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Committee D02 on PETROLEUM PRODUCTS AND LUBRICANTS

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January 23, 2006

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ASTM D02.B0.03 L-37 Surveillance Panel Members and Guests:

Attached for your review and comment are the unconfirmed minutes of the:

January 20th, 2006 L-37 Surveillance Panel Teleconference Meeting.

Please direct any corrections or comments to my attention.

Sincerely.

Donald T. Bartlett, Chairman

L-37 Surveillance Panel

Attachments

Report of Conference Call L-37 Surveillance Panel January 20, 2006, 2:00 EST

The teleconference meeting was brought to order at 2:00 p.m. EST.

I. Attendees:

ASTM TMC: Don Lind Ethyl Corp: Cory Koglin

Lubrizol Corp: Don Bartlett Lubrizol Corp: Chris Schenkenberger

Dana Corp: Don Kreinbring SwRI: Brian Koehler

PARC: Dale Smith

II. Agenda:

 Review Phase 1 industry testing (one test at each of four labs) using the 2005 P4L792/V1L417 2005 Non-Lubrited hardware on TMC 127.

III. Summary of Panel Discussion, Consensus Actions, and Motions:

2005 Non-lubrited hardware P4L792/VL417 discussion:

The labs and panel agreed during the January 4, 2204 Panel teleconference to:

Complete their commitment for conducting the first test (one test at each of four labs) on TMC 127 in the time frame of January 8 through January 20th. Upon completion of the four tests, Mr. Lind will provide charts and the chairman will distribute and convene a panel teleconference to review the data. <u>Attachment # 1</u> is that full summary provided by Mr. Lind.

General Comments and Discussion:

- The history on TMC 127 is that it has not been an oil that fails on all parameters.
- For the last several hardware batches there are only 4 tests that were conducted so the decision is based off of limited data.
- TMC 127 is an oil that cannot be re-blended and the current inventory is limited. In a past understanding, the panel agreed that TMC 127 should be used as discrimination oil and only assigned when a new hardware batch is being introduced.

- Pitting/Spalling Distress V1L417 batch Looks OK, all labs passing, similar to the V1L351 batch we wanted to emulate and compares acceptably to the C1L308, V1L351 gear batch results. It is fairly tight.
- Ridging Distress Three labs rated a 9 distress, one lab a 4 distress. Mr. Lind shared the ridging pass ratio for all gear batches. The chairman has hand noted the respective ratios on the ridging graph in attachment 1. The 75 % ridging pass rate is of some concern.
- Rippling Distress Looks good, seems to fall in line with all other gear batches.
- Wear Distress not a great concern here, maybe just slightly mild, rating definitions may come into play here?
- Other comments noted:
 - A concern that one lab actually achieved a SAE J2360 pass on every single parameter. Not sure if we have ever seen this before with TMC 127. It may be a lab issue?
 - Three of the four tests did fail on one or more parameters.
 - Was the Ridging value of 4 at one lab a 'clunker' due to the hardware mix'?
 - The options for where we go next are limited:
 - The labs run some more TMC 127 tests or,
 - Move forward and each lab run the TMC 151-3 tests described as part of phase II of the hardware approval process.
 - It was a panel full consensus that we should proceed with testing TMC 151-3 and if the trend still existed, we may have to run more TMC 127 tests.
 - As previously discussed and agreed during the January 4th, 2006 panel teleconference the labs are to complete their commitment for the first test on TMC 151-3 in time for the panel to review all data on both oils at the **February 2006** SP meeting in Warrendale, PA. Mr. Lind requested that the oils be completed/reported by February 2nd so that he would have time to put the charts together for the February panel meeting.
 - Mr. Lind was directed to immediately assign one TMC 151-3 to each of the four labs.
 - Labs were instructed/agreed to the following action items:
 - Take the axle for the TMC 151-3 test from some other pallet in the batch of axles they received instead of off of the same pallet that the TMC 127 run was conducted on.
 - As for the TMC 127 runs the labs previously reported, the labs were asked to go back and retrieve/re-report to the TMC the GUSA unique/continuous axle sticker number that Dana attached to the axle cover. In case a lab does not have the cover with the sticker information, Mr. Bartlett suggested that the labs could look at the pallet that they took the axle from to determine the Dana assigned sequential serial number. To meet the TF request at the Lugoff facility, Dana has appropriately attached a onepage sheet to each pallet. It specifically details each unique GUSA sequential serial number that was put on each pallet. It would be easy for a lab to determine the axle GUSA serial number that was used for their TMC 127 test.
 - Labs agreed to report the GUSA unique/continuous axle sticker number Dana attached to the axle cover for the entire 44-test matrix as a better way to document and answer possible questions with future testing.

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In other discussion topics:

- Mr. Kreinbring reported that:
 - o Dana is working on the industry request for an L-37 2006 lubrited hardware quote.
 - With respect to L-42 hardware order, he reported that Dana is still in the process of procuring the heat of steel for the 2006 industry hardware order. The process was due to commence in February, but is now somewhat behind schedule. Mr. Koglin asked him to provide him weekly progress updates so that he could distribute the information to the panel membership. A visit to the Ft. Wayne facility is still requested by the Hardware TF as Dana prepares to commence with the production process.

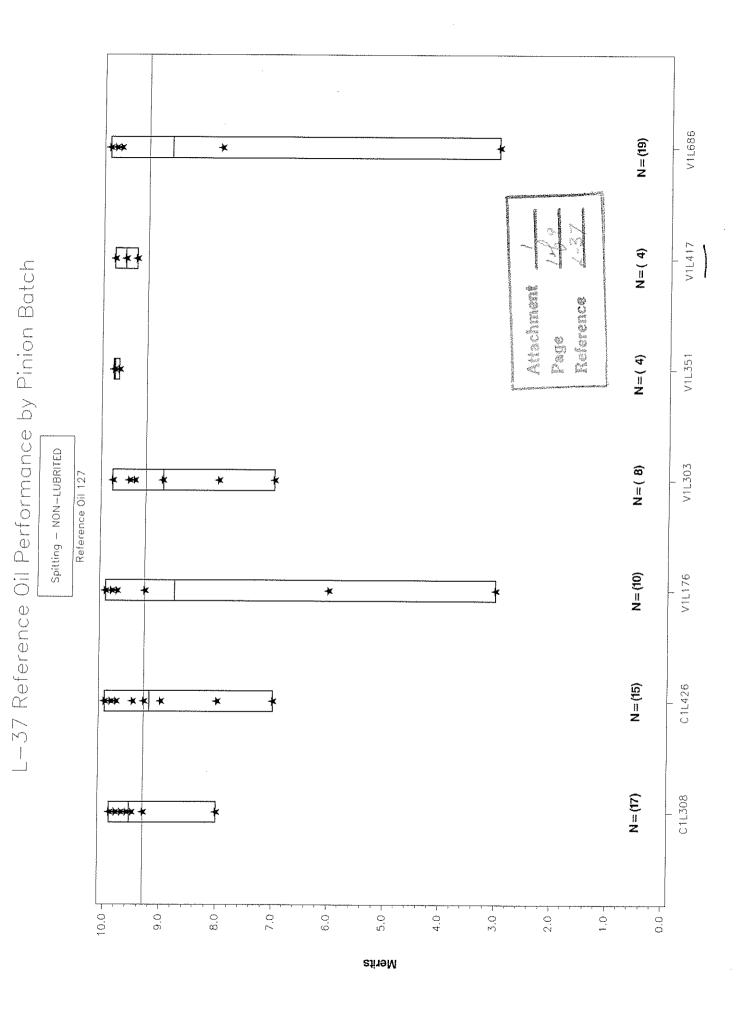
Being no further business to transact, the teleconference meeting was adjourned with a motion by Mr. Koglin/second by Mr. Smith. The meeting was adjourned at 3:27 p.m.

Respectfully submitted,

Donald T. Bartlett,

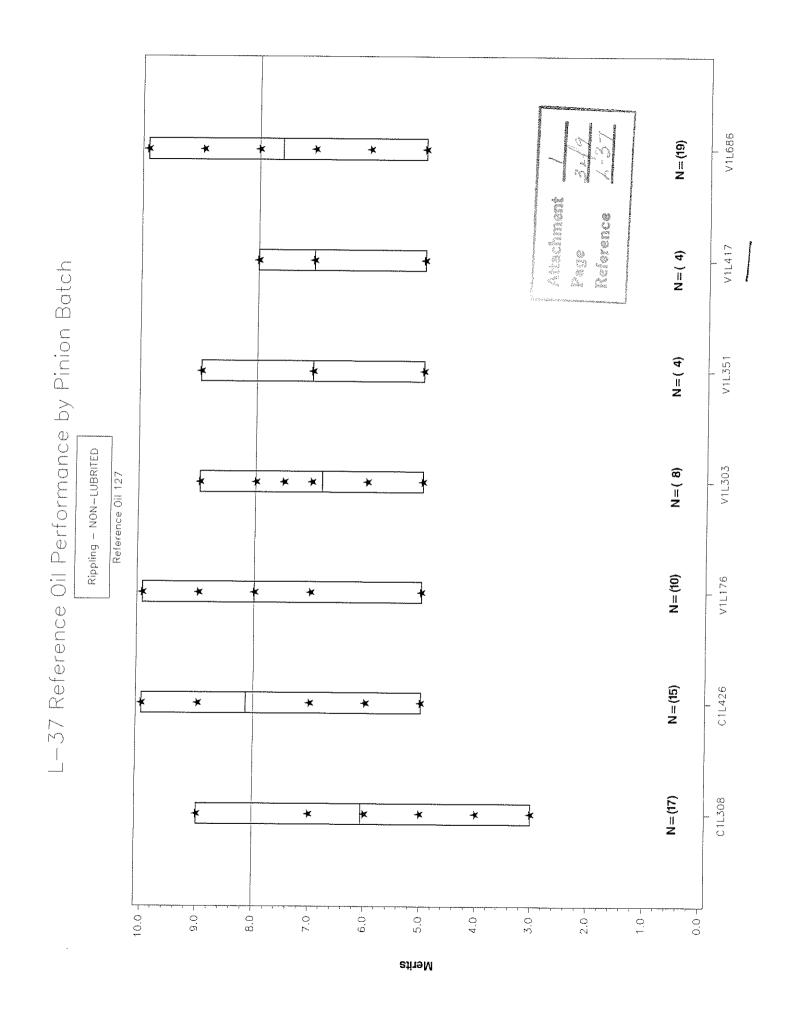
L-37 Surveillance Panel Chairman

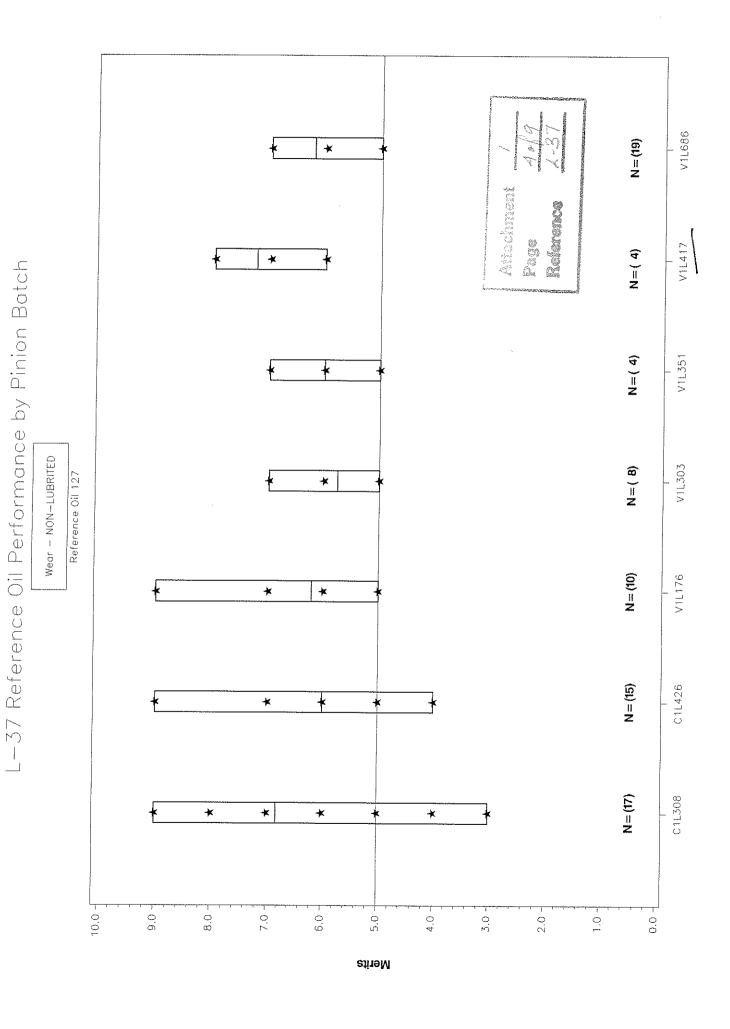
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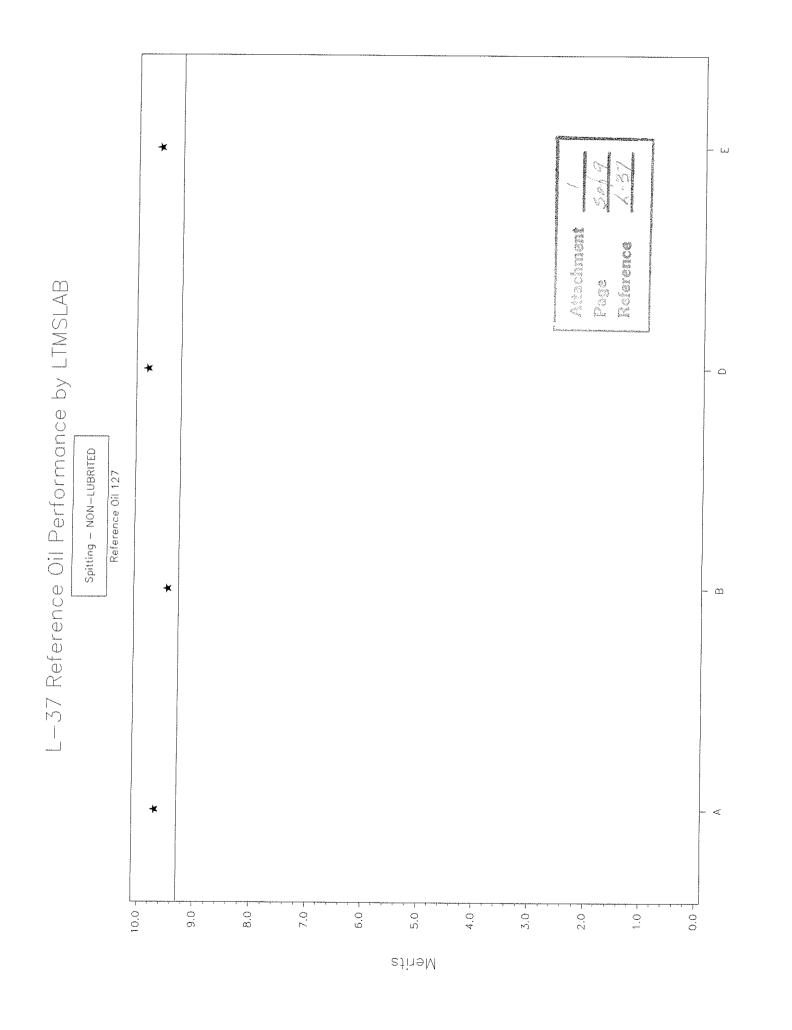


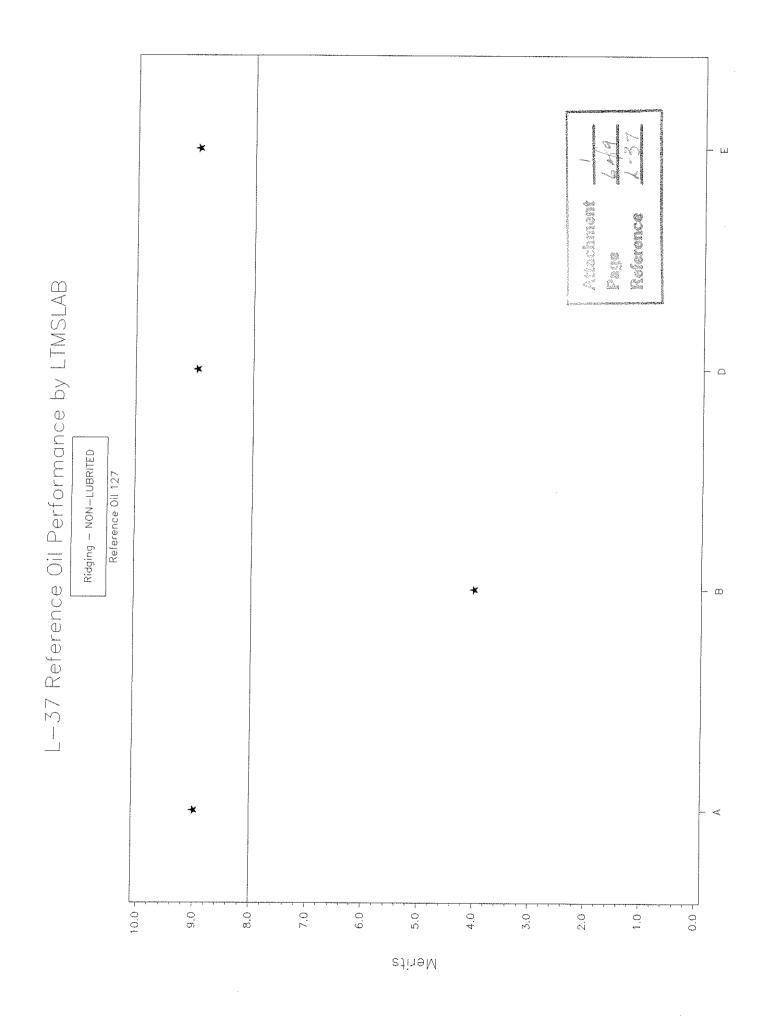
V1L686 N = (19)* * * 5 NY SCHOOL Reference V1L417 00 N=(4) MAND NOTING INDICATES BASS CATE FOR JARANIETE N=(4) V1L351 * Ridging - NON-LUBRITED V1L303 N=(8) Reference Oil 127 * ¥ 100 N = (10)V1L176 × * * 40% N = (15)C1L426 × × × × N = (17)C1L308 × * × 9.0 6.0 -10.0 4.0 -2.0 0.0 8.0 7.0 -5.0 -3.0 -1.0 Merits

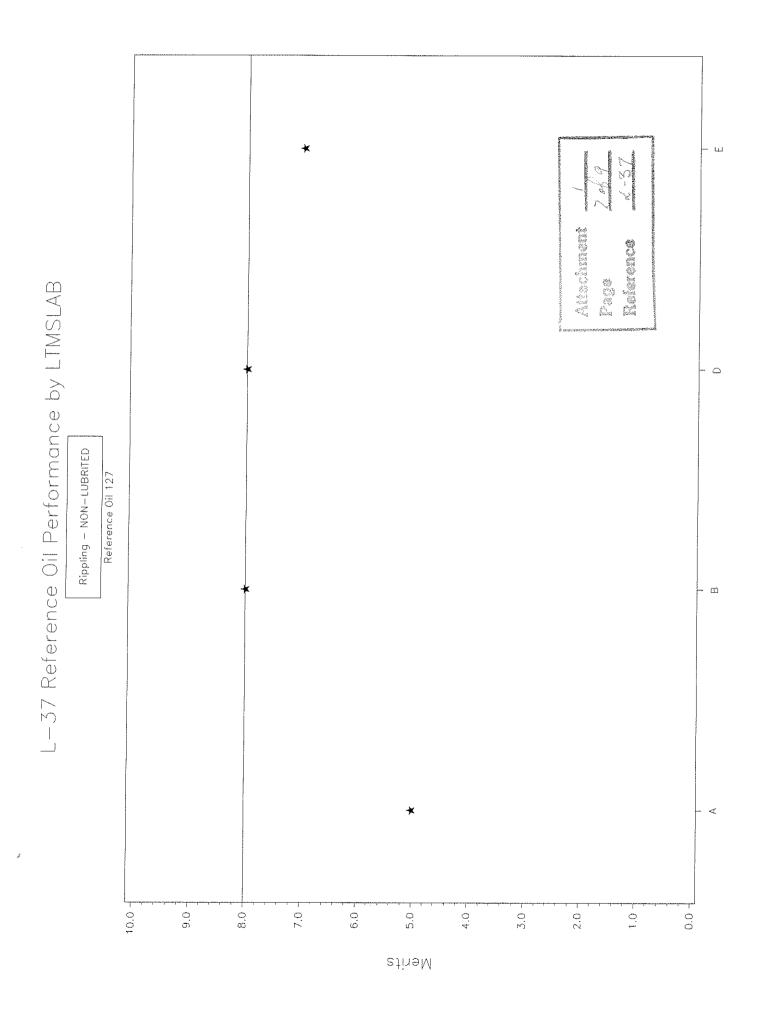
L-37 Reference Oil Performance by Pinion Batch

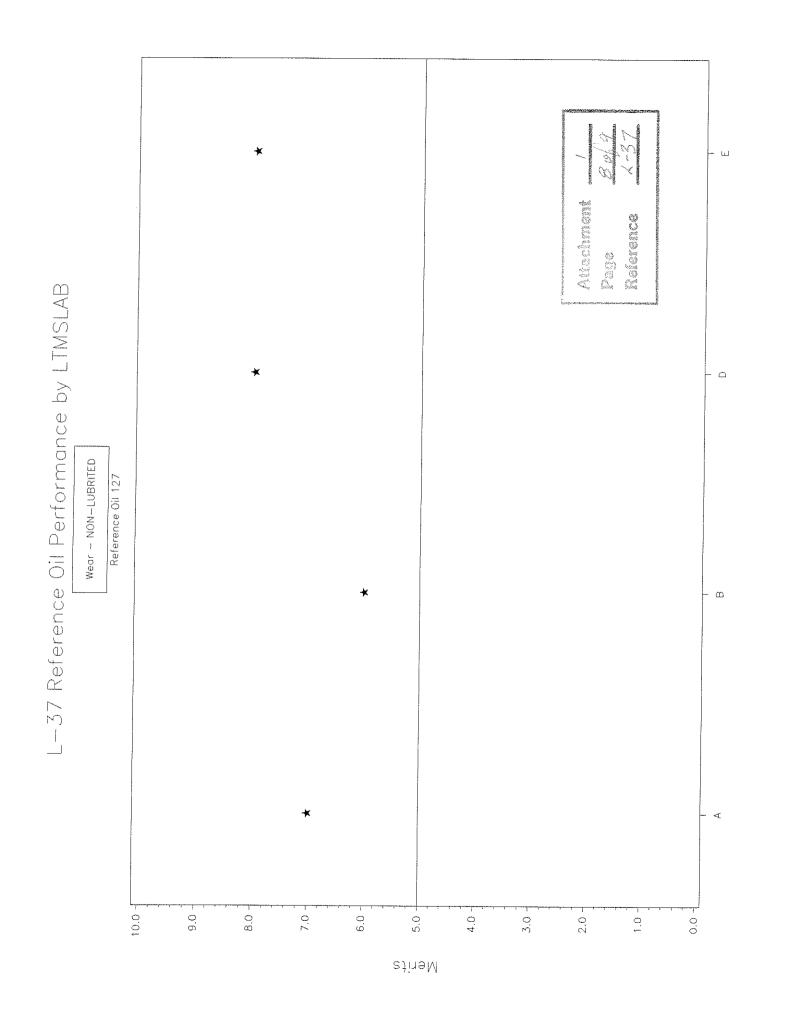












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fpcrat 0 0 0 0
Rspit 9.9 9.9 9.9 10
Rripp 9 9 9 10
Rridg 5 9 9
Rwear
Pspit 9.5 / 9.7 / 9.7 9.9
Pripp 8 7 5 8
Pridg 4 9 9
Pwear 6 8 7 8
DTCOMP 20060107 20060112 20060113 20060114
RINGBAT P4L792 P4L792 P4L792 P4L792
PINBAT V1L417 V1L417 V1L417 V1L417
Oil 127 127 127 127
Run 2263 234 2917 464
STD 191 2 2 3A
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CMIR 46001 44289 49554 49503