

```

%_mprintto;
options notes nosource;
proc datasets lib=work nolist memtype=data kill; quit;
%put NOTE:
=====;
%put NOTE: Covance Study Number : 000000106324;
%put NOTE: Client Protocol ID   : ZRHR-REXC-03-EU;
%put NOTE: Program Name        : t_plug.sas;
%put NOTE: Purpose              : table decriptive stats of Visual
Inspection of the THS 2.2 Tobacco Plugs Data -FAS ;
%put NOTE: ;
%put NOTE: Input Data           : ADAM.ADXT ADAM.ADDX ADAM.ADSL;
%put NOTE: Output               : t_15_2_4_61(plug);
%put NOTE: Macros Called        : _MPRINTTO;
%put NOTE: ;
%put NOTE: Programmed by        : cvn_jriley;
%put NOTE: Creation Date        : 2014-08-04;
%put NOTE: SAS Version          : 9.3;
%put NOTE: ;
%put NOTE: == Latest Run
=====;
%put NOTE: Run by               : &sysuserid;
%put NOTE: Date/Time            :
%sysfunc(putn(%sysfunc(date()),e8601da.))T%sysfunc(putn(%sysfunc(time()),
e86011z.));
%put NOTE: ;
%put NOTE: == Modification History
=====;
%put NOTE: Date      Initials   No. Reason;
%put NOTE: 05Aug2014   JMH       1) Amended code to use correct data;
%put NOTE: 05Aug2014   JMH       2) Amended text to match data and SAP;
%put NOTE: 05Aug2014   JMH       3) Amended format;
%put NOTE: 05Aug2014   JMH       4) Amended code for number of filetrs
analysed and put in column header;
%put NOTE: 29Aug2014   JMH       5) Amended code to also show
assessments which were done as per client comments;
%put NOTE: 29Aug2014   JMH       6) Amended column header and footnote;
%put NOTE: 22Sep2014   KB        7) Removed categories other than 0 1 2
and amended text;
%put NOTE: 22Sep2014   KB        8) Amended length warnings;
%put NOTE: 01Oct2014   JMH       9) Amended footnote and order of data;
%put NOTE: 26Oct2014   KB       10) Added missing row;
%put NOTE: 03NOV2014   JH       11) Amended missing calculation and
added footnote;
%put NOTE: ;
%put NOTE:
=====;
options notes source source2 nofullstimer validvarname=upcase missing='
';
ods _all_ close;
ods listing;

*=====;
* START OF PROGRAM CODE
;

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*=====;

%let tflno=T_15_02_04_61(plug);

%let TFL_Part=%scan(&_SASPROGRAMFILE,-3,%str(/));

data _null_;
    tmp="&TFL_Part";
    if tmp not in ("dev" "qc") then call symput("TFL_Part", "prod");
    call symput('TFLpath', compress("&_SASPROGRAMFILE",""));
run;

*****;
* read in data ;
*****;

/*Use ADSL to get N values for column headers*/
data adsl;
    set adam.adsl(where=(fasfl='Y' and trt01a eq 'THS 2.2'));
run;

proc sort data=adsl nodupkey out=adsl1;
    by trt01an trt01a subjid;
run;

proc freq data=adsl1(where=(not missing(trt01an))) noprint;
    table trt01an*trt01a/ out =tot(drop=percent rename=(count=total));
run;

data tot2;
    set tot;
    trtan=trt01an;
    trta=trt01a;
    call symput('trt' || compress(put(trt01an,best.)),
compress(total));
    drop trt01an trt01a;
run;

/*Bring in appropriate data from ADQSPA*/
data adxt1;
    set adam.adxt(where=(*ANL02FL NE 'Y' AND*/ ANL02FL = "Y" AND fasfl
='Y' and parcat1 in ('Visual Inspection Of Tobacco Plug'))); /* 1) JMH
05Aug2014 */ /* 5) JMH 29Aug2014 */ /* 11) JH 03NOV2014 */
    if trta ne 'THS 2.2' then delete;
    /* 5) start JMH 29Aug2014 */
    ATTRIB STATVAL LENGTH=$200.;
    IF ANL02FL='Y' THEN STATVAL=AVALC;
/* ELSE IF ANL02FL NE 'Y' THEN STATVAL=XTREASND;*/ /* 11) JH 03NOV2014
*/
    /* 5) end JMH 29Aug2014 */
run;

proc sort data=adxt1; by trtan trta; run;

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data adxt;
    set adxt1;
    by trtan trta;
    output;
    /* 11) JH 03NOV2014 = START */
    STATVAL = "Missing";
    OUTPUT;
    /* 11) JH 03NOV2014 = END */
run;

PROC SORT DATA=ADXT NODUPKEY OUT=REASONS (KEEP=XTREASND); /* 1) JMH
05Aug2014 */
    BY XTREASND;
RUN;

* Create values for table rows;
data evaluations;
    set adxt;
    length rowtext $200;
    /* 5) START JMH 29Aug2014 */
    ROWORDER1 = 0;
    ROWORDER2 = 2;
    ROWTEXT = '0';
    IF SUBJID= . OR STATVAL='0' THEN OUTPUT;
    ROWORDER1 = 0;
    ROWORDER2 = 3;
    ROWTEXT = '1';
    IF SUBJID= . OR STATVAL='1' THEN OUTPUT;
    ROWORDER1 = 0;
    ROWORDER2 = 4;
    ROWTEXT = '2';
    IF SUBJID= . OR STATVAL='2' THEN OUTPUT;
    /* 5) END JMH 29Aug2014 */
    * Ashes not anymore visible when shooting the picture;
    /* roworder1 = 1;*/
    /* roworder2 = 2;*/
    /* rowtext = 'Ashes not anymore visible when shooting the picture';
    */
    /* if subjid = . or /*aval=0*/ /*XTREASND*/ /*STATVAL='ASHES NOT ANYMORE
VISIBLE WHEN SHOOTING THE PICTURE' then output;*/ /* 1) JMH 05Aug2014 */
    /* 5) JMH 29Aug2014 */ /*
    /* * No tobacco in the plug;*/
    /* roworder1 = 1;*/
    /* roworder2 = 3;*/
    /* rowtext = /*'No tobacco in the plug'*/'No tobacco in plug'; /*
2) JMH 05Aug2014 */ /*
    /* if subjid = . or /*aval=1*/ /*XTREASND*/ STATVAL='NO TOBACCO IN PLUG'
then output; /* 1) JMH 05Aug2014 */ /* 5) JMH 29Aug2014 */ /*
    /* * Not enough tobacco in the plug to perform the analysis;*/
    /* roworder1 = 1;*/
    /* roworder2 = 4;*/
    /* rowtext = 'Not enough tobacco in the plug to perform the
analysis'; */

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/* if subjid = . or /*aval=2*/ /*XTREASND*/ STATVAL='NOT ENOUGH TOBACCO
IN THE PLUG TO PERFORM THE ANALYSIS' then output; /* 1) JMH 05Aug2014 */
/* 5) JMH 29Aug2014 */ */
/* * Tobacco plug destroyed, analysis impossible;*/
/* roworder1 = 1;*/
/* roworder2 = 5;*/
/* rowtext = 'Tobacco plug destroyed, analysis impossible'; */
/* if subjid = . or /*aval=3*/ /*XTREASND*/ STATVAL='TOBACCO PLUG
DESTROYED, ANALYSIS IMPOSSIBLE' then output; /* 1) JMH 05Aug2014 */ /*
5) JMH 29Aug2014 */ */
/* * No tobacco plug in the vial;*/
/* roworder1 = 1;*/
/* roworder2 = 6;*/
/* rowtext = 'No tobacco plug in the vial'; */
/* if subjid = . or /*aval=4*/ /*XTREASND*/ STATVAL='NO TOBACCO PLUG IN
THE VIAL' then output; /* 1) JMH 05Aug2014 */ /* 5) JMH 29Aug2014 */ */
/* * Other error;*/
/* roworder1 = 1;*/
/* roworder2 = 7;*/
/* rowtext = 'Other error'; */
/* if subjid = . or /*aval=5*/ /*XTREASND*/ STATVAL='OTHER ERROR' then
output; /* 1) JMH 05Aug2014 */ /* 5) JMH 29Aug2014 */ */
/* Missing - only display where needed;
roworder1 = 1;
roworder2 = 8;
rowtext = 'Missing';
if /*aval=.*/* /*XTREASND*/ /*STATVAL=''*/ SUBJID = . OR STATVAL =
"Missing" then output; /* 1) JMH 05Aug2014 */ /* 5) JMH 29Aug2014 */ /*
11) JH 03NOV2014 */
run;

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```

proc sql;
  create table results02 as
  select trtan, trta, roworder1, roworder2, rowtext, avisitn, avisit,
subjid, count(subjid) as products
  from evaluations
  group by trtan, trta, roworder1, roworder2, rowtext, avisitn, avisit;
quit;

```

* Create dummy values for table rows;

```

data dumrows;
  length rowtext $200
          trtan 8.
          trta $40.;

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  trtan=1;
  trta='THS 2.2';
  /* 5) START JMH 29Aug2014 */
  ROWORDER1 = 0;
  ROWORDER2 = 2;
  ROWTEXT = '0';
  OUTPUT;
  ROWORDER1 = 0;

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        ROWORDER2 = 3;
        ROWTEXT = '1';
        OUTPUT;
        ROWORDER1 = 0;
        ROWORDER2 = 4;
        ROWTEXT = '2';
        OUTPUT;
/* 11) JH 03NOV2014 - START */
/* 5) END JMH 29Aug2014 */
/* * Ashes not anymore visible when shooting the picture;*/
/* roworder1 = 1;*/
/* roworder2 = 2;*/
/*   rowtext = 'Ashes not anymore visible when shooting the picture';
*/
/* output;*/
/* * No tobacco in the plug;*/
/* roworder1 = 1;*/
/* roworder2 = 3;*/
/*   rowtext = /*'No tobacco in the plug'*//*'No tobacco in plug';   */
/* 2) JMH 05Aug2014 */ */
/* output;*/
/* * Not enough tobacco in the plug to perform the analysis;*/
/* roworder1 = 1;*/
/* roworder2 = 4;*/
/*   rowtext = 'Not enough tobacco in the plug to perform the
analysis'; */
/* output;*/
/* * Tobacco plug destroyed, analysis impossible;*/
/* roworder1 = 1;*/
/* roworder2 = 5;*/
/*   rowtext = 'Tobacco plug destroyed, analysis impossible'; */
/* output;*/
/* * No tobacco plug in the vial;*/
/* roworder1 = 1;*/
/* roworder2 = 6;*/
/*   rowtext = 'No tobacco plug in the vial'; */
/* output;*/
/* * Other error;*/
/* roworder1 = 1;*/
/* roworder2 = 7;*/
/*   rowtext = 'Other error'; */
/* output;*/
/* 11) JH 03NOV2014 - END */
/* Missing - only display where needed;
roworder1 = 1;
roworder2 = 8;
   rowtext = 'Missing';
output;
run;

data dumrows1;
  set dumrows;
  attrib avisitn length=8.
               avisit length=/*$40.*/$10.; /* 8) KB 22Sep2014 */

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```

        avisitn=101;
        avisit='Day 1';
        output;
        avisitn=102;
        avisit='Day 2';
        output;
        avisitn=103;
        avisit='Day 3';
        output;
        avisitn=104;
        avisit='Day 4';
        output;
        avisitn=105;
        avisit='Day 5';
        output;
run;

/*Merge on the dummy rows to the actual data. Set subjects to equal zero
if only in dummy*/
data results02a;
    merge results02(in=a) dumrows1(in=b);
    by roworder1 roworder2 rowtext avisitn avisit;
    if a or b;
    if b and not a then products=0;
run;

proc sql;
    create table results03 as
    select *
    from (select distinct trtan, trta, roworder1, roworder2, rowtext,
        avisitn, avisit, products from results02a);
quit;

/*Find total number of products smoked per day from DX*/
data dx;
    set adam.addx;
    LENGTH AVISIT2 $10.; /* 8) KB 22Sep2014 */
    where paramtyp='DERIVED' and dtype='SUM' and trta='THS 2.2' AND
    AVISITN GE 101; /* 4) JMH 05Aug2014 */

    AVISIT2=AVISIT; /* 8) KB 22Sep2014 */
    DROP AVISIT; /* 8) KB 22Sep2014 */
    RENAME AVISIT2=AVISIT; /* 8) KB 22Sep2014 */
run;

proc sort data=dx; by trtan trta avisitn avisit subjid; run;

/* 4) start JMH 05Aug2014 */

/*proc freq data=dx noprint; */
/*    table trtan*trta*avisitn*avisit*aval/ out =totprod(drop=percent
rename=(count=total)); */
/*run;*/

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/*data dx1;*/
/*  set totprod;*/
/*  total2=aval*total;*/
/*run;*/
/**/
/*proc summary data=dx1 noprint;*/
/*  by trtan trta avisitn avisit;*/
/*  var total2;*/
/*  output out = dx2 sum=prodcoun;*/
/*run;*/
/**/
/*data producttotals;*/
/*  set dx2;*/
/*  drop _type_ _freq_;*/
/*run;*/

PROC MEANS DATA=DX NOPRINT;
  VAR AVAL;
  BY TRTAN TRTA AVISITN AVISIT;
  OUTPUT OUT=PRODUCTTOTALS SUM=PRODCOUNT ;
RUN;

/*Merge product totals onto original data to work out percentages*/
proc sort data=results03; by trtan trta avisitn avisit; run;

*NOTE: In this dataset, "Missing" is the total of non-missing values,
and will be re-calculated in RESULTS05;
data results04(DROP=ROWTEXT_);
  merge results03(in=a) producttotals(DROP=_);
RESULTS03(WHERE=(ROWTEXT_ = "Missing") KEEP = ROWTEXT TRTAN TRTA AVISITN
AVISIT PRODUCTS RENAME=(ROWTEXT = ROWTEXT_ PRODUCTS = NONMISS)); /* 4)
JMH 05Aug2014 */
  by trtan trta avisitn avisit;
  if a;
run;

data results05;
  set results04;
  attrib percentc productsc length=$200.;

  IF ROWTEXT = "Missing" THEN PRODUCTS = PRODCOUNT - PRODUCTS; /* 11) JH
03NOV2014 */

  if products ne 0 AND ROWTEXT NE "Missing" then
percent=products/NONMISS/*prodcoun*/100; /* 11) JH 03NOV2014 */
  else percent=.;

  if missing(percent) then percentc='';
  else if percent=100 then percentc='(100 %)';
  else if percent ge 10 then percentc='(
||compress(put(percent,8.1))||'%)';
  else if percent lt 10 then percentc='(
||compress(put(percent,8.1))||'%)';

```

```

        productsc=left(strip(put(products,best.)));
        drop percent products;
run;
/*Transposing the subjects and percentages separate will make it easier
to align columns by DP as per style guide*/

proc sort data=results05;
    by roworder1 roworder2 rowtext avisitn avisit;
run;

/*Transpose to get subjects*/
proc transpose data=results05 out=tprod prefix=n;
    by roworder1 roworder2 rowtext avisitn avisit prodcount;
    id trtan;
    idlabel trta;
    var productsc;
run;

/*Transpose to get percentages*/
proc transpose data=results05 out=tperc prefix=p;
    by roworder1 roworder2 rowtext avisitn avisit prodcount;
    id trtan;
    idlabel trta;
    var percentc;
run;

/*Now merge the subjects and percetages back together*/
data results06/(WHERE=(ROWORDER1=0))*;/ /* 7) KB 22Sep2014 */ /* 10) KB
26Oct2014 */
    merge tprod tperc;
    by roworder1 roworder2 rowtext avisitn avisit prodcount;

    /*IF ROWORDER1=0 AND ROWORDER2=2 THEN AVISIT=AVISIT;*/ /* 5) JMH
29Aug2014 */ /* 9) JMH 01Oct2014 */
    /*if roworder2 ne 2 then avisit='';ELSE AVISIT='';*/ /*Set this so
visit and prodcount only come out once rather than for every rowtext
value*/ /* 5) JMH 29Aug2014 */
/*    if roworder2 ne 2 then prodcount='';*/ /* 4) JMH 05Aug2014 */

/* 10) START KB 26Oct2014 */
N1_NUM=INPUT(N1,BEST.);
IF ROWORDER1 NE 0 THEN DO;
    ROWORDER2=5;
    ROWTEXT='Missing';
END;
/* 10) END KB 26Oct2014 */

run;

/* 11) JH 03NOV2014 - START */
/* 10) START KB 26Oct2014 */
/*PROC SORT DATA=RESULTS06;*/
/*    BY ROWORDER1 ROWORDER2 ROWTEXT AVISITN AVISIT PRODCOUNT;*/

```



```

/*RUN;*/
/**/
/*PROC MEANS DATA=RESULTS06(WHERE=(ROWORDER1 NE 0)) NOPRINT;*/
/*    VAR N1_NUM;*/
/*    BY ROWORDER1 ROWORDER2 ROWTEXT AVISITN AVISIT PRODCOUNT;*/
/*    OUTPUT OUT=RESULTS06A SUM=N1_NUM ;*/
/*RUN;*/
/**/
/*DATA RESULTS06B;*/
/*    SET RESULTS06(WHERE=(ROWORDER1=0)) RESULTS06A;*/
/**/
/*    IF ROWTEXT='Missing' THEN DO;*/
/*        N1=STRIP(PUT(N1_NUM,BEST.));*/
/*        PERCENT=(N1_NUM/PRODCOUNT)*100;*/
/*        IF MISSING(PERCENT) THEN P1='';*/
/*        ELSE IF PERCENT=100 THEN P1='(100 %)'; */
/*        ELSE IF PERCENT GE 10 THEN P1='(
' || COMPRESS(PUT(PERCENT,8.1)) || '%' ); */
/*        ELSE IF PERCENT LT 10 THEN P1='(
' || COMPRESS(PUT(PERCENT,8.1)) || '%' ); */
/*        FLAG=1;*/
/*    END;*/
/*RUN;*/
/* 10) END KB 26Oct2014 */
/* 11) JH 03NOV2014 - END */

data labels;
set /*results06*/RESULTS06/*B*/; /* 10) KB 26Oct2014 */ /* 11) JH
03NOV2014 */
    attrib n1 label = "n"
           p1 label = "(%)";
           flag=1;

run;

proc sql noprint;
    create table table.T_15_02_04_61 as
    select rowtext, avisit, /*prodcount,*/ n1, p1 /* 4) JMH 05Aug2014
*/
    from labels
    order by avisitn, roworder1, roworder2;
quit;

proc sort data=labels;
    by avisitn roworder1 roworder2;
run;

%macro outrtf(blankn=, halfblnk=);

%if &halfblnk=N %then %let halfblnk=;
%else %if &halfblnk=Y %then %let halfblnk=~;

```

```

data paging;
  set labels;
  by avisitn roworder1 roworder2 ;
  if first.avisitn or ln gt /*8*/10 then ln=1; /*Amend to look
presentable, and avoid page overflows*/ /* 5) JMH 29Aug2014 */
  else ln+1;
  if ln=1 then page+1;
  call symput("page",compress(put(page,best.)));
run;

options number nodate orientation=landscape papersize=&p_pgsz missing='
';
ods escapechar='$';
%let linetop = \brdrt\brdrs\brdrw30; * needs to be 1.5pt so calculated
in twips (1/20 pt) ;
%let linebot = \brdrb\brdrs\brdrw30;

ods path stdlib.tl06324 (read) ;
ods results off;
ods rtf toc_data
file="/cvn/projects/prj/data/000000106324/TFL/&TFL_Part./&tflno..rtf"
style=tl06324 startpage=yes headery=1440 footery=1440 ;
ods noproctitle;

%do i=1 %to &page;

title ;
footnote;
%let wd=0;

data comp;
  set paging end=eof;
  where page=&i;

  /* Amend title as needed */
  _firtitl="Table 15.2.4.61 Descriptive Statistics of Visual Inspection
of the THS 2.2 Tobacco Plugs Data - FAS";
  _upcas=(length("Path: &TFLpath.")-
length(compress("Path:&TFLpath.",'ABCDEFGHIJKLMNOPQRSTUVWXYZ')))/2;
  len=&blankn.-length("(page &i of &page)");
  if eof then do;
    call symput('_FSRTITL', trim(left(_firtitl)));
    call symput('_blankn', compress(put(len,best.)));
  end;

  CALL SYMPUT('PROD',STRIP(PUT(PRODCOUNT,BEST.)));
  drop _firtitl _upcas len;
run;

ods proclabel = ' ';
ods listing close;

```

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* most set up in template others below;
* title arial 12pt bold with 12pt paragraph space below;
* all headers to be arial 11pt bold;
* data arial 10pt;
* headers to be central, text values left aligned and numeric centered
around decimal point;
proc report data = comp missing headline headskip missing nowd split =
'$' %if &i=1 %then %do; contents=' ' %end; %else %do; contents='' %end;;;
    column flag page avisitn AVISIT roworder1 roworder2 rowtext
/*avisit*/ /*("n of THS 2.2" prodcount)*/ /*("THS 2.2$(N=&trtl1)$[n of THS
2.2 products smoked = &PROD]" n1 p1)*/ /* 9) JMH 01Oct2014 */
    ("THS 2.2$(N=&trtl1)$[n of THS 2.2 products used =
&PROD]" n1 p1); ; /* 4) JMH 05Aug2014 */ /* 6) JMH 29Aug2014 */

    define flag          / order order = internal noprint;
    define page          / order order = internal noprint;
    define avisitn       / order order = internal noprint;
    define roworder1     / order order=internal noprint;
    define roworder2     / order order=internal noprint;
    define rowtext       / group style={just=left cellwidth=/*7*/4cm}
style(header)={just=center} "Evaluation"; /* 9) JMH 01Oct2014 */
    define avisit        / group style={just=left cellwidth=/*2.5*/4.5cm}
style(header)={just=center} "Timepoint"; /* 9) JMH 01Oct2014 */
/*    define prodcount    / group style={just=center cellwidth=3.5cm}
style(header)={just=center} "products smoked";*/ /* 4) JMH 05Aug2014 */
    define n1            / display style={just=/*d*/C cellwidth=/*2*/3cm}
style(header)={just=center}; /* 3) JMH 05Aug2014 */
    define p1            / display style={just=/*d*/C cellwidth=/*2*/3cm}
style(header)={just=center}; /* 3) JMH 05Aug2014 */

    break before flag / page %if &i=1 %then %do;
    contents="&_fsrtitl" %end; %else %do; contents='' %end;;

    break after page / page;

    compute before page / style={protectspecialchars=off};
        line "&linetop";
    endcomp;

    compute after page/style={just=left cellwidth=5cm
protectspecialchars=off};
        line "&linebot" ;
    endcomp;

    compute before _page_ / style={just=left protectspecialchars=off};
        line "\b\fs24\sa24&_FSRTITL." ; * \b = bold, \fs24 is font
size 12pt, \sa24 is space after 12pt;
        line "&linebot";
    endcomp;

    compute after _page_/ style={just=left protectspecialchars=off};
        line 'Note: THS = Tobacco Heating System.';

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```

/*          line 'Note: Percentages are based on the number of THS 2.2
products smoked.';*/
/*line 'Note: Percentages are based on the number of THS 2.2
products smoked in the column header.'; *//* 4) JMH 05Aug2014 */
LINE 'Note: Percentages are based on the number of non-
missing inspections.'/* THS 2.2 products used in the column header.'*/;
/* 6) JMH 29Aug2014 */ /* 11) JH 03NOV2014 */
/* LINE "Note: 0 = Not burned, 1 = White spots, 2 = Ashes.";*/ /*
7) KB 22Sep2014 */
LINE "Note: 0 = No overheating, 1 = White spot(s) inside the
tobacco plug, 2 = Ashes inside the tobacco plug and burnt paper."; /* 9)
JMH 01Oct2014 */
LINE "Note: Missing values assessed as the difference between the
number of sticks used and the number of sticks for which visual
inspection of the plug has been performed."; /* 11) JH 03NOV2014 */
line ' ';
LINE 'Appendix 15.3.6.16';
line "Path: &TFLpath." &_blankn.*"\~\~" "(Page &i of &page)";
line "Program Run: &sysdate &sysuserid Program Status:
&status";
endcomp;
run;
%end;
ods rtf close;
ods results on;
ods path sashelp.tmplmst (read);

%mend ;

%outrtf(blankn=70, halfblnk=N);
ods listing;
proc printto print = "&table./T_15_02_04_61.lst" new;
run;

proc contents data = table.T_15_02_04_61 varnum;
run;
ods listing close;
proc printto ; run;
*=====;
* END OF PROGRAM CODE ;
*=====;

```