This standard has been approved by the SEG Executive Committee at the 1999 SEG annual convention. UKOOA accepted this ratification by the SEG Executive Committee.
Norris, Hares, Faichney, 2001, SEG-UKOOA Ancillary Data Standard - ADS Trace Edit: Geophysics, 66, no. 06, 2040-2054.

SEG/UKOOA Ancillary Data Standard[1]

ADS Trace Edit[2]

Version 1.0

SEG Technical Standards Committee

[2] Michael Norris — Western Geophysical, Michael Hares — Western Geophysical, Alan Faichney — Concept Systems

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1. Introduction

1.1 Background

The ADS Trace Edit, ADS-TE, format is specifically designed to be used with the SEG/UKOOA Ancillary Data, ADS, metafile format. One of the primary requirements for the metafile format was that it should provide a means to track trace edit information for a seismic data volume as it was acquired, analyzed, and initially processed. It is desirous to know not only that the trace was excluded from the data volume, but to know who edited, when it was edited and why it was edited. To provide this knowledge, it is necessary to associate the trace edits with data attributes. To provide this link, it is recommended that the ADS Trace Edit format be used in conjunction with the ADS Trace Attribute, ADS-TA, format to provide trace attribute definition and attribute data.

The requirement to know who, why and when a trace was edited provides a significant encoding problem. In fact it provides an even larger decoding problem because of the many potential decision points and their associated values. The ADS itself provides the means to unwind this conundrum. ADS provides means to time tag individual datasets and to associate individual datasets in a logical sequence of events.

1.2 Schema

Typically trace editing is done as a series of discrete processes that start with the acquisition system. In each of these processes, one or several trace attributes are computed for a trace and the trace's attributes compared to an accepted limit. If the trace's attributes are within the desired limits, it remains in the data volume. If not, then it is excluded from further processing. The attribute calculation, test, accept/reject sequence is performed a number of times before a final data volume is generated.

The ADS Trace Edit format provides a simple means of recording this evolutionary, trace selection process. A basic assumption of this standard is that every trace in a data volume can be unique and unambiguously identified by the logical ANDing of a primary and secondary key (e.g. field shot identifier and trace number or CMP bin number and element count). Each time an editing process runs, the trace attribute selection criteria are recorded as header records and a record is entered for each primary key that requires editing. Within the primary key record, each edited secondary key is entered.

By its nature, trace exclusion is an evolutionary process that involves multiple steps. By including the various trace edit datasets in an ADS metafile, the sequence of the trace elimination process can be easily tracked. To determine which traces were included in a specific seismic data volume, the trace edit datasets are ANDed and ORed in their generation sequence.

In this scheme, the trace attributes are not recorded within the trace edit dataset. What is recorded in the trace edit dataset are the names of the attributes used for trace selection and the selection range for each attribute. The attribute names can either come from the ATA Global Attribute Classes or can be user defined via comment cards. Multiple attribute criteria can be simultaneously applied in the same trace edit dataset.

It is highly recommended that each edit process create a trace edit dataset and the ADS metafile be used to provide the time stamping and logical concatenation of the individual trace edit datasets. Use of the ADS metafile as a supporting element (i.e. the skeleton) significantly simplifies the design of the trace edit format. With this simplification, it is possible to provide an ASCII dataset format that is reasonably efficient and at the same time can be viewed by humans.

An implicit assumption for the trace edit dataset is that the data used to generate the primary key uniquely identifies a set of data traces acquired during a single source event. Additionally the data used to generate the secondary keys uniquely identifies individual data traces within a single source event. For the primary key, it is good practice to slave the primary key to the master shot record used in the ADS data structure. By design, the trace edits can reside in a sequence of datasets and the complete trace edit dataset is the concatenation of those individual datasets. Consequently all datasets within a concatenation must have common primary and secondary keys and those keys must exist for all data traces contained within the seismic trace volume.

1.3 Conventions

Within the text <> are used to enclose unprintable ASCII text and descriptions. An example of this notation is <Hex 0D0A> to represent the ASCII characters carriage return and line feed and <keyword> to indicate the inclusion of a keyword phrase. To denote the repeat of a previous structure … are placed immediately after the structure. The structure can be repeated as many times as required up to the physical limit of the record.

1.4 Controlling Organization

The ADS Trace Edit format was created by a joint committee of the SEG and UKOOA. The format is administered by the SEG Technical Standards Committee. Any questions, corrections or problems encountered in the format should be addressed to:

Society of Exploration Geophysicist
P.O. Box 702740
Tulsa, Ok 74170-2740

Attention: SEG Technical Standards Committee

Phone: (918) 497-5500
Fax: (918) 497-5557
Internet site: www.seg.org

1.5 Acknowledgement

As with all SEG standards, the ADS Trace Edit was developed by individuals volunteering their time and talents. Special acknowledgement and thanks go to Stuart Jackson, Paul Cattermole, Alan Faichney, Don Funkhouser, Mike Hares and Jon Stigant for their efforts toward the completion of this format.

2. General Description

An initial note, the ADS Trace Edit format is intended as an exchange format. It has been optimized for simplified encoding and decoding. It is not intended as a random access, real-time processing device.

The basic form of the dataset is a suite of header records that define who performed the edits and what selection criteria were used to accept or reject the traces within this trace edit dataset. Following the header records are the primary key records that indicate whether traces were included or excluded by the process. If desired, additional pairings of header and primary key record sets can be concatenated to the initial header/primary key record pairing; but the preferred method would be to have a single header/primary key record pairing and include multiple trace edit datasets in a ADS metafile.

Each record in a trace header dataset is a free form, ASCII record which terminates in carriage return/line feed (i.e. Hex OD,OA). The initial character in a record describes the function of the record. The maximum record length including the record terminator <Hex 0D0A> is 255 characters. Valid initial record function characters are shown in Table 1**Record types**.

2.1 Record Classes

Table 1 Record types

Class	Record Function Character	Description
Header	V	ADS Trace Edit version (required)
Header	C	Comment
Header	A	Attribute definition and range (at least one A record is required)
Header	H	Header
Primary Key Record	X	Exclude these trace ranges
Primary Key Record	I	Include these trace ranges
Terminator	E	End of Header/Primary Key record pair (at least one E record is required)
Terminator	T	End of ADS Trace Edit dataset (one and no more than one T record is required)

Except for the Comment and terminator records, all records have the form:
<Record function><Space (Hex 20)><Keyword>,<values>,…,<values><Hex 0D0A>

An example of the record form is an attribute record:
A<Hex20>NS_DGPS_DOP,5,7<Hex 0D0A>

The only three records that are mandatory for inclusion in an ADS Trace Edit dataset are V, E and T.

A simplest, valid ADS Trace Edit dataset would consist of:

V record describing version of the trace edit format

H records describing when and by whom the traces were evaluated

A records describing each attribute that was used to evaluate the traces

X and/or **I** records detailing which traces met the selection criteria

E record terminating the Header/Primary key record pairs

T record terminating the trace edit dataset

A more complex ADS Trace Edit dataset would consist of a sequence of a series of Header/Primary key records:

V record describing version of the trace edit format

H records describing when and by whom the traces were evaluated

A records describing each attribute that was used to evaluate the traces

X and/or **I** records detailing which traces met the selection criteria

E record terminating the Header/Primary key record pairs

H records describing when and by whom the traces were evaluated

A records describing each attribute that was used to evaluate the traces

X and/or **I** records detailing which traces met the selection criteria

E record terminating the Header/Primary key record pairs

H records describing when and by whom the traces were evaluated

A records describing each attribute that was used to evaluate the traces

X and/or **I** records detailing which traces met the selection criteria

E record terminating the Header/Primary key record pairs

H records describing when and by whom the traces were evaluated

A records describing each attribute that was used to evaluate the traces

X and/or **I** records detailing which traces met the selection criteria

E record terminating the Header/Primary key record pairs

T record terminating the trace edit dataset

In the second case, the attributes used to evaluate the traces could be identical for the different Header/Primary key pairings or they could be different. Best practice would be for the process that is performing the evaluation to be common to all of the Header/Primary key pairings; but this is not a requirement of the dataset format.

2.2 Version Record

A V record must be the first record in an ADS Trace Edit dataset. The exact version name must be used. The form of the Version Record is:

V<Space (Hex 20)> ADS Trace Edit, version 1.0, 1998<Hex 0D0A>

The version record is mandatory and the syntax of the record must be exactly as shown in the above example. The commas are used to delimit the standard's version number. If a non-standard version of the format is being produced, it is mandatory that the variations from the standard format be explained exactly via comment records that immediately follow the initial V record.

2.3 Comment Record

The comment record provides an additional means to add text that describes the purpose of the trace evaluating/editing process and provides a place to describe user defined trace evaluation attributes. There is no limit on the number of comment records that can be supplied or on the placement of the comment records within the trace edit dataset.

The form of the Comment Record is:

C<Space (Hex 20)> <comment><Hex 0D0A>

An example of the Comment Record form is:

C<Hex20>This would be a sample comment record<Hex 0D0A>

2.4 Header Records

Header Records provide a standard set of comments that should be provided with every Header/Primary Key pairing. Although not mandatory, inclusion of all of the Header Records is highly encouraged. The form of the Header Records is:

<H><Space (Hex 20)><Keyword>,<values>,…,<values><Hex 0D0A>

Table 2 Header Records

Field	Description
H	Identifies the record as a Header Record
Space	Hex 20
Keyword	Identifies the type of data being specified
Values	Data values associated with the keyword
Record terminator	Hex 0D0A

Table 3 Header Record Keywords

Keywords	Values
Process	Text identifying the process and/or subsystem that is evaluating the trace attributes
Date/Time	Time the process started: Four digit year, Julian day, HHMMSS.SSS
Personnel	Name of key personnel responsible for the trace edit evaluation
Input Data Volume	Name of the data volume being edited
Output Data Volume	Name of the data volume created by the trace edits

Keywords	Values
Primary Key Description	Description of the primary key. Examples are: Field shot identifier (FSID) Common mid-point bin number
Secondary Key Description	Description of the secondary key. Examples are: SEG-D trace number

An example of the Header Record form:

H<Hex20>Process,WGC Omega 1.73 Attribute SFM <Hex 0D0A>

2.5 Attribute Records

Attribute records describe the attribute evaluation criteria used to exclude or include traces. For a given Header/Primary Key pairing, a single Attribute Record can be used or multiple Attribute Records can be used. If multiple Attribute Records are used, traces that are included in the trace edit have trace attributes that are within the ranges of all of the specified Attribute Records. For multiple Attribute Records, traces that are excluded have one or more trace attributes that are outside the acceptable trace attribute ranges. The form of the Comment Record is:

A<Space (Hex 20)> <Attribute name>,<Minimum>,<Maximum><Hex 0D0A>

Table 4 Attribute Records

Field	Description
A	Identifies the record as an Attribute Record
Space	Hex 20
Attribute name	The attribute name can either be a standard attribute defined in the ATA Global Attribute Classes or it can be a user-defined name. Best practice is is to use a standard name. If there is no appropriate standard name, Comment records should be used to completely define the attribute.
Minimum	Minimum value of the attribute range
Maximum	Maximum value of the attribute range
Record terminator	Hex 0D0A

The minimum and maximum values define the acceptable, inclusive range for the attribute. When X records are used to exclude a range of traces, the traces' attributes fall outside the acceptable range. When I records are used to include a range of traces, the traces' attributes fall inside the acceptable range.

An example of the Attribute Record form:

A<Hex20>RMS,5,3000 <Hex 0D0A>

2.6 Exclusion and Inclusion Records

X and I records indicate whether a process chose to include or exclude a range of traces in the seismic data volume. X and I records depend on the primary and secondary keys being unique and unambiguous within the seismic data volume. An X or I record consists of a primary key range

followed by one or more secondary key sets. Each secondary key set is enclosed in parentheses and specifies a range of traces that are to be included or excluded from the seismic data volume. The form of the X and I Records is:

> X<Space (Hex 20)> (PK1-PK2;SK1A-SK1B:SKSPAN1,SK2A-SK2B:SKSPAN2,…)…<Hex 0D0A>
>
> Or
>
> I<Space (Hex 20)> (PK1-PK2;SK1A-SK1B:SKSPAN1,SK2A-SK2B:SKSPAN2,…)…<Hex 0D0A>

Except for the blank following the X or I no other blank space or tab has any significance in the decoding of the record. If it is necessary to enclose blanks within a data field, the data field must be enclosed by quotes (“) Hex 22. Blanks and tabs can be added any place in the string to improve readability. The assumption is that the PK1, PK2, SK1A, SK1B, SKSPAN1, etc. are numeric values. If the record is generated using non-numeric values, the sequences are sorted and logically compared using the standard ASCII, 128 character collating sequence.

The primary keys, PK1 and PK2, must be unique within the dataset the traces edits are associated with. Field shot identifier, FSID, and CMP bin number are examples of potential primary keys. In the case of the FSID, it could be constructed from the SEG-D field file number, line number and an absolute time reference. When trace numbers are used as the secondary key, the trace numbering for the SKnA and SKnB entries follow the SPS convention where the first seismic trace recorded on the SEG-D field file is trace 1 and each subsequent trace is incremented by 1. Please note that the SEG-D field file format does not explicitly contain trace numbers. In the SEG-D field file, traces are identified positionally within their channel sets. There is no implied order for the PK1 and PK2 entries (e.g. PK2 is not assumed to be numerically or logically larger than PK1). There is no implied order for the SKnA and SKnB entries (e.g. SKnB is not assumed to be numerically or logically larger than SKnA).

If the trace edits for a given primary key range exceed the 255 byte limit of the record, the primary key range can be repeated on additional X or I records. There is no implied or required order for the primary key ranges. Within an X or I record there is no implied or required order for the secondary key sets. The X and I records are applied to the associated seismic trace volume in the order they occur in the trace edit dataset.

Table 5 Exclusion and Inclusion Record

Field	Description
X or I	Identifies the record as an Exclusion or Inclusion Record (required)
Space	Hex 20 (required)
(	Start of a trace range specification (required)
PK1	Initial primary key in the trace range (required except when the trace edits apply to all of the shotpoints in the dataset)
-	Primary key separator (only used when a primary key range is to be specified)
PK2	Final primary key in the trace range (optionally specifies a range of primary keys; but if supplied, it must follow a -)
SknA	Initial secondary key in the trace range (required)

Field	Description
-	Secondary key separator (only used when a secondary key range is to be specified)
SKnB	Final secondary key in the trace range (optionally specifies a range of secondary keys; but if supplied, it must follow a -)
:	Separator for secondary key span (only used when a secondary key span is to be specified)
SKSPANn	Increment between secondary keys (optionally specifies a span for the secondary key range; but if supplied, it must follow a :)
,	Separator between sets of secondary key ranges. This separator is omitted for the last secondary key range.
)	End of a trace range specifications (required)
Record terminator	Hex 0D0A (required)

Examples of the Exclusion/Inclusion Record form:

X (100172-1001108;63-65)(1001601-1001602;1-2000:2)<Hex 0D0A>
For shotpoints 100172 to 1001108 exclude traces 63 to 65 and
For shotpoints 1001601 and 1001602 exclude traces 1,3,5,7,…,1997, 1999

X<Hex20>(17;19,23-25,10002) (16-18;100-200) (1-1000,88)<Hex 0D0A>
For shotpoint 17 exclude trace 19, 23, 24, 25 and 10002 and
For shotpoints 16, 17 and 18 exclude all traces 100 through 200 and
For shotpoints 1 through 1000 exclude trace 88

X<Hex20> (17;19,23-25,10002)(16-18;100-200)(1-1000,88)<Hex 0D0A>
This record excludes the same traces as the previous example

X<Hex20> (;63,103-105,1001-1005:2)<Hex 0D0A>
For all shotpoints in the dataset exclude traces 63, 103,104, 105, 1001,1003, 1005

X<Hex20> (;63,103-105,1001-1006:2)<Hex 0D0A>
This record excludes the same traces as the previous example

X<Hex20> (4;63,103-105,1001-1006:2)<Hex 0D0A>
X<Hex20> (4-4;63-63,103-105,1001-1006:2)<Hex 0D0A>
These two X records are functionally equivalent. Either record is a valid X record; but the first record is the preferred practice.

For the previous examples, if I records had been used instead of X records, the specified traces ranges would have been included in the seismic data volume. The primary intent of the trace edit dataset is to determine which traces have been excluded from a seismic data volume. Since by its design, those exclusions may be contained in multiple trace edit datasets, there will arise occasions when traces are reevaluated in light of additional information and need to be added back into the seismic data volume. The I record provides a means of negating a prior exclusion. Although possible, it is not the intent and would be poor practice to use this mechanism to exclude all traces then list all included traces (e.g. X (;1-1000000) followed by I (100-200:1-22)).

2.7 Header/Primary Key Termination Record

An E record must be used to terminate a Header/Primary Key record pairing. The exact form of the record must be used. The form of the Header/Primary Key Termination Record is:

E<Space (Hex 20)> End of Header/Primary Key Pair<Hex 0D0A>

2.8 Trace Edit Dataset Terminator Record

A T record must be used to terminate an ADS Trace Edit dataset. The exact form of the record must be used. The form of the Trace Edit Dataset Termination Record is:

T<Space (Hex 20)> End of ADS Trace Edit Dataset<Hex 0D0A>

3. ADS Dependencies

Figure 1 illustrates the creation of two ADS metafiles. The two metafiles share a common raw data root. Using the ADS metafile chunk dependencies, ADS-TE 2 can be made dependent on ADS-TE1 and ADS-TE 3 can be made dependent on both ADS-TE 1 and ADS-TE2. Likewise in Metafile 2, ADS-TE 5 can be made dependent on ADS-TE 4. ADS-TE 4 cannot be made dependent on ADS-TE 1 because ADS chunk dependencies cannot reference chunks that are external to a metafile.

For the dependency of ADS-TE 4 and ADS-TE 5 to be explicitly stated, the two metafiles would need to be combined. This can be achieved without ambiguity because the metafile chunk serial number is designed to be unique across processes and instances of processes. For more information on chunk dependencies refer to the “Ancillary Data Standard Metafile Format Description”.

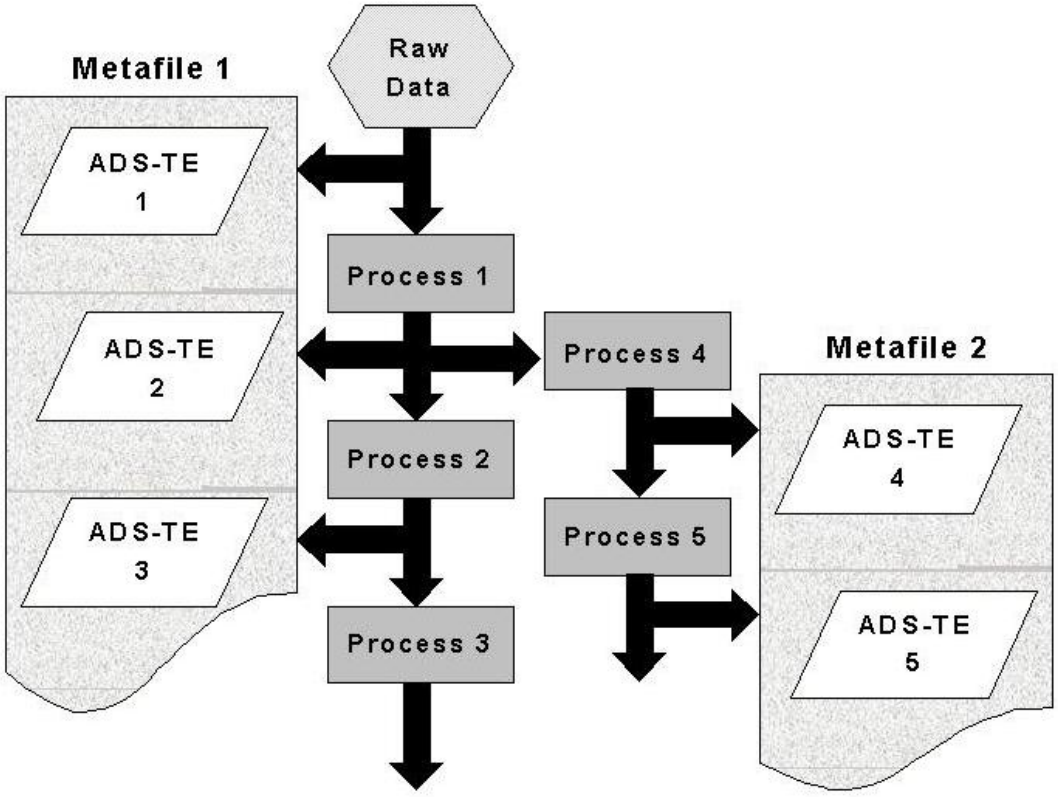

Figure 1 Creation of two ADS metafiles

4. Samples

4.1 Simple

In the following example, the user uses the field shot identifier, FSID, and the sequential trace number as the primary and secondary keys. The comments indicate that the user defines the FSID as the ASCII concatenation of the system number, the line number, the pass number and the acquisition system file number. The acquisition system is using ten cables for acquisition with 320 channels per cable. Trace number 1 is on the port most cable and is nearest the vessel. Trace 3200 is on the starboard most cable and is farthest from the vessel.

The dataset was evaluated on two attributes. The trace exclusion criteria are the average absolute amplitude in a specified gate of the trace and the absolute peak value of the trace. For the latter attribute, two attributes (MIN_AMP and MAX_AMP) are combined to create a single criteria for exclusion.

The processing program has determined that traces 161 to 175 always meet at least one the three exclusion reasons and for files 10 through 20, traces 36, 37, and 38 also meet the exclusion requirements.

Please note that ASCII spaces have been inserted in the following samples for the sake of readability. The only ASCII spaces required by the format are the ones indicated by <Space (Hex 20)>.

```
V<Space (Hex 20)> ADS Trace Edit, version 1.0, 1998<Hex 0D0A>
H<Space (Hex 20)>Process, WGC Omega v1.73 Trace Attribute SFM<Hex 0D0A>
H<Space (Hex 20)>Time/Date, 1998,186,235810.011<Hex 0D0A>
H<Space (Hex 20)>Personnel, John Doe, Jane Doe<Hex 0D0A>
H<Space (Hex 20)>Input Data Volume, /data1/raw_data/swath1.data<Hex 0D0A>
H<Space (Hex 20)>Output Data Volume, /data1/edit_data/swath1.data <Hex 0D0A>
C<Space (Hex 20)>FSID = ASCII Sys#//Line//Pass#//File <Hex 0D0A>
H<Space (Hex 20)>Primary Key Description, FSID<Hex 0D0A>
C<Space (Hex 20)>Trace number range is 1 to 3200, 10 cables<Hex 0D0A>
C<Space (Hex 20)>All 10 cables have 320 channels each<Hex 0D0A>
C<Space (Hex 20)>Trace #1 – Head of port most cable<Hex 0D0A>
C<Space (Hex 20)>Trace #3200 – Tail of starboard most cable<Hex 0D0A>
H<Space (Hex 20)>Secondary Key Description,trace number<Hex 0D0A>
C<Space (Hex 20)> Reject traces with average amplitudes <10uB=0.14mV <Hex 0D0A>
C<Space (Hex 20)>For AVG_ABS, the last 500 ms of the trace is used<Hex 0D0A>
A<Space (Hex 20)>AVG_ABS, 0, 0.14<Hex 0D0A>
C<Space (Hex 20)>Reject absolute peak amplitudes > 300 mV<Hex 0D0A>
A<Space (Hex 20)> MIN_AMP, -300, -9999<Hex 0D0A>
A<Space (Hex 20)> MAX_AMP, 300, 9999<Hex 0D0A>
```

```
X<Space (Hex 20)>(13321001-13321100,161-175)<Hex 0D0A>
X<Space (Hex 20)>(13321010-13321020,68,36-38)<Hex 0D0A>
E<Space (Hex 20)> End of Header/Primary Key Pair<Hex 0D0A>
T<Space (Hex 20)> End of ADS Trace Edit Dataset<Hex 0D0A>
```

For the above example, it would have been correct to list each occurrence for the exclusion of traces 161 to 175. The following sample is equivalent to the previous sample.

```
V<Space (Hex 20)> ADS Trace Edit, version 1.0, 1998<Hex 0D0A>
H<Space (Hex 20)>Process, WGC Omega v1.73 Trace Attribute SFM<Hex 0D0A>
H<Space (Hex 20)>Time/Date, 1998,186,235810.011<Hex 0D0A>
H<Space (Hex 20)>Personnel, John Doe, Jane Doe<Hex 0D0A>
H<Space (Hex 20)>Input Data Volume, /data1/raw_data/swath1.data<Hex 0D0A>
H<Space (Hex 20)>Output Data Volume, /data1/edit_data/swath1.data <Hex 0D0A>
C<Space (Hex 20)>FSID = ASCII Sys#//Line//Pass#//File <Hex 0D0A>
H<Space (Hex 20)>Primary Key Description, FSID<Hex 0D0A>
C<Space (Hex 20)>Trace number range is 1 to 3200, 10 cables<Hex 0D0A>
C<Space (Hex 20)>All 10 cables have 320 channels each<Hex 0D0A>
C<Space (Hex 20)>Trace #1 – Head of port most cable<Hex 0D0A>
C<Space (Hex 20)>Trace #3200 – Tail of starboard most cable<Hex 0D0A>
H<Space (Hex 20)>Secondary Key Description, trace number<Hex 0D0A>
C<Space (Hex 20)> Reject traces with average amplitudes <10uB=0.14mV <Hex 0D0A>
C<Space (Hex 20)>For AVG_ABS, the last 500 ms of the trace is used<Hex 0D0A>
A<Space (Hex 20)>AVG_ABS, 0, 0.14<Hex 0D0A>
C<Space (Hex 20)>Reject absolute peak amplitudes > 300 mV<Hex 0D0A>
A<Space (Hex 20)> MIN_AMP, -300, -9999<Hex 0D0A>
A<Space (Hex 20)> MAX_AMP, 300, 9999<Hex 0D0A>
X<Space (Hex 20)>(13321001-13321001,161-175)<Hex 0D0A>
X<Space (Hex 20)>(13321002-13321002,161-175)<Hex 0D0A>
X<Space (Hex 20)>(13321003-13321003,161-175)<Hex 0D0A>
X<Space (Hex 20)>(13321004-13321004,161-175)<Hex 0D0A>
```

… (There are 92 X records omitted at this point to simplify the sample. They would be required in the actual ADS Trace Edit dataset)

```
X<Space (Hex 20)>(13321097-13321097,161-175)<Hex 0D0A>
X<Space (Hex 20)>(13321098-13321098,161-175)<Hex 0D0A>
```

```
X<Space (Hex 20)>(13321099-13321099,161-175)<Hex 0D0A>
X<Space (Hex 20)>(13321100-13321100,161-175)<Hex 0D0A>
X<Space (Hex 20)>(13321010-13321020,68,36-38)<Hex 0D0A>
E<Space (Hex 20)> End of Header/Primary Key Pair<Hex 0D0A>
T<Space (Hex 20)> End of ADS Trace Edit Dataset<Hex 0D0A>
```

4.2 Less Simple

The following sample is similar to the Simple sample except the trace reject data from the acquisition system is included with the Simple sample and the Simple sample's two exclusion criterion are separated. The results of this sample exclude traces 288 to 303 and 161 to 175 for files 1 to 100 and traces 36 to 38 for files 10 to 20.

```
V<Space (Hex 20)> ADS Trace Edit, version 1.0, 1998<Hex 0D0A>
H<Space (Hex 20)>Process, SXZ-2000 Acquisition System<Hex 0D0A>
H<Space (Hex 20)>Time/Date, 1998,186,201022.431<Hex 0D0A>
H<Space (Hex 20)>Personnel, John Q. Observer<Hex 0D0A>
H<Space (Hex 20)>Input Data Volume, real-time acquisition<Hex 0D0A>
H<Space (Hex 20)>Output Data Volume, /data1/raw_data/swath1.data <Hex 0D0A>
C<Space (Hex 20)>FSID = ASCII Sys#//Line//Pass#//File <Hex 0D0A>
H<Space (Hex 20)>Primary Key Description, FSID<Hex 0D0A>
C<Space (Hex 20)>Trace number range is 1 to 3200, 10 cables<Hex 0D0A>
C<Space (Hex 20)>All 10 cables have 320 channels each<Hex 0D0A>
C<Space (Hex 20)>Trace #1 – Head of port most cable<Hex 0D0A>
C<Space (Hex 20)>Trace #3200 – Tail of starboard most cable<Hex 0D0A>
H<Space (Hex 20)>Secondary Key Description, trace number<Hex 0D0A>
C<Space (Hex 20)>Reject traces with RMS less than 2 uB=0.028 mV<Hex 0D0A>
A<Space (Hex 20)>RMS, 0, 0.028<Hex 0D0A>
X<Space (Hex 20)>(13321001-13321100,288-303)<Hex 0D0A>
E<Space (Hex 20)> End of Header/Primary Key Pair<Hex 0D0A>
H<Space (Hex 20)>Process, WGC Omega v1.73 Trace Attribute SFM<Hex 0D0A>
H<Space (Hex 20)>Time/Date, 1998,186,235810.011<Hex 0D0A>
H<Space (Hex 20)>Personnel, John Doe, Jane Doe<Hex 0D0A>
H<Space (Hex 20)>Input Data Volume, /data1/raw_data/swath1.data<Hex 0D0A>
H<Space (Hex 20)>Output Data Volume, /data1/edit_data/swath1.data <Hex 0D0A>
C<Space (Hex 20)>FSID = ASCII Sys#//Line//Pass#//File <Hex 0D0A>
H<Space (Hex 20)>Primary Key Description, FSID<Hex 0D0A>
C<Space (Hex 20)>Trace number range is 1 to 3200, 10 cables<Hex 0D0A>
```

```
C<Space (Hex 20)>All 10 cables have 320 channels each<Hex 0D0A>
C<Space (Hex 20)>Trace #1 – Head of port most cable<Hex 0D0A>
C<Space (Hex 20)>Trace #3200 – Tail of starboard most cable<Hex 0D0A>
H<Space (Hex 20)>Secondary Key Description, trace number<Hex 0D0A>
C<Space (Hex 20)>Reject traces with average amplitudes <10uB=0.14mV<Hex 0D0A>
C<Space (Hex 20)>For AVG_ABS, the last 500 ms of the trace is used<Hex 0D0A>
A<Space (Hex 20)>AVG_ABS, 0, 0.14<Hex 0D0A>
X<Space (Hex 20)>(13321001-13321100,161-175)<Hex 0D0A>
E<Space (Hex 20)> End of Header/Primary Key Pair<Hex 0D0A>
H<Space (Hex 20)>Process, WGC Omega v1.73 Trace Attribute SFM<Hex 0D0A>
H<Space (Hex 20)>Time/Date, 1998,186,235810.011<Hex 0D0A>
H<Space (Hex 20)>Personnel, John Doe, Jane Doe<Hex 0D0A>
H<Space (Hex 20)>Input Data Volume, /data1/raw_data/swath1.data<Hex 0D0A>
H<Space (Hex 20)>Output Data Volume, /data1/edit_data/swath1.data <Hex 0D0A>
C<Space (Hex 20)>FSID = ASCII Sys#//Line//Pass#//File <Hex 0D0A>
H<Space (Hex 20)>Primary Key Description, FSID<Hex 0D0A>
C<Space (Hex 20)>Trace number range is 1 to 3200, 10 cables<Hex 0D0A>
C<Space (Hex 20)>All 10 cables have 320 channels each<Hex 0D0A>
C<Space (Hex 20)>Trace #1 – Head of port most cable<Hex 0D0A>
C<Space (Hex 20)>Trace #3200 – Tail of starboard most cable<Hex 0D0A>
H<Space (Hex 20)>Secondary Key Description, trace number<Hex 0D0A>
C<Space (Hex 20)>Reject absolute peak amplitudes > 300 mV<Hex 0D0A>
A<Space (Hex 20)> MIN_AMP, -300, -9999<Hex 0D0A>
A<Space (Hex 20)> MAX_AMP, 300, 9999<Hex 0D0A>
X<Space (Hex 20)>(13321010-13321020,68,36-38)<Hex 0D0A>
E<Space (Hex 20)> End of Header/Primary Key Pair<Hex 0D0A>
T<Space (Hex 20)> End of ADS Trace Edit Dataset<Hex 0D0A>
```