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G-000-101.46

EXPANSION OF FEMP RADIONUCLIDE AND INORGANIC ANALYSIS CAPACITY

10/31/91

DOE-238-92
DOE-FO/USEPA
2
LETTER

Department of Energy
Fernald Environmental Management Project
P.O. Box 398705
Cincinnati, Ohio 45239-8705
(513) 738-6357

2367

OCT 3 1 1991

DOE-238-92

Mr. James A. Saric, Remedial Project Director
U. S. Environmental Protection Agency
Region V - 5HR-12
230 South Dearborn Street
Chicago, Illinois 60604

Dear Mr. Saric:

EXPANSION OF FEMP RADIONUCLIDE AND INORGANIC ANALYSIS CAPACITY

Reference: Letter DOE-1898-91, J. R. Craig to C. A. McCord, "Identification of Additional Laboratories to be Utilized at the FMPC," dated July 26, 1991 #1903

In the referenced letter, U.S. EPA concurrence of the use of EcoTek Laboratory Services Incorporated was requested for both organic analysis, Data Quality Level (DQL) IV, and inorganic analysis, DQL II, to support the remediation activities at the FEMP. Subsequently, an audit of this facility was conducted by the Remedial Investigation/Feasibility Study (RI/FS) Contractor and it was determined that the EcoTek Laboratory is capable of providing inorganic analysis at DQL IV and radiological analysis equivalent to that which is currently performed by the RI/FS primary laboratory. A copy of the audit which was conducted is provided as an enclosure.

As discussed in the project manager's meeting held on October 29, 1991, in order to increase laboratory capacity, we are advising you of our intention to increase the utilization of the EcoTek Laboratory. We are requesting your laboratory audit staff to conduct an audit of this laboratory and provide us with concurrence on its utilization for this expanded scope. We have been advised by the laboratory that they are also being considered to participate in the remediation activities at the DOE Mound Facility.

We understand that any samples analyzed by this laboratory for inorganics DQL IV, and for radionuclides will be considered to be "at risk" until this concurrence is received. This would allow the EcoTeck Laboratory to conduct all analyses as identified in the RI/FS Quality Assurance Project Plan. We feel that this course of action is necessary, at this time, to ensure that adequate laboratory capacity is available to meet the RI/FS schedules.

If you or your staff have any questions concerning this request, please contact Oba Vincent at FTS 774-6937 or (513) 738-6937.

Sincerely,

Jack R. Craig
Fernald Remedial Action
Project Manager

FO:Vincent

Enclosure: As stated

cc w/encl.:

J. J. Fiore, EM-42, TREV
K. A. Hayes, EM-424, TREV
M. Butler, USEPA-V, 5CS-TUB-3
J. Benetti, USEPA-V, 5AR-26
D. Payne, USEPA-V, 5SCRL
K. Davidson, OEPA-Columbus
G. E. Mitchell, OEPA, Dayton
T. Schneider, OEPA-Dayton
E. Schuessler, PRC
L. August, GeoTrans
R. L. Glenn, Parsons
D. J. Carr, WEMCO
S. W. Coyle, WEMCO
H. F. Daugherty, WEMCO
J. P. Hopper, WEMCO
J. D. Wood, ASI
AR Coordinator, WEMCO

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OCT 21 1991

Mr. Dennis Carr
Contract Technical Monitor
Westinghouse Environmental Management
Company of Ohio
P.O. Box 398704
Cincinnati, OH 45239

Dear Mr. Carr:

Subject: EcoTek LSI, Atlanta, GA Vendor Source Evaluation

Reference: Letter, DOE-1898-91, J. R. Craig to C. A. McCord, " Identification of Additional Laboratories to be Utilized at the FMPC," dated July 26, 1991

Attached is the Vendor Source Evaluation and completed checklist for ASI's evaluation of EcoTek LSI on October 1, 1991. This was performed at the direction of the letter from Jack Craig, DOE to Catherine McCord, U.S. EPA as specified in the above reference.

For all chemical and radiological parameters, EcoTek LSI was found to be compliant with the FEMP Work Plan and QAPP. EcoTek LSI was identified by the above referenced letter as Level II for inorganics. Based on the findings of the Vendor Performance Evaluation Team, ASI requests DOE to contact U.S. EPA to provide immediate approval of EcoTek LSI for all parameters including inorganics. Please notify ASI of status of approval from U.S. EPA for use of EcoTek LSI for analytical support to the FEMP RI/FS project by October 25, 1991. If further clarification is needed, please contact Larry Sexton or myself at 738-3100.

Sincerely,

John D. Wood
Project Director

AD7135.kg9
Attachments
pc: J. Craig, DOE
B. Davis, DOE
O. Vincent, DOE
H. Daugherty, WEMCO
S. McGee, WEMCO
A. Duarte, ASI
C. Edmunds, ASI Oak Ridge
D. Harmel, ASI
J. Ransone, ASI Oak Ridge
K. Reid, ASI
L. Sexton, ASI

SOURCE EVALUATION FOR ECOTEK LSI LABORATORIES, ATLANTA, GA.

INTRODUCTION AND PURPOSE:

EcoTek Laboratory Services Inc. (EcoTek LSI) owns and operates a mixed waste environmental laboratory located in Atlanta Ga. The lab is currently licensed by the state of Georgia to receive, handle, and store mixed waste.

The laboratory was visited on October 1, 1991 for the purpose of performing a vender source evaluation, as referenced by the letter to Catherine McCord, USEPA from Jack Craig DOE, July 26, 1991. This evaluation was to determine the laboratory's ability to perform under the requirements of the FEMP RI/FS Quality Assurance Project Plan.

The evaluation was conducted by Advanced Sciences Inc. (ASI). ASI personnel were Larry Sexton, Project Quality Assurance Officer; Carleton Edmunds J.D., Senior Scientist; and Alex Duarte, Quality Assurance Technical Representative.

EcoTek LSI CORPORATE STRUCTURE

EcoTek LSI is a wholly owned subsidiary of EcoTek Inc., which was formed in 1987 as a subsidiary of Nuclear Fuel Services, Inc.. Nuclear Fuel Services, Inc. is the sole supplier of nuclear fuel material for the Department of Energy, and Office of Naval Reactors. EcoTek Inc. is an environmental service firm in the area of remediation, decontamination and decommissioning. EcoTek LSI was formed to support its parent company, and acquired Wantec Laboratory in 1989, and extended its facility in 1991.

LABORATORY FACILITY

Total area of the EcoTek LSI facility is 25,000 square feet. This includes 8,000 square foot from the Wantec Organics Laboratory, and additional 17,000 square foot in for radiological and inorganic services which was a new and separate facility completed and occupied in 1991.

The Wantec building houses the Organic Chemistry Lab and Preparations Lab. This area was under renovation. The areas dedicated for the GC/MS were adequate for current requirements, but allow no room for growth. (It was estimated that the renovation for this portion of the lab will be completed by December 1991.)

The new facility houses administrative offices of which approximately 16,000 square feet is dedicated to laboratory space. The radiological and inorganic chemistry laboratory are located in this facility. The laboratories are RI/FS requirements.

LABORATORY CAPACITIES

[redacted]

GENERAL

Sample capacity for chemical analyses is approximately 200 - 300 per month. Current radiological capacity is 200 samples per month for alpha emitters, and 500 per month for gamma emitters. These are further defined in Appendix I under each specific fraction.

The facility is in the process of expanding its radiological analysis capacities and acquiring additional equipment and personnel. The laboratory is currently operating one full 5-day/week shift and a second shift with 50% staffing.

EPA-CLP REPORTING and CAPABILITIES

The laboratory is capable of performing both organics and inorganics analyses reporting as required under the EPA Contract Laboratory Program (CLP), 2/88 Statement Of Work (SOW). EcoTek LSI is currently operating as an EPA contract laboratory for organics analyses only. EcoTek LSI does not have an inorganic contract with EPA, and does not currently anticipate participating in this program in the future. This lab is still capable of providing analytical and reporting support to the FEMP RI/FS for Inorganic parameters to the 2/88 SOW, if approved. In the past, the laboratory has worked directly as an EPA contract laboratory for both Inorganics and Organics CLP Programs.

The laboratory is currently able to analyze work under the 3/90 SOW, but is limited to "manual" reporting of SOW-required deliverables. The laboratory has implemented stringent data verification procedures to insure data accuracy. Due to these additional QC requirements, the cost and time requirements may be adversely affected if 3/90 SOW deliverables are requested. EcoTek LSI is evaluating software needed for more recent CLP reporting requirements and estimates that it will be able report under the 3/90 SOW within two to three months.

MIXED WASTE

EcoTek LSI is licensed by the Georgia Department of Natural Resources (GDNR) to receive and analyze samples containing radioactive material as defined in 49 CFR 173.389. Please find the radioactive materials license enclosed as Appendix I. The license issued by GDNR lists specific activities which may not be exceeded for individual samples:

- Radioactive materials having atomic mass numbers 1 through 96 - no sample is to exceed 5 millicuries.
- Cesium-137 - no sample is to exceed 20 millicuries.
- Transuranium elements with atomic numbers 92 through 96 are limited to 10 millicuries each, total not to exceed 100 millicuries.

The license also lists specific mass quantities (grams/kilograms) of additional materials not addressed above:

- Uranium-235, maximum quantity at any one time is 350 grams.
- Plutonium-239, -240, maximum quantity at any one time is 200 grams.
- Thorium-232 (natural), maximum quantity at any one time is 5.0 kilograms.
- Uranium-238 (natural or depleted), maximum quantity at any one time is 5.0 kilograms.

Mr. Thomas Hill of the Georgia Department of Natural Resources was contacted to clarify if the mass referred to the isotope or sample mass. It was confirmed that the mass referred to the isotope mass. This was further substantiated by EcoTek LSI. Any further inquiries should be addressed to:

Thomas E. Hill
Georgia Department of Natural Resources
Radioactive Materials Program
4244 International Parkway, Suite 114
Atlanta, GA 30354

The expiration date of EcoTek LSI's materials license is September 30, 1995.

TOUR OF FACILITIES SUMMARY

All laboratory and prep areas are well organized. Sample preparation areas were physically isolated from analysis areas of the lab.

The laboratories were divided into high level activity and low level activity sections to minimize carryover and/or exposure from samples having high activities.

All work areas were observable from a perimeter corridor, providing an added measure of safety for workers. Laboratory work areas were restricted from unauthorized entry and required card entry. Entry of a security code was required, in addition, for higher activity controlled areas.

Sample storage areas are temperature-controlled and had restricted physical access. Internal sample custody is maintained for all sample transfers within the laboratory. Lockable, refrigerated storage is provided in each laboratory area for sample storage prior to analysis.

All laboratory areas were clean and residue-free. Glassware prep areas were provided in each work area and were found free of soap residues.

LABORATORY EQUIPMENT AND CAPABILITIES

All laboratory instrumentation appeared to be in good working order with sufficient duplication in key areas to minimize work stoppages due to equipment failures.

The laboratory has a service technician on staff who is able to perform most repairs within a few hours. For more complicated repairs, timely service can be obtained from factory authorized service centers which are in the immediate area. EcoTek LSI does not currently maintain service contracts on its instrumentation.

The laboratory maintains service records for all instruments and performs preventative maintenance based on observed failure rates and per manufacturer recommendations. Maintenance and calibration records are maintained for all instruments and were found to be complete for instruments reviewed at random throughout the lab.

LABORATORY QA/QC REVIEW

Chemical and radiological QA programs required by the RI/FS QAPP are included in the Laboratory quality assurance plan and procedures.

A review of laboratory QA/QC performance was not performed as a part of this evaluation. QA/QC procedures for Organics and Inorganics HSL parameters are consistent with the EPA CLP 2/88 Statement of Work.

A review of EcoTek LSI's existing QA/QC program for the Radiological Laboratory indicates that established Data Quality Objectives (DQOs) for precision and accuracy can be met or exceeded.

Written SOPs were available for CLP addressable activities. Specific procedures are maintained in each work area as necessary. These documents were documented to exist and availability in work areas confirmed.

Client and site specific SOP's are written to address additional, non-routine requirements of site-specific QAPPs. These SOPs are maintained as a Client-specific QAPP for work performed by the laboratory.

RECORDS AND REPORTING

Records were maintained in a controlled area. The laboratory is capable of providing high security for sensitive documents where required.

Sample tracking and data transfers are performed via computer whenever possible, and data are verified by a minimum of three individuals prior to reporting. Where manually entered data is reported, data is verified by six or more persons prior to delivery to the client.

The laboratory maintains both on-site and off-site records storage areas. Off-site storage areas were not evaluated during this visit. Laboratory storage areas were found to be satisfactory.

EcoTek LSI has acquired a Laboratory Information Management System, which is scheduled to be on-line by 1992.

REVIEW OF SAMPLE DATA PACKAGES

Data packages were reviewed for HSL Organics and Inorganics and for Radiological analyses. Packages were found to be complete and included QC checklists for each analysis fraction.

QC documentation required under the CLP SOW was reviewed for compliance with established acceptance criteria. Deficiencies noted were minor in nature and included GC/MS calibration deficiencies for non-SPCC/CCC compounds, and blank contamination from methylene chloride for volatiles. Precision and accuracy were found to be acceptable for both organics and inorganics analyses.

The data package for radiological analyses was found to be complete, containing all necessary data to determine compliance with the laboratory QC program.

EcoTek LSI currently provides electronic data transfer (EDT) to several of its clients and anticipates that it would have no difficulties setting up the required formatting for transfer of FEMP data.

DETECTION LIMITS

EcoTek LSI is capable of meeting exceeding the detection limits as specified by the RI/FS QAPP for almost all parameters. The parameters which method detection limits cannot be met are listed below:

PARAMETERS	QAPP Required MDL*	ECOTEK LSI MDL*
Chloride	500 ug/L	2000 ug/L
Chromium Hexavalent	10 ug/L (aqueous)	100 ug/L
Phosphorus	10 ug/L	100 ug/L
Sulfide	500 ug/L	1000 ug/L
Boron	10 ppb**	14 ppb
Potassium	100 ppb**	621 ppb

* Method Detection Limit
**SW 846 does not have a method listed for Graphite Furnace Atomic Absorption.

LABORATORY SAFETY:

Laboratory worker safety was adequate. Personnel were all observed to be properly attired in lab coats, safety glasses, and protective gloves, when required.

Hand and foot radiation frisks were performed upon exit from all controlled areas.

[redacted]

EVALUATION AND RECOMMENDATIONS:

Data for the FEMP RI/FS are currently classified into Analytical Support Levels (ASLs) based on the qualitative and quantitative nature of data that can be supplied by the lab. These are defined in the FEMP RI/FS Data Validation Program as:

LEVEL I - qualitative field screening or analyses using portable instruments

LEVEL II - semi-quantitative field and laboratory analyses using portable analytical field instruments or controlled laboratory procedures

LEVEL III - quantitative analyses performed at an off-site laboratory using EPA or other approved methods of analysis.

LEVEL IV - quantitative analyses under EPA CLP protocols

LEVEL V - quantitative analyses from non-standard or modified methods of analysis

All laboratory procedures should be capable of achieving ASLs I and II without further evaluation as defined here.

The following recommendations are made based on the laboratory's ability to meet the FEMP RI/FS QAPP for performance at analytical support Levels III, IV, and V.

EPA and/or other approvals may also be required prior to actual performance of work at these level:

ANALYSES	LEVEL IV 2/88 SOW	LEVEL IV 3/90 SOW	LEVEL III	LEVEL V
HSL VOLATILES	YES	(NO)[2]	YES	YES
HSL SEMI-VOLATILES	YES	(NO)[2]	YES	YES
HSL PEST/ PCBs	YES	(NO)[2]	YES	YES
HSL METALS/ CYANIDE	(YES)[1]	(NO)[2]	YES	YES
GENERAL CHEMISTRY	N/A	N/A	YES	YES
RADIOLOGICAL	N/A	N/A	YES	YES

N/A Not Applicable

1 - not currently participating in CLP
2 - manual CLP reporting only

[redacted]

In summary, EcoTek LSI is capable of performing analytical support to the RI/FS project for organic and inorganic analyses, general chemistry, and radiological analyses. EcoTek LSI was identified as Level II for inorganic analysis in the letter mentioned previously. EcoTek LSI is capable of providing Level IV data for the RI/FS project.

The auditor checklist used in the EcoTek LSI evaluation of October 1, 1991 are attached as Appendix II.

Georgia Department of Natural Resources
205 Butler Street, S.E., East Floyd Tower, Atlanta, Georgia 3033
Lonice C. Barrett, Commissione
Harold F. Reheis, Assistant Directo
Environmental Protection Divisio

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[redacted]

RADIOACTIVE MATERIALS PROGRAM
GEORGIA RADIOACTIVE MATERIAL LICENSE

Pursuant to the Georgia Radiation Control Act O.C.G.A. 31-13 (H.B. 947) 1990 and the Georgia Department of Natural Resources Rules and Regulati designated Chapter 290-5-23, and in reliance on statements and representations heretofore made by the licensee designated below, a license is he issued authorizing such licensee to transfer, receive, possess, and use the radioactive material(s) designated below; and to use such radioactive mate for the purpose(s) and at the place(s) designated below. This license is subject to all applicable rules and regulations of the Georgia Departme Natural Resources and orders of the Radioactive Materials Program, now or hereafter in effect, and to any condition specified below.

CORRECTED COPY

License No. GA. 1190-1

License (1. Name and 2. Address)

EcoTek Laboratory Services, Inc.
3342 International Park Drive, S.E.
Atlanta, Georgia 30316

3. License Number: GA. 1190-1

4. Expiration Date: September 30, 199

5. Telephone Number: (404) 244-0827

6. Radioactive Material (Element and Mass Number)	7. Chemical and/or Physical Form	8. Maximum quantity licensee may possess at any one time
A. Any radioactive material with atomic numbers 1-96 except special nuclear material and 131-iodine	A. Any form	A. No sample or sealed sou to exceed 5 millicuries
B. 131-iodine	B. Any form	B. 40 millicuries
C. 58-cobalt	C. Any form	C. No sample to exceed 20 millicuries
D. 60-cobalt	D. Any form	D. No sample to exceed 20 millicuries
E. 134-cesium	E. Any form	E. No sample to exceed 20 millicuries
F. 137-cesium	F. Any form	F. No sample to exceed 20 millicuries
G. Transuranium elements with atomic numbers 92-96 except as noted below for 6H.-K.	G. Any form	G. 10 millicuries each, to not to exceed 100 mill curies

[redacted]

(Continued)

H.	235-uranium	H. Any form	H. 350 grams*
I.	239, 240-plutonium	I. Any form	I. 200 grams*
J.	232-thorium, with daughters (natural)	J. Any form	J. 5 kilograms
K.	238-uranium with daughters (natural or depleted)	K. Any form	K. 5 kilograms

*For purposes of this license, when possession involves a combination of uranium-235 and plutonium-239, -240, the limit for the combination shall be such that the "sum of the rat: will not exceed unity (Rule 290-5-23-23-.01(2)(ccc).

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9. Authorized Use

A. The nuclides may be included in samples received for analysis or as sealed sources use as calibration or check sources.

B. Iodine is used for testing the efficiency of radioiodine absorbers and studying the behavior of radioiodine.

C. through J. The isotopes may be present in samples or used as a tracer in radiochemic: separations.

K. The isotope may be present in samples received for analysis.

Conditions

10. Radioactive material shall be used only at the licensee's address stated in Item 2 above.

11. This license does not authorize distribution to persons licensed pursuant to Rule 290-5-23-.02(11)(j)

12. The licensee shall comply with the provisions of Georgia Department of Natural Resources Rule 290-5-23-.03, "Standards for Protection Against Radiation," and Rule 290-5-23-.07, "Notices, Instructions and Reports to Workers: Inspections."

CONDITIONS (Continued)

13. Radioactive material shall be used by, or under the supervision of Todd L. Hardt, Keith S. Doran, Donald Paine, Stephen M. Schutt, Donald L. Dihel, Robert O. Lucas, John M. Puckett, Judy A. Blair, Annette K. Reynolds, Anthony G. Toney, or Harold M. Williams.

14. The Radiation Safety Officer in this program shall be John M. Puckett.

15. The licensee may transport radioactive material or deliver radioactive material to a carrier for transport in accordance with the provisions of Rule 290-5-23-.06, "Transportation of Radioactive Material, Amended."

16. Except for plutonium contained in a medical device designed for individual human applications, no plutonium regardless of form shall be delivered to a carrier for shipment by air transport or transported in an aircraft by the licensee except in packages the design of which the U.S. Nuclear Regulatory Commission has specifically approved for transport of plutonium by air.

17. The licensee shall not use radioactive material in or on human beings or in field applications where activity is released except as provided otherwise by specific condition of this license.

18. The licensee shall not transfer possession and/or control of materials or products containing radioactive material as a contaminant except:

    A. By transfer of waste to an authorized recipient;

    B. By transfer to a specifically licensed recipient; or

    C. As provided otherwise by a specific condition of this license pursuant to the requirements of (4) of Rule 290-5-23-.03.

16. A. (1) Each sealed source containing radioactive material, other than hydrogen 3, with a half-life greater than 30 days and in any form other than gas shall be tested for leakage and/or contamination at intervals not to exceed 6 months except that each source designed for the purpose of emitting alpha particles shall be tested at intervals not to exceed 3 months.

    (2) Notwithstanding the periodic leak test required by this condition, a licensed sealed source is exempt from such leak tests when the source contains 100 microcuries or less of beta and/or gamma emitting material or 10 microcuries or less of alpha emitting material.

CONDITIONS (Continued)

(3) Except for alpha sources, the periodic leak test required by this condition does not apply to sealed sources that are stored and not being used. The sources excepted from this test shall be tested for leakage before any use or transfer to another person unless they have been leak tested within 6 months before the date of use or transfer.

B. The test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. The test sample shall be taken from the sealed source or from the surfaces of the device in which the sealed source is permanently mounted or stored on which one might expect contamination to accumulate. Records of leak test results shall be kept in units of microcuries and maintained for inspection by the Department.

C. If the test reveals the presence of 0.005 microcurie or more of removable contamination, the licensee shall immediately withdraw the sealed source from use and shall cause it to be decontaminated and repaired or to be disposed of in accordance with Department regulations. A report shall be filed within five (5) days of the test with the Radioactive Materials Program, Georgia Department of Natural Resources, 7 Martin Luther King, Jr., Drive, Atlanta, Georgia, 30334 describing the equipment involved, the test results, and the corrective action taken.

D. The licensee is authorized to collect wipe test samples on sealed sources possessed under this license using an approved leak test kit and instructions.

E. Analysis of tests for leakage and/or contamination shall be performed by persons specifically authorized by this Department, the U.S. Nuclear Regulatory Commission, or an Agreement State to perform such services.

20. Sealed sources containing radioactive material shall not be opened by the licensee.

21. The licensee shall conduct a physical inventory every three (3) months to account for all licensed material received and possessed under this license. The records of inventories shall be maintained for inspection by the Department and shall include the quantities and kinds of radioactive material, location of sealed sources, and the date of the inventory.

22. No containers containing radioactive material in quantities above natural background shall be disposed of to the trash. Any such containers disposed of to the trash shall have all labels indicating radiation or radioactive material obliterated or removed.

[redacted]

Georgia Department of Natural Resources

Radioactive Materials License Supplementary Sheet

2367 [redacted]

CORRECTED COPY

CONDITIONS (Continued)

23. In accordance with DNR Board Policy adopted May 24, 1990 the fees associated with this license fee category C.13, are:
Application fee $420 Renewal fee $420
Amendment fee $310 Routine Inspection fee $950. Non-routine Inspection fee $950. Renewal or amendment fees must accompany each licensure request, as appropriate. Inspection fees are payable upon receipt of each invoice from the Department following inspections.

24. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with statements, representations, and procedures contained in the documents including any enclosures listed below:

    A. Application dated September 11, 1989, signed by Steven M. Schutt;

    B. Ecotek Laboratory Services, Inc. Health Physics Plan dated September 8, 1989;

    C. Ecotek Laboratory Services, Inc. Quality Assurance Manual for Analytical Laboratory Services, Revision 0, dated October 4, 1989;

    D. Letters dated November 29, 1989 and December 8, 1989 both signed by Todd L. Hardt, Ph.D., Manager, Radiological Laboratory;

    E. Letter dated April 18, 1990, signed by Todd L. Hardt, Ph.D., Manager, Radiological Laboratory; and

    F. Letters dated July 12, 1990 and July 17, 1990 both signed by Todd L. Hardt, Ph.D., Manager, Radiological Laboratory.

The Georgia Department of Natural Resources' regulations shall govern unless the statements, representations and procedures in the licensee's application and correspondence are more restrictive than the regulations.

FOR THE GEORGIA DEPARTMENT OF NATURAL RESOURCES

Date September 25, 1990 BY [redacted]

[redacted]

APPENDIX I
GEORGIA RADIOACTIVE MATERIAL LICENSE

[redacted]

APPENDIX II

ECOTEK LSI VENDOR SOURCE EVALUATION
Pre-Award Survey Checklist
October 1, 1991

ASI PERSONNEL :

Larry Sexton, Project Quality Assurance Officer
Carleton Edmunds, J.D., Senior Scientist
Alex Duarte, Technical Representative

EcoTek LSI REPRESENTATIVES :

Stephen M. Schutt, Chief Operating Officer
Donald L. Dihel, Quality Assurance Manager
Charles J. Miller, Sales Manager
John M. Buchanan, Laboratory Operations Manager

CHEMISTRY LABORATORY

Organic Lab Supervisor: Richard G. Brown
Inorganic Laboratory Supervisor: Steve Goodwin
General Chemistry Supervisor: Annette K. Reynolds

Organic Laboratory Instrumentation:

8	Gas Chromatography Instruments 2 dedicated for GC/MS screening 5 dedicated to Pesticide/PCB, Herbicides 1 dedicated for BTEX
7	GC/MS 4 dedicated to Volatile Organics 3 dedicated to Semi-Volatile Organics
5	Purge and Trap Concentrators
1	Gel Permeation Chromatograph

[redacted]

Organic Personnel :

Ten analysts are currently qualified to perform the analysis for Volatiles, Semi-Volatiles, and Pesticides/ PCBs. A first shift is fully staffed and a skeleton second shift is run.

Organic Sample Capacity :

EcoTek LSI personnel estimate that maximum capacity for Level IV data performed by the EPA CLP Statement of work is as follows:

Volatile Organics is 500 samples per month.
Semi-Volatiles is 300 samples per month.
Pesticides\PCBs is 170 samples per month.
TCLP capacity is 200 samples per month, 48 tumblers.

The Lab is operating at 50-60% of its total capacity.

EcoTek LSI does not perform Dioxins\Furans, and contracts this analysis to Weston Analytical.
EcoTek LSI contracts Organo-Phosphorous Pesticides to CompuChem.

Inorganic Lab Equipment:

2	ICPs 1 Simultaneous 1 Sequential to be scheduled to be replaced by another Simultaneous ICP in early 1992
1	Atomic Absorption equipped with Graphite Furnace, and Flame
1	Mercury Cold Vapor

Inorganic Personnel :

Six analysts are currently qualified to perform the analysis for Inorganics.
EcoTek LSI operates a first shift fully staffed and a skeleton second shift.

Inorganic Sample Capacity :

EcoTek LSI personnel estimate that maximum capacity for Level IV data performed by the EPA CLP Statement of work is as follows:

Inorganic sample is 300 samples per month.

The Lab is operating at 50-60% of its total capacity.

[redacted]

General Chemistry Lab Equipment:

1 TRAACS 800 Analyzer

General Chemistry Capacity:

EcoTek LSI personnel estimates that maximum capacity for General Chemistry parameters is as follows:

General Chemistry is 75 samples per day.

The Lab is operating at 50-60% of its total capacity.

RADIOLOGICAL LABORATORY

Radiological Laboratory Supervisors: Rondalynn Mull

Radiological License:

Georgia Department of Natural Resources # GA 11190-1

General License with 5-40 mCi limits for radionuclides with atomic numbers from 1 through 96 with the following additions:

Uranium - 235	350 grams*
Plutonium - 239,240	200 grams*
Thorium - 232	5 kilograms
Natural with Daughters	
Uranium - 238	5 kilograms
Natural or depleted	

* Sum of the fraction rule applies

EcoTek LSI has submitted to the State a request for an increase of their license and expect to have a response within 8-9 weeks.

Radiological Laboratory Instrumentation:

3	Gross Alpha and Beta
2	Alpha Spectroscopy
3	Gamma Spectroscopy
3	Liquid Scintillation Counters
2	Total Uranium and Thorium Fluorimeter/Phosphorimeter

[redacted]

Radiological Laboratory Personnel :

Nine analysts are currently qualified to perform the analysis for Radiochemistry. EcoTek LSI runs a first shift fully staffed.

Radiological Sample Capacity :

EcoTek LSI personnel estimate that maximum capacity for the Radiochemistry Laboratory as follows:

500 samples for Gamma
200 samples for Alpha

The manager stated that the lab has acquired equipment which will essentially double the current capacity.

Currently the Lab is operating at 50-60% of its total capacity.

SAMPLE RECEIPT AREA

Supervisor: James Mark Broxton

Standard Operating Procedures for Sample Receipt

SOP Number	
SOP GL 1100	Sample Management
SOP GL 1110	Chain of Custody Program (internal/external)
SOP GL 1430	Variance reports/procedures (condition on receipt)
SOP GL 6410	Sample storage/disposal
SOP GL 6001	Worker protection, safety procedures

Inspection of Receiving Area -

Clean, and well organized.

Work Station Isolation -

Adequate, well controlled.

Sample Storage and Disposal -

Sample storage was locked in a walk-in refrigerator which was temperature controlled at 4 degrees C. Logs were reviewed, and found to be adequate.

Comments:

The sample receipt area was found to be well controlled. Samples are immediately checked and logged into a the Data Management system. The area was secured and access to the area is logged and tracked by magnetic strips on each employee's identification badge. An internal Chain of Custody is created for each sample. The current computer system utilized is still in the developmental stages and a paper tracking system is concurrently used for internal sample tracking. An interview with the manager showed that the procedures were documented and implemented.

SAMPLE PREP AREA

Supervisor : Gregory Foster

Standard Operating Procedures for Sample Receipt

SOP Number	
SOP # GL 2020.	Glassware Clean-up Prep
SOP # GL 2102	Extraction Procedure (EP Tox)
SOP # OL 2103	TCLP
SOP # CL 2111	P/PCB Extraction in Water
SOP # CL 2113	P/PCB Extraction in Soil/Sediment
SOP # CL 2112	BNA Extraction
SOP # RL 2151	Preparation for Radiological Analysis

Isolation of Labs, Work Areas -

The sample prep area for Organics is located in the Wantec Building and is currently under renovation. This area found to be clean and well equipped. All employees and visitors are required to log in and undergo a radiation monitoring frisk before exiting. The sample area prep area was well isolated from the Organics Volatile, Semi-volatile GC\MS instruments.

Isolation/Storage of Samples -

Samples are stored within the department and analysts are required to sign out the extract.

Variance Reports/Procedures for Sample Prep -

Not Reviewed.

Glassware and Cleanup -

All glassware was found to be adequate and Class A; a formal procedure for preparation and washing was documented. Each department is responsible for cleaning its own glassware. No glassware blanks are currently used.

[redacted]

Comments:

This section was found to be adequate for the level of work performed.

QUALITY CONTROL

Supervisor : Donald Dihel

Standard Operating Procedures for Quality Control

SOP Number	
SOP # GL 1010	Quality Control Program
SOP # GL 1006	Organization and responsibilities
SOP # GL 1110	Chain of Custody Program
SOP # GL 1601	Non compliance actions/documentation

QA Officer - Not in Lab Chain of Command -

Each laboratory has an individual manager. (Mr. Dihel reports to Mr. Shutt)

Compliance With Holding Time Requirements -

EcoTek LSI staff stated that holding times for a HSL's have been exceeded for only approximately 0.001% samples.

QC Sample Prep MS/MSD -

Each analyst is responsible for their MS/MSD QC sample preparation.

Quality of SRMS Used -

NIST or EPA.

QC Records Precision/Accuracy -

Currently the lab does not have control charts, but plans to use a Laboratory Information Management System (LIMS), which will be on-line by 1992 to tract such data. This system will allow tracking of QC perform per analyte, parameter, and operator.

Blind Samples to Labs -

Blind samples submitted quarterly per parameter.

QA Manual - Review

Adequate. Found to comply with the REV 3 RI/FS QAPP.

[redacted]

Library of Lab Reference Documents -

The following documents were said to be documented in the lab library:

-Methods of analysis
-QAPPs
-SOPs

Performance Evaluation Results Available -

EcoTek LSI participates in the EPA CLP for Organics. It does not have a CLP contract for Inorganics, but can provide CLP deliverables. In the Performance Evaluation samples from the EPA EcoTek LSI scored a 96.1%.

The package reviewed was a Performance Evaluation sample, it was found to be adequate to superior.

Comments:

The Quality Assurance Program was found to be adequate, with all the procedures in place. Two individuals were part of the QA department.

SAMPLE ANALYSIS

Standard Operating Procedures for Sample Analysis

SOP Number	
SOP # OL 2602	Semivolatiles by GC/MS (CLP)
SOP # OL 2600	Volatiles by GC/MS (CLP)
SOP # OL 2503	P/P by GC (CLP)
SOP # OL 2602	Semivolatile by GC/MS (CLP)
SOP # RL 2302	Gross alpha/beta activity
SOP # RL 2311	Radium in Water
SOP # RL 2317	Technetium - 99 by LSC
SOP # RL 2318	Thorium by Alpha Spectroscopy
SOP # RL 2322	Uranium by Alpha Spectroscopy
SOP # RL 2325	Plutonium by Alpha Spectroscopy
SOP # RL 4303	Gamma Spectroscopy system (High Energy)
SOP # RL 4303	Gamma Spectroscopy system (High Energy)

SOP # IL 2429 through 2433 Specific Methods for General Chemistry on Traacs 800

No SOPs were identified for CLP Inorganic procedures.

[redacted]

Separation/Condition of Laboratories -

The laboratory is divided into two buildings. The Wantec Building houses the Organic laboratories, and Prep Laboratories. These area were found to be well controlled, but under renovation. The area dedicated to the GC\MS was confined. The area did not have a separate ventilation system that would decrease cross-contamination.

The Radiological Laboratory was divided into two labs equally equipped. One was for high activity level samples, one for lower activity levels. Each lab was clean, separated, and controlled.

Condition of Equipment -

All equipment in the laboratory is cataloged and placed on a routine maintenance schedule. EcoTek LSI has a full-time on-site service department. They do not maintain any service agreement with manufacture. The arrangement has allowed for EcoTek LSI to decrease the downtime of their instrument.

Spare parts for the analytical equipment was available for lab use.

Instrument Logs -

Calibration logs and injection logs are kept, but were not reviewed as part of this evaluation.

Instrument Dedication -

The Organics lab had GC\MS assigned to Volatiles or Semi-Volatiles. The Radiological Lab has a GC/MS dedicated to radiological samples. This instrument is planned to be upgraded in the first quarter of 1992.

Education and Training of Personnel -

The EcoTek LSI managers all have Bachelor degrees and a minimum of five years experience in their section. EcoTek LSI is currently involved in several projects which entail Method Development and Research, as well as the EPA Special Analytical Services Program. The SOP's for each analytical method are available for reference. The EcoTek LSI Laboratory also has a well defined training program for its employees, which involves videotape presentations. A training package from personnel records was reviewed from each section.

RECORDS AND DATA MANAGEMENT

SUPERVISOR: Terry L. Walters

The Data Management Program is currently being revised. The new system will allow constant tracking of the sample and have work stations available in every lab. The data storage area was found to be adequate, and controlled.

Currently, the lab does not have the software available report under the 3/90 EPA CLP Statement of Work, but does have the ability to report under 2/88. EcoTek LSI estimates that this software will be available for use within two months.

HEALTH AND SAFETY

Supervisor: John Puckett

Standard Operating Procedures for Health and Safety

SOP Number	
SOP # GL 1900	Security Plan
SOP # GL 7630	Operation of Security/Fire System
SOP # GL 6001	Safety Program
SOP # GL 1800	Radiological Control Program
SOP # GL 6410	Hazardous Waste Handling System

Radiological Contamination Frisking Procedures -

The EcoTek LSI radiological frisking procedures were adequate. There was not a separate area for frisking or a controlled area marked. Each individual was required to frisk hands and feet for contamination, but a step-off area was not marked. As visitors, ASI personnel were issued safety glasses but not lab coats or shoe covers.

Comments:

The Health and Safety Procedures for EcoTek LSI are well defined and implemented by the staff. Each individual in the laboratory is required to review the Safety plan, and all was documented in personnel files. Material Safety Data Sheets are available for reference.

CLP SPECIFIC QC PARAMETERS

A CLP package was reviewed for the following.

X DENOTES PRESENT AND/OR SUFFICIENT
D DENOTES DEFICIENCY

ORGANICS LABORATORY

- Volatiles and Semi-Volatiles

D (1)	-DFTPP/BFB calibration (min. 12 hrs.)
X	-Surrogate spike recoveries
X	-Matrix spike/matrix spike duplicate analyses
D (2)	-Blank evaluation
X	-Initial and continuing calibration (RF, %RDS, %D)
X	-Internal Std evaluation

[redacted]

Deficiency
1. Non SPCC/CCC were not within limits
2. Blank contaminant was seen for Methylene Chloride.

-Pesticide/PCB analysis

X	-DDT RT > 12 in. and within RT windows
X	-DDT/Endrin TTL breakdown <20%
X	-RT shift for DBC <2%

INORGANICS LABORATORY

X	-Initial/continuing calibration
X	-Inorganics - every 10 samples
X	-Blank evaluation
X	-ICP interference check samples (min. 8 hrs.)
X	-Matrix spike/matrix spike duplicates
X	-Laboratory control samples (metals)
X	-Std. addition for AA
X	-CLP, specific QC parameters
X	-Serial dilutions for ICP

In each package was checklist completed for Quality Assurance

Radiological Sample Package -

A radiological package was reviewed for completeness. It contained all relative QC to the sample.

CHECKLIST COMPLETED BY Alexander R. Duarte
Alexander R. Duarte, Technical Representative

Larry Sexton Project QA Officer
for Carleton Edmunds J.D., Senior Scientist

Larry Sexton
Larry Sexton, Project Quality Officer