing of urine and blood from horses and mules by a comprehensive direct instrumental analysis using Orbitrap™ (UHPLC / HRMS) and immunoassay methodology. Testing includes confirmations on suspect samples.
Agency:	**Nevada State Gaming Control Board**
Contact:	Richard W. Scott, D.V.M
Address:	8425 Log Cabin Way Las Vegas, Nevada 89143
Telephone:	(702) 739-8781
E-mail:	lasrscott@aol.com

New Jersey

Contract:	Laboratory Testing Services for Equine and Human Drug Testing
Period:	2013-2015 (plus one two-year option)
Services:	Testing of equine urine and blood samples and human urine samples using immunoassay methodology and a comprehensive direct instrumental analysis using AB Sciex 4000 Q Trap triple-quad LC/MS/MS or Orbitrap (UHPLC / HRMS). Quantitative analyses of blood are performed for TCO_2 and permitted medications. Confirmation testing on suspects is also performed. Comprehensive out of competition testing program of bloods including cobalt testing by ICP-MS.
Agency:	**New Jersey Racing Commission**
Contact:	Frank Zanzuccki, Executive Director
Address:	P.O. Box 088 Trenton, NJ 08625
Telephone:	(609) 292-0613
E-mail:	frank.zanzuccki@lps.state.nj.us

Oregon

Contract:	Laboratory Services for Equine Urine and Blood Testing
Reference:	1551
Period:	November 10, 2011 to November 9, 2015 (plus seven one-year extensions).
Services:	Testing equine urine using immunoassay methodology and confirmation testing on suspects. Testing of equine blood samples with a comprehensive direct instrumental analysis using Orbitrap UHPLC / HRMS and quantitative analyses of blood for permitted medications. Confirmation testing on suspects is also performed.
Agency:	**Oregon Racing Commission**
Contact:	Dr. Stacy Katler
Address:	800 N.E. Oregon St. #11, Suite 310 Portland, Oregon 97232
Telephone:	(971) 673-0207
E-mail:	stacy.katler@state.or.us

Puerto Rico

Contract:	Laboratory Services for Equine Urine and Blood Testing
Period:	July 1, 2014 – June 30, 2015
Services:	Testing of urine and blood with a comprehensive direct instrumental analysis using Obritrap™ UHPLC / HRMS. Confirmation of samples is also included.
Agency:	**Puerto Rico Horse Racing Industry and Sports Administration**
Contact:	Monica Andreu Martinez
Address:	P.O. Box 29156 65th Infantry Station Rio Piedras, Puerto Rico 00929
Telephone:	(287) 768-2005
E-mail:	andreum@adh.gubierno.pr

Washington

Contract:	Laboratory Testing Services, Equine Drug Testing
Reference:	EMT2011
Period:	January 1, 2016 to December 31, 2018 (with two one-year options)
Services:	Testing equine urine using immunoassay methodology and confirmation testing on suspects. Testing of equine blood samples using a comprehensive direct instrumental analysis by the Orbitrap™ UHPLC / HRMS and quantitative analyses of blood for TCO_2 and permitted medications. Confirmation testing on suspects and cobalt testing by ICP / MS are also performed.
Agency:	**Washington Racing Commission**
Contact:	Doug Moore
Address:	6326 Martin Way E., Suite 209 Olympia, Washington 98516
Telephone:	(360) 459-6462
E-mail:	doug.moore@whrc.state.wa.us

West Virginia

Contract:	Laboratory Testing Services, Equine Drug Testing
Period:	August 1, 2014 to July 31, 2015
Services:	Testing equine urine using immunoassay methodology and confirmation testing on suspects. Testing of equine blood samples using a comprehensive direct instrumental analysis by the Orbitrap™ UHPLC / HRMS and quantitative analyses of blood for TCO_2 and permitted medications. Confirmation testing on suspects is also performed.
Agency:	**West Virginia Racing Commission**
Contact:	Mr. Joe Moore, Executive Director
Address:	900 Pennsylvania Avenue Charleston, West Virginia 25362
Telephone:	(304) 558-2150
E-mail:	joe.k.moore@wv.gov

Wyoming

Contract:	Laboratory Testing Services, Equine Drug Testing
Period:	February 1, 2016 to October 31, 2017
Services:	Testing equine urine using immunoassay methodology and confirmation testing on suspects. Testing of equine blood samples using a comprehensive direct instrumental analysis by the Orbitrap™ UHPLC / HRMS and quantitative analyses of blood for TCO_2 and permitted medications. Confirmation testing on suspects is also performed.
Agency:	**Wyoming Pari-Mutual Commission**
Contact:	Mr. Charlie Moore, Executive Director
Address:	951 Werner Court, Suite 335 Casper, Wyoming 92601
Telephone:	(307) 265-4015
E-mail:	charles.moore@wyo.gov

I. Summary of Bidder's Proposed Personnel / Management Approach

Key Persons and their Resumes

Few laboratories have a staff with the depth of expertise that our Racing Chemistry staff does. They are high-caliber, competent, and some of the best in the country. Two, who oversee the Racing Chemistry Laboratory, have doctorates. Below is a grid of our management staff summarizing their years of experience including their AORC membership status:

Grid of Management Racing Chemistry Staff

Staff Member	Title	Years of Testing Experience	AORC Membership	AORC Years
Dr. Norman Hester	Technical Director Emeritus	33	Affiliate	27
Dr. Anthony Fontana	Chief Science Officer	20	Affiliate	3
Ms. Julie Hagihara	Drug Testing Laboratory Operations Manager	25	Professional	20
Mr. Michael Ngo	Quality Assurance Manager	5	NA	NA

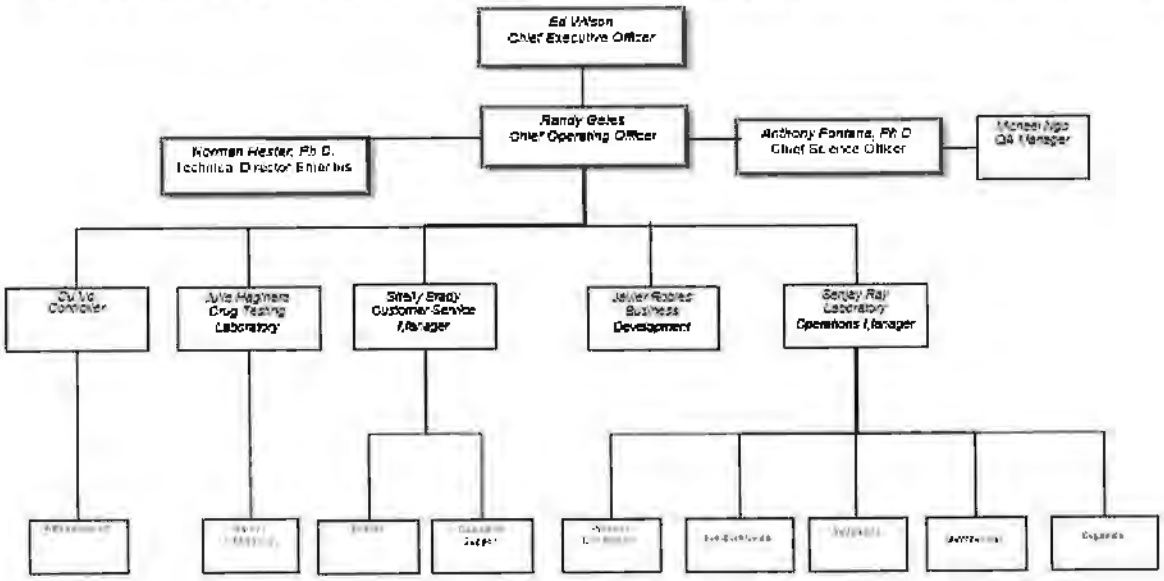
Our racing chemists are supported by a well-trained staff of analysts and technicians. All racing chemists have a minimum of a bachelor's degree, as do many of our supporting technicians.

All junior staff members are fully supervised by our laboratory managers and supervisors and we require they complete extensive in-house training which includes safety, laboratory procedures, ISO/IEC 17025 requirements, and cross-training. Before new hires can work without direct supervision, they must be certified by one of our managers to have a level of competence for the position for which they were hired. Our Standard Operating Procedures (SOP) Manual is readily accessible to all employees.

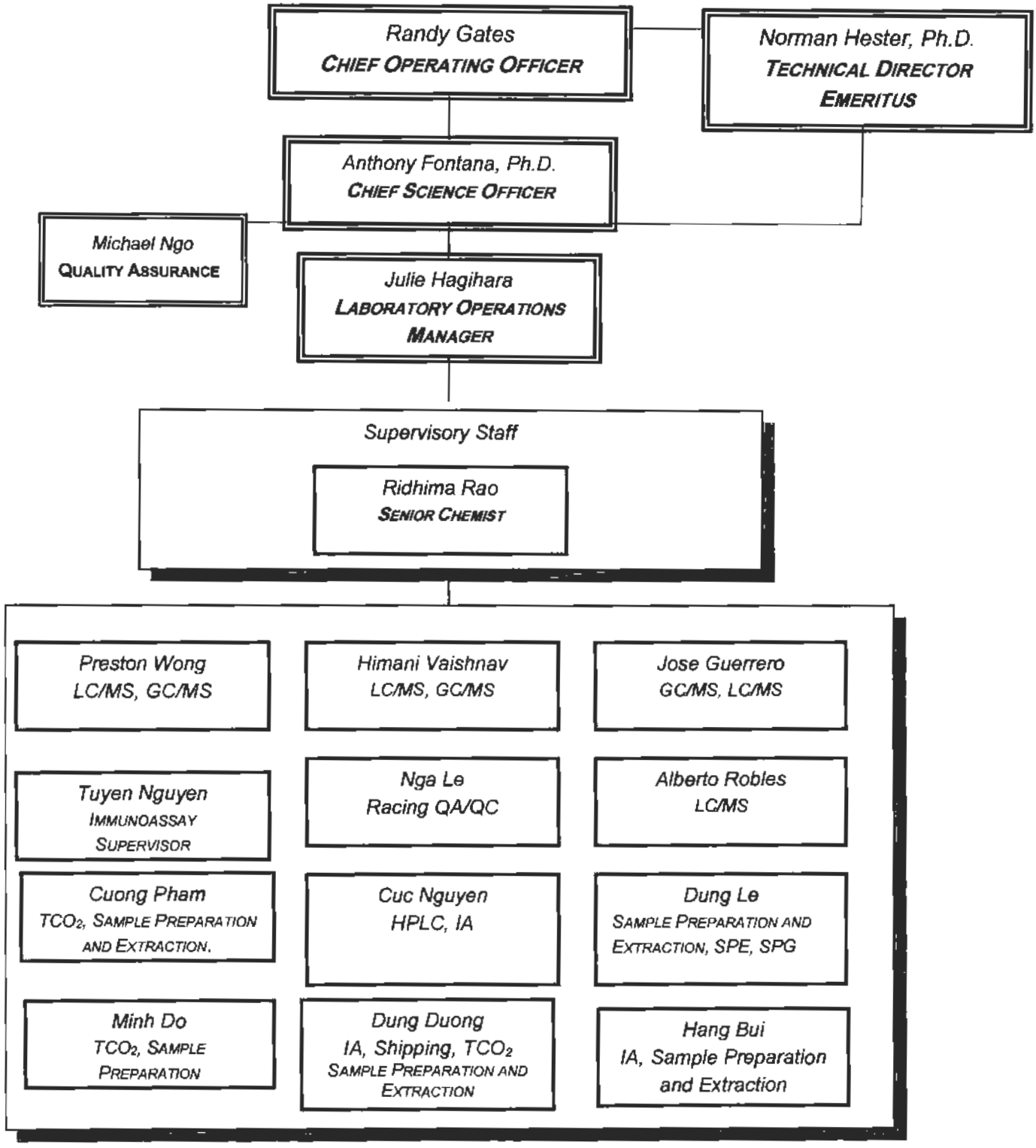
Several of our staff have received special training in GC/MS and LC/MS operation and maintenance by Agilent Corp. and LC/MS operation by Thermo-Finnigan Corp. Three (3) staff members also received hair testing training sponsored by the RMTC at U.C. Davis. All staff in the Racing Lab are required to attend a specialty training course in the quality assurance and the operational requirements of ISO/IEC 17025.

The corporate organizational chart and Racing Chemistry organization chart and resumes of the Racing Chemistry staff are provided below.

TRUESDAIL LABORATORIES, INC. – CORPORATE ORGANIZATION CHART



TRUESDAIL LABORATORIES, INC. – RACING CHEMISTRY ORGANIZATION CHART



Chief Executive Officer **ED WILSON**

Education: **B.A., Chemistry**, Southern Connecticut State University, CT

Experience:

2015 – Present — *Truesdail Laboratories, Inc.*
Chief Executive Officer: Responsible for the overall management. Manages long-term strategic projects. Oversees the Executive Directors.

2012 – 2015 — *Eurofins Eaton Analytical, Inc.*
President: Responsible for the overall leadership of the EEA Monrovia and Bend Laboratories. Participated in the sale of MWH Laboratories, Inc. to Eurofins. Responsible for the Acquisition of the UL South Bend Laboratory into Eurofins Eaton Analytical.

2008 – 2012 — *MWH*
Vice President / Laboratory Director: Responsible for the overall operation of the MWH Laboratory including strategic planning, budgeting and day-to-day operations.

2007 – 2008 — *Columbia Analytical Services, Inc.*
Vice President / Director of IT and Marketing:

2002 – 2007 — Vice President / Laboratory Director:

1999 – 2002 — Laboratory Director:

1998 – 1999 — *CH2M Hill*
Laboratory Director:

1997 – 1998 — LIMS Implementation Manager:

1996 – 1997 — *Analytical Technologies, Inc.*
Vice President Operations:

1995 – 1996 — *PACE Analytical*
Laboratory Director:

1986 – 1993 — *Brown and Caldwell*
President – BC Analytical:

1973 – 1980 — *Los Angeles County Sanitation Districts*
Senior Instrumentation Chemist:

Scientific Affiliations:
American Council of Independent Laboratories
American Water Works Association (AWWA)
WateReuse Association

Chief Operations Officer **RANDY GATES**

Education: B.S., Accounting, Western Governors University

Experience: *Truesdail Laboratories, Inc.*

2013 – Present — Chief Operations Officer: Chair of the executive management group, which is accountable to CEO for the delivery of CEO's overall goals and objectives. Oversees the Department Management Team. Responsible for the maximization of the competitiveness, sustainability, and profitability of the business operations. Compiles and delivers the weekly operations status report to the Truesdail Board of Directors.

2007 - 2013 — Controller: Served as Manager of the Accounting and Human Resources Department. Responsibilities included Accounts Payable, Accounts Receivable, Payroll, Building Maintenance and Web Development. Prepared and presented the year-end financial reports to the Board of Directors. Responsible for the approval and processing of all new and terminated employees. Responsible for conducting Safety Orientations for all new hires. Designed and maintained an Emergency Action Plan.

2006 - 2007 — *IPC International Corp.*

Director of Security: Conducted interviews of all new hires and processed successful candidates. Reported all critical incidents directly to the Regional Security Manager. Completed weekly departmental statistic summaries. Conducted payroll for a staff of thirty (30) on a bi-weekly basis. Designed and implemented an evacuation plan for employees and patrons. Conducted monthly training sessions on the plan. Responsible for administration of the Field Training Officer program. Worked with the local police department to implement crime prevention plans.

Valor Security Services

2001 – 2006 — Assistant Director of Security: Conducted interviews of all new hires and processed successful candidates. Completed all departmental purchase orders for uniforms, vehicles, and medical supplies. Responsible for the oversight and ongoing development of the training program. Created monthly statistical trend reports and presented them at the local police department's monthly comp-stat meeting. Conducted Payroll for a staff of forty (4) on a bi-weekly basis.

Technical Director Emeritus

NORMAN E. HESTER, PH.D.

Education:

M.S. and Ph.D., Chemistry, University of California, Riverside
Post-doctoral, Statewide Air Pollution Research Center, University of California, Riverside, CA
B.S., Chemistry, California State University, Long Beach, CA

Experience:

Truesdail Laboratories, Inc.

Technical Director Emeritus: Part of Company Management Team providing direction on scientific issues. Oversees research and development, evaluates new technology. Coordinated accreditation activities, prepares and/or reviews operating procedures, assists with the recruiting and training of scientific staff, prepares technical proposals, reviews technical data and reports, provides expert witness testimony in the areas of drug detection and identification. Provides technical guidance to company clients. 2014-Present

Technical Director: Oversees all laboratory activities; manages specialized areas of testing, proposal and bid preparation, and develops standard operating procedures. Provides senior program and project management, manpower planning, obtains outside certifications, and interacts with regulatory agencies. Reviews technical data packages and reports. Provides expert witness testimony in the areas of drug detection and identification. 1983-2014

Occidental Research Corporation
Head of Research: Lead research effort in the area of shale oil development. Characterized gross and trace contaminants, directed studies in product upgrading and improvement, investigated ground water contamination and evaluated trace pollutants in solid wastes. Coordinated government permitting and regulatory activities. 1980-1983

Rockwell International: Environ. Monitoring and Service Center
Program Manager: In various contracts for analytical methods development for trace organic and organic metallic determinations. 1977-1980

United States EPA, Las Vegas, NV:
Program and project manager: On various environmental field measurement programs. 1974-1977

Scientific Affiliations:

American Chemical Society, Member
Association of Official Racing Chemists (AORC), Affiliate Member

Publications:

27 papers and presentations in the area of environmental and organic analysis, and analytical methods development

Chief Science Officer

ANTHONY FONTANA, PH.D.

Education:

Ph.D., Agricultural and Environmental Chemistry, University of California, Davis, CA
B.S., Biochemistry, University of California, Riverside, CA

Experience:

Truesdail Laboratories, Inc.

Technical Director: Oversees all day-to-day laboratory activities; research and procurement of instrumentation, oversight of senior management, specialized areas of testing, proposal and bid preparation, and develops standard operating procedures. Provides senior program and project management, manpower planning, obtains outside certifications, and interacts with regulatory agencies. Reviews technical data packages and reports. 2014-Present

Silliker, Inc.

Technical Director of Chemistry: Provided scientific, application, and technical support to clients by assisting with technical issues, interpretation of laboratory data, and providing consulting. Managed Chemistry Department and supported the growth of the chemistry business with development and implementation of new services/ technologies, process optimization, and new method transfers. Chemistry technical resource liaison for Key Accounts and Sales. Provide technical review of marketing communication for scientific correctness. 2008-2014

Decagon Devices, Inc.

Senior Research Scientist: Conducted basic research and collaborated with researchers in new technology development. Led a team in new instrument/product development and testing. Developed and wrote calibration protocols. Provided scientific, application, and technical support to customers in area of water relations to food, cosmetic and pharmaceutical for safety and shelf-life. 1997-2008

Thermalytics, Inc.

Senior Scientist: Principal Investigator for the Department of Energy, Phase I, Small Business Innovation Research project. Developed microcalorimetry for a number of commercial applications. 1994-1997

Scientific Affiliations:

Institute of Food Technologists (IFT), Member
American Association for the Advancement of Science (AAAS), Member
American Chemical Society (ACS), Member
Association of Official Analytical Chemists (AOAC) International, Member

Publications:

Over 40 papers and presentations in the area of environmental and nutritional analysis, and analytical methods development. Author of 7 book chapter and editor on 2 books.

Drug Testing Laboratory Operations Manager

Julie A. Hagihara

Education:

B.A., General Biology, Revelle College,
University of California, San Diego, CA

Experience:

Truesdail Laboratories, Inc.
Drug Testing Laboratory Operations Manager and Racing Chemist: She is responsible for overseeing all aspects of the Racing Laboratory's operations including sample preparation, QA, sample extraction, and communicating with clients. Primary duties include, writing reports, sending results, record keeping, preparation of data packets, shipping and receiving of supplies, annual reports to the AORC, TLC interpretation, and training and supervision of personnel. Ms. Hagihara is also one of our backup GC/MS and LC/MS analysts. 1992 - present

VA Hospital, San Diego, CA.
Laboratory Technician 1990 - 1991

Scientific Affiliations:

Association of Official Racing Chemists (AORC) Professional Member, 1997 - present

Instrumentation and Training:

HP 5890/5971 GC/MS / Chris Nattrass.
Finnigan ITS40 GC/MS / Chris Nattrass
Agilent 6890N/5973 GC/MS / Don Kawachi
Thermo-Finnegan LCQ Deca LC/MS / Kristie Nakamura
Thermo Exactive Plus/ Dale Park

Senior Chemist **Ridihima Rao**

Education:

M.S., Forensic Science, Sam Houston State University, Huntsville, TX
M.S., Life Sciences, Mumbai University, Mumbai, India
B.S., Life Sciences, St. Xaviers College, Mumbai, India

Experience:

Truesdail Laboratories, Inc.
Senior Chemist: Ms. Rao specializes in HPLC and LC-MS/MS operations and drug specific analytical techniques employing immunoassay technology (ELISA). She also oversees method development and reviews data prior to release. 2017 - Present

Origen Laboratories
Certifying Scientist: Assisted in LC-MS/MS method validation for new analytes as part of a team project. Infusion and optimization of new analytes for expansion of existing drug confirmation panels. Responsible for initial review and final certification of data from LC-MS/MS using MultiQuant™.

Alere Toxicology
Analyst II: Method development using LC-MS/MS for quantification of drugs in urine and oral fluids. Assisted in explanation of results for clients. Quality Assurance / Quality Control. Developed standard operating protocols (SOPs) for laboratory procedures. 2009 - 2015

Instrumentation and Training

SCIEX Triple QuadTM 4500 MS with Shimadzu LC 20AD HPLC
API 4000 LC-MS/MS System (AB SciEx) and 3200 Q Trap LC-MS/MS System (MDS XSCIEX) (Applied Biosystems)
Olympus AU640e Chemistry Immunoanalyzer

Memberships

California Association of Toxicologists – Associate Member
Society of Forensic Toxicologists – Associate Member

Chemist **Preston Wong**

Education:

M.S., Forensic Science, Sam Houston State University, Huntsville, TX
B.S., Biology, University of Texas at Dallas, Dallas, TX
B.S., Criminal Justice Studies, University of Texas at Dallas, Dallas, TXa

Experience:

Truesdail Laboratories, Inc.
Chemist: Mr. Wong is responsible for the analysis of blood and urine samples by LC/MS; confirmation of drugs and direct instrumental screening of drugs specializes in HPLC and LC-MS/MS operations. 2017 - Present

Gulfstream Diagnostics
LC-MS/MS Operator/Certifying Scientist: Analyzed LC-MS/MS data for 95 analytes. Prepared calibrators and controls for multiple panels and completed data validation. Complied and analyzed data in Excel spreadsheets for stability studies as well as cross instrument validation. 2017

Origen Laboratories
Senior Toxicologist/LC-MS/MS Operator/Certifying Scientist: Analyzed LC-MS/MS data for 59 analytes. Aided in sample preparation and basic instrument maintenance. Streamlined quantitation methods, sample re-extraction workflow, and secondary peer-review protocols. Analyzed medication compliance, method development, and validated data. 2016

Alere Toxicology / Capital Toxicology
Senior Toxicologist/LC-MS/MS Operator/Certifying Scientist: Designed, created, and simplified the calibration curve, quality controls and internal standard incorporating over 40 analytes and 33 deuterated internal standards. Proficient in sample preparation, instrument preparation and basic maintenance, and data analysis/reporting. 2009 – 2015.

Instrumentation and Training

Thermo Exactive / Himani Vaishnav

Publications

Muscle: An Alternative Post-Mortem Specimen for Drug Screening by Enzyme Linked Immunosorbent Assay. *Wong, Kerrigan, Smith, Moffat, Gordan, Lemos. SOFT – 2008.*

PCP and Drug Impaired Driving in San Francisco, California. *Gordon, Wong, Lemos. AAFS – 2009.*

Driving Under the Influence of Methamphetamine in the City & County of San Francisco, California. *Lemos, Gordon, Wong. AAFS – 2009.*

Determination of Endogenous Gamma-Hydroxybutyrate (GHB) Concentrations in Hair Using LC/MS/MS. *Wong, Stout, Kerrigan. 2009.*

Chemist	**Himani Vaishnav**
Education:	M.S. Organic Chemistry, Gujarat University, Ahmedabad, India B.S. Chemistry, Gujarat University, Ahmedabad, India
Experience:	*Truesdail Laboratories, Inc.* Responsible for the analysis of blood and urine samples by LC/MS and GC/MS; confirmation of drugs and direct instrumental screening of drugs. 2014-Present. Environmental Chemist: Performs hexavalent chromium and anion analysis on water and solid samples using ion chromatogram. Also trained to perform UV, VOC, and many other tests in the General Chemistry and Wet Chemistry Labs. 2012-2014 *Advanced Sterilization Products, Irvine, CA* Worked with the biological indicator; handled and maintained the instruments, did quality inspections of end products. 2011-2014 *Axiom Analytical Inc., Tustin, CA* Performed quality tests of fiber optic probe on FT-IR, UN, and VIS spectrometer; worked directly under the senior engineer for test performance issues and equipment maintenance. 2008-2011
Instrumental and Training	Agilent 7890A / 5975C GC/MS / Dale Park Thermo Exactive / Dale Park Thermo Exactive Plus/ Dale Park

Chemist	**Jose Guerrero**
Education:	B.S., Chemistry, University of California, Irvine, CA
Experience:	*Truesdail Laboratories, Inc.,* He is responsible for the analysis of blood and urine samples by GC/MS, and LC/MS; confirmation of drugs and direct instrumental screening of drugs 2015 – Present Organic Chemist: Analyzing samples on a diverse range of industrial, waste, and drinking water samples using GC/MS and GC. Develops new analytical procedures by GC/MS and GC and performs extraction for Semi-volatile organic methods. 2013 - 2015 *Sun Star Labs* VOC Chemist: Worked with GC and GC/MS instruments. Performed EPA methods 8015, 8021, 8260, 624, and 524. 2012-2013
Instrumentation and Training:	Agilent 7890A / 5975C GC/MS / Dale Park Thermo Exactive / Dale Park Thermo Exactive Plus/ Dale Park
Memberships:	Member of the American Chemical Society

Chemist	**Alberto Robles**
Education:	B.S., Biology, University of California, Los Angeles, CA
Experience:	*Truesdail Laboratories, Inc.*, He is responsible for the analysis of blood and urine samples by LC/MS; confirmation of drugs and direct instrumental screening of drugs. 2016 – Present Wet Chemistry Analyst: Analyzed samples for free ammonia and general physical testing of drinking water and wastewater samples. Analytical data calculations and maintaining QC summary database. 2015 - 2016
Instrumentation and Training:	Thermo Exactive / Himani Vaishnav Thermo Exactive Plus/ Himani Vaishnav
Supervisor, Immunoassay	**Tuyen Nguyen**
Education	Medical Technology, Orange Coast College, Costa Mesa, CA
Experience:	*Truesdail Laboratories, Inc.* Ms. Nguyen is responsible for testing biological specimens, such as blood and urine from horses and dogs for medications and drugs. Activities include sample aliquoting and solvent extraction. Currently she is primarily responsible for immunoassay testing. 1995-present
Instrumentation and Training:	DPC Mark V ELISA autosampler / Araceli Juarez. Packard Multiprobe® 104DT / Araceli Juarez. All other IA equipment / Araceli Juarez

Senior Analyst	**Cuong Dang Pham**
Education:	Chemical Engineering, Phu Tho University, Ho Chi Minh City, Vietnam
Experience:	*Truesdail Laboratories, Inc.* He is primarily responsible for accessioning, aliquoting, and extracting equine and canine specimens. His duties also include solid phase extraction, pH, specific gravity monitoring, and TCO_2 testing. 1991-present
Instrumentation and Training:	Nova 4 Blood Gas Analyzer / Timothy Cicora
Laboratory Technician	**Nga Le**
Education:	Saint Thomas High School, Saigon, Vietnam
Experience:	*Truesdail Laboratories, Inc.*, She is responsible for testing biological specimens such as blood and urine from horses and dogs for medications and drugs. Activities include sample aliquoting, solid-phase extraction, solvent extraction, thin layer chromatography, and QA/QC officer. She is also the rerun analyst. 2002-present

Laboratory Technician	**Hang Bui**
Education:	Mathematics, Fullerton College, Fullerton, CA
Experience:	*Truesdail Laboratories, Inc.* She is responsible for testing biological specimens such as blood and urine from horses and dogs for medication and drugs. Activities include sample aliquoting and solvent extraction. Currently she is responsible for immunoassay testing and is a back-up for the rerun analyst. 1997-present
Instrumentation and Training:	DPC Mark V. ELISA Autosampler / Tuyen Nguyen Packard Multiprobe 104DT / Tuyen Nguyen All other IA Equipment / Tuyen Nguyen

Laboratory Technician	**Minh Do**
Education:	Pre-chemistry course, Orange Coast College, Costa Mesa, CA
Experience:	*Truesdail Laboratories, Inc.*, He is responsible for preparing biological specimens such as blood and urine from horses and dogs for testing of medications and drugs. Activities include solvent extraction, solid-phase extraction, and TCO_2 testing. 1995-present.
Instrumentation and Training:	Nova 4 Blood Gas Analyzer / Cuong Pham

Laboratory Technician	**Cuc Nguyen**
Education:	Office Systems, Chapman Hettinga Education Center, Garden Grove, CA
Experience:	*Truesdail Laboratories, Inc.*, She is responsible for testing biological specimens such as blood and urine from horses and dogs for medications and drugs. Activities include sample aliquoting and solvent extraction. Some of Ms. Nguyen's primary duties include preparation and quality control of extraction and development solutions. She is currently an HPLC analyst and cross-trained in immunoassay testing. 1998-present
Instrumentation and Training:	HPLC Equipment / Denise King DPC Mark V. ELISA Autosampler / Hang Bui Packard Multiprobe 104DT / Hang Bui All other IA equipment / Hang Bui

Laboratory Technician	**Dung Le**
Education:	High school graduate, Saigon, Vietnam
Experience:	*Truesdail Laboratories, Inc.*, He is responsible for preparing biological specimens such as blood and urine from horses and dogs for testing of medications and drugs. Activities include sample aliquoting, solvent and solid-phase extraction, and specific gravity monitoring. 2002-present

Laboratory Technician	**Dung T. Duong**
Education:	B.A., Accounting with a minor in Chemistry and Biology, Saigon University of Law, Saigon, Vietnam
Experience:	*Truesdail Laboratories, Inc.*, He is responsible for preparing biological specimens such as blood and urine from horses and dogs for testing of medications and drugs. Activities include sample aliquoting, solvent extraction, shipping, immunoassay testing, and trained as a backup for TCO_2 testing. 2001-present.
Instrumentation and Training	Nova 4 Blood Gas Analyzer / Cuong Pham DPC Mark V. ELISA Autosampler / Tuyen Nguyen Packard Multiprobe 104DT / Tuyen Nguyen All other IA Equipment / Tuyen Nguyen

Quality Assurance Manager **Michael Ngo**

Education: B.S., Information and Computer Science, University of California, Irvine, CA

Experience:

Truesdail Laboratories, Inc.

Quality Assurance Manager: Responsible for company QA activities. Performs internal audits to ensure conformance with ISO/IEC 17025, ISO 65, and state DPHS requirements. Oversees performance evaluation testing. Coordinates with external auditors. Reviews Level IV data packages. Issues corrective action requests and reviews responses. Participates in management reviews on QA activities. 2011 - Present

Project Manager: Manage client accounts, scheduling sampling events and field services. Generate reports via LIMS and EDD for drinking/waste/storm water and sludge. Analyze lab data, inform clients of results when they are inconsistent or above MCL. Compile monthly/annual data for analytes and QC for spreadsheet summaries. Oversee the AS Admin staff, ensure compliance with all reporting and billing deadlines. 2004 - 2011

Fry's Electronics

Diagnose computer hardware down to each solitary component. Set schematics and floor plans for different floor sections. Handled the transfer orders to and from other regional stores. Processed customer returns. Sold performance service contracts for Fry's. 2004 - 2004

Bank of America

Ran computer systems to regulate work flow, recollect data, and print work. Trained and oversaw new A.O.T. 51 associates. Helped in running the module, data entry, check processing and imaging. 2000- 2004

Customer Services Manager – Marcheal "Shelly" Brady

Education:

A.S., Business Administration, Irvine Valley College, Irvine, CA
Environmental and Engineering Studies, University of California, Irvine, CA.

Experience:

2014-present — *Truesdail Laboratories, Inc.*
Customer Services Manager: Responsible for overseeing the Project Managers, insuring clients requested turn- around times are met, serves as a mediator between the client and project management, accounting, field services, and laboratory staff. Additionally responsible for managing the contracts and purchase orders for Truesdail's Analytical Services Laboratory, Racing Laboratory and Product Certification Department. Talks to clients, problem solves, and brings major issues to the technical director's attention.

2012-2014 — Project Manager: Responsible for all aspects of project management, including but not limited to, scheduling with clients for sample containers and pick-up, coordinating with group leaders for analyses, and assists with report generation and templates for individual reports. Proofreads reports and double check that the QC reported is reviewed with raw data. Talks to clients, problem solves, and brings major issues to the lab manager's attention.

2006-2012 — *Sierra Analytical Labs, Inc. Laguna Hills, CA*
Administration: Responsible for all client correspondence and satisfaction. Tracking status of in-house projects. Communication with Department Manager regarding importance of special projects and the related samples, technical capabilities, and status of client samples. Laboratory report generation, electronic data deliverables generation, client correspondence, data entry, customer service, and office support.

1996-2006 — *Environmental Support Technologies, Irvine, CA*
Office Administrator / Project Coordinator: Responsible for all client correspondence. Prepared Site Health and Safety Plans for each project. Prepared analytical reports. Performed site investigations and obtained and review regulatory documents for Phase I Site Investigations and prepared those reports.

We have many years of experience of testifying and providing advice regarding drug positives, preparing litigation packages, and providing supporting documentation. The following senior staff members are available to serve as expert witnesses. All are Racing Chemists as determined by their affiliation with the Association of Official Racing Chemists (AORC) as professional members or affiliates.

Dr. Norman E. Hester, Technical Director Emeritus, has 33 years' experience at Truesdail. He has testified and served as an expert witness in cases related to drug testing and his chemical expertise. He has provided over 90% of the racing related testimony.

Dr. Anthony Fontana, Chief Science Officer, oversees the day-to-day laboratory operations and reviews all confirmation data packet reports. Dr. Fontana has experience with testimony in court and serves as the expert witness in drug related cases.

Ms. Julie Hagihara, Drug Testing Laboratory Operations Manager, is a professional member of the Association of Racing Chemists and has been called upon to provide testimony relative to laboratory practices in most areas of testing and quality assurance/quality control.

The three key contacts with the Commission would be Ms. Julie Hagihara, Dr. Anthony Fontana, and Dr. Norman Hester. The key contact person for most routine issues such as reports, containers, turn-around and general logistics is Ms. Julie Hagihara. Dr. Anthony Fontana is responsible for the overall technical direction of the Racing Laboratories, data review, and can be contacted on any issue. Dr. Norman Hester is the key contact for issues of pharmacology, special testing, interpretation of results, and testimony. We will provide home and/or cell phone numbers of these staff as requested after contract award.

Dr. Hester backs up Dr. Fontana with data review and laboratory technical direction. Dr. Fontana backs up Dr. Hester for issues of pharmacology, interpretation of results and testimony. Ms. Shelly Brady backs up Ms. Hagihara with reporting and logistics.

We have at least two (2) individuals cross trained for each type of testing we do. In the event of a sudden loss of a key staff member, as noted, we have cross trained staff who can step-up to keep work going. We use overtime liberally as needed if there is a staff shortage until additional staff can be hired and trained.

When a major transition is planned such as extended leave or retirement, we seek to add replacement staff in advance for the purpose of cross training. We have an example of this in process. Dr. Hester was Technical Director of Truesdail Laboratories for over 30 years and is moving to a time of retirement in the future. We hired Dr. Fontana to be his replacement three years ago to allow for extensive cross training. Dr. Hester is transitioning to a part time position but will still be available to support the testing program proposed for Nebraska as needed.

J. Subcontractors

Truesdail will perform the racehorse testing services at its sole facility located in Irvine, California. The use of subcontractors will not be required.

Section 8 – Technical Approach

8.0 Screening, Confirmation of Analysis and Reporting

In recent years, almost all laboratories have moved away from the use of thin layer chromatography (TLC). We moved from using TLC in our Nebraska samples a couple of years ago. TLC has been replaced by direct instrumental screening. High-resolution mass detectors (also called accurate mass) have become practical replacements for the previous preferred technologies. There are two significant advantages that high-resolution mass instruments offer.

First, no special configuration is required to obtain high sensitivity and selectivity. For example, to get equivalent sensitivity using a triple-stage mass spectrometer, special tuning has to be determined for each drug being sought and these tunings have to be programmed into the instrument so that they are in effect when that drug enters the detector after chromatography. This means that only a limited number of drugs can be screened in a single run (about 250) before compromises have to be introduced that limit sensitivity. Because no special programming is needed for accurate mass instruments, many more drugs can be added to the sequencing target analyte list without compromising sensitivity or selectivity. We are currently targeting over 1,800 drugs per run and adding more on a regular basis. A recently compiled list of drugs and drug metabolites being sought is included in **Appendix B.**

Second, analytical data obtained using accurate mass screening can be reanalyzed at a later time for specific drugs whose use in racing was not suspected at the time the screening was done. This is not possible with data from triple-stage instruments since the required programming was not in place at the time of screening.

As discussed in detail below, the arrival of new instrumentation within the last few years has expanded the range of drugs that can be sought, lowered the limits of detection, and reduced the time it takes to analyze a sample.

The UHPLC/HRMS instrument (Thermo Exactive Orbitrap) provides sensitivity hundreds of times better than thin-layer chromatography and for most drugs, more sensitive than ELISA tests. Therefore, UHPLC/HRMS will be the primary screening tool.

We are providing a brief summary of the proposed testing protocols below. More details are covered in the specific test sections.

Blood Samples

Screening with Ultra High Performance Liquid Chromatography Coupled with High Resolution Mass Spectrometry (UHPLC/HRMS)

Blood (serum) will be the major focus for the comprehensive UHPLC/HRMS testing of routine samples. The trend in recent years has been to modify regulations to have analytical thresholds established for many drugs. The vast majority (but not all) of the new thresholds are for levels in blood serum or plasma.

As discussed in more detail in the next section, serum is extracted to produce acidic/neutral and basic fractions which allows us to test for all drugs with blood threshold at the threshold level and for most drugs below thresholds, to screen for hundreds of other drugs and metabolites (currently over 1,800). Exact levels in samples are determined in the confirmation process.

Dimethylsulfoxide (DMSO) also has a regulatory threshold but while it has some therapeutic properties, it is more commonly described as an organic solvent. We also screen DMSO by UHPLC/HRMS but it is not isolated by the more general scheme and a unique preparation is required for the analysis.

Urine Samples

For urine samples, we will screen all samples with two (2) immunoassays and direct instrumental screening by UHPLC/HRMS. Our goal is to test for a few drugs and/or metabolites that are not detected well by the UHPLC/HRMS screening using immunoassay. The testing required by the Commission lists most of their minimum detectability requirements in urine.

The UHPLC/HRMS screening described above for blood tests will be used for all samples for furosemide threshold levels. For samples suspected to be in violation of the quantitative threshold, the corresponding urine will be tested for violation of the specific gravity. Specific gravity testing is performed with a clinical refractometer.

Confirmations

Samples found to be suspect from screening by UHPLC/HRMS or immunoassay are subjected to further testing to confirm the drugs identity and for drugs with thresholds to provide quantitation. Most confirmations are done by liquid chromatography coupled to triple quadrupole mass spectrometry (LC/MS/MS), a few compounds may still be confirmed by GC/MS. Quantitation of phenylbutazone and oxyphenbutazone is performed with standard HPLC.

Multipoint calibrations are done to quantify drugs with established thresholds and duplicate determinations are made to provide an estimate of uncertainty. The step-by-step process for confirmations is given in Section 1.1

8.1 Direct-Instrumental Screening (Background)

Testing for drug control has been a changing process over its approximately 70-year history. Microcrystalline testing was used in the 1940's and 50's. This gave way to thin-layer chromatography that dominated testing until the 1980's, when drug-specific immunoassays became available to improve sensitivity for many drugs.

In the late 1980's and 90's direct instrumental screening by gas chromatography/mass spectroscopy (GC/MS) began to replace thin-layer chromatography. Improvements to liquid chromatography/mass spectroscopy in the 1990's brought a new tool to use for drug screening.

By the 2000's, high-performance liquid chromatography coupled with ion trap detectors (LC/MS^n) and/or triple-quadrupole mass spectrometer detectors (LC/MS/MS) provided the most sensitive technology for drug screening. These technologies are still prominently used in many laboratories as a common screening method.

While LC/MS ion trap and LC/MS/MS triple-quadrupole technologies are extremely sensitive, they have limitations. The number of compounds that can be screened is limited by the scan time; and the maximum number of compounds that can be sought in a single run is 200 to 250 without losing sensitivity. LC/MS/MS methods only screen for compounds pre-programmed into the method, and, once generated, the data cannot be re-examined to look for additional compounds.

Two (2) new improvements recently became available for LC/MS testing. On the chromatography side, Ultra-High Performance Liquid chromatography (UHPLC) has become more routine. On the mass spectrometer side, High-Resolution Mass Spectroscopy (HRMS) has become available at a much lower cost than previously allowing a much more flexible screening protocol.

UHPLC was made possible by the development of pumping systems that deliver much higher pressures to chromatography columns. High pressures allow for the use of more tightly packed and narrow columns. The net result is much higher resolution chromatography, sharper peaks, and in most cases improved sensitivity. Also, the time required to analyze a sample has been greatly reduced allowing more samples to be analyzed in a given timeframe. While UHPLC instrumentation is rather expensive, the high throughput of samples has allowed our lab to lower the cost for direct instrumental screening of samples.

Screening by HRMS has overcome the two main limitations of the triple-quadrupole mass spectroscopy listed above. The number of drugs that can be sought in a single run is not limited by scan time or loss of sensitivity issues. The HRMS detector easily detects all unknown peaks and the instrument's manufacturer has developed comprehensive software to help identify unknowns. Since detection criteria do not need to be programmed into the instrument before the analytical run is made, data collected from HRMS systems can be re-examined at any time after collection to look for new compounds once structural information is available.

The Thermo Orbitrap™ HRMS instruments are manufactured in Germany and European labs were the first to employ this technology. The equine drug-testing laboratory in France quickly adopted the "Orbitrap" technology for its equine drug-screening program. In the U.S., the equine drug-testing lab at the University of California, Davis, was the first university lab to bring this system on-line and Truesdail was the first commercial lab in the U.S. to use this technology for screening.

Since acquiring our first Thermo Orbitrap™ UHPLC/HRMS system, Truesdail began building a target list of compounds of interest to the racing community to be sought in each sample. We began with setting up our target list to include the total list of compounds required by the American Graded Stakes Committee and the list of compounds in ARCI's (Association of Racing Commissioners International) uniform classification list. We have also included drugs targeted in human Olympic athletes, which could be used on horses. Our target list includes both parent drugs

and known drug metabolites. Currently our target list has over 1,800 compounds and is still growing.

In 2011 our new UHPLC/HRMS screening technology was approved during our annual ISO/IEC 17025 audit and added to our scope of accreditation.

8.2 Preparation of Samples for Direct Instrumental Screening

Liquid/liquid extractions will be used to isolate both basic and acid/neutral fractions from blood samples. The flow chart for direct instrumental screening of blood samples is shown in **Figure 8-1.**

Solid Phase Extraction will be used to isolate drugs from urine specimens. Enzyme hydrolyzed urine specimens spiked with internal standards are passed through solid phase cartridges. Two fractions are collected: (1) a basic drugs fraction and (2) an acid/neutral fraction. The flow chart for direct instrumental screening of urine samples is shown in **Figure 8-2.**

The following sections provide more detail of how the analyses are completed.

8.3 Direct Instrumental Screening of Blood by UHPLC/HRMS

Liquid-liquid extractions are used to produce two fractions for analysis, an acidic/neutral fraction and a basic fraction of drugs. The acidic/neutral fraction contains NSAIDs, anabolic steroids, diuretics, corticosteroids, analgesics, and stimulants. The basic fraction contains beta-agonist, local anesthetics, tranquilizers, sedatives, narcotics, etc. We are proposing to test both fractions on all blood samples by UHPLC/HRMS. Our protocol is outlined in the flow chart **Figure 8-1.**

Huge amounts of data are generated by these systems. However, high-speed processors and the ability to process data off-line (i.e., using another computer, not the one running the instrument) further add to the Thermo Orbitrap™ system's capabilities.

If a tentative identification made by the UHPLC/HRMS, the analyst will review the full complement of information produced by the run to make sure a suspect compound has been determined. Also, if the suspect has a regulatory threshold, determination will also be made of estimated level. If a sample is declared suspect, then a new portion of the suspected blood and/or urine will be taken and prepared, and analyzed to produce a full confirmation package as discussed later in the section on confirmation.

As the flow diagram **Figure 8-1** indicates, our preparation scheme produces a fraction for analysis that contains acid/neutral drugs and anabolic steroids. Within the acid/neutral group, we find all common NSAIDs (phenylbutazone, flunixin and ketoprofen), furosemide and most diuretics, and adjunct bleeder medications.

In the recent past, we needed to use at least two (2), and sometimes three (3), separate analyses employing different detection methods to be able to test for these compounds. However, the method we developed with support of Thermo-Fisher's technical support chemists on our Orbitrap™ UHPLC/HRMS system has allowed us to detect and provide quantitative information in one short run. As part of our routine blood screening protocol, we run control samples that contain levels of drugs with regulatory thresholds in blood that have been spiked at regulatory level. A comparison of levels found in track samples with levels found in spiked samples provides an indication of the probable violation of rules.

Thus, the proposed option to test blood samples with the Orbitrap™ UHPLC/HRMS technology provides a quantitative screen for phenylbutazone, oxyphenbutazone, ketoprofen, flunixin, furosemide (and other specific drugs) on each sample. Other similar drugs that the Commission might request may be added without affecting the cost of testing.

Samples found to be suspect for rule violations are subject to full confirmation process described in Sections 8.7-8.9. Phenylbutazone levels are confirmed by HPLC. Ketoprofen, flunixin, and furosemide are confirmed by LC/MS/MS.

8.3.1 Acidic/Neutral Fraction of Blood

As noted above, this fraction contains NSAIDs, anabolic steroids, diuretics, corticosteroids, analgesics, and stimulants. Which means we are testing for hundreds of compounds. However, for clarification we are listing below some specific compounds to assure you we are testing for the threshold compounds listed by your regulations.

Phenylbutazone	Betamethasone
Flunixin	Clenbuterol
Ketoprofen	Dantrolene
Furosemide	Dexamethasone
Boldenone	Diclofenac
Nandrolone	Firocoxib
Testosterone	Isoflupredone
Salicylic Acid	Methylprednisolone
Cetirizine	Prednisolone
Cimetidine	Triamcinolone Acetonide
Caffeine	

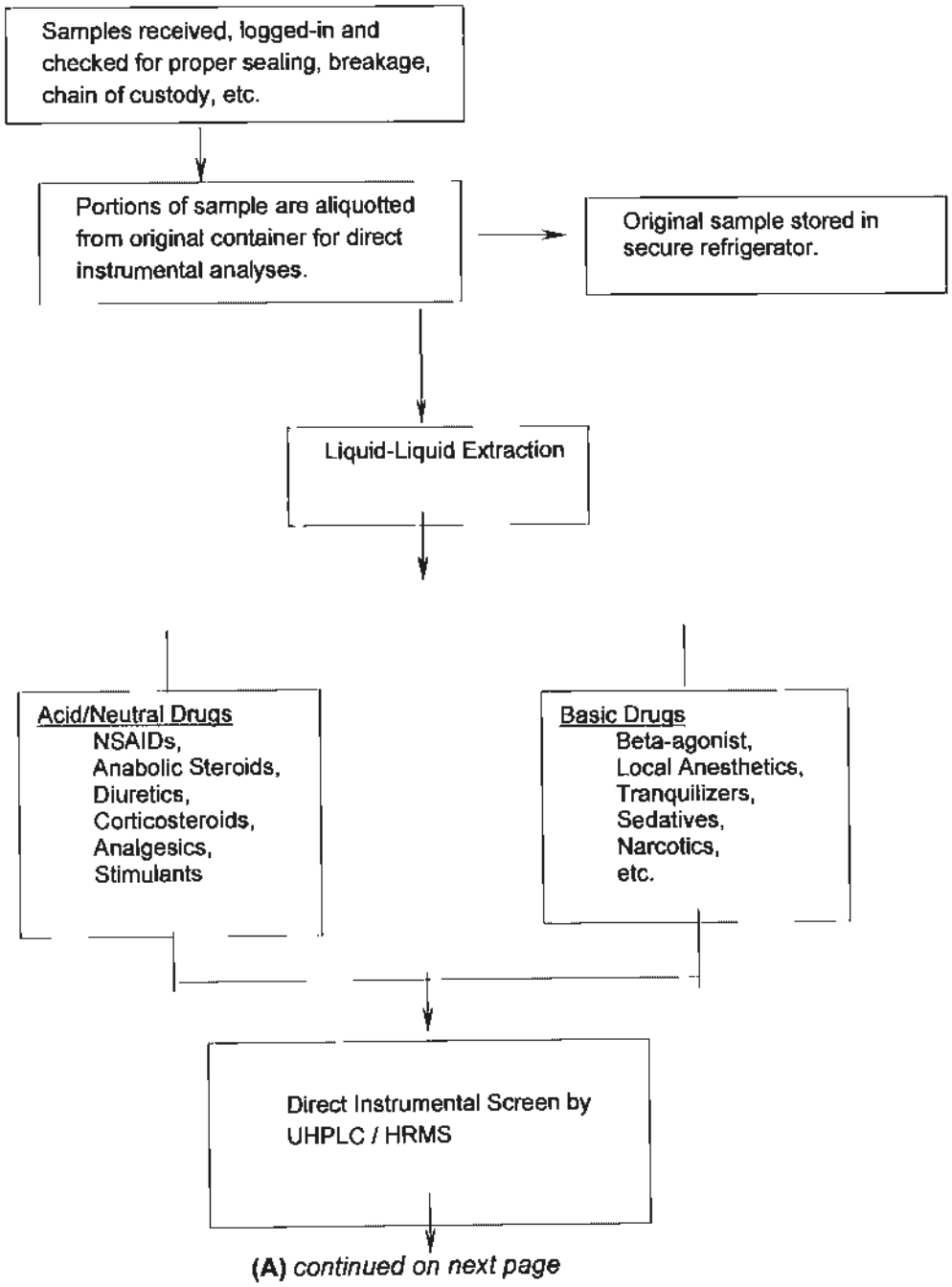
The corresponding urine is tested when drugs are found in serum that have thresholds in urine.

8.3.2 The Basic Fraction of Blood

The basic fraction contains beta-agonists (bronchodilators), local anesthetics, tranquilizers, sedatives, narcotics and stimulant drugs. Listed below are an example of specific compounds from the hundreds we test.

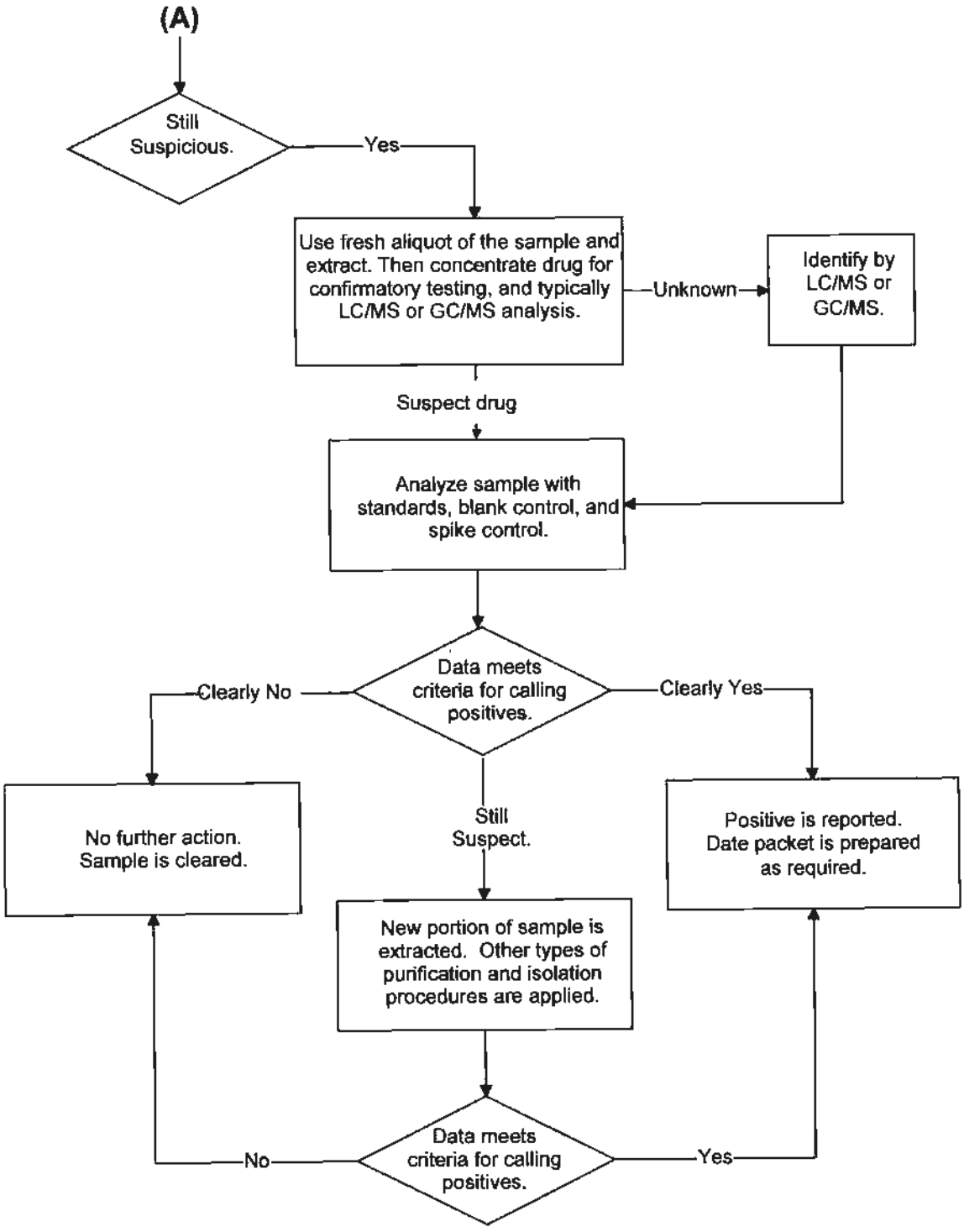
Acepromazine	Pyrilamine
Albuterol	Butorphanol
Bupivicaine	Guaifenesin
Detomidine	Lidocaine
Mepivicaine	Methocarbamol
Omeprazole Sulfide	Procaine
Promazine	Xylazine
Morphine	Benzoylecgonine

Figure 8-1 -- Flow Chart for Direct Instrumental Analysis of Blood



(A) *continued on next page*

Figure 8-1 *(continued)* **-- Flow Chart for Direct Instrumental Analysis of Blood**



8.4 Dimethylsulfoxide (DMSO)

Dimethylsulfoxide is used as a therapeutic to relieve swelling, but in the strict sense is a rather common organic solvent rather than a drug. DMSO is not picked by the broad-based screening protocol described above, but is easily detected by UHPLC/HRMS using a different sample preparation and analysis protocol. The required threshold level for DMSO is extremely high compared to most other drugs (10 ug/ml) and our sensitivity is very low so detection is not an issue.

8.5 Direct Instrumental Screening of Urine by UHPLC/HRMS

Screening of both urine and blood samples provides much redundancy to the testing in that most compounds will be found in both media. However, the Commission's regulatory thresholds have minimum requirements for detectability for most drugs in urine and thus testing of both urine and blood will be performed according to the Commission's regulatory guidelines. There are some differences to be noted in blood versus urine samples. Many drugs are removed from circulation in the blood through a metabolic process, thus we tend to find higher levels of parent drug for some in the blood, and higher levels of metabolites of some in the urine.

Because we expect to find many drugs to have been metabolized, urine samples are subjected to enzyme hydrolysis prior to extraction. Hydrolyzed urine is isolated and separated by solid phase extraction into acidic/neutral and basic fractions covering the same type of drugs as indicated above for blood samples. Your program needs the acidic fraction tested to confirm that permitted NSAIDS and furosemide were given when levels are too low to detect in the blood. The extracts are concentrated and exchanged into mobile phase for analysis as outlined in the flow chart in **Figure 8-2.**

8.5.1 The Acidic/Neutral Fraction of Urine

This fraction contains parent drugs and/or metabolites of NSAIDs, anabolic steroids, diuretics, corticosteroids, analgesics, and stimulants. As with our section on blood testing, we have listed below an example of specific compounds that we test.

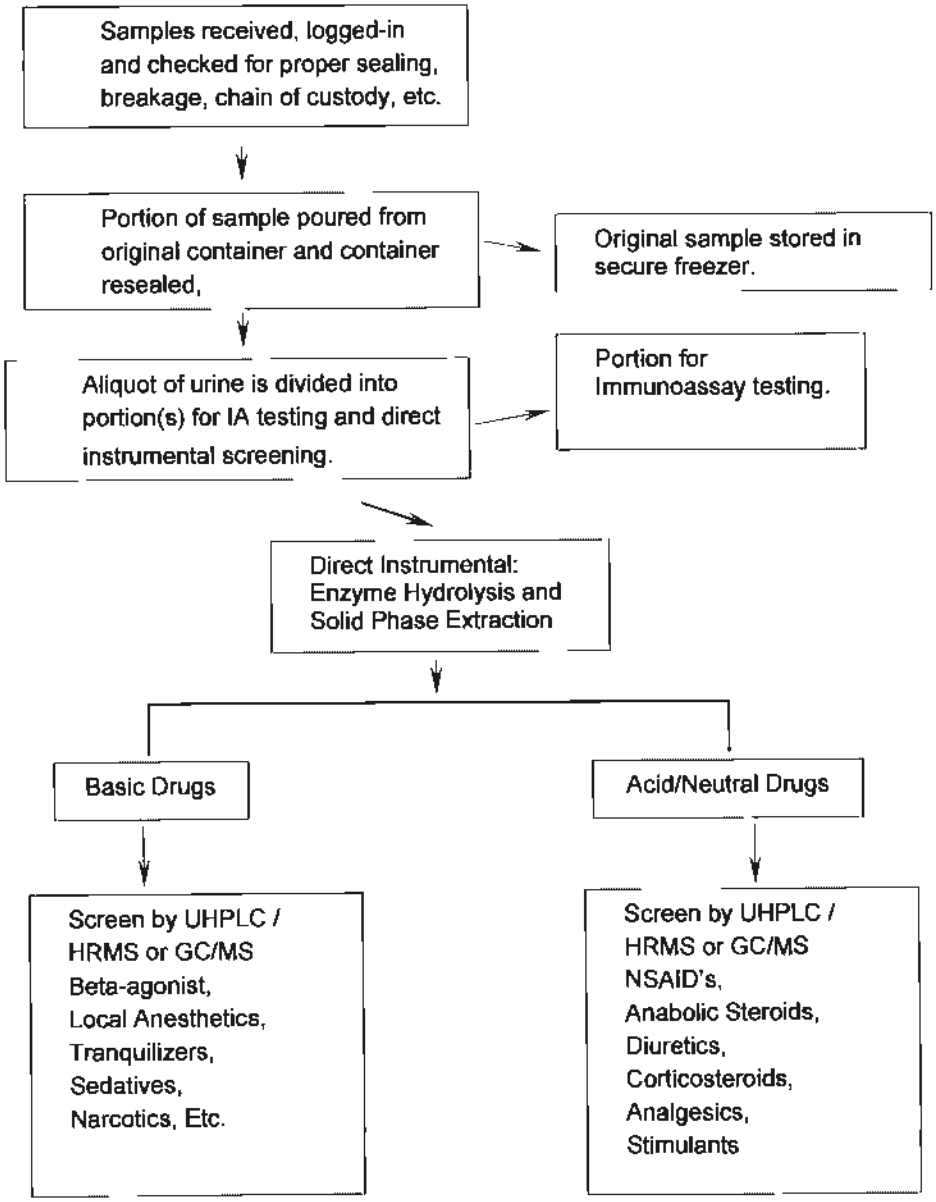
Phenylbutazone	Betamethasone
Flunixin	Clenbuterol
Ketoprofen	Dantrolene
Furosemide	Dexamethasone
Boldenone	Diclofenac
Nandrolone	Firocoxib
Testosterone	Isoflupredone
Salicylic Acid	Methylprednisolone
Hydrocortisone	Prednisolone
Theobromine	Triamcinolone Acetonide

8.5.2 The Basic Fraction of Urine

The basic fraction from urine contains parent drugs and/or metabolites of beta-agonists (bronchodilators), loyal anesthetics, tranquilizers, sedatives, narcotics and similar drugs. Listed below are specific compounds from the hundreds we test for that are part of your regulations. Since the basic fraction is redundant to the same fraction of the blood it will be used on an as needed basis to support blood findings or if needed to detect some new or unusual compound.

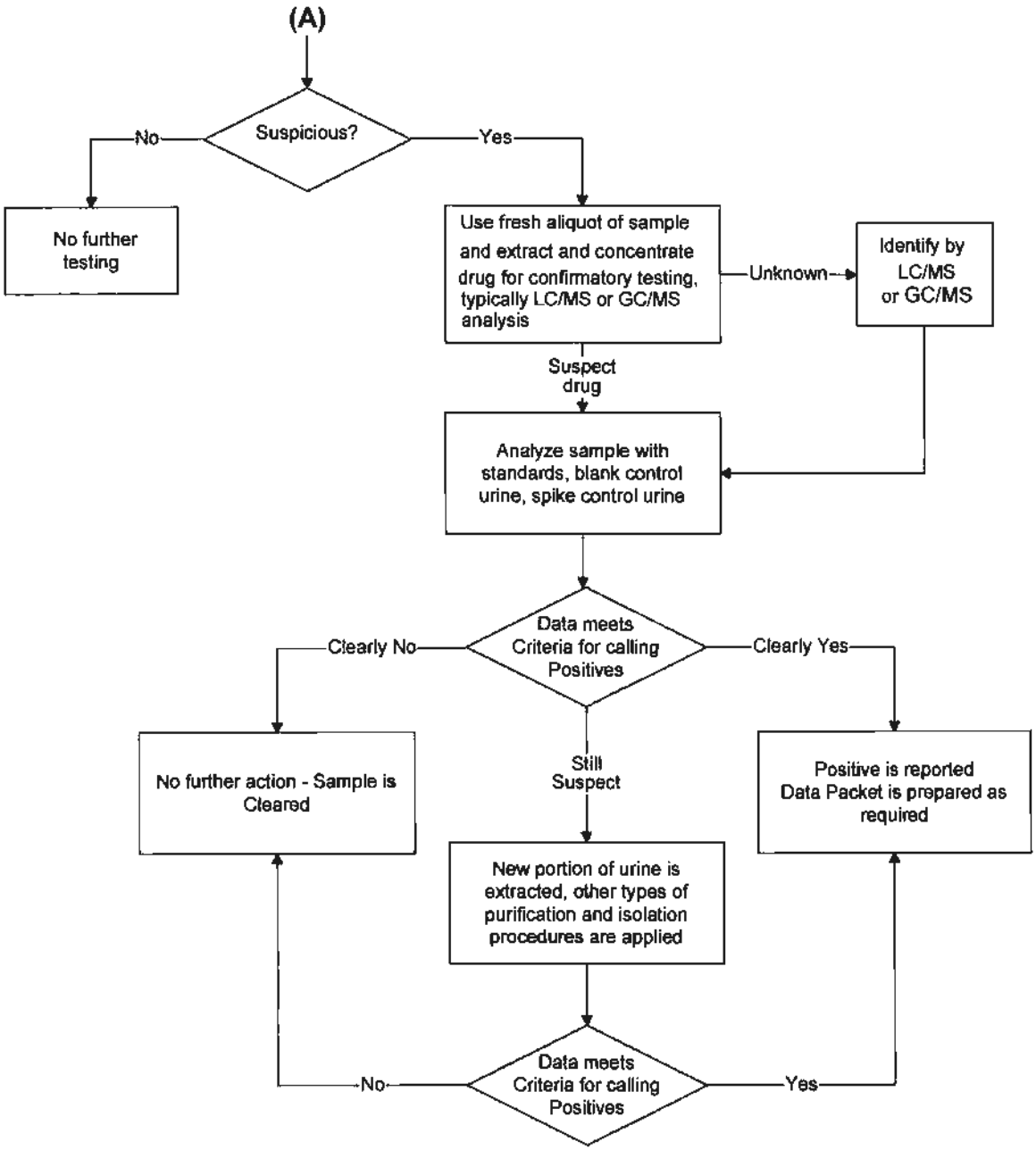
Acepromazine	Pyrilamine
Albuterol	Butorphanol
Bupivicaine	Dermorphin
Detomidine	Lidocaine
Mepivicaine	Methocarbamol
Omeprazole Sulfide	Procaine
Promazine	Xylazine
Morphine	Benzoylecgonine

Figure 8-2 Flow Chart for Direct Instrumental Analysis for Urine



(A) **(A)**

Figure 8-2 *(continued)* **Flow Chart for Direct Instrumental Analysis for Urine**



8.6 Immunoassay Testing

Although immunoassay testing is decreasing in importance, there are a few drugs that do not extract well and could easily be missed in direct instrumental screens. Truesdail proposes to use two (2) immunoassay tests for each urine sample. Glycopyrrolate and Ipratropium are molecules containing quaternary amines that are not extracted well by the routine extraction scheme. Although these drugs are extracted well with an alternative extraction method and detected by UHPLC/HRMS. UHPLC/HRMS is a very cost effective testing methodology when used to test for hundreds of compounds, but it is costly if used to only test for two (2) compounds. Thus, it is most cost effective to test for just these two (2) compounds by immunoassay

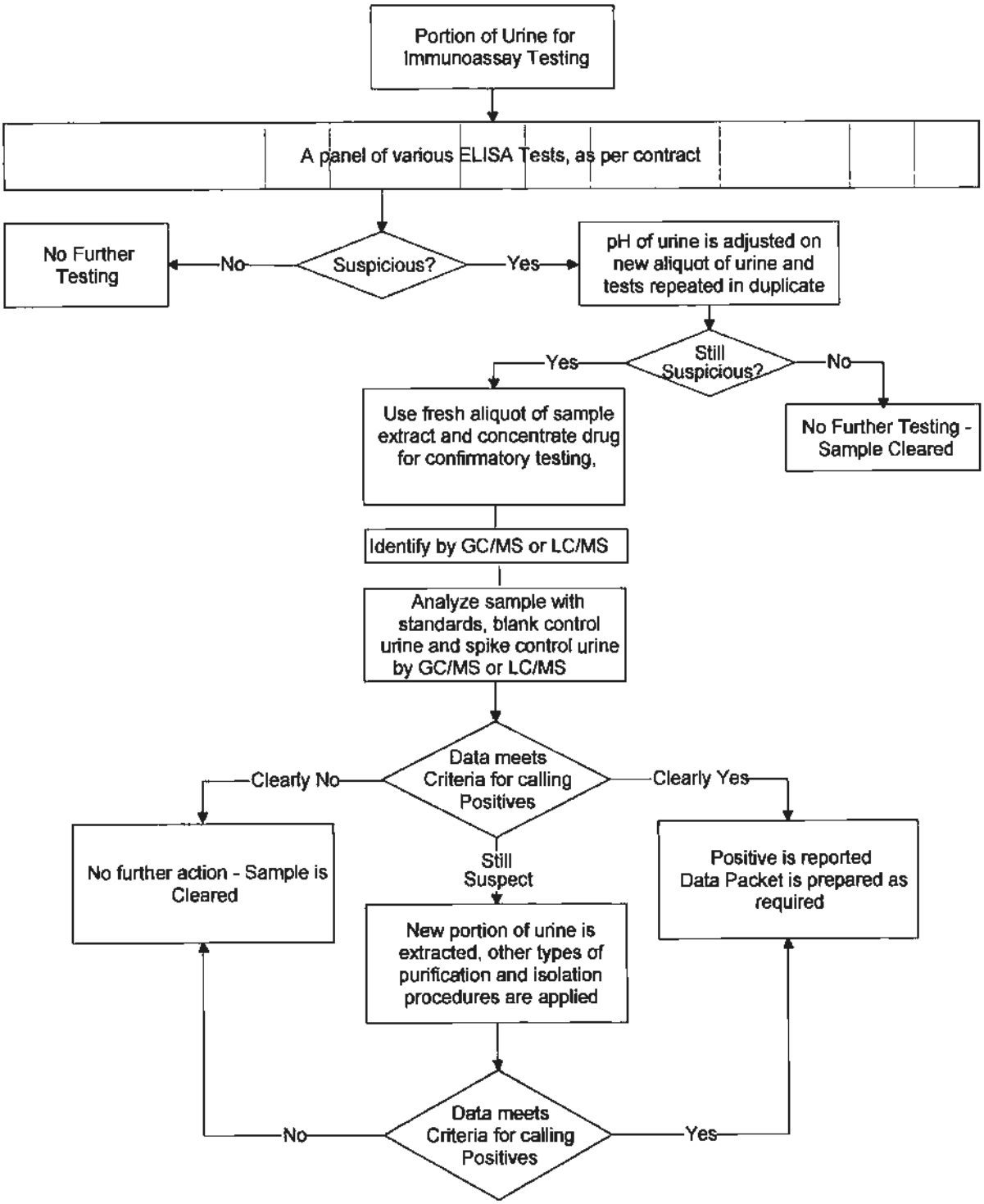
All ELISA kits depend on drug specific antibodies bound to plastic microtiter wells for detection of drugs. The characteristics of the antibodies attached to the wells of the plate determine which drug(s) the assay will detect. In most respects the kits are the same except for the antibodies in the wells and the drug that is used to coat the enzyme responsible for the color reaction.

Truesdail runs all kits with a minimum of two (2) standards, even when the manufacturer does not specify quantitation. Quantitative data has allowed us to monitor the behavior of the assay and to validate detection levels on each plate.

ELISAs are currently run on a plate of 96 wells. Calibration standards, QA/QC samples, and reruns require about 15% of the plate. Therefore, approximately 80 samples can be screened on a typical 96 well microtiter plate.

Flow charts for ELISA testing from initial sampling of urine through final GC/MS or LC/MS confirmation are shown in **Figure 8.3.**

Figure 8-3 Flow Chart for Immunoassay Testing



8.7 Confirmation Methodology

Samples found to be suspicious during the screening tests are subjected to additional testing to confirm the presence of the suspected drug. The goal of our confirmation test is to provide incontrovertible identification of the detected substance. Truesdail Laboratories has been consistently successful when called upon to defend our analytical result. A flow chart for confirmation testing has been included in **Figure 8-4.** The methodologies proposed by Truesdail for confirmations are covered by the scope of our current ISO/IEC 17025 accreditation.

8.7.1 Confirmation Basic Requirements

Confirmation by GC/MS or LC/MS requires three stages: (1) Sample preparation, (2) GC/MS or LC/MS analysis, and (3) Interpretation of results. Detailed descriptions of these stages can be found in our Standard Operating Procedure Manual. The methodologies used for confirmation are covered by the scope of our current ISO 17025 accreditation.

8.7.2 Sample Preparation for Confirmation

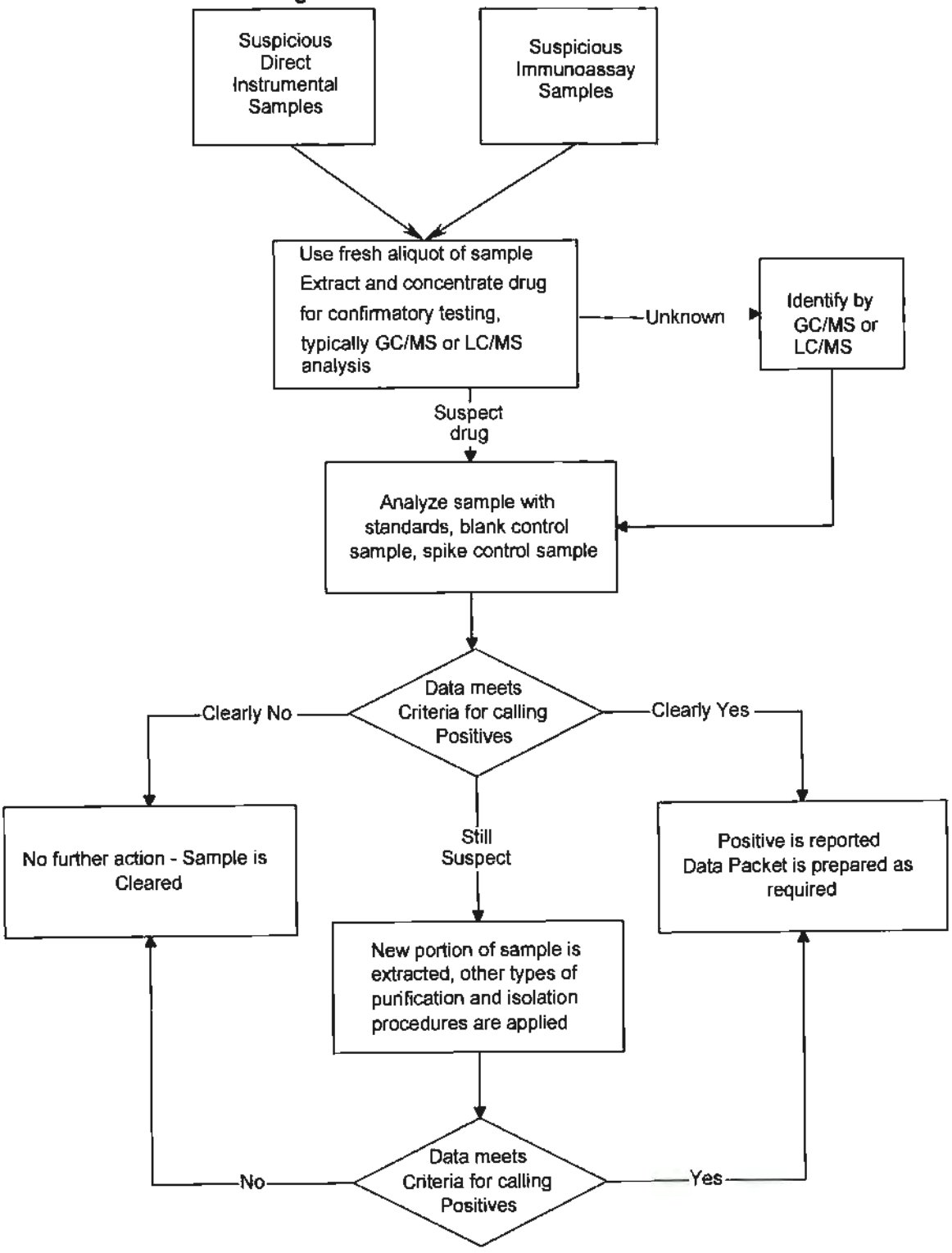
A fresh aliquot of the suspect sample is obtained for confirmations. The amount of sample material used in the preparation depends on the apparent concentration of the drug as estimated by the screening procedure. An extraction procedure is chosen depending on the type of drug and the nature of the sample. The goal of the extraction procedure is to concentrate and purify the drug.

The sample preparation may include the following steps alone or in combination: solid-phase extraction, enzymatic hydrolysis, and liquid/liquid extraction.

8.7.3 Drugs with Thresholds

When confirmation testing is done for drugs having regulatory thresholds, the sample is run in duplicate. If the sample volume is insufficient, only one aliquot is run. Quantitation is achieved by analyzing three control samples spiked with the drug or metabolite at different levels with appropriate blanks to construct a calibration curve. Response factors for the drug are determined and used to calculate quantitative levels of the drug in suspect specimens.

Figure 8-4 Flow Chart for Confirmation



8.8 GC/MS Confirmation

A defensible data package reporting a drug positive must be assembled with care. Each day that confirmation work is done, the tune of the GC/MS is first verified. This is followed by a number of injections that must include: blanks, standard solutions, sample extracts, positive and negative controls.

1. DFTPP tune check of Mass Spectrometer
2. A standard solution of the suspect drug and/or metabolites
3. A solvent blank
4. A negative control sample, C(-)
5. A solvent blank
6. The suspect sample*
7. A solvent blank
8. Analysis of a second portion of the suspect sample*
9. A solvent blank*
10. C(+)1, C(+)2, C(+)3, etc.** Control spiked with the suspect drug or metabolites with one spiked at the regulatory level
11. A solvent blank
12. The standard injected in step 2 is re-injected

*For regulatory threshold drugs, two (2) separate work-ups and analyses of the suspect sample are done to provide an estimate of analytical error, if enough sample is present. If there is not enough sample, then only one work-up and analysis will be performed. This estimate is required for drugs where a regulatory threshold has been established. The lowest concentration value determined in injections 6 and 8 must exceed the threshold value plus the error measurement for the sample to be considered positive. If no estimate of analytical error is required by the regulatory agency, then one work-up of the suspected sample is performed.

**Control spikes at five (5) levels are run when the concentration of the drug is required to exceed a regulatory level (threshold). The control negative plus control positives are used to establish a calibration curve. Only one positive control sample is required to confirm drugs without thresholds.

The purpose of the steps above is as follows:

Steps 3, 5, 7, 9, 11: A solvent blank is injected to verify that the instrument does not contain a contaminant residue remaining from prior injection of a sample, standard, or spiked control.

Steps 2, 12: The standard must be injected to determine both the retention time and the mass spectrum of the substance present in the sample. Two injections of the standard are used to demonstrate that the performance of the instrument has not changed in any significant way during analysis, which can take five or more hours from start to finish.

Step 4: A negative control test consists of a sample containing no drugs. An aliquot of the sample will be extracted in parallel with the suspect sample. This extract is used to verify that the reagents and glassware used in the extraction process are not contaminated with a drug. The spiked negative control test sample assures the analyst that naturally occurring material which are present in plasma/serum extracts do not affect the analysis of the drug and that the extraction procedure is working.

Step 10: At least five (5) spiked control samples are run at different levels when confirmations are done for drugs with a threshold level. One of the spiked control samples is run at the regulatory level to be enforced. This is usually the midpoint-spiked sample, but may also be the lowest spiked sample if sensitivity is an issue. Spiked control samples are run sequentially from lowest to highest. If carryover is known to be a problem, blanks may be run between spikes.

The mass spectra and the retention times for the drug peak from injections number 2, 6, 8, 10 and 12 are compared to determine whether the chromatographic behavior of the drug (indicated by the retention time) and the structure of the drug (derived from the mass spectra) are consistent between the sample, spiked control, and the standard.

8.9 LC/MS Confirmation

Truesdail has an ABI 4000 Q-Trap triple-quadrupole LC/MS, SCIEX 5500 triple-quadrupole LC/MS and two (2) Thermo Exactive UHPLC/HRMS systems for drug detection and confirmation.

Our protocol for analysis follows the same general outline as that documented above for GC/MS. The LC/MS^n and UHPLC/HRMS however, are tune-checked on a daily basis using the analyte being sought, rather than DFTPP used for GC/MS analysis. The Orbitrap UHPLC/HRMS also checks mass accuracy approximately every 48 hours. The positive ionization is checked with a mixture of caffeine, L-Methionyl-Arginyl-Phenyl-Alanine, Acetate and Ultramark 1621. The negative ionization is checked with a mixture of sodium dodecylsulfate, sodium taurochiolate, and Ultramark 1621.

The typical LC/MS confirmation data package will follow the order of analysis listed below:

1. A standard solution of suspected drug and/or metabolites
2. A solvent blank
3. A negative control sample, C(-)
4. A solvent blank
5. The suspect sample*
6. A solvent blank
7. A duplicate extraction of the suspect sample*
8. A solvent blank*
9. C(+)1, C(+)2, C(+)3, etc.** Control spiked with the suspect drug or metabolites with one spiked at regulatory level
10. A solvent blank
11. The standard injected in step 1 is re-injected

*For regulatory threshold drugs, two (2) separate work-ups and analyses of the suspect sample are done to provide an estimate of analytical error, if enough sample is present. If there is not enough sample, then only one work-up and analysis will be performed. This estimate is required for drugs where a regulatory threshold has been established. The lowest concentration value determined in injections 5, 7 must exceed the threshold value plus the error measurement for the sample to be considered positive. If no estimate of analytical error is required by the regulatory agency, then one work-up of the suspected sample is performed.

**Control spikes at three or more levels are run when the concentration of the drug is required to exceed a regulatory level (threshold). The control negative plus control positives are used to establish a calibration curve. Only one positive control sample is required to confirm drugs without thresholds.

Steps 2, 4, 6, 8, 10: A solvent blank is injected to verify that the instrument does not contain a contaminant residue remaining from prior injection of a sample or standard or spiked control.

Steps 1, 11: The standard must be injected to determine both the retention time and the mass spectrum of the substance present in the sample. Two injections of the standard are used to demonstrate that the performance of the instrument has not changed in any significant way during analysis, which can take five or more hours from start to finish.

Step 3: A negative control test consists of a sample containing no drugs. An aliquot of the sample will be extracted in parallel with the suspect sample. This extract is used to verify that the reagents and glassware used in the extraction process are not contaminated with a drug. The spiked negative control test sample assures the analyst that naturally occurring material which are present in plasma/serum extracts do not affect the analysis of the drug and that the extraction procedure is working.

Step 9: At least five (5) spiked control samples are run at different spike levels when confirmations are done for drugs with a threshold level. One of the spiked control samples is run at the regulatory level to be enforced. This is usually the midpoint-spiked sample, but may also be the lowest spiked sample if sensitivity is an issue. Spikes are run sequentially from lowest to highest. If carryover is known to be a problem, blanks may be run between spikes.

8.10 Proposed Reporting Protocols

Preliminary screening results will be communicated by telephone, facsimile, or email to the designated Commission personnel within 72 hours following receipt of the samples. Suspect samples that are flagged by the initial screening process will be retested to identify the suspect drug and then confirmed using positive and negative controls. Final results will be communicated by telephone, facsimile, or e-mail to designated Commission personnel no later than five (5) days following preliminary identification of a sample as being suspect, excluding Saturdays, Sundays and holidays.

Written reports specifying the findings can be sent within 48 hours of the electronic report. A complete litigation packet of the test results will be provided upon request.

In some instances, unusual drug substances may be found on screening and initial confirmation testing that are very difficult to positively identify by standard testing techniques. In these instances, our laboratory will require additional time and possibly apply other testing methodologies. In such cases, the Commission's designate will be notified prior to the end of the confirmation period that a drug substance is present but is, as yet, unidentified, and additional time will be necessary.

Truesdail will report to the Commission all findings of prohibited substances found at any detectable level in addition to any findings of therapeutic substances at or exceeding those levels set forth by the RMTC, ILAC, AORC and ISO 17025, and the ARCI Controlled Therapeutic Medication Schedule. We have in place specific detection limit studies demonstrating we meet all these requirements. As noted above, we routinely seek over 1,800 compounds in each analysis. Our detection levels range from the low pg/ml to the low ng/ml levels.

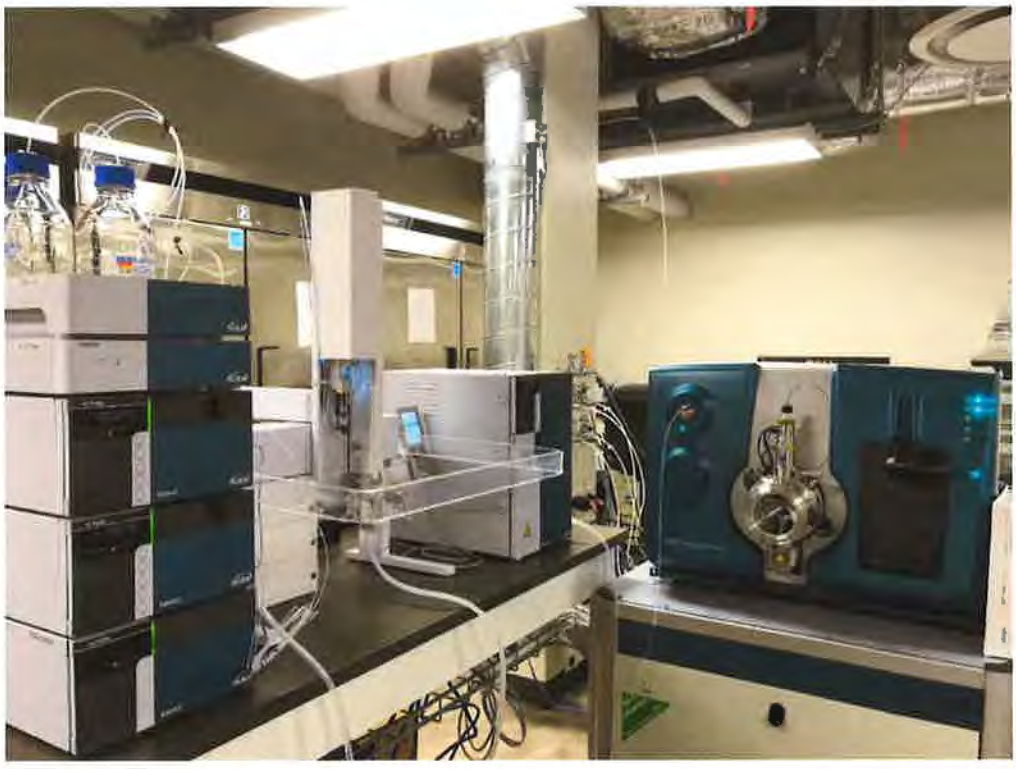
8.11 Equipment

Truesdail has in place all the equipment required for the Commission's scope of work. We have multiple units on line of liquid-liquid extractions and solid-phase extractions (SPE) of samples. We also have multiple units of the major capital equipment items you require. Summarized below are the major instrumentation we have in-house.

Quantity	Equipment
2	ELISA plate readers and autosamplers
1	HPLC systems
1	GC/MS systems
1	LC/MS/MS system
1	LC/MS/MS system with an Ion trap.
2	Thermo Orbitrap UHPLC / HRMS
2	Ion-specific electrode analyzer (TCO_2)

A more complete description of our equipment, with pictures, follows below.

AB Sciex 5500Triple Quad System
With ExionLC and PAL Liquid Injection System



The Sciex Triple Quad 5500 LC/MS/MS system with enhanced high-performance triple quadrupole LC/MS/MS mass spectrometer with mass range of m/z 5 to 1250. This system is designed for sensitivity on low level threshold drugs and for new drug and metabolite identification. With the MultiQuant and Analyst software this system allows for:

- High-sensitivity full-scan MS, MS/MS, and MS/MS/MS with high selectivity from true triple quadrupole precursor ion (PI) and neutral loss (NL) scans
- Multiple reaction monitoring (MRM) for quantitation using high sensitivity triple quadrupole
- Rapid and easy identification and quantitation of drugs and metabolites
- Identification and sequencing of modified peptides

This system is equipped with a high efficiency UHPLC Exion LC system rated for 660 bars. Sample handling for the UHPLC is done with a PAL Liquid Injection System with a LC-MS wash module and three drawer thermostated stack that provides high sample capacity, high throughput and low carryover.

Thermo Exactive Plus™ UHPLC/HRMS
With Transcend™ LX-4 Multiplexing System

The Thermo-Scientific Exactive Plus™ UHPLC / HRMS system is our second bench-top high resolution (accurate mass) system using Thermos Orbitrap™ technology. This instrument allows us to:

- Screen for compounds at femtogram level
- Perform structure elucidation using an "All-Ion Fragmentation"
- Have an ultra-high resolution of up to 140,000
- Have a Mass Range up to 6,000, and
- Have a Mass Accuracy of less than 1 ppm.

The mass spectrometer is equipped with a probe that can be easily switched between APCI and ESI ionization. Rapid switching between positive and negative polarity is possible during a run to optimize sensitivity when a variety of molecules are present.

Instrument operation and data collection is done with the latest version of Thermo's Xcalibur™ software. The UHPLC portion of this system is part of a Thermo Transcend II LX-4 multiplexing system.

The Transcend II LX-4 system allows four HPLC systems to be connected to one detection system to optimize sample throughput. Up to four separate methods can be run simultaneously on independent LC channels. When fully optimized, the LX-4 has the potential to achieve the throughput of four separate LC/MS systems with only a single MS detector.

The benefits of multiplexing does not reduce data quality. The operation of each multiplexed LC system is staggered and parallel. The mass spectrometer is dedicated solely to a single sample stream during the critical elution step. This maintains sensitivity and data quality for all channels.

The Transcend II system is controlled by Thermo's Aria™ Operations software.

Thermo Scientific Exactive™ UHPLC / HRMS
With Thermo-Scientific Transcend Multiplexing System

The Thermo-Scientific ExactiveTM was our first bench-top high-resolution (accurate mass) system using Thermal's OrbitrapTM technology. This instrument allowed Truesdail to:

- Screen compounds at pictogram levels using high-resolution accurate mass
- Do structure elucidation using "All Ion Fragmentation".
- Resolve complex samples with up to 100,000 resolutions.
- Have a Mass Range up to 2,000
- Have a Mass Accuracy of less than 5 ppm

The mass spectrometer is equipped with a probe that is easily switched between APCI and ESI ionization. The instrument also allows rapid switching between positive and negative polarity during a run to optimize sensitivity when a variety of molecules are present.

The LC/MS system includes a Thermo Accela UHPLC front end capable of using microbore columns operating at up to 600-bar pressure. Automation of sample analysis is done with a CTC PAL thermostated auto-sampler with UHPLC injector. Instrument operation and data collection are accomplished with the latest version of Thermo's Xcalibur™ software.

Approximately 18 months after bringing the Exactive into full-time screening mode, Truesdail upgraded the Exactive System by adding multiplexing capability. Multiplexing basically allows multiple HPLC's to feed into one MS detector. Presently, our system is using two HPLC's to increase the sample throughput although the system we purchased will allow up to four HPLC's.

This novel technique takes advantage of the time an MS typically spends idle while columns are flushed and/or equilibrated by time-staggering the LC methods so that the compounds being sought elute in succession. The MS is still dedicated to the portion of the LC run where compounds elute so the data quality remains the same.

We estimate that by multiplexing we can screen 30% to 40% more samples in a given timeframe. Since we often test multi-days of race samples from one shipment, the ability to get a larger number done in a shorter timeframe helps us significantly with meeting our clients' turn-around-time requirements.

AB Sciex 4000 Q Trap™

The 4000 Q trap is a triple stage quadrapole LC/MS/MS system that has as its third stage a linear ion trap. This combination is suited for new drug and metabolite identification. Its unique combination of detectors coupled with its advanced Analyst® software allows for:

- High-sensitivity full-scan MS, MS/MS, and MS/MS/MS with high selectivity from true triple quadrupole precursor ion (PI) and neutral loss (NL) scans
- Multiple reaction monitoring (MRM) for quantitation using high sensitivity triple quadrupole

- Rapid and easy identification and quantitation of metabolites
- Identification and sequencing of modified peptides

This system is equipped with a Shimadzu 20AD HPLC system that has 3 pumps for complex gradients, column temperature controller, and an additional UV detector.

Sample handling for the HPLC is done with a CTC HTS-PAL thermostated auto-sampler, which has the capability of holding up to 400 vials.

Gas Chromatography / Mass Spectroscopy
Agilent 7890A/5975C GC/MS System

The Agilent 7890A/5975C Gas Chromatograph/Mass Spectrometer is equipped with a 7693A automatic liquid sampler, a large-volume injector, and an APEX ProSep Series 7 large-volume inlet. The large-volume injector allows for an increase in the sample volume to be injected into the instrument, thus attaining an increase in sensitivity for the majority of compounds. The use of this large-volume injector was first applied at the University of California, Davis, to improve their sensitivity for direct instrumental screening. This injector coupled with the latest Agilent GC/MS model provides exceptionally sensitive testing. Extracted samples are dried in vials that the autosampler dispenses derivatizing reagents directly into. It then injects the sample. Derivatization

of the sample occurs directly on the ProSep inlet. The system is controlled by Chem Station software. The libraries on the system are NIST, AORC, and Truesdail.

High Performance Liquid Chromatography

Agilent 1200 HPLC Systems

The Agilent 1200 HPLC system includes a binary pump, degasser, multi-wavelength (DAD) detector, autosampler, and temperature controlled column compartment. The HPLC system is controlled using ChemStation software. The HPLC system is use for the identification of quantification of certain non-steroidal anti-inflammatory drugs.

Immunoassay

Bio-Tek EL808

- Bio-Tek EL808 Microplate Reader with Bio-TekGen5 data collection and analysis software.
- Bio-Tek EL312 ELISA Microplate Reader with computer data system.
- Bio-Tek EL311 ELISA Microplate Reader with computer data system.

DPC Mark V Robotic Pipettor

- DPC Mark V Robotic Pipettor for ELISA sample-handling with computer data system.
- Perkin Elmer Multi-probe II Plus robotic Pipettor for ELISA sample handling with computer data system.
- Packard MultiProbe 104DT pipetting system (for ELISA sample handling) with computer data system.

Extraction, and Related Equipment

- Color spot testing kit and reagents
- Three (3) Positive Pressure manifolds for solid-phase extraction
- Six (6) Drying manifolds
- Eppendorf 5810R centrifuge
- Eppendorf 5804 centrifuge
- Eppendorf 5810 centrifuge
- Eppendorf 5418 microcentrifuge
- LabQuake shakers: Over a dozen are available (~17)
- Marathon 3000 centrifuge
- IEC floor-model centrifuge
- Three (3) Clay Adams bench top, six-place centrifuges
- Two (2) 225, 24 place centrifuges

Nova 4 Blood Gas Analyzer for TCO_2

Nova 4 Analyzer
Equipped with ISE's for Na, K, Cl, and TCO_2 (2 units)

Additional Analytical Equipment and Supplies

As a broad-based chemical testing laboratory, Truesdail has all of the routine items necessary to support a drug testing operation. This includes such items as reagents, standards, chemical supplies, pure drugs for reference standards, laboratory sinks, steam baths, hot water baths, distilled water, centrifuges, balances and scales, cameras and photomicrographic equipment, paper and column chromatography apparatus, lab ovens, pH meters, specific gravity meters (refractometers), glassware, etc.

Backup Facilities, Equipment, Instruments, etc.

In addition to our Racing Chemistry Laboratory, there are six other labs within Truesdail Laboratories. They have equipment which duplicates the Racing Lab's and, therefore, is available as backup. The available equipment is:

- We have five (5) additional GC/MS systems in other labs that can back up the Racing GC/MS systems.
- Four (4) LC/MS systems in the Racing dedicated to drug testing that backup each other.
- One (1) HPLC systems is dedicated to drug testing. We have three (3) HPLC systems available as backup in other departments with UV detectors.

- Three (3) ELISA plate readers, and two (2) ELISA plate pipettors provide backup for immunoassay testing.
- TCO_2 testing has two (2) instruments, two (2) Nova 4 Blood Gas Analyzer.

As a final contingency in the event of a major disaster, Truesdail has a close working relationship with both Texas A&M University's Equine Testing Laboratory and New York State's Laboratory. In the event of a total disaster, samples could be subcontracted to one, or both, of these RMTC accredited labs.

Section 9 – Cost Proposal Requirements

Appendix A

Accreditations

ANSI-ASQ National Accreditation Board

ANAB

September 11, 2017

VIA EMAIL

Truesdail Laboratories, Inc.
Michael Ngo
3337 Michelson Drive, Suite CN-750
Irvine, CA 92612

Re: Extension for ISO/IEC 17025: 2005 accreditation

Dear Michael:

This letter is to inform you that your accreditation for ISO/IEC 17025: 2005 will expire on 9/21/17. We have granted you an extension of 90 days from the expiration date on your certificate and scope of accreditation. If you have any questions or concerns regarding this matter, please feel free to give me a call at 414-501-5344.

Regards,

Dominique Hausch
Senior Client Coordinator
ANSI-ASQ National Accreditation Board
Direct line: (414) 501-5346 Main office line: (414) 501-5494
dhausch@anab.org

ANAB is Now the Home of LABORATORY ACCREDITATION BUREAU

www.anab.org | Milwaukee, WI | Alexandria, VA | Fort Wayne, IN | Cary, NC

CERTIFICATE OF ACCREDITATION

ANSI-ASQ National Accreditation Board
500 Montgomery Street, Suite 625, Alexandria, VA 22314, 877-344-3044

This is to certify that

Truesdail Laboratories, Inc.
3337 Michelson Drive, Suite CN-750
Irvine CA 92612

has been assessed by ANAB
and meets the requirements of international standard

ISO/IEC 17025:2005

while demonstrating technical competence in the field of

TESTING

Refer to the accompanying Scope of Accreditation for information regarding the types of tests to which this accreditation applies.

AT-1408
Certificate Number

ANAB Approval

Certificate Valid: 01/10/2017-09/21/2017
Version No. 003 Issued: 01/10/2017

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated January 2009).

ANSI-ASQ National Accreditation Board

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005 and all relevant elements of ILAC-G7:06/2009 for horseracing test laboratories

Truesdail Laboratories, Inc.
3337 Michelson Drive, Suite CN-750, Irvine, CA 92612
Michael Ngo Phone: 714-730-6239
mngo@truesdail.com www.truesdail.com

TESTING

Valid to: September 21, 2017 Certificate Number: **AT - 1408**

I. Chemical

ITEMS, MATERIALS OR PRODUCTS TESTED	SPECIFIC TESTS OR PROPERTIES MEASURED	SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED	*KEY EQUIPMENT OR TECHNOLOGY
Biological Material[2]	ELISA	In-House Methods and Manufacturer's Instructions ILAC-G7:06/2009[3]	Immunoassay Kits and Reader
Biological Material[2]	TCO2	In-House Methods and Manufacturer's Instructions ILAC-G7:06/2009[3]	Direct CO2 Reading Instrument
Biological Material[2]	Specific Gravity	In-House Methods and Manufacturer's Instructions ILAC-G7:06/2009[3]	Refractometer
Biological Material[2]	Liquid Chromatography, Various Detectors	In-House Methods ILAC-G7:06/2009[3]	HPLC
Biological Material[2]	Instrumental Screen	In-House Methods ILAC-G7:06/2009[3]	GC/MS
Biological Material[2]	Instrumental Screen	In-House Methods ILAC-G7:06/2009[3]	LC/MS
Biological Material[2]	Drug Confirmation	In-house Methods ILAC-G7:06/2009[3]	GC/MS LC/MS
Biological Material[2]	Trace Metals	In-House Methods and Manufacturer's Instructions ILAC-G7:06/2009[3]	ICP-OES ICP/MS

ITEMS, MATERIALS OR PRODUCTS TESTED	SPECIFIC TESTS OR PROPERTIES MEASURED	SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED	* KEY EQUIPMENT OR TECHNOLOGY
Biological Material[2]	pH	In-House Methods and Manufacturer's Instructions ILAC-G7:06/2009[3]	pH Meter
Nutritional Supplements	ELISA	In-House Methods and Manufacturer's Instructions	Immunoassay Kits and Reader
Nutritional Supplements	Liquid Chromatography, Various Detectors	In-House Methods	HPLC
Nutritional Supplements	Instrumental Screen	In-House Methods	GC/MS
Nutritional Supplements	Instrumental Screen	In-House Methods	LC/MS
Nutritional Supplements	Confirmation of Chemical Identity	In-house Methods	GC/MS LC/MS
Children's Products	Lead	CPSC 16 CFR 1303 Lead in Paint CPSC-CH-E1003-09	ICP-OES ICP/MS
Children's Metal Jewelry	Lead and other Heavy Metals	CPSC Standard Operating Procedures for Determining Lead and its Availability in Children's Metal Jewelry CPSC-CH-E1001-08.1 CPSC-CH-E1002-08.1 16 CFR 1303 ASTM E1613; ASTM E1645	ICP-OES ICP/MS
Textiles, Toys, Juvenile Products and Child Care Products including Packaging	Lead and other Heavy Metals	CPSC Standard Operating Procedures for Determining Lead and its Availability CPSC-CH-E1001-08.1 CPSC-CH-E1002-08.1 16 CFR 1303 ASTM E1613; ASTM E1645, ANSI Z66.1, ASTM D3630	ICP-OES ICP/MS
Textiles, Toys, Juvenile Products and Child Care Products including Packaging	Phthalates	CPSC-CH-C1001-09.3	GC/MS

ITEMS, MATERIALS OR PRODUCTS TESTED	SPECIFIC TESTS OR PROPERTIES MEASURED	SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED	* KEY EQUIPMENT OR TECHNOLOGY
Plumbing Products	Lead and other Metals	NSF/ANSI 61 & 372, EPA Methods, In-House Methods	ICP-OES ICP/MS
Plumbing Products	Organics	NSF/ANSI 61, EPA Methods, In house Methods	GC/MS LC/MS HPLC
Plumbing Products	Anions, Cations, Hexavalent Chromium, Inorganics	NSF/ANSI 61, EPA Methods	Ion Chromatograph, Spectrophotometer
Rubber, Plastic and Metal Components	Fungus Resistance Testing	MIL-STD-810 Method 508 RTCA/DO-160 Section 13	Fungus Chamber

Notes:

1. ** – As Applicable*
2. *Testing for performance enhancing or performance altering drugs in urine, blood, or other fluid or tissue from Horses, Dogs, Camels, Sheep, Cattle, other domestic animals, or Humans and various feed supplements, seized materials, or syringe contents as requested.*
3. *ILAC-G7:08/2009 Accreditation Requirements and Operating Criteria for Horseracing Laboratories*
4. *This scope is formatted as part of a single document including the Certificate of Accreditation No. AT-1408*

Vice President

RMTC
Racing Medication & Testing Consortium

THIS CERTIFICATE RECOGNIZES THAT

Truesdail Laboratories

HAS BEEN AWARDED RMTC LABORATORY ACCREDITATION

AWARDED THIS 1ST DAY OF MAY, 2014

Alex Waldrop, Chair RMTC Board

Appendix B

Drugs Sought

Appendix B - List of Compounds Sought Using UHPLC / HRMS

List of Compounds Sought Using UHPLC / HRMS

November 2012

No.	Compound	Element Composition
1	((±)-N-Acetyl-3,4-methylenedioxyamphetamine)	C12H15NO3
2	(±)-11-Hydroxy-delta9-THC (THC metab)	C21H30O3
3	1-(1-phenylcyclohexyl)pyrrolidine (Roxicyclidine)	C16H23N
4	1-(2-Phenethyl)-4-phenyl-4-acetoxypiperidine	C21H25NO2
5	1-[1-(2-thienyl)cyclohexyl]piperidine	C15H23NS
6	1-[1-(2-thienyl)cyclohexyl]pyrrolidine	C14H21NS
7	1-1_Dimethylbiguanide	C4H11N5
8	11HydroxyDelta9THC	C21H30O3
9	11-nor-9-carboxy THC_COOH_Glucuronide	C27H36O10
10	11-nor-9-carboxy THC_COOH_Glucuronide_Neg	C27H36O10
11	11NorCarboxyDelta9THC	C21H28O4
12	11NorCarboxyDelta9THC_Neg	C21H28O4
13	1-3 Chlorphenylpiperizine	C10H13ClN2
14	13b,17a-Diethyl-5a-gonane-3a, 17b-diol (norbotethone	C21H36O2
15	16a-Hydroxyestrone (16aOHE)	C18H22O3
16	16a-Hydroxyfurazabol	C20H30N2O3
17	16a-hydroxyprednisolone	C21H28O6
18	16b-Hydroxyfurazabol	C20H30N2O3
19	16B-Hydroxystanzolol	C21H32N2O2
20	17a-Boldenone (Epiboldenone)	C19H26O2
21	17a-Ethyl-5a-estrane-3a,17b-diol (norethandrolone metab)	C20H34O2
22	17-Epimethandienone (methandienone metab)	C20H28O2
23	17-Epioxandrolone	C19H30O3
24	17-hydroxyprogesterone (17 alpha-hydroxyprogesterone)	C21H30O3
25	19-Norandrostenediol	C18H28O2
26	19-Norandrostenedione (NorAD)	C18H24O2
27	19-norandrosterone	C18H28O2
28	19-noretiocholanolone	C18H28O2
29	19-Noretiocholanolone glucuronide	C24H35O8Na
30	19-Noretiocholanolone sulfate	C18H27NaO5S
31	1a-Methyl-5a-androstan-3a,17b-diol (mesterlone metab)	C20H34O2
32	1a-Methyl-5a-androstan-3a-ol-17-one (mesterolone metab)	C20H32O2

No.	Compound	Element Composition
33	1-Androstendione (5a-androst-1-en-3,17-dione)	C19H26O2
34	1-androstenediol (5a-androst-1-ene-3b,17b-diol)	C19H30O2
35	1-Androstenedione	C19H26O2
36	1-Hydroxyalprazolam	C17H13ClN4O
37	1-methyl-4-phenyl-4-propionoxypiperidine (MPPP)	C15H21NO2
38	1-Methylene-5a-androstan-3a-ol-17-one (metenolone metab)	C20H30O2
39	1-Methylene-5a-androstan-3a-ol-17-one glucuronide (metenolone metab)	C26H37O8Na
40	1-Testosterone (5a-androst-1-en-3-one-17b-ol)	C19H28O2
41	2-(1-Hydroxyethyl)promazine sulfoxide	C19H24N2O2S
42	2-(1-Hydroxypropyl)promazine sulfoxide	C20H26N2OS
43	2,5-Dimethoxy-4-ethylamphetamine	C13H21NO2
44	2,5-Dimethoxyamphetamine	C11H17NO2
45	2_bromo_alpha_ergocryptine	C32H40BrN5O5
46	2a-Methyl-5a-androstan-3a-ol-17-one (drostanolone metab)	C20H32O2
47	2a-Methyl-5a-androstan-3a-ol-17-one glucuronide (drostanolone metab)	C26H39O8Na
48	2-ethyl-1,5-dimethyl-3,3-diphenylpyrrolinium perchlorate (EDDP perchlorate)	C20H24N
49	2-hydroxyestrone (2-OHE)	C18H22O3
50	2-Hydroxyethylflurazepam	C17H14ClFN2O2
51	2-Hydroxymethyl-17a-methylandrostadiene-11a,17b-diol-3-one (formebolone metab)	C21H30O4
52	3 Hydroxy Stanozolol	C21H32N2O2
53	3 Hydroxyethylflurazepam	C17H15O2N2ClF
54	3,4,5-Trimethoxyamphetamine (TMA)	C12H20NO3Cl
55	3,4-Methylenedioxyamphetamine (MDA)	C10H13NO2
56	3,4-Methylenedioxymethamphetamine (MDMA)	C11H15NO2
57	3,4-Methylenedioxy-N-ethylamphetamine (MDEA)	C12H17NO2
58	3,4-Methylenedioxyphenyl-2-butanamine	C11H15NO2
59	3a-hydroxy-5a-androstan-17-one (Androsterone)	C19H30O2
60	3b-hydroxy-5a-androstan-17-one (Epiandrosterone)	C19H30O2
61	3-Hydroxy Bupivacaine	C18H28N2O2
62	3-Hydroxy Tripelennamine	C16H21N3O
63	3-Hydroxy-4-methoxytamoxifen	C27H31NO3
64	3-Hydroxylidocaine	C14H22N2O2
65	3-Hydroxymepivacaine	C15H22N2O2
66	3-Hydroxypromazine	C17H20N2OS
67	3-Hydroxystanozolol	C21H32N2O2

No.	Compound	Element Composition
68	3-methylcolterolol	C13H21NO3
69	3-Methylfentanyl	C23H30N2O
70	3-Methylthiofentanyl	C21H28N2OS
71	4 HydroxyNordiazepam	C15H11ClN2O2
72	4 HydroxyNordiazepam_Glucuronide	C21H29ClN2O8
73	4a-Hydroxystanozolol	C21H32N2O2
74	4-Aminoantipyrine	C11H13N3O
75	4-androstenediol (androst-4-ene-3b,17b-diol)	C19H30O2
76	4-Bromo-2,5-dimethoxyamphetamine (DOB)	C11H16BrNO2
77	4-Bromo-2,5-dimethoxyphenethylamine	C10H14BrNO2
78	4-Chloro-4-androsten-3a-ol-17-one (clostebol metab)	C19H27ClO2
79	4-Chlorodehydromethyltestosterone	C20H27O2Cl
80	4-Hydroxyamphetamine	C9H13NO
81	4-Hydroxycyclofenil	C19H20O3
82	4-Hydroxymethamphetamine	C10H15NO
83	4-Hydroxymidazolam	C18H13ClFN3O
84	4-Hydroxypropranolol	C16H21NO3
85	4-Hydroxy-propranolol-sulfate1	C16H21NO6S
86	4-Hydroxy-propranolol-sulfate2	C16H22NO6S
87	4-Hydroxytestosterone	C19H28O3
88	4-hydroxytestosterone (4-OHT)(4,17b-dihydroxyandrost-4-en-3-one)	C19H28O3
89	4-Hydroxyxylazine	C12H16N2OS
90	4-Methoxyamphetamine (PMA)	C10H15NO
91	4-Methyl-2,5-dimethoxyamphetamine (DOM)	C12H19NO2
92	4-Methylaminorex (cis isomer)	C10H12N2O
93	4-methylmethcathinone (mephedrone)	C11H15NO
94	5a-androstane-3a,17a-diol	C19H32O2
95	5a-androstane-3a,17b-diol (Dihydroandrosterone)	C19H32O2
96	5a-androstane-3b,17a-diol	C19H32O2
97	5a-androstane-3b,17b-diol	C19H32O2
98	5a-Estran-3B, 17a-diol	C18H30O2
99	5a-Estran-3B, 17a-diol-daughter	C18H26
100	5-alpha tetrahydrocortisol	C21H34O5
101	5-androstenedione (androst-5-ene-3,17-dione)	C19H26O2
102	5b-Androst-1-en-17b-ol-3-one (4-Dihydroboldenone) (Boldenone Metabolite)	C19H28O2
103	5-Methoxy-3,4-methylenedioxyamphetamine	C11H15NO3

No.	Compound	Element Composition
104	6-Acetylcodeine	C20H23NO4
105	6-Acetylmorphine	C19H21NO4
106	6-a-Fluprednisolone	C21H27FO5
107	6a-Hydroxy Androstenedione	C19H26O3
108	6b-Hydroxyfluoxymesterone (fluoxymesterone metab)	C20H29FO4
109	6b-Hydroxymethandienone (methandienone metab)	C20H28O3
110	6b-Hydroxy-oral turinabol (DHCMT metabolite)	C20H27ClO3
111	6-Desmethylpapaverine	C19H19NO4
112	6-OXO (4-Androstene-3,6,17-trione)	C19H24O3
113	7?-hydroxy-DHEA	C19H28O3
114	7a,17a-Dimethyl-5b-androstane-3a,17b-diol (bolasterone metab)	C21H36O2
115	7a,17a-Dimethyl-5b-androstane-3a,17b-diol glucuronide (bolasterone metab)	C27H43O8Na
116	7-Aminoclonazepam	C15H12ClN3O
117	7-Aminoflunitrazepam	C16H14FN3O
118	7-Aminonitrazepam	C15H13N3O
119	7b,17a-Dimethyl-5b-androstane-3a,17b-diol (calusterone metab)	C21H36O2
120	7b,17a-Dimethyl-5b-androstane-3a,17b-diol glucuronide (calusterone metab)	C27H43O8Na
121	7-Hydroxy Fluphenazine	C22H26F3N3O2S
122	7-Hydroxychlorpromazine	C17H29ClN2OS
123	7-keto-DHEA	C19H26O3
124	8-Hydroxyadenine (8-OHA)	C5H5N5O
125	9(10) dehydronandrolone	C18H24O2
126	9a-Fluoro-17,17-dimethyl-18-nor-androstan-4,13-diene-11b-ol-3-one (fluoxymesterone metab)	C20H27FO2
127	9a-Fluoro-17a-methyl-4-androsten-3a, 6b,11b,17b-tetra-ol (fluoxymesterone metab)	C20H31FO4
128	Abamectin B1a	C48H72O14
129	Abamectin B1b	C47H70O14
130	Acadesine	C9H14N4O5
131	Acebutolol	C18H28N2O4
132	Acecarbromal	C9H15BrN2O3
133	Acemetacin	C21H18ClNO6
134	Acephate	C4H10NO3PS
135	Acepromazine	C19H22N2OS
136	Acequinocyl	C24H32O4
137	Acetaminophen	C8H9NO2
138	Acetamiprid	C10H11ClN4

No.	Compound	Element Composition
139	Acetanilide	C8H9NO
140	Acetazolamide	C4H6N4O3S2
141	Acetophenazine	C23H29N3O2S
142	Acetophenetidin (Phenacetin)	C10H13NO2
143	Acetorphine	C27H35NO5
144	Acetyl-alpha-methylfentanyl	C22H28N2O
145	Acetyldihydrocodeine	C20H25NO4
146	Acetylmethadol (Levacetylmethadol)	C23H31NO2
147	Acetylsalicylic Acid	C9H9O4
148	Acibenzolar S-methyl	C8H6N2OS2
149	Acifluorfen	C14H7ClF3NO5
150	Aclometasone	C28H37ClO7
151	Aclonifen	C12H9ClN2O3
152	Acrinathrin	C26H21F6NO5
153	Adinazolam	C19H18ClN5
154	Adrafinil	C15H15NO3S
155	Adrenaline**	C9H13NO3
156	Adrenochrome Monosemicarbazone Salicylate (Carbazochrome Salicylate)	C17H17N4NaO6
157	Adrenosterone	C19H24O3
158	AICAR	C9H15N4O8P
159	Akton	C12H14Cl3O3PS
160	Alachlor	C14H20ClNO2
161	Alanycarb	C17H25N3O4S2
162	Albuterol	C13H21NO3
163	Alclofenac	C11H11ClO3
164	Alcuronium	C44H50N4O2
165	Aldicarb	C7H14N2O2S
166	Aldicarb sulfone	C7H14N2O4S
167	Aldicarb sulfoxide	C7H14N2O3S
168	Aldocortin	C21H28O5
169	Aldosterone	C21H28O5
170	Alfentanil	C21H32N6O3
171	Allethrin	C19H26O3
172	Allidochlor	C8H12ClNO
173	Allylprodine	C18H25NO2
174	Almotriptan	C17H25N3O2S
175	Alphacetylmethadol	C23H31NO2

No.	Compound	Element Composition
176	Alpha-ethyltryptamine	C12H16N2
177	Alphameprodine	C17H25NO2
178	Alphamethadol	C21H29NO
179	alpha-Methylfentanyl	C23H30N2O
180	alpha-Methylthiofentanyl	C21H28N2OS
181	Alphaprodine	C16H23NO2
182	Alpidem	C21H23Cl2N3O
183	Alprazolam	C17H13ClN4
184	Alprenolol	C15H23NO2
185	Althiazide	C11H14ClN3O4S3
186	Amantidine	C10H17N
187	Ambenonium	C28H42Cl2N4O2
188	Ambroxol	C13H18Br2N2O
189	Amcinonide	C28H35FO7
190	Ametryn	C9H17N5S
191	Amfepramone	C13H19NO
192	Amicarbazone	C10H19N5O2
193	Amiloride	C6H8ClN7O
194	Amineptine	C22H28NO2
195	Amino_Clonazepam	C15H12ClN3O
196	Amino_Flunitrazepam	C16H14FN3O
197	Aminocaproic Acid	C6H13NO2
198	Aminocarb	C11H16N2O2
199	Aminoglutethimide	C13H16N2O2
200	Aminonitrazepam	C15H13N3O
201	Aminophylline	C7H8N4O2
202	Aminophylline (-)	C7H8N4O2
203	Aminopyralid	C6H4Cl2N2O2
204	Aminopyrine	C13H17N2O
205	Aminorex	C9H10N2O
206	Amiodarone	C25H29I2NO3
207	Amiphenazole	C9H9N3S
208	Amisometradine	C9H13N3O2
209	Amisulpride	C17H27N3O4
210	Amitraz	C19H23N3
211	Amitriptyline	C20H23N
212	Amlodipine	C20H25ClN2O5

No.	Compound	Element Composition
213	Amobarbital	C11H18N2O3
214	Amoxapine	C17H16ClN3O
215	Amperozide	C23H29F2N3O
216	Amphetamine	C9H13N
217	Amphetaminil	C17H18N2
218	Amyl nitrite	C5H11NO2
219	Anastrozole	C17H19N5
220	Ancymidol	C15H16N2O2
221	androst-4-ene-3a,17a-diol	C19H26O2
222	Androst-4-ene-3a,17b-diol	C19H30O2
223	androst-5-ene-3a,17a-diol	C19H30O2
224	Androst-5-ene-3a,17b-diol	C19H30O2
225	Androst-5-ene-3b,17a-diol	C19H30O2
226	Androsta-1,4,6-triene-3,17-dione (androstatrienedione, ATD)	C19H22O2
227	Androstanedione (5a-androstane-3,17-dione)	C19H28O2
228	Androstenediol (androst-5-ene-3b,17b-diol)	C19H30O2
229	Androstenedione (androst-4-ene-3,17-dione)	C19H26O2
230	Androsterone	C19H30O2
231	Anhydroecgonine	C9H13NO2
232	AnhydroecgonineMethylEster	C10H15NO2
233	Anilazine	C9H5Cl3N4
234	Anileridine	C22H28N2O2
235	Anilofos	C13H19ClNO3PS2
236	Anilopam Hydrochloride	C20H28Cl2N2O
237	Anisotropine	C17H32BrNO2
238	Antimycin A	C28H40N2O9
239	Antipyrine	C11H12N2O
240	Apazone	C16H20N4O2
241	Apomorphine	C17H17NO2
242	Aprindine	C22H30N2
243	Aprobarbital	C10H14N2O3
244	Aramite	C15H23ClO4S
245	Arecoline	C8H13NO2
246	Arformoterol	C19H24N2O4
247	Articaine	C13H20N2O3S
248	Aspon	C8H14ClN5
249	Astemizole	C28H31FN4O

No.	Compound	Element Composition
250	Asulam	C12H11Cl2N3O2
251	Atenolol	C14H22N2O3
252	Atomoxetine	C17H21NO
253	Atracurium	C65H82N2O18S2
254	Atrazine	C35H44O16
255	Atropine	C17H23NO3
256	Azaconazole	C15H13Cl2N3O2
257	Azacyclonol	C18H21NO
258	Azadirachtin	C9H10ClN2O5PS
259	Azafenidrin	C10H12N3O4PS
260	Azamethiphos	C12H16N3O3PS2
261	Azaperone	C19H22FN3O
262	Azinphos methyl oxon	C10H12N3O3PS2
263	Azinphos-ethyl	C22H17N3O5
264	Azinphos-methyl	C11H9Cl2NO2
265	Azoxystrobin	C20H23NO3
266	Baclofen	C10H12ClNO2
267	Bambuterol	C18H29N3O5
268	Barban	C9H6ClNO3S
269	Barbital	C8H12N2O3
270	Beclomethasone	C22H29ClO5
271	Bemegride	C8H13NO2
272	Benactyzine	C20H25NO3
273	Benalaxyl	C11H13NO4
274	Benazepril	C24H28N2O5
275	Benazeprilat	C22H24N2O5
276	Benazolin	C13H16F3N3O4
277	Bendiocarb	C20H30N2O5S
278	Bendroflumethiazide	C15H14F3N3O4S2
279	Benfluorex	C19H20F3NO2
280	Benfluralin	C13H10INO
281	Benfuracarb	C11H11Cl2NO2
282	Benodanil	C14H24NO4PS3
283	Benoxacor	C10H12N2O3S
284	Benoxaprofen	C16H12ClNO3
285	Benoxinate	C17H28N2O3
286	Benperidol	C22H24FN3O2

No.	Compound	Element Composition
287	Bensulide	C15H18FN3O3S
288	Bentazepam	C17H16N2OS
289	Bentazone	C18H18ClNO5
290	Benthiavalicarb	C17H20N2O3
291	Benzethidine	C23H29NO3
292	Benzocaine	C9H11NO2
293	Benzoctamine	C18H19N
294	Benzoximate	C14H9Cl2NO5
295	Benzoylecgonine	C16H19NO4
296	Benzphetamine	C17H21N
297	Benzthiazide	C15H14ClN3O4S3
298	Benztropine	C21H25NO
299	Benzylmorphine	C24H25NO3
300	Benzylpiperazine (BNP)	C11H16N2
301	Bepridil	C24H34N2O
302	Betacetylmethadol	C23H31NO2
303	Beta-Hydroxy-3-methylfentanyl	C23H30N2O2
304	Beta-Hydroxyfentanyl	C22H28N2O
305	Betameprodine	C17H25NO2
306	Betamethadol	C21H29NO
307	Betamethasone	C22H29FO5
308	beta-methylethylamine (2-phenylpropan-1-amine, 2-Phenylpropylamine)	C9H13N
309	Betaprodine	C16H23NO2
310	Betaxolol	C18H29NO3
311	Bethanechol	C7H17ClN2O2
312	Bethanidine	C10H15N3
313	Bifenazate	C17H20N2O3
314	Bifenox	C14H9Cl2NO5
315	Bifenthrin	C23H22ClF3O2
316	Binapacryl	C15H18N2O6
317	Biperiden	C21H29NO
318	Biriperone	C24H26FN3O
319	Bisoprolol	C18H31NO4
320	Bispyribac-sodium	C19H17N4NaO8
321	Bitertanol	C20H23N3O2
322	Bitolterol	C28H31NO5
323	Bolandiol (estr-4-ene-3?,17?-diol)	C18H28O2

No.	Compound	Element Composition
324	Bolasterone	C21H32O2
325	Boldenone	C19H26O2
326	Boldione (androsta-1,4-diene-3,17-dione)	C19H24O2
327	Boscalid	C18H12Cl2N2O
328	Bretylium	C11H17BrN
329	Brimonidine	C11H10BrN5
330	Brodifacoum	C31H23BrO3
331	Bromadiolone	C30H23BrO4
332	Bromantane	C16H20BrN
333	Bromazepam	C14H10BrN3O
334	Brombuterol	C12H18Br2N2O
335	Bromfenac	C15H12BrNO3
336	Bromhexine	C14H20Br2N2
337	Bromisovalum	CH4N2O
338	Bromocriptine	C32H40BrN5O5
339	Bromodiphenhydramine	C17H20BrNO
340	Bromoxynil	C7H3Br2NO
341	Bromperidol	C21H23BrFNO2
342	Brompheniramine	C16H19BrN2
343	Bromuconazole(cis-)	C13H12BrCl2N3O
344	Bromuconazole(trans-)	C13H12BrCl2N3O
345	Brotizolam	C15H10BrClN4S
346	Budesonide	C25H34O6
347	Bufencarb	C13H19NO2
348	Bufexamac	C12H17NO3
349	Bufotenine	C12H16N2O
350	Bumetanide	C17H20N2O5S
351	Bunitrolol	C14H20N2O2
352	Bunolol	C17H25NO3
353	Bupirimate	C13H24N4O3S
354	Bupivacaine	C18H28N2O
355	Bupranolol	C14H23Cl2NO2
356	Buprenorphine	C29H41NO4
357	Buprenorphine_Glucuronide	C35H49NO10
358	Buprofezin	C16H23N3OS
359	Buproprion	C13H18ClNO
360	Buspirone	C21H31N5O2

No.	Compound	Element Composition
361	Butabarbital	C10H16N2O3
362	Butacaine	C18H30N2O2
363	Butachlor	C17H26ClNO2
364	Butafenacil	C20H18ClF3N2O6
365	Butalbital	C11H16N2O3
366	Butamben (butyl aminobenzoate)	C11H15NO2
367	Butanilicaine	C13H19ClN2O
368	Butaperazine	C24H31N3OS
369	Butocarboxim	C7H14N2O2S
370	Butoctamide	C12H25NO2
371	Butorfinolol	C17H26FNO3
372	Butorphanol	C21H29NO2
373	Butoxycaine	C17H28ClNO3
374	Butoxycarboxim	C7H14N2O4S
375	Butralin	C14H21N3O4
376	Butylate	C11H23NOS
377	Cadusafos	C10H23O2PS2
378	Caffeine	C8H10N4O2
379	Calusterone	C21H32O2
380	Camazepam	C19H18ClN3O3
381	Camphor	C10H16O
382	Candesartan	C24H20N6O3
383	Cannabidiol	C21H30O2
384	Cannabinol	C21H26O2
385	Canrenone	C22H28O3
386	Captodiame	C21H29NS2
387	Captopril	C9H15NO3S
388	Carazolol	C18H22N2O2
389	Carbachol	C6H15ClN2O2
390	Carbamazepine	C15H12N2O
391	Carbaryl	C12H11NO2
392	Carbendazim	C9H9N3O2
393	Carbetamide	C12H16N2O3
394	Carbidopa	C10H14N2O4
395	Carbinoxamine	C16H19ClN2O
396	Carbofuran	C12H15NO3
397	Carbofuran, 3OH-	C12H15NO4

No.	Compound	Element Composition
398	Carboxin	C12H13NO2S
399	Carboxydetomidine	C12H12N2O2
400	Carbromal	C7H13BrN2O2
401	Carfentanil	C24H30N2O3
402	Carfentrazone-ethyl	C15H14Cl2F3N3O3
403	Carisoprolol	C12H24N2O4
404	Carphedon	C12H14N2O2
405	Carphenazine	C24H31N3O2S
406	Carpipramine	C28H38N4O
407	Carprofen	C15H12ClNO2
408	Carpropamid	C15H18Cl3NO
409	Carteolol	C16H24N2O3
410	Carticaine	C13H21ClN2O3S
411	Carvedilol	C24H26N2O4
412	Cathinone	C9H11NO
413	Celecoxib	C17H14F3N3O2S
414	Celiprolol	C20H33N3O4
415	Cetirizine	C21H25ClN2O3
416	Chinomethionate	C10H6N2OS2
417	Chloral	C2HCl3O
418	Chloral betaine	C7H14Cl3NO4
419	Chloral hydrate	C2H3Cl3O2
420	Chloralose	C8H11Cl3O6
421	Chlorantraniliprole	C18H14BrCl2N5O2
422	Chlorbromuron	C9H10BrClN2O2
423	Chlorbufam	C11H10ClNO2
424	Chlorcyclizine	C18H21ClN2
425	Chlordiazepoxide	C16H14ClN3O
426	Chlordimeform	C10H13ClN2
427	Chlorfenvinphos	C12H14Cl3O4P
428	Chlorfluazuron	C20H9Cl3F5N3O3
429	Chlorhexadol	C8H15Cl3O3
430	Chlormerodrin	C5H11ClHgN2O2
431	Chlormethiazole	C6H8ClNS
432	Chlormezanone	C11H12ClNO3S
433	Chlorophenesin	C9H11ClO3
434	Chloroprocaine	C13H19ClN2O2

No.	Compound	Element Composition
435	Chloroquine	C18H26ClN3
436	Chloroquine_2	C18H26ClN3
437	Chlorothiazide	C7H6ClN3O4S2
438	Chloroxuron	C15H15ClN2O2
439	Chlorphenesin	C10H12ClNO4
440	Chlorpheniramine	C16H19ClN2O
441	Chlorphentermine	C10H14ClN
442	Chlorproethazine	C19H23ClN2S
443	Chlorpromazine	C17H19ClN2S
444	Chlorpropham	C10H12ClNO2
445	Chlorprothixene	C18H18ClNS
446	Chlorpyrifos	C9H11Cl3NO3PS
447	Chlorpyrifos -methyl	C7H7Cl3NO3PS
448	Chlorpyrifos oxon	C9H11Cl3NO4P
449	Chlorthalidone	C14H11ClN2O4S
450	Chlorthiamid	C7H5Cl2NS
451	Chlorthiazide	C7H6ClN3O4S2
452	Chlorthion	C8H9ClNO5PS
453	Chlorthiophos	C11H15Cl2O3PS2
454	Chlortoluron	C10H13ClN2O
455	Chlorzoxazone	C7H4ClNO2
456	Ciclesonide	C32H44O7
457	Cimaterol	C12H17N3O
458	Cimetidine	C10H16N6S
459	Cinchocaine	C20H29N3O2
460	Cinnarizine	C26H28N2
461	Ciproflaxin	C17H18FN3O3
462	Cis_Methyl4_Aminorex	C10H12N2O
463	Cisapride	C23H29ClFN3O4
464	Citalopram	C20H21FN2O
465	Citalopram-Glucuronide	C26H29FN2O7
466	Clemastine	C21H26ClNO
467	Clenbuterol	C12H18Cl2N2O
468	Clethodim	C17H26ClNO3S
469	Clibucaine	C15H20Cl2N2O
470	Clidinium	C22H26NO3
471	Clobazam	C16H13ClN2O2

No.	Compound	Element Composition
472	Clobenzorex	C16H18ClN
473	Clobetasol	C25H32ClFO5
474	Clocapramine	C28H37ClN4O
475	Clocortolone	C27H36ClFO5
476	Clofenamide	C6H7ClN2O4S2
477	Clofentezine	C14H8Cl2N4
478	Clomethiazole	C6H8ClNS
479	Clomiphene	C26H28ClNO
480	Clomipramine	C19H23ClN2
481	Clonazepam	C15H10ClN3O3
482	Clonazepam-D4	C15H6D4ClN3O3
483	Clonidine	C9H9Cl2N3
484	Clonitazene	C20H23ClN4O2
485	Cloparnide	C14H20ClN3O3S
486	Clopenthixol	C22H25ClN2OS
487	Clopidogrel	C16H16ClNO2S
488	Clorazepate	C16H11ClN2O3
489	Clormecaine	C11H15ClN2O2
490	Clorprenaline	C11H16ClNO
491	Clostebol	C19H27ClO2
492	Clothianidin	C6H8ClN5O2S
493	Clothiapine	C18H18ClN3S
494	Clotiazepam	C16H15ClN2OS
495	Cloxazolam	C17H14Cl2N2O2
496	Clozapine	C18H19ClN4
497	Clozapine N-Oxyde	C18H19ClN4O
498	Clozaril	C18H19ClN4
499	Cocaethylene	C18H23NO4
500	Cocaine	C17H21NO4
501	Codeine	C18H21NO3
502	Codeine methylbromide	C19H24BrNO3
503	Codeine_Glucuronide	C24H29NO9
504	Codeine-N-oxide	C18H21NO4
505	Colchicine	C22H25NO6
506	Conorphone	C23H29NO3
507	Corticaine (Hydrocortisone)	C21H30O5
508	Cortisone	C21H28O5

No.	Compound	Element Composition
509	Cotinine	C10H12N2O
510	Coumaphos	C14H16ClO5PS
511	Coumaphos oxon	C14H16ClO6P
512	Coumatetryl	C19H16O3
513	Croethamide	C12H22N2O2
514	Cropropamide	C13H24N2O2
515	Crotetamide	C12H22N2O2
516	Crotoxyphos	C14H19O6P
517	Cruformate	C12H19ClNO3P
518	Cumyluron	C17H19ClN2O
519	Cyamemazine	C19H21N3S
520	Cyanazine	C9H13ClN6
521	Cyazofamid	C13H13ClN4O2S
522	Cyclandelate	C17H24O
523	Cyclanilide	C11H9Cl2NO3
524	Cyclizine	C18H22N2
525	Cycloate	C11H21NOS
526	Cyclobarbital	C12H16N2O3
527	Cyclobenzaprine	C20H21N
528	Cyclohexamide	C15H23NO4
529	Cyclopentamine	C9H19N
530	Cyclothiazide	C14H16ClN3O4S2
531	Cycluron	C11H22N2O
532	Cycomethycaine	C22H33NO3
533	Cycrimine	C19H29NO
534	Cyflufenamid	C20H17F5N2O2
535	Cyfluthrin	C22H18Cl2FNO3
536	Cyhalothrin	C23H19ClF3NO3
537	Cymoxanil	C7H10N4O3
538	Cypermethin	C22H19Cl2NO3
539	Cyphenothrin	C24H25NO3
540	Cyprenorphine	C26H33NO4
541	Cyproconazole	C15H18ClN3O
542	Cyprodinil	C14H15N3
543	Cyproheptadine	C21H21N
544	Cyprosulfamide	C18H18N2O5S
545	Cyromazine	C6H10N6

No.	Compound	Element Composition
546	Daimuron	C17H20N2O3
547	D-Amphetamine	C9H13N
548	Danazol	C22H27NO2
549	Dantrolene	C14H10N4O5
550	Dazomet	C15H10N2S2
551	Decamethonium	C16H38N2
552	DEF (Tribufos)	C12H27OPS3
553	Deflazacort	C25H31NO6
554	dehydrochlormethyltestosterone (DHCMT) (oral turinabol)	C20H27ClO2
555	Dehydroepiandrosterone (DHEA)	C19H28O2
556	Dehydronorketamine	C12H12ClNO
557	Delorazepam	C15H10Cl2N2O
558	delta-1-Androstene-3,17-dione	C19H26O2
559	delta-1-Dihydrotestosterone	C19H28O2
560	Delta-9-THC	C21H30O2
561	Deltamethrin	C22H19Br2NO3
562	Dembroxol (Dembrexine)	C13H18Br2N2O
563	Demeton S-methyl	C6H15O3PS2
564	Demeton S-sulfone	C6H15O5PS2
565	Demeton-O	C8H19O3PS2
566	Demeton-S (disulfoton oxon)	C8H19O3PS2
567	Demoxepam	C15H11ClN2O2
568	Deoxycorticosterone	C21H30O3
569	Deracoxib	C17H14F3N3O3S
570	Dermorphin	C40H50N8O10
571	Dermorphin (1-4)Tetrapeptide-Amide (D-Arg)	C26H34N7O6
572	Dermorphin Analog	C44H59N11O10
573	Dermorphin Analog (1-4)	C27H38N8O5
574	Desalkylflurazepam	C15H10ClFN2O
575	Desipramine	C18H22N2
576	Desmedipham	C16H16N2O4
577	Desmethyl sertraline	C16H15Cl2N
578	Desmethyldoxepin	C18H19NO
579	DesmethylDoxepine	C18H19NO
580	Desmethyl-Naproxen	C13H12O3
581	Desmethylprochlorperazine	C19H22ClN3S
582	Desmethylselegiline	C12H15N

No.	Compound	Element Composition
583	Desmetryn	C8H15N5S
584	Desmopressin	C46H64N14O12S2
585	Desomorphine	C17H21NO2
586	Desonide	C24H32O6
587	Desoximetasone	C22H29FO4
588	Desoxymethyltestosterone (Madol) (17a-methyl-5a-androst-2-en-17b-ol)	C20H32O
589	Despropionylfentanyl	C19H24N2
590	Desvenlafaxine	C16H25NO2
591	Detomidine	C12H14N2
592	Dexamethasone	C22H29FO5
593	Dexoximetasone	C22H29FO4
594	Dextran	C18H32O16
595	Dextromethorphan	C18H25NO
596	Dextromoramide	C25H32N2O2
597	Dextropropoxyphene	C22H29NO2
598	Dextrorphan	C17H23NO
599	Dezocine	C16H23NO
600	Diacetylmorphine (Heroin)	C21H23NO5
601	Dialifor	C14H17ClNO4PS2
602	Diallate	C10H17Cl2NOS
603	Diamidafos (Nellite)	C8H13N2O2P
604	Diamorphine	C21H23NO5
605	Diampromide	C21H28N2O
606	Diazepam	C16H13ClN2O
607	Diazinon	C12H21N2O3PS
608	Diazinon hydroxy	C12H21N2O4PS
609	Diazinon oxon	C12H21N2O4P
610	Diazoxide	C8H7ClN2O2S
611	Dibucaine	C20H29N3O2
612	Dicapthon	C8H9ClNO5PS
613	Dichlofluanid	C9H11Cl2FN2O2S2
614	Dichloralphenazone	C11H12N2O
615	Dichlorfenthion	C10H13Cl2O3PS
616	Dichlormid	C8H11Cl2NO
617	Dichlorphenamide	C6H6Cl2N2O4S2
618	Dichlorvos	C4H7Cl2O4P

No.	Compound	Element Composition
619	Diclobutrazol	C15H19Cl2N3O
620	Diclofenac	C14H11Cl2NO2
621	Diclofenamide	C6H6Cl2N2O4S2
622	Dicrotophos	C8H16NO5P
623	Diethofencarb	C14H21NO4
624	Diethylpropion	C13H19NO
625	Diethylthiambutene	C16H21NS2
626	Diethyltryptamine	C14H20N2
627	Difenacoum	C31H24O3
628	Difenoconazole	C19H17Cl2N3O3
629	Difenoxin	C28H28N2O2
630	Diflenoxuron	C16H18N2O3
631	Diflorasone	C26H32F2O7
632	Diflubenzuron	C14H9ClF2N2O2
633	Diflucortolone	C22H28F2O4
634	Diflunisal	C13H8F2O3
635	Digitoxin	C41H64O13
636	Digoxin	C41H64O14
637	Dihydrocodeine	C18H23NO3
638	Dihydroergocornine mesylate	C32H45N5O8S
639	Dihydroergotamine	C33H37N5O5
640	Dihydromorphone	C17H22ClNO3
641	Dihydrotestosterone (DHT) (17b-hydroxy-5a-androstan-3-one)	C19H30O2
642	Diltiazem	C22H26N2O4S
643	Dimefline	C20H21NO3
644	Dimenoxadol	C20H25NO3
645	Dimepheptanol	C21H29NO
646	Dimepiperate	C15H21NOS
647	Dimethachlor	C13H18ClNO2
648	Dimethametryn	C11H21N5S
649	Dimethenamid	C12H18ClNO2S
650	Dimethisoquin	C17H24N2O
651	Dimethoate	C5H12NO3PS2
652	Dimethomorph	C21H22ClNO4
653	Dimethylamphetamine	C11H17N
654	Dimethylthiambutene	C14H17NS2
655	Dimethyltryptamine	C12H16N2
656	Dimethylvinphos. Z-	C10H10Cl3O4P
657	Dimetilan	C10H16N4O3
658	Dimoxystrobin	C19H22N2O3

No.	Compound	Element Composition
659	Diniconazole	C15H17Cl2N3O
660	Dinotefuran	C7H14N4O3
661	Dioxacarb	C11H13NO4
662	Dioxaphetyl butyrate	C22H27NO3
663	Dioxathion	C12H26O6P2S4
664	Diphenamid	C16H17NO
665	Diphenhydramine	C17H21NO
666	Diphenoxylate	C30H32N2O
667	Diphenylamine	C12H11N
668	Dipipanone	C24H31NO
669	Diprenorphine	C26H35NO4
670	Dipropetryn	C11H21N5S
671	Dipyridamole	C24H40N8O4
672	Dipyrone	C13H16N3NaO4S
673	Disopyramide	C21H29N3O
674	Disulfoton	C8H19O2PS3
675	Ditalimfos	C12H14NO4PS
676	Dithianon	C14H4N2O2S2
677	Dithiopyr	C15H16F5NO2S2
678	Diuron	C9H10CL2N2O
679	Divalproex sodium	C16H31NaO4
680	Dixyrazine	C24H33N3O2S
681	DNOC	C7H7N2O5
682	Dobutamine	C18H23NO3
683	Dodemorph	C18H35NO
684	Donepezil	C24H30ClNO3
685	Doramectin	C50H74O14
686	Dorzolamide	C10H17ClN2O4S3
687	Dothiepin	C19H21NS
688	Doxacurium	C56H78N2O16
689	Doxapram	C24H30N2O2
690	Doxazosin	C23H25N5O5
691	Doxefazepam	C17H14ClFN2O3
692	Doxepin	C19H21NO
693	Doxylamine	C17H22N2O
694	Dromostanolone	C20H32O2
695	Droperidol	C22H22FN3O
696	Drostanolone	C20H32O2
697	Drotebanol	C19H27NO4
698	Duloxetine	C18H19NOS
699	Dyclonine	C18H27NO2

No.	Compound	Element Composition
700	Dyphylline	C10H14N4O4
701	Dypiramidole	C24H40N8O4
702	EcgonineMethylEster	C10H17NO3
703	EDDP	C20H23N
704	EDDP_Glucuronide	C26H31NO6
705	Edifenphos	C14H15O2PS2
706	Edrophonium	C10H16NO
707	Eltenac	C12H9Cl2NO2S
708	EMDP	C19H21N
709	Enalapril	C20H28N2O5
710	Enalapril (metabolite enaloprilat)	C20H28N2O5
711	Enaloprilat	C18H28N2O7
712	Enciprazine	C23H32N2O6
713	Ephedrine	C10H15NO
714	Epibatidine	C11H13ClN2
715	Epimetendiol (methandienone metab)	C20H32O2
716	Epitestosterone	C19H28O2
717	Epitizide	C10H11ClF3N3O4
718	Epitrenbolone (17a-Trenbolone)	C18H22O2
719	EPN	C14H14NO4PS
720	Epoxiconazole	C17H13ClFN3O
721	Eprinomectin B1a	C50H75NO14
722	Eprinomectin B1b	C49H73NO14
723	EPTC (eptam)	C9H19NOS
724	Ergoloid mesylate	C33H45N5O5
725	Ergonovine	C19H23N3O2
726	Ergotamine	C33H35N5O5
727	Erythritol tetranitrate	C4H6N4O12
728	Esmolol	C16H25NO4
729	Esprocarb	C15H23NOS
730	Estazolam	C16H11ClN4
731	Estra-4,9,11-triene-3,17-dione (Trendione)	C18H20O2
732	Etaconazol	C14H15Cl2N3O2
733	Etafedrine	C12H19NO
734	Etamiphylline	C13H21N5O2
735	Ethaboxam	C14H16N4OS2
736	Ethacrynic Acid	C13H12Cl2O4
737	Ethalfluralin	C13H14F3N3O4
738	Ethamivan	C12H17NO3
739	Ethanol	C2H6O
740	Ethchlorvynol	C7H9ClO

No.	Compound	Element Composition
741	Ethidimuron	C7H12N4O3S2
742	Ethinamate	C9H13NO2
743	Ethiofencarb	C11H15NO2S
744	Ethiolate	C7H15NOS
745	Ethion	C9H22O4P2S4
746	Ethion monoxon	C9H22O5P2S3
747	Ethiprole	C13H9Cl2F3N4OS
748	Ethirimol	C11H19N3O
749	Ethofumesate	C13H18O5S
750	Ethoheptazine	C16H23NO2
751	Ethoprop	C8H19O2PS2
752	Ethopropazine	C19H24N2S
753	Ethosuximide	C7H11NO2
754	Ethotoin	C11H12N2O2
755	Ethoxyquin	C14H19NO
756	Ethoxzolamide	C9H10N2O3S2
757	Ethyl Loflazepate	C18H14ClFN2O3
758	Ethylaminobenzoate (Benzocaine)	C9H11NO2
759	Ethylamphetamine	C11H17N
760	Ethylestrenol	C20H32O
761	Ethylestrenol (19-nor-17a-pregn-4-en-17-ol)	C20H32O
762	Ethylisobutrazine	C20H26N2S
763	Ethylmethylthiambutene	C15H19NS2
764	Ethylmorphine	C19H23NO3
765	Ethylnorepinephrine	C10H15NO3
766	Etidocaine	C17H28N2O
767	Etifoxin	C17H17ClN2O
768	Etilefrine	C10H15NO2
769	Etiocholanolone	C19H30O2
770	Etizolam	C17H15ClN4S
771	Etobenzanid	C16H15Cl2NO3
772	Etodolac	C17H21NO3
773	Etodroxizine	C23H31ClN2O3
774	Etofenprox	C25H28O3
775	Etomidate	C14H16N2O2
776	Etonitazene	C22H28N4O3
777	Etorphine	C25H33NO4
778	Etoxazole	C21H23F2NO2
779	Etoxeridine	C18H27NO4
780	Etrimfos	C10H17N2O4PS
781	Exemestane	C20H24O2

No.	Compound	Element Composition
782	Famoxadone	C22H18N2O4
783	Famphur	C10H16NO5PS2
784	Famphur oxon	C10H16NO6PS
785	Famprofazone	C24H31N3O
786	Febarbamate	C20H27N3O6
787	Felbamate	C11H14N2O4
788	Felodipine	C18H19Cl2NO4
789	Fenamidone	C17H17N3OS
790	Fenamiphos	C13H22NO3PS
791	Fenamiphos sulfone	C13H22NO5PS
792	Fenamiphos sulfoxide	C13H22NO4PS
793	Fenarimol	C17H12Cl2N2O
794	Fenazaquin	C20H22N2O
795	Fenbuconazole	C19H17ClN4
796	Fenbufen	C16H14O3
797	Fenbutrazate	C23H29NO3
798	Fencamfamin	C15H21N
799	Fencamine	C19H27ClN6O2
800	Fenclozic acid	C11H8ClNO2S
801	Fendiline	C23H25N
802	Fenethylline	C18H24ClN5O2
803	Fenfluramine	C12H16F3N
804	Fenhexamid	C14H17Cl2NO2
805	Fenitrothion	C9H12NO5PS
806	Fenoldopam	C16H16ClNO3
807	Fenoprofen	C15H14O3
808	Fenoprofen-daughter	C14H12O
809	Fenoterol	C17H21NO4
810	Fenoxanil	C15H18Cl2N2O2
811	Fenoxycarb	C17H19NO4
812	Fenozolone	C11H12N2O2
813	Fenpiclonil	C11H6Cl2N2
814	Fenpropathrin	C22H23NO3
815	Fenpropimorph	C20H33NO
816	Fenproporex	C12H16N2
817	Fenpyroximate	C24H27N3O4
818	Fenspiride	C15H20N2O2
819	Fensulfothion	C11H17O4PS2
820	Fentanyl	C22H28N2O
821	Fenthion	C10H15O3PS2
822	Fenthion oxon	C10H15O4PS

No.	Compound	Element Composition
823	Fenthion sulfone	C10H15O5PS2
824	Fenthion sulfoxide	C10H15O4PS2
825	Fenuron	C9H12N2O
826	Fenvalerate	C25H22ClNO3
827	Fexofenadine	C32H39NO4
828	Finasteride	C23H36N2O2
829	Fipronil	C12H4Cl2F6N4OS
830	Firocoxib	C17H20O5S
831	Flecainide	C17H20F6N2O3
832	Floctafenine	C20H17F3N2O4
833	Flonicamid	C9H6F3N3O
834	Florasulam	C12H8F3N5O3S
835	Fluanisone	C21H25FN2O2
836	Fluazinam	C13H4Cl2F6N4O4
837	Flubendiamide	C23H23F7IN2O4S
838	Flucarbazone	C12H11F3N4O6S
839	Fluchloralin	C12H13ClF3N3O4
840	Flucinolone Acetonide	C24H30F2O6
841	Flucythrinate	C26H23F2NO4
842	Fludiazepam	C16H12ClFN2O
843	Fludioxonil	C12H6F2N2O2
844	Fludrocortisone	C21H29FO5
845	Flufenacet	C14H13F4N3O2S
846	Flufenamic Acid	C14H10F3NO2
847	Flufenoxuron	C21H11ClF6N2O3
848	Flumethasone	C22H28F2O5
849	Flumethiazide	C8H6F3N3O4S2
850	Flumetralin	C16H12ClF4N3O4
851	Flumetsulam	C12H9F2N5O2S
852	Flumioxazin	C19H15FN2O4
853	Flunarizine	C26H26F2N2
854	Flunisolide	C24H31FO6
855	Flunitrazepam	C16H12FN3O3
856	Flunixin (Banamine)	C14H11F3N2O2
857	Flunixine	C14H11F3N2O2
858	Fluocinolone Acetonide	C24H30F2O6
859	Fluocinonide	C26H29FO4
860	Fluometuron	C10H11F3N2O
861	Fluopicolide	C14H8Cl3F3N2O
862	Fluopromazine (Triflupromazine)	C18H19F3N2S
863	Fluoresone	C8H9FO2S

No.	Compound	Element Composition
864	Fluorochloridone	C12H10Cl2F3NO
865	Fluorodifen	C13H7F3N2O5
866	Fluorometholone	C22H29FO4
867	Fluorophenethylamine	C8H10FN
868	Fluoxastrobin	C21H16ClFN4O5
869	Fluoxetine	C17H18F3NO
870	Fluoxymesterone	C20H29FO3
871	Flupenthixol	C23H25F3N2OS
872	Fluphenazine	C22H26F3N3OS
873	Fluphenazine Sulfoxide	C22H26F3N3O2S
874	Flupirtine	C15H17FN4O2
875	Fluprednisolone	C21H27FO5
876	Fluquinconazole	C16H8Cl2FN5O
877	Flurandrenolide	C24H33FO6
878	Flurazepam	C21H23ClFN3O
879	Flurbiprofen	C15H13FO2
880	Fluroxypyr	C7H5Cl2FN2O3
881	Flusilazole	C16H15F2N3Si
882	Fluspirilene	C29H31F2N3O
883	Fluticasone	C22H27F3O4S
884	Flutolanil	C17H16F3NO2
885	Flutoprazepam	C19H16ClFN2O
886	Flutriafol	C16H13F2N3O
887	Fluvalinate ?	C26H22ClF3N2O3
888	Fluvoxamine	C15H21F3N2O2
889	Fonophos	C10H15OPS2
890	Fonophos O-analog	C10H15O2PS
891	Forchlorfenuron	C12H10ClN3O
892	Formasafen	C15H10ClF3N2O6
893	Formebolone	C21H28O4
894	Formestane	C19H26O3
895	Formetanate	C11H15N3O2
896	Formoterol	C19H24N2O4
897	Fosinopril	C30H46NO7P
898	Fosinoprilat	C23H34NO5P
899	Fosphenytoin	C16H13N2Na2O6P
900	Fosthiazate	C9H18NO3PS2
901	Fuberidazole	C11H8N2O
902	Fulvestrant	C32H47F5O3S
903	Furalaxyl	C17H19NO4
904	Furathiocarb	C18H26N2O5S

No.	Compound	Element Composition
905	Furazabol (17b-hydroxy-17a-methyl-5a-androstano[2,3-c]-	C20H30N2O2
906	Furethidine	C21H31NO4
907	Furfenorex	C15H19NO
908	Furosemide_neg	C12H11ClN2O5S
909	Furosemide-D5 (Lasix)	C12H6ClN2O5SD5
910	Gabapentin	C9H17NO2
911	Galantamine	C17H21NO3
912	Gallamine	C24H45N3O3
913	Gepirone	C19H29N5O2
914	Gestrinone	C21H24O2
915	GHB	C4H8O3
916	Glafenine	C19H17ClN2O4
917	Gliclazide	C15H21N3O3S
918	Glimepiride	C24H34N4O5S
919	Glutethimide	C13H15NO2
920	Glyburide	C23H28ClN3O5S
921	Glyburide (Glybenclamide)	C23H28ClN3O5S
922	Glycerol	C3H8O3
923	Glycopyrrolate	C19H28NO3
924	Griseofulvin	C17H17ClO6
925	Guaifenesin (glycerol guiacolate)	C10H14O4
926	Guanabenz	C8H8Cl2N4
927	Guanadrel	C10H19N3O2
928	Guanethidine	C10H22N4
929	Halazepam	C17H12ClF3N2O
930	Halcinonide	C24H32ClFO5
931	Halobetasol	C25H31ClF2O5
932	Halofenozide	C18H19ClN2O2
933	Haloperidol	C21H23ClFNO2
934	Haloperidol-Gluc	C27H31ClFNO8
935	Haloxazolam	C17H14BrFN2O2
936	Haloxyfob-methyl	C16H13ClF3NO4
937	Heptaminol	C8H19NO
938	Heptenophos	C9H12ClO4P
939	Heroin	C21H23NO5
940	Hexaconazole	C14H17Cl2N3O
941	Hexaflumuron	C16H8Cl2F6N2O3
942	Hexafluorenium	C36H42Br2N2
943	Hexazinone	C12H20N4O2
944	Hexobarbital	C12H16N2O3
945	Hexocyclium	C21H36N2O5S

No.	Compound	Element Composition
946	Hexylcaine	C16H23NO2
947	Hexythiazox	C17H21ClN2O2S
948	HMMA	C11H17NO2
949	Homatropine	C16H21NO3
950	Homophenazine	C23H28F3N3OS
951	Hydralazine	C8H8N4
952	Hydramethylnon	C25H24F6N4
953	Hydrochlorothiazide	C7H8ClN3O4S2
954	Hydrocodone	C18H21NO3
955	Hydrocodone-Glucuronide	C24H29NO9
956	Hydrocortisone (Cortisol)	C21H30O5
957	Hydroflumethiazide	C8H8F3N3O4S2
958	Hydromorphinol	C17H21NO4
959	Hydromorphone	C17H19NO3
960	Hydromorphone_ Glucuronide	C23H27NO9
961	Hydroxy_ Midazolam	C18H13ClFN3O
962	Hydroxy_Alprazolam	C17H13ClN4O
963	Hydroxy_Midazolam_Glucuronide	C24H21ClFN3O7
964	HydroxyBenzoylecgonine	C16H19NO5
965	Hydroxy-bupropion	C13H18ClNO2
966	Hydroxycarisoprodol	C12H24N2O5
967	Hydroxy-chloroquine	C18H26ClN3O
968	Hydroxy-cotinine	C10H12N2O2
969	Hydroxydetomidine	C12H15ON2
970	Hydroxyethyl starch	C29H52O21
971	Hydroxy-metoprolol	C15H25NO4
972	Hydroxypethidine	C15H21NO3
973	Hydroxy-propranolol	C16H21NO3
974	Hydroxy-propranolol-glucuronide	C22H29NO9
975	Hydroxy-sertraline	C17H17Cl2NO
976	HydroxyTriazolam	C17H12Cl2N4O
977	Hydroxyzine	C21H27ClN2O2
978	Ibogaine	C20H26N2O
979	Ibomal	C10H13BrN2O3
980	Ibuprofen_Glucuronide_pos	C19H26O8
981	Ibuprofen_Neg	C13H18O2
982	Ibuprofen_pos	C13H18O2
983	Ibuprofen-daughter	C12H16
984	Ibuprofen-Glucuronide_Neg	C19H26O8
985	Ibutilide	C24H40N2O7S
986	Iloprost	C22H32O4

No.	Compound	Element Composition
987	Imazalil	C14H14Cl2N2O
988	Imazamox	C15H19N3O4
989	Imazapyr	C13H15N3O3
990	Imazaquin	C17H17N3O3
991	Imibenconazole	C17H13Cl3N4S
992	Imidacloprid	C9H10ClN5O2
993	Imipramine	C19H24N2
994	Imiprothrin	C17H22N2O4
995	Inabenifide	C19H15ClN2O2
996	Indanofan	C20H17ClO3
997	Indapamide	C16H16ClN3O3S
998	Indomethacin	C19H16ClNO4
999	Indoxacarb	C22H17ClF3N3O7
1000	Ioxynil	C7H3I2NO
1001	Ipconazole	C18H24ClN3O
1002	Ipratropium	C20H30NO3
1003	Iprobenfos	C13H21O3PS
1004	Iprovalicarb	C18H28N2O3
1005	Irbesartan	C25H28N6O
1006	Isapirone	C19H23N5O3S
1007	Isazophos	C9H17ClN3O3PS
1008	Isocaffeine	C8H10N4O2
1009	Isocarbamid	C8H15N3O2
1010	Isocarbophos	C11H16NO4PS
1011	Isocarboxazid	C12H13N3O2
1012	Isoetharine	C13H21NO3
1013	Isofenfos	C15H24NO4PS
1014	Isofenfos O-analog	C15H24NO5P
1015	Isoflupredone	C21H27FO5
1016	Isomethadone (Methadone)	C21H27NO
1017	Isometheptene	C9H19N
1018	Isoprocarb	C11H15NO2
1019	Isopropalin	C15H23N3O4
1020	Isopropamide	C23H33N2O
1021	Isoproterenol	C11H17NO3
1022	Isoprothiolane	C12H18O4S2
1023	Isoproturon	C12H18N2O
1024	Isosorbide dinitrate	C6H8N2O8
1025	Isoxaben	C18H24N2O4
1026	Isoxadifen-ethyl	C18H17NO3
1027	Isoxaflutole	C15H12F3NO4S

No.	Compound	Element Composition
1028	Isoxathion	C13H16NO4PS
1029	Isoxicam	C14H13N3O5S
1030	Isoxsuprine	C18H23NO3
1031	Isradipine	C19H21N3O5
1032	Ivermectin B1a	C48H74O14
1033	Ivermectin B1b	C47H72O14
1034	Kebuzone	C19H18N2O3
1035	Ketamine	C13H16ClNO
1036	Ketazolam	C20H17ClN2O3
1037	Ketobemidone	C15H21NO2
1038	Ketoconazole	C26H28Cl2N4O4
1039	Ketoprofen	C16H14O3
1040	Ketorolac	C15H13NO3
1041	Kresoxim-methyl	C18H19NO4
1042	Labetolol	C19H24N2O3
1043	Lactofen	C19H15ClF3NO7
1044	Lamotrigine	C9H7Cl2N5
1045	Lenperone	C22H23F2NO2
1046	Letosteine	C10H17NO4S2
1047	Letrozole	C17H11N5
1048	Levallorphan	C19H25NO
1049	Levamisole	C11H12N2S
1050	Levmetamfetamine	C10H15N
1051	Levobunolol	C17H25NO3
1052	Levomethorphan	C18H25NO
1053	Levomoramide	C25H32N2O2
1054	Levophacetoperane	C14H19NO2
1055	Levophenacylmorphan	C24H27NO2
1056	Levorphanol	C17H23NO
1057	Levotiracetam	C8H14N2O2
1058	Lidocaine	C14H22N2O
1059	Linuron	C9H10Cl2N2O2
1060	Lisinopril	C21H31N3O5
1061	Lithium	CLi2O3
1062	Lobeline	C22H27NO2
1063	Lofentanil	C25H32N2O3
1064	Loperamide	C29H33ClN2O2
1065	Loprazolam	C23H21ClN6O3
1066	Loratadine	C22H23ClN2O2
1067	Lorazepam	C15H10Cl2N2O2
1068	Lorazepam_Glucuronide	C21H18Cl2N2O8

No.	Compound	Element Composition
1069	Lormetazepam	C16H12Cl2N2O2
1070	Losartan	C22H23ClN6O
1071	Loxapine	C18H18ClN3O
1072	LSD	C20H25N3O
1073	Lufenuron	C17H8Cl2F6N2O3
1074	Lysergic acid diethylamide (LSD)	C20H25N3O
1075	Mabuterol	C13H18ClF3N2O
1076	Malathion	C10H19O6PS2
1077	Malathion O-analog	C10H19O7PS
1078	Mandipropamid	C23H22ClNO4
1079	Mannitol	C6H14O6
1080	Maprotiline	C20H23N
1081	Mazindol	C16H13ClN2O
1082	MBDB	C12H17NO2
1083	MDA	C10H13NO2
1084	MDEA	C12H17NO2
1085	MDMA	C11H15NO2
1086	Mebutamate	C10H20N2O4
1087	Mecamylamine	C11H21N
1088	Meclizine	C25H27ClN2
1089	Meclofenamic Acid (Arquel)	C14N11Cl2NO2
1090	Meclofenoxate	C12H16ClNO3
1091	Mecloqualone	C15H11ClN2O
1092	Medazepam	C16H15ClN2
1093	Medetomidine	C13H16N2
1094	Medrysone	C22H32O3
1095	Mefenacet	C16H14N2O2S
1096	Mefenamic Acid	C15H15NO2
1097	Mefenorex	C12H18ClN
1098	Mefludide	C11H13F3N2O3S
1099	Mefruside	C13H19ClN2O5S2
1100	Melatonin	C13H16N2O2
1101	Meloxicam	C14H13N3O4S2
1102	Melperone	C16H22FNO
1103	Memantine	C12H21N
1104	Mepanipyrim	C14H13N3
1105	Meparfynol	C6H10O
1106	Mepazine	C19H22N2S
1107	Mepenzolate	C21H26BrNO3
1108	Meperidine	C15H21NO2
1109	Meperidine-D4	C15H17D4NO2

No.	Compound	Element Composition
1110	Mephenesin	C10H14O3
1111	Mephenoxalone	C11H13NO4
1112	Mephentermine	C11H17N
1113	Mephenytoin	C12H14N2O2
1114	Mephobarbital (Methylphenobarbital)	C13H14N2O3
1115	Mephospholan	C8H16NO3PS2
1116	Mepivacaine	C15H22N2O
1117	Meprednisone	C22H28O5
1118	Meprobamate	C9H18N2O4
1119	Mepronil	C17H19NO2
1120	Meralluride	C16H25HgN6O8
1121	Merbaphen	C16H16ClHgN2NaO6
1122	Mercaptomerin	C16H27HgNO6S
1123	Mersalyl	C13H17HgNNaO6
1124	Mescaline	C11H17NO3
1125	Mesocarb	C18H18N4O2
1126	Mesoridazine	C21H26N2OS2
1127	Mesotrione	C14H13NO7S
1128	Mestanolone	C20H32O2
1129	Mesterolone	C20H32O2
1130	Metaclazepam	C18H18BrClN2O
1131	Metaflumizone	C24H16F6N4O2
1132	Metalaxyl	C15H21NO4
1133	Metaproterenol	C11H17NO3
1134	Metaraminol	C9H13NO2
1135	Metaxalone	C12H15NO3
1136	Metazachlor	C14H16ClN3O
1137	Metazocine	C15H21NO
1138	Metconazole	C17H22ClN3O
1139	Metenolone	C20H30O2
1140	Methabenzthiazuron	C10H11N3OS
1141	Methachtoline	C8H18ClNO2
1142	Methacrifos	C7H13O5PS
1143	Methadone	C21H27NO
1144	Methamidophos	C2H8NO2PS
1145	Methamphetamine	C10H15N
1146	Methamphetamine-D5	C10H10D5N
1147	Methandienone	C20H28O2
1148	Methandriol	C20H32O2
1149	Methandrostenolone	C20H28O2

No.	Compound	Element Composition
1150	Methanedione	C20H28O2
1151	Methantheline	C21H26NO3
1152	Methapyrilene	C14H19N3S
1153	Methaqualone	C16H14N2O
1154	Metharbital	C9H14N2O3
1155	Methasterone	C21H34O2
1156	Methazolamide	C5H8N4O3S2
1157	Methcathinone	C10H13NO
1158	Methdilazine	C18H20N2S
1159	Methenolone	C20H30O2
1160	Methidathion	C6H11N2O4PS3
1161	Methiocarb	C11H15NO2S
1162	Methixene	C20H23NS
1163	Methocarbamol	C11H15NO5
1164	Methohexital	C14H18N2O3
1165	Methomyl	C5H10N2O2S
1166	Methoprotryne	C11H21N5OS
1167	Methotrexate	C20H22N8O5
1168	Methotrimeprazine	C19H24N2OS
1169	Methoxamine	C11H17NO3
1170	Methoxyfenozide	C22H28N2O3
1171	Methoxyphenamine	C11H17NO
1172	Methoxyphenylpiperazine	C11H16N2O
1173	Methoxyverapamil	C28H40N2O5
1174	Methscopolamine (Methylscopolamine)	C18H24NO4
1175	Methsuximide	C12H13NO2
1176	Methyl-1-testosterone	C20H30O2
1177	Methylatropine	C18H26NO3
1178	Methylbenzodioxolylbutanamine (MBDB)	C12H17N2O
1179	Methylchlothiazide	C9H11Cl2N3O4S2
1180	Methylclostebol (4-chloro-17a-methyl-androst-4-en-3b,17b-diol)	C20H29ClO2
1181	Methyldesorphine	C18H21NO2
1182	Methyldienole	C19H26O2
1183	Methyldihydromorphine	C18H23NO3
1184	Methyldopa	C10H13NO4
1185	Methylephedrine	C11H17NO
1186	Methylephedrine****	C11H17NO
1187	Methylergonovine	C20H25N3O2
1188	Methylhexaneamine	C7H17N

No.	Compound	Element Composition
1189	Methylnortestosterone	C19H28O2
1190	Methylphenidate	C14H19NO2
1191	Methylprednisolone	C22H30O5
1192	Methylscopolamine (Methscopolamine)	C18H24NO4
1193	Methyltestosterone	C20H30O2
1194	Methyprylon	C10H17NO2
1195	Methysergide	C21H27N3O2
1196	Metiamide	C9H16N4S2
1197	Metipranolol	C17H27NO4
1198	Metobromuron	C9H11BrN2O2
1199	Metoclopramide	C14H22ClN3O2
1200	Metocurine	C40H48N2O6
1201	Metofluthrin	C18H20F4O3
1202	Metolachlor	C15H22ClNO2
1203	Metolazone	C16H16ClN3O3S
1204	Metomidate	C13H15ClN2O2
1205	Metominostrobin(E-)	C16H16N2O3
1206	Metopon (methyldihydromorphinone)	C18H21NO3
1207	Metoprolol	C15H25NO3
1208	Metosulam	C14H13Cl2N5O4S
1209	Metoxuron	C10H13ClN2O2
1210	Metrafenone	C19H21BrO5
1211	Metribolone (methyltrienolone, 17b-hydroxy-17a-methylestra-4,9,11-trien-3-one)	C19H24O2
1212	Metribuzin	C8H14N4OS
1213	Metronidazole	C6H9N3O3
1214	Mevinphos	C7H13O6P
1215	Mexacarbate	C12H18N2O2
1216	Mexazolam	C18H16Cl2N2O2
1217	Mexiletine	C11H17NO
1218	Mianserine	C18H20N2
1219	Mibefradil	C29H40Cl2FN3O3
1220	Mibolerone	C20H30O2
1221	Miconazole	C18H14Cl4N2O
1222	Midazolam	C18H13ClFN3
1223	Midodrine	C12H18N2O4
1224	Milbemectin A3	C31H44O7
1225	Milbemectin A4	C32H46O7
1226	Milrinone	C12H9N3O

No.	Compound	Element Composition
1227	Minoxidil	C9H15N5O
1228	Mirtazapine	C17H19N3
1229	Mirtazapine-Glucuronide	C23H27N3O6
1230	Mivacurium	C58H80Cl2N2O14
1231	Moclobamide	C13H17O2N2Cl
1232	Modafinil	C15H15NO2S
1233	Modafinil Acid	C15H14O3S
1234	Moexipril (metabolite moexiprilat)	C27H34N2O7
1235	Molinate	C9H17NOS
1236	Molindone	C16H24N2O2
1237	Molsidomine	C9H14N4O4
1238	Mometasone	C22H28Cl2O4
1239	Monocrotophos	C7H14NO5P
1240	Monolinuron	C9H11ClN2O2
1241	Montelukast	C35H36ClNO3S
1242	Moperone	C22H26FNO2
1243	Morpheridine	C20H30N2O3
1244	Morphine	C17H19NO3
1245	Morphine methylbromide	C18H22NO3Br
1246	Morphine-6B-D_Glucuronide	C23H27NO9
1247	Morphine-N-oxide	C17H19NO4
1248	Mosapramine	C28H35ClN4O
1249	Moxidectin	C37H53NO8
1250	Muscarine	C9H20NO2
1251	Myclobutanil	C15H17ClN4
1252	Myrophine	C38H51NO4
1253	N,N-Dimethylamphetamine	C11H17N
1254	Nabumetone	C15H16O2
1255	N-Acetylamphetamine	C11H15NO
1256	N-Acetylprocainamide	C15H23N3O2
1257	Nadolol	C17H27NO4
1258	Naepaine	C14H22N2O2
1259	Nalbuphine	C21H27NO4
1260	Naled	C4H7Br2Cl2O4P
1261	Nalorphine	C19H21NO3
1262	Naloxone	C19H21NO4
1263	Naltrexone	C20H23NO4
1264	Nandrolone	C18H26O2
1265	Naphazoline	C14H14N2

No.	Compound	Element Composition
1266	Naphthol	C10H8O
1267	Napropamide	C17H21NO2
1268	Naproxen	C14H14O3
1269	Naproxen-daughter	C13H12O
1270	Naptalam sodium	C18H12NNaO3
1271	N-Butylscopolamine	C21H30NO4
1272	N-desmethyl-cis-tramadol	C15H23NO2
1273	N-Desmethylcitalopram	C19H19FN2O
1274	N-desmethyl-clomopramine	C18H21ClN2
1275	N-Desmethylclozapine	C17H17ClN4
1276	N-Desmethylflunitrazepam	C15H10FN3O3
1277	N-Desmethylfluoxetine (norfluoxetine)	C16H16F3NO
1278	N-desmethyl-imipramine	C19N24N2
1279	N-desmethyl-selegiline	C12H15N
1280	N-Desmethylsildenafil	C21H28N6O4S
1281	N-desmethyl-trimipramine	C15H23NO2
1282	Nebivolol	C22H25F2NO4
1283	Neburon	C12H16Cl2N2O
1284	Nefazodone	C25H33Cl2N5O2
1285	Nefopam	C17H19NO
1286	Neostigmine	C13H22N2O6S
1287	N-Ethyl-1-phenylcyclohexylamine	C14H21N
1288	N-Ethyl-3-piperidyl benzilate	C21H25NO3
1289	N-ethyl-amphetamine	C11H17N
1290	N-Hydroxy-3,4-methylenedioxyamphetamine	C10H13NO3
1291	Nicardipine	C26H29N3O6
1292	Nicocodeine	C24H24N2O4
1293	Nicomorphine	C29H25N3O5
1294	Nicotine	C10H14N2
1295	Nicotine-Glucuronide	C16H22N2O6
1296	Nifedipine	C17H16N2O5
1297	Niflumic Acid	C13H9F3N2O2
1298	Nikethamide	C10H14N2O
1299	Nimesulide	C13H12N2O5S
1300	Nimetazepam	C16H13N3O3
1301	Nimodipine	C21H26N2O7
1302	Nitenpyram	C11H15ClN4O2
1303	Nitralin	C13H19N3O6S
1304	Nitrazepam	C15H11N3O3

No.	Compound	Element Composition
1305	Nitrendipine	C18H20N2O6
1306	Nitroglycerin	C3H5N3O9
1307	Nitrothal-isopropyl	C14H17NO6
1308	Nizatidine	C12H21N5O2S2
1309	N-Methyl-3-piperidyl benzilate	C20H23NO3
1310	Noethandrolone	C20H30O2
1311	Noracymethadol	C22H29NO2
1312	Norbenzoylecgonine	C15H17NO4
1313	Norbolethone	C21H32O2
1314	Norbuprenorphine	C25H35NO4
1315	Norbuprenorphine_Glucuronide	C31H43NO10
1316	Nor-citalopram	C19H19FN2O
1317	Norclomipramine	C18H21ClN2
1318	Norclostebol	C18H25ClO2
1319	Nor-clozapine	C17H17ClN4
1320	Norcoceethylene	C17H21NO4
1321	Norcocaine	C16H19NO4
1322	Norcodeine	C17H19NO3
1323	Nordiazepam	C15H11ClN2O
1324	Nordiazepam-Glucuronide	C21H19ClN2O7
1325	Nordoxepin	C18H19NO
1326	Norfenefrine	C8H11NO2
1327	Norfenfluramine	C10H12F3N
1328	Norfentanyl	C14H20N2O
1329	Norfloxacin	C16H18FN3O3
1330	Norfluoxetine	C16H16F3NO
1331	Norflurazon	C12H9ClF3N3O
1332	Norketamine	C12H14ClNO
1333	Norlevorphanol	C16H21NO
1334	Nor-LSD	C19H23N3O
1335	Normeperidine	C14H19NO2
1336	Normethadone	C20H25NO
1337	Normethandrolone	C19H28O2
1338	Normorphine	C16H17NO3
1339	Noroxycodone	C17H19NO4
1340	Noroxymorphone	C16H17NO4
1341	Norpipanone	C23H29NO
1342	Norpropoxyphene	C21H26NO2
1343	Norpseudephedrine (Cathine)	C9H13NO

No.	Compound	Element Composition
1344	Norsertraline hydrochloride	C16H15Cl2N
1345	Nortestosterone	C18H26O2
1346	Nortryptiline	C19H21N
1347	Noscapine	C22H23NO7
1348	Novaluron	C17H9ClF8N2O4
1349	Noviflumuron	C17H7Cl2F9N2O3
1350	Nuarimol	C17H12ClFN2O
1351	Nylidrin	C19H25NO2
1352	Octhilinone (2-Octyl-4-isothiazoline-3-one)	C11H19NOS
1353	Octopamine	C8H11NO2
1354	o-Desmethylmetoprolol	C14H23NO3
1355	O-Desmethylpyrilamine	C16H21N3O
1356	O-Desmethyltramadol	C15H23NO2
1357	O-Desmethylvenlafaxine	C16H25NO2
1358	Ofurace	C14H16ClNO3
1359	OH-LSD	C20H26N3O2
1360	Olanzapine	C17H20N4S
1361	Olmesartan	C29H30N6O6
1362	Olsalazine	C14H10N2O6
1363	Omeprazole	C17H19N3O3S
1364	Omethoate (Dimethoate oxon)	C5H12NO4PS
1365	Ondansetron	C18H19N3O
1366	Opipramole	C23H29N3O
1367	Oral Turinabol	C20H27ClO2
1368	Orbencarb	C12H16ClNOS
1369	Oripavine	C18H19NO3
1370	Orphenadrine	C18H23NO
1371	Oryzalin	C12H18N4O6S
1372	Oxabolone	C26H38O4
1373	Oxadiazon	C15H18Cl2N2O3
1374	Oxadixyl	C14H18N2O4
1375	Oxamyl	C7H13N3O3S
1376	Oxandrolone	C19H30O3
1377	Oxaprozin	C18H15NO3
1378	Oxazepam	C15H11ClN2O2
1379	Oxazepam_Glucuronide	C21H19ClN2O8
1360	Oxazepam-D5	C15H6D5ClN2O2
1381	Oxazolam	C18H17ClN2O2
1382	Oxcarbazepine	C15H12N2O2

No.	Compound	Element Composition
1383	Oxethazaine	C28H41N3O3
1384	Oxilofrine	C10H15NO2
1385	Oxilofrine (Methylsynephrine)	C10H15NO2
1386	Oxprenolol	C15H23NO3
1387	Oxycodone	C15H11ClN2O2
1388	Oxymesterone	C20H30O3
1389	Oxymetazoline	C16H24N2O
1390	Oxymetholone	C21H32O3
1391	Oxymorphone	C17H19NO4
1392	Oxymorphone_Glucuronide	C23H27NO10
1393	Oxyperitine	C23H29N3O2
1394	Oxyphenbutazone	C19H20N2O3
1395	Oxyphencyclimine	C20H28N2O3
1396	Oxyphenonium Bromide	C21H34BrNO3
1397	Paclitaxel	C47H51NO14
1398	Paclobutrazol	C15H20ClN3O
1399	Paliperidone	C23H27FN4O3
1400	Pancuronium	C35H60N2O4
1401	Papaverine	C20H21NO4
1402	Paracetamol	C8H9NO2
1403	Para-Fluorofentanyl	C22H27FN2O
1404	Parahexyl	C22H32O2
1405	Paramethadione	C7H11NO3
1406	Paramethasone	C22H29FO5
1407	Parathion	C10H14NO5PS
1408	Parathion methyl oxon	C8H10NO6P
1409	Parathion oxon	C10H14NO6P
1410	Paraxanthine	C7H8N4O2
1411	Pargyline	C11H13N
1412	Paroxetine	C19H20FNO3
1413	PCP	C17H25N
1414	Pebulate	C10H21NOS
1415	Pemoline	C9H8N2O2
1416	Penbutolol	C18H29NO2
1417	Penconazole	C13H15Cl2N3
1418	Pencycuron	C19H21ClN2O
1419	Pendimethalin	C13H19N3O4
1420	Penfluridol	C28H27ClF5NO
1421	Penoxsulam	C16H14F5N5O5S

No.	Compound	Element Composition
1422	Pentaerythritol tetranitrate	C5H8N4O12
1423	Pentazocine	C19H27NO
1424	Pentetrazol	C6H10N4
1425	Penthiopyrad	C16H20F3N3OS
1426	Pentobarbital	C11H18N2O3
1427	Pentoxyfylline	C13H18N4O3
1428	Pentoxyverine	C20H31NO3
1429	Pentylenetetrazol	C6H10N4
1430	Perazine	C20H25N3S
1431	Perfluorodecahydronophthalene	C10F18
1432	Perfluorodecalin	C10F18
1433	Perfluorooctylbromide	C8BrF17
1434	Perfluorotripropylamine	C9F21N
1435	Periciazine	C21H23N3OS
1436	Perindopril	C19H32N2O5
1437	Perlapine	C19H21N3
1438	Permethrin(cis-)	C21H20Cl2O3
1439	Permethrin(trans-)	C21H20Cl2O3
1440	Perphenazine	C21H26ClN3OS
1441	Peyote	C11H17NO3
1442	Phenacemide	C9H10N2O2
1443	Phenadoxone	C23H29NO2
1444	Phenaglycodol	C11H15ClO2
1445	Phenampromide	C17H26N2O
1446	Phenazocine	C22H27NO
1447	Phencyclidine (PCP)	C17H25N
1448	Phendimetrazine	C12H17NO
1449	Phenelzine	C8H14N2O4S
1450	Pheniramine	C16H20N2
1451	Phenmedipham	C16H16N2O4
1452	Phenmetrazine	C11H15NO
1453	Phenobarbital	C12H12N2O3
1454	Phenobarbital-D5	C12H7D5N2O3
1455	Phenolphtalein	C20H14O4
1456	Phenomorphan	C24H29NO
1457	Phenoperidine	C23H29NO3
1458	Phenothrin	C23H26O3
1459	Phenoxybenzamine	C18H22ClNO
1460	Phenpentermine	C11H17N

No.	Compound	Element Composition
1461	Phenpromethamine (Phenpropylmethyamine)	C10H15N
1462	Phensuximide	C11H11NO2
1463	Phentermine	C10H15N
1464	Phenthoate	C12H17O4PS2
1465	Phentolamine	C17H19N3O
1466	Phenylbutazone	C19H20N2O2
1467	Phenylbutazone - d9	C19H11D9N2O2
1468	Phenylbutazone (neg)	C19H20N2O2
1469	Phenylephrine	C9H13NO2
1470	Phenylphenol(o-)	C12H10O
1471	Phenylphtalein	C20H14O4
1472	Phenylpropanolamine	C9H13NO
1473	PhenylToloxamine	C17H21NO
1474	Phenytoin	C15H12N2O2
1475	Pholcodine	C23H30N2O4
1476	Pholedrine	C10H15NO
1477	Phorate	C7H17O2PS3
1478	Phorate oxon	C7H17O4PS
1479	Phorate oxon sulfone	C7H17O5PS2
1480	Phorate oxon sulfoxide	C7H17O4PS2
1481	Phorate sulfone	C7H17O4PS3
1482	Phorate sulfoxide	C7H17O4PS2
1483	Phosalone	C12H15ClNO4PS2
1484	Phosmet	C11H12NO4PS2
1485	Phosphamidon	C10H19ClNO5P
1486	Phoxim	C12H15N2O3PS
1487	p-Hydroxyphenytoin	C15H12N2O3
1488	Physostigmine	C15H21N3O2
1489	Picloram	C6H3Cl3N2O2
1490	Picoxystrobin	C18H16F3NO4
1491	Picrotoxin	C30H34O13
1492	Piminodine	C23H30N2O2
1493	Pimozide	C28H29F2N3O
1494	Pinazepam	C18H13ClN2O
1495	Pindolol	C14H20N2O2
1496	Pinoxaden	C23H32N2O4
1497	Pipamperone	C21H30FN3O2
1498	Pipecuronium	C35H62Br2N4O4
1499	Pipequaline	C22H24N2

No.	Compound	Element Composition
1500	Piperacetazine	C24H30N2O2S
1501	Piperocaine	C16H23NO2
1502	Piperonyl butoxide	C19H30O5
1503	Piperophos	C14H28NO3PS2
1504	Pipotiazine	C24H33N3O3S2
1505	Pipradrol	C18H21NO
1506	Piquindone	C15H22N2O
1507	Pirbuterol	C12H20N2O3
1508	Piretanide	C17H18N2O5S
1509	Pirimicarb	C11H18N4O2
1510	Pirimiphos-ethyl	C13H24N3O3PS
1511	Pirimiphos-methyl	C11H20N3O3PS
1512	Piritramide	C27H34N4O
1513	Piroxicam	C15H13N3O4S
1514	PMA	C10H15NO
1515	p-methylamphetamine	C10H15N
1516	PMMA	C11H17NO
1517	Polythiazide	C11H13ClF3N3O4
1518	Practolol	C14H22N2O3
1519	Pramoxine	C17H27NO3
1520	prasterone (dehydroepiandrosterone, DHEA)	C19H28O2
1521	Prazepam	C19H17ClN2O
1522	Prazosin	C19H21N5O4
1523	Prednisolone	C21H28O5
1524	Prednisone	C21H26O5
1525	Prenylamine	C24H27N
1526	Pretilachlor	C17H26ClNO2
1527	Prilocaine	C21H28O5
1528	Primidone	C12H14N2O2
1529	Probenazole	C10H9NO3S
1530	Probenecid	C13H19NO4S
1531	Procainamide	C13H21N3O
1532	Procaine	C13H20N2O2
1533	Procaterol	C16H22N2O3
1534	Prochloraz	C15H16Cl3N3O2
1535	Prochlorperazine	C20H24ClN3S
1536	Procyclidine	C19H30ClNO
1537	Profenophos	C11H15BrClO3PS
1538	Progesterone	C21H30O2

No.	Compound	Element Composition
1539	Proheptazine	C17H25NO2
1540	Prohexadione	C10H12O5
1541	Prolintane	C15H23N
1542	Promazine	C17H20N2S
1543	Promecarb	C12H17NO2
1544	Promethazine	C17H20N2S
1545	Promethazine Sulfoxide	C17H20N2OS
1546	Prometon	C10H19N5O
1547	Prometryn	C10H19N5S
1548	Propachlor	C11H14ClNO
1549	Propafenone	C21H27NO3
1550	Propamocarb	C9H20N2O2
1551	Propanidid	C18H27NO5
1552	Propanil	C9H9Cl2NO
1553	Propantheline	C23H30NO3
1554	Proparacaine	C16H26N2O3
1555	Propargite	C19H26O4S
1556	Propazine	C9H16ClN5
1557	Propentofylline	C15H22N4O3
1558	Properidine	C16H23NO2
1559	Propetamphos	C10H20NO4PS
1560	Propham	C10H13NO2
1561	Propiconazole	C15H17Cl2N3O2
1562	Propiomazine	C20H24N2OS
1563	Propionylpromazine	C20H24N2OS
1564	Propiram	C16H25N3O
1565	Propisochlor	C15H22ClNO2
1566	Propoxur	C11H15NO3
1567	Propoxycaine	C16H26N2O3
1568	Propoxyphene	C22H29NO2
1569	Propranolol	C16H21NO2
1570	Propranolol-Gluc1	C22H29NO8
1571	Propranolol-Gluc2	C22H29NO8
1572	Propylhexedrine	C10H21N
1573	Prostanozol	C25H38N2O2
1574	Prothioconazole	C14H15Cl2N3OS
1575	Prothipendyl	C16H19N3S
1576	Prothoate	C9H20NO3PS2
1577	Protokylol	C18H21NO5

No.	Compound	Element Composition
1578	Protriptyline	C19H21N
1579	Protryptiline	C12H16N2O
1580	Proxibarbital	C10H14N2O4
1581	Pseudoephedrine	C10H15NO
1582	Psilocin	C12H16N2O
1583	Psilocybin	C12H17N2O4P
1584	Pymetrozine	C10H11N5O
1585	Pyracarbolid	C13H15NO2
1586	Pyraclofos	C14H18ClN2O3PS
1587	Pyraclostrobin	C19H18ClN3O4
1588	Pyraflufen-ethyl	C15H13Cl2F3N2O
1589	Pyrasulfotole	C14H13F3N2O4S
1590	Pyrazone (Chloridazon)	C10H8ClN3O
1591	Pyrazophos	C14H20N3O5PS
1592	Pyridaben	C19H25ClN2OS
1593	Pyridalyl	C18H14Cl4F3NO3
1594	Pyridaphenthion	C14H17N2O4PS
1595	Pyridate	C19H23ClN2O2S
1596	Pyridostigmine	C9H13N2O2
1597	Pyrifenox	C14H12Cl2N2O
1598	Pyrilamine	C17H23N3O
1599	Pyrimethanil	C12H13N3
1600	Pyriproxyfen	C20H19NO3
1601	Pyrithyldione	C9H13NO2
1602	Pyroquilon	C11H11NO
1603	Pyroxsulam	C14H13F3N6O5S
1604	Quazepam	C17H11ClF4N2S
1605	Quetiapine	C21H25N3O2S
1606	Quetiapine-Glucuronide	C27H33N3O8S
1607	Quinalphos	C12H15N2O3PS
1608	Quinapril	C25H31ClN2O5
1609	Quinaprilat	C23H26N2O5
1610	Quinbolone	C24H32O2
1611	Quinclamine	C10H6ClNO2
1612	Quinethazone	C10H12ClN3O3S
1613	Quinidine	C20H24N2O2
1614	Quinine	C20H24N2O2
1615	Quinoxyfen	C15H8Cl2FNO
1616	Racemethorphan	C18H25NO

No.	Compound	Element Composition
1617	Racemoramide	C25H32N2O2
1618	Racemorphan	C17H23NO
1619	Raclopride	C15H20Cl2N2O3
1620	Ractopamine	C18H23NO3
1621	Raloxifene	C28H27NO4S
1622	Ramipril, metabolite Ramiprilat	C23H32N2O5
1623	Ranitidine	C13H22N4O3S
1624	Remifentanil	C20H28N2O5
1625	Remoxipride	C16H23BrN2O3
1626	Reproterol	C18H23N5O5
1627	Reserpine	C33H40N2O9
1628	Resmethrin	C22H26O3
1629	Risperidone	C23H27FN4O2
1630	Ritalinic acid	C13H17NO2
1631	Ritanserin	C27H25F2N3OS
1632	Ritodrine	C17H21NO3
1633	Rivastigmine	C14H22N2O2
1634	Rizatriptan	C22H25N5O2
1635	Rocuronium	C32H53BrN2O4
1636	Rofecoxib	C17H14O4S
1637	Romifidine	C9H9BrFN3
1638	Ropivacaine	C17H26N2O
1639	Rotenone	C23H22O6
1640	RSR-13 (efaproxiral)	C20H23NO4
1641	Saflufenacil	C17H17ClF4N4O5
1642	Salicylamide	C7H7NO2
1643	Salicylate	C7H6O3
1644	Salicylic Acid	C7H6O3
1645	Salmeterol	C25H37NO4
1646	Schradan	C8H24N4O3P2
1647	Scopolamine	C17H21NO4
1648	Secbumeton	C10H19N5O
1649	Secobarbital	C12H18N2O3
1650	Securinine	C13H15NO2
1651	Selegine	C13H17N
1652	Sertraline	C17H17Cl2N
1653	Sethoxydim	C17H29NO3S
1654	Sibutramine	C17H26ClN
1655	Siduron	C14H20N2O

No.	Compound	Element Composition
1656	Sildenafil	C22H30N6O4S
1657	Simazine	C7H12ClN5
1658	Simeconazole	C14H20FN3OSi
1659	Simetryn	C8H15N5S
1660	Sotalol	C12H20N2O3S
1661	Spiclomazine	C22H24ClN3OS2
1662	Spinetoram	C42H69NO10
1663	Spinetoram 1	C43H69NO10
1664	Spinosad A	C41H65NO10
1665	Spinosad D	C42H67NO10
1666	Spiperone	C23H26FN3O2
1667	Spirapril, metabolite Spiraprilat	C22H30N2O5S2
1668	Spirodiclofen	C21H24Cl2O4
1669	Spiromefisen	C23H30O4
1670	Spironolactone	C22H28O3
1671	Spirotetramat	C21H27NO5
1672	Spiroxamine	C18H35NO2
1673	Stanozolol	C21H32N2O
1674	Stanozolol-D3	C21H29D3N2O
1675	Stenbolone	C20H30O2
1676	Strychnine	C21H22N2O2
1677	Succinylcholine	C14H30Cl2N2O4
1678	Sufentanil	C22H30N2O2S
1679	Sulcotrione	C14H13ClO5S
1680	Sulfamethazine	C12H14N4O2S
1681	Sulfasalazine	C18H14N4O5S
1682	Sulfentrazone	C11H10Cl2F2N4O
1683	Sulfondiethylmethane	C9H20O4S2
1684	Sulfonmethane	C7H16O4S2
1685	Sulforidazine	C21H26N2O2S2
1686	Sulfotep-ethyl	C8H20O5P2S2
1687	Sulfuramid	C10H6F17NO2S
1688	Sulindac	C20H17FO3S
1689	Sulpiride	C15H23N3O4S
1690	Sulprofos	C12H19O2PS3
1691	Sultopride	C17H26N2O4S
1692	Sumatriptan	C14H21N3O2S
1693	Synephrine	C9H13NO2
1694	Tadalafil	C22H19N3O4

No.	Compound	Element Composition
1695	Talbutal	C11H16N2O3
1696	Tamoxifen	C26H29NO
1697	Tandospirone	C21H29N5O2
1698	Tebuconazole	C16H22ClN3O
1699	Tebufenozide	C22H28N2O2
1700	Tebufenpyrad	C18H24ClN3O
1701	Tebupirimphos	C13H23N2O3PS
1702	Tebuthiuron	C9H16N4OS
1703	Teflubenzuron	C14H6Cl2F4N2O2
1704	Tefluthrin	C17H14ClF7O2
1705	Telmisartan	C33H30N4O2
1706	Temazepam	C16H13ClN2O2
1707	Temazepam_Glucuronode	C22H31N2O8
1708	Tembotrione	C17H16ClF3O6S
1709	Temephos	C16H20O6P2S3
1710	Tenoxicam	C13H11N3O4S2
1711	Tepoxalin	C20H20ClN3O3
1712	Tepraloxydim	C17H24ClNO4
1713	Terazosin	C19H25N5O4
1714	Terbacil	C9H13ClN2O2
1715	Terbufos	C9H21O2PS3
1716	Terbufos oxon sulfoxide	C9H21O4PS2
1717	Terbufos sulfone	C9H21O4PS3
1718	Terbumeton	C10H19N5O
1719	Terbutaline	C12H19NO3
1720	Terbuthylazine	C9H16ClN5
1721	Terbutryn	C10H19N5S
1722	Terfenadine	C32H41NO2
1723	Testolactone	C19H24O3
1724	Testosterone	C19H28O2
1725	Testosterone-D3	C19D3H25O2
1726	Tetrabenazine	C19H27NO3
1727	Tetracaine	C15H24N2O2
1728	Tetrachlorvinphos	C10H9Cl4O4P
1729	Tetraconazole	C13H11Cl2F4N3O
1730	Tetrahydrocannabinol (THC)	C21H30O2
1731	Tetrahydrogestrinone	C21H28O2
1732	Tetrahydrozoline	C19H27NO3
1733	Tetramethrin	C19H25NO4

No.	Compound	Element Composition
1734	Tetrazepam	C16H17ClN2O
1735	THC	C21H30O2
1736	Thebacon	C20H23NO4
1737	Thebaine	C19H21NO3
1738	Theobromine	C7H8N4O2
1739	Theophylline	C7H8N4O2
1740	Thiabendazole	C10H7N3S
1741	Thiacloprid	C10H9ClN4S
1742	Thialbarbital	C13H16N2O2S
1743	Thiamethoxam	C8H10ClN5O3S
1744	Thiamylal	C12H18N2O2S
1745	Thiazopyr	C16H17F5N2O2S
1746	Thidiazuron	C9H8N4OS
1747	Thiethylperazine	C22H29N3S2
1748	Thiofanox	C9H18N2O2S
1749	Thiofentanyl	C20H26N2OS
1750	Thiometon	C6H15O2PS3
1751	Thiopental	C11H17N2O2S
1752	Thiophanate-methyl	C12H14N4O4S2
1753	Thiopropazate	C23H28ClN3O2S
1754	Thioproperazine	C22H30N4O2S2
1755	Thioridazine	C21H26N2S2
1756	Thiosalicylate	C7H6O2S
1757	Thiothixene	C23H29N3O2S2
1758	Thiphenamil	C20H25NOS
1759	Tiagabine	C20H25NO2S2
1760	Tiapride	C15H24N2O4S
1761	Tiaprofenic Acid	C14H12O3S
1762	Tibolone	C21H28O2
1763	Tiletamine	C12H17NOS
1764	Tilidine	C17H23NO2
1765	Timiperone	C22H24FN3OS
1766	Timolol	C13H24N4O3S
1767	Tizanidine	C9H8ClN5S
1768	Tocainide	C11H16N2O
1769	Tofisopam	C22H26N2O4
1770	Tolazoline	C10H12N2
1771	Tolbutamide	C12H18N2O3S
1772	Tolclofos-methyl	C9H11Cl2O3PS

No.	Compound	Element Composition
1773	Tolectin	C15H15NO3
1774	Tolfenpyrad	C21H22ClN3O2
1775	Tolmetin	C15H15NO3
1776	Topiramate	C12H21NO8S
1777	Topramezone	C16H17N3O5S
1778	Torsemide	C16H20N4O3S
1779	Tralkoxydim	C20H27NO3
1780	Tralomethrin	C22H19Br4NO3
1781	Tramadol	C16H25NO2
1782	Tramadol-Glucuronide	C22H33NO8
1783	Trandolapril (and metabolite, Trandolaprilat)	C24H34N2O5
1784	Tranexamic Acid	C8H15NO2
1785	Tranylcypromine	C9H11N
1786	Trazodone	C19H22ClN5O
1787	Trenbolone	C18H22O2
1788	Trestolone (Ment)	C19H28O2
1789	Trestolone Acetate	C21H30O3
1790	Tretoquinol	C19H23NO5
1791	Triadimefon	C14H16ClN3O2
1792	Triadimenol	C14H18ClN3O2
1793	Tri-allate	C10H16Cl3NOS
1794	Triamcinolone	C21H27FO6
1795	Triamcinolone Acetonide	C24H31FO6
1796	Triamterene	C12H11N7
1797	Triazolam	C17H12Cl2N4
1798	Triazophos	C12H16N3O3PS2
1799	Tribromethanol	C2H3Br3O
1800	Tricaine methanesulfonate	C10H15NO5S
1801	Trichlamide	C13H16Cl3NO3
1802	Trichlorfon	C4H8Cl3O4P
1803	Trichlormethiazide	C8H8Cl3N3O4S2
1804	Trichloroethanol	C2H3Cl3O
1805	Tricholoroethylene	C2HCl3
1806	Triclofos	C2H4Cl3O4P
1807	Triclopyr	C7H4Cl3NO3
1808	Tricyclazole	C9H7N3S
1809	Tridemorph	C19H39NO
1810	Tridihexethyl	C21H36ClNO
1811	Trietazine	C9H16ClN5

No.	Compound	Element Composition
1812	Triflumizole	C15H15ClF3N3O
1813	Triflumuron	C15H10ClF3N2O3
1814	Trifluomeprazine	C19H21F3N2S
1815	Trifluoperazine	C21H24F3N3S
1816	Trifluoxystrobin	C20H19F3N2O4
1817	Trifluperidol	C22H23F4NO2
1818	Triflupromazine (Fluopromazine)	C18H19F3N2S
1819	Trifluralin	C13H16F3N3O4
1820	Trifluromethylphenylpiperazine	C9H18N2O2
1821	Triforine	C10H14Cl6N4O2
1822	Trihexylamine	C18H39N
1823	Trihexylphenidyl	C20H31NO
1824	Trimeperidine	C17H25NO2
1825	Trimeprazine	C18H22N2S
1826	Trimethadione	C6H9NO3
1827	Trimethoprim	C14H18N4O3
1828	Trimipramine	C20H26N2
1829	Trinexapac-ethyl	C13H16O5
1830	Tripamide	C16H20ClN3O3S
1831	Tripelennamine	C16H21N3
1832	Triprolidine	C19H22N2
1833	Triticonazole	C17H20ClN3O
1834	Tuaminoheptane	C7H17N
1835	Tubocurarine (Curare)	C37H42Cl2N2O6
1836	Tulobuterol	C12H18ClNO
1837	Tybamate	C13H26N2O4
1838	Uniconazole	C15H18ClN3O
1839	Valdecoxib	C16H14N2O3S
1840	Valerenic acid	C15H22O2
1841	Validamycin	C20H35NO13
1842	Valnoctamide	C8H17NO
1843	Valsartan	C24H29N5O3
1844	Vamidothion	C8H18NO4PS3
1845	Vamidothion sulfone	C8H18NO6PS2
1846	Vancomycin	C66H75Cl2N9O24
1847	Vardenafil	C23H32N6O4S
1848	Vedaprofen	C19H22O2
1849	Venlafaxine	C17H27NO2
1850	Veralipride	C17H25N3O5S

No.	Compound	Element Composition
1851	Verapamil	C27H38N2O4
1852	Vercuronium	C34H57BrN2O4
1853	Vernolate	C10H21NOS
1854	Vigabatrin (GABA)	C6H11NO2
1855	Viloxazine	C13H19NO3
1856	Vinbarbital	C11H16N2O3
1857	Vincamine	C21H26N2O3
1858	Vincristine	C46H56N4O10
1859	Vinylbital	C11H16N2O3
1880	Warfarin	C19H16O4
1861	Xylazine	C12H16N2S
1862	Xylometazoline	C16H24N2
1863	Yohimbine	C21H26N2O3
1864	Zafirlukast	C31H33N3O6S
1865	Zaleplon	C17H15N5O
1866	Zeranol	C18H26O5
1867	Ziconotide	C102H172N36O32
1868	Zileuton	C11H12N2O2S
1869	Zilpaterol	C14H19N3O2
1870	Zimelidine	C16H17BrN2
1871	Zinterol	C19H26N2O4S
1872	Ziprasidone	C21H21ClN4OS
1873	Zolazepam	C15H15FN4O
1874	Zolmitriptan	C16H21N3O2
1875	Zolpidem	C19H21N3O
1876	Zomepirac	C15H14ClNO3
1877	Zonisamide	C8H8N2O3S
1878	Zopiclone	C17H17ClN6O3
1879	Zotepine	C18H18ClNOS
1880	Zoxamide	C14H16Cl3NO2
1881	Zuclopenthixol	C22H25ClN2OS