

MATERIALS LICENSE

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 39, 40 and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 182 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

Licensee

1. Western Atlas International, Inc.
Western Atlas Logging Services
2. 10201 Westheimer
P.O. Box 1407
Houston, Texas 77251-1407

In accordance with letter dated
March 10, 1995

3. License number 42-02964-01 is amended in its entirety to read as follows:

4. Expiration date March 31, 2003

5. Docket or Reference No 030-06402

6. Byproduct, source, and/or special nuclear material

7. Chemical and/or physical form

8. Maximum amount that licensee may possess at any one time under this license

- A. Cobalt-60
- B. Gold-198
- C. Antimony-124
- D. Iodine-131
- E. Iridium-192
- F. Scandium-46
- G. Americium-241

- A. Solid wire, beads or foil
- B. Any except as sealed sources
- C. Any except as sealed sources
- D. Any except as sealed sources
- E. Any except as sealed sources
- F. Any except sealed sources
- G. Sealed neutron sources (Gammatron Model DA-5; Gamma Industries Model NB (HP); Gulf Nuclear Model NEEI-71-1)

- A. 10 millicuries
- B. 100 millicuries
- C. 100 millicuries
- D. 800 millicuries
- E. 800 millicuries
- F. 100 millicuries
- G. Not to exceed 5 curies per source

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MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number

42-02964-01

Docket or Reference Number

030-06402

Amendment No. 61

- | | | |
|---|--|--|
| 6. Byproduct, source, and/or special nuclear material | 7. Chemical and/or physical form | 8. Maximum amount that licensee may possess at any one time under this license |
| H. Americium 241 | H. Sealed neutron sources (Amersham Model CDC.CYN Series; Gammatron Model DA-20; Gammatron Model AN-HP; Gamma Industries Model NB (HP); Gulf Nuclear Model AMBE 71-2A) | H. Not to exceed 20 curies per source |
| I. Americium-241 | I. Sealed source (Gulf Nuclear Model VL-1; Gammatron Model AN-HP) | I. Not to exceed 2 curies per source |
| J. Cesium-137 | J. Sealed sources (Gulf Nuclear Model CSV; Gulf Nuclear Model CS-2; Gamma Ind. Model VD (HP); Amersham Model CDC.CYN Series) | J. Not to exceed 3 curies per source |
| K. Cesium-137 | K. Sealed Sources (Gammatron Model GT-GHP; Gulf Nuclear Model CS-2; Gulf Nuclear Model VL-1; Amersham Model CDC.CYN Series) | K. Not to exceed 1 curie per source |
| L. Hydrogen-3 | L. Foil sources (Amersham or Safety Light Corp. Titanium Tritide or Scandium Tritide) | L. Not to exceed 20 curies per source/target |

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number

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030-06402

Amendment No. 61

- | | | |
|---|--|--|
| 6. Byproduct, source, and/or special nuclear material | 7. Chemical and/or physical form | 8. Maximum amount that licensee may possess at any one time under this license |
| M. Americium-241 | M. Sealed neutron sources (Gammatron Model AN-HP; Gammatron Model GT-GHP; Gulf Nuclear Model NEEI 71-1) | M. Not to exceed 500 millicuries per source |
| N. Cesium-137 | N. Sealed sources (Gammatron Model GT-GHP; Gulf Nuclear Model CS-2; Gulf Nuclear Model VL-1; Gammatron Model GT-G) | N. Not to exceed 200 millicuries per source |
| O. Thorium-228 | O. Any | O. Not to exceed 10 millicuries per source |
| P. Uranium (Depleted in Uranium-235) | P. Metal Bars | P. 6000 Kilograms |

9. Authorized use

- A. Used for collar markers or perforation markers.
- B. through F. Oil well, gas well and non-potable water well radioactive tracer studies and instrument calibration.
- G. through L. For use in radioactive logging oil, gas, non-potable water, disposal, water injection and underground petroleum products storage wells and instrument calibration.
- M. through O. Used for instrument calibration
- P. Used as sinker bars to aid descent of logging and perforating instruments into the wellbore.

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number

42-02964-01

Docket or Reference Number

030-06402

Amendment No. 61

CONDITIONS

10. A. Licensed material may be used and stored at the branch offices located in the non-Agreement States listed in the licensee's letter dated November 7, 1995. The licensee shall notify USNRC, Region IV, Nuclear Materials Licensing Section, 611 Ryan Plaza Drive, Suite 400, Arlington, Texas 76011, of the opening of additional branch offices or the closing of existing branch offices (in non-Agreement States) within 7 days thereafter.
- B. Licensed material identified in Item C may be temporarily stored in accordance with letters dated October 1, 1994, October 28, 1994, April 6, 1995, May 4, 1995, November 30, 1995, and December 7, 1995.
- C. Licensed material may also be used at temporary job sites of the licensee anywhere in the United States where the Nuclear Regulatory Commission maintains jurisdiction for regulating the use of licensed material.
11. Licensed material shall be used by, or under the supervision and in the physical presence of:
- A. Individuals who have completed the Dresser Atlas training program outlined in application dated April 20, 1990, and letter dated February 19, 1993, and have been designated by the company Radiation Protection Officer or company Radiation Safety Coordinator, or
- B. Individuals who have completed the N.L. McCullough training program outlined in Attachment 7 of the December 23, 1980, application for License No. 42-13898-01 and who have been designated by Edward J. Domangue, Wallace A. Roos, Billie D. Rose, or Murrell C. Hatcher.
12. Notwithstanding the periodic leak test required by 10 CFR 39.35, such requirement does not apply to sources, except sources containing plutonium, that are stored and not being used. The sources excepted from this test shall be tested for leakage before use or transfer to another person.
13. Sealed sources authorized for a use other than well logging shall be leak tested and inventoried in accordance with 10 CFR 39.35 and 10 CFR 39.37.
14. The licensee shall maintain a funding plan or certificate of financial assurance for decommissioning per the provisions of 10 CFR 30.35 and this license.

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number

42-02964-01

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030-06402

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15. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents, including any enclosures, listed below. The Nuclear Regulatory Commission's regulations shall govern unless the statements, representations, and procedures in the licensee's application and correspondence are more restrictive than the regulations.

- A. Documents submitted in support of License Number 42-13898-01:
- Attachment 7 of December 23, 1980, application entitled "Training Program"
- B. Application dated April 20, 1990
- C. Letter dated October 17, 1990
- D. Letter dated February 19, 1993
- E. Letter dated October 28, 1994
- F. Letter dated April 6, 1995
- G. Letter dated May 4, 1995
- H. Letter dated November 7, 1995
- I. Letter dated November 30, 1995
- J. Letter dated December 7, 1995
- K. Letter dated March 5, 1996

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Date JUN 25 1996

Original Signed By
By Jacqueline D. BurksJacqueline D. Burks
Nuclear Materials Licensing Branch
Region IV
Arlington, Texas 76011



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION IV

611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-8064

June 25, 1996

Western Atlas International, Inc.
Western Atlas Logging Services
ATTN: Billie D. Rose
Radiation Safety Officer
10201 Westheimer
P.O. Box 1407
Houston, TX 77251-1407

SUBJECT: LICENSE AMENDMENT

Please find enclosed License No. 42-02964-01. You should review this license carefully and be sure that you understand all conditions. If you have any questions, you may contact the reviewer who signed your license at 817-860-8132.

This amendment authorizes a delay in implementing source abandonment procedures until December 1, 1999 for a neutron generator logging tool that became stuck downhole at British Borneo Exploration, Inc. located Offshore, Louisiana in addition to including the well site as a storage location.

NRC expects licensees to conduct their programs with meticulous attention to detail and a high standard of compliance. Because of the serious consequences to employees and the public which can result from failure to comply with NRC requirements, you must conduct your program involving radioactive materials in accordance with the conditions of your NRC license, representations made in your license application, and NRC regulations. In particular, note that you must:

1. Operate in accordance with NRC regulations 10 CFR Part 19, "Notices, Instructions and Reports to Workers: Inspection and Investigations," 10 CFR Part 20, "Standards for Protection Against Radiation," and other applicable regulations.
2. Possess radioactive material only in the quantity and form indicated in your license.
3. Use radioactive material only for the purpose(s) indicated in your license.
4. Notify NRC in writing of any change in mailing address (no fee required if the location of radioactive material remains the same).

5. Request and obtain written NRC consent before transferring your license or any right thereunder, either voluntarily or involuntarily, directly or indirectly, through transfer of control of your license to any person or entity. A transfer of control of your license includes not only a total change of ownership, but also a change in the controlling interest in your company whether it is a corporation, partnership, or other entity. In addition, appropriate license amendments must be requested and obtained for any other planned changes in your facility or program that are contrary to your license or contrary to representations made in your license application, as well as supplemental correspondence thereto, which are incorporated into your license. A license fee may be charged for the amendments if you are not in a fee-exempt category.
6. Maintain in a single document decommissioning records that have been certified for completeness and accuracy listing all the following items applicable to the license:
 - Onsite areas designated or formerly designated as restricted areas as defined in 10 CFR 20.3(a)(14) or 20.1003.
 - Onsite areas, other than restricted areas, where radioactive materials in quantities greater than amounts listed in Appendix C to 10 CFR 20.1001-20.2401 have been used, possessed, or stored.
 - Onsite areas, other than restricted areas, where spills or other unusual occurrences involving the spread of contamination in and around the facility, equipment, or site have occurred that required reporting pursuant to 10 CFR 30.50(b)(1) or (b)(4), including areas where subsequent cleanup procedures have removed the contamination.
 - Specific locations and radionuclide contents of previous and current burial areas within the site, excluding radioactive material with half-lives of 10 days or less, depleted uranium used only for shielding or as penetrators in unused munitions, or sealed sources authorized for use at temporary job sites.
 - Location and description of all contaminated equipment involved in licensed operations that is to remain onsite after license termination.
7. Submit a complete renewal application with proper fee, or termination request at least 30 days before the expiration date on your license. You will receive a reminder notice approximately 90 days before the expiration date. Possession of radioactive material after your license expires is a violation of NRC regulations.
8. Request termination of your license if you plan to permanently discontinue activities involving radioactive material.

Western Atlas International, Inc. -3-
Western Atlas Logging Services

You will be periodically inspected by NRC. Failure to conduct your program in accordance with NRC regulations, license conditions, and representations made in your license application and supplemental correspondence with NRC will result in enforcement action against you. This could include issuance of a notice of violation; imposition of a civil penalty; or an order suspending, modifying, or revoking your license as specified in the "General Statement of Policy and Procedure for NRC Enforcement Actions" (Enforcement Policy), 60 FR 34381, June 30, 1995.

Thank you for your cooperation.

Sincerely,

Original Signed By
Jacqueline D. Burks

Jacqueline D. Burks
Health Physicist
Nuclear Materials Licensing Branch

Docket: 030-06402
License: 42-02964-01
Control: 465602

Enclosures: As stated

JUN 25 1996

Western Atlas International, Inc.
Western Atlas Logging Services

-4-

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UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

June 14, 1996

MEMORANDUM TO: D. Blair Spitzberg, Chief
Nuclear Materials Licensing Branch
Division of Nuclear Materials Safety, RIV

FROM: Larry W. Camper, Chief
Medical, Academic, and Commercial
Use Safety Branch
Division of Industrial and
Medical Nuclear Safety, NMSS *[Signature]*

SUBJECT: TECHNICAL ASSISTANCE REQUEST; WESTERN ATLAS
INTERNATIONAL, INC.; LICENSE NUMBER 42-02964-01

I am responding to your technical assistance request (TAR) dated December 14, 1995, transmitting letters dated April 6, 1995, May 4, 1995, November 30, 1995, and December 7, 1995, (Attachments 1 through 5), from Western Atlas International, Inc., requesting a license amendment authorizing a delay in implementing source abandonment procedures.

Western Atlas' request concerns a 10 curie hydrogen-3 contained in a neutron generator logging tool, which became stuck downhole at about 13,000 feet. Western Atlas indicates that attempts to recover the source have been unsuccessful, any further recovery attempts might cause source rupture, and that the tool and source have been declared unrecoverable. In justifying delaying source abandonment, Western Atlas states, "Completing the well abandonment procedures at this time is hampered by ... significant and ... potentially dangerous situations." Western Atlas further indicates that the location of the logging tool and hydrogen-3 sources has been isolated within the well.

According to the well operator, the existing well production zones are expected to produce for about 4 years. At the end of that time the well will require an "well work-over" in order to continue producing. Western Atlas proposes to complete the abandonment at that time. The TAR indicates that in addition to the amendment authorizing the delay, it would also modify Western Atlas' license to include the well site as a storage location.

Contact: J. Bruce Carrico, NMSS
(301) 415-7826

June 14, 1996

The abandonment requirements specified in 10 CFR 39.77 were reviewed, in coordination with Office of the General Counsel staff, and determined to allow licensees delaying abandonment with the Nuclear Regulatory Commission's approval. Therefore, the Western Atlas amendment request may be authorized.

Attachments: 1. TAR dtd 12/14/95
2. Ltr dtd 4/6/95
3. Ltr dtd 5/4/95
4. Ltr dtd 11/30/95
5. Ltr dtd 12/7/95



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION IV

611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-8064

December 18, 1995

Western Atlas International, Inc.
Atlas Wireline Services
ATTN: Billie D. Rose
Radiation Safety Officer
10201 Westheimer
P.O. Box 1407
Houston, TX 77251-1407

SUBJECT: LICENSE AMENDMENT

We have reviewed your letter dated April 6, 1995, requesting an amendment to your byproduct material license for use of sealed sources and devices for well logging.

Note that 10 CFR 39.77(c)(3) states that a licensee shall either ensure that abandonment procedures are implemented within 30 days after the sealed source has been classified as irretrievable or request an extension of time if unable to complete the abandonment procedures. We have forwarded your request of an extension of time to perform the full abandonment procedure until December 1, 1999, to our Headquarter's Office for additional technical review. Assuming that NRC-Headquarter's staff agree that your request poses no significant health and safety issue, we will grant an amendment; otherwise, you will be notified of our decision.

If you have any questions, we encourage you to contact us at (817) 860-8132.

Thank you for your cooperation.

Sincerely,

Original Signed By
Jacqueline D. Burks

Jacqueline D. Burks
Health Physicist
Nuclear Materials Licensing Branch

License: 42-02964-01
Docket: 030-06402
Control: 465602

Western Atlas International, Inc. -2-
Atlas Wireline Services

DEC 18 1995

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UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION IV

611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-8064

REGIONAL TECHNICAL ASSISTANCE REQUEST FORM

Date: December 14, 1995

Mail or E-Mail to: Donald A. Cool, Ph.D. (DAC), Mail Stop: 8 F5 TWFN If E-Mail,
cc: CLE
Division of Industrial and Medical Nuclear Safety, NMSS

From: D. Blair Spitzberg, Ph.D. (DBS) Region IV
Chief, Nuclear Materials Licensing Branch

Licensee: Western Atlas International, Inc. License No.: 42-02964-01
Atlas Wireline Services

- ☐ Letters dated: April 6, 1995; May 4, 1995; November 30, 1995; and
December 7, 1995 (enclosed)
- ☐ Suggested change in licensing procedure (enclosed): N/A

☐ **Problem/Issue:**

Western Atlas International, Inc. (WAI) in its April 6, 1995 letter, requested an amendment to their license to add a well operated by British-Borneo Exploration, Inc. as a storage site for a PDK logging tool with a neutron generator that utilizes a 10 Curie hydrogen-3 (H-3) source lost in the well. Enclosed with this letter was a chronological list of events in addition to a diagram of the well showing packers at specified depths. In a letter dated December 7, 1995, the licensee requests an extension of the time frame required by 10 CFR 39.77(c)(3) for completion of abandonment procedures.

During a telephone conversation on May 3, 1995, with Mr. Billie D. Rose of WAI, I asked for additional information concerning the tool stuck in the well. Mr. Rose responded in a letter dated May 4, 1995, providing supplemental information as requested.

In another telephone conversation with Mr. Rose on October 26, 1995, we requested responses to specific technical concerns that should be addressed before approval of an amendment to authorize temporary storage. (These specific technical concerns are the result of a similar request of an amendment to authorize temporary storage of a well containing a source lost downhole from another NRC licensee). In a letter dated November 30, 1995, Mr. Rose responded to our letter; however, responses to Items 1 and 4 were in conflict.

We requested additional information from Mr. Rose in a facsimile form dated December 6, 1995, asking him to clarify whether the source is recoverable or unrecoverable. If it is determined that the source is unrecoverable, Mr. Rose should justify why WAI is not implementing full abandonment procedures at this time in accordance with 10 CFR 39.77(c). In a letter from Mr. Rose dated December 7, 1995, Mr. Rose clarified that the source was declared nonrecoverable. Mr. Rose explains that completing well abandonment procedures at this time is hampered by some significant and also some potentially dangerous situations which he explains in detail in Item 3 of the December 7, 1995 letter.

In summary, WAI states, in part, that well pressure and the small diameter prohibits completing full abandonment procedures at this time.

☐ **Action Required:**

Determine the feasibility of authorizing an extension of time to perform full abandonment procedures in accordance with 10 CFR 39.77(c) until December 1, 1999.

Recommended Action (with revisions):

☐ Approve or ☐ Reject

Remarks:

None.

Regional Reviewer: Jacqueline D. Burks

Reviewer Code: T9

Reviewer Phone No.: (817)860-8132

FAX No.: (817)860-8263

Request Needed by: 01/15/96 (date)

Form TAR-10

9/93

THIRTY-DAY STATUS RESPONSE TO TECHNICAL ASSISTANCE REQUEST

Western Atlas International, Inc.
Atlas Wireline Services

-3-

DOCUMENT NAME: P:\DEFICIEN\WAIHAW.S.TAR


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12/13/95		12/13/95		12/13/95	12/13/95		

OFFICIAL RECORD COPY

To: Jacqueline Burkes	From: Billie Rose
Co: US NRC	Co: WALC
Dept:	Phone # 972 5681
Fax # 817-860-8263	Fax # 972 4402

P.1/2
M/S#16 T9

R	E C E I V E
	 DEC - JOURNAL ATLAS
REGION IV	

Logging Services

December 07, 1995
 Jacqueline Burkes
 U.S. Nuclear Regulatory Commission
 611 Ryan Plaza Square
 Arlington, Texas 76011-8064

Western Atlas
 International, Inc.
 P.O. Box 1407
 Houston, Texas 77251-1407
 (713)972-4000

License No. 42-02964-01
 Docket No. 030-06402
 Mail Control. No. 465602

Ms. Burkes,

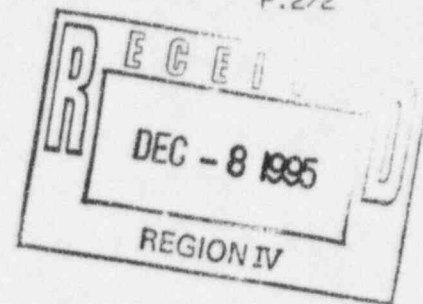
The purpose of this letter is to respond to your letter dated December 06, 1995. The answers to items of concern will be in the same numerical order as your letter.

1. The source was declared nonrecoverable because fishing operations to recover it could endanger the source and cause it to rupture. There are not any plans to fish the 10 Ci Tritium source.
2. British Borneo has forecast that the current producing zone will last about four years. Using this projection would make the next possible time for completing the well abandonment procedure December 01, 1999.
3. Completing the well abandonment procedures at this time is hampered by some significant and also some potentially dangerous situations.
 - a) Gas pressure at the surface ranges from over 6000 pounds per inch (psi) while the well is producing, shut in pressures exceed 8000 (psi). Performing abandonment procedures under these conditions is not workable, the well needs to be static to pull the production tubing and pump cement to the top of the plugged packer located at 12,930'. Pumping heavy viscous fluids in a producing formation to kill the well pressure could damage the formation resulting in reduction of gas production and shortening the life span of the well.
 - b) The well does not have a drilling rig over it at this time. Work performed in March 1995 was completed by using a wireline unit and a boom (crane) to position wireline equipment above the well head, a drilling rig was not on location.
 - c) The source is located in the bottom of the well isolated from the rest of the well with a non-retrievable type packer that is internally plugged with two permanent type plugs, the plugs are capped with cement.

Handwritten: H-5(d2)

Page 2.

December 7, 1995
Jacqueline Burkes
Nuclear Regulatory Commission



d) There is 750' of packers, sand screens, 2 7/8" O.D. tubing, and several other mechanical devices that are set in the well bore from 11,688' to 12,421' above the plugged packer located at 12,934'. This can act as a mechanical device to prevent the source from being accessible to any subsequent drilling.

Due to well conditions and mechanical configuration of the well, any work performed on this well in its present condition can only be performed through tubing that has 2.5" inside diameter. Well pressure and the small diameter prohibits completing full abandonment procedures at this time, this is the reason for requesting an extension of time to perform the full abandonment procedure. I request that Western Atlas International Inc. be granted an extension period to complete the full abandonment procedure. The date of the extension is requested to coincide with British Borneo's forecast of the next possible well work-over date, December 1, 1999.

If additional information is required please advise.

Sincerely,

Billie D. Rose
Billie D. Rose
Radiation Safety Officer
Western Atlas International Inc.

(476547)



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION IV

511 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-8064

FACSIMILE FORM

DATE/TIME: 12/6/95 1:45pm

PRIORITY: X

Immediately
1 hour
2-4 hours

MESSAGE TO: Billie D. Rose
Western Atlas International, Inc.
Atlas Wireline Services

License No. 42-02964-01
Docket No. 030-06402
Mail Control No. 465602

MESSAGE FROM: Jacqueline D. Burks
Health Physicist
Nuclear Materials Licensing Branch
U.S. NRC, Region IV

NUMBER OF PAGES: 1 PLUS TRANSMITTAL SHEET

TELECOPY NUMBER: (713) 972-5752

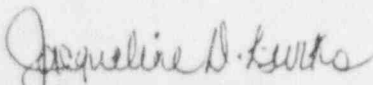
VERIFICATION NUMBER:

CONTACT:

SPECIAL INSTRUCTION/ ATTACHMENTS:

Mr. Rose,

Per our telephone conversation of December 5, 1995, the items on the next page are deficiencies which require your response. Please respond to this fax within 15 days. Our fax number is (817) 860-8263. If you have any questions regarding our discussion and this fax, please call me at (817) 860-8132. When responding to this fax, please include your license, docket and mail control numbers, located at the top of this page. Thank you.


Jacqueline D. Burks
Health Physicist

TRANSMITTED & VERIFIED BY:

Jacqueline D. Burks

DISPOSITION

Return to Originator X
Place in Mail

Please respond to the following item as it pertains to your letters dated April 6, 1995, May 4, 1995, and November 30, 1995:

- ✓ 1. Response to Items 1 and 4 of the November 30, 1995 letter are in conflict. Is the 10 Ci tritium source recoverable or nonrecoverable? Do you plan to make any efforts to recovery it?

Clarify this discrepancy.

2. Item 4 of your letter dated November 30, 1995 states that British Borneo's current forecast calls for the existing production zones to produce another 4 years. That would put the next possible time for recovery, completing a radioactive source abandonment procedure or petition the agency for an extension at 12/01/1997. We feel that the date is an error - in 4 years, the date will be 12/01/1999.

Respecify the date when tool recovery operations or completion of radioactive source abandonment procedures will occur.

- ✓ 3. If the source has been declared unrecoverable, justify why Western Atlas International, Inc. is not implementing full abandonment procedures at this time in accordance with 10 CFR 39.77(c).

mst 16 79

To	Jacqueline Burkes	From	Billie Rose
Co.	US NRC	Co.	WALS
Dept.		Phone #	972 5681
Fax #	817-860-8263	Fax #	972 4402

November 30, 1995

Jacqueline Burkes
U.S. Nuclear Regulatory Commission
611 Ryan Plaza Square
Arlington, Texas 76011-8064

License No. 02204-01
Docket No. 020-06402
Mail Control No. 465602

NOV 30 1995

Ms. Burkes,

The purpose of this letter is to respond to your letter dated November 26, 1995 that contained Special Instruction Attachment pertaining to temporary abandonment of tritium sources contained inside of a logging tool.

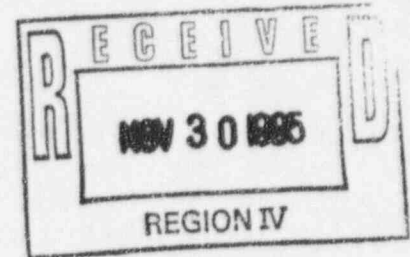
The Response to the Special Instructions are in the same numerical order as listed in your letter.

1. British Borneo has declared the source to be unrecoverable due to the mechanical structure of the well. On the last three fishing attempts the top of the tool could not be located with fishing tools. Milling operations would be required to remove packers from the well to get full gauge fishing tools to the logging tools. Mill cuttings and parts of the packers would fall on top of the logging tools. Cleaning debris from around the small diameter tool will endanger the tool and may breach the integrity of the pressure housing and release tritium into the well bore.
 2. The source is on top of a cement retainer at 13,140'. It is isolated from the rest of the well by a combination of packers, bridge plugs and cement. There is no flow around the tool. There are two Magna Range bridge plugs set in the tail pipe below the production packer that is set at 12,934'. This isolates the tool containing the Tritium source from the rest of the well. There is a plug set in the production nipple at 12,462' below the production packer set at 12,412'. The well is static below this point.
- Operating pressure rating for the pressure housing of the PDK logging tool is 17,000 pounds per square inch and should experience only slight deterioration over a long period of years in a static well.
3. All efforts to recover the tool and source failed. On the last three trips in the well with fishing tools there was no indication that the fishing tools came in contact with the logging tool.
 4. British Borneo's current forecast calls for the existing production zones to produce another four years. That would put the next possible time for recovery, completing a radioactive source abandonment procedure or petition the agency for an extension at 12/01/1997.

4457112

Page 2.

November 30 1995
Jacqueline Burkes
Nuclear Regulatory Commission



5. British Borneo has committed to seek consensus with Mineral
? comment from [unclear] Mining Service to leave the tool in the well as a temporary
storage or to do a radioactive source abandonment procedure if
necessary.

Please find enclosed an updated well schematic that shows the
location and depth of the plugs that isolate the production from
the PDK logging tool and radioactive source.

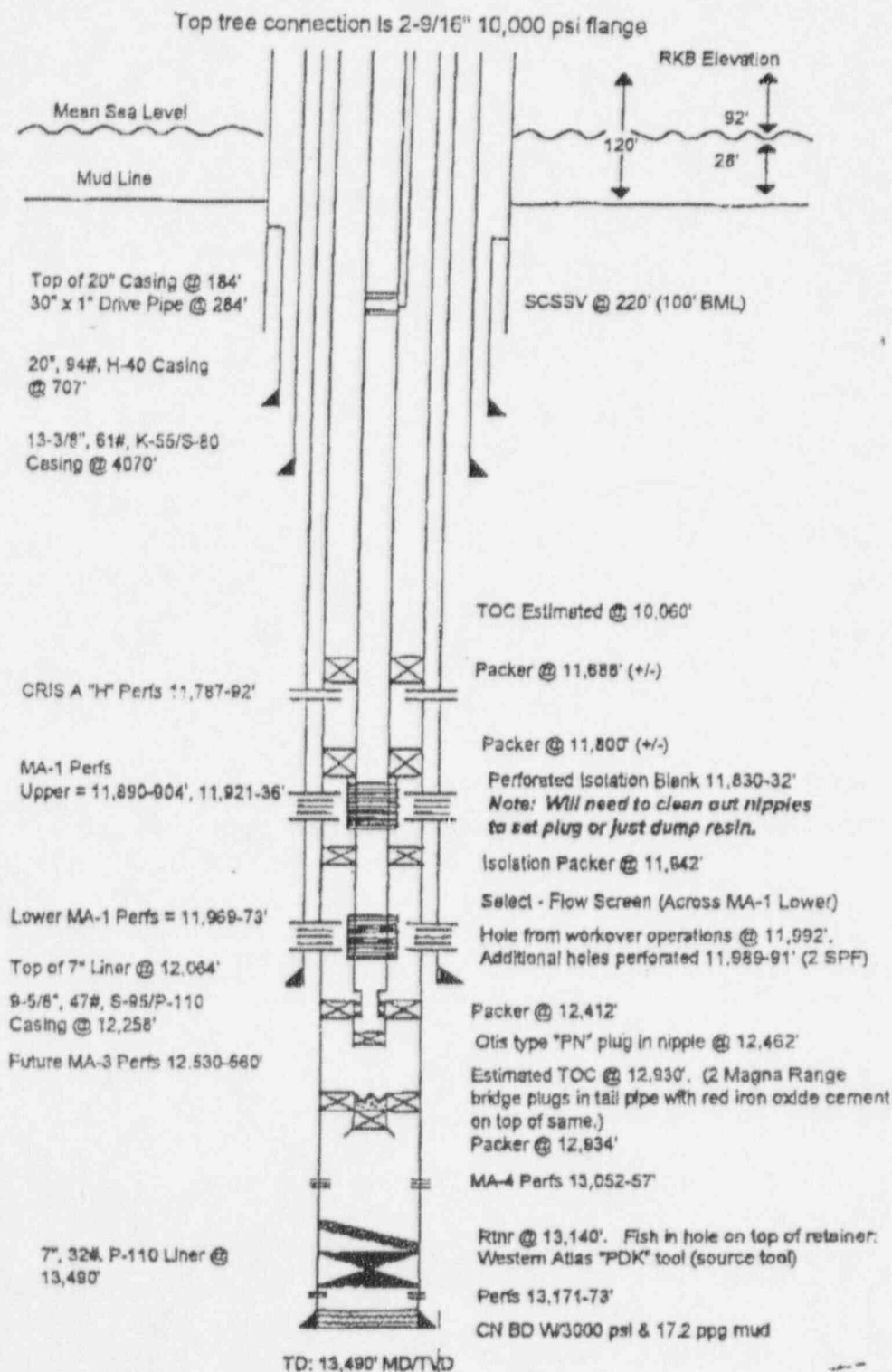
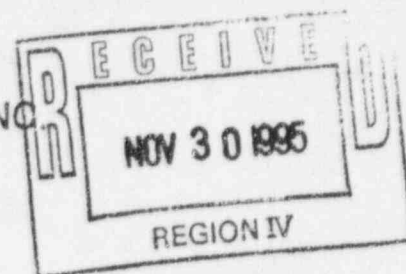
If additional information is required to complete this request
please advise.

Billie D. Rose
Radiation Safety Officer
Western Atlas International Inc.

Copy: G. Ross Frazer P.E.
British Borneo
Exploration Inc.

44-5702

BRITISH-BORNEO EXPLORATION, INC
EAST CAMERON BLOCK 2
OCS-G 10605 #A-1 (fka #2)



41512



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION IV

611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-8064

FACSIMILE FORM

DATE/TIME: 10/26/95 9:10am

PRIORITY: X

Immediately
1 hour
2-4 hours

MESSAGE TO: Billie D. Rose, RSO
Western Atlas International, Inc.
Atlas Wireline Services

License No. 42-02964-01
Docket No. 030-06402
Mail Control No. 465602

MESSAGE FROM: Jacqueline D. Burks
Health Physicist
Nuclear Materials Licensing Branch
U.S. NRC, Region IV

NUMBER OF PAGES: PLUS TRANSMITTAL SHEET

TELECOPY NUMBER: (713) 972-5752

VERIFICATION NUMBER:

CONTACT:

SPECIAL INSTRUCTION/ ATTACHMENTS:

Mr. Rose,

Per our telephone conversation of October 26, 1995, the items on the next page are the deficiencies which require your response. Please respond to this fax within 15 days. Our fax number is (817) 860-8263. If you have any questions regarding our discussion and this fax, please call me at (817) 860-8132. When responding to this fax, please include your license, docket and mail control numbers, located at the top of this page. Thank you.

Jacqueline D. Burks
Jacqueline D. Burks
Health Physicist

TRANSMITTED & VERIFIED BY:

Jacqueline D. Burks

DISPOSITION

Return to Originator X
Place in Mail

11/7/95: verbal approval for 30 day extension granted for response

Jackie Burks

Please respond to the following items as they pertain to your letter dated April 6, 1995, and supplemental information dated May 4, 1995:

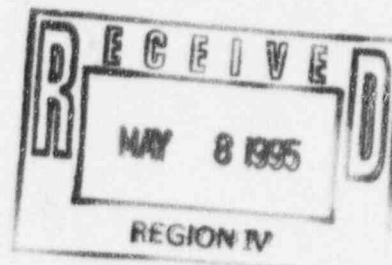
- 1.1. Clarify whether the source has been declared unrecoverable or not.
- ✓ 2. The technical basis for showing that the integrity of the source will not be compromised while in temporary storage/abandonment.
- ✓ 3. Justification for suspending tool recovery operations.
- 1.4. A commitment for when tool recovery operations will resume (i.e., when the well is reworked); specify a date when tool recovery operations will resume. The licensee may request an extension of the date in the future, if necessary.
- ✓ 5. A commitment to receive concurrence from the well owner and the state authority that regulates drilling activities concerning temporary storage/abandonment of the source down hole.

The above are specific technical concerns that need to be addressed each time before we can approve an amendment to authorize temporary storage/abandonment down hole.

Atlas Wireline Services

May 4, 1995

Jacqueline Burks
U.S. NUCLEAR REGULATORY COMMISSION
611 Ryan Plaza Square
Arlington, Texas 76011-8064



Western Atlas
International, Inc.
P.O. Box 1407
Houston, TX 77251-1407
(713) 972-4000

Re: RAM License # 42-02964-01
Mail Control # 465602

Dear Mrs. Burks:

This letter is in response to your telephone call on May 3, 1995 requesting additional information to continue processing the license amendment requested in my letter dated April, 6 1995. Enclosed with this letter is a copy of the original well schematic and a copy of an expanded version of the lower end of the well. These attachments portray the depth of the logging tools in relation to the perforations that are flowing above the top of the tools.

Flowmeter readings performed by WAIL on the logging run prior to the pulsed neutron logging run showed that the well fluid was static at 13,070'. This reading was taken 13' below open perforations located at 13,052' to 13,057'. A flowmeter reading taken at 13,040' above the perforations did show flow movement.

The engineer's measurement of the tool string is as follows.

Description	Length
Sinker Bar	25'
PDK (logging tool)	<u>33'</u>
Total	58'

As shown in the enclosed schematic, the top and bottom of the tools are as follows.

Description	Top Depth	Bottom Depth
Sinker Bars	13,082'	13,107'
PDK (logging tool)	13,107'	13,140'
Neutron Generator	13,136'	
(located inside logging tool)		

Should additional information be required, please advise.

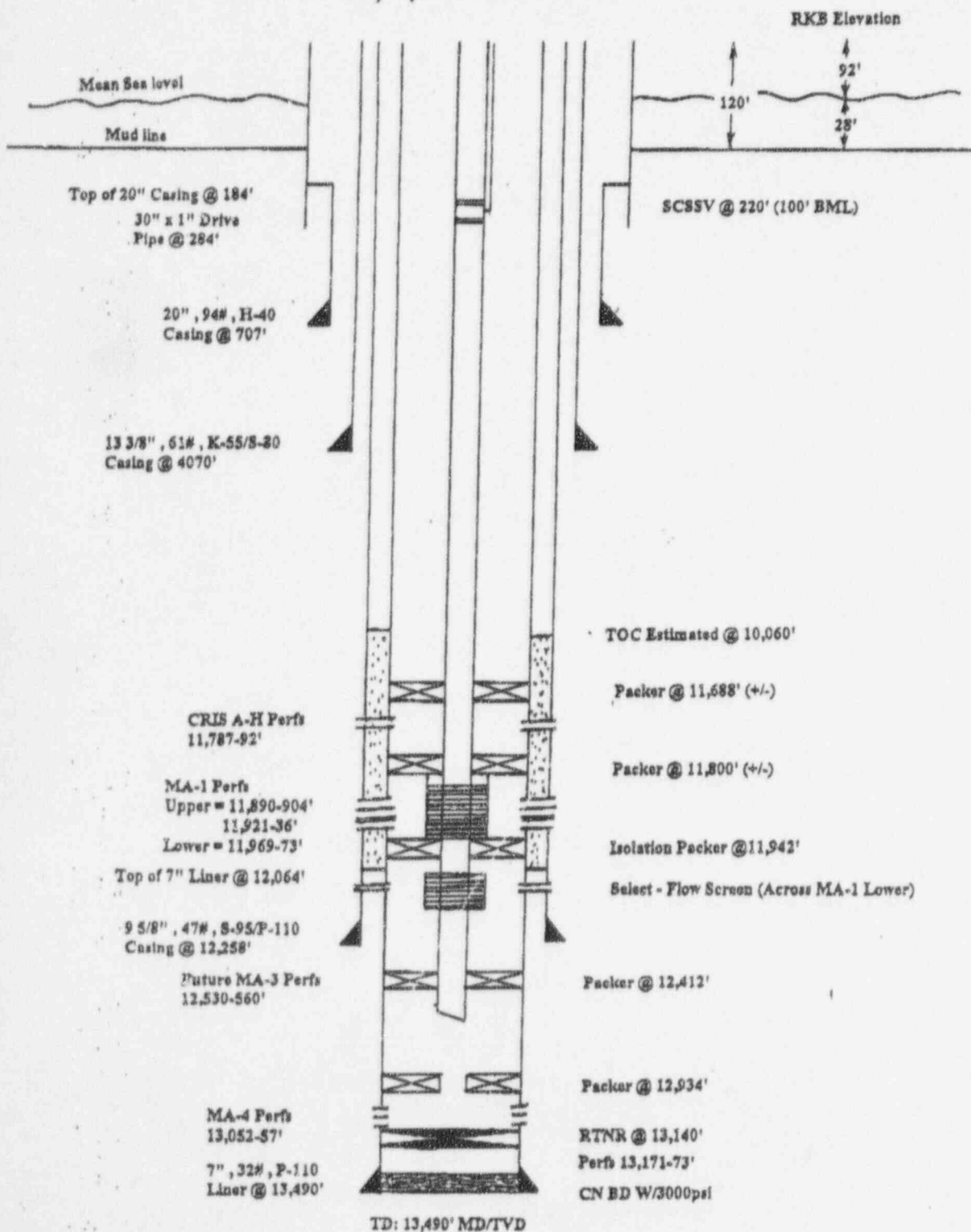
Sincerely,

Billie D. Rose
Billie D. Rose
Radiation Safety Officer

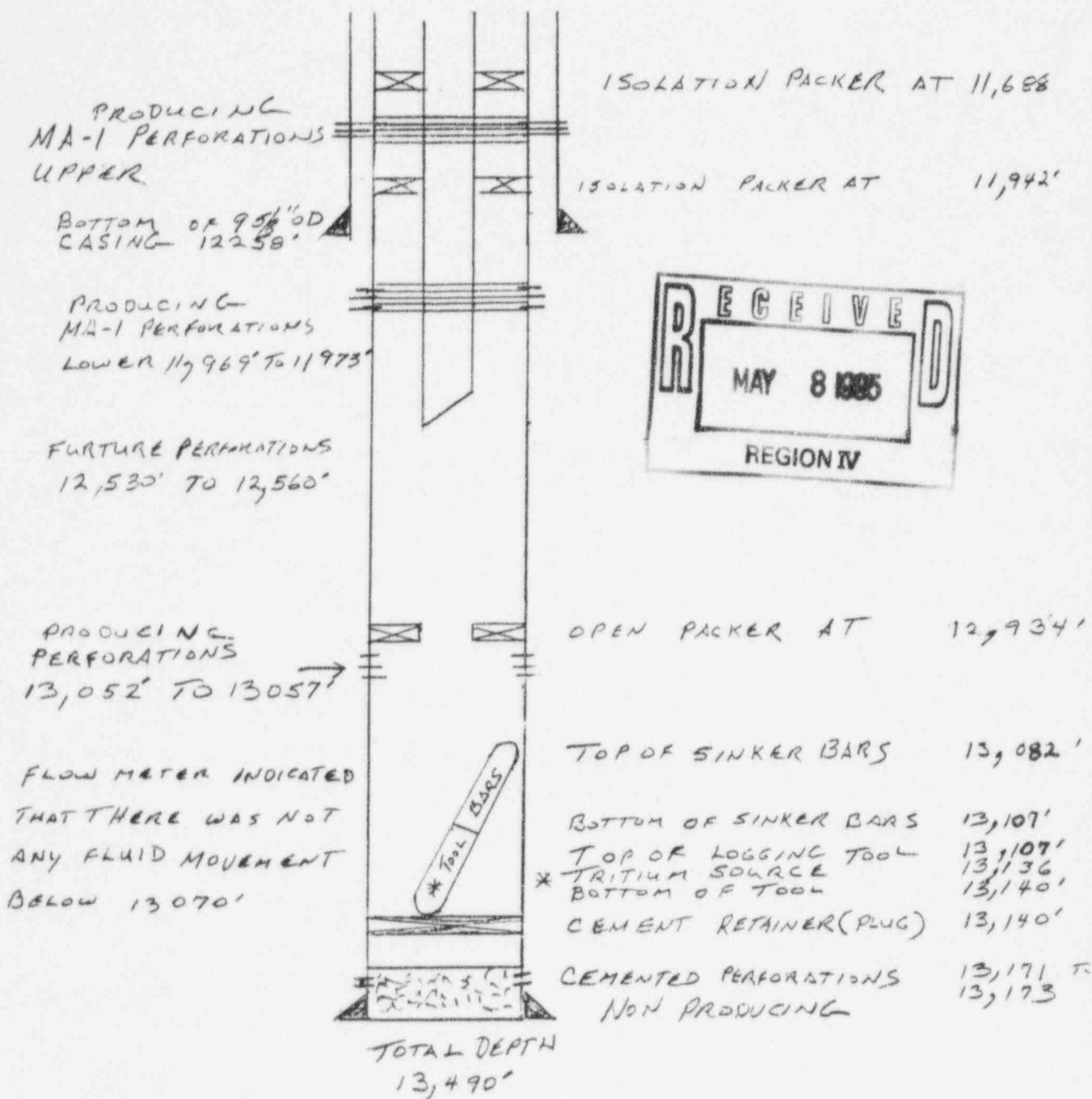
465602

BRITISH-BORNEO
EAST CAMERON BLOCK 2
OCS-G-10605 #2

Top flange connection is 2 9/16" 10,000 psi flange.



MINIMUM ID = 2.108"



EXPANDED VERSION OF WELL SCHEMATIC!

BRITISH TORNEO
EAST CAMERON BLOCK 2
OSC-G-10605#2

MAY 4, 1995
Bill Rose

465602

CONVERSATION RECORD

TIME

3:30pm

DATE

5/3/95

TYPE

☐ VISIT

☐ CONFERENCE

☒ TELEPHONE

☐ INCOMING

☒ OUTGOING

ROUTING

NAME/SYMBOL

INT

Location of Visit/Conference:

NAME OF PERSON(S) CONTACTED OR IN CONTACT WITH YOU

Bellie D. Rose

ORGANIZATION (Office, dept., bureau, etc.)

Western Alaska Intern. Tr.

TELEPHONE NO.

713-972-4000

SUBJECT

Re: additional information needed for amendment

SUMMARY

Asked Mr. Rose to fix a response to the following:

1. Between which of the bridge piers is the source.
2. What is the length of the tool from top to bottom; what is the bottom depth of the tool; what is the top depth of the tool
3. Submit the well diagram showing the tool in place.
4. Is the tool isolated in a static fluid flow or is it in a producing fluid flow area?

ACTION REQUIRED

Unit for response to the above before amending license

NAME OF PERSON DOCUMENTING CONVERSATION

SIGNATURE

DATE

Jacqueline D. Burks

Jacqueline D. Burks

5/3/95

ACTION TAKEN

SIGNATURE

TITLE

DATE

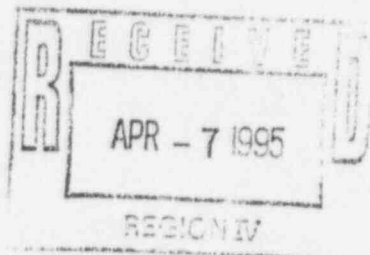


Atlas Wireline Services

April 6, 1995

Jacqueline Burks
U.S. Nuclear Regulatory Commission
611 Ryan Plaza Square
Arlington, Texas 76011-8064

Re: RAM License # 42-02964-01
Mail Control # 465602



Western Atlas
International, Inc.
P.O. Box 1407
Houston, TX 77251-1407
(713) 972-4000

Dear Mrs. Burks

The purpose of this letter is to request an additional amendment to License No. 42-02694. I request that this amendment be processed along with the amendment that was requested in my letter addressed to your attention dated March 10, 1995 in order to consolidate the cost of the two amendments.

This amendment concerns a PDK logging tool with a neutron generator that utilizes a 10 Ci H3 radioactive source was lost in a well operated by British-Borneo Exploration, Inc. as we have discussed on the telephone several times since March 6, 1994. Well information is as follows;

Well Operator:	British-Borneo Exploration Inc.
Well Name:	East Cameron Block No. 2
Lease:	OCS-G 10605 #2
State:	Off-Shore Louisiana
Casing Data:	7" 32# S-95/P-110
Well Depth :	13,490' Measured Vertical Depth
Plug Back Depth:	13140'
Tubing Size:	2 7/8 OD 7.7#
Bottom of Tubing:	12419'
Shut-in Pressure:	8600 PSI
Flowing pressure:	

Please amend the above referenced Radioactive Materials License to add the above well as a storage site for a PDK tool containing a 10 Ci H3 source.

ATTACHMENT 2

465602

Chronological list of events:

DATE	TIME	EVENT
02-27-1995	0600	Load out Jack Up Barge. Depart docks for British-Borneo Well.
	1030	Put barge on spot and Rig up.
	1330	Halliburton completes gauge ring run (2.12511 OD) on slick line.
	1400	Rig up production logging tools, Gamma ray, temperature, pressure, fluid density, flowmeter, and spinner tools.
	1830	Run in hole with production logging tools.
02-28-1995	0030	Production logging tools become stuck at 11747'. Commenced attempting to work the tool free.
	1100	Worked tool string free and came out of well.
	1400	Ran PDK tool (containing Neutron Generator) in well.
	1800	Tool Became stuck at 11747.
	1830	Commenced attempting to work tool free.
03-01-1995	0000	Commenced pumping water down tubing to attempt freeing the PDK tool.
	0600	Stop pumping water, started working wireline up and down to try to free PDK tool. Tool remained stuck. A decision was made to load the well with 17.2 drilling fluid to neutralize the well pressure.
	1900	Drilling fluid arrives at location, commenced pumping in to tubing.
03-02-1995	1115	The tubing could not be loaded using the

existing equipment. a decision was made to call Halliburton to load the well.

03-03 1995	0900	Halliburton arrived and started pumping in to the tubing.
	1345	Tubing loading is completed. Commenced working wine up and down to free tools. The wireline parted on surface. The wireline leading from the well was tied to the broken end of wire at the logging unit.
	2200	A Kinley cutter is run over the wireline to sever the line at the top of the PDK tool.
03-04-1994	0215	The line is severed and removed from the well.
	0230	Rig up string of fishing tools and run in well to fish PDK tools.
	2100	Fishing attempts were unsuccessful. Made a gauge run in preparation to set a bridge plug to isolate the PDK tool from well production.
03-05-1995	0530	Started in well with setting tool and bridge plug. Plug set down at 11,710', after stopping the plug was moving down the well very slowly. A decision was made to attempt push the plug down the well with fluid. The tools appear to become free. The setting tool is pulled from the well. It appears that the plug pre-set in the tubing at 11,747'.
03-06-1995		Operations are terminated until a later date.

I was informed by Mr. Ross Frazer who is an Operations manager with British Borneo, that they had rigged up a snubbing unit on the well on March 24 1995 to run pipe in the tubing under pressure with a mill. They are going to attempt to mill up the bridge plug that is blocking the tubing at 11,747'.

If the milling operation is successful Mr. Ross has proposed to do a temporary abandonment of the PDK tool as follows.

- Set a plug ("R" Type) in the Baker production packer located at 12,394' to isolate the PDK tool from well production.
- At any time the tubing is pulled from the well or the well is abandoned the abandonment procedure will be completed to comply with regulations.
- A Plaque will be mounted well head that will comply to regulations. The Plaque will be manufactured by Western Atlas and Delivered to British Borneo when the plugging process is completed.

I will keep you informed of the plugging process of this well and will notify you when it is completed.

If additional information is required please advise.

Sincerely,

Billie D. Rose
Billie D. Rose
Radiation Safety Officer

Licensed material may be used at temporary job sites of the licensee anywhere in the United States where the Nuclear Regulatory Commission maintains jurisdiction for regulating the use of licensed material.

Atlas Wireline Services
East Elkins Road
Buckhannon, WV 26201

Atlas Wireline Services
Route 1 Box 323
Kenai, Alaska 99611

Atlas Wireline Services
1088 N. Robertson Road
P.O. Box 1570
Mills, Wyoming 82644

Atlas Wireline Services
5625 Venture Way
Mt. Pleasant Michigan
48858

Atlas Wireline Services
Pouch 340013
Prudhoe, Alaska
99734-0013

Atlas Wireline Services
247 Industrial Drive
Rock Springs, Wyoming
82901

Atlas Wireline Services
4620 Oklahoma Avenue
Woodward, Oklahoma 73085

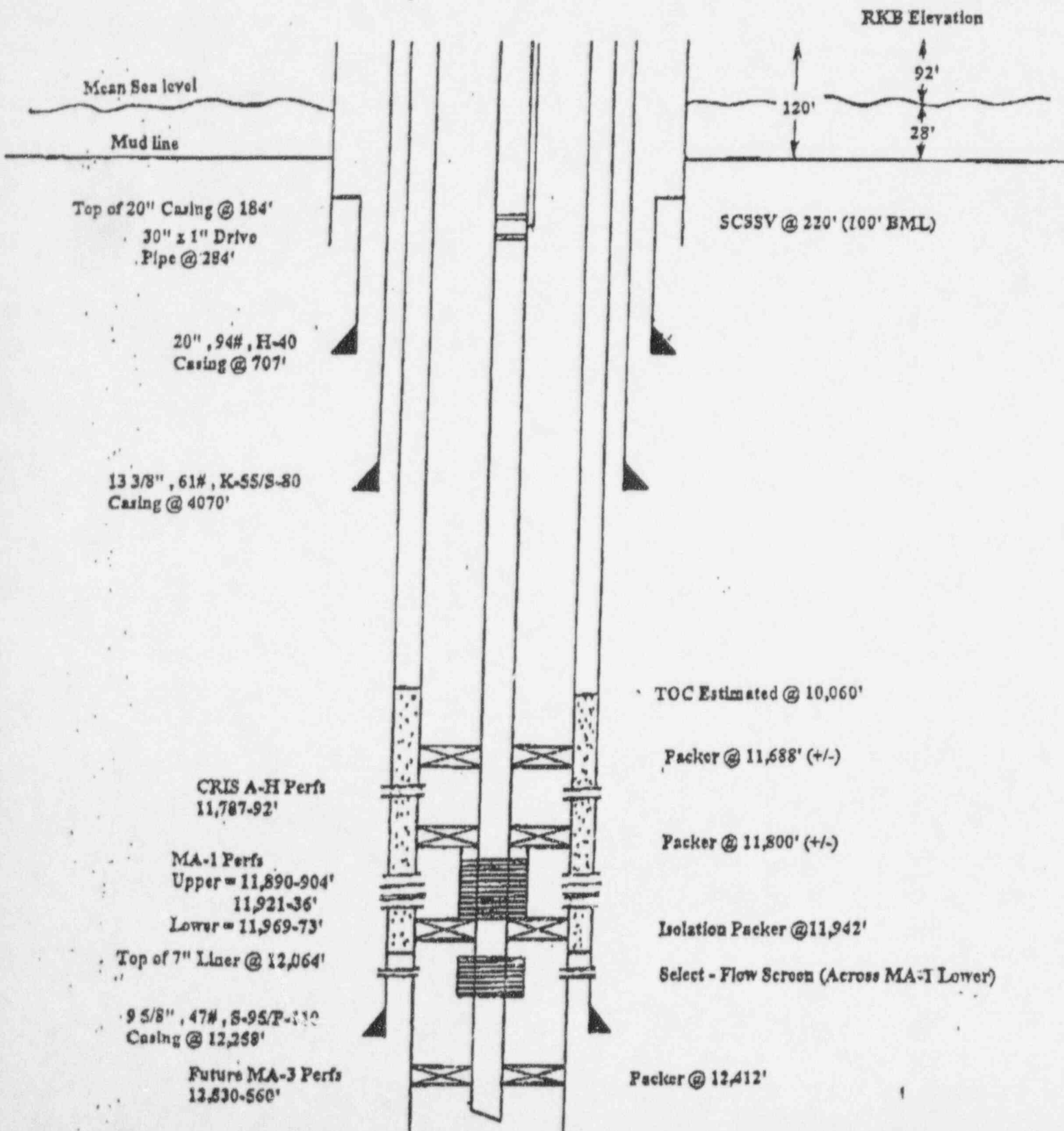
Atlas Wireline Services
801 North Morgan Road
P.O. Box 850906
Yukon, Oklahoma 73085

Enron Oil and Gas Company
Well Name: Block 620 Well # Side Track No. 1
OCS-G 3087 Offshore Texas

British Borneo Exploration Inc.
Well Name: East Cameron Block #2
OCS-G 10605 #2

BRITISH-BORNEO
EAST CAMERON BLOCK 2
OCS-G-10605 #2

Top tree connection is 2 9/16" 10,000 psi flange

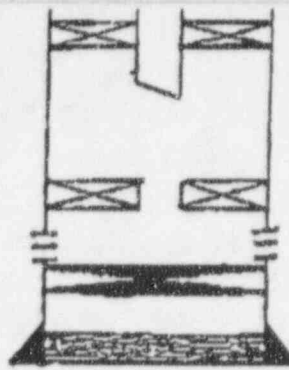


Future MA-3 Perfs
12,530-560'

Packer @ 12,412'

MA-4 Perfs
13,052-57'

7", 32#, P-110
Liner @ 13,490'



Packer @ 12,934'

RTNR @ 13,140'

Perfs 13,171-73'

CN BD W/3000psi

TD: 13,490' MD/TVD

Minimum ID = 2.188

07:40:08 HSTLISE W891:11 56. 90 RBW



465602



Atlas Wireline Services

March 30, 1995

Western Atlas
International, Inc.
P.O. Box 1407
Houston, TX 77251-1407
(713) 972-4000

Attention: Rita Messier
License Fee and Debt Collection Branch
Division of Accounting and Finance
Office of the Controller
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

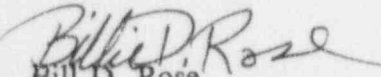
Re: License No. 42-02964-01

Dear Rita:

Enclosed is our check number 241614 dated 03/29/95 in the amount of \$650.00 which represents payment for amendment to license.

If you need anything further, please advise.

Sincerely,


Bill D. Rose
Radiation Safety Officer

Enclosure: As stated

1075 APR -5 PM 2:57

LICENSE FEE REQUIREMENTS

LICENSE FEE AND DEBT COLLECTION BRANCH
DIVISION OF ACCOUNTING AND FINANCE
OFFICE OF THE CONTROLLER
U.S. NUCLEAR REGULATORY COMMISSION
WASHINGTON, DC 20555-0001

Attn: Rita Messier

Western Atlas International, Inc.
Attn: Billie S. Rose, R.S.O.
P.O. Box 1407
Houston, TX 77251-1407

TYPE OF ACTION

☐ NEW LICENSE☐ RENEWAL OF LICENSE☒ AMENDMENT TO LICENSE

REQUESTED DATE

3/10/95

LICENSE NUMBER

42-02964-01

CONTROL NUMBER

465602

I. APPLICATION FEE DUE

Your request for a licensing action is subject to the fee(s) in the category(ies) noted below in accordance with Section 170.31 of the enclosed Federal Register notice. Payment of the fee is required prior to the issuance of the license, renewal, or amendment.

FEE CATEGORY	APPLICATION	RENEWAL	AMENDMENT
5A	\$	\$	\$ 650
	\$	\$	\$
	\$	\$	\$
	\$	\$	\$
	\$	\$	\$
	\$	\$	\$
	\$	\$	\$
	\$	\$	\$
	\$	\$	\$
	\$	\$	\$

FEE(s) DUE	\$
PAYMENT RECEIVED	\$
AMOUNT DUE	\$ 650

☒ Your request was received without the prescribed application fee.☐ We received your Check No. _____ in the amount of \$ _____. Payment of the additional fee noted above is required.☐ Your request will increase the scope of your license program. Therefore, your request is subject to the application fee(s) noted above. Refer to Section 170.31 and Footnote 1(d)(2).☐ Your license expired prior to the receipt of your application for renewal. Therefore, your request is subject to the application fee(s) noted above. Refer to Section 170.31 and Footnote 1(a).

MAKE PAYMENT OF THE FEE(S) TO THE U.S. NUCLEAR REGULATORY COMMISSION AND MAIL THE PAYMENT TO THE ADDRESS LISTED AT THE TOP OF THIS FORM. IF WE DO NOT RECEIVE A REPLY FROM YOU WITHIN 30 CALENDAR DAYS FROM THE DATE LISTED BELOW, WE SHALL ASSUME THAT YOU DO NOT WISH TO PURSUE YOUR APPLICATION AND WILL VOID THIS ACTION.

SIGNATURE -- LICENSE FEE ANALYST

Rita Messier

LFDCB

Rem
3/23/95

LFDCB

1 1

II. FEE NOT REQUIRED

☐ Enclosed is Check No. _____ which accompanied your request. The fee is not required because:☐ We received your Check No. _____ in payment of the fee.☐ The Licensing staff has informed us that your request is to be considered as a continuation of your request dated _____, Control No. _____.☐ Your request was combined, prior to review, with your _____ request, Control No. _____.

III. CHECK RETURNED

☐ Enclosed is Check No. _____ which was returned to us by the bank for:☐ INSUFFICIENT FUNDS☐ ACCOUNT CLOSED☐ OTHER

MAIL THE REPLACEMENT CHECK TO THE ADDRESS LISTED AT THE TOP OF THIS FORM AND REFERENCE THE ABOVE CONTROL NUMBER.

IV. LICENSE ISSUED WITHOUT THE REQUIRED FEE

☐ License No. _____, Amendment No. _____, issued on _____ was issued without the required fee being collected. The fee required is noted in Section I of this form.☐ The scope of your licensed program was increased. Therefore, your request is subject to the application fee(s) noted in Section I of this form. Refer to Section 170.31 and Footnote 1(d)(2).☐ Because of the urgency of your request, the license was issued without remittance of the prescribed fee noted in Section I of this form.DISTRIBUTION
OC/DAF/RF
LFDCB R/F (2)Pending Fee File
Region IV

DATE

3/23/95

BETWEEN:

LICENSE FEE MANAGEMENT BRANCH, #401
AND
REGIONAL LICENSING SECTIONS

(FOR LFMS USE)
INFORMATION FROM L75

PROGRAM CODE: 03110
STATUS CODE: 0
FEE CATEGORY: 5A
EXP. DATE: 19980331
FEE COMMENTS: NOT 2C WELL LOGGING 0
DECOM FIN ASSUR REQ: Y

1995 APR 23 AM 10:44

LICENSE FEE TRANSMITTAL

A. REGION IV

1. APPLICATION ATTACHED
APPLICANT/LICENSEE: WESTERN ATLAS INTERNATIONAL, INC.
RECEIVED DATE: 950322
DOCKET NO.: 3006402
CONTROL NO.: 465602
LICENSE NO.: 42-02964-01
ACTION TYPE: AMENDMENT

2. FEE ATTACHED
AMOUNT: 4
CHECK NO.: 4

3. COMMENTS

SIGNED
DATE

Billie Greenmaki
3/22/95

B. LICENSE FEE MANAGEMENT BRANCH (CHECK WHEN MILESTONE 03 IS ENTERED V)

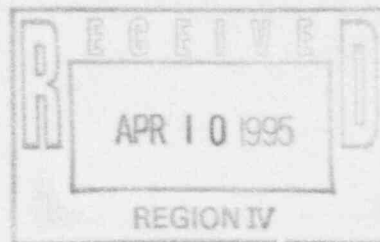
1. FEE CATEGORY AND AMOUNT: 5A \$650

2. CORRECT FEE PAID. APPLICATION MAY BE PROCESSED FOR:
AMENDMENT ✓
RENEWAL
LICENSE

3. OTHER

SIGNED
DATE

Rita Messier
4/6/95



Log	Mar 3 1995
Remitter	
Check No.	241614
Amount	\$650
Fee Category	3A
Type of Fee	am
Date Check Rec'd	4/6/95
Date Completed	
By:	Ken

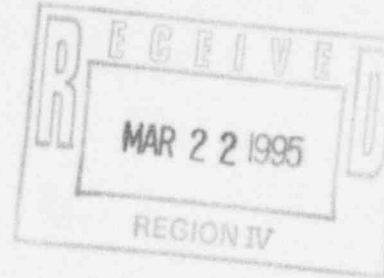


Atlas Wireline Services

March 10, 1995

Jacqueline D. Burks
U.S. NUCLEAR REGULATORY COMMISSION
611 Ryan Plaza Square
Arlington, Texas 76011-8064

Re: RAM License 42-02964-01



Western Atlas
International, Inc.
P.O. Box 1407
Houston, TX 77251-1407
(713) 972-4000

Dear Jackie:

The purpose of this letter is to request an amendment to Western Atlas International Inc. Radioactive License 42-02964-01 as we discussed on the telephone March 7, 1994.

"Open hole logging" procedures are completely different from "through tubing cased hole logging" procedures. Well conditions and surface equipment used to do some types of well re-completions create conditions that hamper Western Atlas and other electric wireline companies' ability to comply with 39.15(5)(i)(ii). Regulations do not take in consideration that logging tools containing radioactive sources may be lost and unrecoverable in a producing well.

Some of the circumstances that are different from open-hole logging are as follows.

- ▶ Many re-completions are performed without a work-over or a drilling rig on location. This condition prohibits the pulling of any of the production string(s) out of the well. Electric wireline companies rig up on the well over a portable mast.
- ▶ Due to the wells being mechanically in a completed state with production strings in place, and having inside diameter restrictions, it is not possible to set deflecting devices to prevent drilling at that time. However, since the well has production equipment in place, drilling into the source is not a danger under these conditions. See Example 1. of a simple single production string completion.
- ▶ Special types of neutron logs are performed on work-over wells to determine where water may be migrating from and into the oil/gas production. These tools contain neutron generators. Target sources in the generators contain up to 10 curies of Tritium H3.
- ▶ Due to pipe restrictions and other mechanical devices used in a well completion string, a tool containing H3 sometimes hangs and cannot be retrieved from the well. This is where the ability to comply to the above mentioned regulations becomes hampered.
- ▶ Contracting a drilling rig or a work-over off-shore to cure the problems listed above could damage the existing production zones and would also be extremely expensive in terms of rig time and additional production costs to the operator.

465602

I request that Western Atlas International Inc. Radioactive License Number 42-02964-01 be amended to allow neutron logging tools with neutron generators that contain up to 10 curies of Tritium H3 to be left in a well for an extended period of time subject to the following conditions.

1. An abandonment procedure to satisfy the requirements of CFR 10 39.15 and 39.77 will be completed.
 - a. On any occasion the production string (tubing) is removed from the well for work-over or any reason.
 - b. At the time the well is no longer productive and is abandoned.
2. Records of Tritium H3 sources temporarily left in wells will be maintained on file in the Houston Office and will be transferred to the well abandonment file after the final abandonment procedure is completed.
3. Samples of the well production will be collected every six months or as close to six month intervals as logistics permit for analysis.
 - a. Samples will be analyzed for tritium by an outside vendor.
 - b. Should a fluid sample analysis show that the Tritium is escaping from the tool, a plan must be developed to cement the tool and source in place.
 - c. Should tritium concentrations be found in the production fluids that exceed 1E-3 ($\mu\text{Ci/ml}$), the operator will be notified to shut the well in and develop a plan to place cement on the source and tool to stop any further tritium leakage.
4. Producing a well while a Tritium source is located in the well will only be elected only after all reasonable fishing efforts have been exhausted and it is not feasible to do a standard abandonment due to well conditions.
5. A telephone report will be made to the NRC at the time a source is left in a well. A written report will follow within thirty days of the first report.
6. A well head plaque will be furnished for the well to comply with CFR 10 39.77.

If additional information or conditions are required to complete this request for an amendment, please advise.

Sincerely

Billie D. Rose
Billie D. Rose
Radiation Safety Officer



ATLAS WIRELINE SERVICES

EQUIPMENT and SERVICES LOCATION:

Lafayette, LA 1-318-234-6283

District Manager: Todd Broome

Field Supv: M. Dore/B. Myers/M. Vanno

SALES LOCATION:

17015 ALDINE WESTFIELD

HOUSTON TX 77223-3118

600-456-8254



British Borneo

Tommy Crochet

E. Cameron #2

Louisiana

Baroid Cameron

Hurcules # 20

Ron Weitz

October 7, 1994

Page 1 of 5

TAG

WELL NO.

CASE

OCS-G-10605

713-584-0457

713-393-2211

EC7-2X

H940184

CORPORATION

See Below

See Below

40/60

0

0

7022 PSI

CASING

LINER

TUBING

WKSTRG

COMP. FLUID

11.8% CaCl

0

243°

7.0"

N/A

2.875"

3.5"

32 #

7.7#

13.30#

P-110

13 Cr

S-135

Kaw Fox

IF

NO.	DEPTH	LENGTH	O. D.	I. D.	DESCRIPTION
PRODUCTION TUBING					
1	0	32.80			Elevation KB to THF
1	32.80	.75	7.000	2.323	Hanger, Ingram Cactus (T-40, 7-1/16" x 2-3/8" w/ 2-7/8" Kawasaki-Fox Top & Bottom, 5/2 1/2" BPV)
2	33.55	5.60	2.875	2.323	2-7/8" Pup Joint w/2-7/8" 7.7# Kawasaki Fox Pin x Pin 13 CR
3	39.15	31.60	3.297	2.323	1 Joint Tubing 2-7/8" Kawasaki Fox 13 CR
4	70.75	10.15	3.297	2.323	Pup Joint 2-7/8" 7.7# Kawasaki Fox 13 CR
5	80.90	6.10	3.297	2.323	Pup Joint 2-7/8" 7.7# Kawasaki Fox 13 CR
6	87.00	187.75	3.297	2.323	6 Joints Tubing 2-7/8" 7.7# Kawasaki Fox 13 CR
7	274.75	10.01	3.297	2.323	2-7/8" x 10 ft. Flow Pup 13 CR w/2-7/8" 7.7# Kawasaki Fox Box x Box
8	284.76	9.22	4.937	2.188	2-7/8" Camco SCSSV TRDP-4AH S/N HJS-1612 2-7/8" 7.7# Fox Pin x Pin
9	289.98	9.82	3.297	2.323	2-7/8" x 10ft. Flow Pup 13CR w/2-7/8" 7.7# Kawasaki Fox Box x Pin
10	299.80	3690.01	3.297	2.323	117 Joints Tubing 2-7/8" 7.7# Kawasaki Fox 13 CR
11	3989.81	10.01	3.297	2.323	2-7/8" x 10ft. Flow Pup 13 CR w/2-7/8" 7.7# Kawasaki Box x Box
12	3999.82	.82	3.48	2.188	2-7/8" "R" Nipple Tube Alloy HWS w/2-7/8" Kawasaki Fox Pin x Pin 13 CR S/N 36446 KY-004-01
13	4000.64	9.82	3.297	2.323	2-7/8" x 10ft. Flow Pup 13 CR w/2-7/8" 7.7# Kawasaki Fox Box x Pin
14	4010.46	7617.17	3.297	2.323	241 Joints Tubing 2-7/8" 7.7# Kawasaki Fox
15	11627.63	10.05	3.297	2.323	2-7/8" x 10' Flow Pup 13CR w/2-7/8" 7.7# Kawasaki Fox Box x Box
16	11637.68	.82	3.480	2.188	2-7/8" "R" Nipple Tube Alloy HWS w/2-7/8" 7.7# Kawasaki Fox Pin x Pin 13 CR S/N 36446-KY-099-02
17	11638.50	9.83	3.297	2.323	2-7/8" x 10 ft. Flow Pup 13 CR w/2-7/8" 7.7# Kawasaki Fox Box x Pin
18	11648.33	31.68	3.297	2.323	1 Joint Tubing 2-7/8" 7.7# Kawasaki Fox
19	11680.01	.76		2.323	BOT L-22S Locator 2-7/8" 7.7# Kaw Fox SS
	11680.77	3.05	3.240	2.323	BOT 80-32 K-Ryte Seals SS
	11683.82	13.54	3.000	2.323	80-32 Spacer SS
	11697.36	4.65	3.240	2.323	80-32 K-Ryte Seals w/Muleshoe
20	11680.77	4.86	5.820	3.250	BOT 70A4-32 S2P Packer BMS-S210
21	11685.63	19.46	4.250	3.250	BOT 80-32 Seal Bore Extension MNS S210

Perforations: CHRIS A "H" 11,787 - 11,792
 MA-3 UPPER = 11,890 - 11,904 & 11,921 - 11,936
 LOWER = 11,969 - 11,973
 MA-3 = 12,530 - 12,560
 MA-4 = 13,052 - 13,057

EQUIPMENT and SERVICES LOCATION:
Lafayette, LA 1-518-234-6263
District Manager: Todd Broome
Field Supv: M. Dore/B. Myers/M. Vannoy

SALES LOCATION:
17016 ALDINE WESTFIELD
HOUSTON TX 77723-3118
970-468-8264



PERFORATION	7528	PERFORATION	See Below
BRITISH BORNEO	7528	PERFORATION	See Below
Tommy Crochet	7528	PERFORATION	See Below
P. Cameron #2	#2	40/60	11.8# CaCl ₂
Louisiana	OCS-G-10605	0	0
Harold, Cameron	7022 PSI	243°	
Hercules # 20	713-584-0457	CASING	7.0" 32# P-110
Don Weitz	713-393-2211	LINER	N/A
October 7, 1994	EC2-2Y	TUBING	2.875" 7.7# 13 CR Kaw Box
Page 2 of 5	H940184	WKSTRO	3.5" 13.30# S-135 IF

NO	DEPTH	LENGTH	D. D.	I. D.	DESCRIPTION
22.	11705.09	.66	5.437	2.323	BOT Crossover Sub w/4.094 8n Box x 2-7/8" 7.7# Kawasaki Fox Pin BMS-S210
23.	11705.75	31.57	3.297	2.323	1 Joint Tubing 2-7/8" 7.7# 13,CR Kawasaki Fox
24.	11737.32	10.01	3.297	2.323	2-7/8" x 10ft. Flow Pup 13CR w/2.78 7.7# Kawasaki Fox Box x Box
25.	11747.33	.82	3.480	2.188	2-7/8" "R" Nipple 13 CR Tube Alloy HWS w/2-7/8" 7.7# Kawasaki Fox Pin x Pin S/N 36446 HY 022-2
26.	11748.15	9.82	3.297	2.323	2-7/8" x 10 ft. Flow Pup 13 CR w/2-7/8" 7.7# Kawasaki Box x Pin
27.	11757.97	31.58	3.297	2.323	1 Joint Tubing 2-7/8" 7.7# 13 CR Kawasaki Fox
28.	11789.55	10.00	3.297	2.323	2-7/8" x 10 ft. Flow Pup 13 CR w/2-7/8" 7.7# Kawasaki Fox Box x Box
29.	11799.55	.82	3.480	2.188	2-7/8" "R" Nipple Tube-Alloy HWS w/2-7/8" 7.7# Kawasaki Fox Pin x Pin S/N 36446-HY-002-01
30.	11800.37	9.83	3.297	2.323	2-7/8" x 10 ft. Flow Pup 13 CR w/2-7/8" 7.7# Kawasaki Fox Box x Pin
31.	11810.20	.82	4.187	2.323	Baker 80-40 Locator 2-7/8" 7.7# K-Fox Box 13 CR
	11811.02	14.18	3.980	2.323	Baker 80-40 Molded Seals w/2-7/8" 7.7# K-Fox Pin 13 CR
CONCENTRIC STRING					
A.	11825.20	94.01	3.297	2.323	3 Joints Tubing 2-7/8" 7.7# 13 CR Kawasaki Fox
B.	11919.21	10.00	3.297	2.323	2-7/8" x 10 ft. Flow Pup 13 CR w/2-7/8" 7.7# Kawasaki Fox Box x Box
C.	11929.21	.82	3.480	2.188	2-7/8" "R" Nipple Tube Alloy HWS w/2-7/8" 7.7# Kawasaki Fox Pin x Pin S/N 36446-KY-009-03
D.	11930.03	9.82	3.297	2.323	2-7/8" x 10 ft. Flow Pup 13 CR w/2-7/8" 7.7# Kawasaki Fox Box x Pin
E.	11939.85	1.06	3.437	2.323	Baker 80-32 S-22 Locator w-2-7/8" 7.7# Kaw Fox Box 13 CR
	11940.91	7.29	3.240	2.406	Baker 80-32 Molded Seals 13 CR w/1/2 Muleshoe
	11948.20				End of Assembly

Perforations: CHRIS A "H" 11,787 - 11,792
MA-1 UPPER = 11,890 - 11,904 & 11,921 - 11,936
LOWER = 11,969 - 11,973
MA-3 = 12,830 - 12,860
MA-4 = 13,052 - 13,087



EQUIPMENT and SERVICES LOCATION:
Lafayette, LA 1-318-234-5283
District Manager: Todd Broome
Field Supv: M. Dore/B. Myers/M. Vannoy

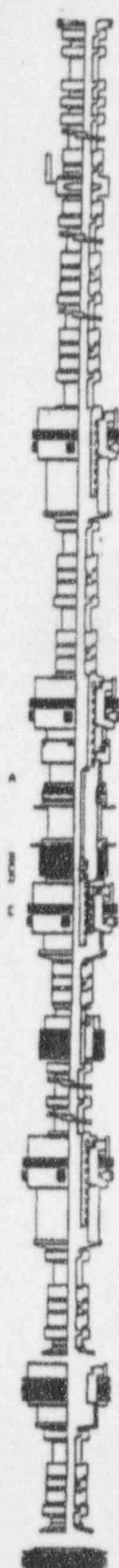
SALES LOCATION:
17015 ALDINE WESTFIELD
HOUSTON TX 77058-8118
800-466-8254

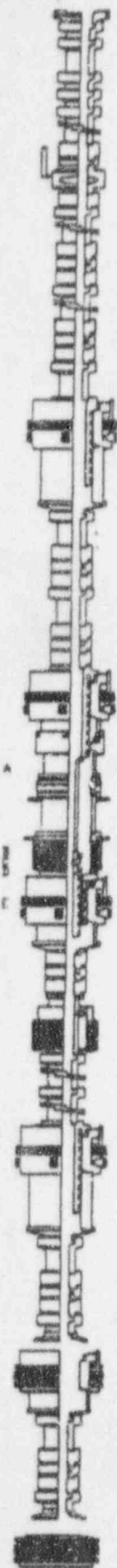


OPERATOR	PROF	POPULATION
British Borneo	PRO	See Below
Tommy Crochet	PRO	See Below
P. Cameron #2	#2	40/60
Louisiana	OCS-G-10605	11.8# CaCl ₂
Reynold, Cameron	PRO	7022 PSI
Hercules #20	713-584-0457	CASING 7.0" 32 # P-110
Ron Weitz	713-393-2211	LINER N/A
October 7, 1994	EC2-2X	TUBING 2.875" 7.7# 13 CR New Fox
Page 3 of 5	H9401R4	WKSTRG 3.5" 13.30# S-135 IF

NO.	DEPTH	LENGTH	O. D.	I. D.	DESCRIPTION
MA-1 UPPER SAND G. P. ASSY. 3RD ALT ZONE					
32.	11811.02	4.18	5.820	4.000	Baker 70A4-40 SC-2 Packer
33.	11815.20	4.83	5.500	4.687	80-40 Upper GP Extension 5-1/2" 8rd Pin x Pin 13 CR
34.	11820.03	1.66	5.812	4.240	80-40 Sliding Sleeve 13 CR
35.	11821.69	1.49	5.560	4.000	80-40 Seal Bore 13 CR
36.	11823.18	15.62	5.000	4.400	80-40 Lower GP Extension 5" NU 8rd Pin x Pin 13 CR
37.	11838.80	.69	5.560	3.548	Crossover Sub 5" NU 8rd Box x 4" NU 8rd Pin 13 CR
38.	11839.49	1.46	4.560	3.548	4" GPR-6 Shear Out Safety Joint w/4" NU 8rd Box x Pin 53K Shear 13 CR
39.	11840.95	29.10	4.500	3.548	4" 9.5# Blank Pipe w/4" NU 8rd Box x Pin 13 CR w/5-7/8" Mechanical Weld-On Blade Type Guides Middle and Btm.
40.	11870.05	11.04	4.477	3.548	4" x .008 Ga. Bakerweld All Welded Screen
	11881.09	30.09	4.477	3.548	316L SS Base Wrap made on 4" SCH-40
	11911.18	30.09	4.477	3.548	316L SS Base Pipe w/4" NU 8rd Box x Pin Centralized Every 15 ft. w/5-3/4" Weld on Blade Type Guides Btm & Middle ea. Jt. Total Length=71.22 ft.
41.	11941.27	.92	5.000	3.250	82-40 Baker "S-22B" Snaplatch 13 CR w/ 4" NU 8rd Box w/ 3.25" Honed Bore
	11942.19	5.48	3.980	3.250	82-40 Molded Seals 13 CR w/ 1/2 Muleshoe
MA-1 LOWER SAND ISOLATION ASSY					
42.	11942.19	2.92	5.678	4.000	83-40 Baker Model "FB-1" Production Packer w/13 CR Body
43.	11945.11	5.61	5.000	4.408	5" x 6 ft. Millout Extension 5" 8rd 13 CR
44.	11950.72	.78	5.562	2.323	Crossover Sub 5" NU 8rd Box x 2-7/8" 7.7# Fox Pin 13 CR
45.	11951.50	10.01	3.312	2.323	2-7/8" Flow Pup w/2-7/8" Kawasaki Fox Box x Box
46.	11961.51	.82	3.480	2.188	2-7/8" "R" LN (Tube Alloy - HWS) w/2-7/8" 7.7# Kawasaki Fox Pin x Pin S/N 36446-KY-004-02
47.	11962.33	9.81	3.312	2.323	2-7/8" Flow Pup w-2-7/8" Kawasaki Fox Box x Pin 13 CR
48.	11972.14	9.50	4.000	2.323	Blank Screen 2-7/8" x 4" x .008 Ga. x 30 ft.

Perforations: CHRIS A "H" 11,727 - 11,792
MA-1 UPPER = 11,890 - 11,904, & 11,921 - 11,936
LOWER = 11,969 - 11,973
MA-3 = 12,530 - 13,560
MA-4 = 13,052 - 13,067





EQUIPMENT and SERVICE LOCATION:
Lafayette, LA 1-318-234-6263
District Manager: Todd Broome
Field Supv: M. Dore/B. Myers/M. Vannoy

SALES LOCATION:
17015 ALDINE WESTFIELD
HOUSTON TX 77723-8118
800-466-8254



OPERATION	DATE	FORMATION
British Borneo		See Below
Tommy Cratchet		See Below
P. Cameron #2	#2	40/60
Louisiana	OCS-G-10605	11.8# CaCl ₂
Baroid Cameron		7022 PSI
Hircules #20	713-584-0457	CASING 7.0" 32# P-110
Ron Weitz	713-393-2211	LINER N/A
October 7, 1994	EC2-2X	TUBING 2.875" 7.7# 13 CR Kaw. Fox
Page 4 of 5	H940184	WKSTRG 3.5" 13.30# S-135 IF

NO.	DEPTH	LENGTH	O. D.	I. D.	DESCRIPTION
49.	11981.64	20.13	4.477	2.323	Select-a-flow Screen w/40-60 Baker Bond w/20 ft. 316LSS Wirewrap and 10 ft. 4" Blank Above on 2-7/8" 7.7# 316LSS Base Pipe w/Kawasaki Fox Box x Pin w/5-3/4" OD Weld On Guide Above and Below Screen Total Length 29.63 ft.
50.	12001.77	28.95	3.312	2.323	4 Pup Joints 2-7/8" 7.7# 13 CR Kawasaki Fox (10.23', 8.24', 6.25' & 4.23 ft.)
51.	12030.72	380.23	3.312	2.323	12 Joints Tubing 2-7/8" 7.7# 13 CR Kawasaki Fox
52.	12410.95	1.05	3.437	2.406	Baker 80-32 "S-22" Locator w/ 2-7/8", 7.7# Kawasaki Fox Box 13 CR
	12412.00	7.30	3.240	2.406	Baker 80-32 Molded Seals w/ 1/2 Muleshoe 13 CR
	12419.30				End of Mule Shoe
MA-3 SAND PACKER ASSY. 1ST ALT ZONE					
53.	12412.00	3.20	5.468	3.250	Baker 82-32 Model "DB" Packer 13 CR w/4 1/2" 8rd Box Down
54.	12415.20	5.73	4.500	4.000	4-1/2" x 6 ft. Millout Extension 13 CR
55.	12420.93	.63	4.968	2.323	Crossover Sub 4-1/2" NU 8rd Box x 2-7/8" 7.7# Kawasaki Fox Pin 13 CR
56.	12421.56	31.00	3.312	2.323	1 Joint Tubing 2-7/8" 7.7# 13 CR Kawasaki Fox
57.	12452.56	10.02	3.312	2.323	2-7/8" Flow Pup w/2-7/8" 7.7# 13 CR Kawasaki Fox Box x Box
58.	12462.58	.83	3.480	2.188	2-7/8" "R" LN (Tube Alloy HWS) w/2-7/8" 7.7# Fox Pin x Pin S/N 36446-KY-004-03 13 CR
59.	12463.41	9.81	3.312	2.323	2-7/8" Flow Pup w/2-7/8" 7.7# Kawasaki Box x Pin 13 CR
60.	12473.22	6.16	3.312	2.323	2-7/8" 7.7# 13 CR Kawasaki Fox Box x Pin Pup Joint
61.	12479.38 12479.88	.50	5.500	2.323	2-7/8" x 5 1/4" Wireline Re-Entry Guide 13 CR Bottom of Wireline Entry Guide

Perforations: CHRIS A "H" 11,787 - 11,792
MA-1 UPPER = 11,890 - 11,904 & 11,921 - 11,936
LOWER = 11,949 - 11,973
MA-3 = 12,530 - 12,560
MA-4 = 13,052 - 13,057

EQUIPMENT and SERVICES LOCATION:

Lafayette, LA 1-318-234-5263

District Manager: Todd Broome

Field Supv: M. Dora/E. Myers/M. Vanney

SALES LOCATION:

17015 ALDINE WESTFIELD

HOUSTON TX 77723-8118

800-465-6254



OPERATOR	YANG	POC/STATION	See Below
British Borneo		POC/STATION	See Below
Tommy Crochet		POC/STATION	See Below
E. Cameron #2	# 2	POC/STATION	See Below
Louisiana	OCS-G-1060	POC/STATION	See Below
Beroid Cameron		POC/STATION	See Below
Humphreys # 20	713-584-0457	POC/STATION	See Below
Ron Weitz	713-393-2211	POC/STATION	See Below
October 7, 1994	EC2-2X	POC/STATION	See Below
Page 5 of 5	H940184	POC/STATION	See Below

NO.	DEPTH	LENGTH	O. D.	I. D.	DESCRIPTION
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MA-4 SAND PACKER ASSY.
(PRIMARY ZONE)

62.	12934.00	3.20	5.468	3.250	Baker 82-32 Model "DB" Packer 13 CR
63.	12937.20	5.60	4.500	4.000	4-1/2" X 6 ft. Millout Extension BMS-S210
64.	12942.80	.66	5.000	2.323	Crossover Sub 4-1/2" 8rd Box x 2-7/8" Fox Pin BMS S210
65.	12943.46	31.58	3.312	2.323	1 Joint Tubing 2-7/8" 13 CR Kawasaki Fox
66.	12975.04	10.03	3.312	2.323	2-7/8" Flow Pup w/2-7/8" 7.7# 13 CR Kawasaki Fox Box x Box
67.	12985.07	.83	3.480	2.188	2-7/8" "R" LN (Tube Alloy HWS) w/2-7/8" 7.7# Fox Pin x Pin S/N 36446-KY-009-01 13 CR
68.	12985.90	9.81	3.312	2.323	2-7/8" Flow Pup w/2-7/8" 7.7# Kawasaki Fox Box x Pin 13 CR
69.	12995.71	6.08	3.312	2.323	Pup Joint 2-7/8" 7.7# 13 CR Kawasaki Fox Box x Pin
70.	13001.79	.56	5.500	2.323	2-7/8" x 5 1/4" Wireline Re-Entry Guide 13 CR
	13002.35				Bottom of Wireline Entry Guide
71.	13140.00				PBTD Halliburton EZSV

Perforations: CHRIS A "H" 11,787 - 11,792
 MA-1 UPPER = 11,890 - 11,904 & 11,921 - 11,936
 LOWER = 11,949 - 11,973
 MA-3 = 12,530 - 12,560
 MA-4 = 13,052 - 13,087

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